

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

Sebastian Rahtz

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

Heiko Oberdiek

Email: `heiko.oberdiek at gmail.com`

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## 1 Documentation overview for hyperref

The documentation for package hyperref consists of several files:

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

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

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

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

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

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

Source code documentation:

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

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

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

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### 3 File hyccheck.tex

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

```

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

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

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

```

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

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

```

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

`\HyC@checkPackage`

```

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

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

```

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

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

```

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

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

```

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

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

```

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

`\HyC@noValue`

```

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

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



```

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

```

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

```

90 \newtoks\HyC@Toks

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

```

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

```

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

```

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

```

`\HyC@checkItem` A single check.

```

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

```

`\HyC@string` Some shorthands.

```

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

```

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

```

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

```

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

```

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

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

```

## 4 Package options and setup

### 4.1 Save catcodes

There are many packages that change the standard catcodes.

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

```

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

```

\Hy@SetCatcodes

```

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

```

\Hy@RestoreCatcodes

```

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

```

```

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

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

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

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

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

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

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

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

```
536 \begingroup
```

### 6.2.1 Preprocessing

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

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

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

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

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

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

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

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

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

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

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

```
542 \ifHy@unicode
```

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

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

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

```
546 \HyPsd@UTFviii
```

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

```
548 \else
```

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

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

```
551 \fi
```

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

```
553 \enc@update
```

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```

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

```

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

```

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

```

**Package color.**

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

**Upper- and lowercase.**

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

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

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

Disable \cyr, used in russianb.ldf.

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

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

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

**Package german.**

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

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

**Package FrenchPro.** This package uses:

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

**AMS classes.**

```
652 \HyPsd@AMSclassfix
```

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

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

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

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

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

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

**Miscellaneous commands.**

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

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

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

**Patch for cjk bookmarks.**

```
668 \HyPsd@CJKhook
```

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

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

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

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

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

**Package xspace.**

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



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

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

\@ifstar is defined in L<sup>A</sup>T<sub>E</sub>X as follows:

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

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

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

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

Support for package 'xargs':

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

## 6.2.2 Expansion

There are several possibilities to expand tokens within 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 get no wrong results by forgetting the proofreading of his text. But the *disadvantage* is that old wrong code cannot be processed without errors. Mainly the error message is very cryptic and for the normal user hard to understand. 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 T<sub>E</sub>X, so these tokens are viewed verbatim. So this version detects them now, and removes them with an descriptive warning for the user. As additional features xspace support is possible and grouping characters can be used without problems, because they are removed silently.

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

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

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

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

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

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

### 6.2.3 Postprocessing

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

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

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

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

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

```

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

```

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

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

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

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

```

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

```

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

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

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

```

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

```

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

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

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

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

```

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

```

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

```

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

```

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

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

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

```

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

```

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

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

```

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

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

```

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

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

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

```

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

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

With Unicode the spaces are replaced by their octal sequences.

```

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

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

```

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

### Try conversion back to PDFDocEncoding.

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

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

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

`\Hy@pdfstringdef`

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

## 6.3 Encodings

### 6.3.1 XeTeX

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

```

829 \newif\ifHyPsd@XeTeXBigChars
830 \def\HyPsd@XeTeXBigCharsfalse{%
831   \global\let\ifHyPsd@XeTeXBigChars\iffalse
832 }%
833 \def\HyPsd@XeTeXBigCharstrue{%
834   \global\let\ifHyPsd@XeTeXBigChars\iftrue
835 }%
836 \def\HyPsd@ToBigChars#1{%
837   \ifHyPsd@XeTeXBigChars
838     \EdefEscapeHex\HyPsd@UnescapedString{%
839       \expandafter\@gobbletwo\HyPsd@UnescapedString
840     }%
841     \begingroup
842     \toks@{ }%
843     \escapechar=92\relax
844     \let\x\HyPsd@ToBigChar
845     \expandafter\HyPsd@ToBigChar\HyPsd@UnescapedString
846     \relax\relax\relax\relax\relax\relax\relax
847     \edef\x{%
848       \endgroup
849       \gdef\noexpand#1{\the\toks@}%
850     }%
851     \x
852   \fi
853 }%
854 \def\HyPsd@ToBigChar#1#2#3#4{%
855   \ifx\relax#1\relax
856     \let\x\relax
857   \else
858     \count@=#1#2#3#4\relax
859     \let\y\@empty
860     \lccode\z@=\count@
861     \ifnum\count@=40 % (
862       \let\y\@backslashchar
863     \else
864       \ifnum\count@=41 % )
865         \let\y\@backslashchar
866       \else
867         \ifnum\count@=92 % backslash
868           \let\y\@backslashchar
869         \else
870           \ifnum\count@=10 % newline
871             \edef\y##1{\string\n}%
872           \else
873             \ifnum\count@=13 % carriage return
874               \edef\y##1{\string\r}%
875             \fi
876           \fi
877         \fi
878       \fi
879     \fi
880   \lowercase{%
881     \toks@\expandafter{%
882       \the\expandafter\toks@
883     }%
884     \y
885     ^^@%
886   }%

```

```

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

```

### 6.3.2 Workaround for package linguex

```

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

```

### 6.3.3 PD1 encoding

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

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

```

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

```

### 6.3.4 PU encoding

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

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

```

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

```



```

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

```

## 6.4 Additional user commands

### 6.4.1 `\texorpdfstring`

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

```

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

```

### 6.4.2 Hooks for `\pdfstringdef`

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

```

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

```

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

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

```

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

```

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

```

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

```

`\HyPsd@DisableCommands`

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

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

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

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

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

## 6.5 Help macros for expansion

### 6.5.1 `\ignorespaces`

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

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

### 6.5.2 Babel languages

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

```
\pdfstringdefDisableCommands{%
  \languageshorthands{system}%
}
```

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

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

```

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

  Nothing to do for english.

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

```

```

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

```

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

```

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

```

```

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

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

```

```

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

```

```

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

```

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

.-.

```

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

```

### 6.5.3 CJK patch

```

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

```

\HyPsd@CJKhook

```

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

```

#### 6.5.4 CJK bookmarks

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

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

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

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

```

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

```



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

```

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

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

```

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

### 6.5.5 CJK unicode

`\HyPsd@CJKhook@unicode`

```

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

\HyPsd@CJK@Unicode

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

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

```

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

```

```

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

```

```

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

```

```

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

```

### 6.5.6 \@inmathwarn-Patch

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

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

```

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

```

```

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

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

```

\HyPsd@add@accent

```

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

```

### 6.5.7 Unexpandable spaces

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

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

These properties are used in \HyPsd@CheckCatcodes.

```

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

```

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

```

1602 \HyPsd@LetUnexpandableSpace\HyPsd@UnexpandableSpace

```

### 6.5.8 Marker for commands

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

```

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

```

### 6.5.9 \hspace fix

\HyPsd@hspace

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

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

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

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

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

### 6.5.10 Fix for AMS classes

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

### 6.5.11 Reference commands

\HyPsd@href

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

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

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

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

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



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

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

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

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

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

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

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

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

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

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

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

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

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

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

`\HyPsd@@autorefname`

```

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

```

### 6.5.12 Redefining the defining commands

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

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

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

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

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

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

```

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

```

```

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

```

### 6.5.13 \ifnextchar

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

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

```

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

```

### 6.5.14 \@protected@testoptifnextchar

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

```

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

```

## 6.6 Help macros for postprocessing

### 6.6.1 Generic warning.

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

```

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

```

### 6.6.2 Protecting spaces

```

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

```

1776 {%

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

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

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

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

### Remove mask.

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

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

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

### 6.6.3 Remove grouping braces

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

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

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

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

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

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

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

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

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

```

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

```

#### 6.6.4 Catcode check

##### Check catcodes.

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

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

```

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

```

```

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

```

### Remove counts, dimens, skips.

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

```

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

```

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

```

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

```



```

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

```

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

```

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

```

### Catcode warnings.

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

```

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

```

`\HyPsd@RemoveSpaceWarning`

```

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

```

```

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

```

\HyPsd@ReplaceSpaceWarning

```

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

```

### 6.6.5 Check for wrong glyphs

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

```

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

```

## Spaces.

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

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

### 6.6.6 Replacing tokens

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

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

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

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

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

`\HyPsd@EscapeTeX`

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

```

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

```

### 6.6.7 Support for package xspace

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

```

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

```

### 6.6.8 Converting to Unicode

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

```

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

```

`\HyPsd@ConvertToUnicode`

```

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

```

```

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

```

\HyPsd@DoConvert

```

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

```

\HyPsd@DoEscape

```

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

```

\HyPsd@GetTwoBytes

```

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

```

\HyPsd@GetOneByte

```

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

```

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

```

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

```

\HyPsd@Char

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

### 6.6.9 Support for UTF-8 input encoding

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

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

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

```

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

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

```

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

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

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

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

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

$$(5)$$

```

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

```

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

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

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

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

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

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

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

$$(12)$$

```

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

```

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

```

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

```

```

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

```



```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

```

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

```

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

```

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

```

## 7 Support of other packages

### 7.1 Class memoir

```

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

```

### 7.2 Package subfigure

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

```

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

```

```

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

```

### 7.3 Package xr and xr-hyper

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

```

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

```

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

```

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

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

```

Providing dummy definitions.

```

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

```

## 8 Help macros for links

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

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

```

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

```

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

```

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

```

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

```

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

```

```

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

```

## 9 Options

```

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

```

### 9.1 Help macros

\Hy@boolkey

```

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

```

```

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

```

\Hy@WarnOptionValue

```

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

```

\Hy@DisableOption

```

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

```

\Hy@WarnOptionDisabled

```

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

```

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

```

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

```

```

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

```

```

\Hy@DefNameKey #1: option name
#2: \do list with known values, first argument of \do is value, second argument is a
comment.
2581 \def\Hy@DefNameKey#1{%
2582   \expandafter\Hy@@DefNameKey\csname @#1\endcsname{#1}%
2583 }

```

```

\Hy@@DefNameKey #1: macro for value storage
#2: option name
#3: \do list with known values.
2584 \def\Hy@@DefNameKey#1#2#3{%
2585   \define@key{Hyp}{#2}{%
2586     \edef#1{#1}%
2587     \ifx#1\@empty
2588       \else
2589         \Hy@CheckOptionValue{#1}{#2}{#3}%
2590       \fi
2591   }%
2592   \let#1\@empty
2593 }

```

```

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

```

## 9.2 Defining the options

```

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

```

```

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

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

```

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

```

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

```



```

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

```

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

```

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

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

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

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

```

Determines whether an automatic anchor is put on each page

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

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

```

```

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

```

```

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

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

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

```

## 10 Options for different drivers

```

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

```

```

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

```

```

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

```

```

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

```

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

```

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

```

```

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

```

## 11 Options to add extra features

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

```

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

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

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

```

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

```

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

```

```

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

```

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

```

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

```

Configuration of encap char.

```

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

```

## 12 Language options

The `\autoref` feature depends on the language.

```

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

```



```

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

```

```

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

```

Next commented section for Russian is provided by Olga Lapko.

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

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

is the `\appendixautorefname`.

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

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

```
3201 \def\equationautorefname{\cyr\cyrv\cyrery\cyr.}%
```

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

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

```
3203 %   \cyr\cyrv\cyrery\cyr\cyrzh\cyre\cyrn\cyri\cyre
```

```
3204 % }%
```

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

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

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

```
3207 }%
```

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

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

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

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

```
3211 % }%
```

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```
3224 % }%
```

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```

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

```

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

```

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

```

```

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

```

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

```

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

```

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

```

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

```

```

3363 }%
3364 }

```

## 13 Options to change appearance of links

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

```

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

```

## 14 Bookmarking

```

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

```

```

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

```

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

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

```

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

```

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

```

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

```

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

```

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

```



```

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

Option CJKbookmarks enables the patch for CJK bookmarks.

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

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

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

```

## 15 PDF-specific options

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

```

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

```

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

```

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

```

```

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

```

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

```

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

```

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

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

```

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

```

```

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

```

```

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

```

```

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

```

```

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

```

```

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

```

```

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

```



```

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

```

```

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

```

Default values:

```

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

```

```

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

```

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

```

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

```

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

```

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

```

Add option tex4ht if package tex4ht is loaded.

```

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

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

```

After processing options.

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

## 15.1 PDF/A

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

```

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

```

## 15.2 Patch for babel's \texttilde

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

```

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

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

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

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

```

```

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

```

### 15.2.1 Driver loading

```

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

```

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

```

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

```

```

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

```

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

```

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

```



```

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

```

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

```

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

```

```

4367 \fi
4368 \fi

```

## 15.2.2 Bookmarks

```

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

```

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

```

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

```

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

```

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

```

```

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

```

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

```

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

```

for grouping consistency:

```

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

```

```

4530 \pdf@ifdraftmode{}{%
4531 \Hy@CatcodeWrapper\ReadBookmarks
4532 }%
4533 \fi
4534 }
4535 \ifHy@backref
4536 \RequirePackage{backref}%
4537 \else
4538 \let\Hy@backout\@gobble
4539 \fi
4540 \Hy@DisableOption{backref}
4541 \Hy@DisableOption{pagebackref}
4542 \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.

```

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

```

```

4577 \catcode'\# = 6 ^^A
4578 \gdef\Hy@ActiveCarriageReturn{^^M}^^A
4579 \gdef\hyper@n@normalise#1#2{^^A
4580 \def\Hy@tempa{#2}^^A
4581 \ifx\Hy@tempa\Hy@ActiveCarriageReturn
4582 \Hy@ReturnAfterElseFi{^^A
4583 \hyper@@normalise{#1}^^A
4584 }^^A
4585 \else
4586 \Hy@ReturnAfterFi{^^A
4587 \hyper@@normalise{#1}{#2}^^A
4588 }^^A
4589 \fi
4590 }^^A
4591 \gdef\hyper@@normalise#1#2{^^A
4592 \edef\Hy@tempa{^^A
4593 \endgroup
4594 \noexpand#1{\Hy@RemovePercentCr#2%^^M\@nil}^^A
4595 }^^A
4596 \Hy@tempa
4597 }^^A
4598 \gdef\Hy@RemovePercentCr#1%^^M#2\@nil{^^A
4599 #1^^A
4600 \ifx\limits#2\limits
4601 \else
4602 \Hy@ReturnAfterFi{^^A
4603 \Hy@RemovePercentCr #2\@nil
4604 }^^A
4605 \fi
4606 }^^A
4607 \endgroup
4608 \providecommand*\hyper@chars{%
4609 \let\#\hyper@hash
4610 \let\%\@percentchar
4611 \Hy@safe@activetrue
4612 }

4613 \def\hyperlink#1#2{%
4614 \hyper@@link{#1}{#2}%
4615 }

4616 \def\Hy@VerboseLinkStart#1#2{%
4617 \ifHy@verbose
4618 \begingroup
4619 \Hy@safe@activetrue
4620 \xdef\Hy@VerboseGlobalTemp{(#1 '#2')%
4621 \Hy@Info{Reference \Hy@VerboseGlobalTemp}%
4622 \xdef\Hy@VerboseGlobalTemp{%
4623 \Hy@VerboseGlobalTemp, %
4624 line \the\inputlineno
4625 }%
4626 \endgroup
4627 \let\Hy@VerboseLinkInfo\Hy@VerboseGlobalTemp
4628 \@onelevel@sanitize\Hy@VerboseLinkInfo
4629 \fi
4630 }

4631 \def\Hy@VerboseLinkInfo{<VerboseLinkInfo>}
4632 \def\Hy@VerboseLinkStop{%

```

```

4633 \ifHy@verbose
4634 \begingroup
4635 \edef\x{\endgroup
4636 \write\m@ne{%
4637 Package 'hyperref' Info: %
4638 End of reference \Hy@VerboseLinkInfo.%
4639 }%
4640 }%
4641 \x
4642 \fi
4643 }

4644 \def\Hy@VerboseAnchor#1{%
4645 \ifHy@verbose
4646 \begingroup
4647 \Hy@safe@activetrue
4648 \Hy@Info{Anchor '\HyperDestNameFilter{#1}'}%
4649 \endgroup
4650 \fi
4651 }

4652 \def\Hy@AllowHyphens{%
4653 \relax
4654 \ifhmode
4655 \penalty\@M
4656 \hskip\z@skip
4657 \fi
4658 }

4659 \DeclareRobustCommand*\href{[1][]{%
4660 \begingroup
4661 \setkeys{href}{#1}%
4662 \@ifnextchar\bgroup\Hy@href{\hyper@normalise\href@}%
4663 }
4664 \def\Hy@href#1{%
4665 \hyper@normalise\href@
4666 }
4667 \begingroup
4668 \catcode'\$=6 %
4669 \catcode'\#=12 %
4670 \gdef\href@#1{\expandafter\href@split$1##\}%
4671 \gdef\href@split$1#$2#$3\\$4{%
4672 \hyper@@link{$1}{$2}{$4}%
4673 \endgroup
4674 }%
4675 \endgroup

```

Option 'page'.

```

4676 \define@key{href}{page}{%
4677 \def\Hy@href@page{#1}%
4678 }
4679 \let\Hy@href@page\@empty
4680 \newcount\c@Hy@tempcnt
4681 \def\theHy@tempcnt{\the\c@Hy@tempcnt}
4682 \def\Hy@MakeRemoteAction{%
4683 \ifx\Hy@href@page\@empty
4684 \def\Hy@href@page{0}%
4685 \else
4686 \setcounter{Hy@tempcnt}{\Hy@href@page}%
4687 \ifnum\c@Hy@tempcnt<\@ne

```

```

4688 \Hy@Warning{%
4689   Invalid page number (\theHy@tempcnt)\MessageBreak
4690   for remote PDF file.\MessageBreak
4691   Using page 1%
4692 }%
4693 \def\Hy@href@page{0}%
4694 \else
4695   \global\advance\c@Hy@tempcnt\m@ne
4696   \edef\Hy@href@page{\theHy@tempcnt}%
4697 \fi
4698 \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.

```

4699 \ifx\Hy@href@nextactionraw\@empty
4700 \else
4701   \Hy@newwindowsettrue
4702   \Hy@newwindowtrue
4703 \fi
4704 }

```

Option ‘pdfremotestartview’.

```

4705 \define@key{href}{pdfremotestartview}{%
4706   \setkeys{Hyp}{pdfremotestartview={#1}}%
4707 }

```

Option ‘pdfnewwindow’.

```

4708 \let\KV@href@pdfnewwindow\KV@Hyp@pdfnewwindow
4709 \let\KV@href@pdfnewwindow@default\KV@Hyp@pdfnewwindow@default

```

Option ‘ismap’.

```

4710 \newif\ifHy@href@ismap
4711 \define@key{href}{ismap}[true]{%
4712   \ltx@ifundefined{Hy@href@ismap#1}{%
4713     \Hy@Error{%
4714       Invalid value (#1) for key ‘ismap’.\MessageBreak
4715       Permitted values are ‘true’ or ‘false’.\MessageBreak
4716       Ignoring ‘ismap’%
4717     }\@ehc
4718   }{%
4719     \csname Hy@href@ismap#1\endcsname
4720   }%
4721 }

```

Option ‘nextactionraw’.

```

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

```



```

4736 \ifx\Hy@href@nextactionraw\@empty
4737 \else
4738 \edef\Hy@href@nextactionraw{/Next \Hy@href@nextactionraw}%
4739 \fi
4740 \fi
4741 }
4742 \def\HyPat@ObjRef/{.+}

```

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

```

4743 \RequirePackage{url}
4744 \let\HyOrg@url\url
4745 \def\Hurl{\begingroup \Url}
4746 \DeclareRobustCommand*\nolinkurl{\hyper@normalise\nolinkurl@}
4747 \def\nolinkurl@#1{\Hurl{#1}}
4748 \DeclareRobustCommand*\url{\hyper@normalise\url@}
4749 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}

4750 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
4751 \providecommand\hyper@image[2]{#2}

4752 \def\hypertarget#1#2{%
4753 \ifHy@nesting
4754 \hyper@@anchor{#1}{#2}%
4755 \else
4756 \hyper@@anchor{#1}{\relax}#2%
4757 \fi
4758 }

```

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

```

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

4779 \def\hyperdef{\@ifnextchar{\label@hyperdef}\@hyperdef}
4780 \def\@hyperdef#1#2#3{% category, name, text
4781 \ifx\#1\%
4782 \def\Hy@AnchorName{#2}%

```

```

4783 \else
4784 \def\Hy@AnchorName{#1.#2}%
4785 \fi
4786 \ifHy@nesting
4787 \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#3}%
4788 \else
4789 \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#3%
4790 \fi
4791 }

```

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

```

4792 \def\label@hyperref[#1]{%
4793 \expandafter\label@@hyperref\csname r@#1\endcsname{#1}%
4794 }%
4795 \def\label@@hyperref#1#2#3{%
4796 \ifx#1\relax
4797 \protect\G@refundefinedtrue
4798 \@latex@warning{%
4799 Hyper reference ‘#2’ on page \thepage \space undefined%
4800 }%
4801 \hyper@@link{}{??}{#3}%
4802 \else
4803 \hyper@@link{\expandafter\@fifthoffive#1}%
4804 {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
4805 \fi
4806 }
4807 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
4808 % anchor text
4809 \@bsphack
4810 \ifx\#2\%
4811 \def\Hy@AnchorName{#3}%
4812 \else
4813 \def\Hy@AnchorName{#2.#3}%
4814 \fi
4815 \if@filesw
4816 \protected@write\@auxout{}{%
4817 \string\newlabel{#1}{\{ }\{ }\{\Hy@AnchorName\} }%
4818 }%
4819 \fi
4820 \@esphack
4821 \ifHy@nesting
4822 \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#4}%
4823 \else
4824 \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#4%
4825 \fi
4826 }

```

## 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.

```

4827 \def\hyper@@link{\let\Hy@reserved@a\relax
4828 \@ifnextchar{\hyper@link@}{\hyper@link@[link]}%

```

```

4829 }
4830 \def\hyper@link@{#1}#2#3#4{%
4831   \begingroup
4832     \protected@edef\Hy@tempa{#2}%
4833     \Hy@safe@activetrue
4834     \edef\x{#3}%
4835     \ifx\Hy@tempa\@empty
4836       \toks0{\hyper@link{#1}}%
4837     \else
4838       \toks0{\expandafter\hyper@readexternallink#2\{#1}}%
4839     \fi
4840     \toks2{%
4841       \Hy@safe@activesfalse
4842       #4%
4843     }%
4844     \edef\Hy@tempa{\the\toks2}%
4845     \edef\x{\endgroup
4846       \ifx\Hy@tempa\@empty
4847         \noexpand\Hy@Warning{Suppressing empty link}%
4848       \else
4849         \the\toks0 {\x}{\the\toks2}}%
4850     \fi
4851   }%
4852   \x
4853 }

```

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.

```

4854 \def\hyper@readexternallink#1\{#2#3#4{%
4855   \begingroup
4856     \let\relax
4857   \expandafter\endgroup
4858   \expandafter\@hyper@@readexternallink#1\{#2}{#3}{#4}%
4859 }
4860 \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.

```

4861   \@hyper@readexternallink{#2}{#3}{#4}#1::\{#1}%
4862 }

```

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

```

4863 \def\@pdftempwordfile{file}%
4864 \def\@pdftempwordrun{run}%
4865 \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:

```

4866 \ifx\\#6\\%
4867 \@hyper@linkfile file:#7\\{#3}{#2}{#7}%
4868 \else
4869 \ifx\\#4\\%
4870 \@hyper@linkfile file:#7\\{#3}{#2}{#7}%
4871 \else

```

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

```

4872 \def\@pdftempa{#4}%
4873 \ifx\@pdftempa\@pdftempwordfile
4874 \@hyper@linkfile#7\\{#3}{#2}{#7}%
4875 \else

```

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

```

4876 \ifx\@pdftempa\@pdftempwordrun
4877 \ifHy@pdfa
4878 \Hy@Error{%
4879 PDF/A: Launch action is prohibited%
4880 }\@ehc
4881 \begingroup
4882 \leavevmode
4883 #2%
4884 \endgroup
4885 \else
4886 \@hyper@launch#7\\{#3}{#2}%
4887 \fi
4888 \else

```

otherwise its a URL

```

4889 \hyper@linkurl{#3}{#7\ifx\\#2\\else\hyper@hash#2\fi}%
4890 \fi
4891 \fi
4892 \fi
4893 \fi
4894 }

```

By default, turn run: into file:

```

4895 \def\@hyper@launch run:#1\\#2#3{% filename, anchor text, linkname
4896 \hyper@linkurl{#2}{%
4897 \Hy@linkfileprefix
4898 #1%
4899 \ifx\\#3\\%
4900 \else
4901 \hyper@hash
4902 #3%
4903 \fi
4904 }%
4905 }

```

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

```

4906 \def\@hyper@linkfile file:#1\\#2#3#4{%
4907 %file url,link string, name, original uri
4908 \filename@parse{#1}%
4909 \ifx\filename@ext\relax

```

```

4910 \edef\filename@ext{\XR@ext}%
4911 \fi
4912 \def\use@file{\filename@area\filename@base.\filename@ext}%
4913 \Hy@ifStringEndsWith\filename@ext\XR@ext{%
4914 \hyper@linkfile{#2}{\use@file}{#3}%
4915 }{%
4916 \ifx\@baseurl\@empty
4917 \hyper@linkurl{#2}{%
4918 #4\ifx\\#3\\else\hyper@hash#3\fi
4919 }%
4920 \else
4921 \hyper@linkurl{#2}{\use@file\ifx\\#3\\else\hyper@hash#3\fi}%
4922 \fi
4923 }%
4924 }

4925 \def\Hy@ifStringEndsWith#1#2{%
4926 \begingroup
4927 \edef\x{#1}%
4928 \@onelevel@sanitize\x
4929 \edef\x{.\x}%
4930 \edef\y{#2}%
4931 \@onelevel@sanitize\y
4932 \edef\y{.\y}%
4933 \expandafter\def\expandafter\z\expandafter##\expandafter1\y##2\@nil{%
4934 \endgroup
4935 \ifx\relax##2\relax
4936 \expandafter\ltx@secondoftwo
4937 \else
4938 \expandafter\ltx@firstoftwo
4939 \fi
4940 }%
4941 \expandafter\expandafter\expandafter\z\expandafter\x\y\@nil
4942 }

4943 \def\Hy@StringLocalhost{localhost}
4944 \@onelevel@sanitize\Hy@StringLocalhost
4945 \def\Hy@CleanupFile#1{%
4946 \edef#1{#1}%
4947 \expandafter\Hy@@CleanupFile#1\hbox{//\hbox\@nil{#1}%
4948 }
4949 \def\Hy@@CleanupFile#1//#2/#3\hbox#4\@nil#5{%
4950 \begingroup
4951 \toks@{\endgroup}%
4952 \def\x{#1}%
4953 \ifx\x\@empty
4954 \def\x{#2}%
4955 \ifx\x\@empty
4956 \toks@{\endgroup\def#5{/#3}}%
4957 \else
4958 \@onelevel@sanitize\x
4959 \ifx\x\Hy@StringLocalhost
4960 \toks@{\endgroup\def#5{/#3}}%
4961 \fi
4962 \fi
4963 \fi
4964 \the\toks@
4965 }

```

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.

```

4966 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
4967 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
4968   \ifx\#1\%
4969     #2\Hy@Warning{Ignoring empty anchor}%
4970   \else
4971     \def\anchor@spot{#2#3}%
4972     \let\put@me@back\@empty
4973     \ifx\relax#2\relax
4974     \else
4975       \ifHy@nesting
4976       \else
4977         \ifcat a\noexpand#2\relax
4978         \else
4979           \ifcat 0\noexpand#2 \relax
4980           \else
4981             \typeout{Anchor start is not alphanumeric %
4982               on input line\the\inputlineno%
4983             }%
4984             \let\anchor@spot\@empty
4985             \def\put@me@back{#2#3}%
4986           \fi
4987         \fi
4988       \fi
4989     \fi
4990     \ifHy@activeanchor
4991       \anchor@spot
4992     \else
4993       \hyper@anchor{#1}%
4994     \fi
4995     \expandafter\put@me@back
4996   \fi
4997   \let\anchor@spot\@empty
4998 }
4999 \def\anchor@spot{}
```

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

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

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

```

5000 \let\htmladdimg\hyperimage
5001 \def\htmladdnormallink#1#2{\href{#2}{#1}}
5002 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
5003 \def\htmlref#1#2{% anchor text, label
```

```

5004 \label@hyperref[#{#2}]{#1}%
5005 }

```

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

```

5006 \def\@latex2htmlX{%
5007   \let\hhyperref\hyperref
5008   \def\hyperref##1##2##3##4{% anchor text for HTML
5009     % text to print before label in print
5010     % label
5011     % post-label text in print
5012     ##2\ref{##4}##3%
5013   }%
5014 }

```

## 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.

```

5015 \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
5016 \def\HyField@NewFlag#1#2{%
5017   \lowercase{\HyField@NewOption{#2}}%
5018   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5019 }

```

```

\HyField@NewFlagOnly
5020 \def\HyField@NewFlagOnly#1#2{%
5021   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5022 }

```

```

\HyField@NewOption #1: option name
5023 \def\HyField@NewOption#1{%
5024   \expandafter\newif\csname ifFld@#1\endcsname
5025   \define@key{Field}{#1}[true]{%
5026     \lowercase{\Field@boolkey{##1}}{#1}%
5027   }%
5028 }

```

\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

```
5029 \def\HyField@NewBitsetFlag#1#2#3#4{%  
5030   \begingroup  
5031     \count@=#4\relax  
5032     \advance\count@\m@ne  
5033     \def\x##1{%  
5034       \endgroup  
5035       \expandafter\def\csname HyField@#3@#1\endcsname{##1}%  
5036       \expandafter\ifx\csname HyField@#3@##1\endcsname\relax  
5037         \expandafter\edef\csname HyField@#3@##1\endcsname{%  
5038           (\number#4) #2%  
5039         }%  
5040       \else  
5041         \expandafter\edef\csname HyField@#3@##1\endcsname{%  
5042           \csname HyField@#3@##1\endcsname  
5043             /#2%  
5044         }%  
5045       \fi  
5046     }%  
5047   \expandafter\x\expandafter{\the\count@}%  
5048 }
```

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

```
5049 \def\HyField@UseFlag#1#2{%  
5050   \lowercase{\HyField@@UseFlag{#2}}{#1}%  
5051 }
```

\HyField@@UseFlag

```
5052 \def\HyField@@UseFlag#1#2{%  
5053   \bitsetSetValue{HyField@#2}{%  
5054     \csname HyField@#2@#1\endcsname  
5055   }{%  
5056     \csname ifFld@#1\endcsname 1\else 0\fi  
5057   }%  
5058 }
```

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

```
5059 \def\HyField@SetFlag#1#2{%  
5060   \lowercase{\HyField@@SetFlag{#2}}{#1}%  
5061 }
```

\HyField@@SetFlag

```
5062 \def\HyField@@SetFlag#1#2{%  
5063   \bitsetSetValue{HyField@#2}{%  
5064     \csname HyField@#2@#1\endcsname  
5065   }{1}%  
5066 }
```

\HyField@PrintFlags

```
5067 \def\HyField@PrintFlags#1#2{%  
5068   \ifHy@verbose  
5069     \begingroup
```



```

5070 \let\Hy@temp\@empty
5071 \let\MessageBreak\relax
5072 \expandafter\@for\expandafter\x\expandafter:\expandafter=%
5073 \bitsetGetSetBitList{HyField@#1}\do{%
5074 \edef\Hy@temp{%
5075 \Hy@temp
5076 \csname HyField@#1@\x\endcsname\MessageBreak
5077 }%
5078 }%
5079 \edef\x{\endgroup
5080 \noexpand\Hy@Info{%
5081 Field flags: %
5082 \expandafter\ifx\@car#1\@nil S\else/\fi
5083 #1 %
5084 \bitsetGetDec{HyField@#1} %
5085 (0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
5086 \Hy@temp
5087 for #2%
5088 }%
5089 }\x
5090 \fi
5091 }

```

### 19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```

5092 \HyField@NewFlag{Ff}{ReadOnly}{1}
5093 \HyField@NewFlag{Ff}{Required}{2}
5094 \HyField@NewFlag{Ff}{NoExport}{3}

```

“Table 8.75 Field flags specific to button fields”

```

5095 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
5096 \HyField@NewFlag{Ff}{Radio}{16}
5097 \HyField@NewFlag{Ff}{Pushbutton}{17}
5098 \HyField@NewFlag{Ff}{RadiosInUnison}{26}

```

“Table 8.77 Field flags specific to text fields”

```

5099 \HyField@NewFlag{Ff}{Multiline}{13}
5100 \HyField@NewFlag{Ff}{Password}{14}
5101 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
5102 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5103 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4
5104 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4
5105 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5

```

“Table 8.79 field flags specific to choice fields”

```

5106 \HyField@NewFlag{Ff}{Combo}{18}
5107 \HyField@NewFlag{Ff}{Edit}{19}
5108 \HyField@NewFlag{Ff}{Sort}{20}
5109 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4
5110 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5111 \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.

```

5112 \newif\iffld@popdown
5113 \define@key{Field}{popdown}[true]{%

```

```

5114 \lowercase{\Field@boolkey{#1}}{popdown}%
5115 }

```

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.

```

5116 \HyField@NewFlag{F}{Invisible}{1}
5117 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2
5118 \HyField@NewFlag{F}{Print}{3}% PDF 1.2
5119 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2
5120 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3
5121 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3
5122 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4
5123 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5
5124 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7

5125 \ifHy@pdfa
5126 \def\HyField@PDFAFldWarning#1#2{%
5127   \Hy@Warning{%
5128     PDF/A: Annotation flag '#1' must\MessageBreak
5129     be set to '#2'%
5130   }%
5131 }%
5132 \Fld@invisiblefalse
5133 \def\Fld@invisibletrue{%
5134   \HyField@PDFAFldWarning{invisible}{false}%
5135 }%
5136 \Fld@hiddenfalse
5137 \def\Fld@hiddentruetrue{%
5138   \HyField@PDFAFldWarning{hidden}{false}%
5139 }%
5140 \Fld@printtrue
5141 \def\Fld@printfalse{%
5142   \HyField@PDFAFldWarning{print}{true}%
5143 }%
5144 \Fld@nozoomtrue
5145 \def\Fld@nozoomfalse{%
5146   \HyField@PDFAFldWarning{nozoom}{true}%
5147 }%
5148 \Fld@norotatefalse
5149 \def\Fld@norotatefalse{%
5150   \HyField@PDFAFldWarning{norotate}{true}%
5151 }%
5152 \Fld@noviewfalse
5153 \def\Fld@noviewtrue{%
5154   \HyField@PDFAFldWarning{noview}{false}%
5155 }%
5156 \fi

```

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

```

5157 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
5158 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
5159 \HyField@NewFlag{Submit}{GetMethod}{4}
5160 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
5161 \HyField@NewFlagOnly{Submit}{XFDF}{6}
5162 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}

```

```

5163 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
5164 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}
5165 \HyField@NewFlag{Submit}{CanonicalFormat}{10}
5166 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
5167 \HyField@NewFlag{Submit}{ExclFKey}{12}
5168 \HyField@NewFlag{Submit}{EmbedForm}{14}

5169 \define@key{Field}{export}{%
5170   \lowercase{\def\Hy@temp{#1}}%
5171   \@ifundefined{Fld@export@\Hy@temp}{%
5172     \@onelevel@sanitize\Hy@temp
5173     \Hy@Error{%
5174       Unknown export format '\Hy@temp'.\MessageBreak
5175       Known formats are 'FDF', 'HTML', 'XFDF', and 'PDF'%
5176     }\@ehc
5177   }{%
5178     \let\Fld@export\Hy@temp
5179   }%
5180 }
5181 \def\Fld@export{fdf}
5182 \@namedef{Fld@export@fdf}{0}%
5183 \@namedef{Fld@export@html}{1}%
5184 \@namedef{Fld@export@xfdf}{2}%
5185 \@namedef{Fld@export@pdf}{3}%

```

### 19.1.2 Set submit flags

\HyField@FlagsSubmit

```

5186 \def\HyField@FlagsSubmit{%
5187   \bitsetReset{HyField@Submit}%
5188   \ifcase\@nameuse{Fld@export@\Fld@export} %
5189     % FDF
5190     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5191     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5192     \HyField@UseFlag{Submit}{IncludeAppendSaves}%
5193     \HyField@UseFlag{Submit}{IncludeAnnotations}%
5194     \HyField@UseFlag{Submit}{CanonicalFormat}%
5195     \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
5196     \HyField@UseFlag{Submit}{ExclFKey}%
5197     \HyField@UseFlag{Submit}{EmbedForm}%
5198   \or % HTML
5199     \HyField@SetFlag{Submit}{ExportFormat}%
5200     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5201     \HyField@UseFlag{Submit}{GetMethod}%
5202     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5203     \HyField@UseFlag{Submit}{CanonicalFormat}%
5204   \or % XFDF
5205     \HyField@SetFlag{Submit}{XFDF}%
5206     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5207     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5208     \HyField@UseFlag{Submit}{CanonicalFormat}%
5209   \or % PDF
5210     \HyField@SetFlag{Submit}{SubmitPDF}%
5211     \HyField@UseFlag{Submit}{GetMethod}%
5212   \fi
5213   \HyField@PrintFlags{Submit}{submit button field}%
5214   \bitsetIsEmpty{HyField@Submit}{%
5215     \def\Fld@submitflags{%

```

```

5216 }{%
5217   \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}}%
5218 }%
5219 }

```

### 19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

5220 \def\HyField@FlagsAnnot#1{%
5221   \bitsetReset{HyField@F}%
5222   \HyField@UseFlag{F}{Invisible}%
5223   \HyField@UseFlag{F}{Hidden}%
5224   \HyField@UseFlag{F}{Print}%
5225   \HyField@UseFlag{F}{NoZoom}%
5226   \HyField@UseFlag{F}{NoRotate}%
5227   \HyField@UseFlag{F}{NoView}%
5228   \HyField@UseFlag{F}{Locked}%
5229   \HyField@UseFlag{F}{ToggleNoView}%
5230   \HyField@UseFlag{F}{LockedContents}%
5231   \HyField@PrintFlags{F}{#1}%
5232   \bitsetIsEmpty{HyField@F}{%
5233     \def\Fld@annotflags{%
5234     }{%
5235     \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}}%
5236   }%
5237 }

```

### 19.1.4 Pushbutton field

\HyField@FlagsPushButton

```

5238 \def\HyField@FlagsPushButton{%
5239   \HyField@FlagsAnnot{push button field}%
5240   \bitsetReset{HyField@Ff}%
5241   \HyField@UseFlag{Ff}{ReadOnly}%
5242   \HyField@UseFlag{Ff}{Required}%
5243   \HyField@UseFlag{Ff}{NoExport}%
5244   \HyField@SetFlag{Ff}{Pushbutton}%
5245   \HyField@PrintFlags{Ff}{push button field}%
5246   \bitsetIsEmpty{HyField@Ff}{%
5247     \def\Fld@flags{%
5248     }{%
5249     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}}%
5250   }%
5251 }

```

### 19.1.5 Check box field

\HyField@FlagsCheckBox

```

5252 \def\HyField@FlagsCheckBox{%
5253   \HyField@FlagsAnnot{check box field}%
5254   \bitsetReset{HyField@Ff}%
5255   \HyField@UseFlag{Ff}{ReadOnly}%
5256   \HyField@UseFlag{Ff}{Required}%
5257   \HyField@UseFlag{Ff}{NoExport}%
5258   \HyField@PrintFlags{Ff}{check box field}%
5259   \bitsetIsEmpty{HyField@Ff}{%

```

```

5260 \def\Fld@flags{%
5261 }{%
5262 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5263 }%
5264 }

```

### 19.1.6 Radio button field

\HyField@FlagsRadioButton

```

5265 \def\HyField@FlagsRadioButton{%
5266 \HyField@FlagsAnnot{radio button field}%
5267 \bitsetReset{HyField@Ff}%
5268 \HyField@UseFlag{Ff}{ReadOnly}%
5269 \HyField@UseFlag{Ff}{Required}%
5270 \HyField@UseFlag{Ff}{NoExport}%
5271 \HyField@UseFlag{Ff}{NoToggleToOff}%
5272 \HyField@SetFlag{Ff}{Radio}%
5273 \HyField@UseFlag{Ff}{RadiosInUnison}%
5274 \HyField@PrintFlags{Ff}{radio button field}%
5275 \bitsetIsEmpty{HyField@Ff}{%
5276 \def\Fld@flags{%
5277 }{%
5278 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5279 }%
5280 }

```

### 19.1.7 Text fields

\HyField@FlagsText

```

5281 \def\HyField@FlagsText{%
5282 \HyField@FlagsAnnot{text field}%
5283 \bitsetReset{HyField@Ff}%
5284 \HyField@UseFlag{Ff}{ReadOnly}%
5285 \HyField@UseFlag{Ff}{Required}%
5286 \HyField@UseFlag{Ff}{NoExport}%
5287 \HyField@UseFlag{Ff}{Multiline}%
5288 \HyField@UseFlag{Ff}{Password}%
5289 \HyField@UseFlag{Ff}{FileSelect}%
5290 \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5291 \HyField@UseFlag{Ff}{DoNotScroll}%
5292 \ifFld@comb
5293 \ifcase0\ifFld@multiline
5294 \else\ifFld@password
5295 \else\ifFld@fileselect
5296 \else 1\fi\fi\fi\relax
5297 \Hy@Error{%
5298 Field option ‘comb’ cannot used together with\MessageBreak
5299 ‘multiline’, ‘password’, or ‘fileselect’%
5300 }\@ehc
5301 \else
5302 \HyField@UseFlag{Ff}{Comb}%
5303 \fi
5304 \fi
5305 \HyField@UseFlag{Ff}{RichText}%
5306 \HyField@PrintFlags{Ff}{text field}%
5307 \bitsetIsEmpty{HyField@Ff}{%

```

```

5308 \def\Fld@flags{%
5309 }{%
5310 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5311 }%
5312 }

```

### 19.1.8 Choice fields

\HyField@FlagsChoice

```

5313 \def\HyField@FlagsChoice{%
5314 \HyField@FlagsAnnot{choice field}%
5315 \bitsetReset{HyField@Ff}%
5316 \HyField@UseFlag{Ff}{ReadOnly}%
5317 \HyField@UseFlag{Ff}{Required}%
5318 \HyField@UseFlag{Ff}{NoExport}%
5319 \HyField@UseFlag{Ff}{Combo}%
5320 \ifFld@combo
5321 \HyField@UseFlag{Ff}{Edit}%
5322 \fi
5323 \HyField@UseFlag{Ff}{Sort}%
5324 \HyField@UseFlag{Ff}{MultiSelect}%
5325 \ifFld@combo
5326 \ifFld@edit
5327 \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5328 \fi
5329 \fi
5330 \HyField@UseFlag{Ff}{CommitOnSelChange}%
5331 \HyField@PrintFlags{Ff}{choice field}%
5332 \bitsetIsEmpty{HyField@Ff}{%
5333 \def\Fld@flags{%
5334 }{%
5335 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5336 }%
5337 }

```

## 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.

```

5338 \def\HyField@PDFChoices#1{%
5339 \begingroup
5340 \gdef\Fld@choices{%
5341 \def\HyTmp@Optlist{%
5342 \let\HyTmp@Optitem\relax
5343 \count@=0 %
5344 \kv@parse{#1}{%
5345 \Hy@pdfstringdef\kv@key\kv@key
5346 \ifx\kv@value\relax
5347 \ifnum\Hy@pdfversion<3 % implementation note 122, PDF spec 1.7
5348 \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@key)]}%
5349 \else
5350 \xdef\Fld@choices{\Fld@choices(\kv@key)}%
5351 \fi
5352 \else
5353 \Hy@pdfstringdef\kv@value\kv@value

```

```

5354 \xdef\Fld@choices{\Fld@choices[(\kv@value)(\kv@key)]}%
5355 \fi
5356 \edef\HyTmp@optlist{%
5357 \HyTmp@optlist
5358 \HyTmp@optitem{\the\count@}{\kv@key}0%
5359 }%
5360 \advance\count@ by 1 %
5361 \@gobbletwo
5362 }%
5363 \xdef\Fld@choices{/Opt[\Fld@choices]}%
5364 \ifFld@multiselect
5365 \HyField@@PDFChoices{DV}\Fld@default
5366 \HyField@@PDFChoices{V}\Fld@value
5367 \else
5368 \ifx\Fld@default\relax
5369 \else
5370 \pdfstringdef\Hy@gtemp\Fld@default
5371 \xdef\Fld@choices{\Fld@choices/DV(\Hy@gtemp)}%
5372 \fi
5373 \ifx\Fld@value\relax
5374 \else
5375 \pdfstringdef\Hy@gtemp\Fld@value
5376 \xdef\Fld@choices{\Fld@choices/V(\Hy@gtemp)}%
5377 \fi
5378 \fi
5379 \endgroup
5380 }

```

\HyField@@PDFChoices

```

5381 \def\HyField@@PDFChoices#1#2{%
5382 \ifx#2\relax
5383 \else
5384 \count@=0 %
5385 \def\HyTmp@optitem##1##2##3{%
5386 \def\HyTmp@key{##2}%
5387 \ifx\HyTmp@key\Hy@gtemp
5388 \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5389 \HyTmp@optlist
5390 \HyTmp@optitem{##1}{##2}1%
5391 }%
5392 \let\HyTmp@found=Y%
5393 \else
5394 \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5395 \HyTmp@optlist
5396 \HyTmp@optitem{##1}{##2}##3%
5397 }%
5398 \fi
5399 }%
5400 \expandafter\comma@parse\expandafter{#2}{%
5401 \pdfstringdef\Hy@gtemp\comma@entry
5402 \let\HyTmp@found=N %
5403 \expandafter\let\expandafter\HyTmp@optlist\expandafter\@empty
5404 \HyTmp@optlist
5405 \ifx\HyTmp@found Y%
5406 \advance\count@ by 1 %
5407 \else
5408 \@onelevel@sanitize\comma@entry

```

```

5409 \PackageWarning{hyperref}{%
5410 \string\ChoiceBox: Ignoring value '\comma@entry',%
5411 \MessageBreak
5412 it cannot be found in the choices%
5413 }%
5414 \fi
5415 \@gobble
5416 }%
5417 \def\HyTmp@optitem##1##2##3{%
5418 \ifnum##3=1 %
5419 (##2)%
5420 \fi
5421 }%
5422 \ifcase\count@
5423 \or
5424 \xdef\Fld@choices{\Fld@choices/#1\HyTmp@optlist}%
5425 \else
5426 \xdef\Fld@choices{\Fld@choices/#1[\HyTmp@optlist]}%
5427 \ifx#1V%
5428 \def\HyTmp@optitem##1##2##3{%
5429 \ifnum##3=1 %
5430 \@firstofone{ ##1}%
5431 \fi
5432 }%
5433 \edef\HyTmp@optlist{\HyTmp@optlist}%
5434 \xdef\Fld@choices{%
5435 \Fld@choices
5436 /I[\expandafter\@firstofone\HyTmp@optlist]%
5437 }%
5438 \fi
5439 \fi
5440 \fi
5441 }

```

## 19.3 Forms

\HyField@SetKeys

```

5442 \def\HyField@SetKeys{%
5443 \kvsetkeys{Field}%
5444 }

5445 \newif\ifFld@checked
5446 \newif\ifFld@disabled
5447 \Fld@checkedfalse
5448 \Fld@disabledfalse
5449 \newcount\Fld@menulength
5450 \newdimen\Fld@Width
5451 \newdimen\Fld@charsize
5452 \Fld@charsize=10\p@
5453 \def\Fld@maxlen{0}
5454 \def\Fld@align{0}
5455 \def\Fld@color{0 0 0 rg}
5456 \def\Fld@bcolor{1 1 1}
5457 \def\Fld@bordercolor{1 0 0}
5458 \def\Fld@bordersep{1\p@}
5459 \def\Fld@borderwidth{1}
5460 \def\Fld@borderstyle{S}

```



```

5461 \def\Fld@cbsymbol{4}
5462 \def\Fld@radiosymbol{H}
5463 \def\Fld@rotation{0}
5464 \def\Form{\@ifnextchar[{\@Form}{\@Form[]}}
5465 \def\endForm{\@endForm}
5466 \newif\ifForm@html
5467 \Form@htmlfalse
5468 \def\Form@boolkey#1#2{%
5469   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5470 }
5471 \define@key{Form}{action}{%
5472   \hyper@normalise\Hy@DefFormAction{#1}%
5473 }
5474 \def\Hy@DefFormAction{\def\Form@action}
5475 \def\enc@html{html}
5476 \define@key{Form}{encoding}{%
5477   \def\Hy@tempa{#1}%
5478   \ifx\Hy@tempa\enc@html
5479     \Form@htmltrue
5480     \def\Fld@export{html}%
5481   \else
5482     \Hy@Warning{%
5483       Form 'encoding' key with \MessageBreak
5484       unknown value '#1'%
5485     }%
5486     \Form@htmlfalse
5487   \fi
5488 }
5489 \define@key{Form}{method}{%
5490   \lowercase{\def\Hy@temp{#1}}%
5491   \@ifundefined{Form@method@\Hy@temp}{%
5492     \@onelevel@sanitize\Hy@temp
5493     \Hy@Error{%
5494       Unknown method '\Hy@temp'\MessageBreak
5495       Known values are 'post' and 'get'%
5496     }\@ehc
5497   }{%
5498     \let\Form@method\Hy@temp
5499     \ifcase\@nameuse{Form@method@\Hy@temp} %
5500       \Fld@getmethodfalse
5501     \else
5502       \Fld@getmethodtrue
5503     \fi
5504   }%
5505 }
5506 \def\Form@method{}
5507 \@namedef{Form@method@post}{0}
5508 \@namedef{Form@method@get}{1}
5509 \newif\ifHyField@NeedAppearances
5510 \def\HyField@NeedAppearancesfalse{%
5511   \global\let\ifHyField@NeedAppearances\iffalse
5512 }
5513 \def\HyField@NeedAppearancetrue{%
5514   \global\let\ifHyField@NeedAppearances\iftrue
5515 }
5516 \HyField@NeedAppearancetrue
5517 \define@key{Form}{NeedAppearances}[true]{%

```

```

5518 \edef\Hy@tempa{#1}%
5519 \ifx\Hy@tempa\Hy>true
5520 \HyField@NeedAppearancestrue
5521 \else
5522 \ifx\Hy@tempa\Hy>false
5523 \HyField@NeedAppearancesfalse
5524 \else
5525 \Hy@Error{%
5526     Unexpected value '\Hy@tempa'\MessageBreak
5527     of option 'NeedAppearances' instead of\MessageBreak
5528     'true' or 'false'%
5529 } \@ehc
5530 \fi
5531 \fi
5532 }
5533 \def\Field@boolkey#1#2{%
5534 \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5535 }
5536 \ifHy@texht
5537 \newtoks\Field@toks
5538 \Field@toks={ }%
5539 \def\Field@addtoks#1#2{%
5540 \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}%
5541 \@processme
5542 }%
5543 \else
5544 \def\Hy@WarnHTMLFieldOption#1{%
5545 \Hy@Warning{%
5546     HTML field option '#1'\MessageBreak
5547     is ignored%
5548 }%
5549 }%
5550 \fi
5551 \def\Fld@checkequals#1=#2=#3\\{%
5552 \def\@currDisplay{#1}%
5553 \ifx\\#2\\%
5554 \def\@currValue{#1}%
5555 \else
5556 \def\@currValue{#2}%
5557 \fi
5558 }
5559 \define@key{Field}{loc}{%
5560 \def\Fld@loc{#1}%
5561 }
5562 \define@key{Field}{checked}[true]{%
5563 \lowercase{\Field@boolkey{#1}}{checked}%
5564 }
5565 \define@key{Field}{disabled}[true]{%
5566 \lowercase{\Field@boolkey{#1}}{disabled}%
5567 }
5568 \ifHy@texht
5569 \define@key{Field}{accesskey}{%
5570 \Field@addtoks{accesskey}{#1}%
5571 }%
5572 \define@key{Field}{tabkey}{%
5573 \Field@addtoks{tabkey}{#1}%
5574 }%

```

```

5575 \else
5576   \define@key{Field}{accesskey}{%
5577     \Hy@WarnHTMLFieldOption{accesskey}%
5578   }%
5579   \define@key{Field}{tabkey}{%
5580     \Hy@WarnHTMLFieldOption{tabkey}%
5581   }%
5582 \fi
5583 \define@key{Field}{name}{%
5584   \def\Fld@name{#1}%
5585 }
5586 \let\Fld@altname\relax
5587 \define@key{Field}{altname}{%
5588   \def\Fld@altname{#1}%
5589 }
5590 \let\Fld@mappingname\relax
5591 \define@key{Field}{mappingname}{%
5592   \def\Fld@mappingname{#1}%
5593 }
5594 \define@key{Field}{width}{%
5595   \def\Fld@width{#1}%
5596   \Field@Width#1\setbox0=\hbox{m}%
5597 }
5598 \define@key{Field}{maxlen}{%
5599   \def\Fld@maxlen{#1}%
5600 }
5601 \define@key{Field}{menulength}{%
5602   \Fld@menulength=#1\relax
5603 }
5604 \define@key{Field}{height}{%
5605   \def\Fld@height{#1}%
5606 }
5607 \define@key{Field}{charsize}{%
5608   \Fld@charsize#1%
5609 }
5610 \define@key{Field}{borderwidth}{%
5611   \def\Fld@borderwidth{#1}%
5612 }
5613 \define@key{Field}{borderstyle}{%
5614   \let\Hy@temp\Fld@borderstyle
5615   \def\Fld@borderstyle{#1}%
5616   \Hy@Match\Fld@borderstyle{%
5617     ~[SDBIU]$%
5618   }{}{%
5619     \Hy@Warning{%
5620       Invalid value ‘\@pdfborderstyle’\MessageBreak
5621       for option ‘pdfborderstyle’. Valid values:\MessageBreak
5622       \space\space S (Solid), D (Dashed), B (Beveled),\MessageBreak
5623       \space\space I (Inset), U (Underline)\MessageBreak
5624       Option setting is ignored%
5625     }%
5626     \let\Fld@borderstyle\Hy@temp
5627   }%
5628 }
5629 \define@key{Field}{bordersep}{%
5630   \def\Fld@bordersep{#1}%
5631 }

```

```

5632 \define@key{Field}{default}{%
5633   \def\Fld@default{#1}%
5634 }
5635 \define@key{Field}{align}{%
5636   \def\Fld@align{#1}%
5637 }
5638 \define@key{Field}{value}{%
5639   \def\Fld@value{#1}%
5640 }
5641 \define@key{Field}{checkboxsymbol}{%
5642   \Fld@DingDef\Fld@cbsymbol{#1}%
5643 }
5644 \define@key{Field}{radiosymbol}{%
5645   \Fld@DingDef\Fld@radiosymbol{#1}%
5646 }
5647 \def\Fld@DingDef#1#2{%
5648   \def\Fld@temp{}%
5649   \Fld@@DingDef#2\ding{}\@nil
5650   \let#1\Fld@temp
5651 }
5652 \def\Fld@@DingDef#1\ding#2#3\@nil{%
5653   \expandafter\def\expandafter\Fld@temp\expandafter{%
5654     \Fld@temp
5655     #1%
5656   }%
5657   \ifx\\#3\\%
5658     \expandafter\@gobble
5659   \else
5660     \begingroup
5661     \lccode'0=#2\relax
5662     \lowercase{\endgroup
5663       \expandafter\def\expandafter\Fld@temp\expandafter{%
5664         \Fld@temp
5665         0%
5666       }%
5667     }%
5668     \expandafter\@firstofone
5669   \fi
5670   {%
5671     \Fld@@DingDef#3\@nil
5672   }%
5673 }
5674 \define@key{Field}{rotation}{%
5675   \def\Fld@rotation{#1}%
5676 }
5677 \define@key{Field}{backgroundcolor}{%
5678   \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
5679 }
5680 \define@key{Field}{bordercolor}{%
5681   \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
5682 }
5683 \define@key{Field}{color}{%
5684   \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
5685 }
5686 \def\Fld@onclick@code{}
5687 \def\Fld@format@code{}

```

```

5688 \def\Fld@validate@code{}
5689 \def\Fld@calculate@code{}
5690 \def\Fld@keystroke@code{}
5691 \def\Fld@onfocus@code{}
5692 \def\Fld@onblur@code{}
5693 \def\Fld@onmousedown@code{}
5694 \def\Fld@onmouseup@code{}
5695 \def\Fld@onenter@code{}
5696 \def\Fld@onexit@code{}
5697 \def\Hy@temp#1{%
5698   \expandafter\Hy@@temp\csname Fld@#1@code\endcsname{#1}%
5699 }
5700 \def\Hy@@temp#1#2{%
5701   \ifHy@pdfa
5702     \define@key{Field}{#2}{%
5703       \Hy@Error{%
5704         PDF/A: Additional action ‘#2’ is prohibited%
5705       }\@ehc
5706     }%
5707   \else
5708     \define@key{Field}{#2}{%
5709       \def#1{##1}%
5710     }%
5711   \fi
5712 }
5713 \Hy@temp{keystroke}
5714 \Hy@temp{format}
5715 \Hy@temp{validate}
5716 \Hy@temp{calculate}
5717 \Hy@temp{onfocus}
5718 \Hy@temp{onblur}
5719 \Hy@temp{onenter}
5720 \Hy@temp{onexit}
5721 \ifHy@texht
5722   \def\Hy@temp#1{%
5723     \define@key{Field}{#1}{%
5724       \Field@addtoks{#1}{##1}%
5725     }%
5726   }%
5727 \else
5728   \def\Hy@temp#1{%
5729     \define@key{Field}{#1}{%
5730       \Hy@WarnHTMLFieldOption{#1}%
5731     }%
5732   }%
5733 \fi
5734 \Hy@temp{ondblclick}
5735 \Hy@temp{onmousedown}
5736 \Hy@temp{onmouseup}
5737 \Hy@temp{onmouseover}
5738 \Hy@temp{onmousemove}
5739 \Hy@temp{onmouseout}
5740 \Hy@temp{onkeydown}
5741 \Hy@temp{onkeyup}
5742 \Hy@temp{onselect}
5743 \Hy@temp{onchange}
5744 \Hy@temp{onkeypress}

```

```

5745 \ifHy@texht
5746   \define@key{Field}{onclick}{%
5747     \Field@addtoks{onclick}{#1}%
5748   }%
5749 \else
5750   \ifHy@pdfa
5751     \define@key{Field}{onclick}{%
5752       \Hy@Error{%
5753         PDF/A: Action 'onclick' is prohibited%
5754       }\@ehc
5755     }%
5756   \else
5757     \define@key{Field}{onclick}{%
5758       \def\Fld@onclick@code{#1}%
5759     }%
5760   \fi
5761 \fi

5762 \DeclareRobustCommand\TextField{%
5763   \@ifnextchar[{\@TextField}{\@TextField[]}%
5764 }
5765 \DeclareRobustCommand\ChoiceMenu{%
5766   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
5767 }
5768 \DeclareRobustCommand\CheckBox{%
5769   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
5770 }
5771 \DeclareRobustCommand\PushButton{%
5772   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
5773 }
5774 \DeclareRobustCommand\Gauge{%
5775   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
5776 }
5777 \DeclareRobustCommand\Submit{%
5778   \@ifnextchar[{\@Submit}{\@Submit[]}%
5779 }
5780 \DeclareRobustCommand\Reset{%
5781   \@ifnextchar[{\@Reset}{\@Reset[]}%
5782 }
5783 \def\LayoutTextField#1#2{% label, field
5784   #1 #2%
5785 }
5786 \def\LayoutChoiceField#1#2{% label, field
5787   #1 #2%
5788 }
5789 \def\LayoutCheckField#1#2{% label, field
5790   #1 #2%
5791 }
5792 \def\LayoutPushButtonField#1{% button
5793   #1%
5794 }
5795 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5796 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5797 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5798 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5799 \def\MakeButtonField#1{%
5800   \sbox0{%
5801     \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%

```

```

5802 }%
5803 \@tempdima\ht0 %
5804 \advance\@tempdima by \Fld@borderwidth bp %
5805 \advance\@tempdima by \Fld@borderwidth bp %
5806 \ht0\@tempdima
5807 \@tempdima\dp0 %
5808 \advance\@tempdima by \Fld@borderwidth bp %
5809 \advance\@tempdima by \Fld@borderwidth bp %
5810 \dp0\@tempdima
5811 \box0\relax
5812 }
5813 \def\DefaultHeightofSubmit{14pt}
5814 \def\DefaultWidthofSubmit{2cm}
5815 \def\DefaultHeightofReset{14pt}
5816 \def\DefaultWidthofReset{2cm}
5817 \def\DefaultHeightofCheckBox{\baselineskip}
5818 \def\DefaultWidthofCheckBox{\baselineskip}
5819 \def\DefaultHeightofChoiceMenu{\baselineskip}
5820 \def\DefaultWidthofChoiceMenu{\baselineskip}
5821 \def\DefaultHeightofText{\baselineskip}
5822 \def\DefaultHeightofTextMultiline{4\baselineskip}
5823 \def\DefaultWidthofText{3cm}
5824 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
5825 \def\DefaultOptionsofReset{print,name=Reset,noexport}
5826 \def\DefaultOptionsofPushButton{print}
5827 \def\DefaultOptionsofCheckBox{print}
5828 \def\DefaultOptionsofText{print}

```

Default options for the types of \ChoiceMenu.

```

5829 \def\DefaultOptionsofListBox{print}
5830 \def\DefaultOptionsofComboBox{print,edit,sort}
5831 \def\DefaultOptionsofPopdownBox{print}
5832 \def\DefaultOptionsofRadio{print,notoggletooff}

```

## 20 Setup

```

5833 \ifHy@figures
5834 \Hy@Info{Hyper figures ON}%
5835 \else
5836 \Hy@Info{Hyper figures OFF}%
5837 \fi
5838 \ifHy@nesting
5839 \Hy@Info{Link nesting ON}%
5840 \else
5841 \Hy@Info{Link nesting OFF}%
5842 \fi
5843 \ifHy@hyperindex
5844 \Hy@Info{Hyper index ON}%
5845 \else
5846 \Hy@Info{Hyper index OFF}%
5847 \fi
5848 \ifHy@backref
5849 \Hy@Info{backreferencing ON}%
5850 \else
5851 \Hy@Info{backreferencing OFF}%
5852 \fi
5853 \ifHy@colorlinks

```

```

5854 \Hy@Info{Link coloring ON}%
5855 \else
5856 \Hy@Info{Link coloring OFF}%
5857 \fi
5858 \ifHy@ocgcolorlinks
5859 \Hy@Info{Link coloring with OCG ON}%
5860 \else
5861 \Hy@Info{Link coloring with OCG OFF}%
5862 \fi
5863 \ifHy@pdfa
5864 \Hy@Info{PDF/A mode ON}%
5865 \else
5866 \Hy@Info{PDF/A mode OFF}%
5867 \fi

```

## 21 Low-level utility macros

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

```

5868 \edef\hyper@hash{\string#}
5869 \edef\hyper@tilde{\string~}
5870 \edef\hyper@quote{\string"}

```

Support \label before \begin{document}.

```

5871 \def\@currentHref{Doc-Start}
5872 \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.

```

5873 \Hy@AtBeginDocument{%
5874 \Hy@pdfstringtrue
5875 \PDF@SetupDoc
5876 \let\PDF@SetupDoc\@empty
5877 \Hy@DisableOption{pdfpagescrop}%
5878 \Hy@DisableOption{pdfpagemode}%
5879 \Hy@DisableOption{pdfnonfullscreenpagemode}%
5880 \Hy@DisableOption{pdfdirection}%
5881 \Hy@DisableOption{pdfviewarea}%
5882 \Hy@DisableOption{pdfviewclip}%
5883 \Hy@DisableOption{pdfprintarea}%
5884 \Hy@DisableOption{pdfprintclip}%
5885 \Hy@DisableOption{pdfprintscaling}%
5886 \Hy@DisableOption{pdfduplex}%
5887 \Hy@DisableOption{pdfpicktraybypdfsize}%
5888 \Hy@DisableOption{pdfprintpagerange}%
5889 \Hy@DisableOption{pdfnumcopies}%
5890 \Hy@DisableOption{pdfstartview}%
5891 \Hy@DisableOption{pdfstartpage}%
5892 \Hy@DisableOption{pdftoolbar}%
5893 \Hy@DisableOption{pdfmenubar}%
5894 \Hy@DisableOption{pdfwindowui}%
5895 \Hy@DisableOption{pdfitwindow}%
5896 \Hy@DisableOption{pdfcenterwindow}%
5897 \Hy@DisableOption{pdfdisplaydoctitle}%
5898 \Hy@DisableOption{pdfpagelayout}%
5899 \Hy@DisableOption{pdflang}%
5900 \Hy@DisableOption{baseurl}%
5901 \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
5902 \Hy@pdfstringfalse

```



5903 }

Ignore star from referencing macros:

```
5904 \LetLtxMacro\NoHy@OrgRef\ref
5905 \DeclareRobustCommand*\ref{%
5906   \@ifstar\NoHy@OrgRef\NoHy@OrgRef
5907 }
5908 \LetLtxMacro\NoHy@OrgPageRef\pageref
5909 \DeclareRobustCommand*\pageref{%
5910   \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
5911 }
```

## 22 Localized nullifying of package

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

```
5912 \def\NoHyper{%
5913   \def\hyper@link@{##1}##2##3##4{##4}%
5914   \def\hyper@@anchor##1{%
5915     \global\let\hyper@livelink\hyper@link
5916     \gdef\hyper@link##1##2##3{##3}%
5917     \def\hyper@anchor##1{%
5918       \def\hyper@anchorstart##1{%
5919         \let\hyper@anchorend\@empty
5920         \def\hyper@linkstart##1##2{%
5921           \let\hyper@linkend\@empty
5922           \def\hyper@linkurl##1##2{##1}%
5923           \def\hyper@linkfile##1##2##3{##1}%
5924           \def\hyper@link@{##1}##2##3{%
5925             \let\Hy@backout\@gobble
5926           }
5927           \def\stop@hyper{%
5928             \def\hyper@link@{##1}##2##3##4{##4}%
5929             \let\Hy@backout\@gobble
5930             \def\hyper@@anchor##1{%
5931               \def\hyper@link##1##2##3{##3}%
5932               \def\hyper@anchor##1{%
5933                 \def\hyper@anchorstart##1{%
5934                   \let\hyper@anchorend\@empty
5935                   \def\hyper@linkstart##1##2{%
5936                     \let\hyper@linkend\@empty
5937                     \def\hyper@linkurl##1##2{##1}%
5938                     \def\hyper@linkfile##1##2##3{##1}%
5939                     \def\hyper@link@{##1}##2##3{%
5940                       }
5941                   }
5942                   \global\let\hyper@link\hyper@livelink
5943                 }
5944               }
5945             }
5946           }
5947           \def\endNoHyper{%
5948             \global\let\hyper@link\hyper@livelink
5949           }
5950           }
5951           }
5952         }
5953       }
5954     }
5955   }
5956 }
```

## 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:

```

5945 <*nohyperref>
5946 \RequirePackage{letltxmacro}[2008/06/13]
5947 \let\hyper@@anchor\@gobble
5948 \def\hyper@link#1#2#3{#3}%
5949 \let\hyper@anchorstart\@gobble
5950 \let\hyper@anchorend\@empty
5951 \let\hyper@linkstart\@gobbletwo
5952 \let\hyper@linkend\@empty
5953 \def\hyper@linkurl#1#2{#1}%
5954 \def\hyper@linkfile#1#2#3{#1}%
5955 \def\hyper@link@{#1}#2#3{#3}%
5956 \let\PDF@SetupDoc\@empty
5957 \let\PDF@FinishDoc\@empty
5958 \def\nohyperpage#1{#1}

```

Some top-level commands:

```

5959 \def\Acrobatmenu#1#2{\leavevmode#2}
5960 \let\pdfstringdefDisableCommands\@gobbletwo
5961 \let\texorpdfstring\@firstoftwo
5962 \let\pdfbookmark\@undefined
5963 \newcommand\pdfbookmark[3]{}{}
5964 \let\phantomsection\@empty
5965 \let\hypersetup\@gobble
5966 \let\hyperbaseurl\@gobble
5967 \newcommand*{\href}[3]{}{#3}
5968 \let\hyperdef\@gobbletwo
5969 \let\hyperlink\@gobble
5970 \let\hypertarget\@gobble
5971 \def\hyperref{%
5972   \@ifnextchar[\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
5973 }
5974 \long\def\@gobbleopt[#1]{}
5975 \let\hyperpage\@empty

```

Ignore star from referencing macros:

```

5976 \LetLtxMacro\NoHy@OrgRef\ref
5977 \DeclareRobustCommand*{\ref}{%
5978   \@ifstar\NoHy@OrgRef\NoHy@OrgRef
5979 }
5980 \LetLtxMacro\NoHy@OrgPageRef\pageref
5981 \DeclareRobustCommand*{\pageref}{%
5982   \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
5983 }
5984 </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}

```

5985 <*package>

```

```
5986 \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.

```
5987 \if@filesw
5988 \ifHy@typexml
5989 \immediate\closeout\@mainaux
5990 \immediate\openout\@mainaux\jobname.aux\relax
5991 \immediate\write\@auxout{<relaxxml>\relax}%
5992 \fi
5993 \immediate\write\@auxout{%
5994 \string\providecommand\string\HyperFirstAtBeginDocument{%
5995 \string\AtBeginDocument}^^J%
5996 \string\HyperFirstAtBeginDocument{%
5997 \string\ifx\string\hyper@anchor\string\@undefined^^J%
5998 \string\global\string\let\string\oldcontentsline\string\contentsline^^J%
5999 \string\gdef\string\contentsline%
6000 \string#1\string#2\string#3\string#4{%
6001 \string\oldcontentsline%
6002 {\string#1}{\string#2}{\string#3}}^^J%
6003 \string\global\string\let\string\oldnewlabel\string\newlabel^^J%
6004 \string\gdef\string\newlabel\string#1\string#2{%
6005 \string\newlabelxx{\string#1}\string#2}^^J%
6006 \string\gdef\string\newlabelxx%
6007 \string#1\string#2\string#3\string#4\string#5\string#6{%
6008 \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.

```
6009 \string\AtEndDocument{%
6010 \string\ifx\string\hyper@anchor\string\@undefined^^J%
6011 \string\let\string\contentsline\string\oldcontentsline^^J%
6012 \string\let\string\newlabel\string\oldnewlabel^^J%
6013 \string\fi%
6014 }^^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.

```
6015 \string\fi%
6016 }^^J%
6017 \string\global\string\let\string\hyper@last\relax^^J%
6018 \string\gdef\string\HyperFirstAtBeginDocument\string#1{\string#1}%
6019 }%
6020 \fi
6021 \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.

```
6022 \ifx\hyper@last\@undefined
6023 \def\@starttoc#1{%
6024 \begingroup
6025 \makeatletter
6026 \IfFileExists{\jobname.#1}{%
6027 \Hy@WarningNoLine{%
```

```

6028         old #1 file detected, not used; run LaTeX again%
6029     }%
6030 }{}%
6031 \if@filesw
6032     \expandafter\newwrite\csname tf@#1\endcsname
6033     \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
6034 \fi
6035 \@nobeckfalse
6036 \endgroup
6037 }%
6038 \def\newlabel#1#2{\@newl@bel r{#1}{#2}{-}{-}}%
6039 \fi
6040 }

```

## 25 Title strings

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

```

6041 \ifHy@usetitle
6042 \let\HyOrg@title\title
6043 \let\HyOrg@author\author
6044 \def\title{\@ifnextchar{\Hy@scanopttitle}{\Hy@scantitle}}%
6045 \def\Hy@scanopttitle[#1]{%
6046     \gdef\Hy@title{#1}%
6047     \HyOrg@title{#1}%
6048 }%
6049 \def\Hy@scantitle#1{%
6050     \gdef\Hy@title{#1}%
6051     \HyOrg@title{#1}%
6052 }%
6053 \def\author{\@ifnextchar{\Hy@scanoptauthor}{\Hy@scanauthor}}%
6054 \def\Hy@scanoptauthor[#1]{%
6055     \gdef\Hy@author{#1}%
6056     \HyOrg@author{#1}%
6057 }%
6058 \def\Hy@scanauthor#1{%
6059     \gdef\Hy@author{#1}%
6060     \HyOrg@author{#1}%
6061 }%

```

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.

```

6062 \begingroup
6063 \def\process@me#1\@nil#2{%
6064     \expandafter\let\expandafter\x\csname @#2\endcsname
6065     \edef\y{\expandafter\strip@prefix\meaning\x}%
6066     \def\c##1#1##2\@nil{%
6067         \ifx\##1\%
6068             \else
6069                 \expandafter\gdef\csname Hy@#2\expandafter\endcsname
6070                 \expandafter{x}%
6071             \fi
6072         }%
6073     \expandafter\c\y\relax#1\@nil
6074 }%
6075 \expandafter\process@me\string\@latex@\@nil{title}%

```

```

6076 \expandafter\process@me\string\@latex@\@nil{author}%
6077 \endgroup
6078 \fi
6079 \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.

```

6080 \def\Hy@UseMaketitleString#1{%
6081 \ltx@ifundefined{Hy@#1}{-}{%
6082 \begingroup
6083 \let\Hy@saved@hook\pdfstringdefPreHook
6084 \pdfstringdefDisableCommands{%
6085 \expandafter\let\expandafter\\ \csname Hy@newline@#1\endcsname
6086 \let\newline\\%
6087 }%
6088 \expandafter\ifx\csname @pdf#1\endcsname\@empty
6089 \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
6090 \csname Hy@#1\endcsname\@empty
6091 }%
6092 \fi
6093 \global\let\pdfstringdefPreHook\Hy@saved@hook
6094 \endgroup
6095 }%
6096 }
6097 \def\Hy@newline@title#1{ #1}
6098 \def\Hy@newline@author#1{, #1}
6099 \def\Hy@UseMaketitleInfos{%
6100 \Hy@UseMaketitleString{title}%
6101 \Hy@UseMaketitleString{author}%
6102 }

```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.

## 27 Every page

```

6103 \RequirePackage{atbegshi}[2007/09/09]
6104 \def\Hy@EveryPageHook{}
6105 \def\Hy@EveryPageBoxHook{}
6106 \def\Hy@FirstPageHook{}
6107 \AtBeginShipout{%
6108 \Hy@EveryPageHook
6109 \ifx\Hy@EveryPageBoxHook\@empty
6110 \else
6111 \setbox\AtBeginShipoutBox=\vbox{%
6112 \offinterlineskip
6113 \Hy@EveryPageBoxHook

```

```

6114 \box\AtBeginShipoutBox
6115 }%
6116 \fi
6117 }
6118 \AtBeginShipoutFirst{%
6119 \Hy@FirstPageHook
6120 }
6121 \g@addto@macro\Hy@FirstPageHook{%
6122 \PDF@FinishDoc
6123 \gdef\PDF@FinishDoc{}%
6124 }

```

## 27.1 PDF /PageLabels

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

```

6125 \ifHy@pagelabels
6126 \begingroup\expandafter\expandafter\expandafter\endgroup
6127 \expandafter\ifx\csname thepage\endcsname\relax
6128 \Hy@pagelabelsfalse
6129 \Hy@WarningNoLine{%
6130 Option 'pdflabels' is turned off\MessageBreak
6131 because \string\thepage\space is undefined%
6132 }%
6133 \csname fi\endcsname
6134 \csname iffalse\expandafter\endcsname
6135 \fi

```

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

```

6136 \def\thispdfpagelabel#1{%
6137 \gdef\HyPL@thisLabel{#1}%
6138 }%
6139 \global\let\HyPL@thisLabel\relax

```

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

```

6140 \def\HyPL@Labels{}%

```

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

```

6141 \newcount\Hy@abspage
6142 \Hy@abspage=0 %

```

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

```

6143 \def\HyPL@LastType{init}%
6144 \def\HyPL@LastNumber{0}%
6145 \def\HyPL@LastPrefix{}%

```

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

```

6146 \def\HyPL@arabic{D}%
6147 \def\HyPL@Roman{R}%
6148 \def\HyPL@roman{r}%
6149 \def\HyPL@Alph{A}%
6150 \def\HyPL@alph{a}%

```

`\HyPL@EveryPage` If a page is shipout and the page number is known, `\HyPL@EveryPage` has to be called. It stores the current page label.

```

6151 \def\HyPL@EveryPage{%
6152 \begingroup

```

```

6153 \ifx\HyPL@thisLabel\relax
6154 \let\HyPL@page\thepage
6155 \else
6156 \let\HyPL@page\HyPL@thisLabel
6157 \global\let\HyPL@thisLabel\relax
6158 \fi
6159 \let\HyPL@Type\relax
6160 \ifnum\the\c@page>0 %
6161 \expandafter\HyPL@CheckThePage\HyPL@page\@nil
6162 \fi
6163 \let\Hy@temp Y%
6164 \ifx\HyPL@Type\HyPL@LastType
6165 \else
6166 \let\Hy@temp N%
6167 \fi
6168 \ifx\HyPL@Type\relax
6169 \pdfstringdef\HyPL@Prefix{\HyPL@page}%
6170 \else
6171 \pdfstringdef\HyPL@Prefix\HyPL@Prefix
6172 \fi
6173 \ifx\HyPL@Prefix\HyPL@LastPrefix
6174 \else
6175 \let\Hy@temp N%
6176 \fi
6177 \if Y\Hy@temp
6178 \advance\c@page by -1 %
6179 \ifnum\HyPL@LastNumber=\the\c@page\relax
6180 \else
6181 \let\Hy@temp N%
6182 \fi
6183 \Hy@StepCount\c@page
6184 \fi
6185 \if N\Hy@temp
6186 \ifx\HyPL@Type\relax
6187 \HyPL@storePageLabel{/P(\HyPL@Prefix)}%
6188 \else
6189 \HyPL@storePageLabel{%
6190 \ifx\HyPL@Prefix\@empty
6191 \else
6192 /P(\HyPL@Prefix)%
6193 \fi
6194 /S/\csname HyPL\HyPL@Type\endcsname
6195 \ifnum\the\c@page=1 %
6196 \else
6197 \space/St \the\c@page
6198 \fi
6199 }%
6200 \fi
6201 \fi
6202 \xdef\HyPL@LastNumber{\the\c@page}%
6203 \global\let\HyPL@LastType\HyPL@Type
6204 \global\let\HyPL@LastPrefix\HyPL@Prefix
6205 \endgroup
6206 \Hy@GlobalStepCount\Hy@abspage
6207 }%

```

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

```

6208 \def\HyPL@CheckThePage#1\@nil{%
6209 \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
6210 }%

```

`\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`.

```

6211 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
6212 \def\Hy@tempa{#4}%
6213 \def\Hy@tempb{\csname\endcsname\c@page}%
6214 \ifx\Hy@tempa\Hy@tempb
6215 \expandafter\ifx\csname HyPL#3\endcsname\relax
6216 \else
6217 \def\HyPL@Type{#3}%
6218 \def\HyPL@Prefix{#2}%
6219 \fi
6220 \else
6221 \begingroup
6222 \let\Hy@next\endgroup
6223 \let\HyPL@found\@undefined
6224 \def\arabic{\HyPL@Format{arabic}}%
6225 \def\Roman{\HyPL@Format{Roman}}%
6226 \def\roman{\HyPL@Format{roman}}%
6227 \def\Alph{\HyPL@Format{Alph}}%
6228 \def\alph{\HyPL@Format{alph}}%
6229 \protected@edef\Hy@temp{#1}%
6230 \ifx\HyPL@found\relax
6231 \toks@{\expandafter{\Hy@temp}}%
6232 \edef\Hy@next{\endgroup
6233 \noexpand\HyPL@@@CheckThePage\the\toks@
6234 \noexpand\HyPL@found\relax\noexpand\@nil
6235 }%
6236 \fi
6237 \Hy@next
6238 \fi
6239 }%

```

`\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`.

```

6240 \def\HyPL@Format#1#2{%
6241 \ifx\HyPL@found\@undefined
6242 \expandafter\ifx\csname c@#2\endcsname\c@page
6243 \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
6244 \else
6245 \expandafter\noexpand\csname#1\endcsname{#2}%
6246 \fi
6247 \else
6248 \expandafter\noexpand\csname#1\endcsname{#2}%
6249 \fi
6250 }%

```

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



```

6251 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
6252   \def\Hy@tempa{#3}%
6253   \def\Hy@tempb{\HyPL@found\relax}%
6254   \ifx\Hy@tempa\Hy@tempb
6255     \def\HyPL@Type{#2}%
6256     \def\HyPL@Prefix{#1}%
6257   \fi
6258 }%

```

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

```

6259 \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`.

```

6260 \def\HyPL@Useless{0<</S/D>>}%
6261 \@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.

```

6262 \def\HyPL@SetPageLabels{%
6263   \@onelevel@sanitize\HyPL@Labels
6264   \ifx\HyPL@Labels\@empty
6265     \else
6266       \ifx\HyPL@Labels\HyPL@Useless
6267       \else
6268         \Hy@PutCatalog{/PageLabels<</Nums[\HyPL@Labels]>>}%
6269       \fi
6270     \fi
6271 }%

```

```

6272 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
6273 \fi

```

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

```

6274 \Hy@DisableOption{pdfpagelabels}
6275 </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`

```

6276 <*pdfTeX>
6277 \pdf@ifdraftmode{%
6278   \let\Hy@PutCatalog\ltx@gobble
6279 }{%
6280   \let\Hy@PutCatalog\pdfcatalog
6281 }
6282 </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.

```

6283 <*vTeX>

```

```

6284 \providecommand*{\XR@ext}{pdf}
6285 \edef\Hy@VTeXversion{%
6286   \ifx\VTeXversion\@undefined
6287     \z@
6288   \else
6289     \ifx\VTeXversion\relax
6290       \z@
6291     \else
6292       \VTeXversion
6293     \fi
6294   \fi
6295 }
6296 \begingroup
6297   \ifnum\Hy@VTeXversion<660 %
6298     \gdef\Hy@PutCatalog#1{%
6299       \Hy@WarningNoLine{%
6300         VTeX 6.59g or above required for pdfpagelabels%
6301       }%
6302     }%
6303   \else
6304     \gdef\Hy@PutCatalog#1{%
6305       \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
6306     }%
6307     \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
6308       \ifx\#2\%
6309         \else
6310           \immediate\special{!pdfpagelabels #2}%
6311         \fi
6312       }%
6313     \fi
6314 \endgroup
6315 \</vtex>

6316 \<*pdfTeX | vtex>

```

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

```

6317 \ifHy@pagelabels
6318   \def\HyPL@StorePageLabel#1{%
6319     \toks@\expandafter{\HyPL@Labels}%
6320     \xdef\HyPL@Labels{%
6321       \the\toks@
6322       \the\Hy@abspage<<#1>>%
6323     }%
6324   }%

```

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.

```

6325 \RequirePackage{atveryend}[2009/12/07]%
6326 \AtVeryEndDocument{%
6327   \HyPL@SetPageLabels
6328 }%

6329 \fi
6330 \</pdfTeX | vtex>

```

### 27.1.2 xetex

```

6331 <*xetex>
6332 \HyPsd@LoadUnicode
6333 \Hy@unicodetrue
6334 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
6335 \else
6336 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
6337 \fi
6338 \HyPsd@LoadStringEnc
6339 \define@key{Hyp}{unicode}[true]{%
6340 \Hy@boolkey{unicode}{#1}%
6341 \ifHy@unicode
6342 \else
6343 \Hy@Warning{%
6344 XeTeX driver only supports 'unicode=true'. Ignoring\MessageBreak
6345 option setting 'unicode=false'%
6346 }%
6347 \Hy@unicodetrue
6348 \fi
6349 }
6350 \define@key{Hyp}{pdfencoding}{%
6351 \edef\HyPsd@temp{#1}%
6352 \ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
6353 \let\HyPsd@pdfencoding\HyPsd@temp
6354 \else
6355 \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
6356 \let\HyPsd@pdfencoding\HyPsd@temp
6357 \else
6358 \Hy@Warning{%
6359 XeTeX driver only supports\MessageBreak
6360 'pdfencoding=unicode|auto'. Ignoring option\MessageBreak
6361 setting 'pdfencoding=\HyPsd@temp'%
6362 }%
6363 \fi
6364 \fi
6365 }
6366 \let\HyXeTeX@CheckUnicode\relax
6367 </xetex>

```

### 27.1.3 pdfmarkbase, dvipdfm, xetex

```

6368 <*pdfmarkbase>
6369 \begingroup
6370 \@ifundefined{headerps@out}{}{%
6371 \toks@{\expandafter\Hy@FirstPageHook}%
6372 \xdef\Hy@FirstPageHook{%
6373 \noexpand\headerps@out{%
6374 systemdict /pdfmark known%
6375 {%
6376 userdict /?pdfmark systemdict /exec get put%
6377 }{%
6378 userdict /?pdfmark systemdict /pop get put %
6379 userdict /pdfmark systemdict /cleartomark get put%
6380 }%
6381 ifelse%
6382 }%
6383 \the\toks@
6384 }%
6385 }%

```

```

6386 \endgroup
6387 \pdfmarkbase>

\Hy@PutCatalog

6388 <dvipdfm | xetex>\def\Hy@PutCatalog#1{\@pdfm@mark{docview << #1 >>}}
6389 <*pdfmarkbase>
6390 \def\Hy@PutCatalog#1{%
6391   \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} << #1 >>}}%
6392 }
6393 \pdfmarkbase>

6394 <*pdfmarkbase | dvipdfm | xetex>
6395 \ifHy@pagelabels

```

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

```

6396 \def\HyPL@StorePageLabel#1{%
6397   \if@filesw
6398     \begingroup
6399     \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
6400     \immediate\write\@mainaux{%
6401       \string\HyPL@Entry{\Hy@tempa}%
6402     }%
6403   \endgroup
6404   \fi
6405 }%

```

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.

```

6406 \Hy@AtBeginDocument{%
6407   \if@filesw
6408     \immediate\write\@mainaux{%
6409       \string\providecommand\string*\string\HyPL@Entry[1]{}%
6410     }%
6411   \fi
6412   \ifx\HyPL@Labels\@empty
6413     \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
6414   \else
6415     \HyPL@SetPageLabels
6416   \fi
6417   \let\HyPL@Entry\@gobble
6418 }%

```

\HyPL@Entry

```

6419 \def\HyPL@Entry#1{%
6420   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
6421     \HyPL@Labels
6422     #1%
6423   }%
6424 }%

6425 \fi
6426 \pdfmarkbase | dvipdfm | xetex>
6427 <*package>
6428 \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

```

6429 \def\Hy@CounterExists#1{%
6430   \begingroup\expandafter\expandafter\expandafter\endgroup
6431   \expandafter\ifx\csname c@#1\endcsname\relax
6432     \expandafter\@gobble
6433   \else
6434     \begingroup\expandafter\expandafter\expandafter\endgroup
6435     \expandafter\ifx\csname the#1\endcsname\relax
6436       \expandafter\expandafter\expandafter\@gobble
6437     \else
6438       \expandafter\expandafter\expandafter\@firstofone
6439     \fi
6440   \fi
6441 }
6442 \Hy@CounterExists{section}{%
6443   \newcommand\theHequation{\theHsection.\arabic{equation}}}%
6444 }
6445 \Hy@CounterExists{part}{%
6446   \newcommand\theHpart{\arabic{part}}}%
6447 }
6448 \ltx@ifundefined{thechapter}{%
6449   \newcommand\theHsection   {\arabic{section}}}%
6450   \newcommand\theHfigure    {\arabic{figure}}}%
6451   \newcommand\theHtable     {\arabic{table}}}%
6452 }{%
6453   \newcommand\theHchapter   {\arabic{chapter}}}%
6454   \newcommand\theHfigure    {\theHchapter.\arabic{figure}}}%
6455   \newcommand\theHtable     {\theHchapter.\arabic{table}}}%
6456   \newcommand\theHsection   {\theHchapter.\arabic{section}}}%
6457 }
6458 \newcommand\theHsubsection  {\theHsection.\arabic{subsection}}
6459 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
6460 \newcommand\theHparagraph   {\theHsubsubsection.\arabic{paragraph}}
6461 \newcommand\theHsubparagraph{\theHparagraph.\arabic{subparagraph}}
6462 \newcommand\theHtheorem     {\theHsection.\arabic{theorem}}
6463 \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.

```

6464 \let\H@item\item
6465 \newcounter{Item}
6466 \def\theHItem{\arabic{Item}}
6467 \def\item{%
6468   \@hyper@itemfalse
6469   \ifnmbrlist\@hyper@itemtrue\fi
6470   \H@item
6471 }

6472 \newcommand\theHenumi   {\theHItem}
6473 \newcommand\theHenumii  {\theHItem}
6474 \newcommand\theHenumiii {\theHItem}
6475 \newcommand\theHenumiv  {\theHItem}
6476 \newcommand\theHHfootnote {\arabic{Hfootnote}}
6477 \newcommand\theHmpfootnote{\arabic{mpfootnote}}
6478 \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.

```

6479 \let\H@refstepcounter\refstepcounter
6480 \edef\name@of@eq{equation}%
6481 \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.

```

6482 \newif\if@hyper@item
6483 \newif\if@skiphyperref
6484 \@hyper@itemfalse
6485 \@skiphyperreffalse
6486 \def\refstepcounter#1{%
6487   \ifHy@pdfstring
6488   \else
6489     \H@refstepcounter{#1}%
6490     \edef\This@name{#1}%
6491     \ifx\This@name\name@of@slide
6492     \else
6493       \if@skiphyperref
6494       \else
6495         \if@hyper@item
6496           \stepcounter{Item}%
6497           \hyper@refstepcounter{Item}%
6498           \@hyper@itemfalse
6499         \else
6500           \hyper@refstepcounter{#1}%
6501         \fi
6502       \fi
6503     \fi
6504   \fi
6505 }
6506 \let\Hy@saved@refstepcounter\refstepcounter

```

AMS $\LaTeX$  processes all equations twice; we want to make sure that the hyper stuff is not executed twice, so we use the AMS `\ifmeasuring@`, initialized if AMS math is not used.

```

6507 \@ifpackageloaded{amsmath}{-}{\newif\ifmeasuring@\measuring@false}

```

`\hyper@refstepcounter`

```

6508 \def\hyper@refstepcounter#1{%
6509   \edef\This@name{#1}%
6510   \ifx\This@name\name@of@eq
6511     \@ifundefined{theHequation}{%
6512       \make@stripped@name{\theequation}%
6513       \let\theHequation\newname
6514     }{}%
6515   \fi
6516   \@ifundefined{theH#1}{%
6517     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
6518   }{}%
6519   \hyper@makecurrent{#1}%
6520   \ifmeasuring@
6521   \else
6522     \Hy@raisedlink{%
6523       \hyper@anchorstart{\@currentHref}\hyper@anchorend
6524     }%
6525   \fi
6526 }

```

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`.

```

6527 \begingroup\expandafter\expandafter\expandafter\endgroup
6528 \expandafter\ifx\csname chapter\endcsname\relax
6529   \def\Hy@chapterstring{section}%
6530 \else
6531   \def\Hy@chapterstring{chapter}%
6532 \fi
6533 \def\Hy@appendixstring{appendix}
6534 \def\Hy@chapapp{\Hy@chapterstring}
6535 \let\HyOrg@appendix\appendix
6536 \def\appendix{%
6537   \ltx@ifundefined{chapter}%
6538   {\gdef\theHsection{\Alph{section}}}%
6539   {\gdef\theHchapter{\Alph{chapter}}}%
6540   \xdef\Hy@chapapp{\Hy@appendixstring}%
6541   \HyOrg@appendix
6542 }

```

`\Hy@Test@alph`

```

6543 \def\Hy@Test@alph#1{%
6544   \ifcase#1\or
6545     a\or b\or c\or d\or e\or f\or g\or h\or i\or j\or
6546     k\or l\or m\or n\or o\or p\or q\or r\or s\or t\or
6547     u\or v\or w\or x\or y\or z%
6548   \else
6549     \@ctrerr
6550   \fi
6551 }

```

`\Hy@Test@Alph`

```

6552 \def\Hy@Test@Alph#1{%
6553   \ifcase#1\or
6554     A\or B\or C\or D\or E\or F\or G\or H\or I\or J\or
6555     K\or L\or M\or N\or O\or P\or Q\or R\or S\or T\or
6556     U\or V\or W\or X\or Y\or Z%
6557   \else
6558     \@ctrerr
6559   \fi
6560 }

```

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

```

6561 \def\hyper@makecurrent#1{%
6562   \begingroup
6563     \edef\Hy@param{#1}%
6564     \ifx\Hy@param\Hy@chapterstring
6565       \let\Hy@param\Hy@chapapp
6566     \fi
6567     \ifHy@hypertextnames
6568       \let\@number\@firstofone
6569       \def\@fnsymbol##1{fnsymbol\number##1}%
6570       \ifx\@alph\Hy@Test@alph
6571         \else
6572           \def\@alph{alph\number}%
6573         \fi
6574       \ifx\@Alph\Hy@Test@Alph
6575         \else
6576           \def\@Alph{Alph\number}%
6577         \fi
6578       \ifHy@naturalnames
6579         \let\textlatin\@firstofone
6580         \xdef\HyperGlobalCurrentHref{\csname the#1\endcsname}%
6581       \else
6582         \xdef\HyperGlobalCurrentHref{%
6583           \csname
6584             the%
6585             \expandafter\ifx\csname theH#1\endcsname\relax\else H\fi
6586             #1%
6587           \endcsname
6588         }%
6589       \fi
6590       \xdef\HyperGlobalCurrentHref{%
6591         \Hy@param.\expandafter\strip@prefix\meaning\HyperGlobalCurrentHref
6592       }%
6593     \else
6594       \Hy@GlobalStepCount\Hy@linkcounter
6595       \xdef\HyperGlobalCurrentHref{\Hy@param.\the\Hy@linkcounter}%
6596     \fi
6597   \endgroup
6598   \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
6599   \ifHy@localanchorname
6600     \let\@currentHref\HyperLocalCurrentHref
6601   \else
6602     \global\let\@currentHref\HyperGlobalCurrentHref
6603   \fi
6604 }

```



`\Hy@MakeCurrentHref`

```

6605 \def\Hy@MakeCurrentHref#1{%
6606   \edef\HyperLocalCurrentHref{#1}%
6607   \@onelevel@sanitize\HyperLocalCurrentHref
6608   \global\let\HyperGlobalCurrentHref\HyperLocalCurrentHref
6609   \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
6610   \ifHy@localanchorname
6611     \let\@currentHref\HyperLocalCurrentHref
6612   \else
6613     \global\let\@currentHref\HyperGlobalCurrentHref
6614   \fi
6615 }

```

`\Hy@MakeCurrentHrefAuto`

```

6616 \def\Hy@MakeCurrentHrefAuto#1{%
6617   \Hy@GlobalStepCount\Hy@linkcounter
6618   \Hy@MakeCurrentHref{#1.\the\Hy@linkcounter}%
6619 }

```

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

```

6620 \def\@currentHlabel{\@currentHref}

6621 \@ifpackageloaded{fancyvrb}{%
6622   \@ifpackagelater{fancyvrb}{1998/05/20}{%
6623     \def\FV@StepLineNo{%
6624       \FV@SetLineNo
6625       \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
6626       \FV@StepLineNo
6627     }%
6628   }%
6629 }{}

```

## 29 Package lastpage support

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

`\lastpage@putlabel`

```

6630 \Hy@AtBeginDocument{%
6631   \@ifclassloaded{revtex4}{%
6632     \@namedef{ver@lastpage.sty}{1994/06/25}%
6633   }{}%
6634   \@ifpackageloaded{lastpage}{%
6635     \ifHy@pageanchor
6636     \else
6637       \Hy@WarningNoLine{%
6638         The \string\pageref{LastPage} link doesn't work\MessageBreak
6639         with disabled option 'pageanchor'%
6640       }%
6641     \fi

```

```

6642 \def\lastpage@putlabel{%
6643   \addtocounter{page}{-1}%
6644   \if@filesw
6645     \begingroup
6646     \let\@number\@firstofone
6647     \ifHy@pageanchor
6648       \ifHy@hypertexnames
6649         \ifHy@plainpages
6650           \def\Hy@temp{\arabic{page}}%
6651         \else
6652           \Hy@unicodedefalse
6653           \pdfstringdef\Hy@temp{\thepage}%
6654         \fi
6655       \else
6656         \def\Hy@temp{\the\Hy@pagecounter}%
6657       \fi
6658     \fi
6659     \immediate\write\@auxout{%
6660       \string\newlabel
6661       {LastPage}{\the\thepage}{\thepage}%
6662       \ifHy@pageanchor page.\Hy@temp\fi}{}}%
6663   }%
6664 \endgroup
6665 \fi
6666 \addtocounter{page}{1}%
6667 }%
6668 \@ifclassloaded{revtex4}{%
6669   \begingroup
6670   \toks@\expandafter{\lastpage@putlabel}%
6671   \edef\x{\endgroup
6672     \def\noexpand\lastpage@putlabel{%
6673       \noexpand\stepcounter{page}%
6674       \the\toks@
6675       \noexpand\addtocounter{page}\noexpand\m@ne
6676     }%
6677   }%
6678   \x
6679 }{}%
6680 }{}%
6681 }
6682 \end{package}
6683 \check
6684 \checkpackage{lastpage}[1994/06/25]
6685 \checkcommand\def\lastpage@putlabel{%
6686   \addtocounter{page}{-1}%
6687   \immediate\write\@auxout{%
6688     \string\newlabel{LastPage}{\the\thepage}{\thepage}%
6689   }%
6690   \addtocounter{page}{1}%
6691 }
6692 \end{check}
6693 \end{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.

```
6694 \def\hypergetref#1{\getrefbykeydefault{#1}{-}{??}}
6695 \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:

```
6696 \@ifpackageloaded{titlesec}{%
6697   \def\ttl@Hy@steplink#1{%
6698     \Hy@MakeCurrentHrefAuto{#1*}%
6699     \edef\ttl@Hy@saveanchor{%
6700       \noexpand\Hy@raisedlink{%
6701         \noexpand\hyper@anchorstart{\@currentHref}%
6702         \noexpand\hyper@anchorend
6703         \def\noexpand\ttl@Hy@SavedCurrentHref{\@currentHref}%
6704         \noexpand\ttl@Hy@PatchSaveWrite
6705       }%
6706     }%
6707   }%
6708   \def\ttl@Hy@PatchSaveWrite{%
6709     \begingroup
6710     \toks@\expandafter{\ttl@savewrite}%
6711     \edef\x{\endgroup
6712       \def\noexpand\ttl@savewrite{%
6713         \let\noexpand\@currentHref
6714         \noexpand\ttl@Hy@SavedCurrentHref
6715         \the\toks@
6716       }%
6717     }%
6718     \x
6719   }%
6720   \def\ttl@Hy@refstepcounter#1{%
6721     \let\ttl@b\Hy@raisedlink
6722     \def\Hy@raisedlink##1{%
6723       \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
6724     }%
6725     \refstepcounter{#1}%
6726     \let\Hy@raisedlink\ttl@b
6727   }%
6728 }
```

Package titletoc support:

```
6729 \@ifpackageloaded{titletoc}{%
6730   \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
6731 }
```

## 32 Package varioref support

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

```
6732 \def\Hy@varioref@undefined{??}{??}{-}{-}{-}
6733 \@ifpackageloaded{varioref}{%
6734   \def\vref@pagenum#1#2{%
```

```

6735 \ifundefined{r@#2}{%
6736 \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
6737 }{}%
6738 \edef#1{\getpagerefnumber{#2}}%
6739 }%
6740 }{}

```

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

```

6741 \def\Hy@varioref@refstepcounter#1{%
6742 \stepcounter{#1}%
6743 \protected@edef\@currentlabel{%
6744 \csname p@#1\expandafter\endcsname\csname the#1\endcsname
6745 }%
6746 }
6747 \AtBeginDocument{%
6748 \ifx\refstepcounter\Hy@varioref@refstepcounter
6749 \let\H@refstepcounter\refstepcounter
6750 \let\refstepcounter\Hy@saved@refstepcounter
6751 \fi
6752 }

```

### 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

```

6753 \ifpackageloaded{longtable}{%
6754 \begingroup
6755 \def\y{\LT@array}%
6756 \ifundefined{scr@LT@array}{%
6757 \ifundefined{adl@LT@array}{\def\y{\adl@LT@array}}%
6758 }\def\y{\scr@LT@array}%
6759 \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
6760 \expandafter\endgroup
6761 \expandafter\def\y[#1]#2{%
6762 \H@refstepcounter{#1}%
6763 \hyper@makecurrent{table}%
6764 \let\Hy@LT@currentHref\@currentHref
6765 #2\@sharp###4%
6766 }%
6767 }%
6768 \expandafter\expandafter\expandafter\x\y[{#1}]{#2}\@nil

```

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

```

6769 \begingroup
6770 \def\x#1\ifvoid\LT@foot#2\fi#3\@nil{%
6771 \endgroup
6772 \def\LT@start{%
6773 #1%
6774 \ifvoid\LT@foot#2\fi
6775 \let\@currentHref\Hy@LT@currentHref
6776 \Hy@raisedlink{%
6777 \hyper@anchorstart{\@currentHref}\hyper@anchorend

```

```

6778     }%
6779     #3%
6780     }%
6781     }%
6782 \expandafter\x\LT@start\@nil
6783 }{}

```

## 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.

```

6784 \let\new@refstepcounter\refstepcounter
6785 \let\H@equation\equation
6786 \let\H@endequation\endequation
6787 \ifpackageloaded{amsmath}{%
6788   \long\def\Hy@temp{%
6789     \incr@eqnum
6790     \mathdisplay@push
6791     \st@rredfalse \global\@eqnswtrue
6792     \mathdisplay{equation}%
6793   }%
6794   \ifx\Hy@temp\equation
6795     \expandafter\ifx\csname if@fleqn\expandafter\endcsname
6796       \csname iftrue\endcsname
6797   \else
6798     \long\def\equation{%
6799       \mathdisplay@push
6800       \st@rredfalse \global\@eqnswtrue
6801       \mathdisplay{equation}%
6802       \incr@eqnum
6803     }%
6804   \fi
6805 \fi
6806 }{}%
6807 \def\equation{%
6808   \let\refstepcounter\H@refstepcounter
6809   \H@equation
6810   \ifundefined{theHequation}{%
6811     \make@stripped@name{\theequation}%
6812     \let\theHequation\newname
6813   }{}%
6814   \hyper@makecurrent{equation}%
6815   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
6816   \let\refstepcounter\new@refstepcounter
6817 }%
6818 \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
6819 }

```

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.

```

6820 \newif\if@eqnstar
6821 \@eqnstarfalse
6822 \let\H@eqnarray\eqnarray
6823 \let\H@endeqnarray\endeqnarray
6824 \def\eqnarray{%
6825   \let\Hy@reserved@a\relax
6826   \def\@currentHref{}%
6827   \H@eqnarray
6828   \if@eqnstar
6829   \else
6830     \ifx\\ \@currentHref\\%
6831     \else
6832       \@ifundefined{theHequation}{%
6833         \make@stripped@name{\theequation}%
6834         \let\theHequation\newname
6835       }{}%
6836       \hyper@makecurrent{equation}%
6837       \hyper@anchorstart{\@currentHref}{\hyper@anchorend
6838     \fi
6839   \fi
6840 }
6841 \def\endeqnarray{%
6842   \H@endeqnarray
6843 }

```

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.

```

6844 \@namedef{eqnarray*}{%
6845   \def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
6846 }
6847 \@namedef{endeqnarray*}{%
6848   \nonumber\endeqnarray\@eqnstarfalse
6849 }

```

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

```

6850 \ltx@ifundefined{subeqnarray}{}{}%
6851 \let\H@subeqnarray\subeqnarray
6852 \let\H@endsubeqnarray\endsubeqnarray
6853 \def\subeqnarray{%
6854   \let\Hy@reserved@a\relax
6855   \H@subeqnarray
6856   \@ifundefined{theHequation}{%
6857     \make@stripped@name{\theequation}%
6858     \let\theHequation\newname
6859   }{}%
6860   \hyper@makecurrent{equation}%
6861   \hyper@anchorstart{\@currentHref}{\hyper@anchorend
6862 }%
6863 \def\endsubeqnarray{%
6864   \H@endsubeqnarray
6865 }%
6866 \newcommand\theHsubequation{\theHequation\alph{subequation}}%
6867 }

```

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

```

6868 \def\make@stripped@name#1{%
6869   \begingroup
6870   \escapechar\m@ne

```

```

6871 \global\let\newname\@empty
6872 \protected@edef\Hy@tempa{#1}%
6873 \edef\@tempb{%
6874   \noexpand\@tfor\noexpand\Hy@tempa:=%
6875   \expandafter\strip@prefix\meaning\Hy@tempa
6876 }%
6877 \@tempb\do{%
6878   \if\Hy@tempa\else
6879   \if\Hy@tempa\else
6880     \xdef\newname{\newname\Hy@tempa}%
6881   \fi
6882   \fi
6883 }%
6884 \endgroup
6885 }

```

Support for amsmath's subequations:

```

6886 \begingroup\expandafter\expandafter\expandafter\endgroup
6887 \expandafter\ifx\csname subequations\endcsname\relax
6888 \else
6889   \let\HyOrg@subequations\subequations
6890   \def\subequations{%
6891     \stepcounter{equation}%
6892     \protected@edef\theHparentequation{%
6893       \@ifundefined{theHequation}\theequation\theHequation
6894     }%
6895     \addtocounter{equation}{-1}%
6896     \HyOrg@subequations
6897     \def\theHequation{\theHparentequation\alph{equation}}%
6898     \ignorespaces
6899   }%
6900 \fi

```

Support for package amsthm (Daniel Müllner):

```

6901 \@ifpackageloaded{amsthm}{%
6902   \def\@thm#1#2#3{%
6903     \ifhmode
6904       \unskip\unskip\par
6905     \fi
6906     \normalfont
6907     \trivlist
6908     \let\thmheadnl\relax
6909     \let\thm@swap\@gobble
6910     \thm@notefont{\fontseries\mddefault\upshape}%
6911     \thm@headpunct{.}% add period after heading
6912     \thm@headsep 5\p@ plus\p@ minus\p@\relax
6913     \thm@space@setup
6914     #1% style overrides
6915     \@topsep \thm@preskip % used by thm head
6916     \@topsepadd \thm@postskip % used by \@endparenv
6917     \def\dth@counter{#2}%
6918     \ifx\@empty\dth@counter
6919       \def\@tempa{%
6920         \@oparg{\@begintheorem{#3}{}}{}%
6921       }%
6922     \else
6923       \H@refstepcounter{#2}%
6924       \hyper@makecurrent{#2}%

```

```

6925 \let\Hy@dth@currentHref\@currentHref
6926 \def\@tempa{%
6927   \@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}[]%
6928   }%
6929 \fi
6930 \@tempa
6931 }%
6932 \dth@everypar={%
6933   \@minipagefalse
6934   \global\@newlistfalse
6935   \@noparitemfalse
6936   \if@inlabel
6937     \global\@inlabelfalse
6938     \begingroup
6939       \setbox\z@\lastbox
6940       \ifvoid\z@
6941         \kern-\itemindent
6942       \fi
6943     \endgroup
6944     \ifx\@empty\dth@counter
6945     \else
6946       \Hy@raisedlink{%
6947         \hyper@anchorstart{%
6948           \ltx@ifundefined{Hy@dth@currentHref}%
6949             \@currentHref\Hy@dth@currentHref
6950         }\hyper@anchorend
6951       }%
6952     \fi
6953     \unhbox\@labels
6954   \fi
6955   \if@nobreak
6956     \@nobreakfalse \clubpenalty\@M
6957   \else
6958     \clubpenalty\@clubpenalty \everypar{}%
6959   \fi
6960 }%
6961 }{}

```

## 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.

```

6962 \@ifpackageloaded{tabularx}{\Hy@hyperfootnotesfalse}{}
6963 \ifHy@hyperfootnotes
6964   \newcounter{Hfootnote}%
6965   \let\H@@footnotetext\@footnotetext
6966   \let\H@@footnotemark\@footnotemark
6967   \def\@xfootnotenext[#1]{%
6968     \begingroup
6969       \csname c@\@mpfn\endcsname #1\relax
6970       \unrestored@protected@xdef\@thefnmark{\thempfn}%
6971     \endgroup
6972     \ifx\@footnotetext\@mpfootnotetext

```



```

6973 \expandafter\H@@mpfootnotetext
6974 \else
6975 \expandafter\H@@footnotetext
6976 \fi
6977 }%
6978 \def\@xfootnotemark[#1]{%
6979 \begingroup
6980 \c@footnote #1\relax
6981 \unrestored@protected@xdef\@thefnmark{\thefootnote}%
6982 \endgroup
6983 \H@@@footnotemark
6984 }%
6985 \let\H@@mpfootnotetext\@mpfootnotetext
6986 \long\def\@mpfootnotetext#1{%
6987 \H@@mpfootnotetext{%
6988 \ifHy@nesting
6989 \expandafter\hyper@@@anchor\expandafter{%
6990 \Hy@footnote@currentHref
6991 }{#1}%
6992 \else
6993 \Hy@raisedlink{%
6994 \expandafter\hyper@@@anchor\expandafter{%
6995 \Hy@footnote@currentHref
6996 }{\relax}%
6997 }#1%
6998 \fi
6999 }%
7000 }%
7001 \long\def\@footnotetext#1{%
7002 \H@@@footnotetext{%
7003 \ifHy@nesting
7004 \expandafter\hyper@@@anchor\expandafter{%
7005 \Hy@footnote@currentHref
7006 }{#1}%
7007 \else
7008 \Hy@raisedlink{%
7009 \expandafter\hyper@@@anchor\expandafter{%
7010 \Hy@footnote@currentHref
7011 }{\relax}%
7012 }%
7013 \let\@currentHref\Hy@footnote@currentHref
7014 \let\@currentlabelname\@empty
7015 #1%
7016 \fi
7017 }%
7018 }%

```

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.

```

7019 \def\@footnotemark{%
7020 \leavevmode
7021 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7022 \stepcounter{Hfootnote}%
7023 \global\let\Hy@saved@currentHref\@currentHref
7024 \hyper@makecurrent{Hfootnote}%
7025 \global\let\Hy@footnote@currentHref\@currentHref

```

```

7026 \global\let\@currentHref\Hy@saved@currentHref
7027 \hyper@linkstart{link}{\Hy@footnote@currentHref}%
7028 \@makefnmark
7029 \hyper@linkend
7030 \ifhmode\spacefactor\@x@sf\fi
7031 \relax
7032 }%

```

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

```

7033 \ifpackageloaded{longtable}{%
7034 \CheckCommand*{\LT@p@ftntext}[1]{%
7035 \edef\@tempa{%
7036 \the\LT@p@ftn
7037 \noexpand\footnotetext[\the\c@footnote]%
7038 }%
7039 \global\LT@p@ftn\expandafter{\@tempa{#1}}%
7040 }%
7041 \long\def\LT@p@ftntext#1{%
7042 \edef\@tempa{%
7043 \the\LT@p@ftn
7044 \begingroup
7045 \noexpand\c@footnote=\the\c@footnote\relax
7046 \noexpand\protected@xdef\noexpand\@thefnmark{%
7047 \noexpand\thempfn
7048 }%
7049 \noexpand\Hy@LT@footnotetext{%
7050 \Hy@footnote@currentHref
7051 }%
7052 }%
7053 \global\LT@p@ftn\expandafter{%
7054 \@tempa{#1}%
7055 \endgroup
7056 }%
7057 }%
7058 \long\def\Hy@LT@footnotetext#1#2{%
7059 \H@@@footnotetext{%
7060 \ifHy@nesting
7061 \hyper@@anchor{#1}{#2}%
7062 \else
7063 \Hy@raisedlink{%
7064 \hyper@@anchor{#1}{\relax}%
7065 }%
7066 \def\@currentHref{#1}%
7067 \let\@currentlabelname\@empty
7068 #2%
7069 \fi
7070 }%
7071 }%
7072 }{}%

```

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

```

7073 \ifpackageloaded{fancyvrb}{%
7074 \def\V@@@footnotetext{%
7075 \insert\footins\bgroup
7076 \csname reset@font\endcsname

```

```

7077 \footnotesize
7078 \interlinepenalty\interfootnotelinepenalty
7079 \splittopskip\footnotesep
7080 \splitmaxdepth\dp\strutbox
7081 \floatingpenalty \@MM
7082 \hsize\columnwidth
7083 \@parboxrestore
7084 \edef\@currentlabel{\csname p@footnote\endcsname\@thefnmark}%
7085 \@makefnmark{}%
7086 \rule{\z@}{\footnotesep}%
7087 \bgroup
7088 \aftergroup\V@@@footnotetext
7089 \Hy@raisedlink{%
7090 \expandafter\hyper@@anchor\expandafter{%
7091 \Hy@footnote@currentHref
7092 }{\relax}%
7093 }%
7094 \let\@currentHref\Hy@footnote@currentHref
7095 \let\@currentlabelname\@empty
7096 \ignorespaces
7097 }%
7098 }{}%

```

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

```

7099 \def\Hy@temp#1{%
7100 \begingroup
7101 \unrestored@protected\xdef\@thefnmark{\ref{#1}}%
7102 \endgroup
7103 \@footnotemark
7104 }%
7105 \ifx\Hy@temp\footref
7106 \def\footref#1{%
7107 \begingroup
7108 \unrestored@protected\xdef\@thefnmark{\ref{#1}}%
7109 \endgroup
7110 \H@@@footnotemark
7111 }%
7112 \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.

```

7113 \let\HyOrg@maketitle\maketitle
7114 \def\maketitle{%
7115 \let\Hy@saved@footnotemark\@footnotemark
7116 \let\Hy@saved@footnotetext\@footnotetext
7117 \let\@footnotemark\H@@@footnotemark
7118 \let\@footnotetext\H@@@footnotetext
7119 \@ifnextchar[\Hy@maketitle@optarg{% ]
7120 \HyOrg@maketitle
7121 \Hy@maketitle@end
7122 }%
7123 }%
7124 \def\Hy@maketitle@optarg[#1]{%
7125 \HyOrg@maketitle[#1]%
7126 \Hy@maketitle@end
7127 }%
7128 \def\Hy@maketitle@end{%

```

```

7129 \ifx\@footnotemark\H\@footnotemark
7130 \let\@footnotemark\Hy@saved@footnotemark
7131 \fi
7132 \ifx\@footnotetext\H\@footnotetext
7133 \let\@footnotetext\Hy@saved@footnotetext
7134 \fi
7135 }%

```

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

```

7136 \def\realfootnote{%
7137 \ifnextchar[\@xfootnote{%
7138 \stepcounter{\@mpfn}%
7139 \protected@xdef\@thefnmark{\thempfn}%
7140 \H\@footnotemark\H\@footnotetext
7141 }%
7142 }%

7143 \fi
7144 \Hy@DisableOption{hyperfootnotes}

7145 </package>
7146 <*check>
7147 \checklatex
7148 \checkcommand\def\@xfootnotenext[#1]{%
7149 \begingroup
7150 \csname c@\@mpfn\endcsname #1\relax
7151 \unrestored@protected@xdef\@thefnmark{\thempfn}%
7152 \endgroup
7153 \@footnotetext
7154 }
7155 \checkcommand\def\@xfootnotemark[#1]{%
7156 \begingroup
7157 \c@footnote #1\relax
7158 \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7159 \endgroup
7160 \@footnotemark
7161 }
7162 \checkcommand\def\@footnotemark{%
7163 \leavevmode
7164 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7165 \makefnmark
7166 \ifhmode\spacefactor\@x@sf\fi
7167 \relax
7168 }
7169 </check>
7170 <*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.

```

7171 \def\caption{%
7172 \ifx\@cuptype\@undefined
7173 \latex@error{\noexpand\caption outside float}\@ehd
7174 \expandafter\@gobble
7175 \else
7176 \H@refstepcounter\@cuptype

```

```

7177 \let\Hy@tempa\@caption
7178 \@ifundefined{float@caption}{%
7179 }{%
7180   \expandafter\ifx\csname @float@c@\@capttype\endcsname
7181     \float@caption
7182     \let\Hy@tempa\Hy@float@caption
7183   \fi
7184 }%
7185 \expandafter\@firstofone
7186 \fi
7187 {\@dblarg{\Hy@tempa\@capttype}}}%
7188 }
7189 \long\def\@caption#1[#2]#3{%
7190   \expandafter\ifx\csname if@capstart\expandafter\endcsname
7191     \csname iftrue\endcsname
7192     \global\let\@currentHref\hc@currentHref
7193   \else
7194     \hyper@makecurrent{\@capttype}%
7195   \fi
7196   \@ifundefined{NR@gettitle}{%
7197     \def\@currentlabelname{#2}%
7198   }{%
7199     \NR@gettitle{#2}%
7200   }%
7201   \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
7202     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7203   }%
7204   \begingroup
7205     \@parboxrestore
7206     \if@minipage
7207       \@setminipage
7208     \fi
7209     \normalsize
7210     \expandafter\ifx\csname if@capstart\expandafter\endcsname
7211       \csname iftrue\endcsname
7212       \global\@capstartfalse
7213       \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
7214     \else
7215       \@makecaption{\csname fnum@#1\endcsname}{%
7216         \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

7217   \ifHy@nesting
7218     \expandafter\hyper@@anchor\expandafter{\@currentHref}{#3}%
7219   \else
7220     \Hy@raisedlink{%
7221       \expandafter\hyper@@anchor\expandafter{%
7222         \@currentHref
7223       }\relax}%
7224     }%
7225     #3%
7226   \fi
7227 }%
7228 \fi
7229 \par
7230 \endgroup
7231 }

```

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.

```

7232 \let\Hy@float@caption\@caption
7233 \ifpackageloaded{float}{%
7234   \def\Hy@float@caption{%
7235     \ifx\Hy@float@currentHref\@undefined
7236       \hyper@makecurrent{\@cuptype}%
7237       \global\let\Hy@float@currentHref\@currentHref
7238     \else
7239       \let\@currentHref\Hy@float@currentHref
7240     \fi
7241     \float@caption
7242   }%
7243   \let\HyOrg@float@makebox\float@makebox
7244   \renewcommand{\float@makebox}[1]{%
7245     \HyOrg@float@makebox{%
7246       #1\relax
7247       \ifx\Hy@float@currentHref\@undefined
7248         \else
7249           \expandafter\hyper@@anchor\expandafter{%
7250             \Hy@float@currentHref
7251           }\relax}%
7252       \global\let\Hy@float@currentHref\@undefined
7253     \fi
7254   }%
7255 }%
7256 }{}

7257 \</package>
7258 \<*check>
7259 \checklatex[1999/06/01 - 2000/06/01]
7260 \checkcommand\def\caption{%
7261   \ifx\@cuptype\@undefined
7262     \@latex@error{\noexpand\caption outside float}\@ehd
7263     \expandafter\@gobble
7264   \else
7265     \refstepcounter\@cuptype
7266     \expandafter\@firstofone
7267   \fi
7268   {\@dblarg{\@caption\@cuptype}}%
7269 }
7270 \checkcommand\long\def\@caption#1[#2]#3{%
7271   \par
7272   \addcontentsline{\csname ext@#1\endcsname}{#1}{%
7273     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7274   }%
7275   \begingroup
7276     \@parboxrestore
7277     \if@minipage
7278       \@setminipage
7279     \fi
7280     \normalsize
7281     \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
7282   \endgroup
7283 }
7284 \</check>
7285 \<*package>

```

## 37 Bibliographic references

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

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

```

7286 \def\hyper@natlinkstart#1{%
7287   \Hy@backout{#1}%
7288   \hyper@linkstart{cite}{cite.#1}%
7289   \def\hyper@nat@current{#1}%
7290 }
7291 \def\hyper@natlinkend{%
7292   \hyper@linkend
7293 }
7294 \def\hyper@natlinkbreak#1#2{%
7295   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
7296 }
7297 \def\hyper@natanchorstart#1{%
7298   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
7299 }
7300 \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.

```

7301 \ltx@ifundefined{NAT@parse}{%
7302   \providecommand*\@extra@binfo{}%
7303   \providecommand*\@extra@b@citeb{}%
7304   \def\bibcite#1#2{%
7305     \@newl@bel{b}{#1\@extra@binfo}{%
7306       \hyper@link{cite}{cite.#1\@extra@b@citeb}{#2}%
7307     }%
7308   }%
7309   \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.”.

```

7310 \let\Hy@bibcite\bibcite
7311 \begingroup
7312   \ifundefined{bbl@cite@choice}{}{%
7313     \g@addto@macro\bbl@cite@choice{%
7314       \let\bibcite\Hy@bibcite
7315     }%
7316   }%
7317 \endgroup

```

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

```

7318 \providecommand*\@BIBLABEL{\@biblabel}%
7319 \def\@lbibitem[#1]#2{%
7320   \@skiphyperreftrue
7321   \H@item[%
7322     \ifx\Hy@raisedlink\@empty

```

```

7323     \hyper@anchorstart{cite.#2\@extra@b@citeb}%
7324     \@BIBLABEL{#1}%
7325     \hyper@anchorend
7326   \else
7327     \Hy@raisedlink{%
7328       \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
7329     }%
7330     \@BIBLABEL{#1}%
7331   \fi
7332   \hfill
7333 }%
7334 \@skiphyperreffalse
7335 \if@filesw
7336   \begingroup
7337   \let\protect\noexpand
7338   \immediate\write\@auxout{%
7339     \string\bibcite{#2}{#1}%
7340   }%
7341   \endgroup
7342 \fi
7343 \ignorespaces
7344 }%

```

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

```

7345 \def\@bibitem#1{%
7346   \@skiphyperrefftrue\H@item\@skiphyperreffalse
7347   \Hy@raisedlink{%
7348     \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
7349   }%
7350   \if@filesw
7351     \begingroup
7352     \let\protect\noexpand
7353     \immediate\write\@auxout{%
7354       \string\bibcite{#1}{\the\value{\@listctr}}%
7355     }%
7356     \endgroup
7357   \fi
7358   \ignorespaces
7359 }%
7360 }{}

7361 \</package>
7362 \<*check>
7363 \checklatex
7364 \checkcommand\def\@lbibitem[#1]#2{%
7365   \item[\@biblabel{#1}\hfill]%
7366   \if@filesw
7367     {%
7368       \let\protect\noexpand
7369       \immediate\write\@auxout{%
7370         \string\bibcite{#2}{#1}%
7371       }%
7372     }%
7373   \fi
7374   \ignorespaces
7375 }
7376 \checkcommand\def\@bibitem#1{%

```



```

7377 \item
7378 \if@filesw
7379 \immediate\write\@auxout{%
7380 \string\bibcite{#1}{\the\value{\@listctr}}}%
7381 }%
7382 \fi
7383 \ignorespaces
7384 }
7385 \</check>
7386 \<*package>

```

Revtext (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.

```

7387 \@ifclassloaded{revtex}{%
7388 \Hy@Info{*** compatibility with revtex **** }%
7389 \def\revtex@checking#1#2{%
7390 \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
7391 \expandafter\def\csname b@#1\endcsname{#2}%
7392 \@SetMaxRnhefLabel{#1}%
7393 \expandafter\let\csname b@#1\endcsname\T@temp
7394 }%

```

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

```

7395 \@ifundefined{@CITE}{\def@CITE{\@cite}}{%
7396 \providecommand*{\@extra@b@citeb}{}%
7397 \def\CITEX[#1]#2{%
7398 \let\@citea\@empty
7399 \leavevmode
7400 \unskip
7401 $\sim$%
7402 \scriptstyle
7403 \@CITE{%
7404 \@for\@citeb:=#2\do{%
7405 \@citea
7406 \def\@citea{,\penalty\@m\ }%
7407 \edef\@citeb{\expandafter\@firstofone\@citeb}%
7408 \if@filesw
7409 \immediate\write\@auxout{\string\citation{\@citeb}}%
7410 \fi
7411 \@ifundefined{b@\@citeb\extra@b@citeb}{%
7412 \mbox{\reset@font\bfseries ?}%
7413 \G@refundefinedtrue
7414 \@latex@warning{%
7415 Citation '\@citeb' on page \thepage \space undefined%
7416 }%
7417 }{%
7418 {\csname b@\@citeb\extra@b@citeb\endcsname}%
7419 }%
7420 }%
7421 }{#1}%
7422 }$%
7423 }%

```

No, life is too short. I am not going to understand the Revtext \@collapse macro, I shall just restore the original behaviour of \@citex; sigh. This is SO vile.

```

7424 \def\citex[#1]#2{%

```

```

7425 \let\@citea\@empty
7426 \@cite{%
7427   \@for\@citeb:=#2\do{%
7428     \@citea
7429     \def\@citea{,\penalty\@m\ }%
7430     \edef\@citeb{\expandafter\@firstofone\@citeb}%
7431     \if@filesw
7432       \immediate\write\@auxout{\string\citation{\@citeb}}%
7433     \fi
7434     \ifundefined{b@\@citeb\@extra@b@citeb}{%
7435       \mbox{\reset@font\bfseries ?}%
7436       \G@refundefinedtrue
7437       \@latex@warning{%
7438         Citation '\@citeb' on page \thepage \space undefined%
7439       }%
7440     }{%
7441       \hbox{\csname b@\@citeb\@extra@b@citeb\endcsname}%
7442     }%
7443   }%
7444 }{\#1}%
7445 }%
7446 }{}

```

### 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.

```

7447 \ifpackageloaded{harvard}{%
7448   \Hy@AtBeginDocument{%
7449     \Hy@Info{*** compatibility with harvard **** }%
7450     \Hy@raiselinksfalse
7451     \def\harvardcite#1#2#3#4{%
7452       \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{\cite.#1}{#2}}%
7453       \global\@namedef{HAR@an@#1}{\hyper@link[cite]{\cite.#1}{#3}}%
7454       \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{\cite.#1}{#4}}%
7455       \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
7456     }%
7457     \def\HAR@citetoaux#1{%
7458       \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
7459       \ifHy@backref
7460         \ifx\@empty\@currentlabel
7461           \else
7462             \@bsphack
7463             \if@filesw
7464               \protected@write\@auxout{}{%
7465                 \string\@writefile{brf}{%
7466                   \string\backcite{#1}{%
7467                     {\thepage}{\@currentlabel}{\@currentHref}%
7468                   }%
7469                 }%
7470             }%
7471           \fi

```

```

7472     \@esphack
7473     \fi
7474   \fi
7475 }%
7476 \def\harvarditem{%
7477   \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
7478 }%
7479 \def\@harvarditem[#1]#2#3#4#5\par{%
7480   \item[]%
7481   \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
7482   \if@filesw
7483     \begingroup
7484       \def\protect##1{\string ##1\space}%
7485       \ifthenelse{\equal{#1}{\null}}{%
7486         {\def\next{{#4}{#2}{#3}}}%
7487         {\def\next{{#4}{#2}{#1}{#3}}}%
7488       \immediate\write\@auxout{\string\harvardcite\codeof\next}%
7489     \endgroup
7490   \fi
7491   \protect\hspace*{-\labelwidth}%
7492   \protect\hspace*{-\labelsep}%
7493   \ignorespaces
7494   #5%
7495   \ifHy@backref
7496     \newblock
7497     \backref{\csname br@#4\endcsname}%
7498   \fi
7499   \par
7500 }%

```

\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:

```

7501 \long\def\HAR@checkcitations#1#2#3#4{%
7502   \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#2}}%
7503   \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
7504     \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#3}}%
7505     \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
7506       \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#4}}%
7507       \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
7508         \else
7509           \@tempswatrue
7510         \fi
7511       \else
7512         \@tempswatrue
7513       \fi
7514     \else
7515       \@tempswatrue
7516     \fi
7517   }%
7518 }%
7519 }{}

```

## 37.2 Package chicago

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

```

7520 \@ifpackageloaded{chicago}{%
\citeN
7521 \def\citeN{%
7522 \def\@citesep{-1000}%
7523 \def\@cite##1##2{##1}%
7524 \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}}%
7525 \@citedata@opt
7526 }%

\shortciteN
7527 \def\shortciteN{%
7528 \def\@citesep{-1000}%
7529 \def\@cite##1##2{##1}%
7530 \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}}%
7531 \@citedata@opt
7532 }%

\@citedata@opt
7533 \def\@citedata@opt{%
7534 \let\@cite@opt\@empty
7535 \@ifnextchar [{%
7536 \@tempwattrue
7537 \@citedatax@opt
7538 }{%
7539 \@tempwafalse
7540 \@citedatax[]%
7541 }%
7542 }%

\@citedatax@opt
7543 \def\@citedatax@opt[#1]{%
7544 \def\@cite@opt{, #1}%
7545 \@citedatax[{#1}]%
7546 }%

7547 }-{}

```

## 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.

```

7548 \def\Hy@EveryPageAnchor{%
7549 \Hy@DistillerDestFix
7550 \ifHy@pageanchor
7551 \ifHy@hypertextnames
7552 \ifHy@plainpages
7553 \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
7554 \else
7555 \begingroup
7556 \let\@number\@firstofone

```

```

7557     \Hy@unicodedefalse
7558     \pdfstringdef\@the@H@page{\thepage}%
7559     \endgroup
7560     \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
7561     \fi
7562   \else
7563     \Hy@GlobalStepCount\Hy@pagecounter
7564     \def\Hy@TempPageAnchor{%
7565       \hyper@@anchor{page.\the\Hy@pagecounter}%
7566     }%
7567     \fi
7568     \vbox to 0pt{%
7569       \kern\voffset
7570       \kern\topmargin
7571       \kern-1bp\relax
7572       \hbox to 0pt{%
7573         \kern\hoffset
7574         \kern\ifodd\value{page}%
7575           \oddsidemargin
7576         \else
7577           \evensidemargin
7578         \fi
7579         \kern-1bp\relax
7580         \Hy@TempPageAnchor\relax
7581       \hss
7582     }%
7583     \vss
7584   }%
7585   \fi
7586 }
7587 \g@addto@macro\Hy@EveryPageBoxHook{%
7588   \Hy@EveryPageAnchor
7589 }

```

## 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.

```

7590 \def\addcontentsline#1#2#3{% toc extension, type, tag
7591   \begingroup
7592   \let\label\@gobble
7593   \ifx\@currentHref\@empty
7594     \Hy@Warning{%
7595       No destination for bookmark of \string\addcontentsline,%
7596       \MessageBreak destination is added%
7597     }%
7598     \phantomsection
7599   \fi
7600   \expandafter\ifx\csname toplevel@#2\endcsname\relax
7601     \begingroup
7602     \def\Hy@tempa{#1}%
7603     \ifx\Hy@tempa\Hy@bookmarkstype
7604       \Hy@WarningNoLine{%
7605         bookmark level for unknown #2 defaults to 0%
7606       }%

```

```

7607     \else
7608         \Hy@Info{bookmark level for unknown #2 defaults to 0}%
7609     \fi
7610 \endgroup
7611 \expandafter\gdef\csname toclevel@#2\endcsname{0}%
7612 \fi
7613 \edef\Hy@toclevel{\csname toclevel@#2\endcsname}%
7614 \Hy@writebookmark{\csname the#2\endcsname}%
7615     {#3}%
7616     {\@currentHref}%
7617     {\Hy@toclevel}%
7618     {#1}%
7619 \ifHy@verbose
7620     \begingroup
7621         \def\Hy@tempa{#3}%
7622         \@onelevel@sanitize\Hy@tempa
7623         \let\temp@online\on@line
7624         \let\on@line\@empty
7625         \Hy@Info{%
7626             bookmark\temp@online:\MessageBreak
7627             thecounter {\csname the#2\endcsname}\MessageBreak
7628             text {\Hy@tempa}\MessageBreak
7629             reference {\@currentHref}\MessageBreak
7630             toclevel {\Hy@toclevel}\MessageBreak
7631             type {#1}%
7632         }%
7633     \endgroup
7634 \fi
7635 \addtocontents{#1}{%
7636     \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
7637 }%
7638 \endgroup
7639 }
7640 \def\contentsline#1#2#3#4{%
7641     \ifx\\#4\\%
7642         \csname l@#1\endcsname{#2}{#3}%
7643     \else
7644         \ifcase\Hy@linktoc % none
7645             \csname l@#1\endcsname{#2}{#3}%
7646         \or % section
7647             \csname l@#1\endcsname{%
7648                 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
7649             }{#3}%
7650         \or % page
7651             \csname l@#1\endcsname{{#2}}{%
7652                 \hyper@linkstart{link}{#4}{#3}\hyper@linkend
7653             }%
7654         \else % all
7655             \csname l@#1\endcsname{%
7656                 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
7657             }{%
7658                 \hyper@linkstart{link}{#4}{#3}\hyper@linkend
7659             }%
7660         \fi
7661     \fi
7662 }
7663 \end{package}

```

```

7664 <*check>
7665 \checklatex
7666 \checkcommand\def\addcontentsline#1#2#3{%
7667   \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}}%
7668 }
7669 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
7670 </check>
7671 <*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.

```

7672 \let\H@definecounter\@definecounter
7673 \def\@definecounter#1{%
7674   \H@definecounter{#1}%
7675   \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
7676 }

```

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.

```

7677 \let\H@newctr\@newctr
7678 \def\@newctr#1[#2]{%
7679   \H@newctr#1[{#2}]%
7680   \expandafter\def\csname theH#1\endcsname{%
7681     \csname the\@ifundefined{theH#2}{H}{H}#2\endcsname.\arabic{#1}%
7682   }%
7683 }

```

## 41 AMS $\LaTeX$ compatibility

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

Version 6.77p uses a patch by Ross Moore.

```

7684 \ifpackageloaded{amsmath}{%
7685   \def\Hy@make@anchor{%
7686     \Hy@MakeCurrentHrefAuto{AMS}%
7687     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
7688   }%
7689   \def\Hy@make@df@tag@@#1{%
7690     \gdef\df@tag{%
7691       \maketag@@@{\Hy@make@anchor#1}%
7692       \def\@currentlabel{#1}%
7693     }%
7694   }%
7695   \def\Hy@make@df@tag@@@#1{%
7696     \gdef\df@tag{%
7697       \tagform@{\Hy@make@anchor#1}%
7698       \toks@{\xp{p@equation{#1}}}%
7699       \edef\@currentlabel{\the\toks@}%
7700     }%
7701   }%

```

```

7702 \let\HyOrg@make@df@tag@@\make@df@tag@@
7703 \let\HyOrg@make@df@tag@@@ \make@df@tag@@@
7704 \let\make@df@tag@@\Hy@make@df@tag@@
7705 \let\make@df@tag@@@ \Hy@make@df@tag@@@
7706 }{}

```

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

```

7707 \ifpackagewith{hyperref}{pdfTeX}{%
7708   \let\H@seteqlabel\@seteqlabel
7709   \def\@seteqlabel#1{%
7710     \H@seteqlabel{#1}%
7711     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
7712     \Hy@raisedlink{%
7713       \hyper@anchorstart{\@currentHref}\hyper@anchorend
7714     }%
7715   }%
7716 }{}

```

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.

```

7717 \let\HyOrg@addtoreset\@addtoreset
7718 \def\@addtoreset#1#2{%
7719   \HyOrg@addtoreset{#1}{#2}%
7720   \expandafter\xdef\csname theH#1\endcsname{%
7721     \expandafter\noexpand
7722     \csname the\@ifundefined{theH#2}{H#2}\endcsname
7723     .\noexpand\the\noexpand\value{#1}%
7724   }%
7725 }

```

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

```

7726 </package>
7727 <*check>
7728 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
7729 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
7730   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
7731     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
7732       \@addtoreset{#2}{#3}%
7733       \xp\xdef\csname the#2\endcsname{%
7734         \xp\xnx\csname the#3\endcsname .\nx#1{#2}%
7735       }%
7736     }%
7737   }%

```



```

7738 }%
7739 </check>
7740 <*package>
7741 \Ifpackageloaded{amsmath}{%
7742 \Ifpackagelater{amsmath}{1999/12/14}{%
7743 \renewcommand*{\numberwithin}{3}[\arabic]{%
7744 \Ifundefined{c@#2}{\@nocounterr{#2}}{%
7745 \Ifundefined{c@#3}{\@nocnterr{#3}}{%
7746 \HyOrg@addtoreset{#2}{#3}%
7747 \@xp\xdef\csname the#2\endcsname{%
7748 \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
7749 }%
7750 \@xp\xdef\csname theH#2\endcsname{%
7751 \@xp\@nx
7752 \csname the\Ifundefined{theH#3}{H#3}\endcsname
7753 .\@nx#1{#2}%
7754 }%
7755 }%
7756 }%
7757 }%
7758 }{%
7759 \Hy@WarningNoLine{%
7760 \string\numberwithin\space of package ‘amsmath’ %
7761 only fixed\MessageBreak
7762 for version 2000/06/06 v2.12 or newer%
7763 }%
7764 }%
7765 }{}

```

## 42 Included figures

Simply intercept the low level graphics package macro.

```

7766 \ifHy@figures
7767 \let\Hy@Gin@setfile\Gin@setfile
7768 \def\Gin@setfile#1#2#3{%
7769 \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
7770 }%
7771 \fi
7772 \Hy@DisableOption{hyperfigures}

```

## 43 hyperindex entries

Internal command names are prefixed with \HyInd@.

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

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

```

7773 \ifHy@hyperindex
7774 \def\HyInd@ParenLeft{({}%
7775 \def\HyInd@ParenRight{)}}%

```

```

7776 \def\hyperindexformat#1#2{%
7777   \let\HyOrg@hyperpage\hyperpage
7778   \let\hyperpage\@firstofone
7779   #1{\HyOrg@hyperpage{#2}}}%
7780   \let\hyperpage\HyOrg@hyperpage
7781 }%
7782 \Hy@nextfalse
7783 \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
7784 \@ifpackageloaded{index}{\Hy@nexttrue}{}%
7785 \@ifpackageloaded{amsmidx}{\Hy@nexttrue}{}%
7786 \begingroup
7787   \lccode'\|=\expandafter'\HyInd@EncapChar\relax
7788   \lccode'\|/\|=\relax
7789 \lowercase{\endgroup
7790 \ifHy@next
7791   \let\HyInd@org@wrindex\@wrindex
7792   \def\@wrindex#1#2{\HyInd@@wrindex{#1}#2||\}%
7793   \def\HyInd@@wrindex#1#2|#3|#4\{\%
7794     \ifx\|#3\%
7795       \HyInd@org@wrindex{#1}{#2|hyperpage}%
7796     \else
7797       \HyInd@@@wrindex{#1}{#2}#3\%
7798     \fi
7799   }%
7800   \def\HyInd@@@wrindex#1#2#3#4\{\%
7801   \def\Hy@temp@A{#3}%
7802   \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
7803     \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
7804     \relax
7805     \HyInd@org@wrindex{#1}{%
7806       #2|hyperindexformat{/#3#4}%
7807     }%
7808   \else
7809     \ifx\|#4\%
7810       \ifx\Hy@temp@A\HyInd@ParenRight
7811         \HyInd@org@wrindex{#1}{#2|#3}%
7812       \else
7813         \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
7814       \fi
7815     \else
7816       \HyInd@org@wrindex{#1}{%
7817         #2|#3hyperindexformat{/#4}%
7818       }%
7819     \fi
7820   \fi
7821 }%
7822 \else
7823   \def\@wrindex#1{\@@wrindex#1||\}%
7824   \def\@@wrindex#1|#2|#3\{\%
7825   \if@files
7826     \ifx\|#2\%
7827       \protected@write\@indexfile{}{%
7828         \string\indexentry{#1|hyperpage}{\thepage}%
7829       }%
7830     \else
7831       \HyInd@@@wrindex{#1}#2\%
7832     \fi

```

```

7833 \fi
7834 \endgroup
7835 \@esphack
7836 }%
7837 \def\HyInd@@@wrindex#1#2#3\{\{%
7838 \def\Hy@temp@A{#2}%
7839 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
7840 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
7841 \relax
7842 \protected@write\@indexfile{\}%
7843 \string\indexentry{%
7844 #1|hyperindexformat{/#2#3}%
7845 }\{thepage}%
7846 }%
7847 \else
7848 \ifx\#3\%
7849 \ifx\Hy@temp@A\HyInd@ParenRight
7850 \protected@write\@indexfile{\}%
7851 \string\indexentry{#1|#2}\{thepage}%
7852 }%
7853 \else
7854 \protected@write\@indexfile{\}%
7855 \string\indexentry{#1|#2hyperpage}\{thepage}%
7856 }%
7857 \fi
7858 \else
7859 \protected@write\@indexfile{\}%
7860 \string\indexentry{%
7861 #1|#2hyperindexformat{/#3}%
7862 }\{thepage}%
7863 }%
7864 \fi
7865 \fi
7866 }%
7867 \fi
7868 }%
7869 \fi
7870 \Hy@DisableOption{hyperindex}
7871 \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.

```

7872 \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.

```

7873 \def\hyperpage#1{%
7874 \HyInd@hyperpage#1\nohyperpage{\}\@nil
7875 }
7876 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{%
7877 \HyInd@@@hyperpage{#1}%
7878 #2%
7879 \def\Hy@temp{#3}%
7880 \ifx\Hy@temp\@empty
7881 \else
7882 \Hy@ReturnAfterFi{%
7883 \HyInd@hyperpage#3\@nil

```

```

7884 }%
7885 \fi
7886 }
7887 \def\HyInd@@hyperpage#1{\@hyperpage#1---\}
7888 \def\@hyperpage#1--#2--#3\{%
7889 \ifx\#2\%
7890 \@commahyperpage{#1}%
7891 \else
7892 \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
7893 \fi
7894 }
7895 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
7896 \def\@commahyperpage#1, #2,#3\{%
7897 \ifx\#2\%
7898 \HyInd@pagelink{#1}%
7899 \else
7900 \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
7901 \fi
7902 }

```

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

```

7903 \def\HyInd@pagelink#1{%
7904 \begingroup
7905 \toks@={}%
7906 \HyInd@removespaces#1 \@nil
7907 \endgroup
7908 }
7909 \def\HyInd@removespaces#1 #2\@nil{%
7910 \toks@=\expandafter{\the\toks@#1}%
7911 \ifx\#2\%
7912 \edef\x{\the\toks@}%
7913 \ifx\x\@empty
7914 \else
7915 \hyperlink{page.\the\toks@}{\the\toks@}%
7916 \fi
7917 \else
7918 \Hy@ReturnAfterFi{%
7919 \HyInd@removespaces#2\@nil
7920 }%
7921 \fi
7922 }

```

## 44 Compatibility with foiltex

```

7923 \@ifclassloaded{foils}{%
7924 \providecommand*\ext@table{lot}%
7925 \providecommand*\ext@figure{lof}%
7926 }{}

```

## 45 Compatibility with seminar slide package

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

```

7927 \@ifclassloaded{seminar}{%
7928 \Hy@seminarslides true\newcommand\theHslide{\arabic{slide}}%

```

```

7929 }{%
7930   \Hy@seminarslidesfalse
7931 }
7932 \@ifpackageloaded{slidesec}{%
7933   \newcommand\theHslidesection {\arabic{slidesection}}%
7934   \newcommand\theHslidesubsection{%
7935     \theHslidesection.\arabic{slidesubsection}%
7936   }%
7937   \def\slide@heading[#1]#2{%
7938     \H@refstepcounter{slidesection}%
7939     \@addtoreset{slidesubsection}{slidesection}%
7940     \addtocontents{los}{%
7941       \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
7942       {\@SCTR}{\slideheading.\theslide\section}%
7943     }%
7944     \def\Hy@tempa{#2}%
7945     \ifx\Hy@tempa\@empty
7946     \else
7947       {%
7948         \edef\@currentlabel{%
7949           \csname p@slidesection\endcsname\theslide\section
7950         }%
7951         \makeslideheading{#2}%
7952       }%
7953     \fi
7954     \gdef\theslideheading{#1}%
7955     \gdef\theslidesubheading{}%
7956     \ifHy@bookmarksnumbered
7957       \def\Hy@slidetitle{\theslide\section\space #1}%
7958     \else
7959       \def\Hy@slidetitle{#1}%
7960     \fi
7961     \ifHy@hypertexnames
7962       \ifHy@naturalnames
7963         \hyper@@anchor{slideheading.\theslide\section}{\relax}%
7964         \Hy@writebookmark
7965           {\theslide\section}%
7966           {\Hy@slidetitle}%
7967           {slideheading.\theslide\section}%
7968           {1}%
7969           {toc}%
7970       \else
7971         \hyper@@anchor{slideheading.\theHslidesection}{\relax}%
7972         \Hy@writebookmark
7973           {\theslide\section}%
7974           {\Hy@slidetitle}%
7975           {slideheading.\theHslidesection}%
7976           {1}%
7977           {toc}%
7978       \fi
7979     \else
7980       \Hy@GlobalStepCount\Hy@linkcounter
7981       \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
7982       \Hy@writebookmark
7983         {\theslide\section}%
7984         {\Hy@slidetitle}%
7985         {slideheading.\the\Hy@linkcounter}%

```

```

7986     {1}%
7987     {toc}%
7988   \fi
7989 }%
7990 \def\slide@subheading[#1]#2{%
7991   \H@refstepcounter{slidesubsection}%
7992   \addtocontents{los}{%
7993     \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
7994     {\@SCTR}{slideheading.\theslidesubsection}%
7995   }%
7996   \def\Hy@tempa{#2}%
7997   \ifx\Hy@tempa\@empty
7998   \else
7999     {%
8000       \edef\@currentlabel{%
8001         \csname p@slidesubsection\endcsname\theslidesubsection
8002       }%
8003       \makeslidesubheading{#2}%
8004     }%
8005   \fi
8006   \gdef\theslidesubheading{#1}%
8007   \ifHy@bookmarksnumbered
8008     \def\Hy@slidetitle{\theslidesubsection\space #1}%
8009   \else
8010     \def\Hy@slidetitle{#1}%
8011   \fi
8012   \ifHy@hypertextnames
8013     \ifHy@naturalnames
8014       \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
8015       \Hy@writebookmark
8016         {\theslidesubsection}%
8017         {\Hy@slidetitle}%
8018         {slideheading.\theslidesubsection}%
8019         {2}%
8020         {toc}%
8021     \else
8022       \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
8023       \Hy@writebookmark
8024         {\theslidesubsection}%
8025         {\Hy@slidetitle}%
8026         {slideheading.\theHslidesubsection}%
8027         {2}%
8028         {toc}%
8029     \fi
8030   \else
8031     \Hy@GlobalStepCount\Hy@linkcounter
8032     \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
8033     \Hy@writebookmark
8034       {\theslidesubsection}%
8035       {\Hy@slidetitle}%
8036       {slideheading.\the\Hy@linkcounter}%
8037       {1}%
8038       {toc}%
8039   \fi
8040 }%
8041 \providecommand*{\listslidenam}{List of Slides}%
8042 \def\listofslides{%

```

```

8043 \section*{%
8044 \listslidenam
8045 \@mkboth{%
8046 \expandafter\MakeUppercase\listslidenam
8047 }{%
8048 \expandafter\MakeUppercase\listslidenam
8049 }%
8050 }%
8051 \def\l@slide##1##2##3##4{%
8052 \slide@undottedcline{%
8053 \slidenumberline{##3}{\hyperlink{##4}{##2}}}%
8054 }{%
8055 }%
8056 \let\l@subslide\l@slide
8057 \@startlos
8058 }%
8059 \def\slide@contents{%
8060 \def\l@slide##1##2##3##4{%
8061 \slide@ccline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
8062 }%
8063 \let\l@subslide\@gobblefour
8064 \@startlos
8065 }%
8066 \def\Slide@contents{%
8067 \def\l@slide##1##2##3##4{%
8068 \ifcase\lslide@flag
8069 \message{##1 ** \the\c@slidesection}%
8070 \ifnum##1>\c@slidesection
8071 \def\lslide@flag{1}%
8072 {%
8073 \large
8074 \slide@ccline{%
8075 \slidenumberline{$\Rightarrow\bullet$}%
8076 {\hyperlink{##4}{##2}}}%
8077 }{##3}%
8078 }%
8079 \else
8080 {%
8081 \large
8082 \slide@ccline{%
8083 \slidenumberline{$\surd\;\bullet$}%
8084 {\hyperlink{##4}{##2}}}%
8085 }{##3}%
8086 }%
8087 \fi
8088 \or
8089 \def\lslide@flag{2}%
8090 {%
8091 \large
8092 \slide@ccline{%
8093 \slidenumberline{$\bullet$}%
8094 {\hyperlink{##4}{##2}}}%
8095 }{##3}%
8096 }%
8097 \or
8098 {%
8099 \large

```

```

8100      \slide@cline{%
8101          \slidenumberline{${\bullet}$}%
8102          {\hyperlink{##4}{##2}}}%
8103      }{##3}%
8104  }%
8105  \fi
8106 }%
8107 \def\l@subslide##1##2##3##4{%
8108     \ifnum\lslide@flag=1 %
8109         \@undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}}%
8110     \fi
8111 }%
8112 \def\lslide@flag{0}%
8113 \@startlos
8114 }%
8115 }{}

```

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.)

```

8116 \ifHy@texht
8117   \expandafter\endinput
8118 \fi
8119 \let\real@setref\@setref
8120 \def\@setref#1#2#3{% csname, extract group, refname
8121   \ifx#1\relax
8122     \protect\G@refundefinedtrue
8123     \nfss@text{\reset@font\bfseries ??}%
8124     \@latex@warning{%
8125       Reference ‘#3’ on page \thepage \space undefined%
8126     }%
8127   \else
8128     \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
8129   \fi
8130 }

```

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

```

8131 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
8132   \begingroup
8133   \toks0={\hyper@@link{#5}{#4}}%
8134   \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
8135   \edef\x{\endgroup
8136     \the\toks0 {\the\toks1 }%
8137   }%
8138   \x
8139 }
8140 \def\@pagesetref#1#2#3{% csname, extract macro, ref
8141   \ifx#1\relax
8142     \protect\G@refundefinedtrue
8143     \nfss@text{\reset@font\bfseries ??}%
8144     \@latex@warning{%
8145       Reference ‘#3’ on page \thepage \space undefined%
8146     }%
8147   \else
8148     \protect\hyper@@link
8149     {\expandafter\@fifthoffive#1}%
8150     {page.\expandafter\@secondoffive#1}%

```



```

8151     {\expandafter\@secondoffive#1}%
8152   \fi
8153 }

8154 </package>
8155 <*check>
8156 \checklatex
8157 \checkcommand\def\@setref#1#2#3{%
8158   \ifx#1\relax
8159     \protect\G@refundefinedtrue
8160     \nfss@text{\reset@font\bfseries ??}%
8161     \@latex@warning{%
8162       Reference '#3' on page \thepage\space undefined%
8163     }%
8164   \else
8165     \expandafter#2#1\null
8166   \fi
8167 }
8168 </check>
8169 <*package>

```

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

```

8170 \def\HyRef@StarSetRef#1{%
8171   \begingroup
8172   \Hy@safe@activetrue
8173   \edef\x{#1}%
8174   \@onelevel@sanitize\x
8175   \edef\x{\endgroup
8176     \noexpand\HyRef@@StarSetRef
8177     \expandafter\noexpand\csname r@\x\endcsname{\x}%
8178   }%
8179   \x
8180 }
8181 \def\HyRef@@StarSetRef#1#2#3{%
8182   \ifx#1\@undefined
8183     \let#1\relax
8184   \fi
8185   \real@setref#1#3{#2}%
8186 }
8187 \def\@refstar#1{%
8188   \HyRef@StarSetRef{#1}\@firstoffive
8189 }
8190 \def\@pagerefstar#1{%
8191   \HyRef@StarSetRef{#1}\@secondoffive
8192 }
8193 \def\@namerefstar#1{%
8194   \HyRef@StarSetRef{#1}\@thirdoffive
8195 }
8196 \Hy@AtBeginDocument{%
8197   \@ifpackageloaded{varioref}{%
8198     \def\@Refstar#1{%
8199       \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
8200     }%
8201     \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
8202       \MakeUppercase#1%
8203     }%
8204     \DeclareRobustCommand*\{ \Ref }{%

```

```

8205 \@ifstar\@Refstar\HyRef@Ref
8206 }%
8207 \def\HyRef@Ref#1{%
8208 \hyperref[#1]{\Ref*{#1}}%
8209 }%
8210 \def\vr@f#1{%
8211 \leavevmode\unskip\vref@space
8212 \hyperref[#1]{%
8213 \Ref*{#1}%
8214 \let\vref@space\nobreakspace
8215 \@vpageref\unskip}{#1}%
8216 }%
8217 }%
8218 \def\vr@f#1{%
8219 \leavevmode\unskip\vref@space
8220 \begingroup
8221 \let\T@pageref\@pagerefstar
8222 \hyperref[#1]{%
8223 \ref*{#1}%
8224 \vpageref\unskip}{#1}%
8225 }%
8226 \endgroup
8227 }%
8228 }{}%
8229 }
8230 \DeclareRobustCommand*\autopageref{%
8231 \@ifstar{%
8232 \HyRef@autopagerefname\pageref*%
8233 }\HyRef@autopageref
8234 }
8235 \def\HyRef@autopageref#1{%
8236 \hyperref[#1]{\HyRef@autopagerefname\pageref*{#1}}%
8237 }
8238 \def\HyRef@autopagerefname{%
8239 \ltx@ifundefined{pageautorefname}{%
8240 \ltx@ifundefined{pagename}{%
8241 \Hy@Warning{No autoref name for 'page'}%
8242 }{%
8243 \pagename\nobreakspace
8244 }%
8245 }{}%
8246 \pageautorefname\nobreakspace
8247 }%
8248 }
8249 \DeclareRobustCommand*\autoref{%
8250 \@ifstar{\HyRef@autoref@gobbletwo}{\HyRef@autoref\hyper@@link}%
8251 }
8252 \def\HyRef@autoref#1#2{%
8253 \begingroup
8254 \Hy@safe@activetrue
8255 \expandafter\HyRef@autosetref\csize r@#2\endcsname{#2}{#1}%
8256 \endgroup
8257 }
8258 \def\HyRef@autosetref#1#2#3{% link command, csize, refname
8259 \HyRef@ShowKeysRef{#2}%
8260 \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
8261 \edef\HyRef@thisref{%

```

```

8262 \expandafter\@fourthoffive#1\@empty\@empty\@empty
8263 }%
8264 \expandafter\HyRef@testreftype\HyRef@thisref.\.%
8265 \Hy@safe@activesfalse
8266 #3{%
8267 \expandafter\@fifthoffive#1\@empty\@empty\@empty
8268 }{%
8269 \expandafter\@fourthoffive#1\@empty\@empty\@empty
8270 }{%
8271 \HyRef@currentHtag
8272 \expandafter\@firstoffive#1\@empty\@empty\@empty
8273 \null
8274 }%
8275 \else
8276 \protect\G@refundefinedtrue
8277 \nfss@text{\reset@font\bfseries ??}%
8278 \@latex@warning{%
8279 Reference '#2' on page \thepage\space undefined%
8280 }%
8281 \fi
8282 }
8283 \def\HyRef@testreftype#1.#2\.{%
8284 \ltx@ifundefined{#1autorefname}{%
8285 \ltx@ifundefined{#1name}{%
8286 \HyRef@StripStar#1\*\@nil{#1}%
8287 \ltx@ifundefined{\HyRef@name autorefname}{%
8288 \ltx@ifundefined{\HyRef@name name}{%
8289 \def\HyRef@currentHtag{%
8290 \Hy@Warning{No autoref name for '#1'}%
8291 }{%
8292 \edef\HyRef@currentHtag{%
8293 \expandafter\noexpand\csname\HyRef@name name\endcsname
8294 \noexpand~%
8295 }%
8296 }%
8297 }{%
8298 \edef\HyRef@currentHtag{%
8299 \expandafter\noexpand
8300 \csname\HyRef@name autorefname\endcsname
8301 \noexpand~%
8302 }%
8303 }%
8304 }{%
8305 \edef\HyRef@currentHtag{%
8306 \expandafter\noexpand\csname#1name\endcsname
8307 \noexpand~%
8308 }%
8309 }%
8310 }{%
8311 \edef\HyRef@currentHtag{%
8312 \expandafter\noexpand\csname#1autorefname\endcsname
8313 \noexpand~%
8314 }%
8315 }%
8316 }
8317 \def\HyRef@StripStar#1*\#2\@nil#3{%
8318 \def\HyRef@name{#2}%

```

```

8319 \ifx\HyRef@name\HyRef@CaseStar
8320 \def\HyRef@name{#1}%
8321 \else
8322 \def\HyRef@name{#3}%
8323 \fi
8324 }
8325 \def\HyRef@CaseStar{*\\}
8326 \def\HyRef@currentHtag{}

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

8327 \let\HyRef@ShowKeysRef\@gobble
8328 \def\HyRef@ShowKeysInit{%
8329 \begingroup\expandafter\expandafter\expandafter\endgroup
8330 \expandafter\ifx\csname SK@@label\endcsname\relax
8331 \else
8332 \ifx\SK@ref\@empty
8333 \else
8334 \def\HyRef@ShowKeysRef{%
8335 \SK@\SK@\@ref
8336 }%
8337 \fi
8338 \fi
8339 }
8340 \@ifpackageloaded{showkeys}{%
8341 \HyRef@ShowKeysInit
8342 }{%
8343 \Hy@AtBeginDocument{%
8344 \@ifpackageloaded{showkeys}{%
8345 \HyRef@ShowKeysInit
8346 }{}%
8347 }%
8348 }

```

Defaults for the names that \autoref uses.

```

8349 \providecommand*\AMSautorefname{\equationautorefname}
8350 \providecommand*\Hfootnoteautorefname{\footnoteautorefname}
8351 \providecommand*\Itemautorefname{\itemautorefname}
8352 \providecommand*\itemautorefname{item}
8353 \providecommand*\equationautorefname{Equation}
8354 \providecommand*\footnoteautorefname{footnote}
8355 \providecommand*\itemautorefname{item}
8356 \providecommand*\figureautorefname{Figure}
8357 \providecommand*\tableautorefname{Table}
8358 \providecommand*\partautorefname{Part}
8359 \providecommand*\appendixautorefname{Appendix}
8360 \providecommand*\chapterautorefname{chapter}
8361 \providecommand*\sectionautorefname{section}
8362 \providecommand*\subsectionautorefname{subsection}
8363 \providecommand*\subsubsectionautorefname{subsubsection}
8364 \providecommand*\paragraphautorefname{paragraph}
8365 \providecommand*\subparagraphautorefname{subparagraph}
8366 \providecommand*\FancyVerbLineautorefname{line}
8367 \providecommand*\theoremautorefname{Theorem}
8368 \providecommand*\pageautorefname{page}
8369 \</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`.

```
8370 (*pdfTEX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo)
8371 \begingroup\expandafter\expandafter\expandafter\endgroup
8372 \expandafter\ifx\csname pdfTEXescapestring\endcsname\relax
8373 \begingroup
8374 \catcode'\|=0 %
8375 \@makeother\|%
8376 |@firstofone{|endgroup
8377 |def|Hy@pstringdef#1#2{%
8378 |begingroup
8379 |edef~{|string~}%
8380 |xdef|Hy@gtemp{#2}%
8381 |endgroup
8382 |let#1|Hy@gtemp
8383 |@onelevel@sanitize#1%
8384 |edef#1{|expandafter|Hy@ExchangeBackslash#1\|@nil}%
8385 |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
8386 |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
8387 }%
8388 |def|Hy@ExchangeBackslash#1\#2|@nil{%
8389 #1%
8390 |ifx|\#2\|}%
8391 |else
8392 \|%
8393 |Hy@ReturnAfterFi{%
8394 |Hy@ExchangeBackslash#2|@nil
8395 }%
8396 |fi
8397 }%
8398 }%
8399 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
8400 #1%
8401 \ifx\#2\|}%
8402 \else
8403 \@backslashchar(%
8404 \Hy@ReturnAfterFi{%
8405 \Hy@ExchangeLeftParenthesis#2\@nil
8406 }%
8407 \fi
8408 }%
8409 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
8410 #1%
8411 \ifx\#2\|}%
8412 \else
8413 \@backslashchar)%
8414 \Hy@ReturnAfterFi{%
8415 \Hy@ExchangeRightParenthesis#2\@nil
```

```

8416 }%
8417 \fi
8418 }%
8419 \else
8420 \def\Hy@pstringdef#1#2{%
8421 \begingroup
8422 \edef~{\string~}%
8423 \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
8424 \endgroup
8425 \let#1\Hy@gtemp
8426 }%
8427 \fi
8428 </pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>

```

## 46.2 pdfTeX

```

8429 <*pdfTeX>
8430 \providecommand*{\XR@ext}{pdf}
8431 \Hy@setbreaklinks{true}
8432 \def\HyPat@ObjRef{%
8433 [0-9]*[1-9][0-9]* 0 R%
8434 }

```

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

Set PDF version if requested by option pdfversion.

- pdfT<sub>E</sub>X 1.10a, 2003-01-16: \pdfoptionpdfminorversion
- pdfT<sub>E</sub>X 1.30, 2005-08-081: \pdfminorversion

```

8435 \let\Hy@pdfminorversion\relax
8436 \begingroup\expandafter\expandafter\expandafter\endgroup
8437 \expandafter\ifx\csname pdfminorversion\endcsname\relax
8438 \begingroup\expandafter\expandafter\expandafter\endgroup
8439 \expandafter\ifx\csname pdfoptionpdfminorversion\endcsname\relax
8440 \else
8441 \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
8442 \fi
8443 \else
8444 \def\Hy@pdfminorversion{\pdfminorversion}%
8445 \fi
8446 \@ifundefined{Hy@pdfminorversion}{%
8447 \PackageInfo{hyperref}{%
8448 PDF version is not set, because pdfTeX is too old (<1.10a)%
8449 }%
8450 }{%
8451 \ifHy@ocgcolorlinks
8452 \ifnum\Hy@pdfminorversion<5 %
8453 \kvsetkeys{Hyp}{pdfversion=1.5}%
8454 \fi
8455 \fi
8456 \ifHy@setpdfversion
8457 \ifnum\Hy@pdfminorversion=\Hy@pdfversion\relax
8458 \else
8459 \Hy@pdfminorversion=\Hy@pdfversion\relax
8460 \fi
8461 \PackageInfo{hyperref}{%

```

```

8462 \expandafter\string\Hy@pdfminorversion
8463 :=\number\Hy@pdfversion\space
8464 }%
8465 \fi
8466 \edef\Hy@pdfversion{\number\Hy@pdfminorversion}%
8467 }
8468 \Hy@DisableOption{pdfversion}%

8469 \ifHy@ocgcolorlinks
8470 \pdf@ifdraftmode{}\{%
8471 \immediate\pdfobj{%
8472 <<%
8473 /Type/OCG%
8474 /Name(View)%
8475 /Usage<<%
8476 /Print<<%
8477 /PrintState/OFF%
8478 >>%
8479 /View<<%
8480 /ViewState/ON%
8481 >>%
8482 >>%
8483 >>%
8484 }%
8485 \edef\OBJ@OCG@view{\the\pdflastobj\space 0 R}%
8486 \immediate\pdfobj{%
8487 <<%
8488 /Type/OCG%
8489 /Name(Print)%
8490 /Usage<<%
8491 /Print<<%
8492 /PrintState/ON%
8493 >>%
8494 /View<<%
8495 /ViewState/OFF%
8496 >>%
8497 >>%
8498 >>%
8499 }%
8500 \edef\OBJ@OCG@print{\the\pdflastobj\space 0 R}%
8501 \immediate\pdfobj{%
8502 [%
8503 \OBJ@OCG@view\space\OBJ@OCG@print
8504 ]%
8505 }%
8506 \edef\OBJ@OCGs{\the\pdflastobj\space 0 R}%
8507 \pdfcatalog{%
8508 /OCProperties<<%
8509 /OCGs \OBJ@OCGs
8510 /D<<%
8511 /OFF[\OBJ@OCG@print]%
8512 /AS[%
8513 <<%
8514 /Event/View%
8515 /OCGs \OBJ@OCGs
8516 /Category[/View]%
8517 >>%
8518 <<%

```

```

8519         /Event/Print%
8520         /OCGs \OBJ@OCGs
8521         /Category[/Print]%
8522     >>%
8523     <<%
8524         /Event/Export%
8525         /OCGs \OBJ@OCGs
8526         /Category[/Print]%
8527     >>%
8528     ]%
8529     >>%
8530     >>%
8531     }%
8532     \beginngroup
8533     \edef\x{\endgroup
8534     \pdfpageresources{%
8535         /Properties<<%
8536         /OCView \OBJ@OCG@view
8537         /OCPrint \OBJ@OCG@print
8538     >>%
8539     }%
8540     }%
8541     \x
8542     }%
8543     \Hy@AtBeginDocument{%
8544     \def\Hy@colorlink#1{%
8545     \beginngroup
8546     \ifHy@ocgcolorlinks
8547     \def\Hy@ocgcolor{#1}%
8548     \setbox0=\hbox\bgroup\color@beginngroup
8549     \else
8550     \HyColor@UseColor#1%
8551     \fi
8552     }%
8553     \def\Hy@endcolorlink{%
8554     \ifHy@ocgcolorlinks
8555     \color@endgroup\egroup
8556     \mbox{%
8557     \pdfliteral page{/OC/OCPrint BDC}%
8558     \rlap{\copy0}%
8559     \pdfliteral page{EMC/OC/OCView BDC}%
8560     \beginngroup
8561     \expandafter\HyColor@UseColor\Hy@ocgcolor
8562     \box0 %
8563     \endgroup
8564     \pdfliteral page{EMC}%
8565     }%
8566     \fi
8567     \endgroup
8568     }%
8569     }%
8570     \else
8571     \Hy@DisableOption{ocgcolorlinks}%
8572     \fi

```

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

```

8573 \def\setpdfinkmargin#1{\pdfinkmargin#1}
8574 \ifx\pdfstartlink\@undefined% less than version 14

```



```

8575 \let\pdfstartlink\pdfannotlink
8576 \let\pdfinkmargin\@tempdima
8577 \let\pdfxform\pdfform
8578 \let\pdflastxform\pdflastform
8579 \let\pdfrefxform\pdfrefform
8580 \else
8581 \pdfinkmargin1pt %
8582 \fi

```

First set up the default linking

```
8583 \providecommand*\@pdfview{XYZ}
```

First define the anchors:

```

8584 \Hy@WrapperDef\new@pdfink#1{%
8585 \ifhmode
8586 \@savs\spacefactor
8587 \fi
8588 \Hy@SaveLastskip
8589 \Hy@VerboseAnchor{#1}%
8590 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
8591 \Hy@DestName\Hy@pstringDest\@pdfview
8592 \Hy@RestoreLastskip
8593 \ifhmode
8594 \spacefactor\@savs
8595 \fi
8596 }
8597 \let\pdf@endanchor\@empty

```

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

```

8598 \def\Hy@DestName#1#2{%
8599 \pdfdest name{#1}#2\relax
8600 }

```

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.

```

8601 \providecommand*\@pdfborder{0 0 1}
8602 \providecommand*\@pdfborderstyle{}
8603 \def\Hy@undefinedname{UNDEFINED}
8604 \def\find@pdfink#1#2{%
8605 \leavevmode
8606 \protected@edef\Hy@testname{#2}%
8607 \ifx\Hy@testname\@empty
8608 \Hy@Warning{%
8609 Empty destination name,\MessageBreak
8610 using '\Hy@undefinedname'%
8611 }%
8612 \let\Hy@testname\Hy@undefinedname
8613 \else
8614 \Hy@pstringdef\Hy@testname{%
8615 \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
8616 }%
8617 \fi
8618 \Hy@StartlinkName{%
8619 \ifHy@pdfa /F 4\fi
8620 \Hy@setpdfborder

```

```

8621 \ifx\@pdfhighlight\@empty
8622 \else
8623 /H\@pdfhighlight
8624 \fi
8625 \ifx\CurrentBorderColor\relax
8626 \else
8627 /C[\CurrentBorderColor]%
8628 \fi
8629 }\Hy@testname
8630 \expandafter\Hy@colorlink\csname @#1color\endcsname
8631 }
8632 \def\Hy@StartlinkName#1#2{%
8633 \pdfstartlink attr{#1}goto name{#2}\relax
8634 }
8635 \def\close@pdfink{%
8636 \Hy@endcolorlink
8637 \Hy@VerboseLinkStop
8638 \pdfendlink
8639 }
8640 \def\hyper@anchor#1{%
8641 \new@pdfink{#1}\anchor@spot\pdf@endanchor
8642 }
8643 \def\hyper@anchorstart#1{%
8644 \new@pdfink{#1}%
8645 \Hy@activeanchortrue
8646 }
8647 \def\hyper@anchorend{%
8648 \pdf@endanchor
8649 \Hy@activeanchorfalse
8650 }
8651 \def\hyper@linkstart#1#2{%
8652 \Hy@VerboseLinkStart{#1}{#2}%
8653 \ltx@ifundefined{@#1bordercolor}{%
8654 \let\CurrentBorderColor\relax
8655 }{%
8656 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8657 }%
8658 \find@pdfink{#1}{#2}%
8659 }
8660 \def\hyper@linkend{\close@pdfink}
8661 \def\hyper@link#1#2#3{%
8662 \Hy@VerboseLinkStart{#1}{#2}%
8663 \ltx@ifundefined{@#1bordercolor}{%
8664 \let\CurrentBorderColor\relax
8665 }{%
8666 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8667 }%
8668 \find@pdfink{#1}{#2}#3%
8669 \close@pdfink
8670 }
8671 \let\CurrentBorderColor\@linkbordercolor
8672 \def\hyper@linkurl#1#2{%
8673 \begingroup
8674 \Hy@pstringdef\Hy@pstringURI{#2}%
8675 \hyper@chars
8676 \leavevmode
8677 \pdfstartlink

```

```

8678 attr{%
8679   \Hy@setpdfborder
8680   \ifx\@pdfhighlight\@empty
8681   \else
8682     /H\@pdfhighlight
8683   \fi
8684   \ifx\@urlbordercolor\relax
8685   \else
8686     /C[\@urlbordercolor]%
8687   \fi
8688 }%
8689 user{%
8690   /Subtype/Link%
8691   \ifHy@pdfa /F 4\fi
8692   /A<<%
8693   /Type/Action%
8694   /S/URI%
8695   /URI(\Hy@pstringURI)%
8696   \ifHy@href@ismap
8697     /IsMap true%
8698   \fi
8699   \Hy@href@nextactionraw
8700   >>%
8701 }%
8702 \relax
8703 \Hy@colorlink\@urlcolor#1%
8704 \close@pdflink
8705 \endgroup
8706 }
8707 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
8708 \begingroup
8709   \def\Hy@pstringF{#2}%
8710   \Hy@CleanupFile\Hy@pstringF
8711   \Hy@pstringdef\Hy@pstringF\Hy@pstringF
8712   \Hy@pstringdef\Hy@pstringD{#3}%
8713   \Hy@MakeRemoteAction
8714   \leavevmode
8715   \pdfstartlink
8716   attr{%
8717     \Hy@setpdfborder
8718     \ifx\@pdfhighlight\@empty
8719     \else
8720       /H\@pdfhighlight
8721     \fi
8722     \ifx\@filebordercolor\relax
8723     \else
8724       /C[\@filebordercolor]%
8725     \fi
8726   }%
8727   user {%
8728     /Subtype/Link%
8729     \ifHy@pdfa /F 4\fi
8730     /A<<%
8731     /F(\Hy@pstringF)%
8732     /S/GoToR%
8733     \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}

8734      \ifx\#3\%
8735      /D[\Hy@href@page\@pdfremotestartview]%
8736      \else
8737      /D(\Hy@pstringD)%
8738      \fi
8739      \Hy@href@nextactionraw
8740      >>%
8741      }%
8742      \relax
8743      \Hy@colorlink\@filecolor#1%
8744      \close@pdflink
8745      \endgroup
8746 }
8747 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
8748 \begingroup
8749 \Hy@pstringdef\Hy@pstringF{#1}%
8750 \Hy@pstringdef\Hy@pstringP{#3}%
8751 \leavevmode
8752 \pdfstartlink
8753 attr{%
8754 \Hy@setpdfborder
8755 \ifx\@pdfhighlight\@empty
8756 \else
8757 /H\@pdfhighlight
8758 \fi
8759 \ifx\@runbordercolor\relax
8760 \else
8761 /C[\@runbordercolor]%
8762 \fi
8763 }%
8764 user {%
8765 /Subtype/Link%
8766 \ifHy@pdfa /F 4\fi
8767 /A<<%
8768 /F(\Hy@pstringF)%
8769 /S/Launch%
8770 \Hy@SetNewWindow
8771 \ifx\#3\%
8772 \else
8773 /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
8774 \fi
8775 \Hy@href@nextactionraw
8776 >>%
8777 }%
8778 \relax
8779 \Hy@colorlink\@runcolor#2%

```

```

8780 \close@pdflink
8781 \endgroup
8782 }

```

\@pdfproducer

```

8783 \ifx\@pdfproducer\relax
8784 \begingroup\expandafter\expandafter\expandafter\endgroup
8785 \expandafter\ifx\csname luatexversion\endcsname\relax
8786 \def\@pdfproducer{pdfTeX}%
8787 \ifx\eTeXversion\@undefined
8788 \else
8789 \ifx\eTeXversion\relax
8790 \else
8791 \ifnum\eTeXversion>0 %
8792 \def\@pdfproducer{pdfTeX}%
8793 \fi
8794 \fi
8795 \fi
8796 \ifx\pdfTeXversion\@undefined
8797 \else
8798 \ifnum\pdfTeXversion<100 %
8799 \edef\@pdfproducer{%
8800 \@pdfproducer
8801 \the\pdfTeXversion.\pdfTeXrevision
8802 }%
8803 \else
8804 \ifnum\pdfTeXversion<130 %
8805 \edef\@pdfproducer{%
8806 \@pdfproducer-%
8807 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
8808 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil
8809 \pdfTeXrevision
8810 }%
8811 \else
8812 \ifnum\pdfTeXversion<140 %
8813 \else
8814 \def\@pdfproducer{pdfTeX}%
8815 \fi
8816 \edef\@pdfproducer{%
8817 \@pdfproducer-%
8818 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
8819 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
8820 \pdfTeXrevision
8821 }%
8822 \fi
8823 \fi
8824 \fi
8825 \else
8826 \begingroup
8827 \count@=\luatexversion
8828 \divide\count@ by 100 %
8829 \edef\x{\the\count@}%
8830 \count@=-\x\relax
8831 \multiply\count@ by 100 %
8832 \advance\count@ by \luatexversion
8833 \edef\x{\endgroup
8834 \def\noexpand\@pdfproducer{%

```

```

8835      LuaTeX-\x.\the\count@.\luatexrevision
8836    }%
8837  }%
8838  \x
8839  \fi
8840  \fi

```

\PDF@SetupDox

```

8841 \def\PDF@SetupDoc{%
8842   \ifx\@pdfpagescrop\@empty
8843   \else
8844     \edef\process@me{%
8845       \pdfpagesattr={%
8846         /CropBox[\@pdfpagescrop]%
8847         \expandafter\ifx\expandafter\\the\pdfpagesattr\\%
8848         \else
8849           ^^J\the\pdfpagesattr
8850         \fi
8851       }%
8852     }%
8853     \process@me
8854   \fi
8855   \Hy@pstringdef\Hy@pstringB{\@baseurl}%
8856   \pdfcatalog{%
8857     /PageMode/\@pdfpagemode
8858     \ifx\@baseurl\@empty
8859     \else
8860       /URI<</Base(\Hy@pstringB)>>%
8861     \fi
8862   }%
8863   \ifx\@pdfstartpage\@empty
8864   \else
8865     \ifx\@pdfstartview\@empty
8866     \else
8867       openaction goto page\@pdfstartpage{\@pdfstartview}%
8868     \fi
8869   \fi
8870   \edef\Hy@temp{%
8871     \ifHy@toolbar\else /HideToolbar true\fi
8872     \ifHy@menubar\else /HideMenubar true\fi
8873     \ifHy>windowui\else /HideWindowUI true\fi
8874     \ifHy@fitwindow /FitWindow true\fi
8875     \ifHy@centerwindow /CenterWindow true\fi
8876     \ifHy@displaydoctitle /DisplayDocTitle true\fi
8877     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
8878     \Hy@UseNameKey{Direction}\@pdfdirection
8879     \Hy@UseNameKey{ViewArea}\@pdfviewarea
8880     \Hy@UseNameKey{ViewClip}\@pdfviewclip
8881     \Hy@UseNameKey{PrintArea}\@pdfprintarea
8882     \Hy@UseNameKey{PrintClip}\@pdfprintclip
8883     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8884     \Hy@UseNameKey{Duplex}\@pdfduplex
8885     \ifx\@pdfpicktraybypdfsize\@empty
8886     \else
8887       /PickTrayByPDFSize \@pdfpicktraybypdfsize
8888     \fi
8889     \ifx\@pdfprintpagerange\@empty

```

```

8890 \else
8891   /PrintPageRange[\@pdfprintpagerange]%
8892 \fi
8893 \ifx\@pdfnumcopies\@empty
8894 \else
8895   /NumCopies \@pdfnumcopies
8896 \fi
8897 }%
8898 \pdfcatalog{%
8899   \ifx\Hy@temp\@empty
8900 \else
8901   /ViewerPreferences<<\Hy@temp>>%
8902 \fi
8903 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
8904 \ifx\@pdflang\@empty
8905 \else
8906   /Lang(\@pdflang)%
8907 \fi
8908 }%
8909 }

```

#### \PDF@FinishDoc

```

8910 \def\PDF@FinishDoc{%
8911   \pdf@ifdraftmode{}{%
8912     \Hy@UseMaketitleInfos
8913     \HyInfo@GenerateAddons
8914     \pdfinfo{%
8915       /Author(\@pdfauthor)%
8916       /Title(\@pdftitle)%
8917       /Subject(\@pdfsubject)%
8918       /Creator(\@pdfcreator)%
8919       \ifx\@pdfcreationdate\@empty
8920       \else
8921         /CreationDate(\@pdfcreationdate)%
8922       \fi
8923       \ifx\@pdfmoddate\@empty
8924       \else
8925         /ModDate(\@pdfmoddate)%
8926       \fi
8927       \ifx\@pdfproducer\relax
8928       \else
8929         /Producer(\@pdfproducer)%
8930       \fi
8931       /Keywords(\@pdfkeywords)%
8932       \ifx\@pdftrapped\@empty
8933       \else
8934         /Trapped/\@pdftrapped
8935       \fi
8936       \HyInfo@Addons
8937     }%
8938   }%
8939   \Hy@DisableOption{pdfauthor}%
8940   \Hy@DisableOption{pdftitle}%
8941   \Hy@DisableOption{pdfsubject}%
8942   \Hy@DisableOption{pdfcreator}%
8943   \Hy@DisableOption{pdfcreationdate}%
8944   \Hy@DisableOption{pdfmoddate}%

```

```

8945 \Hy@DisableOption{pdfproducer}%
8946 \Hy@DisableOption{pdfkeywords}%
8947 \Hy@DisableOption{pdftrapped}%
8948 \Hy@DisableOption{pdfinfo}%
8949 }

```

`\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`.

```

8950 \def\hyper@pagetransition{%
8951 \ifx\@pdfpagetransition\relax
8952 \else
8953 \expandafter\Hy@RemoveTransPageAttr
8954 \the\pdfpageattr^^J/Trans{}}>>\END
8955 \ifx\@pdfpagetransition\@empty
8956 \else
8957 \edef\@processme{%
8958 \global\pdfpageattr{%
8959 \the\pdfpageattr
8960 ^^J/Trans << /S /\@pdfpagetransition\space >>%
8961 }%
8962 }%
8963 \@processme
8964 \fi
8965 \fi
8966 }

```

`\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.

```

8967 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
8968 \ifx\#2\%
8969 \global\pdfpageattr{#1}%
8970 \else
8971 \Hy@RemoveTransPageAttr#1#4\END
8972 \fi
8973 }

```

`\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`.

```

8974 \def\hyper@pageduration{%
8975 \ifx\@pdfpageduration\relax
8976 \else
8977 \expandafter
8978 \Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
8979 \ifx\@pdfpageduration\@empty
8980 \else
8981 \edef\@processme{%
8982 \global\pdfpageattr{%
8983 \the\pdfpageattr
8984 ^^J/Dur \@pdfpageduration\space
8985 }%
8986 }%
8987 \@processme
8988 \fi

```



```
8989 \fi
8990 }
```

`\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.

```
8991 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
8992 \ifx\#2\%
8993 \global\pdfpageattr{#1}%
8994 \else
8995 \Hy@RemoveDurPageAttr#1#4\END
8996 \fi
8997 }
```

`\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).

```
8998 \def\hyper@pagehidden{%
8999 \ifHy@useHidKey
9000 \expandafter
9001 \Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END
9002 \ifHy@pdfpagehidden
9003 \edef\@processme{%
9004 \global\pdfpageattr{%
9005 \the\pdfpageattr
9006 ^^J/Hid true % SPACE
9007 }%
9008 }%
9009 \@processme
9010 \fi
9011 \fi
9012 }
```

`\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.

```
9013 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
9014 \ifx\#2\%
9015 \global\pdfpageattr{#1}%
9016 \else
9017 \Hy@RemoveHidPageAttr#1#4\END
9018 \fi
9019 }

9020 \pdf@ifdraftmode{}{%
9021 \g@addto@macro\Hy@EveryPageHook{%
9022 \hyper@pagetransition
9023 \hyper@pageduration
9024 \hyper@pagehidden
9025 }%
9026 }
```

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

```
9027 </pdfTeX>
```

```

9028 <*pdftex | xetex>
9029 \Hy@AtBeginDocument{%
9030   \ifHy@setpagesize
9031     \expandafter\@firstofone
9032   \else
9033     \expandafter\@gobble
9034   \fi
9035   {%
9036     \ifclassloaded{seminar}{%
9037 <*pdftex>
9038   \setlength{\pdfhorigin}{1truein}%
9039   \setlength{\pdfvorigin}{1truein}%
9040 >/pdftex>
9041   \ifportrait
9042     \ifdim\paperwidth=\z@
9043   \else
9044     \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
9045   \fi
9046   \ifdim\paperheight=\z@
9047   \else
9048     \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
9049   \fi
9050   \else
9051     \ifdim\paperheight=\z@
9052   \else
9053     \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
9054   \fi
9055   \ifdim\paperwidth=\z@
9056   \else
9057     \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
9058   \fi
9059   \fi
9060 }{%
9061   \ltx@ifundefined{stockwidth}{%
9062     \ifdim\paperwidth>\z@
9063       \setlength{\pdfpagewidth}{\paperwidth}%
9064     \fi
9065     \ifdim\paperheight>\z@
9066       \setlength{\pdfpageheight}{\paperheight}%
9067     \fi
9068   }{%
9069     \ifdim\stockwidth>\z@
9070       \setlength{\pdfpagewidth}{\stockwidth}%
9071     \fi
9072     \ifdim\stockheight>\z@
9073       \setlength{\pdfpageheight}{\stockheight}%
9074     \fi
9075   }%
9076 }%
9077 }%
9078 \Hy@DisableOption{setpagesize}%
9079 }
9080 </pdftex | xetex>
9081 <*pdftex>
9082 \def\Acrobatmenu#1#2{%
9083   \Hy@Acrobatmenu{#1}{#2}{%
9084     \pdfstartlink

```

```

9085 attr{%
9086   \Hy@setpdfborder
9087   \ifx\@pdfhighlight\@empty
9088   \else
9089     /H\@pdfhighlight
9090   \fi
9091   \ifx\@menubordercolor\relax
9092   \else
9093     /C[\@menubordercolor]%
9094   \fi
9095 }%
9096 user{%
9097   /Subtype/Link%
9098   \ifHy@pdfa /F 4\fi
9099   /A<<%
9100     /S/Named%
9101     /N/#1%
9102     \Hy@href@nextactionraw
9103   >>%
9104 }%
9105 \relax
9106 \Hy@colorlink\@menucolor#2%
9107 \close@pdflink
9108 }%
9109 }

```

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

`\AtBeginShipoutFirst` adds an additional box layer around the first output page. This disturbs pdf<sub>T</sub>E<sub>X</sub>'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 pdf<sub>T</sub>E<sub>X</sub>—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`.

```

9110 \def\Hy@FixNotFirstPage{%
9111   \gdef\Hy@FixNotFirstPage{%
9112     \setbox\AtBeginShipoutBox=\hbox{%
9113       \copy\AtBeginShipoutBox
9114     }%
9115   }%
9116 }
9117 \AtBeginShipout{\Hy@FixNotFirstPage}
9118 \</pdfTeX>

```

### 46.3 hypertex

The Hyper<sub>T</sub>E<sub>X</sub> specification (this is borrowed from an article by Arthur Smith) says that conformant viewers/translators must recognize the following set of `\special` commands:

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

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

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

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

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

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

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

```
9119 \*hypertext
9120 \providecommand*\XR@ext}{dvi}
9121 \def\PDF@FinishDoc{}
9122 \def\PDF@SetupDoc{%
9123   \ifx\@baseurl\@empty
9124   \else
9125     \special{html:<base href="\@baseurl">}%
9126   \fi
9127 }
9128 \Hy@WrapperDef\hyper@anchor#1{%
9129   \Hy@SaveLastskip
9130   \Hy@VerboseAnchor{#1}%
9131   \begingroup
9132     \let\protect=\string
9133     \hyper@chars
9134     \special{html:<a name=%
9135       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9136   \endgroup
9137   \Hy@Activeanchortrue
9138   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9139   \special{html:</a>}%
9140   \Hy@Activeanchorfalse
9141   \Hy@RestoreLastskip
9142 }
9143 \Hy@WrapperDef\hyper@anchorstart#1{%
9144   \Hy@SaveLastskip
9145   \Hy@VerboseAnchor{#1}%
9146   \begingroup
9147     \hyper@chars
9148     \special{html:<a name=%
9149       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9150   \endgroup
9151   \Hy@Activeanchortrue
9152 }
9153 \def\hyper@anchorend{%
9154   \special{html:</a>}%
9155   \Hy@Activeanchorfalse
```

```

9156 \Hy@RestoreLastskip
9157 }
9158 \def\@urlltype{url}
9159 \def\hyper@linkstart#1#2{%
9160 \Hy@VerboseLinkStart{#1}{#2}%
9161 \expandafter\Hy@colorlink\csname @#1color\endcsname
9162 \def\Hy@tempa{#1}%
9163 \ifx\Hy@tempa\@urlltype
9164 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9165 \else
9166 \begingroup
9167 \hyper@chars
9168 \special{html:<a href=%
9169 \hyper@quote\#\Hy@DestNameFilter{#2}\hyper@quote>}%
9170 \endgroup
9171 \fi
9172 }
9173 \def\hyper@linkend{%
9174 \special{html:</a>}%
9175 \Hy@endcolorlink
9176 }
9177 \def\hyper@linkfile#1#2#3{%
9178 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\\else\#3\fi}%
9179 }
9180 \def\hyper@linkurl#1#2{%

```

If we want to raise up the final link `\special`, we need to get its height; ask me why L<sup>A</sup>T<sub>E</sub>X constructs make this totally foul up, and make us revert to basic T<sub>E</sub>X. I do not know.

```

9181 \leavevmode
9182 \ifHy@raiselinks
9183 \Hy@SaveSpaceFactor
9184 \Hy@SaveSavedSpaceFactor
9185 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9186 \Hy@RestoreSavedSpaceFactor
9187 \@linkdim\dp\@tempboxa
9188 \lower\@linkdim\hbox{%
9189 \hyper@chars
9190 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9191 }%
9192 \Hy@colorlink\@urlcolor
9193 \Hy@RestoreSpaceFactor
9194 #1%
9195 \Hy@SaveSpaceFactor
9196 \@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).

```

9197 \advance\@linkdim by -6.5\p@
9198 \raise\@linkdim\hbox{\special{html:</a>}}%
9199 \Hy@endcolorlink
9200 \Hy@RestoreSpaceFactor
9201 \else
9202 \begingroup
9203 \hyper@chars
9204 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9205 \Hy@colorlink\@urlcolor#1%
9206 \special{html:</a>}%

```

```

9207 \Hy@endcolorlink
9208 \endgroup
9209 \fi
9210 }

```

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

```

9211 \def\hyper@link#1#2#3{%
9212 \Hy@VerboseLinkStart{#1}{#2}%
9213 \hyper@linkurl{#3}{\# \HyperDestNameFilter{#2}}%
9214 }

9215 \def\hyper@image#1#2{%
9216 \begingroup
9217 \hyper@chars
9218 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
9219 \endgroup
9220 }
9221 \</hypertex>
9222 \<*dviwindo>

```

## 46.4 dviwindo

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

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

```

9223 \providecommand*{\XR@ext}{dvi}
9224 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
9225 \Hy@WrapperDef\hyper@anchor#1{%
9226 \Hy@SaveLastskip
9227 \Hy@VerboseAnchor{#1}%
9228 \begingroup
9229 \let\protect=\string
9230 \special{mark: #1}%
9231 \endgroup
9232 \Hy@activeanchortrue
9233 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9234 \Hy@activeanchorfalse
9235 \Hy@RestoreLastskip
9236 }
9237 \Hy@WrapperDef\hyper@anchorstart#1{%
9238 \Hy@SaveLastskip
9239 \Hy@VerboseAnchor{#1}%
9240 \special{mark: #1}%
9241 \Hy@activeanchortrue
9242 }
9243 \def\hyper@anchorend{%
9244 \Hy@activeanchorfalse
9245 \Hy@RestoreLastskip
9246 }
9247 \def\hyper@linkstart#1#2{%

```

```

9248 \Hy@VerboseLinkStart{#1}{#2}%
9249 \expandafter\Hy@colorlink\csname @#1color\endcsname
9250 \special{button: %
9251 10000000 %
9252 \number\baselineskip\space
9253 #2%
9254 }%
9255 }
9256 \def\hyper@linkend{%
9257 \Hy@endcolorlink
9258 }
9259 \def\hyper@link#1#2#3{%
9260 \Hy@VerboseLinkStart{#1}{#2}%
9261 \leavevmode
9262 \ifHy@raiselinks
9263 \Hy@SaveSpaceFactor
9264 \Hy@SaveSavedSpaceFactor
9265 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#3}%
9266 \Hy@RestoreSavedSpaceFactor
9267 \@linkdim\dp\@tempboxa
9268 \lower\@linkdim\hbox{%
9269 \special{button: %
9270 \number\wd\@tempboxa\space
9271 \number\ht\@tempboxa\space
9272 #2%
9273 }%
9274 \expandafter\Hy@colorlink\csname @#1color\endcsname
9275 \Hy@RestoreSpaceFactor
9276 #3%
9277 \Hy@SaveSpaceFactor
9278 \Hy@endcolorlink
9279 }%
9280 \@linkdim\ht\@tempboxa
9281 \advance\@linkdim by -6.5\p@
9282 \raise\@linkdim\hbox{}%
9283 \Hy@RestoreSpaceFactor
9284 \else
9285 \special{button: %
9286 \number\wd\@tempboxa\space
9287 \number\ht\@tempboxa\space
9288 #2%
9289 }%
9290 \expandafter\Hy@colorlink\csname @#1color\endcsname
9291 #3%
9292 \Hy@endcolorlink
9293 \fi
9294 }
9295 \def\hyper@linkurl#1#2{%
9296 \begingroup
9297 \hyper@chars
9298 \leavevmode
9299 \ifHy@raiselinks
9300 \Hy@SaveSpaceFactor
9301 \Hy@SaveSavedSpaceFactor
9302 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9303 \Hy@RestoreSavedSpaceFactor
9304 \@linkdim\dp\@tempboxa

```

```

9305 \lower\@linkdim\hbox{%
9306 \special{button: %
9307 \number\wd\@tempboxa\space
9308 \number\ht\@tempboxa\space
9309 launch: \wwwbrowser\space
9310 #2%
9311 }%
9312 \Hy@colorlink\@urlcolor
9313 \Hy@RestoreSpaceFactor
9314 #1%
9315 \Hy@SaveSpaceFactor
9316 \Hy@endcolorlink
9317 }%
9318 \@linkdim\ht\@tempboxa
9319 \advance\@linkdim by -6.5\p@
9320 \raise\@linkdim\hbox{}%
9321 \Hy@RestoreSpaceFactor
9322 \else
9323 \special{button: %
9324 \number\wd\@tempboxa\space
9325 \number\ht\@tempboxa\space
9326 launch: \wwwbrowser\space
9327 #2%
9328 }%
9329 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
9330 \fi
9331 \endgroup
9332 }
9333 \def\hyper@linkfile#1#2#3{%
9334 \begingroup
9335 \hyper@chars
9336 \leavevmode
9337 \ifHy@raiselinks
9338 \Hy@SaveSpaceFactor
9339 \Hy@SaveSavedSpaceFactor
9340 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9341 \Hy@RestoreSavedSpaceFactor
9342 \@linkdim\dp\@tempboxa
9343 \lower\@linkdim\hbox{%
9344 \special{button: %
9345 \number\wd\@tempboxa\space
9346 \number\ht\@tempboxa\space
9347 #3,%
9348 file: #2%
9349 }%
9350 \Hy@colorlink\@filecolor
9351 \Hy@RestoreSpaceFactor
9352 #1%
9353 \Hy@SaveSpaceFactor
9354 \Hy@endcolorlink
9355 }%
9356 \@linkdim\ht\@tempboxa
9357 \advance\@linkdim by -6.5\p@
9358 \raise\@linkdim\hbox{}%
9359 \Hy@RestoreSpaceFactor
9360 \else
9361 \special{button: %

```



```

9362      \number\wd\@tempboxa\space
9363      \number\ht\@tempboxa\space
9364      #3,%
9365      file: #2%
9366      }%
9367      \Hy@colorlink\@filecolor#1\Hy@endcolorlink
9368      \fi
9369 \endgroup
9370 }
9371 \ifx\@pdfproducer\relax
9372 \def\@pdfproducer{dviwindo + Distiller}%
9373 \fi
9374 \HyInfo@AddonUnsupportedtrue
9375 \def\PDF@FinishDoc{%
9376 \Hy@UseMaketitleInfos
9377 \HyInfo@TrappedUnsupported
9378 \special{PDF: Keywords \@pdfkeywords}%
9379 \special{PDF: Title \@pdftitle}%
9380 \special{PDF: Creator \@pdfcreator}%
9381 \ifx\@pdfcreationdate\@empty
9382 \else
9383 \special{PDF: CreationDate \@pdfcreationdate}%
9384 \fi
9385 \ifx\@pdfmoddate\@empty
9386 \else
9387 \special{PDF: ModDate \@pdfmoddate}%
9388 \fi
9389 \special{PDF: Author \@pdfauthor}%
9390 \ifx\@pdfproducer\relax
9391 \else
9392 \special{PDF: Producer \@pdfproducer}%
9393 \fi
9394 \special{PDF: Subject \@pdfsubject}%
9395 \Hy@DisableOption{pdfauthor}%
9396 \Hy@DisableOption{pdftitle}%
9397 \Hy@DisableOption{pdfsubject}%
9398 \Hy@DisableOption{pdfcreator}%
9399 \Hy@DisableOption{pdfcreationdate}%
9400 \Hy@DisableOption{pdfmoddate}%
9401 \Hy@DisableOption{pdfproducer}%
9402 \Hy@DisableOption{pdfkeywords}%
9403 \Hy@DisableOption{pdftrapped}%
9404 \Hy@DisableOption{pdfinfo}%
9405 }
9406 \def\PDF@SetupDoc{%
9407 \ifx\@baseurl\@empty
9408 \else
9409 \special{PDF: Base \@baseurl}%
9410 \fi
9411 \ifx\@pdfpagescrop\@empty\else
9412 \special{PDF: BBox \@pdfpagescrop}%
9413 \fi
9414 \def\Hy@temp{}%
9415 \ifx\@pdfstartpage\@empty
9416 \else
9417 \ifx\@pdfstartview\@empty
9418 \else

```

```

9419     \edef\Hy@temp{%
9420         ,Page=\@pdfstartpage
9421         ,View=\@pdfstartview
9422     }%
9423 \fi
9424 \fi
9425 \edef\Hy@temp{%
9426     \noexpand\pdfmark{%
9427         pdfmark=/DOCVIEW,%
9428         PageMode=/\@pdfpagemode
9429     }\Hy@temp
9430 }%
9431 }%
9432 \Hy@temp
9433 \ifx\@pdfpagescrop\@empty
9434 \else
9435     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9436 \fi
9437 \edef\Hy@temp{%
9438     \ifHy@toolbar\else /HideToolbar true\fi
9439     \ifHy@menubar\else /HideMenubar true\fi
9440     \ifHy>windowui\else /HideWindowUI true\fi
9441     \ifHy@fitwindow /FitWindow true\fi
9442     \ifHy@centerwindow /CenterWindow true\fi
9443     \ifHy@displaydoctitle /DisplayDocTitle true\fi
9444     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9445     \Hy@UseNameKey{Direction}\@pdfdirection
9446     \Hy@UseNameKey{ViewArea}\@pdfviewarea
9447     \Hy@UseNameKey{ViewClip}\@pdfviewclip
9448     \Hy@UseNameKey{PrintArea}\@pdfprintarea
9449     \Hy@UseNameKey{PrintClip}\@pdfprintclip
9450     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9451     \Hy@UseNameKey{Duplex}\@pdfduplex
9452     \ifx\@pdfpicktraybypdfsize\@empty
9453     \else
9454         /PickTrayByPDFSize \@pdfpicktraybypdfsize
9455     \fi
9456     \ifx\@pdfprintpagerange\@empty
9457     \else
9458         /PrintPageRange[\@pdfprintpagerange]%
9459     \fi
9460     \ifx\@pdfnumcopies\@empty
9461     \else
9462         /NumCopies \@pdfnumcopies
9463     \fi
9464 }%
9465 \pdfmark{pdfmark=/PUT,%
9466     Raw={%
9467         \string{Catalog}\string}<<%
9468         \ifx\Hy@temp\@empty
9469         \else
9470             /ViewerPreferences<<\Hy@temp>>%
9471         \fi
9472         \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9473         \ifx\@pdflang\@empty
9474         \else
9475             /Lang(\@pdflang)%

```

```

9476     \fi
9477     >>%
9478   }%
9479 }%
9480 }
9481 \</dviwindo>
9482 \<*dvipdfm | xetex>

```

## 46.5 dvipdfm/xetex dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

9483 \providecommand*{\XR@ext}{pdf}
9484 \Hy@setbreaklinks{true}
9485 \def\HyPat@ObjRef{%
9486   @[\ ]+%
9487 }
9488 \newsavebox{\pdfm@box}
9489 \def\@pdfm@mark#1{\special{pdf:#1}}
9490 \Hy@WrapperDef\@pdfm@dest#1{%
9491   \Hy@SaveLastskip
9492   \Hy@VerboseAnchor{#1}%
9493   \begingroup
9494     \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9495     \def\x{XYZ}%
9496     \ifx\x\@pdfview
9497       \def\x{XYZ @xpos @ypos null}%
9498     \else
9499       \def\x{FitH}%
9500       \ifx\x\@pdfview
9501         \def\x{FitH @ypos}%
9502       \else
9503         \def\x{FitBH}%
9504         \ifx\x\@pdfview
9505           \def\x{FitBH @ypos}%
9506         \else
9507           \def\x{FitV}%
9508           \ifx\x\@pdfview
9509             \def\x{FitV @xpos}%
9510           \else
9511             \def\x{FitBV}%
9512             \ifx\x\@pdfview
9513               \def\x{FitBV @xpos}%
9514             \else
9515               \def\x{Fit}%
9516               \ifx\x\@pdfview
9517                 \let\x\@pdfview
9518               \else
9519                 \def\x{FitB}%
9520                 \ifx\x\@pdfview
9521                   \let\x\@pdfview
9522                 \else
9523                   \def\x{FitR}%
9524                   \ifx\x\@pdfview
9525                     \Hy@Warning{'pdfview=FitR' is not supported}%
9526                     \def\x{XYZ @xpos @ypos null}%
9527                   \else
9528                     \@onelevel@sanitize\@pdfview

```

```

9529         \Hy@Warning{%
9530             Unknown value '\@pdfview' for pdfview%
9531         }%
9532         \def\x{XYZ @xpos @ypos null}%
9533     \fi
9534 \fi
9535 \fi
9536 \fi
9537 \fi
9538 \fi
9539 \fi
9540 \fi
9541 \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
9542 \endgroup
9543 \Hy@RestoreLastskip
9544 }
9545 \providecommand*\@pdfview{XYZ}
9546 \providecommand*\@pdfborder{0 0 1}
9547 \providecommand*\@pdfborderstyle{}
9548 \def\hyper@anchor#1{%
9549     \@pdfm@dest{#1}%
9550 }
9551 \def\hyper@anchorstart#1{%
9552     \Hy@activeanchortrue
9553     \@pdfm@dest{#1}%
9554 }
9555 \def\hyper@anchorend{%
9556     \Hy@activeanchorfalse
9557 }
9558 \newcounter{Hy@AnnotLevel}
9559 \ifHy@ocgcolorlinks
9560     \def\OBJ@OCG@view{@OCG@view}%
9561     \@pdfm@mark{%
9562         obj \OBJ@OCG@view <<%
9563         /Type/OCG%
9564         /Name(View)%
9565         /Usage<<%
9566         /Print<<%
9567         /PrintState/OFF%
9568         >>%
9569         /View<<%
9570         /ViewState/ON%
9571         >>%
9572         >>%
9573     }%
9574 }%
9575 \@pdfm@mark{close \OBJ@OCG@view}%
9576 \def\OBJ@OCG@print{@OCG@print}%
9577 \@pdfm@mark{%
9578     obj \OBJ@OCG@print <<%
9579     /Type/OCG%
9580     /Name(Print)%
9581     /Usage<<%
9582     /Print<<%
9583     /PrintState/ON%
9584     >>%
9585     /View<<%

```

```

9586         /ViewState/OFF%
9587     >>%
9588 >>%
9589 >>%
9590 }%
9591 \@pdfm@mark{close \OBJ@OCG@print}%
9592 \def\OBJ@OCGs{\@OCGs}%
9593 \@pdfm@mark{%
9594     obj \OBJ@OCGs [%
9595         \OBJ@OCG@view\space\OBJ@OCG@print
9596     ]%
9597 }%
9598 \@pdfm@mark{close \OBJ@OCGs}%
9599 \@pdfm@mark{%
9600     put @catalog <<%
9601         /OCProperties<<%
9602         /OCGs \OBJ@OCGs
9603         /D<<%
9604         /OFF[\OBJ@OCG@print]%
9605         /AS[%
9606             <<%
9607                 /Event/View%
9608                 /OCGs \OBJ@OCGs
9609                 /Category[/View]%
9610             >>%
9611             <<%
9612                 /Event/Print%
9613                 /OCGs \OBJ@OCGs
9614                 /Category[/Print]%
9615             >>%
9616             <<%
9617                 /Event/Export%
9618                 /OCGs \OBJ@OCGs
9619                 /Category[/Print]%
9620             >>%
9621             ]%
9622         >>%
9623     >>%
9624 >>%
9625 }%
9626 \AtBeginShipout{%
9627     \setbox\AtBeginShipoutBox=\hbox{%
9628         \copy\AtBeginShipoutBox
9629         \@pdfm@mark{%
9630             put @resources <<%
9631                 /Properties<<%
9632                 /OCView \OBJ@OCG@view
9633                 /OCPrint \OBJ@OCG@print
9634             >>%
9635             >>%
9636         }%
9637     }%
9638 }%
9639 \Hy@AtBeginDocument{%
9640     \def\Hy@colorlink#1{%
9641         \begingroup
9642         \ifHy@ocgcolorlinks

```

```

9643     \def\Hy@ocgcolor{#1}%
9644     \setbox0=\hbox\bgroup\color@begingroup
9645     \else
9646     \HyColor@UseColor#1%
9647     \fi
9648 }%
9649 \def\Hy@endcolorlink{%
9650 \ifHy@ocgcolorlinks
9651 \color@endgroup\egroup
9652 \mbox{%
9653 \@pdfm@mark{content /OC/OCPrint BDC}%
9654 \rlap{\copy0}%
9655 \@pdfm@mark{content EMC/OC/OCView BDC}%
9656 \begingroup
9657 \expandafter\HyColor@UseColor\Hy@ocgcolor
9658 \box0 %
9659 \endgroup
9660 \@pdfm@mark{content EMC}%
9661 }%
9662 \fi
9663 \endgroup
9664 }%
9665 }%
9666 \else
9667 \Hy@DisableOption{ocgcolorlinks}%
9668 \fi

9669 \def\Hy@BeginAnnot#1{%
9670 \stepcounter{Hy@AnnotLevel}%
9671 \ifnum\value{Hy@AnnotLevel}=\@ne
9672 #1%
9673 \fi
9674 }
9675 \def\Hy@endAnnot{%
9676 \ifnum\value{Hy@AnnotLevel}=\@ne
9677 \Hy@endcolorlink
9678 \@pdfm@mark{eann}%
9679 \fi
9680 \addtocounter{Hy@AnnotLevel}\m@ne
9681 }

9682 \def\Hy@undefinedname{UNDEFINED}
9683 \def\hyper@linkstart#1#2{%
9684 \Hy@VerboseLinkStart{#1}{#2}%
9685 \Hy@BeginAnnot{%
9686 \protected@edef\Hy@testname{#2}%
9687 \ifx\Hy@testname\@empty
9688 \Hy@Warning{%
9689 Empty destination name,\MessageBreak
9690 using '\Hy@undefinedname'%
9691 }%
9692 \let\Hy@testname\Hy@undefinedname
9693 \else
9694 \Hy@pstringdef\Hy@testname{%
9695 \expandafter\HyperDestNameFilter\expandafter{%
9696 \Hy@testname
9697 }%
9698 }%
9699 \fi

```

```

9700 \pdfmark{
9701   bann<<
9702   /Type/Annot
9703   /Subtype/Link
9704   \ifHy@pdfa /F 4\fi
9705   \Hy@setpdfborder
9706   \expandafter\ifx\csname @#1bordercolor\endcsname\relax
9707   \else
9708     /C[\csname @#1bordercolor\endcsname]%
9709   \fi
9710   /A<<
9711   /S/GoTo
9712   /D(\Hy@testname)%
9713   \Hy@href@nextactionraw
9714   >>
9715   >>
9716   }%
9717   \expandafter\Hy@colorlink\csname @#1color\endcsname
9718   }%
9719 }
9720 \def\hyper@linkend{\Hy@endAnnot}%
9721 \def\hyper@link#1#2#3{%
9722   \hyper@linkstart{#1}{#2}#3\hyper@linkend
9723 }
9724 \def\hyper@linkfile#1#2#3{%
9725   \leavevmode
9726   \Hy@BeginAnnot{
9727     \def\Hy@pstringF{#2}%
9728     \Hy@CleanupFile\Hy@pstringF
9729     \Hy@pstringdef\Hy@pstringF\Hy@pstringF
9730     \Hy@pstringdef\Hy@pstringD{#3}%
9731     \Hy@MakeRemoteAction
9732     \pdfmark{
9733       bann<<
9734       /Type/Annot
9735       /Subtype/Link
9736       \ifHy@pdfa /F 4\fi
9737       \Hy@setpdfborder
9738       \ifx\@filebordercolor\relax
9739       \else
9740         /C[\@filebordercolor]%
9741       \fi
9742       /A<<
9743       /S/GoToR
9744       /F(\Hy@pstringF)%
9745       /D%
9746       \ifx\#3\%
9747         [\Hy@href@page\@pdfremotestartview]%
9748       \else
9749         (\Hy@pstringD)%
9750       \fi
9751       \Hy@SetNewWindow
9752       \Hy@href@nextactionraw
9753       >>
9754       >>
9755     }%
9756     \Hy@colorlink\@filecolor

```

```

9757 }%
9758 #1%
9759 \Hy@EndAnnot
9760 }
9761 \def\hyper@linkurl#1#2{%
9762 \leavevmode
9763 \Hy@BeginAnnot{%
9764 \Hy@pstringdef\Hy@pstringURI{#2}%
9765 \@pdfm@mark{%
9766 bann<<%
9767 /Type/Annot%
9768 /Subtype/Link%
9769 \ifHy@pdfa /F 4\fi
9770 \Hy@setpdfborder
9771 \ifx\@urlbordercolor\relax
9772 \else
9773 /C[\@urlbordercolor]%
9774 \fi
9775 /A<<%
9776 /S/URI%
9777 /URI(\Hy@pstringURI)%
9778 \ifHy@href@ismap
9779 /IsMap true%
9780 \fi
9781 \Hy@href@nextactionraw
9782 >>%
9783 >>%
9784 }%
9785 \Hy@colorlink\@urlcolor
9786 }%
9787 #1%
9788 \Hy@EndAnnot
9789 }
9790 \def\Acrobatmenu#1#2{%
9791 \Hy@Acrobatmenu{#1}{#2}{%
9792 \Hy@BeginAnnot{%
9793 \@pdfm@mark{%
9794 bann<<%
9795 /Type/Annot%
9796 /Subtype/Link%
9797 \ifHy@pdfa /F 4\fi
9798 /A<<%
9799 /S/Named%
9800 /N/#1%
9801 \Hy@href@nextactionraw
9802 >>%
9803 \Hy@setpdfborder
9804 \ifx\@menubordercolor\relax
9805 \relax
9806 /C[\@menubordercolor]%
9807 \fi
9808 >>%
9809 }%
9810 \Hy@colorlink\@menucolor
9811 }%
9812 #2%
9813 \Hy@EndAnnot

```



```

9814 }%
9815 }
9816 \ifx\@pdfproducer\relax
9817 \def\@pdfproducer{dvipdfm}%

```

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

```

9818 \begingroup\expandafter\expandafter\expandafter\endgroup
9819 \expandafter\ifx\csname XeTeXversion\endcsname\relax
9820 \else
9821 \edef\@pdfproducer{XeTeX \the\XeTeXversion\XeTeXrevision}%
9822 \fi
9823 \fi
9824 \def\PDF@FinishDoc{%
9825 \Hy@UseMaketitleInfos
9826 \HyInfo@GenerateAddons
9827 \@pdfm@mark{%
9828 docinfo<<%
9829 /Title(\@pdftitle)%
9830 /Subject(\@pdfsubject)%
9831 /Creator(\@pdfcreator)%
9832 \ifx\@pdfcreationdate\@empty
9833 \else
9834 /CreationDate(\@pdfcreationdate)%
9835 \fi
9836 \ifx\@pdfmoddate\@empty
9837 \else
9838 /ModDate(\@pdfmoddate)%
9839 \fi
9840 /Author(\@pdfauthor)%
9841 \ifx\@pdfproducer\relax
9842 \else
9843 /Producer(\@pdfproducer)%
9844 \fi
9845 /Keywords(\@pdfkeywords)%
9846 \ifx\@pdftrapped\@empty
9847 \else
9848 /Trapped/\@pdftrapped
9849 \fi
9850 \HyInfo@Addons
9851 >>%
9852 }%
9853 \Hy@DisableOption{pdfauthor}%
9854 \Hy@DisableOption{pdftitle}%
9855 \Hy@DisableOption{pdfsubject}%
9856 \Hy@DisableOption{pdfcreator}%
9857 \Hy@DisableOption{pdfcreationdate}%
9858 \Hy@DisableOption{pdfmoddate}%
9859 \Hy@DisableOption{pdfproducer}%
9860 \Hy@DisableOption{pdfkeywords}%
9861 \Hy@DisableOption{pdftrapped}%
9862 \Hy@DisableOption{pdfinfo}%
9863 }

9864 \def\PDF@SetupDoc{%
9865 \edef\Hy@temp{%
9866 \ifHy@toolbar\else /HideToolbar true\fi
9867 \ifHy@menubar\else /HideMenubar true\fi
9868 \ifHy>windowui\else /HideWindowUI true\fi

```

```

9869 \ifHy@fitwindow /FitWindow true\fi
9870 \ifHy@centerwindow /CenterWindow true\fi
9871 \ifHy@displaydoctitle /DisplayDocTitle true\fi
9872 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9873 \Hy@UseNameKey{Direction}\@pdfdirection
9874 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9875 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9876 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9877 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9878 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9879 \Hy@UseNameKey{Duplex}\@pdfduplex
9880 \ifx\@pdfpicktraybypdfsize\@empty
9881 \else
9882 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9883 \fi
9884 \ifx\@pdfprintpagerange\@empty
9885 \else
9886 /PrintPageRange\@pdfprintpagerange]%
9887 \fi
9888 \ifx\@pdfnumcopies\@empty
9889 \else
9890 /NumCopies \@pdfnumcopies
9891 \fi
9892 }%
9893 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9894 \@pdfm@mark{%
9895 docview<<%
9896 \ifx\@pdfstartpage\@empty
9897 \else
9898 \ifx\@pdfstartview\@empty
9899 \else
9900 /OpenAction[ @page\@pdfstartpage\@pdfstartview]%
9901 \fi
9902 \fi
9903 \ifx\@baseurl\@empty
9904 \else
9905 /URI<</Base(\Hy@pstringB)>>%
9906 \fi
9907 /PageMode/\@pdfpagemode
9908 \ifx\Hy@temp\@empty
9909 \else
9910 /ViewerPreferences<<\Hy@temp>>%
9911 \fi
9912 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9913 \ifx\@pdflang\@empty
9914 \else
9915 /Lang(\@pdflang)%
9916 \fi
9917 >>%
9918 }%
9919 \ifx\@pdfpagescrop\@empty
9920 \else
9921 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}%
9922 \fi
9923 }
9924 \end{dvipdfm} \xetex

```

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

```

9925 <*dvipdfm>
9926 \AtBeginShipoutFirst{%
9927   \ifHy@setpagesize
9928     \begingroup
9929     \ifundefined{stockwidth}{%
9930       \ifdim\paperwidth>\z@
9931       \ifdim\paperheight>\z@
9932         \special{papersize=\the\paperwidth,\the\paperheight}%
9933       \fi
9934     \fi
9935   }{%
9936     \ifdim\stockwidth>\z@
9937     \ifdim\stockheight>\z@
9938       \special{papersize=\the\stockwidth,\the\stockheight}%
9939     \fi
9940   \fi
9941 }{%
9942   \endgroup
9943 \fi
9944 \Hy@DisableOption{setpagesize}%
9945 }
9946 </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.

```

9947 <*vtexhtml>
9948 \providecommand*{\XR@ext}{.htm}
9949 \RequirePackage{vtexhtml}
9950 \newif\if@Localurl
9951 \def\PDF@FinishDoc{}
9952 \def\PDF@SetupDoc{%
9953   \ifx\@baseurl\@empty
9954     \else
9955       \special{!direct <base href="\@baseurl">}%
9956     \fi
9957 }
9958 \def\@urltype{url}
9959 \def\hyper@link#1#2#3{%
9960   \Hy@VerboseLinkStart{#1}{#2}%
9961   \leavevmode
9962   \special{!direct <a href=%
9963     \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
9964   #3%
9965   \special{!direct </a>}%
9966 }
9967 \def\hyper@linkurl#1#2{%
9968   \begingroup
9969   \hyper@chars
9970   \leavevmode
9971   \MathBSuppress=1\relax
9972   \special{!direct <a href=%
9973     \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}%

```

```

9974   #1%
9975   \MathBSuppress=0\relax
9976   \special{!direct </a>}%
9977 \endgroup
9978 }
9979 \def\hyper@linkfile#1#2#3{%
9980 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%
9981 }
9982 \def\hyper@linkstart#1#2{%
9983 \Hy@VerboseLinkStart{#1}{#2}%
9984 \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
9985 \@Localurltrue
9986 \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
9987 \else
9988 \@Localurlfalse
9989 \begingroup
9990 \hyper@chars
9991 \special{!aref \HyperDestNameFilter{#2}}%
9992 \endgroup
9993 \fi
9994 }
9995 \def\hyper@linkend{%
9996 \if@Localurl
9997 \special{!endaref}%
9998 \else
9999 \special{!direct </a>}%
10000 \fi
10001 }
10002 \Hy@WrapperDef\hyper@anchorstart#1{%
10003 \Hy@SaveLastskip
10004 \Hy@VerboseAnchor{#1}%
10005 \begingroup
10006 \hyper@chars
10007 \special{!aname #1}%
10008 \special{!direct <a name=%
10009 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10010 \endgroup
10011 \Hy@activeanchortrue
10012 }
10013 \def\hyper@anchorend{%
10014 \special{!direct </a>}%
10015 \Hy@activeanchorfalse
10016 \Hy@RestoreLastskip
10017 }
10018 \Hy@WrapperDef\hyper@anchor#1{%
10019 \Hy@SaveLastskip
10020 \Hy@VerboseAnchor{#1}%
10021 \begingroup
10022 \let\protect=\string
10023 \hyper@chars
10024 \leavevmode
10025 \special{!aname #1}%
10026 \special{!direct <a name=%
10027 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10028 \endgroup
10029 \Hy@activeanchortrue
10030 \bgroup\anchor@spot\egroup

```

```

10031 \special{!direct </a>}%
10032 \Hy@activeanchorfalse
10033 \Hy@RestoreLastskip
10034 }
10035 \def\@Form[#1]{%
10036 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10037 }
10038 \def\@endForm{}
10039 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10040 \Hy@Message{Sorry, TeXpider does not yet support FORM gauges}%
10041 }
10042 \def\@TextField[#1]#2{% parameters, label
10043 \Hy@Message{Sorry, TeXpider does not yet support FORM text fields}%
10044 }
10045 \def\@CheckBox[#1]#2{% parameters, label
10046 \Hy@Message{Sorry, TeXpider does not yet support FORM checkboxes}%
10047 }
10048 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10049 \Hy@Message{Sorry, TeXpider does not yet support FORM choice menus}%
10050 }
10051 \def\@PushButton[#1]#2{% parameters, label
10052 \Hy@Message{Sorry, TeXpider does not yet support FORM pushbuttons}%
10053 }
10054 \def\@Reset[#1]#2{%
10055 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10056 }
10057 \def\@Submit[#1]#2{%
10058 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10059 }
10060 </vtexhtml>
10061 <*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.

```

10062 \ifx\mediaheight\@undefined
10063 \else
10064 \ifx\mediaheight\relax
10065 \else
10066 \ifHy@setpagesize
10067 \providecommand*{\VTeXInitMediaSize}{%
10068 \ltx@ifundefined{stockwidth}{%
10069 \ifdim\paperheight>0pt %
10070 \setlength\mediaheight\paperheight
10071 \fi
10072 \ifdim\paperheight>0pt %
10073 \setlength\mediawidth\paperwidth
10074 \fi
10075 }{%
10076 \ifdim\stockheight>0pt %
10077 \setlength\mediaheight\stockheight
10078 \fi
10079 \ifdim\stockwidth>0pt %
10080 \setlength\mediawidth\stockwidth
10081 \fi
10082 }%
10083 }%

```

```

10084 \Hy@AtBeginDocument{\VTeXInitMediaSize}%
10085 \fi
10086 \Hy@DisableOption{setpagesize}%
10087 \fi
10088 \fi

Older versions of VTeX require xyz in lower case.

10089 \providecommand*\@pdfview{xyz}
10090 \providecommand*\@pdfborder{0 0 1}
10091 \providecommand*\@pdfborderstyle{}
10092 \let\CurrentBorderColor\@linkbordercolor
10093 \Hy@WrapperDef\hyper@anchor#1{%
10094 \Hy@SaveLastskip
10095 \Hy@VerboseAnchor{#1}%
10096 \begingroup
10097 \let\protect=\string
10098 \hyper@chars
10099 \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10100 \endgroup
10101 \Hy@activeanchortrue
10102 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
10103 \Hy@activeanchorfalse
10104 \Hy@RestoreLastskip
10105 }
10106 \Hy@WrapperDef\hyper@anchorstart#1{%
10107 \Hy@SaveLastskip
10108 \Hy@VerboseAnchor{#1}%
10109 \begingroup
10110 \hyper@chars
10111 \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10112 \endgroup
10113 \Hy@activeanchortrue
10114 }
10115 \def\hyper@anchorend{%
10116 \Hy@activeanchorfalse
10117 \Hy@RestoreLastskip
10118 }
10119 \def\@urltype{url}
10120 \def\Hy@undefinedname{UNDEFINED}
10121 \def\hyper@linkstart#1#2{%
10122 \Hy@VerboseLinkStart{#1}{#2}%
10123 \Hy@pstringdef\Hy@pstringURI{#2}%
10124 \expandafter\Hy@colorlink\csname @#1color\endcsname
10125 \ltx@ifundefined{@#1bordercolor}{%
10126 \let\CurrentBorderColor\relax
10127 }{%
10128 \edef\CurrentBorderColor{%
10129 \csname @#1bordercolor\endcsname
10130 }%
10131 }%
10132 \def\Hy@tempa{#1}%
10133 \ifx\Hy@tempa\@urltype
10134 \special{!%
10135 aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10136 \ifHy@href@ismap
10137 /IsMap true%
10138 \fi
10139 \Hy@href@nextactionraw

```

```

10140     >,%
10141     a=<%
10142         \ifHy@pdfa /F 4\fi
10143         \Hy@setpdfborder
10144         \ifx\CurrentBorderColor\relax
10145         \else
10146             /C [\CurrentBorderColor]%
10147         \fi
10148     >%
10149 }%
10150 \else
10151     \protected@edef\Hy@testname{#2}%
10152     \ifx\Hy@testname\@empty
10153         \Hy@Warning{%
10154             Empty destination name,\MessageBreak
10155             using '\Hy@undefinedname'%
10156         }%
10157     \let\Hy@testname\Hy@undefinedname
10158 \fi
10159 \special{!%
10160     aref \expandafter\HyperDestNameFilter
10161         \expandafter{\Hy@testname};%
10162     a=<%
10163         \ifHy@pdfa /F 4\fi
10164         \Hy@setpdfborder
10165         \ifx\CurrentBorderColor\relax
10166         \else
10167             /C [\CurrentBorderColor]%
10168         \fi
10169     >%
10170 }%
10171 \fi
10172 }
10173 \def\hyper@linkend{%
10174     \special{!endaref}%
10175     \Hy@endcolorlink
10176 }
10177 \def\hyper@linkfile#1#2#3{%
10178     \leavevmode
10179     \def\Hy@pstringF{#2}%
10180     \Hy@CleanupFile\Hy@pstringF
10181     \special{!%
10182         aref <%
10183         \ifnum\Hy@VTeXversion>753 \ifHy@newwindow n\fi
10184         f=\Hy@pstringF>#3;%
10185         a=<%
10186             \ifHy@pdfa /F 4\fi
10187             \Hy@setpdfborder
10188             \ifx\@filebordercolor\relax
10189             \else
10190                 /C [\@filebordercolor]%
10191             \fi
10192         >%
10193     }%
10194     \Hy@colorlink\@filecolor#1\Hy@endcolorlink
10195     \special{!endaref}%
10196 }

```

```

10197 \def\hyper@linkurl#1#2{%
10198   \begingroup
10199   \Hy@pstringdef\Hy@pstringURI{#2}%
10200   \hyper@chars
10201   \leavevmode
10202   \special{!%
10203     aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10204     \ifHy@href@ismap
10205       /IsMap true%
10206     \fi
10207     \Hy@href@nextactionraw
10208     >,%
10209     a=<%
10210     \ifHy@pdfa /F 4\fi
10211     \Hy@setpdfborder
10212     \ifx\@urlbordercolor\relax
10213     \else
10214       /C [\@urlbordercolor]%
10215     \fi
10216     >%
10217   }%
10218   \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
10219   \special{!endaref}%
10220 \endgroup
10221 }
10222 \def\hyper@link#1#2#3{%
10223   \Hy@VerboseLinkStart{#1}{#2}%
10224   \ltx@ifundefined{@#1bordercolor}{%
10225     \let\CurrentBorderColor\relax
10226   }{%
10227     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
10228   }%
10229   \leavevmode
10230   \protected@edef\Hy@testname{#2}%
10231   \ifx\Hy@testname\@empty
10232     \Hy@Warning{%
10233       Empty destination name,\MessageBreak
10234       using '\Hy@undefinedname'%
10235     }%
10236     \let\Hy@testname\Hy@undefinedname
10237   \fi
10238   \special{!%
10239     aref \expandafter\HyperDestNameFilter
10240     \expandafter{\Hy@testname};%
10241     a=<%
10242     \ifHy@pdfa /F 4\fi
10243     \Hy@setpdfborder
10244     \ifx\CurrentBorderColor\relax
10245     \else
10246       /C [\CurrentBorderColor]%
10247     \fi
10248     >%
10249   }%
10250   \expandafter
10251   \Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
10252   \special{!endaref}%
10253 }

```



```

10254 \def\hyper@image#1#2{%
10255   \hyper@linkurl{#2}{#1}%
10256 }
10257 \def\@hyper@launch run:#1\#2#3{%
10258   \Hy@pstringdef\Hy@pstringF{#1}%
10259   \Hy@pstringdef\Hy@pstringP{#3}%
10260   \leavevmode
10261   \special{!aref %
10262     <u=%
10263       /Type/Action%
10264       /S/Launch%
10265       /F(\Hy@pstringF)%
10266       \Hy@SetNewWindow
10267       \ifx\#3\%
10268         \else
10269           /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>%
10270         \fi
10271       \Hy@href@nextactionraw
10272     >,%
10273     a=<%
10274       \ifHy@pdfa /F 4\fi
10275       \Hy@setpdfborder
10276       \ifx\@runbordercolor\relax
10277         \else
10278           /C[\@runbordercolor]%
10279         \fi
10280       >%
10281     }%
10282   \Hy@colorlink\@runcolor#2\Hy@endcolorlink
10283   \special{!endaref}%
10284 }
10285 \def\Acrobatmenu#1#2{%
10286   \Hy@Acrobatmenu{#1}{#2}{%
10287     \special{!%
10288       aref <u=/S /Named /N /#1>,%
10289       a=<%
10290         \ifHy@pdfa /F 4\fi
10291         \Hy@setpdfborder
10292         \ifx\@menubordercolor\relax
10293           \else
10294             /C[\@menubordercolor]%
10295           \fi
10296         >%
10297       }%
10298     \Hy@colorlink\@menucolor#2\Hy@endcolorlink
10299     \special{!endaref}%
10300   }%
10301 }

```

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

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

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

```

10302 \ifnum\Hy@VTeXversion<702 %
10303 \else
10304   \def\hyper@pagetransition{%
10305     \ifx\@pdfpagetransition\relax
10306       \else
10307         \ifx\@pdfpagetransition\@empty

```

Standard incantation.

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

```
10308 \else
10309 \hvtex@parse@trans\@pdfpagetransition
10310 \fi
10311 \fi
10312 }%
```

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

Syntax of VT<sub>E</sub>X \special{!trans <transition\_effect>}:

```
<transition_effect> ::= <transition_style>[,<transition_duration>]
<transition_style> ::= <Blinds_effect> | <Box_effect> |
                      <Dissolve_effect> | <Glitter_effect> |
                      <Split_effect> | <Wipe_effect>
<Blinds_effect> ::= B[<effect_dimension>]
<Box_effect> ::= X[<effect_motion>]
<Dissolve_effect> ::= D
<Glitter_effect> ::= G[<effect_direction>]
<Split_effect> ::= S[<effect_motion>][<effect_dimension>]
<Wipe_effect> ::= W[<effect_direction>]
<Replace_effect> ::= R
<effect_direction> ::= <number>
<effect_dimension> ::= H | V
<effect_motion> ::= I | O
<transition_duration> ::= <number>
```

Transition codes:

```
10313 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
10314 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
10315 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
10316 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
10317 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
10318 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
10319 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%
```

Optional parameters:

```
10320 \def\hvtex@par@dimension{/Dm}%
10321 \def\hvtex@par@direction{/Di}%
10322 \def\hvtex@par@duration{/D}%
10323 \def\hvtex@par@motion{/M}%
```

Tokenizer:

```
10324 \def\hvtex@gettoken{%
10325 \expandafter\hvtex@gettoken@\hvtex@buffer\@nil
10326 }%
```

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

```
10327 \def\hvtex@gettoken@#1 #2\@nil{%
10328 \edef\hvtex@token{#1}%
10329 \edef\hvtex@buffer{#2}%
10330 }%
10331 \def\hvtex@parse@trans#1{%
```

Initializing code:

```
10332 \let\hvtex@trans@code\@empty
10333 \let\hvtex@param@dimension\@empty
10334 \let\hvtex@param@direction\@empty
```

```

10335 \let\hvtex@param@duration\@empty
10336 \let\hvtex@param@motion\@empty
10337 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

10338 \hvtex@gettoken
10339 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

10340 \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

10341 \else
10342 \hvtex@gettoken
10343 \fi
10344 \fi
10345 \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```

10346 \hvtex@trans@params
10347 }%

```

Reentrant macro to parse optional parameters.

```

10348 \def\hvtex@trans@params{%
10349 \ifx\hvtex@buffer\@empty
10350 \else
10351 \hvtex@gettoken
10352 \let\hvtex@trans@par\hvtex@token
10353 \ifx\hvtex@buffer\@empty
10354 \else
10355 \hvtex@gettoken
10356 \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.

```

10357 \let\hvtex@param@duration\hvtex@token
10358 \else \ifx\hvtex@trans@par\hvtex@par@motion

```

/M can be either /I or /O

```

10359 \expandafter\edef\expandafter\hvtex@param@motion
10360 \expandafter{\expandafter\@gobble\hvtex@token}%
10361 \else \ifx\hvtex@trans@par\hvtex@par@dimension

```

/Dm can be either /H or /V

```

10362 \expandafter\edef\expandafter\hvtex@param@dimension
10363 \expandafter{\expandafter\@gobble\hvtex@token}%
10364 \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).

```

10365 \let\hvtex@param@direction\hvtex@token
10366 \fi\fi\fi
10367 \fi
10368 \fi
10369 \ifx\hvtex@buffer\@empty
10370 \let\next\hvtex@produce@trans
10371 \else
10372 \let\next\hvtex@trans@params
10373 \fi
10374 \next
10375 }%

```

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

```

10376 \def\hvtex@produce@trans{%
10377 \let\vtex@trans@special\@empty
10378 \if S\hvtex@trans@code
10379 \edef\vtex@trans@special{\hvtex@trans@code
10380 \hvtex@param@dimension\hvtex@param@motion}%
10381 \else\if B\hvtex@trans@code
10382 \edef\vtex@trans@special{%
10383 \hvtex@trans@code\hvtex@param@dimension
10384 }%
10385 \else\if X\hvtex@trans@code
10386 \edef\vtex@trans@special{%
10387 \hvtex@trans@code\hvtex@param@motion
10388 }%
10389 \else\if W\hvtex@trans@code
10390 \edef\vtex@trans@special{%
10391 \hvtex@trans@code\hvtex@param@direction
10392 }%
10393 \else\if D\hvtex@trans@code
10394 \let\vtex@trans@special\hvtex@trans@code
10395 \else\if R\hvtex@trans@code
10396 \let\vtex@trans@special\hvtex@trans@code
10397 \else\if G\hvtex@trans@code
10398 \edef\vtex@trans@special{%
10399 \hvtex@trans@code\hvtex@param@direction
10400 }%
10401 \fi\fi\fi\fi\fi
10402 \ifx\vtex@trans@special\@empty
10403 \else
10404 \ifx\hvtex@param@duration\@empty
10405 \else
10406 \setlength{\dimen@}{\hvtex@param@duration\p}%

```

I'm not guilty of possible overflow.

```

10407 \multiply\dimen@\@m
10408 \edef\vtex@trans@special{%
10409 \vtex@trans@special,\strip@pt\dimen@
10410 }%
10411 \fi

```

And all the mess is just for this.

```

10412 \special{!trans \vtex@trans@special}%
10413 \fi
10414 }%

10415 \def\hyper@pageduration{%
10416 \ifx\@pdfpageduration\relax
10417 \else
10418 \ifx\@pdfpageduration\@empty
10419 \special{!duration-}%
10420 \else
10421 \special{!duration \@pdfpageduration}%
10422 \fi
10423 \fi
10424 }%
10425 \def\hyper@pagehidden{%
10426 \ifHy@useHidKey

```

```

10427 \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
10428 \fi
10429 }%
10430 \g@addto@macro\Hy@EveryPageBoxHook{%
10431 \hyper@pagetransition
10432 \hyper@pageduration
10433 \hyper@pagehidden
10434 }%
10435 \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

```

10436 \ifx\@pdfproducer\relax
10437 \def\@pdfproducer{VTeX}%
10438 \ifnum\Hy@VTeXversion>\z@
10439 \count@\VTeXversion
10440 \divide\count@ 100 %
10441 \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
10442 \multiply\count@ -100 %
10443 \advance\count@\VTeXversion
10444 \edef\@pdfproducer{%
10445 \@pdfproducer
10446 .\ifnum\count@<10 0\fi\the\count@
10447 \ifx\VTeXOS\@undefined\else
10448 \ifnum\VTeXOS>0 %
10449 \ifnum\VTeXOS<6 %
10450 \space(
10451 \ifcase\VTeXOS
10452 \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
10453 \fi
10454 )%
10455 \fi
10456 \fi
10457 \fi
10458 ,\space
10459 \ifnum\OpMode=\@one PDF\else PS\fi
10460 \space backend%
10461 \ifx\gexmode\@undefined\else
10462 \ifnum\gexmode>\z@\space with GeX\fi
10463 \fi
10464 }%
10465 \fi
10466 \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).

```

10467 \def\PDF@SetupDoc{%
10468 \ifx\@pdfpagescrop\@empty
10469 \else
10470 \special{!pdfinfo b=<\@pdfpagescrop>}%
10471 \fi
10472 \ifx\@pdfstartpage\@empty
10473 \else
10474 \ifx\@pdfstartview\@empty
10475 \else
10476 \special{!onopen Page\@pdfstartpage}%
10477 \fi
10478 \fi
10479 \special{!pdfinfo p=</\@pdfpagemode>}%
10480 \ifx\@baseurl\@empty
10481 \else
10482 \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
10483 \fi
10484 \special{!pdfinfo v=<<<%
10485 \ifHy@toolbar\else /HideToolbar true\fi
10486 \ifHy@menubar\else /HideMenubar true\fi
10487 \ifHy>windowui\else /HideWindowUI true\fi
10488 \ifHy@fitwindow /FitWindow true\fi
10489 \ifHy@centerwindow /CenterWindow true\fi
10490 \ifHy@displaydoctitle /DisplayDocTitle true\fi
10491 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10492 \Hy@UseNameKey{Direction}\@pdfdirection
10493 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10494 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10495 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10496 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10497 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10498 \Hy@UseNameKey{Duplex}\@pdfduplex
10499 \ifx\@pdfpicktraybypdfsize\@empty
10500 \else
10501 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10502 \fi
10503 \ifx\@pdfprintpagerange\@empty
10504 \else
10505 /PrintPageRange[\@pdfprintpagerange]%
10506 \fi
10507 \ifx\@pdfnumcopies\@empty
10508 \else
10509 /NumCopies \@pdfnumcopies

```

```

10510 \fi
10511 >>>}%
10512 \ifx\@pdfpagelayout\@empty
10513 \else
10514 \special{!pdfinfo l=</\@pdfpagelayout\space>}%
10515 \fi
10516 }%
10517 \HyInfo@AddonUnsupportedtrue
10518 \def\PDF@FinishDoc{%
10519 \Hy@UseMaketitleInfos
10520 \HyInfo@TrappedUnsupported
10521 \special{!pdfinfo a=<\@pdfauthor>}%
10522 \special{!pdfinfo t=<\@pdftitle>}%
10523 \special{!pdfinfo s=<\@pdfsubject>}%
10524 \special{!pdfinfo c=<\@pdfcreator>}%
10525 \ifx\@pdfproducer\relax
10526 \else
10527 \special{!pdfinfo r=<\@pdfproducer>}%
10528 \fi
10529 \special{!pdfinfo k=<\@pdfkeywords>}%
10530 \Hy@DisableOption{pdfauthor}%
10531 \Hy@DisableOption{pdftitle}%
10532 \Hy@DisableOption{pdfsubject}%
10533 \Hy@DisableOption{pdfcreator}%
10534 \Hy@DisableOption{pdfcreationdate}%
10535 \Hy@DisableOption{pdfmoddate}%
10536 \Hy@DisableOption{pdfproducer}%
10537 \Hy@DisableOption{pdfkeywords}%
10538 \Hy@DisableOption{pdftrapped}%
10539 \Hy@DisableOption{pdfinfo}%
10540 }
10541 </vtex>

```

## 46.7 Fix for Adobe bug number 466320

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

```

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

```

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

```

10542 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
10543 <package>\providecommand*{\Hy@DistillerDestFix}{%
10544 <*pdfmark | dviwindo>
10545 \def\Hy@DistillerDestFix{%
10546 \beginngroup
10547 \let\x\literalps@out

```

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

```

10548 \ifnum \@ifundefined{OpMode}{0}{%
10549 \ifundefined{gexmode}{0}{%
10550 \ifnum\gexmode>0 \OpMode\else 0\fi
10551 }}>1 %

```

```

10552 \def\x##1{%
10553 \immediate\special{!=##1}%
10554 }%
10555 \fi
10556 \x{%
10557 /product where{%
10558 pop %
10559 product(Distiller)search{%
10560 pop pop pop %
10561 version(.)search{%
10562 exch pop exch pop%
10563 (3011)eq{%
10564 gsave %
10565 newpath 0 0 moveto closepath clip%
10566 /Courier findfont 10 scalefont setfont %
10567 72 72 moveto(.)show %
10568 grestore%
10569 }if%
10570 }{pop}ifelse%
10571 }{pop}ifelse%
10572 }if%
10573 }%
10574 \endgroup
10575 }
10576 </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

```

10577 <*pdfmark>
10578 \Hy@breaklinks@unsupported
10579 \def\HyPat@ObjRef{%
10580 \[{\^{}+}\}%
10581 }
10582 \Hy@WrapperDef\hyper@anchor#1{%
10583 \Hy@SaveLastskip
10584 \Hy@VerboseAnchor{#1}%
10585 \begingroup
10586 \pdfmark[\anchor@spot]{%
10587 pdfmark=/DEST,%
10588 linktype=anchor,%
10589 View=/\@pdfview \@pdfviewparams,%
10590 DestAnchor={#1}%
10591 }%
10592 \endgroup

```



```

10593 \Hy@RestoreLastskip
10594 }
10595 \ltx@ifundefined{hyper@anchorstart}{\endinput}
10596 \Hy@WrapperDef\hyper@anchorstart#1{%
10597 \Hy@SaveLastskip
10598 \Hy@VerboseAnchor{#1}%
10599 \literalps@out{H.S}%
10600 \Hy@AllowHyphens
10601 \xdef\hyper@currentanchor{#1}%
10602 \Hy@activeanchortrue
10603 }
10604 \def\hyper@anchorend{%
10605 \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
10606 \pdfmark{%
10607 pdfmark=/DEST,%
10608 linktype=anchor,%
10609 View=/\@pdfview \@pdfviewparams,%
10610 DestAnchor=\hyper@currentanchor,%
10611 }%
10612 \Hy@activeanchorfalse
10613 \Hy@RestoreLastskip
10614 }
10615 \def\hyper@linkstart#1#2{%
10616 \Hy@VerboseLinkStart{#1}{#2}%
10617 \ifHy@breaklinks
10618 \else
10619 \leavevmode
10620 \ifmmode
10621 \def\Hy@LinkMath{$}%
10622 \else
10623 \def\Hy@LinkMath{}%
10624 \fi
10625 \Hy@SaveSpaceFactor
10626 \hbox\bgroup
10627 \Hy@RestoreSpaceFactor
10628 \Hy@LinkMath
10629 \fi
10630 \expandafter\Hy@colorlink\csname @#1color\endcsname
10631 \literalps@out{H.S}%
10632 \Hy@AllowHyphens
10633 \xdef\hyper@currentanchor{#2}%
10634 \gdef\hyper@currentlinktype{#1}%
10635 }
10636 \def\hyper@linkend{%
10637 \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
10638 \ltx@ifundefined{@\hyper@currentlinktype bordercolor}{%
10639 \let\Hy@tempcolor\relax
10640 }{%
10641 \edef\Hy@tempcolor{%
10642 \csname @\hyper@currentlinktype bordercolor\endcsname
10643 }%
10644 }%
10645 \pdfmark{%
10646 pdfmark=/ANN,%
10647 linktype=link,%
10648 Subtype=/Link,%
10649 PDFAMlags=4,%

```

```

10650   Dest=\hyper@currentanchor,%
10651   AcroHighlight=\@pdfhighlight,%
10652   Border=\@pdfborder,%
10653   BorderStyle=\@pdfborderstyle,%
10654   Color=\Hy@tempcolor,%
10655   Raw=H.B%
10656 }%
10657 \Hy@endcolorlink
10658 \ifHy@breaklinks
10659 \else
10660   \Hy@LinkMath
10661   \Hy@SaveSpaceFactor
10662   \egroup
10663   \Hy@RestoreSpaceFactor
10664 \fi
10665 }

```

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.

```

10666 \begingroup
10667   \catcode'P=12 %
10668   \catcode'T=12 %
10669   \lowercase{\endgroup
10670   \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
10671 }
10672 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

`\hyper@pagetransition`

```

10673 \def\hyper@pagetransition{%
10674   \ifx\@pdfpagetransition\relax
10675   \else
10676     \ifx\@pdfpagetransition\@empty
10677       % 1. Does an old entry have to be deleted?
10678       % 2. If 1=yes, how to delete?
10679     \else
10680       \pdfmark{%
10681         pdfmark=/PUT,%
10682         Raw={%
10683           \string{ThisPage\string}%
10684           <</Trans << /S /\@pdfpagetransition\space >> >>%
10685         }%
10686       }%
10687     \fi
10688   \fi
10689 }

```

`\hyper@pageduration`

```

10690 \def\hyper@pageduration{%
10691   \ifx\@pdfpageduration\relax
10692   \else
10693     \ifx\@pdfpageduration\@empty
10694       % 1. Does an old entry have to be deleted?
10695       % 2. If 1=yes, how to delete?
10696     \else
10697       \pdfmark{%
10698         pdfmark=/PUT,%

```

```

10699     Raw={%
10700         \string{ThisPage\string}%
10701         <</Dur \@pdfpageduration>>%
10702     }%
10703 }%
10704 \fi
10705 \fi
10706 }

```

\hyper@pagehidden

```

10707 \def\hyper@pagehidden{%
10708     \ifHy@useHidKey
10709         \pdfmark{%
10710             pdfmark=/PUT,%
10711             Raw={%
10712                 \string{ThisPage\string}%
10713                 <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
10714             }%
10715         }%
10716     \fi
10717 }

10718 \g@addto@macro\Hy@EveryPageBoxHook{%
10719     \hyper@pagetransition
10720     \hyper@pageduration
10721     \hyper@pagehidden
10722 }

10723 \def\hyper@image#1#2{%
10724     \hyper@linkurl{#2}{#1}%
10725 }

10726 \def\Hy@undefinedname{UNDEFINED}
10727 \def\hyper@link#1#2#3{%
10728     \Hy@VerboseLinkStart{#1}{#2}%
10729     \ltx@ifundefined{@#1bordercolor}{%
10730         \let\Hy@tempcolor\relax
10731     }{%
10732         \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
10733     }%
10734     \begingroup
10735     \protected@edef\Hy@testname{#2}%
10736     \ifx\Hy@testname\@empty
10737         \Hy@Warning{%
10738             Empty destination name,\MessageBreak
10739             using '\Hy@undefinedname'%
10740         }%
10741         \let\Hy@testname\Hy@undefinedname
10742     \fi
10743     \pdfmark[{#3}]{%
10744         Color=\Hy@tempcolor,%
10745         linktype={#1},%
10746         AcroHighlight=\@pdfhighlight,%
10747         Border=\@pdfborder,%
10748         BorderStyle=\@pdfborderstyle,%
10749         pdfmark=/ANN,%
10750         Subtype=/Link,%
10751         PDFAFlags=4,%
10752         Dest=\Hy@testname

```

```

10753 }%
10754 \endgroup
10755 }
10756 \newtoks\pdf@docset
10757 \def\PDF@FinishDoc{%
10758   \Hy@UseMaketitleInfos
10759   \HyInfo@GenerateAddons
10760   \let\Hy@temp\@empty
10761   \ifx\@pdfcreationdate\@empty
10762   \else
10763     \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
10764   \fi
10765   \ifx\@pdfmoddate\@empty
10766   \else
10767     \expandafter\def\expandafter\Hy@temp\expandafter{%
10768       \Hy@temp
10769       ModDate=\@pdfmoddate,%
10770     }%
10771   \fi
10772   \ifx\@pdfproducer\relax
10773   \else
10774     \expandafter\def\expandafter\Hy@temp\expandafter{%
10775       \Hy@temp
10776       Producer=\@pdfproducer,%
10777     }%
10778   \fi
10779   \expandafter
10780   \pdfmark\expandafter{%
10781     \Hy@temp
10782     pdfmark=/DOCINFO,%
10783     Title=\@pdftitle,%
10784     Subject=\@pdfsubject,%
10785     Creator=\@pdfcreator,%
10786     Author=\@pdfauthor,%
10787     Keywords=\@pdfkeywords,%
10788     Trapped=\@pdftrapped
10789   }%
10790   \ifx\HyInfo@Addons\@empty
10791   \else
10792     \pdfmark{%
10793       pdfmark=/DOCINFO,%
10794       Raw={\HyInfo@Addons}%
10795     }%
10796   \fi
10797   \Hy@DisableOption{pdfauthor}%
10798   \Hy@DisableOption{pdftitle}%
10799   \Hy@DisableOption{pdfsubject}%
10800   \Hy@DisableOption{pdfcreator}%
10801   \Hy@DisableOption{pdfcreationdate}%
10802   \Hy@DisableOption{pdfmoddate}%
10803   \Hy@DisableOption{pdfproducer}%
10804   \Hy@DisableOption{pdfkeywords}%
10805   \Hy@DisableOption{pdftrapped}%
10806   \Hy@DisableOption{pdfinfo}%
10807 }
10808 \def\PDF@SetupDoc{%
10809   \def\Hy@temp{}%

```

```

10810 \ifx\@pdfstartpage\@empty
10811 \else
10812 \ifx\@pdfstartview\@empty
10813 \else
10814 \edef\Hy@temp{%
10815     ,Page=\@pdfstartpage
10816     ,View=\@pdfstartview
10817 }%
10818 \fi
10819 \fi
10820 \edef\Hy@temp{%
10821 \noexpand\pdfmark{%
10822     pdfmark=/DOCVIEW,%
10823     PageMode=/\@pdfpagemode
10824     \Hy@temp
10825 }%
10826 }%
10827 \Hy@temp
10828 \ifx\@pdfpagescrop\@empty
10829 \else
10830 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
10831 \fi
10832 \edef\Hy@temp{%
10833 \ifHy@toolbar\else /HideToolbar true\fi
10834 \ifHy@menubar\else /HideMenubar true\fi
10835 \ifHy>windowui\else /HideWindowUI true\fi
10836 \ifHy@fitwindow /FitWindow true\fi
10837 \ifHy@centerwindow /CenterWindow true\fi
10838 \ifHy@displaydoctitle /DisplayDocTitle true\fi
10839 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10840 \Hy@UseNameKey{Direction}\@pdfdirection
10841 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10842 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10843 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10844 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10845 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10846 \Hy@UseNameKey{Duplex}\@pdfduplex
10847 \ifx\@pdfpicktraybypdfsize\@empty
10848 \else
10849 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10850 \fi
10851 \ifx\@pdfprintpagerange\@empty
10852 \else
10853 /PrintPageRange[\@pdfprintpagerange]%
10854 \fi
10855 \ifx\@pdfnumcopies\@empty
10856 \else
10857 /NumCopies \@pdfnumcopies
10858 \fi
10859 }%
10860 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10861 \pdfmark{%
10862     pdfmark=/PUT,%
10863     Raw={%
10864         \string{Catalog\string}<<%
10865         \ifx\Hy@temp\@empty
10866         \else

```

```

10867      /ViewerPreferences<<\Hy@temp>>%
10868    \fi
10869    \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10870    \ifx\@pdflang\@empty
10871    \else
10872      /Lang(\@pdflang)%
10873    \fi
10874    \ifx\@baseurl\@empty
10875    \else
10876      /URI<</Base(\Hy@pstringB)>>%
10877    \fi
10878    >>%
10879  }%
10880 }%
10881 }
10882 </pdfmark>
10883 <*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.

```

10884 \newif\ifHy@pdfmarkerror
10885 \def\pdfmark{\@ifnextchar[{\pdfmark@}{\pdfmark@[]}}
10886 \def\pdfmark@[#1]#2{%
10887   \Hy@pdfmarkerrorfalse
10888   \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
10889   \@processme
10890   \let\pdf@type\relax
10891   \kvsetkeys{PDF}{#2}%
10892   \ifHy@pdfmarkerror
10893   \else
10894     \ifx\pdf@type\relax
10895       \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
10896       \ifx\#1\%
10897       \else
10898         \pdf@rect{#1}%
10899       \fi
10900     \else
10901       \ifx\#1\%
10902         \literalps@out{%
10903           [\the\pdf@toks\space\pdf@type\space pdfmark%
10904           }%
10905         \else
10906           \ltx@ifundefined{@pdf@linktype color}{%
10907             \Hy@colorlink\@linkcolor
10908           }{%
10909             \expandafter\Hy@colorlink
10910               \csname @\pdf@linktype color\endcsname
10911           }%
10912           \pdf@rect{#1}%
10913           \literalps@out{%
10914             [\the\pdf@toks\space\pdf@type\space pdfmark%
10915             }%
10916           \Hy@endcolorlink
10917         \fi

```

```

10918 \fi
10919 \fi
10920 }

```

The complicated bit is working out the right enclosing rectangle of some piece of TeX text, needed by the /Rect key. This solution originates with Toby Thain (tobyth@netspace.net.au).

For the case breaklinks is enabled, I have added two hooks, the first one for package setouterhbox, it provides a hopefully better method without setting the text twice.

```
\usepackage[hyperref]{setouterhbox}
```

With the second hook, also you can set the text twice, e.g.:

```

\long\def\Hy@setouterhbox#1#2{\long\def\my@temp{#2}}
\def\Hy@breaklinksunhbox#1{\my@temp}

```

```

10921 \newsavebox{\pdf@box}
10922 \providecommand*{\Hy@setouterhbox}{\sbox}
10923 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
10924 \def\Hy@DEST{/DEST}
10925 \def\pdf@rect#1{%
10926   \begingroup
10927   \chardef\x=1 %
10928   \def\Hy@temp{#1}%
10929   \ifx\Hy@temp\ltx@empty
10930     \chardef\x=0 %
10931   \else
10932     \def\y{\anchor@spot}%
10933     \ifx\Hy@temp\y
10934       \def\y{\relax}%
10935       \ifx\anchor@spot\y
10936         \chardef\x=0 %
10937       \fi
10938     \fi
10939   \fi
10940 \expandafter\endgroup
10941 \ifcase\x
10942   \literalps@out{H.S}%
10943   \literalps@out{H.R}%
10944 \else
10945   \leavevmode
10946   \Hy@SaveSpaceFactor
10947   \ifmmode
10948     \def\Hy@LinkMath{$}%
10949   \else
10950     \def\Hy@LinkMath{}%
10951   \fi
10952   \ifHy@breaklinks
10953     \Hy@setouterhbox\pdf@box{%
10954       \Hy@RestoreSpaceFactor
10955       \Hy@LinkMath
10956       \Hy@AllowHyphens#1%
10957       \Hy@LinkMath
10958       \Hy@SaveSpaceFactor
10959     }%
10960   \else
10961     \sbox\pdf@box{%
10962       \Hy@RestoreSpaceFactor
10963       \Hy@LinkMath

```

```

10964      #1%
10965      \Hy@LinkMath
10966      \Hy@SaveSpaceFactor
10967    }%
10968  \fi
10969  \dimen@ \ht \pdf@box
10970  \ifdim \dp \pdf@box = \z@
10971    \literalps@out{H.S}%
10972  \else
10973    \lower \dp \pdf@box \hbox{\literalps@out{H.S}}%
10974  \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...).

```

10975  \ifHy@breaklinks
10976    \expandafter \Hy@breaklinksunhbox
10977  \else
10978    \expandafter \box
10979  \fi
10980  \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

10981  \ifdim \dimen@ = \z@
10982    \literalps@out{H.R}%
10983  \else
10984    \raise \dimen@ \hbox{\literalps@out{H.R}}%
10985  \fi
10986  \Hy@RestoreSpaceFactor
10987  \fi
10988  \ifx \pdf@type \Hy@DEST
10989  \else
10990    \pdf@addtoksx{H.B}%
10991  \fi
10992 }

```

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.

```

10993 \newtoks \pdf@toks
10994 \newtoks \pdf@defaulttoks
10995 \pdf@defaulttoks = {}%
10996 \def \pdf@addtoks #1 #2 {%
10997   \edef \@processme {\pdf@toks {\the \pdf@toks / #2 #1}}%
10998   \@processme
10999 }
11000 \def \pdf@addtoksx #1 {%
11001   \edef \@processme {\pdf@toks {\the \pdf@toks \space #1}}%
11002   \@processme
11003 }
11004 \def \PDFdefaults #1 {%
11005   \pdf@defaulttoks = {#1}%
11006 }

```

This is the list of allowed keys. See the Acrobat manual for an explanation.

```

11007 % what is the type of pdfmark?

```



```

11008 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
11009 % what is the link type?
11010 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
11011 \def\pdf@linktype{link}
11012 % parameter is a stream of PDF
11013 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
11014 % parameter is a name
11015 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
11016 % parameter is a array
11017 \define@key{PDF}{Border}{%
11018   \edef\Hy@temp{#1}%
11019   \ifx\Hy@temp\@empty
11020     \else
11021       \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
11022   \fi
11023 }
11024 \let\Hy@BorderArrayPatch\@empty
11025 % parameter is a dictionary
11026 \define@key{PDF}{BorderStyle}{%
11027   \edef\Hy@temp{#1}%
11028   \ifx\Hy@temp\@empty
11029     \else
11030       \pdf@addtoks{<<#1>>}{BS}%
11031   \fi
11032 }
11033 % parameter is a array
11034 \define@key{PDF}{Color}{%
11035   \ifx\relax#1\relax
11036     \else
11037       \pdf@addtoks{[#1]}{Color}% hash-ok
11038   \fi
11039 }
11040 % parameter is a string
11041 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
11042 % parameter is a integer
11043 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
11044 % parameter is a array
11045 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
11046 % parameter is a string
11047 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
11048 % parameter is a string or file
11049 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
11050 % parameter is a destination
11051 \define@key{PDF}{Dest}{%
11052   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11053   \ifx\Hy@pstringDest\@empty
11054     \Hy@pdfmarkerrortrue
11055     \Hy@Warning{Destination with empty name ignored}%
11056   \else
11057     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11058   \fi
11059 }
11060 \define@key{PDF}{DestAnchor}{%
11061   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11062   \ifx\Hy@pstringDest\@empty
11063     \Hy@pdfmarkerrortrue
11064     \Hy@Warning{Destination with empty name ignored}%

```

```

11065 \else
11066 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11067 \fi
11068 }
11069 % parameter is a string
11070 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
11071 % parameter is a string
11072 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
11073 % parameter is a int
11074 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
11075 \define@key{PDF}{PDFAFlags}{%
11076 \ifHy@pdfa
11077 \pdf@addtoks{#1}{F}%
11078 \fi
11079 }
11080 % parameter is a name
11081 \define@key{PDF}{AcroHighlight}{%
11082 \begingroup
11083 \edef\x{#1}%
11084 \expandafter\endgroup\ifx\x\@empty
11085 \else
11086 \pdf@addtoks{#1}{H}%
11087 \fi
11088 }
11089 % parameter is a string
11090 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
11091 % parameter is a string
11092 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
11093 % parameter is a string
11094 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11095 % parameter is a string
11096 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
11097 % parameter is a Boolean
11098 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
11099 % parameter is a integer or name
11100 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
11101 % parameter is a name
11102 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
11103 % parameter is a string
11104 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
11105 % parameter is a array
11106 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
11107 % parameter is a integer
11108 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
11109 % parameter is a name
11110 \define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
11111 % parameter is a string
11112 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
11113 % parameter is a string
11114 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
11115 % parameter is a string
11116 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
11117 % parameter is an array
11118 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
11119 % parameter is a string
11120 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

11121 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
11122 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
11123 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
11124 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11125 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
11126 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
11127 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
11128 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11129 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
11130 \define@key{PDF}{URI}{\pdf@addtoks{(#1)}{URI}}
11131 \define@key{PDF}{Trapped}{%
11132   \edef\Hy@temp{#1}%
11133   \ifx\Hy@temp\@empty
11134     \else
11135       \pdf@addtoks{/#1}{Trapped}%
11136     \fi
11137 }
11138
11139 </pdfmarkbase>
11140 <*pdfmark>
11141 \def\Acrobatmenu#1#2{%
11142   \Hy@Acrobatmenu{#1}{#2}{%
11143     \pdfmark[{#2}]{%
11144       linktype=menu,%
11145       pdfmark=/ANN,%
11146       AcroHighlight=\@pdfhighlight,%
11147       Border=\@pdfborder,%
11148       BorderStyle=\@pdfborderstyle,%
11149       Action={<< /Subtype /Named /N /#1 >>},%
11150       Subtype=/Link,%
11151       PDFAFlags=4%
11152     }%
11153   }%
11154 }

```

And now for some useful examples:

```

11155 \def\PDFNextPage{\@ifnextchar[{\PDFNextPage@}{\PDFNextPage@[]}}
11156 \def\PDFNextPage@[#1]#2{%
11157   \pdfmark[{#2}]{%
11158     #1,%
11159     Border=\@pdfborder,%
11160     BorderStyle=\@pdfborderstyle,%
11161     Color=.2 .1 .5,%
11162     pdfmark=/ANN,%
11163     Subtype=/Link,%
11164     PDFAFlags=4,%
11165     Page=/Next%
11166   }%
11167 }
11168 \def\PDFPreviousPage{%
11169   \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
11170 }
11171 \def\PDFPreviousPage@[#1]#2{%
11172   \pdfmark[{#2}]{%
11173     #1,%
11174     Border=\@pdfborder,%
11175     BorderStyle=\@pdfborderstyle,%
11176     Color=.4 .4 .1,%

```

```

11177 pdfmark=/ANN,%
11178 Subtype=/Link,%
11179 PDFAFlags=4,%
11180 Page=/Prev%
11181 }%
11182 }
11183 \def\PDFOpen#1{%
11184 \pdfmark{#1,pdfmark=/DOCVIEW}%
11185 }

```

This will only work if you use Distiller 2.1 or higher.

```

11186 \def\hyper@linkurl#1#2{%
11187 \begingroup
11188 \Hy@pstringdef\Hy@pstringURI{#2}%
11189 \hyper@chars
11190 \leavevmode
11191 \pdfmark[{#1}]{%
11192 pdfmark=/ANN,%
11193 linktype=url,%
11194 AcroHighlight=\@pdfhighlight,%
11195 Border=\@pdfborder,%
11196 BorderStyle=\@pdfborderstyle,%
11197 Color=\@urlbordercolor,%
11198 Action={<<%
11199 /Subtype/URI%
11200 /URI(\Hy@pstringURI)%
11201 \ifHy@href@ismap
11202 /IsMap true%
11203 \fi
11204 >>},%
11205 Subtype=/Link,%
11206 PDFAFlags=4%
11207 }%
11208 \endgroup
11209 }
11210 \def\hyper@linkfile#1#2#3{%
11211 \begingroup
11212 \def\Hy@pstringF{#2}%
11213 \Hy@CleanupFile\Hy@pstringF
11214 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
11215 \Hy@pstringdef\Hy@pstringD{#3}%
11216 \Hy@MakeRemoteAction
11217 \leavevmode
11218 \pdfmark[{#1}]{%
11219 pdfmark=/ANN,%
11220 Subtype=/Link,%
11221 PDFAFlags=4,%
11222 AcroHighlight=\@pdfhighlight,%
11223 Border=\@pdfborder,%
11224 BorderStyle=\@pdfborderstyle,%
11225 linktype=file,%
11226 Color=\@filebordercolor,%
11227 Action={%
11228 <<%
11229 /S/GoToR%
11230 \Hy@SetNewWindow
11231 /F(\Hy@pstringF)%
11232 /D%

```

```

11233     \ifx\|#3\|%
11234     [\Hy@href@page\@pdfremotestartview]%
11235     \else
11236     (\Hy@pstringD)cvn%
11237     \fi
11238     \Hy@href@nextactionraw
11239     >>%
11240     }%
11241     }%
11242 \endgroup
11243 }
11244 \def\@hyper@launch run:#1\|#2#3{%
11245 \begingroup
11246 \Hy@pstringdef\Hy@pstringF{#1}%
11247 \Hy@pstringdef\Hy@pstringP{#3}%
11248 \leavevmode
11249 \pdfmark[{#2}]{%
11250 pdfmark=/ANN,%
11251 Subtype=/Link,%
11252 PDFAFlags=4,%
11253 AcroHighlight=\@pdfhighlight,%
11254 Border=\@pdfborder,%
11255 BorderStyle=\@pdfborderstyle,%
11256 linktype=run,%
11257 Color=\@runbordercolor,%
11258 Action={%
11259 <<%
11260 /S/Launch%
11261 \Hy@SetNewWindow
11262 /F(\Hy@pstringF)%
11263 \ifx\|#3\|%
11264 \else
11265 /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
11266 \fi
11267 \Hy@href@nextactionraw
11268 >>%
11269 }%
11270 }%
11271 \endgroup
11272 }
11273 \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.

```

11274 <*dvips>
11275 \providecommand*{\XR@ext}{pdf}
11276 \def\Hy@raisedlink{}
11277 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
11278 \def\headerps@out#1{\special{! #1}}%
11279 \input{pdfmark.def}%
11280 \ifx\@pdfproducer\relax

```

```

11281 \def\@pdfproducer{dvips + Distiller}%
11282 \fi
11283 \providecommand*\@pdfborder{0 0 1}
11284 \providecommand*\@pdfborderstyle{}
11285 \providecommand*\@pdfview{XYZ}
11286 \providecommand*\@pdfviewparams{ H.V}
11287 \def\Hy@BorderArrayPatch{BorderArrayPatch}

11288 \g@addto@macro\Hy@FirstPageHook{%
11289 \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.

```

11290 /DvipsToPDF{72.27 mul Resolution div} def%
11291 /PDFToDvips{72.27 div Resolution mul} def%
11292 /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.

```

11293 /BorderArrayPatch{%
11294   [exch{%
11295     dup dup type/integertype eq exch type/realtype eq or%
11296     {BPToDvips}if%
11297   }forall]%
11298 }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.

```

11299 /HyperBorder {1 PDFToDvips} def%
11300 /H.V {pdf@hoff pdf@voff null} def%
11301 /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

```

11302 /H.S {%
11303   currentpoint %
11304   HyperBorder add /pdf@lly exch def %
11305   dup DvipsToPDF 72 add /pdf@hoff exch def %
11306   HyperBorder sub /pdf@llx exch def%
11307 } def%

```

The calculation of upper left *y* is done without raising the point in T<sub>E</sub>X, by simply adding on the current \baselineskip to the current *y*. This is usually too much, so we remove a notional 2 points.

We have to see what the current baselineskip is, and convert it to the dvips coordinate system.

Argument: baselineskip in pt. The  $x$  and  $y$  coordinates of the current point, minus the baselineskip

```

11308 /H.L {%
11309 2 sub dup%
11310 /HyperBasePt exch def %
11311 PDFToDvips /HyperBaseDvips exch def %
11312 currentpoint %
11313 HyperBaseDvips sub /pdf@ury exch def%
11314 /pdf@urx exch def%
11315 } def%
11316 /H.A {%
11317 H.L %
11318 % | /pdf@voff| = the distance from the top of the page to a point
11319 % | \baselineskip| above the current point in PDF coordinates
11320 currentpoint exch pop %
11321 vsize 72 sub exch DvipsToPDF %
11322 HyperBasePt sub % baseline skip
11323 sub /pdf@voff exch def%
11324 } def%
11325 /H.R {%
11326 currentpoint %
11327 HyperBorder sub /pdf@ury exch def %
11328 HyperBorder add /pdf@urx exch def %
11329 % | /pdf@voff| = the distance from the top of the page to the current point, in
11330 % PDF coordinates
11331 currentpoint exch pop vsize 72 sub %
11332 exch DvipsToPDF sub /pdf@voff exch def%
11333 } def%
11334 }%
11335 }
11336 \AtBeginShipoutFirst{%
11337 \ifHy@setpagesize
11338 \begingroup
11339 \@ifundefined{stockwidth}{%
11340 \ifdim\paperwidth>\z@
11341 \ifdim\paperheight>\z@
11342 \special{papersize=\the\paperwidth,\the\paperheight}%
11343 \fi
11344 \fi
11345 }{%
11346 \ifdim\stockwidth>\z@
11347 \ifdim\stockheight>\z@
11348 \special{papersize=\the\stockwidth,\the\stockheight}%
11349 \fi
11350 \fi
11351 }%
11352 \endgroup
11353 \fi
11354 \Hy@DisableOption{setpagesize}%
11355 }
11356 \</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.

```

11357 <*vtexpdfmark>
11358 \providecommand*{\XR@ext}{pdf}
11359 \def\Hy@raisedlink{}
11360 \def\literalps@out#1{\special{pS:#1}}%
11361 \def\headerps@out#1{\immediate\special{pS:#1}}%
11362 \input{pdfmark.def}%
11363 \ifx\@pdfproducer\relax
11364   \ifnum\OpMode=\@ne
11365     \def\@pdfproducer{VTeX}%
11366   \else
11367     \def\@pdfproducer{VTeX + Distiller}%
11368   \fi
11369 \fi
11370 \providecommand*\@pdfborder{0 0 1}
11371 \providecommand*\@pdfborderstyle{}
11372 \providecommand*\@pdfview{XYZ}
11373 \providecommand*\@pdfviewparams{ H.V}
11374 \g@addto@macro\Hy@FirstPageHook{%
11375   \headerps@out{%
11376     /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.

```

11377   /HyperBorder {1} def%
11378   /H.V {pdf@hoff pdf@voff null} def%
11379   /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:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

11380   /H.S {%
11381     currentpoint %
11382     HyperBorder sub%
11383     /pdf@lly exch def %
11384     dup 72 add /pdf@hoff exch def %
11385     HyperBorder sub%
11386     /pdf@llx exch def%
11387   } def%

```

The  $x$  and  $y$  coordinates of the current point, minus the `\baselineskip`:  $\text{pdf@ury} = Y_c + \text{HyperBasePt} + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

11388   /H.L {%
11389     2 sub%
11390     /HyperBasePt exch def %
11391     currentpoint %
11392     HyperBasePt add HyperBorder add%
11393     /pdf@ury exch def %
11394     HyperBorder add%
11395     /pdf@urx exch def%
11396   } def%
11397   /H.A {%
11398     H.L %
11399     currentpoint exch pop %
11400     vsize 72 sub exch %
11401     HyperBasePt add add%
11402     /pdf@voff exch def%
11403   } def%

```



$\text{pdf@ury} = Y_c + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

11404 /H.R {%
11405   currentpoint %
11406   HyperBorder add%
11407   /pdf@ury exch def %
11408   HyperBorder add%
11409   /pdf@urx exch def %
11410   currentpoint exch pop vsize 72 sub add%
11411   /pdf@voff exch def%
11412 } def%
11413 }%
11414 }
11415 </vtexpdfmark>

```

## 46.11 Textures

```

11416 <*textures>
11417 \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.

```

11418 \begingroup
11419   \obeylines %
11420   \gdef\Hy@ps@CR{\noexpand
11421     }%
11422 \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`.

```

11423 \def\literalps@out#1{%
11424   \special{postscript 0 0 transform}%
11425   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
11426 }%
11427 %

```

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.

```

11428 \def\headerps@out#1{%
11429   \special{%
11430     prepostscript TeXdict begin\Hy@ps@CR
11431       #1\Hy@ps@CR
11432     end%

```

```

11433 }%
11434 }%
11435 %

```

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.

```

11436 \g@addto@macro\Hy@FirstPageHook{%
11437   \headerps@out{%
11438     /betterpdfmark {%
11439       systemdict begin %
11440         dup /BP eq%
11441         {cleartomark gsave nulldevice []}%
11442         {dup /EP eq%
11443           {cleartomark cleartomark grestore}%
11444           {cleartomark}%
11445         ifelse%
11446       }ifelse %
11447     end%
11448   }def\Hy@ps@CR
11449   ___pdfmark___ not{/pdfmark /betterpdfmark load def}if%
11450 }% end of \headerps@out
11451 }% end of \AtBeginShipoutFirst
11452 %
11453 \input{pdfmark.def}%
11454 %
11455 \ifx\@pdfproducer\relax
11456   \def\@pdfproducer{Textures + Distiller}%
11457 \fi
11458 \providecommand*\@pdfborder{0 0 1}
11459 \providecommand*\@pdfborderstyle{}
11460 \providecommand*\@pdfview{XYZ}
11461 \providecommand*\@pdfviewparams{ H.V}
11462 %

```

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  $\TeX$ .

```

11463 \Hy@AtBeginDocument{%
11464   \headerps@out{%

```

Textures lives in normal points, I think. So conversion from one coordinate system to another involves doing nothing.

```

11465   /vsize {\Hy@pageheight} def%
11466   /DvipsToPDF {} def%
11467   /PDFToDvips {} def%
11468   /BPTToDvips {} def%
11469   /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
11470   /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
11471   /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
11472   /H.S {%
11473     currentpoint %
11474     HyperBorder add /pdf@lly exch def %
11475     dup DvipsToPDF 72 add /pdf@hoff exch def %
11476     HyperBorder sub /pdf@llx exch def%
11477   } def\Hy@ps@CR
11478   /H.L {%

```

```

11479      2 sub %
11480      PDFToDvips /HyperBase exch def %
11481      currentpoint %
11482      HyperBase sub /pdf@ury exch def%
11483      /pdf@urx exch def%
11484      } def\Hy@ps@CR
11485      /H.A {%
11486      H.L %
11487      currentpoint exch pop %
11488      vsize 72 sub exch DvipsToPDF %
11489      HyperBase sub % baseline skip
11490      sub /pdf@voff exch def%
11491      } def\Hy@ps@CR
11492      /H.R {%
11493      currentpoint %
11494      HyperBorder sub /pdf@ury exch def %
11495      HyperBorder add /pdf@urx exch def %
11496      currentpoint exch pop vsize 72 sub %
11497      exch DvipsToPDF sub /pdf@voff exch def%
11498      } def\Hy@ps@CR
11499      }%
11500      }

11501      \Hy@AtBeginDocument{%
11502      \ifHy@colorlinks
11503      \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
11504      \fi
11505      }

```

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.

```

11506      \expandafter\let\expandafter\keepPDF@SetupDoc
11507      \csname PDF@SetupDoc\endcsname
11508      \def\PDF@SetupDoc{%
11509      \ifx\@baseurl\@empty
11510      \else
11511      \special{html:<base href="\@baseurl">}%
11512      \fi
11513      \keepPDF@SetupDoc
11514      }

11515      \Hy@WrapperDef\hyper@anchor#1{%
11516      \Hy@SaveLastskip
11517      \Hy@VerboseAnchor{#1}%
11518      \begingroup
11519      \let\protect=\string
11520      \special{html:<a name=%
11521      \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11522      \endgroup
11523      \Hy@activeanchortrue
11524      \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
11525      \special{html:</a>}%
11526      \Hy@activeanchorfalse
11527      \Hy@RestoreLastskip
11528      }

11529      \Hy@WrapperDef\hyper@anchorstart#1{%
11530      \Hy@SaveLastskip
11531      \Hy@VerboseAnchor{#1}%
11532      \begingroup

```

```

11533 \hyper@chars
11534 \special{html:<a name=%
11535 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11536 \endgroup
11537 \Hy@activeanchortrue
11538 }
11539 \def\hyper@anchorend{%
11540 \special{html:</a>}%
11541 \Hy@activeanchorfalse
11542 \Hy@RestoreLastskip
11543 }
11544 \def\@urlltype{url}
11545 \def\hyper@linkstart#1#2{%
11546 \Hy@VerboseLinkStart{#1}{#2}%
11547 \expandafter\Hy@colorlink\csname @#1color\endcsname
11548 \def\Hy@tempa{#1}%
11549 \ifx\Hy@tempa\@urlltype
11550 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11551 \else
11552 \begingroup
11553 \hyper@chars
11554 \special{%
11555 html:<a href=%
11556 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>%
11557 }%
11558 \endgroup
11559 \fi
11560 }
11561 \def\hyper@linkend{%
11562 \special{html:</a>}%
11563 \Hy@endcolorlink
11564 }
11565 \def\hyper@linkfile#1#2#3{%
11566 \hyper@linkurl{#1}{%
11567 \Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi
11568 }%
11569 }
11570 \def\hyper@linkurl#1#2{%
11571 \leavevmode
11572 \ifHy@raiselinks
11573 \Hy@SaveSpaceFactor
11574 \Hy@SaveSavedSpaceFactor
11575 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
11576 \Hy@RestoreSavedSpaceFactor
11577 \@linkdim\dp\@tempboxa
11578 \lower\@linkdim\hbox{%
11579 \hyper@chars
11580 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11581 }%
11582 \Hy@colorlink\@urllcolor
11583 \Hy@RestoreSpaceFactor
11584 #1%
11585 \Hy@SaveSpaceFactor
11586 \@linkdim\ht\@tempboxa
11587 \advance\@linkdim by -6.5\p@
11588 \raise\@linkdim\hbox{\special{html:</a>}}%
11589 \Hy@endcolorlink

```

```

11590 \Hy@RestoreSpaceFactor
11591 \else
11592 \begingroup
11593 \hyper@chars
11594 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11595 \Hy@colorlink\@urlcolor#1%
11596 \special{html:</a>}%
11597 \Hy@endcolorlink
11598 \endgroup
11599 \fi
11600 }

Very poor implementation of \hyper@link without considering #1.
11601 \def\hyper@link#1#2#3{%
11602 \Hy@VerboseLinkStart{#1}{#2}%
11603 \hyper@linkurl{#3}{\#\HyperDestNameFilter{#2}}%
11604 }
11605 \def\hyper@image#1#2{%
11606 \begingroup
11607 \hyper@chars
11608 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
11609 \endgroup
11610 }
11611 </textures>

```

## 46.12 dvipsone

```

11612 % \subsection{dvipsone driver}
11613 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
11614 % |\special| commands.
11615 (*dvipsone)
11616 \providecommand*\XR@ext}{pdf}
11617 \def\Hy@raisedlink{}
11618 \providecommand*\@pdfborder{0 0 1}
11619 \providecommand*\@pdfborderstyle{}
11620 \def\literalps@out#1{\special{ps:#1}}%
11621 \def\headerps@out#1{\special{headertext=#1}}%
11622 \input{pdfmark.def}%
11623 \ifx\@pdfproducer\relax
11624 \def\@pdfproducer{dvipsone + Distiller}%
11625 \fi
11626 \HyInfo@AddonUnsupportedtrue
11627 \def\PDF@FinishDoc{%
11628 \Hy@UseMaketitleInfos
11629 \HyInfo@TrappedUnsupported
11630 \special{PDF: Keywords \@pdfkeywords}%
11631 \special{PDF: Title \@pdftitle}%
11632 \special{PDF: Creator \@pdfcreator}%
11633 \ifx\@pdfcreationdate\@empty
11634 \else
11635 \special{PDF: CreationDate \@pdfcreationdate}%
11636 \fi
11637 \ifx\@pdfmoddate\@empty
11638 \else
11639 \special{PDF: ModDate \@pdfmoddate}%
11640 \fi
11641 \special{PDF: Author \@pdfauthor}%
11642 \ifx\@pdfproducer\relax

```

```

11643 \else
11644   \special{PDF: Producer \@pdfproducer}%
11645 \fi
11646 \special{PDF: Subject \@pdfsubject}%
11647 \Hy@DisableOption{pdfauthor}%
11648 \Hy@DisableOption{pdftitle}%
11649 \Hy@DisableOption{pdfsubject}%
11650 \Hy@DisableOption{pdfcreator}%
11651 \Hy@DisableOption{pdfcreationdate}%
11652 \Hy@DisableOption{pdfmoddate}%
11653 \Hy@DisableOption{pdfproducer}%
11654 \Hy@DisableOption{pdfkeywords}%
11655 \Hy@DisableOption{pdftrapped}%
11656 \Hy@DisableOption{pdfinfo}%
11657 }
11658 \def\PDF@SetupDoc{%
11659   \def\Hy@temp{}%
11660   \ifx\@pdfstartpage\@empty
11661     \else
11662       \ifx\@pdfstartview\@empty
11663         \else
11664           \edef\Hy@temp{%
11665             ,Page=\@pdfstartpage
11666             ,View=\@pdfstartview
11667           }%
11668         \fi
11669       \fi
11670     \edef\Hy@temp{%
11671       \noexpand\pdfmark{%
11672         pdfmark=/DOCVIEW,%
11673         PageMode=/\@pdfpagemode
11674       }\Hy@temp
11675     }%
11676   }%
11677   \Hy@temp
11678   \ifx\@pdfpagescrop\@empty
11679     \else
11680       \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
11681     \fi
11682   \edef\Hy@temp{%
11683     \ifHy@toolbar\else /HideToolbar true\fi
11684     \ifHy@menubar\else /HideMenubar true\fi
11685     \ifHy>windowui\else /HideWindowUI true\fi
11686     \ifHy@fitwindow /FitWindow true\fi
11687     \ifHy@centerwindow /CenterWindow true\fi
11688     \ifHy@displaydoctitle /DisplayDocTitle true\fi
11689     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
11690     \Hy@UseNameKey{Direction}\@pdfdirection
11691     \Hy@UseNameKey{ViewArea}\@pdfviewarea
11692     \Hy@UseNameKey{ViewClip}\@pdfviewclip
11693     \Hy@UseNameKey{PrintArea}\@pdfprintarea
11694     \Hy@UseNameKey{PrintClip}\@pdfprintclip
11695     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
11696     \Hy@UseNameKey{Duplex}\@pdfduplex
11697     \ifx\@pdfpicktraybypdfsize\@empty
11698       \else
11699         /PickTrayByPDFSize \@pdfpicktraybypdfsize

```

```

11700 \fi
11701 \ifx\@pdfprintpagerange\@empty
11702 \else
11703   /PrintPageRange[\@pdfprintpagerange]%
11704 \fi
11705 \ifx\@pdfnumcopies\@empty
11706 \else
11707   /NumCopies \@pdfnumcopies
11708 \fi
11709 }%
11710 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
11711 \pdfmark{%
11712   pdfmark=/PUT,%
11713   Raw={%
11714     \string{Catalog\string}<<%
11715     \ifx\Hy@temp\@empty
11716     \else
11717       /ViewerPreferences<<\Hy@temp>>%
11718     \fi
11719     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
11720     \ifx\@pdflang\@empty
11721     \else
11722       /Lang(\@pdflang)%
11723     \fi
11724     \ifx\@baseurl\@empty
11725     \else
11726       /URI<</Base(\Hy@pstringB)>>%
11727     \fi
11728     >>%
11729   }%
11730 }%
11731 }
11732 \providecommand*\@pdfview{XYZ}
11733 \providecommand*\@pdfviewparams{ %
11734   gsave revscl currentpoint grestore %
11735   72 add exch pop null exch null%
11736 }
11737 \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  $\TeX$ .

```

11738 \g@addto@macro\Hy@FirstPageHook{%
11739   \headerps@out{%

```

dvipsone lives in scaled points; does this mean 65536 or 65781?

```

11740   /DvipsToPDF { 65781 div } def%
11741   /PDFToDvips { 65781 mul } def%
11742   /BPToDvips{65781 mul}def%
11743   /HyperBorder { 1 PDFToDvips } def%
11744   /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.

```

11745   /BorderArrayPatch{%
11746     [exch{%

```

```

11747      dup dup type/integertype eq exch type/realtype eq or%
11748      {BPToDvips}if%
11749    }forall}%
11750  }def%
11751  /H.S {%
11752    currentpoint %
11753    HyperBorder add /pdf@lly exch def %
11754    dup DvipsToPDF 72 add /pdf@hoff exch def %
11755    HyperBorder sub /pdf@llx exch def%
11756  } def%
11757  /H.L {%
11758    2 sub %
11759    PDFToDvips /HyperBase exch def %
11760    currentpoint %
11761    HyperBase sub /pdf@ury exch def%
11762    /pdf@urx exch def%
11763  } def%
11764  /H.A {%
11765    H.L %
11766    currentpoint exch pop %
11767    HyperBase sub % baseline skip
11768    DvipsToPDF /pdf@voff exch def%
11769  } def%
11770  /H.R {%
11771    currentpoint %
11772    HyperBorder sub /pdf@ury exch def %
11773    HyperBorder add /pdf@urx exch def %
11774    currentpoint exch pop DvipsToPDF /pdf@voff exch def%
11775  } def%
11776  }%
11777 }
11778 </dvipsone>

```

## 46.13 TeX4ht

```

11779 < *tex4ht>
11780 \providecommand*{\XR@ext}{html}
11781 \def\Hy@raisedlink{}
11782 \ifpackageloaded{tex4ht}{%
11783   \Hy@InfoNoLine{tex4ht is already loaded}%
11784 }{%
11785   \RequirePackage[hTeX4ht]{tex4ht}%
11786 }
11787 \hyperlinkfileprefix{}
11788 \def\PDF@FinishDoc{}
11789 \def\PDF@SetupDoc{%
11790   \ifx\@baseurl\@empty
11791     \else
11792       \special{t4ht=<base href="\@baseurl">}%
11793     \fi
11794 }
11795 \Hy@WrapperDef\hyper@anchor#1{%
11796   \Hy@SaveLastskip
11797   \Hy@VerboseAnchor{#1}%
11798   \begingroup
11799     \let\protect=\string
11800     \special{t4ht=<a name=%
11801       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%

```



```

11802 \endgroup
11803 \Hy@activeanchortrue
11804 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
11805 \special{t4ht=</a>}%
11806 \Hy@activeanchorfalse
11807 \Hy@RestoreLastskip
11808 }
11809 \Hy@WrapperDef\hyper@anchorstart#1{%
11810 \Hy@SaveLastskip
11811 \Hy@VerboseAnchor{#1}%
11812 \begingroup
11813 \hyper@chars\special{t4ht=<a name=%
11814 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11815 \endgroup
11816 \Hy@activeanchortrue
11817 }
11818 \def\hyper@anchorend{%
11819 \special{t4ht=</a>}%
11820 \Hy@activeanchorfalse
11821 \Hy@RestoreLastskip
11822 }
11823 \def\@urlltype{url}
11824 \def\hyper@linkstart#1#2{%
11825 \Hy@VerboseLinkStart{#1}{#2}%
11826 \expandafter\Hy@colorlink\csname @#1color\endcsname
11827 \def\Hy@tempa{#1}%
11828 \ifx\Hy@tempa\@urlltype
11829 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
11830 \else
11831 \begingroup
11832 \hyper@chars
11833 \special{t4ht=<a href=%
11834 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
11835 \endgroup
11836 \fi
11837 }
11838 \def\hyper@linkend{%
11839 \special{t4ht=</a>}%
11840 \Hy@endcolorlink
11841 }
11842 \def\hyper@linkfile#1#2#3{%
11843 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%
11844 }
11845 \def\hyper@linkurl#1#2{%
11846 \leavevmode
11847 \ifHy@raiselinks
11848 \Hy@SaveSpaceFactor
11849 \Hy@SaveSavedSpaceFactor
11850 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
11851 \Hy@RestoreSavedSpaceFactor
11852 \@linkdim\dp\@tempboxa
11853 \lower\@linkdim\hbox{%
11854 \begingroup
11855 \hyper@chars
11856 \special{%
11857 t4ht=<a href=\hyper@quote#2\hyper@quote>%
11858 }%

```

```

11859 \endgroup
11860 }%
11861 \Hy@colorlink\@urlcolor
11862 \Hy@RestoreSpaceFactor
11863 #1%
11864 \Hy@SaveSpaceFactor
11865 \Hy@endcolorlink
11866 \@linkdim\ht\@tempboxa
11867 \advance\@linkdim by -6.5\p@
11868 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
11869 \Hy@RestoreSpaceFactor
11870 \else
11871 \begingroup
11872 \hyper@chars
11873 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
11874 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
11875 \special{t4ht=</a>}%
11876 \endgroup
11877 \fi
11878 }

```

Poor implementation of \hyper@link without considering #1.

```

11879 \def\hyper@link#1#2#3{%
11880 \Hy@VerboseLinkStart{#1}{#2}%
11881 \hyper@linkurl{#3}{\#\HyperDestNameFilter{#2}}%
11882 }
11883 \def\hyper@image#1#2{%
11884 \begingroup
11885 \hyper@chars
11886 \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
11887 \endgroup
11888 }
11889 \let\autoref\ref
11890 \ifx \rEfLiNK \UnDef
11891 \def\rEfLiNK #1#2{#2}%
11892 \fi
11893 \def\backref#1{}

```

Fix for tex4ht.

```

11894 \AtBeginDocument{%
11895 \expandafter\let\expandafter\Hy@OrgMakeLabel\csname Make:Label\endcsname
11896 \expandafter\def\csname Make:Label\endcsname#1#2{%
11897 \ifhmode
11898 \Hy@SaveSpaceFactor
11899 \else
11900 \global\Hy@SavedSpaceFactor=1000 %
11901 \fi
11902 \Hy@OrgMakeLabel{#1}{%
11903 \Hy@RestoreSpaceFactor
11904 #2%
11905 \Hy@SaveSpaceFactor
11906 }%
11907 \Hy@RestoreSpaceFactor
11908 }%
11909 }
11910 </tex4ht>
11911 <*tex4htcfg>
11912 \IfFileExists{\jobname.cfg}{\endinput}{}
11913 \Preamble{html}

```

```

11914 \begin{document}%
11915 \EndPreamble
11916 \def\TeX{\TeX}
11917 \def\OMEGA{\Omega}
11918 \def\LaTeX{\LaTeX}
11919 \def\LaTeXe{\LaTeX2e}
11920 \def\TeX{e-\TeX}
11921 \def\MF{Metafont}
11922 \def\MP{MetaPost}
11923 </tex4htc>

```

## 47 Driver-specific form support

### 47.1 pdfmarks

```

11924 <*pdfmark>
11925 \long\def\@Form[#1]{%
11926 \g@addto@macro\Hy@FirstPageHook{%
11927 \headerps@out{%
11928 [%
11929 /_objdef{pdfDocEncoding}%
11930 /type/dict%
11931 /OBJ pdfmark%
11932 [%
11933 {pdfDocEncoding}%
11934 <<%
11935 /Type/Encoding%
11936 /Differences[%
11937 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
11938 /tilde %
11939 39/quotesingle %
11940 96/grave %
11941 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
11942 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
11943 /quotedblbase/quotedblleft/quotedblright/quoteleft%
11944 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%
11945 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
11946 164/currency %
11947 166/brokenbar %
11948 168/dieresis/copyright/ordfeminine %
11949 172/logicalnot/.notdef/registered/macron/degree/plusminus%
11950 /twosuperior/threesuperior/acute/mu %
11951 183/periodcentered/cedilla/onesuperior/ordmasculine %
11952 188/onequarter/onehalf/threequarters %
11953 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
11954 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
11955 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
11956 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
11957 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
11958 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
11959 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
11960 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
11961 /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%
11962 /ucircumflex/udieresis/yacute/thorn/ydieresis%
11963 ]%
11964 >>%
11965 /PUT pdfmark%
11966 [%

```

```

11967  /__objdef{ZaDb}%
11968  /type/dict%
11969  /OBJ pdfmark%
11970  [%
11971   {ZaDb}%
11972   <<%
11973    /Type/Font%
11974    /Subtype/Type1%
11975    /Name/ZaDb%
11976    /BaseFont/ZapfDingbats%
11977   >>%
11978  /PUT pdfmark%
11979  [%
11980   /__objdef{Helv}%
11981   /type/dict%
11982  /OBJ pdfmark%
11983  [%
11984   {Helv}%
11985   <<%
11986    /Type/Font%
11987    /Subtype/Type1%
11988    /Name/Helv%
11989    /BaseFont/Helvetica%
11990    /Encoding{pdfDocEncoding}%
11991   >>%
11992  /PUT pdfmark%
11993  [%
11994   /__objdef{aform}%
11995   /type/dict%
11996  /OBJ pdfmark%
11997  [%
11998   /__objdef{afields}%
11999   /type/array%
12000  /OBJ pdfmark%
12001  {%
12002   [%
12003    /BBox[0 0 100 100]%
12004    /__objdef{Check}%
12005   /BP pdfmark %
12006   1 0 0 setrgbcolor%
12007   /ZapfDingbats 80 selectfont %
12008   20 20 moveto%
12009   (4)show%
12010   [/EP pdfmark%
12011   [%
12012    /BBox[0 0 100 100]%
12013    /__objdef{Cross}%
12014   /BP pdfmark %
12015   1 0 0 setrgbcolor%
12016   /ZapfDingbats 80 selectfont %
12017   20 20 moveto%
12018   (8)show%
12019   [/EP pdfmark%
12020   [%
12021    /BBox[0 0 250 100]%
12022    /__objdef{Submit}%
12023   /BP pdfmark %

```

```

12024 0.6 setgray %
12025 0 0 250 100 rectfill %
12026 1 setgray %
12027 2 2 moveto %
12028 2 98 lineto %
12029 248 98 lineto %
12030 246 96 lineto %
12031 4 96 lineto %
12032 4 4 lineto %
12033 fill %
12034 0.34 setgray %
12035 248 98 moveto %
12036 248 2 lineto %
12037 2 2 lineto %
12038 4 4 lineto %
12039 246 4 lineto %
12040 246 96 lineto %
12041 fill%
12042 /Helvetica 76 selectfont %
12043 0 setgray %
12044 8 22.5 moveto%
12045 (Submit)show%
12046 [/EP pdfmark%
12047 [%
12048   /BBox[0 0 250 100]%
12049   /_objdef{SubmitP}%
12050 /BP pdfmark %
12051 0.6 setgray %
12052 0 0 250 100 rectfill %
12053 0.34 setgray %
12054 2 2 moveto %
12055 2 98 lineto %
12056 248 98 lineto %
12057 246 96 lineto %
12058 4 96 lineto %
12059 4 4 lineto %
12060 fill %
12061 1 setgray %
12062 248 98 moveto %
12063 248 2 lineto %
12064 2 2 lineto %
12065 4 4 lineto %
12066 246 4 lineto %
12067 246 96 lineto %
12068 fill%
12069 /Helvetica 76 selectfont %
12070 0 setgray %
12071 10 20.5 moveto%
12072 (Submit)show%
12073 [/EP pdfmark%
12074 } ?pdfmark%
12075 [%
12076 {aform}%
12077 <<%
12078 /Fields{afields}%
12079 /DR<<%
12080 /Font<<%

```

```

12081      /ZaDb{ZaDb}%
12082      /Helv{Helv}%
12083      >>%
12084  >>%
12085  /DA(/Helv 10 Tf 0 g)%
12086  /CO{corder}%
12087  \ifHy@pdfa
12088  \else
12089      \ifHyField@NeedAppearances
12090      /NeedAppearances true%
12091      \fi
12092  \fi
12093  >>%
12094  /PUT pdfmark%
12095  [%
12096  {Catalog}%
12097  <<%
12098      /AcroForm{aform}%
12099  >>%
12100  /PUT pdfmark%
12101  [%
12102  /__objdef{corder}%
12103  /type/array%
12104  /OBJ pdfmark% dps
12105  }]%
12106  \kvsetkeys{Form}{#1}%
12107  }
12108  \def\@endForm{}
12109  \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12110  \Hy\Message{Sorry, pdfmark drivers do not support FORM gauges}%
12111  }
12112  \def\@TextField[#1]#2{% parameters, label
12113  \def\Fld@name{#2}%
12114  \def\Fld@default{}%
12115  \let\Fld@value\@empty
12116  \def\Fld@width{\DefaultWidthofText}%
12117  \def\Fld@height{%
12118  \ifFld@multiline
12119      \DefaultHeightofTextMultiline
12120  \else
12121      \DefaultHeightofText
12122  \fi
12123  }%
12124  \begingroup
12125  \expandafter\HyField@SetKeys\expandafter{%
12126  \DefaultOptionsofText,#1%
12127  }%
12128  \HyField@FlagsText
12129  \ifFld@hidden\def\Fld@width{1sp}\fi
12130  \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12131  \LayoutTextField{#2}{%
12132  \Hy@escapeform\PDFForm@Text
12133  \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
12134  pdfmark=/ANN,Raw={\PDFForm@Text}%
12135  }%
12136  }%
12137  \endgroup

```

```

12138 }
12139 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12140 \def\Fld@name{#2}%
12141 \let\Fld@default\relax
12142 \let\Fld@value\relax
12143 \def\Fld@width{\DefaultWidthofChoiceMenu}%
12144 \def\Fld@height{\DefaultHeightofChoiceMenu}%
12145 \begingroup
12146 \Fld@menulength=0 %
12147 \@tempdima\z@
12148 \@for\@curropt:=#3\do{%
12149 \expandafter\Fld@checkequals\@curropt==\%
12150 \Hy@StepCount\Fld@menulength
12151 \settowidth{\@tempdimb}{\@currDisplay}%
12152 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12153 }%
12154 \advance\@tempdima by 15\p@
12155 \begingroup
12156 \HyField@SetKeys{#1}%
12157 \edef\x{\endgroup
12158 \noexpand\expandafter
12159 \noexpand\HyField@SetKeys
12160 \noexpand\expandafter{%
12161 \expandafter\noexpand\csname DefaultOptionsof%
12162 \ifFld@radio
12163 Radio%
12164 \else
12165 \ifFld@combo
12166 \ifFld@popdown
12167 PopdownBox%
12168 \else
12169 ComboBox%
12170 \fi
12171 \else
12172 ListBox%
12173 \fi
12174 \fi
12175 \endcsname
12176 }%
12177 }\x
12178 \HyField@SetKeys{#1}%
12179 \ifFld@hidden\def\Fld@width{1sp}\fi
12180 \ifx\Fld@value\relax
12181 \let\Fld@value\Fld@default
12182 \fi
12183 \LayoutChoiceField{#2}{%
12184 \ifFld@radio
12185 \HyField@FlagsRadioButton
12186 \@@Radio{#3}%
12187 \else
12188 \begingroup
12189 \HyField@FlagsChoice
12190 \ifdim\Fld@width<\@tempdima
12191 \ifdim\@tempdima<1cm\@tempdima1cm\fi
12192 \edef\Fld@width{\the\@tempdima}%
12193 \fi
12194 \ifFld@combo

```

```

12195         \else
12196         \@tempdima=\the\Fld@menulength\Fld@charsize
12197         \advance\@tempdima by \Fld@borderwidth bp %
12198         \advance\@tempdima by \Fld@borderwidth bp %
12199         \edef\Fld@height{\the\@tempdima}%
12200         \fi
12201         \@@ListBox{#3}%
12202     \endgroup
12203 \fi
12204 }%
12205 \endgroup
12206 }
12207 \def\@@Radio#1{%
12208     \Fld@listcount=0 %
12209     \EdefEscapeName\Fld@default{\Fld@default}%
12210     \@for\@curropt:=#1\do{%
12211         \expandafter\Fld@checkequals\@curropt==\%
12212         \EdefEscapeName\@currValue{\@currValue}%
12213         \Hy@StepCount\Fld@listcount
12214         \@currDisplay\space
12215         \Hy@escapeform\PDFForm@Radio
12216         \pdfmark[MakeRadioField{\Fld@width}{\Fld@height}]{%
12217             pdfmark=/ANN,%
12218             Raw={%
12219                 \PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>%
12220             }%
12221         } % deliberate space between radio buttons
12222     }%
12223 }
12224 \newcount\Fld@listcount
12225 \def\@@ListBox#1{%
12226     \HyField@PDFChoices{#1}%
12227     \Hy@escapeform\PDFForm@List
12228     \pdfmark[MakeChoiceField{\Fld@width}{\Fld@height}]{%
12229         pdfmark=/ANN,Raw={\PDFForm@List}%
12230     }%
12231 }
12232 \def\@PushButton[#1]#2{% parameters, label
12233     \def\Fld@name{#2}%
12234     \begingroup
12235         \expandafter\HyField@SetKeys\expandafter{%
12236             \DefaultOptionsofPushButton,#1%
12237         }%
12238         \ifHy@pdfa
12239             \Hy@Error{%
12240                 PDF/A: Push button with JavaScript is prohibited%
12241             }\@ehc
12242             \LayoutPushButtonField{%
12243                 \leavevmode
12244                 \MakeButtonField{#2}%
12245             }%
12246         \else
12247             \HyField@FlagsPushButton
12248             \ifFld@hidden\def\Fld@width{1sp}\fi
12249             \LayoutPushButtonField{%
12250                 \leavevmode
12251                 \Hy@escapeform\PDFForm@Push

```



```

12252     \pdfmark[\MakeButtonField{#2}]{%
12253     pdfmark=/ANN,Raw={\PDFForm@Push}%
12254     }%
12255 }%
12256 \fi
12257 \endgroup
12258 }
12259 \def\@Submit[#1]#2{%
12260 \def\Fld@width{\DefaultWidthofSubmit}%
12261 \def\Fld@height{\DefaultHeightofSubmit}%
12262 \begingroup
12263 \expandafter\HyField@SetKeys\expandafter{%
12264 \DefaultOptionsofSubmit,#1%
12265 }%
12266 \HyField@FlagsPushButton
12267 \HyField@FlagsSubmit
12268 \ifFld@hidden\def\Fld@width{1sp}\fi
12269 \Hy@escapeform\PDFForm@Submit
12270 \pdfmark[\MakeButtonField{#2}]{%
12271 pdfmark=/ANN,%
12272 Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
12273 }%
12274 \endgroup
12275 }
12276 \def\@Reset[#1]#2{%
12277 \def\Fld@width{\DefaultWidthofReset}%
12278 \def\Fld@height{\DefaultHeightofReset}%
12279 \begingroup
12280 \expandafter\HyField@SetKeys\expandafter{%
12281 \DefaultOptionsofReset,#1%
12282 }%
12283 \leavevmode
12284 \ifHy@pdfa
12285 \Hy@Error{%
12286 PDF/A: Reset action is prohibited%
12287 }\@ehc
12288 \MakeButtonField{#2}%
12289 \else
12290 \HyField@FlagsPushButton
12291 \ifFld@hidden\def\Fld@width{1sp}\fi
12292 \Hy@escapeform\PDFForm@Reset
12293 \pdfmark[\MakeButtonField{#2}]{%
12294 pdfmark=/ANN,Raw={\PDFForm@Reset}%
12295 }%
12296 \fi
12297 \endgroup
12298 }%
12299 \def\@CheckBox[#1]#2{% parameters, label
12300 \def\Fld@name{#2}%
12301 \def\Fld@default{0}%
12302 \begingroup
12303 \def\Fld@width{\DefaultWidthofCheckBox}%
12304 \def\Fld@height{\DefaultHeightofCheckBox}%
12305 \expandafter\HyField@SetKeys\expandafter{%
12306 \DefaultOptionsofCheckBox,#1%
12307 }%
12308 \HyField@FlagsCheckBox

```

```

12309 \ifFld@hidden\def\Fld@width{1sp}\fi
12310 \LayoutCheckField{#2}{%
12311   \Hy@escapeform\PDFForm@Check
12312   \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
12313     pdfmark=/ANN,Raw={\PDFForm@Check}%
12314   }%
12315 }%
12316 \endgroup
12317 }
12318 \pdfmark>

```

## 47.2 HyperTeX

```

12319 <*hypertex>
12320 \def\@Form[#1]{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12321 \def\@endForm{}
12322 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12323   \Hy@Message{Sorry, HyperTeX does not support FORM gauges}%
12324 }
12325 \def\@TextField[#1]#2{% parameters, label
12326   \Hy@Message{Sorry, HyperTeX does not support FORM text fields}%
12327 }
12328 \def\@CheckBox[#1]#2{% parameters, label
12329   \Hy@Message{Sorry, HyperTeX does not support FORM checkboxes}%
12330 }
12331 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12332   \Hy@Message{Sorry, HyperTeX does not support FORM choice menus}%
12333 }
12334 \def\@PushButton[#1]#2{% parameters, label
12335   \Hy@Message{Sorry, HyperTeX does not support FORM pushbuttons}%
12336 }
12337 \def\@Reset[#1]#2{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12338 \def\@Submit[#1]#2{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12339 </hypertex>

```

## 47.3 TeX4ht

```

12340 <*tex4ht>
12341 \def\@Form[#1]{%
12342   \kvsetkeys{Form}{#1}%
12343   \HCode{<form action="\Form@action" method="\Form@method">}%
12344 }
12345 \def\@endForm{\HCode{</form>}}
12346 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12347   \Hy@Message{Sorry, TeX4ht does not support gauges}%
12348 }
12349 \def\@TextField[#1]#2{% parameters, label
12350   \let\Hy@reserved@a\@empty
12351   \def\Fld@name{#2}%
12352   \def\Fld@default{}%
12353   \bgroup
12354     \Field@toks={ }%
12355     \kvsetkeys{Field}{#1}%
12356     \HCode{<label for="\Fld@name">#2</label>}%
12357     \ifFld@password
12358       \@@PasswordField
12359     \else
12360       \@@TextField
12361     \fi

```

```

12362 \egroup
12363 }
12364 \def\@@PasswordField{%
12365   \HCode{%
12366     <input type="password" %
12367       id="\Fld@name" %
12368       name="\Fld@name" %
12369       \ifFld@hidden type="hidden" \fi
12370       value="\Fld@default" %
12371       \the\Field@toks
12372     >%
12373   }%
12374 }
12375 \def\@@TextField{%
12376   \ifFld@multiline
12377     \HCode{<textarea %
12378       \ifFld@readonly readonly \fi
12379       id="\Fld@name" %
12380       name="\Fld@name" %
12381       \ifFld@hidden type="hidden" \fi
12382       \the\Field@toks>%
12383   }%
12384   \Fld@default
12385   \HCode{</textarea>}%
12386 \else
12387   \HCode{<input type="text" %
12388     \ifFld@readonly readonly \fi
12389     id="\Fld@name" %
12390     name="\Fld@name" %
12391     \ifFld@hidden type="hidden" \fi
12392     value="\Fld@default" %
12393     \the\Field@toks>%
12394   }%
12395 \fi
12396 }
12397 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12398   \def\Fld@name{#2}%
12399   \def\Fld@default{#3}%
12400   \let\Hy@reserved@a\relax
12401   \begingroup
12402     \expandafter\Fld@findlength#3\\%
12403     \Field@toks={ }%
12404     \kvsetkeys{Field}{#1}%
12405     #2%
12406     \ifFld@radio
12407       \expandafter\@@Radio#3\\%
12408     \else
12409       \expandafter\@@Menu#3\\%
12410     \fi
12411   \endgroup
12412 }
12413 \def\Fld@findlength#1\\{%
12414   \Fld@menulength=0 %
12415   \@for\@currupt:=#1\do{\Hy@StepCount\Fld@menulength}%
12416 }
12417 \def\@@Menu#1\\{%
12418   \HCode{<select size="\the\Fld@menulength" %

```

```

12419     name="\Fld@name" %
12420     \the\Field@toks>%
12421 }%
12422 \@for\@curropt:=#1\do{%
12423     \expandafter\Fld@checkequals\@curropt==\\%
12424     \HCode{<option %
12425         \ifx\@curropt\Fld@default selected \fi
12426         value="\@currValue">\@currDisplay</option>%
12427     }%
12428 }%
12429 \HCode{</select>}}%
12430 }
12431 \def\@@Radio#1\\{%
12432     \@for\@curropt:=#1\do{%
12433         \expandafter\Fld@checkequals\@curropt==\\%
12434         \HCode{<input type="radio" %
12435             \ifx\@curropt\Fld@default checked \fi
12436             name="\Fld@name" %
12437             value="\@currValue" %
12438             \the\Field@toks>%
12439         }%
12440         \@currDisplay
12441     }%
12442 }
12443 \def\@PushButton[#1]#2{% parameters, label
12444     \def\Fld@name{#2}%
12445     \bgroup
12446     \Field@toks={ }%
12447     \kvsetkeys{Field}{#1}%
12448     \HCode{<input type="button" %
12449         name="\Fld@name" %
12450         value="#2" %
12451         \the\Field@toks>%
12452     }%
12453     \HCode{</button>}}%
12454     \egroup
12455 }
12456 \def\@Submit[#1]#2{%
12457     \HCode{<button type="submit">#2</button>}}%
12458 }
12459 \def\@Reset[#1]#2{%
12460     \HCode{<button type="reset">#2</button>}}%
12461 }
12462 \def\@CheckBox[#1]#2{% parameters, label
12463     \let\Hy@reserved@a\@empty
12464     \def\Fld@name{#2}%
12465     \def\Fld@default{0}%
12466     \bgroup
12467     \Field@toks={ }%
12468     \kvsetkeys{Field}{#1}%
12469     \HCode{<input type="checkbox" %
12470         \ifFld@checked checked \fi
12471         \ifFld@disabled disabled \fi
12472         \ifFld@readonly readonly \fi
12473         name="\Fld@name" %
12474         \ifFld@hidden type="hidden" \fi
12475         value="\Fld@default" %

```

```

12476 \the\Field@toks>%
12477 #2%
12478 }%
12479 \egroup
12480 }
12481 </tex4ht>

```

## 47.4 pdfTeX

```

12482 <*pdfTeX>
12483 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12484 \Hy@Message{Sorry, pdfTeX does not support FORM gauges}%
12485 }
12486 \def\MakeFieldObject#1#2{\sbox0{#1}%
12487 \immediate\pdfxform0 %
12488 \expandafter\edef\csname #2Object\endcsname{%
12489 \the\pdfastxform\space 0 R%
12490 }%
12491 % \hbox to 0pt{\hskip-\maxdimen{\pdfrefxform \the\pdfastxform}}}%
12492 }%
12493 \def\HyField@afields{}
12494 \begingroup\expandafter\expandafter\expandafter\endgroup
12495 \expandafter\ifx\csname pdfastlink\endcsname\relax
12496 \let\HyField@AddToFields\relax
12497 \PackageInfo{hyperref}{%
12498 You need pdfTeX 1.40.0 for setting the /Fields entry.%
12499 \MessageBreak
12500 Adobe Reader/Acrobat accepts an empty /Field array,%
12501 \MessageBreak
12502 but other PDF viewers might complain%
12503 }%
12504 \else
12505 \def\HyField@AuxAddToFields#1{%
12506 \def\HyField@AfterAuxOpen{\Hy@AtBeginDocument}%
12507 \Hy@AtBeginDocument{%
12508 \if@filesw
12509 \immediate\write\@mainaux{%
12510 \string\providecommand\string\HyField@AuxAddToFields[1]{}%
12511 }%
12512 \fi
12513 \let\HyField@AfterAuxOpen\@firstofone
12514 \def\HyField@AuxAddToFields#1{%
12515 \xdef\HyField@afields{%
12516 \ifx\HyField@afields\@empty
12517 \else
12518 \HyField@afields
12519 \space
12520 \fi
12521 #1 0 R%
12522 }%
12523 }%
12524 }%
12525 \def\HyField@AddToFields{%
12526 \expandafter\HyField@@AddToFields\expandafter{%
12527 \the\pdfastlink
12528 }%
12529 }%
12530 \def\HyField@@AddToFields#1{%

```

```

12531 \HyField@AfterAuxOpen{%
12532 \if@filesw
12533 \write\@mainaux{%
12534 \string\HyField@AuxAddToFields{#1}%
12535 }%
12536 \fi
12537 }%
12538 }%
12539 \fi
12540 \def\@Form[#1]{%
12541 \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
12542 \kvsetkeys{Form}{#1}%
12543 \pdf@ifdraftmode{}{%
12544 \Hy@FormObjects
12545 \ifnum\pdfTeXversion>13 %
12546 \pdfrefobj\OBJ@pdfdocencoding
12547 \pdfrefobj\OBJ@ZaDb
12548 \pdfrefobj\OBJ@Helv
12549 \fi
12550 \AtVeryEndDocument{%
12551 \immediate\pdfobj{%
12552 <<%
12553 /Fields[\HyField@afields]%
12554 /DR<<%
12555 /Font<<%
12556 /ZaDb \OBJ@ZaDb\space 0 R%
12557 /Helv \OBJ@Helv\space 0 R%
12558 >>%
12559 >>%
12560 /DA(/Helv 10 Tf 0 g)%
12561 \ifHy@pdfa
12562 \else
12563 \ifHyField@NeedAppearances
12564 /NeedAppearances true%
12565 \fi
12566 \fi
12567 >>%
12568 }%
12569 \edef\OBJ@acroform{\the\pdfastobj}%
12570 \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
12571 }%
12572 }%
12573 \MakeFieldObject{%

Same as \ding{123} of package pifont.
12574 \begingroup
12575 \fontfamily{pzd}%
12576 \fontencoding{U}%
12577 \fontseries{m}%
12578 \fontshape{n}%
12579 \selectfont
12580 \char123 %
12581 \endgroup
12582 }{Ding}%
12583 \MakeFieldObject{%
12584 \fbox{\textcolor{yellow}{\textsf{Submit}}}%
12585 }{Submit}%
12586 \MakeFieldObject{%

```

```

12587 \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
12588 }{SubmitP}%
12589 }
12590 \def\@endForm{}
12591 \def\@TextField[#1]#2{% parameters, label
12592 \def\Fld@name{#2}%
12593 \def\Fld@default{}%
12594 \let\Fld@value\@empty
12595 \def\Fld@width{\DefaultWidthofText}%
12596 \def\Fld@height{%
12597 \ifFld@multiline
12598 \DefaultHeightofTextMultiline
12599 \else
12600 \DefaultHeightofText
12601 \fi
12602 }%
12603 \begingroup
12604 \expandafter\HyField@SetKeys\expandafter{%
12605 \DefaultOptionsofText,#1%
12606 }%
12607 \PDFForm@Name
12608 \HyField@FlagsText
12609 \ifFld@hidden\def\Fld@width{1sp}\fi
12610 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12611 \LayoutTextField{#2}{%
12612 \Hy@escapeform\PDFForm@Text
12613 \pdfstartlink user {\PDFForm@Text}\relax
12614 \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
12615 \HyField@AddToFields
12616 }%
12617 \endgroup
12618 }
12619 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12620 \def\Fld@name{#2}%
12621 \let\Fld@default\relax
12622 \let\Fld@value\relax
12623 \def\Fld@width{\DefaultWidthofChoiceMenu}%
12624 \def\Fld@height{\DefaultHeightofChoiceMenu}%
12625 \begingroup
12626 \Fld@menulength=0 %
12627 \@tempdima\z@
12628 \@for\@curropt:=#3\do{%
12629 \expandafter\Fld@checkequals\@curropt==\%
12630 \Hy@StepCount\Fld@menulength
12631 \settowidth{\@tempdimb}{\@currDisplay}%
12632 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12633 }%
12634 \advance\@tempdima by 15\p@
12635 \begingroup
12636 \HyField@SetKeys{#1}%
12637 \edef\x{\endgroup
12638 \noexpand\expandafter
12639 \noexpand\HyField@SetKeys
12640 \noexpand\expandafter{%
12641 \expandafter\noexpand\csname DefaultOptionsof%
12642 \ifFld@radio
12643 Radio%

```

```

12644     \else
12645     \ifFld@combo
12646     \ifFld@popdown
12647     PopdownBox%
12648     \else
12649     ComboBox%
12650     \fi
12651     \else
12652     ListBox%
12653     \fi
12654     \fi
12655     \endcsname
12656     }%
12657 } \x
12658 \HyField@SetKeys{#1}%
12659 \PDFForm@Name
12660 \ifFld@hidden\def\Fld@width{1sp}\fi
12661 \ifx\Fld@value\relax
12662     \let\Fld@value\Fld@default
12663 \fi
12664 \LayoutChoiceField{#2}{%
12665     \ifFld@radio
12666     \HyField@FlagsRadioButton
12667     \@@Radio{#3}%
12668     \else
12669     \begingroup
12670     \HyField@FlagsChoice
12671     \ifdim\Fld@width<\@tempdima
12672     \ifdim\@tempdima<1cm\@tempdima1cm\fi
12673     \edef\Fld@width{\the\@tempdima}%
12674     \fi
12675     \ifFld@combo
12676     \else
12677     \@tempdima=\the\Fld@menulength\Fld@charsize
12678     \advance\@tempdima by \Fld@borderwidth bp %
12679     \advance\@tempdima by \Fld@borderwidth bp %
12680     \edef\Fld@height{\the\@tempdima}%
12681     \fi
12682     \@@ListBox{#3}%
12683     \endgroup
12684     \fi
12685     }%
12686 \endgroup
12687 }
12688 \def\@@Radio#1{%
12689     \Fld@listcount=0 %
12690     \EdefEscapeName\Fld@default{\Fld@default}%
12691     \@for\@curropt=#1\do{%
12692         \expandafter\Fld@checkequals\@curropt==\%
12693         \EdefEscapeName\@currValue{\@currValue}%
12694         \Hy@StepCount\Fld@listcount
12695         \@currDisplay\space
12696         \leavevmode
12697         \Hy@escapeform\PDFForm@Radio
12698         \pdfstartlink user {%
12699             \PDFForm@Radio
12700             /AP<<%

```



```

12701      /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.
12702      /\@currValue\space \DingObject
12703      >>%
12704      >>%
12705      }%
12706      \relax
12707      \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
12708      \ifnum\Fld@listcount=1 %
12709      \HyField@AddToFields
12710      \fi
12711      \space % deliberate space between radio buttons
12712      }%
12713      }
12714      \newcount\Fld@listcount
12715      \def\@@ListBox#1{%
12716      \HyField@PDFChoices{#1}%
12717      \leavevmode
12718      \Hy@escapeform\PDFForm@List
12719      \pdfstartlink user {\PDFForm@List}\relax
12720      \MakeChoiceField{\Fld@width}{\Fld@height}%
12721      \pdfendlink
12722      \HyField@AddToFields
12723      }
12724      \def\@PushButton[#1]#2{% parameters, label
12725      \def\Fld@name{#2}%
12726      \begingroup
12727      \expandafter\HyField@SetKeys\expandafter{%
12728      \DefaultOptionsofPushButton,#1%
12729      }%
12730      \PDFForm@Name
12731      \ifHy@pdfa
12732      \Hy@Error{%
12733      PDF/A: Push button with JavaScript is prohibited%
12734      }\@ehc
12735      \LayoutPushButtonField{%
12736      \leavevmode
12737      \MakeButtonField{#2}%
12738      }%
12739      \else
12740      \HyField@FlagsPushButton
12741      \ifFld@hidden\def\Fld@width{1sp}\fi
12742      \LayoutPushButtonField{%
12743      \leavevmode
12744      \Hy@escapeform\PDFForm@Push
12745      \pdfstartlink user {\PDFForm@Push}\relax
12746      \MakeButtonField{#2}%
12747      \pdfendlink
12748      \HyField@AddToFields
12749      }%
12750      \fi
12751      \endgroup
12752      }
12753      \def\@Submit[#1]#2{%
12754      \def\Fld@width{\DefaultWidthofSubmit}%

```

```

12755 \def\Fld@height{\DefaultHeightofSubmit}%
12756 \begingroup
12757 \expandafter\HyField@SetKeys\expandafter{%
12758   \DefaultOptionsofSubmit,#1%
12759 }%
12760 \HyField@FlagsPushButton
12761 \HyField@FlagsSubmit
12762 \ifFld@hidden\def\Fld@width{1sp}\fi
12763 \leavevmode
12764 \Hy@escapeform\PDFForm@Submit
12765 \pdfstartlink user {%
12766   \PDFForm@Submit
12767   /AP<</N \SubmitObject/D \SubmitPObject>>%
12768 }%
12769 \relax
12770 \MakeButtonField{#2}%
12771 \pdfendlink
12772 \HyField@AddToFields
12773 \endgroup
12774 }
12775 \def\@Reset[#1]#2{%
12776   \def\Fld@width{\DefaultWidthofReset}%
12777   \def\Fld@height{\DefaultHeightofReset}%
12778   \begingroup
12779   \expandafter\HyField@SetKeys\expandafter{%
12780     \DefaultOptionsofReset,#1%
12781   }%
12782   \leavevmode
12783   \ifHy@pdfa
12784     \Hy@Error{%
12785       PDF/A: Reset action is prohibited%
12786     }\@ehc
12787     \MakeButtonField{#2}%
12788   \else
12789     \HyField@FlagsPushButton
12790     \ifFld@hidden\def\Fld@width{1sp}\fi
12791     \Hy@escapeform\PDFForm@Reset
12792     \pdfstartlink user {\PDFForm@Reset}\relax
12793     \MakeButtonField{#2}%
12794     \pdfendlink
12795     \HyField@AddToFields
12796   \fi
12797 \endgroup
12798 }
12799 \def\@CheckBox[#1]#2{% parameters, label
12800   \def\Fld@name{#2}%
12801   \def\Fld@default{0}%
12802   \begingroup
12803   \def\Fld@width{\DefaultWidthofCheckBox}%
12804   \def\Fld@height{\DefaultHeightofCheckBox}%
12805   \expandafter\HyField@SetKeys\expandafter{%
12806     \DefaultOptionsofCheckBox,#1%
12807   }%
12808   \PDFForm@Name
12809   \HyField@FlagsCheckBox
12810   \ifFld@hidden\def\Fld@width{1sp}\fi
12811   \LayoutCheckField{#2}{%

```

```

12812 \Hy@escapeform\PDFForm@Check
12813 \pdfstartlink user {\PDFForm@Check}\relax
12814 \MakeCheckField{\Fld@width}{\Fld@height}%
12815 \pdfendlink
12816 \HyField@AddToFields
12817 }%
12818 \endgroup
12819 }
12820 \def\Hy@FormObjects{%
12821 \pdfobj {%
12822 <<%
12823 /Type/Encoding%
12824 /Differences%
12825 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
12826 /ring/tilde %
12827 39/quotesingle %
12828 96/grave %
12829 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
12830 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
12831 /quotedblbase/quotedblleft/quotedblright/quoteleft%
12832 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
12833 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
12834 164/currency %
12835 166/brokenbar %
12836 168/dieresis/copyright/ordfeminine %
12837 172/logicalnot/.notdef/registered/macron/degree/plusminus%
12838 /twosuperior/threesuperior/acute/mu %
12839 183/periodcentered/cedilla/onesuperior/ordmasculine %
12840 188/onequarter/onehalf/threequarters %
12841 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
12842 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
12843 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
12844 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
12845 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
12846 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
12847 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
12848 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
12849 /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
12850 /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
12851 ]%
12852 >>%
12853 }%
12854 \xdef\OBJ@pdfdocencoding{\the\pdflastobj}%
12855 \pdfobj{%
12856 <<%
12857 /Type/Font%
12858 /Subtype/Type1%
12859 /Name/ZaDb%
12860 /BaseFont/ZapfDingbats%
12861 >>%
12862 }%
12863 \xdef\OBJ@ZaDb{\the\pdflastobj}%
12864 \pdfobj{%
12865 <<%
12866 /Type/Font%
12867 /Subtype/Type1%
12868 /Name/Helv%

```

```

12869 /BaseFont/Helvetica%
12870 /Encoding \OBJ@pdfdocencoding\space 0 R%
12871 >>%
12872 }%
12873 \xdef\OBJ@Helv{\the\pdfastobj}%
12874 \global\let\Hy@FormObjects\relax
12875 }
12876 \pdfTeX

```

## 47.5 dvipdfm, xetex

D. P. Story adapted the pdf<sub>TEX</sub> forms part for dvipdfm, of which version 0.12.7b or higher is required because of a bug.

```

12877 \dvipdfm | xetex

```

\@Gauge

```

12878 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12879 \Hy@Message{Sorry, dvipdfm/XeTeX does not support FORM gauges}%
12880 }

```

\@Form

```

12881 \def\@Form[#1]{%
12882 \ifundefined{textcolor}{\let\textcolor\@gobble}{}%
12883 \kvsetkeys{Form}{#1}%
12884 \Hy@FormObjects
12885 \@pdfm@mark{obj @afields []}%
12886 \@pdfm@mark{obj @corder []}%
12887 \@pdfm@mark{%
12888 obj @aform <<%
12889 /Fields @afields%
12890 /DR<<%
12891 /Font<<%
12892 /ZaDb @OBJZaDb%
12893 /Helv @OBJHelv%
12894 >>%
12895 >>%
12896 /DA(/Helv 10 Tf 0 g)%
12897 /CO @corder%
12898 \ifHy@pdfa
12899 \else
12900 \ifHyField@NeedAppearances
12901 /NeedAppearances true%
12902 \fi
12903 \fi
12904 >>%
12905 }%
12906 \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
12907 }

```

\@endForm

```

12908 \def\@endForm{}

```

\dvipdfm@setdim \dvipdfm@setdim sets dimensions for ann using \pdfm@box.

```

12909 \def\dvipdfm@setdim{%
12910 height \the\ht\pdfm@box\space
12911 width \the\wd\pdfm@box\space
12912 depth \the\dp\pdfm@box\space
12913 }

```

\HyField@AnnotCount

```
12914 \newcount\HyField@AnnotCount
12915 \HyField@AnnotCount=\z@
```

\HyField@AdvanceAnnotCount

```
12916 \def\HyField@AdvanceAnnotCount{%
12917   \global\advance\HyField@AnnotCount\@ne
12918 }
```

\HyField@TheAnnotCount

```
12919 \def\HyField@TheAnnotCount{%
12920   \the\HyField@AnnotCount
12921 }
```

\@TextField

```
12922 \def\@TextField[#1]#2{% parameters, label
12923   \def\Fld@name{#2}%
12924   \def\Fld@default{}%
12925   \let\Fld@value\@empty
12926   \def\Fld@width{\DefaultWidthofText}%
12927   \def\Fld@height{%
12928     \ifFld@multiline
12929       \DefaultHeightofTextMultiline
12930     \else
12931       \DefaultHeightofText
12932     \fi
12933   }%
12934   \begingroup
12935     \expandafter\HyField@SetKeys\expandafter{%
12936       \DefaultOptionsofText,#1%
12937     }%
12938     \PDFForm@Name
12939     \HyField@FlagsText
12940     \ifFld@hidden\def\Fld@width{1sp}\fi
12941     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12942     \setbox\pdfm@box=\hbox{%
12943       \MakeTextField{\Fld@width}{\Fld@height}%
12944     }%
12945     \HyField@AdvanceAnnotCount
12946     \LayoutTextField{#2}{%
12947       \Hy@escapeform\PDFForm@Text
12948       \@pdfm@mark{%
12949         ann @text\HyField@TheAnnotCount\space
12950         \dvipdfm@setdim << \PDFForm@Text >>%
12951       }%
12952     }%
12953     \unhbox\pdfm@box
12954     \@pdfm@mark{put @afields @text\HyField@TheAnnotCount}%
12955     % record in @afields array
12956   \endgroup
12957 }
```

\@ChoiceMenu

```
12958 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12959   \def\Fld@name{#2}%
12960   \let\Fld@default\relax
```

```

12961 \let\Fld@value\relax
12962 \def\Fld@width{\DefaultWidthofChoiceMenu}%
12963 \def\Fld@height{\DefaultHeightofChoiceMenu}%
12964 \begingroup
12965 \Fld@menulength=0 %
12966 \@tempdima\z@
12967 \@for\@curropt:=#3\do{%
12968 \expandafter\Fld@checkequals\@curropt==\%
12969 \Hy@StepCount\Fld@menulength
12970 \settowidth{\@tempdimb}{\@currDisplay}%
12971 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12972 }%
12973 \advance\@tempdima by 15\p@
12974 \begingroup
12975 \HyField@SetKeys{#1}%
12976 \edef\x{\endgroup
12977 \noexpand\expandafter
12978 \noexpand\HyField@SetKeys
12979 \noexpand\expandafter{%
12980 \expandafter\noexpand\csname DefaultOptionsof%
12981 \ifFld@radio
12982 Radio%
12983 \else
12984 \ifFld@combo
12985 \ifFld@popdown
12986 PopdownBox%
12987 \else
12988 ComboBox%
12989 \fi
12990 \else
12991 ListBox%
12992 \fi
12993 \fi
12994 \endcsname
12995 }%
12996 }\x
12997 \HyField@SetKeys{#1}%
12998 \PDFForm@Name
12999 \ifFld@hidden\def\Fld@width{1sp}\fi
13000 \ifx\Fld@value\relax
13001 \let\Fld@value\Fld@default
13002 \fi
13003 \LayoutChoiceField{#2}{%
13004 \ifFld@radio
13005 \HyField@FlagsRadioButton
13006 \@@Radio{#3}%
13007 \else
13008 \begingroup
13009 \HyField@FlagsChoice
13010 \ifdim\Fld@width<\@tempdima
13011 \ifdim\@tempdima<1cm\@tempdima1cm\fi
13012 \edef\Fld@width{\the\@tempdima}%
13013 \fi
13014 \ifFld@combo
13015 \else
13016 \@tempdima=\the\Fld@menulength\Fld@charsize
13017 \advance\@tempdima by \Fld@borderwidth bp %

```

```

13018      \advance\@tempdima by \Fld@borderwidth bp %
13019      \edef\Fld@height{\the\@tempdima}%
13020      \fi
13021      \@@Listbox{#3}%
13022      \endgroup
13023      \fi
13024      }%
13025      \endgroup
13026      }

```

#### \@@Radio

```

13027 \def\@@Radio#1{%
13028   \Fld@listcount=0 %
13029   \EdefEscapeName\Fld@default{\Fld@default}%
13030   \setbox\pdfm@box=\hbox{%
13031     \MakeRadioField{\Fld@width}{\Fld@height}%
13032   }%
13033   \@for\@curropt:=#1\do{%
13034     \expandafter\Fld@checkequals\@curropt==\%
13035     \EdefEscapeName\@currValue{\@currValue}%
13036     \Hy@StepCount\Fld@listcount
13037     \@currDisplay\space
13038     \leavevmode
13039     \Hy@escapeform\PDFForm@Radio
13040     \ifnum\Fld@listcount=1 %
13041       \HyField@AdvanceAnnotCount
13042     \fi
13043     \@pdfm@mark{%
13044       ann %
13045       \ifnum\Fld@listcount=1 %
13046         @radio\HyField@TheAnnotCount%
13047         \space
13048       \fi
13049       \dvi pdfm@setdim
13050       <<%
13051       \PDFForm@Radio
13052       /AP<</N<</\@currValue /null>>>>%
13053       >>%
13054     }%
13055     \unhcopy\pdfm@box\space% deliberate space between radio buttons
13056     \ifnum\Fld@listcount=1 %
13057       \@pdfm@mark{%
13058         put @afields @radio\HyField@TheAnnotCount
13059       }%
13060     \fi
13061   }%
13062 }

```

#### \Fld@listcount

```

13063 \newcount\Fld@listcount

```

#### \@@Listbox

```

13064 \def\@@Listbox#1{%
13065   \HyField@PDFChoices{#1}%
13066   \setbox\pdfm@box=\hbox{%
13067     \MakeChoiceField{\Fld@width}{\Fld@height}%
13068   }%

```

```

13069 \leavevmode
13070 \Hy@escapeform\PDFForm@List
13071 \HyField@AdvanceAnnotCount
13072 \@pdfm@mark{%
13073   ann @list\HyField@TheAnnotCount\space
13074   \dvipdfm@setdim
13075   <<\PDFForm@List>>%
13076 }%
13077 \unhbox\pdfm@box
13078 \@pdfm@mark{put @afields @list\HyField@TheAnnotCount}%
13079 }

```

#### \@PushButton

```

13080 \def\@PushButton[#1]#2{% parameters, label
13081   \def\Fld@name{#2}%
13082   \begingroup
13083     \expandafter\HyField@SetKeys\expandafter{%
13084       \DefaultOptionsofPushButton,#1%
13085     }%
13086     \PDFForm@Name
13087     \ifHy@pdfa
13088       \Hy@Error{%
13089         PDF/A: Push button with JavaScript is prohibited%
13090       }\@ehc
13091       \LayoutPushButtonField{%
13092         \leavevmode
13093         \MakeButtonField{#2}%
13094       }%
13095     \else
13096       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13097       \HyField@FlagsPushButton
13098       \ifFld@hidden\def\Fld@width{1sp}\fi
13099       \HyField@AdvanceAnnotCount
13100       \LayoutPushButtonField{%
13101         \leavevmode
13102         \Hy@escapeform\PDFForm@Push
13103         \@pdfm@mark{%
13104           ann @push\HyField@TheAnnotCount\space
13105           \dvipdfm@setdim
13106           <<\PDFForm@Push>>%
13107         }%
13108       }%
13109       \unhbox\pdfm@box
13110       \@pdfm@mark{put @afields @push\HyField@TheAnnotCount}%
13111     \fi
13112   \endgroup
13113 }

```

#### \@Submit

```

13114 \def\@Submit[#1]#2{%
13115   \def\Fld@width{\DefaultWidthofSubmit}%
13116   \def\Fld@height{\DefaultHeightofSubmit}%
13117   \begingroup
13118     \expandafter\HyField@SetKeys\expandafter{%
13119       \DefaultOptionsofSubmit,#1%
13120     }%
13121     \HyField@FlagsPushButton

```



```

13122 \HyField@FlagsSubmit
13123 \ifFld@hidden\def\Fld@width{1sp}\fi
13124 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}}%
13125 \leavevmode
13126 \Hy@escapeform\PDFForm@Submit
13127 \HyField@AdvanceAnnotCount
13128 \@pdfm@mark{%
13129   ann @submit\HyField@TheAnnotCount\space
13130   \dvipdfm@setdim
13131   <<\PDFForm@Submit>>%
13132 }%
13133 \unhbox\pdfm@box%
13134 \@pdfm@mark{put @afields @submit\HyField@TheAnnotCount}%
13135 \endgroup
13136 }

```

#### \@Reset

```

13137 \def\@Reset[#1]#2{%
13138   \def\Fld@width{\DefaultWidthofReset}%
13139   \def\Fld@height{\DefaultHeightofReset}%
13140   \begingroup
13141     \expandafter\HyField@SetKeys\expandafter{%
13142       \DefaultOptionsofReset,#1%
13143     }%
13144     \leavevmode
13145     \ifHy@pdfa
13146       \Hy@Error{%
13147         PDF/A: Reset action is prohibited%
13148       }\@ehc
13149       \MakeButtonField{#2}%
13150     \else
13151       \HyField@FlagsPushButton
13152       \ifFld@hidden\def\Fld@width{1sp}\fi
13153       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}}%
13154       \Hy@escapeform\PDFForm@Reset
13155       \HyField@AdvanceAnnotCount
13156       \@pdfm@mark{%
13157         ann @reset\HyField@TheAnnotCount\space
13158         \dvipdfm@setdim
13159         <<\PDFForm@Reset>>%
13160       }%
13161       \unhbox\pdfm@box
13162       \@pdfm@mark{put @afields @reset\HyField@TheAnnotCount}%
13163     \fi
13164   \endgroup
13165 }

```

#### \@CheckBox

```

13166 \def\@CheckBox[#1]#2{% parameters, label
13167   \def\Fld@name{#2}%
13168   \def\Fld@default{0}%
13169   \begingroup
13170     \def\Fld@width{\DefaultWidthofCheckBox}%
13171     \def\Fld@height{\DefaultHeightofCheckBox}%
13172     \expandafter\HyField@SetKeys\expandafter{%
13173       \DefaultOptionsofCheckBox,#1%
13174     }%

```

```

13175 \PDFForm@Name
13176 \HyField@FlagsCheckBox
13177 \ifFld@hidden\def\Fld@width{1sp}\fi
13178 \setbox\pdfm@box=\hbox{%
13179   \MakeCheckField{\Fld@width}{\Fld@height}%
13180 }%
13181 \HyField@AdvanceAnnotCount
13182 \LayoutCheckField{#2}{%
13183   \Hy@escapeform\PDFForm@Check
13184   \@pdfm@mark{%
13185     ann @check\HyField@TheAnnotCount\space
13186     \dvipdfm@setdim
13187     <<\PDFForm@Check>>%
13188   }%
13189   \unhbox\pdfm@box
13190   \@pdfm@mark{put @afields @check\HyField@TheAnnotCount}%
13191 }%
13192 \endgroup
13193 }

13194 \def\Hy@FormObjects{%
13195   \@pdfm@mark{obj @OBJpdfdocencoding%
13196     <<%
13197       /Type/Encoding%
13198       /Differences[%
13199         24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
13200         39/quotesingle %
13201         96/grave %
13202         128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13203         /fraction/guilsinglleft/guilsinglright/minus/perthousand%
13204         /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
13205         /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
13206         /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13207         164/currency %
13208         166/brokenbar %
13209         168/dieresis/copyright/ordfeminine %
13210         172/logicalnot/.notdef/registered/macron/degree/plusminus%
13211         /twosuperior/threesuperior/acute/mu %
13212         183/periodcentered/cedilla/onesuperior/ordmasculine %
13213         188/onequarter/onehalf/threequarters %
13214         192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13215         /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
13216         /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
13217         /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
13218         /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
13219         /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
13220         /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
13221         /eth/ntilde/ograve/oacute/ocircumflex/otilde/odieresis%
13222         /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
13223         /thorn/ydieresis%
13224       ]%
13225     >>%
13226   }%
13227   \@pdfm@mark{obj @OBJZaDb%
13228     <<%
13229       /Type/Font%
13230       /Subtype/Type1%
13231       /Name/ZaDb%

```

```

13232 /BaseFont/ZapfDingbats%
13233 >>%
13234 }%
13235 \@pdfm@mark{obj @OBJHelv%
13236 <<%
13237 /Type/Font%
13238 /Subtype/Type1%
13239 /Name/Helv%
13240 /BaseFont/Helvetica%
13241 /Encoding @OBJpdfdocencoding%
13242 >>%
13243 }%
13244 \global\let\Hy@FormObjects\relax
13245 }
13246 </dvipdfm | xetex>

```

## 47.6 Common forms part

```

13247 <*pdfform>

```

\Hy@escapestring

```

13248 \begingroup\expandafter\expandafter\expandafter\endgroup
13249 \expandafter\ifx\csname pdfescapestring\endcsname\relax
13250 \let\Hy@escapestring\@firstofone
13251 \def\Hy@escapeform#1{%
13252   \ifHy@escapeform
13253     \def\Hy@escapestring##1{%
13254       \noexpand\Hy@escapestring{\noexpand##1}%
13255     }%
13256     \edef\Hy@temp{#1}%
13257     \expandafter\Hy@@@escapeform\Hy@temp\Hy@escapestring{}\@nil
13258     \def\Hy@escapestring##1{%
13259       \@ifundefined{Hy@esc@\string##1}{%
13260         ##1%
13261         \ThisShouldNotHappen
13262       }{%
13263         \csname Hy@esc@\string##1\endcsname
13264       }%
13265     }%
13266   \else
13267     \let\Hy@escapestring\@firstofone
13268   \fi
13269 }%
13270 \def\Hy@@@escapeform#1\Hy@escapestring#2#3\@nil{%
13271   \ifx\#3\%
13272   \else
13273     \expandafter
13274     \Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
13275     \Hy@ReturnAfterFi{%
13276       \Hy@@@escapeform#3\@nil
13277     }%
13278   \fi
13279 }%
13280 \else
13281 \def\Hy@escapeform#1{%
13282   \ifHy@escapeform
13283     \let\Hy@escapestring\pdfescapestring

```

```

13284 \else
13285 \let\Hy@escapestring\@firstofone
13286 \fi
13287 }%
13288 \Hy@escapeform{}%
13289 \fi

```

#### \PDFForm@Name

```

13290 \def\PDFForm@Name{%
13291 \PDFForm@@Name\Fld@name
13292 \ifx\Fld@altname\relax
13293 \else
13294 \PDFForm@@Name\Fld@altname
13295 \fi
13296 \ifx\Fld@mappingname\relax
13297 \else
13298 \PDFForm@@Name\Fld@mappingname
13299 \fi
13300 }

```

#### \PDFForm@@Name

```

13301 \def\PDFForm@@Name#1{%
13302 \begingroup
13303 \ifnum\Hy@pdfversion<5 % implementation note 117, PDF spec 1.7
13304 \ifHy@unicode
13305 \Hy@unicodedefalse
13306 \fi
13307 \fi
13308 \HyPsd@XeTeXBigCharstrue
13309 \pdfstringdef\Hy@gtemp#1%
13310 \endgroup
13311 \let#1\Hy@gtemp
13312 }

```

#### \Fld@additionalactions

```

13313 \def\Fld@@additionalactions{%
K input (keystroke) format
13314 \ifx\Fld@keystroke@code\@empty
13315 \else
13316 /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
13317 \fi
F display format
13318 \ifx\Fld@format@code\@empty
13319 \else
13320 /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
13321 \fi
V validation
13322 \ifx\Fld@validate@code\@empty
13323 \else
13324 /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
13325 \fi
C calculation
13326 \ifx\Fld@calculate@code\@empty
13327 \else

```

```

13328   /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
13329   \fi

Fo receiving the input focus
13330   \ifx\Fld@onfocus@code\@empty
13331   \else
13332   /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
13333   \fi

Bl loosing the input focus (blurred)
13334   \ifx\Fld@onblur@code\@empty
13335   \else
13336   /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
13337   \fi

D pressing the mouse button (down)
13338   \ifx\Fld@onmousedown@code\@empty
13339   \else
13340   /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
13341   \fi

U releasing the mouse button (up)
13342   \ifx\Fld@onmouseup@code\@empty
13343   \else
13344   /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
13345   \fi

E cursor enters the annotation's active area.
13346   \ifx\Fld@onenter@code\@empty
13347   \else
13348   /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
13349   \fi

X cursor exits the annotation's active area.
13350   \ifx\Fld@onexit@code\@empty
13351   \else
13352   /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
13353   \fi
13354 }
13355 \def\Fld@additionalactions{%
13356   \if\Fld@@additionalactions-%
13357   \else
13358     \ifHy@pdfa
13359     \else
13360       /AA<<\Fld@@additionalactions>>%
13361     \fi
13362   \fi
13363 }

\Fld@annotnames
13364 \def\Fld@annotnames{%
13365   /T(\Fld@name)%
13366   \ifx\Fld@altname\relax
13367   \else
13368     /TU(\Fld@altname)%
13369   \fi
13370   \ifx\Fld@mappingname\relax
13371   \else
13372     /TM(\Fld@mappingname)%
13373   \fi

```

13374 }

\PDFForm@Check

```
13375 \def\PDFForm@Check{%
13376   /Subtype/Widget%
13377   \Fld@annotflags
13378   \Fld@annotnames
13379   /FT/Btn%
13380   \Fld@flags
13381   /Q \Fld@align
13382   /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
13383   /MK<<%
13384     \ifnum\Fld@rotation=\z@
13385     \else
13386       /R \Fld@rotation
13387     \fi
13388     \ifx\Fld@bordercolor\relax
13389     \else
13390       /BC[\Fld@bordercolor]%
13391     \fi
13392     \ifx\Fld@bcolor\relax
13393     \else
13394       /BG[\Fld@bcolor]%
13395     \fi
13396     /CA(\Hy@escapestring{\Fld@cbsymbol})%
13397   >>%
13398   /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13399     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13400   /H/P%
13401   \ifFld@checked /V/Yes\else /V/Off\fi
13402   \Fld@additionalactions
13403 }
```

\PDFForm@Push

```
13404 \ifHy@pdfa
13405 \else
13406   \def\PDFForm@Push{%
13407     /Subtype/Widget%
13408     \Fld@annotflags
13409     \Fld@annotnames
13410     /FT/Btn%
13411     \Fld@flags
13412     /H/P%
13413     /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13414     \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13415       \ifx\Fld@bordercolor\relax\else 1\fi
13416       \space
13417     \else
13418       /MK<<%
13419       \ifnum\Fld@rotation=\z@
13420       \else
13421         /R \Fld@rotation
13422       \fi
13423       \ifx\Fld@bordercolor\relax
13424       \else
13425         /BC[\Fld@bordercolor]%
13426       \fi
```

```

13427     >>%
13428     \fi
13429     /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick@code})>>%
13430     \Fld@additionalactions
13431   }%
13432 \fi

```

#### \PDFForm@List

```

13433 \def\PDFForm@List{%
13434   /Subtype/Widget%
13435   \Fld@annotflags
13436   \Fld@annotnames
13437   /FT/Ch%
13438   \Fld@flags
13439   /Q \Fld@align
13440   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13441   \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13442     \ifx\Fld@bordercolor\relax\else 1\fi
13443     \ifx\Fld@bcolor\relax \else 1\fi
13444     \space
13445   \else
13446     /MK<<%
13447     \ifnum\Fld@rotation=\z@
13448     \else
13449       /R \Fld@rotation
13450     \fi
13451     \ifx\Fld@bordercolor\relax
13452     \else
13453       /BC[\Fld@bordercolor]%
13454     \fi
13455     \ifx\Fld@bcolor\relax
13456     \else
13457       /BG[\Fld@bcolor]%
13458     \fi
13459   >>%
13460 \fi
13461 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
13462   \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13463 \Fld@choices
13464 \Fld@additionalactions
13465 }

```

#### \PDFForm@Radio

```

13466 \def\PDFForm@Radio{%
13467   /Subtype/Widget%
13468   \Fld@annotflags
13469   \Fld@annotnames
13470   /FT/Btn%
13471   \Fld@flags
13472   /H/P%
13473   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13474   /MK<<%
13475   \ifnum\Fld@rotation=\z@
13476   \else
13477     /R \Fld@rotation
13478   \fi
13479   \ifx\Fld@bordercolor\relax

```

```

13480 \else
13481 /BC[\Fld@bordercolor]%
13482 \fi
13483 \ifx\Fld@bcolor\relax
13484 \else
13485 /BG[\Fld@bcolor]%
13486 \fi
13487 /CA[\Fld@radiosymbol]%
13488 >>%
13489 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13490 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13491 \ifx\@currValue\Fld@default
13492 /V/\Fld@default
13493 /DV/\Fld@default
13494 \else
13495 /V/Off%
13496 /DV/Off%
13497 \fi
13498 \Fld@additionalactions
13499 }

```

#### \PDFForm@Text

```

13500 \def\PDFForm@Text{%
13501 /Subtype/Widget%
13502 \Fld@annotflags
13503 \Fld@annotnames
13504 /FT/Tx%
13505 \Fld@flags
13506 /Q \Fld@align
13507 /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
13508 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13509 \ifx\Fld@bordercolor\relax\else 1\fi
13510 \ifx\Fld@bcolor\relax \else 1\fi
13511 \space
13512 \else
13513 /MK<<%
13514 \ifnum\Fld@rotation=\z@
13515 \else
13516 /R \Fld@rotation
13517 \fi
13518 \ifx\Fld@bordercolor\relax
13519 \else
13520 /BC[\Fld@bordercolor]%
13521 \fi
13522 \ifx\Fld@bcolor\relax
13523 \else
13524 /BG[\Fld@bcolor]%
13525 \fi
13526 >>%
13527 \fi
13528 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
13529 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13530 /DV(\Hy@escapestring{\Fld@default})%
13531 /V(\Hy@escapestring{\Fld@value})%
13532 \Fld@additionalactions
13533 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
13534 }

```



\PDFForm@Submit

```
13535 \def\PDFForm@Submit{%
13536   /Subtype/Widget%
13537   \Fld@annotflags
13538   \Fld@annotnames
13539   /FT/Btn%
13540   \Fld@flags
13541   /H/P%
13542   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13543   \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13544     \ifx\Fld@bordercolor\relax\else 1\fi
13545     \space
13546   \else
13547     /MK<<%
13548     \ifnum\Fld@rotation=\z@
13549     \else
13550       /R \Fld@rotation
13551     \fi
13552     \ifx\Fld@bordercolor\relax
13553     \else
13554       /BC[\Fld@bordercolor]%
13555     \fi
13556   >>%
13557 \fi
13558 /A<<%
13559 /S/SubmitForm%
13560 /F<<%
13561   /FS/URL%
13562   /F(\Hy@escapestring{\Form@action})%
13563 >>%
13564 \Fld@submitflags
13565 >>%
13566 \Fld@additionalactions
13567 }
```

\PDFForm@Reset

```
13568 \ifHy@pdfa
13569 \else
13570 \def\PDFForm@Reset{%
13571   /Subtype/Widget%
13572   \Fld@annotflags
13573   \Fld@annotnames
13574   /FT/Btn%
13575   \Fld@flags
13576   /H/P%
13577   /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
13578   \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13579     \ifx\Fld@bordercolor\relax\else 1\fi
13580     \space
13581   \else
13582     /MK<<%
13583     \ifnum\Fld@rotation=\z@
13584     \else
13585       /R \Fld@rotation
13586     \fi
13587     \ifx\Fld@bordercolor\relax
13588     \else
```

```

13589      /BC[\Fld@bordercolor]%
13590      \fi
13591 %      /CA (Clear)
13592 %      /AC (Done)
13593      >>%
13594      \fi
13595      /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13596      /A<</S/ResetForm>>%
13597      \Fld@additionalactions
13598      }%
13599 \fi

13600 </pdfform>
13601 <*package>

```

## 48 Bookmarks in the PDF file

This was originally developed by Yannis Haralambous (it was the separate `repere.sty`); it needed the `repere` or `makebook.pl` post-processor to work properly. Now redundant, as it is done entirely in L<sup>A</sup>T<sub>E</sub>X macros.

To write out the current section title, and its rationalized number, we have to intercept the `\@sect` command, which is rather dangerous. But how else to see the information we need? We do the *same* for `\@ssect`, giving anchors to unnumbered sections. This allows things like bibliographies to get bookmarks when used with a manual `\addcontentsline`

```

13602 \def\phantomsection{%
13603   \Hy@MakeCurrentHrefAuto{section*}%
13604   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
13605 }
13606 </package>

```

### 48.1 Bookmarks

```

13607 <*outlines>

```

This section was written by Heiko Oberdiek; the code replaces an earlier version by David Carlisle.

The first part of bookmark code is in section 6. Further documentation is available as paper and slides of the talk, that Heiko Oberdiek has given at the EuroTeX'99 meeting in Heidelberg. See `paper.pdf` and `slides.pdf` in the `doc` directory of `hyperref`.

When using the right-to-left typesetting based on  $\varepsilon$ -T<sub>E</sub>X, the order of the `\BOOKMARK` commands written to the `\@outlinefile` could appear wrong, because of mis-feature of  $\varepsilon$ -T<sub>E</sub>X's implementation (that it processes the shipped out lines left-to-right, instead of the order in which they appear in the document). The wrong order will appear when the file contains two bookmarks on the same line typeset right-to-left.

To work around this problem, the `bookmark@seq@number` counter is used to write the bookmark's sequential number into a comment in the `\@outlinefile`, which could be used to post-process it to achieve the proper ordering of `\BOOKMARK` commands in that file.

```

13608 \def\Hy@writebookmark#1#2#3#4#5{%
13609   % section number, text, label, level, file
13610   \ifx\WriteBookmarks\relax%
13611     \else
13612     \ifnum#4>\Hy@bookmarksdepth\relax
13613     \else
13614     \@@@writetorep{#1}{#2}{#3}{#4}{#5}%

```

```

13615 \fi
13616 \fi
13617 }
13618 \def\Hy@currentbookmarklevel{0}
13619 \def\Hy@numberline#1{#1 }
13620 \def\@@writetorep#1#2#3#4#5{%
13621 \begingroup
13622 \edef\Hy@tempa{#5}%
13623 \ifx\Hy@tempa\Hy@bookmarkstype
13624 \edef\Hy@level{#4}%
13625 \ifx\Hy@levelcheck Y%
13626 \@tempcnta\Hy@level\relax
13627 \advance\@tempcnta by -1 %
13628 \ifnum\Hy@currentbookmarklevel<\@tempcnta
13629 \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
13630 \advance\@tempcnta by 1 %
13631 \Hy@Warning{%
13632 Difference (\the\@tempcnta) between bookmark levels is %
13633 greater \MessageBreak than one, level fixed%
13634 }%
13635 \@tempcnta\Hy@currentbookmarklevel
13636 \advance\@tempcnta by 1 %
13637 \edef\Hy@level{\the\@tempcnta}%
13638 \fi
13639 \else
13640 \global\let\Hy@levelcheck Y%
13641 \fi
13642 \global\let\Hy@currentbookmarklevel\Hy@level
13643 \@tempcnta\Hy@level\relax
13644 \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
13645 \advance\@tempcnta by -1 %
13646 \edef\Hy@tempa{#3}%
13647 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
13648 \ifx\Hy@tempa\Hy@tempb
13649 \Hy@Warning{%
13650 The anchor of a bookmark and its parent's must not%
13651 \MessageBreak be the same. Added a new anchor%
13652 }%
13653 \phantomsection
13654 \fi
13655 \ifHy@bookmarksnumbered
13656 \let\numberline\Hy@numberline
13657 \let\booknumberline\Hy@numberline
13658 \let\partnumberline\Hy@numberline
13659 \let\chapternumberline\Hy@numberline
13660 \else
13661 \let\numberline\@gobble
13662 \let\booknumberline\@gobble
13663 \let\partnumberline\@gobble
13664 \let\chapternumberline\@gobble
13665 \fi
13666 \HyPsd@XeTeXBigCharstrue
13667 \pdfstringdef\Hy@tempa{#2}%
13668 \HyPsd@SanitizeForOutFile\Hy@tempa
13669 \if@filesw
13670 \stepcounter{bookmark@seq@number}%
13671 \ifundefined{outlinefile}{%

```

```

13672     }{%
13673     \protected@write\@outlinefile{}{%
13674     \protect\BOOKMARK
13675     [\Hy@level][\@bookmarkopenstatus{\Hy@level}]{#3}%
13676     {\Hy@tempa}{\Hy@tempb}%
13677     \@percentchar\space\thebookmark@seq@number
13678     }%
13679     }%
13680     \fi
13681     \fi
13682 \endgroup
13683 }
13684 \newcounter{bookmark@seq@number}

13685 \begingroup
13686 \lccode'('= '{%
13687 \lccode'('= '}%
13688 \lccode'1=\z@
13689 \lccode'2=\z@
13690 \lccode'3=\z@
13691 \lccode'5=\z@
13692 \lccode'7=\z@
13693 \lccode'\#=\z@
13694 \lccode'\'=\z@
13695 \lccode'\{=\z@
13696 \lccode'\}=\z@
13697 \lowercase{%
13698 \endgroup
13699 \def\HyPsd@SanitizeForOutFile#1{%
13700 \@onelevel@sanitize\Hy@tempa
13701 \escapechar'\%
13702 \edef\Hy@tempa{%
13703 \expandafter\HyPsd@SanitizeOut@BraceLeft\Hy@tempa(\@nil
13704 }%
13705 \edef\Hy@tempa{%
13706 \expandafter\HyPsd@SanitizeOut@BraceRight\Hy@tempa)\@nil
13707 }%
13708 }%
13709 \def\HyPsd@SanitizeOut@BraceLeft#1(#2\@nil{%
13710 #1%
13711 \ifx\#2\%
13712 \expandafter\ltx@gobble
13713 \else
13714 \expandafter\ltx@firstofone
13715 \fi
13716 {%
13717 \string\173%
13718 \HyPsd@SanitizeOut@BraceLeft#2\@nil
13719 }%
13720 }%
13721 \def\HyPsd@SanitizeOut@BraceRight#1)#2\@nil{%
13722 #1%
13723 \ifx\#2\%
13724 \expandafter\ltx@gobble
13725 \else
13726 \expandafter\ltx@firstofone
13727 \fi
13728 {%

```

```

13729 \string\175%
13730 \HyPsd@SanitizeOut@BraceRight#2\@nil
13731 }%
13732 }%
13733 }

```

In the call of \BOOKMARK the braces around #4 are omitted, because it is not likely, that the level number contains ].

```

13734 \newcommand{\currentpdfbookmark}{%
13735 \pdfbookmark{\Hy@currentbookmarklevel}%
13736 }
13737 \newcommand{\subpdfbookmark}{%
13738 \@tempcnta\Hy@currentbookmarklevel
13739 \Hy@StepCount\@tempcnta
13740 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
13741 }
13742 \newcommand{\belowpdfbookmark}[2]{%
13743 \@tempcnta\Hy@currentbookmarklevel
13744 \Hy@StepCount\@tempcnta
13745 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
13746 \advance\@tempcnta by -1 %
13747 \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
13748 }

```

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.

```

13749 \renewcommand{\pdfbookmark}[3][0]{%
13750 \Hy@writebookmark}{#2}{#3.#1}{#1}{toc}%
13751 \hyper@anchorstart{#3.#1}\hyper@anchorend
13752 }
13753 \def\BOOKMARK{%
13754 \@ifnextchar[{\@BOOKMARK}{\@@BOOKMARK[1][-]}%
13755 }
13756 \def\@BOOKMARK[#1]{%
13757 \@ifnextchar[{\@@BOOKMARK[{#1}]}{\@@BOOKMARK[{#1}][-]}%
13758 }

```

The macros for calculating structure of outlines are derived from those by Petr Olsak used in the texinfo pdf macros.

#### 48.1.1 Rerun warning

\Hy@OutlineRerunCheck

```

13759 \RequirePackage{rerunfilecheck}[2009/12/10]
13760 \def\Hy@OutlineRerunCheck{%
13761 \RerunFileCheck{\jobname.out}{%
13762 \immediate\closeout\@outlinefile
13763 }{%
13764 Rerun to get outlines right\MessageBreak
13765 or use package ‘bookmark’%
13766 }%
13767 }

```

#### 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.

13768 \\*vtex\

13769 \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.

13770 \begingroup

13771 \catcode'\ '=12 %

13772 \ifnum\Hy@VTeXversion<650 %

13773 \catcode'\ "=12 %

13774 \gdef\hv@pdf@char#1#2#3{%

13775 \char

13776 \ifcase'#1#2#3 %

13777 "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%

13778 \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%

13779 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%

13780 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%

13781 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%

13782 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%

13783 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%

13784 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%

13785 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%

13786 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%

13787 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%

13788 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%

13789 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%

13790 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%

13791 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%

13792 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%

13793 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%

13794 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%

13795 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%

13796 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%

13797 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%

13798 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%

13799 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%

13800 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%

13801 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%

13802 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%

13803 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%

13804 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%

13805 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%

13806 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%

13807 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%

13808 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%

13809 \fi

13810 }%

13811 \else

13812 \gdef\hv@pdf@char{\char'}%

13813 \fi

13814 \endgroup

\@@BOOKMARK

13815 \def\@@BOOKMARK[#1][#2]#3#4#5{%

```

13816 \expandafter\edef\csname @count@#3\endcsname{%
13817   \the\@serial@counter
13818 }%
13819 \edef\@mycount{\the\@serial@counter}%
13820 \Hy@StepCount\@serial@counter
13821 \edef\@parcount{%
13822   \expandafter\ifx\csname @count@#5\endcsname\relax
13823     0%
13824   \else
13825     \csname @count@#5\endcsname
13826   \fi
13827 }%
13828 \immediate\special{%
13829   !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
13830   s=\ifx#2-c\else o\fi,t=#4%
13831 }%
13832 }%

```

\ReadBookmarks

```

13833 \def\ReadBookmarks{%
13834   \begingroup
13835   \def\0{\hv@pdf@char 0}%
13836   \def\1{\hv@pdf@char 1}%
13837   \def\2{\hv@pdf@char 2}%
13838   \def\3{\hv@pdf@char 3}%
13839   \def\{({}%
13840   \def\)}{)%
13841   \def\do##1{%
13842     \ifnum\catcode'##1=\active
13843       \@makeother##1%
13844     \else
13845       \ifnum\catcode'##1=6 %
13846         \@makeother##1%
13847       \fi
13848     \fi
13849   }%
13850   \dospecials
13851   \Hy@safe@activetrue
13852   \InputIfFileExists{\jobname.out}{\}{}%
13853 \endgroup
13854 \ifx\WriteBookmarks\relax
13855 \else
13856   \if@filesw
13857     \newwrite\@outlinefile
13858     \Hy@OutlineRerunCheck
13859     \immediate\openout\@outlinefile=\jobname.out\relax
13860     \ifHy@typexml
13861       \immediate\write\@outlinefile{<relaxxml>\relax}%
13862     \fi
13863   \fi
13864 \fi
13865 }

13866 \</vtex>
13867 \<!*vtex>
13868 \def\ReadBookmarks{%
13869   \begingroup

```

```

13870 \def\do##1{%
13871   \ifnum\catcode'\##1=\active
13872   \@makeother##1%
13873   \else
13874     \ifnum\catcode'\##1=6 %
13875     \@makeother##1%
13876   \fi
13877   \fi
13878 }%
13879 \dospecials
13880 \Hy@safe@activetrue
13881 \escapechar='\%
13882 \def\@@BOOKMARK[##1][##2]##3##4##5{%
13883   \calc@bm@number{##5}%
13884 }%
13885 \InputIfFileExists{\jobname.out}{-}{-}%
13886 \ifx\WriteBookmarks\relax
13887   \global\let\WriteBookmarks\relax
13888 \fi
13889 \def\@@BOOKMARK[##1][##2]##3##4##5{%
13890   \def\Hy@temp{##4}%
13891 \langle *pdftex\rangle
13892   \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
13893   \Hy@OutlineName{\Hy@pstringName{%
13894     ##2\check@bm@number{##3}}%
13895   }{%
13896     \expandafter\strip@prefix\meaning\Hy@temp
13897   }%
13898 \rangle /pdftex\rangle
13899 \langle *pdfmark\rangle
13900   \pdfmark{%
13901     pdfmark=/OUT,%
13902     Count={##2\check@bm@number{##3}},%
13903     Dest={##3},%
13904     Title=\expandafter\strip@prefix\meaning\Hy@temp
13905   }%
13906 \rangle /pdfmark\rangle
13907 \langle *dvipdfm | xetex\rangle
13908   \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
13909   \@pdfm@mark{%
13910     outline \ifHy@DvipdfmxOutlineOpen
13911       [%
13912       \ifnum##21>\z@
13913       \else
13914       -%
13915       \fi
13916     ] %
13917     \fi
13918     ##1<<%
13919     /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
13920     /A<<%
13921     /S/GoTo%
13922     /D(\Hy@pstringName)%
13923     >>%
13924     >>%
13925   }%
13926 \rangle /dvipdfm | xetex\rangle

```



```

13927 }%
13928 {%
13929   \def\WriteBookmarks{0}%
13930   \InputIfFileExists{\jobname.out}{-}{-}%
13931 }%
13932 {%\escapechar\m@ne\InputIfFileExists{\jobname.out}{-}{-}}%
13933 \ifx\WriteBookmarks\relax
13934 \else
13935   \if@files
13936     \newwrite\@outlinefile
13937     \Hy@OutlineRerunCheck
13938     \immediate\openout\@outlinefile=\jobname.out\relax
13939     \ifHy@typexml
13940       \immediate\write\@outlinefile{<relaxxml>\relax}%
13941     \fi
13942   \fi
13943 \fi
13944 \endgroup
13945 }
13946 <*pdfTeX>
13947 \def\Hy@OutlineName#1#2#3#4{%
13948   \pdfoutline goto name{#2}count#3{#4}%
13949 }
13950 </pdfTeX>
13951 \def\check@bm@number#1{%
13952   \expandafter\ifx\csname B_#1\endcsname\relax
13953     0%
13954   \else
13955     \csname B_#1\endcsname
13956   \fi
13957 }
13958 \def\calc@bm@number#1{%
13959   \@tempcnta=\check@bm@number{#1}\relax
13960   \advance\@tempcnta by 1 %
13961   \expandafter\xdef\csname B_#1\endcsname{the\@tempcnta}%
13962 }
13963 </!vTeX>
13964 \ifHy@implicit
13965 \else
13966   \expandafter\endinput
13967 \fi
13968 </outlines>
13969 <*outlines | hypertex>
13970 \newlength\Hy@SectionHShift
13971 \def\Hy@SectionAnchorHref#1{%
13972   \ifx\protect\@typeset@protect
13973     \Hy@@SectionAnchor{#1}%
13974   \fi
13975 }
13976 \DeclareRobustCommand*\Hy@@SectionAnchor}[1]{%
13977   \leavevmode
13978   \hbox to 0pt{%
13979     \kern-\Hy@SectionHShift
13980     \Hy@raisedlink{%
13981       \hyper@anchorstart{#1}\hyper@anchorend
13982     }%

```

```

13983 \hss
13984 }%
13985 }
13986 \let\H@old@ssect\@ssect
13987 \def\@ssect#1#2#3#4#5{%
13988 \Hy@MakeCurrentHrefAuto{section*}%
13989 \setlength{\Hy@SectionHShift}{#1}%
13990 \begingroup
13991 \toks@{\H@old@ssect{#1}{#2}{#3}{#4}}%
13992 \toks\tw@\expandafter{%
13993 \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
13994 #5%
13995 }%
13996 \edef\x{\endgroup
13997 \the\toks@{\the\toks\tw@}}%
13998 }\x
13999 }
14000 \let\H@old@schapter\@schapter
14001 \def\@schapter#1{%
14002 \begingroup
14003 \let\@mkboth\@gobbletwo
14004 \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14005 \Hy@raisedlink{%
14006 \hyper@anchorstart{\@currentHref}\hyper@anchorend
14007 }%
14008 \endgroup
14009 \H@old@schapter{#1}%
14010 }

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:

14011 \ltx@ifundefined{@chapter}{}{%
14012 \let\Hy@org@chapter\@chapter
14013 \def\@chapter{%
14014 \def\Hy@next{%
14015 \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14016 \Hy@raisedlink{%
14017 \hyper@anchorstart{\@currentHref}\hyper@anchorend
14018 }%
14019 }%
14020 \ifnum\c@secnumdepth>\m@ne
14021 \ltx@ifundefined{if@mainmatter}%
14022 \iftrue{\csname if@mainmatter\endcsname}%
14023 \let\Hy@next\relax
14024 \fi
14025 \fi
14026 \Hy@next
14027 \Hy@org@chapter
14028 }%
14029 }

14030 \let\H@old@part\@part
14031 \begingroup\expandafter\expandafter\expandafter\endgroup
14032 \expandafter\ifx\csname chapter\endcsname\relax
14033 \let\Hy@secnum@part\z@
14034 \else
14035 \let\Hy@secnum@part\m@ne

```

```

14036 \fi
14037 \def\@part{%
14038   \ifnum\Hy@secnum@part>\c@secnumdepth
14039     \phantomsection
14040   \fi
14041   \H@old@part
14042 }

14043 \let\H@old@spart\@spart
14044 \def\@spart#1{%
14045   \Hy@MakeCurrentHrefAuto{part*}%
14046   \Hy@raisedlink{%
14047     \hyper@anchorstart{\@currentHref}\hyper@anchorend
14048   }%
14049   \H@old@spart{#1}%
14050 }

14051 \let\H@old@sect\@sect
14052 \def\@sect#1#2#3#4#5#6[#7]#8{%
14053   \ifnum #2>\c@secnumdepth
14054     \expandafter\@firstoftwo
14055   \else
14056     \expandafter\@secondoftwo
14057   \fi
14058   {%
14059     \Hy@MakeCurrentHrefAuto{section*}%
14060     \setlength{\Hy@SectionHShift}{#3}%
14061     \begingroup
14062     \toks@{\H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}}%
14063     \toks\tw@\expandafter{%
14064       \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14065       #8%
14066     }%
14067     \edef\x{\endgroup
14068       \the\toks@\the\toks\tw@}%
14069     }\x
14070   }{%
14071     \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}{#8}%
14072   }%
14073 }

14074 </outlines | hypertex>
14075 <*outlines>

14076 \expandafter\def\csname Parent-4\endcsname{}
14077 \expandafter\def\csname Parent-3\endcsname{}
14078 \expandafter\def\csname Parent-2\endcsname{}
14079 \expandafter\def\csname Parent-1\endcsname{}
14080 \expandafter\def\csname Parent0\endcsname{}
14081 \expandafter\def\csname Parent1\endcsname{}
14082 \expandafter\def\csname Parent2\endcsname{}
14083 \expandafter\def\csname Parent3\endcsname{}
14084 \expandafter\def\csname Parent4\endcsname{}

14085 </outlines>

```

## 49 Compatibility with koma-script classes

```

14086 <*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.

```

14087 \def\Hy@tempa{%
14088   \def\@addchap{##1}##2{%
14089     \typeout{##2}%
14090     \if@twoside
14091       \@mkboth{##1}{}%
14092     \else
14093       \@mkboth{}{##1}%
14094     \fi
14095     \addtocontents{lof}{\protect\addvspace{10\p@}}%
14096     \addtocontents{lot}{\protect\addvspace{10\p@}}%
14097     \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14098     \Hy@raisedlink{%
14099       \hyper@anchorstart{\@currentHref}\hyper@anchorend
14100     }%
14101     \if@twocolumn
14102       \@topnewpage[\@makeschapterhead{##2}]%
14103     \else
14104       \@makeschapterhead{##2}%
14105       \@afterheading
14106     \fi
14107     \addcontentsline{toc}{chapter}{##1}%
14108   }%
14109 }
14110 \@ifclassloaded{scrbook}{%
14111   \@ifclasslater{scrbook}{2001/01/01}{%
14112     \let\Hy@tempa\@empty
14113   }{}%
14114 }{%
14115   \@ifclassloaded{scrreprt}{%
14116     \@ifclasslater{scrreprt}{2001/01/01}{%
14117       \let\Hy@tempa\@empty
14118     }{}%
14119   }{}%
14120   \let\Hy@tempa\@empty
14121 }%
14122 }%
14123 \Hy@tempa
14124 \</outlines | hypertext>

```

## 50 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek.

### 50.1 PD1 encoding

```

14125 \<*pd1enc>
14126 \DeclareFontEncoding{PD1}{}{}

Accents
14127 \DeclareTextAccent{'}{PD1}{\textasciigrave}
14128 \DeclareTextAccent{'}{PD1}{\textacute}
14129 \DeclareTextAccent{^}{PD1}{\textasciicircum}
14130 \DeclareTextAccent{~}{PD1}{\texttilde}

```

```

14131 \DeclareTextAccent{"}{PD1}{\textasciidieresis}
14132 \DeclareTextAccent{r}{PD1}{\textring}
14133 \DeclareTextAccent{v}{PD1}{\textasciicaron}
14134 \DeclareTextAccent{.}{PD1}{\textdotaccent}
14135 \DeclareTextAccent{c}{PD1}{\textcedilla}
14136 \DeclareTextAccent{=}{PD1}{\textasciimacron}
14137 \DeclareTextAccent{b}{PD1}{\textmacronbelow}
14138 \DeclareTextAccent{d}{PD1}{\textdotbelow}
14139 \DeclareTextCompositeCommand{'}{PD1}{\@empty}{\textasciigrave}
14140 \DeclareTextCompositeCommand{'}{PD1}{\@empty}{\textacute}
14141 \DeclareTextCompositeCommand{~}{PD1}{\@empty}{\textasciicircum}
14142 \DeclareTextCompositeCommand{-}{PD1}{\@empty}{\texttilde}
14143 \DeclareTextCompositeCommand{"}{PD1}{\@empty}{\textasciidieresis}
14144 \DeclareTextCompositeCommand{r}{PD1}{\@empty}{\textring}
14145 \DeclareTextCompositeCommand{v}{PD1}{\@empty}{\textasciicaron}
14146 \DeclareTextCompositeCommand{.}{PD1}{\@empty}{\textdotaccent}
14147 \DeclareTextCompositeCommand{c}{PD1}{\@empty}{\textcedilla}
14148 \DeclareTextCompositeCommand{=}{PD1}{\@empty}{\textasciimacron}
14149 \DeclareTextCompositeCommand{b}{PD1}{\@empty}{\textmacronbelow}
14150 \DeclareTextCompositeCommand{d}{PD1}{\@empty}{\textdotbelow}
14151 \DeclareTextCompositeCommand{'}{PD1}{\ }{\textasciigrave}
14152 \DeclareTextCompositeCommand{'}{PD1}{\ }{\textacute}
14153 \DeclareTextCompositeCommand{~}{PD1}{\ }{\textasciicircum}
14154 \DeclareTextCompositeCommand{-}{PD1}{\ }{\texttilde}
14155 \DeclareTextCompositeCommand{"}{PD1}{\ }{\textasciidieresis}
14156 \DeclareTextCompositeCommand{r}{PD1}{\ }{\textring}
14157 \DeclareTextCompositeCommand{v}{PD1}{\ }{\textasciicaron}
14158 \DeclareTextCompositeCommand{.}{PD1}{\ }{\textdotaccent}
14159 \DeclareTextCompositeCommand{c}{PD1}{\ }{\textcedilla}
14160 \DeclareTextCompositeCommand{=}{PD1}{\ }{\textasciimacron}
14161 \DeclareTextCompositeCommand{b}{PD1}{\ }{\textmacronbelow}
14162 \DeclareTextCompositeCommand{d}{PD1}{\ }{\textdotbelow}
14163 \DeclareTextCommand{k}{PD1}[1]{\TextSymbolUnavailable{k{#1}}#1}
14164 \DeclareTextCommand{t}{PD1}[1]{\TextSymbolUnavailable{t{#1}}#1}
14165 \DeclareTextCommand{newtie}{PD1}[1]{%
14166   \TextSymbolUnavailable{newtie{#1}}#1%
14167 }

```

Special white space escape characters not for use in bookmarks but for other PDF strings.

```

14168 % U+0009 (CHARACTER TABULATION)
14169 \DeclareTextCommand{\textHT}{PD1}{\011}% U+0009
14170 % U+000A (LINE FEED)
14171 \DeclareTextCommand{\textLF}{PD1}{\012}% U+000A
14172 % U+000D (CARRIAGE RETURN)
14173 \DeclareTextCommand{\textCR}{PD1}{\015}% U+000D

```

Accent glyph names

```

14174 % U+02D8 BREVE; breve
14175 \DeclareTextCommand{\textasciibreve}{PD1}{\030}% U+02D8
14176 % U+02C7 CARON; caron
14177 \DeclareTextCommand{\textasciicaron}{PD1}{\031}% U+02C7
14178 % U+02C6 MODIFIER LETTER CIRCUMFLEX ACCENT; circumflex
14179 \DeclareTextCommand{\textcircumflex}{PD1}{\032}% U+02C6
14180 % U+02D9 DOT ABOVE; dotaccent
14181 \DeclareTextCommand{\textdotaccent}{PD1}{\033}% U+02D9
14182 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut
14183 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034}% U+02DD
14184 % U+02DB OGONEK; ogonek
14185 \DeclareTextCommand{\textogonek}{PD1}{\035}% U+02DB

```

14186 % U+02DA RING ABOVE; ring  
 14187 \DeclareTextCommand{\textring}{PD1}{\036}% U+02DA  
 14188 % U+02DC SMALL TILDE; ilde, \*tilde  
 14189 \DeclareTextCommand{\texttilde}{PD1}{\037}% U+02DC  
 \040: U+0020 SPACE; \*space, spacehackarabic  
 \041: U+0021 EXCLAMATION MARK; exclam  
 14190 % U+0022 QUOTATION MARK; quotedbl  
 14191 \DeclareTextCommand{\textquotedbl}{PD1}{\string"}% \042 U+0022  
 14192 % U+0023 NUMBER SIGN; numbersign  
 14193 \DeclareTextCommand{\textnumbersign}{PD1}{\043}% U+0023  
 14194 % U+0024 DOLLAR SIGN; dollar  
 14195 \DeclareTextCommand{\textdollar}{PD1}{\044}% U+0024  
 14196 % U+0025 PERCENT SIGN; percent  
 14197 \DeclareTextCommand{\textpercent}{PD1}{\045}% U+0025  
 14198 % U+0026 AMPERSAND; ampersand  
 14199 \DeclareTextCommand{\textampersand}{PD1}{\046}% U+0026  
 \047: U+0027 APOSTROPHE; quotesingle  
  
 14200 % U+0028 LEFT PARENTHESIS; parenleft  
 14201 \DeclareTextCommand{\textparenleft}{PD1}{\string\(% \050 U+0028  
 14202 % U+0029 RIGHT PARENTHESIS; parenright  
 14203 \DeclareTextCommand{\textparenright}{PD1}{\string\)% \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  
 14204 % U+002E FULL STOP; period  
 14205 \DeclareTextCommand{\textdotbelow}{PD1}{\056}% \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  
 14206 % U+003C LESS-THAN SIGN; less  
 14207 \DeclareTextCommand{\textless}{PD1}{\073}% \074 U+003C  
 \075: U+003D EQUALS SIGN; equal  
 14208 % U+003E GREATER-THAN SIGN; greater  
 14209 \DeclareTextCommand{\textgreater}{PD1}{\075}% \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  
 14210 % U+005C REVERSE SOLIDUS; backslash  
 14211 \DeclareTextCommand{\textbackslash}{PD1}{\134}% U+005C  
 \135: U+005D RIGHT SQUARE BRACKET; bracketright  
 14212 % U+005E CIRCUMFLEX ACCENT; asciicircum  
 14213 \DeclareTextCommand{\textasciicircum}{PD1}{\136}% U+005E  
 14214 % U+005F LOW LINE; underscore  
 14215 \DeclareTextCommand{\textunderscore}{PD1}{\137}% U+005F  
 14216 \DeclareTextCommand{\textmacronbelow}{PD1}{\137}% U+005F

14217 % U+0060 GRAVE ACCENT; grave  
 14218 \DeclareTextCommand{\textasciigrave}{PD1}{\140}% U+0060  
 \141: U+0061 LATIN SMALL LETTER A; a  
 ...  
 \150: U+0068 LATIN SMALL LETTER H; h  
 14219 % U+0069 LATIN SMALL LETTER I; i  
 14220 \DeclareTextCompositeCommand{\.}{PD1}{i}{i}% \151 U+0069  
 \152: U+006A LATIN SMALL LETTER J; j  
 ...  
 \172: U+007A LATIN SMALL LETTER Z; z  
 14221 % U+007B LEFT CURLY BRACKET; braceleft  
 14222 \DeclareTextCommand{\textbraceleft}{PD1}{\173}% U+007B  
 14223 % U+007C VERTICAL LINE; \*bar, verticalbar  
 14224 \DeclareTextCommand{\textbar}{PD1}{|}% U+007C  
 14225 % U+007D RIGHT CURLY BRACKET; braceright  
 14226 \DeclareTextCommand{\textbraceright}{PD1}{\175}% U+007D  
 14227 % U+007E TILDE; asciitilde  
 14228 \DeclareTextCommand{\textasciitilde}{PD1}{\176}% U+007E  
 Slot \177 (0x7F) is undefined in PDFDocEncoding.  
 14229 % U+2022 BULLET; bullet  
 14230 \DeclareTextCommand{\textbullet}{PD1}{\200}% U+2022  
 14231 % U+2020 DAGGER; dagger  
 14232 \DeclareTextCommand{\textdagger}{PD1}{\201}% U+2020  
 14233 % U+2021 DOUBLE DAGGER; daggerdbl  
 14234 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202}% U+2021  
 14235 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 14236 \DeclareTextCommand{\textellipsis}{PD1}{\203}% U+2026  
 14237 % U+2014 EM DASH; emdash  
 14238 \DeclareTextCommand{\textemdash}{PD1}{\204}% U+2014  
 14239 % U+2013 EN DASH; endash  
 14240 \DeclareTextCommand{\textendash}{PD1}{\205}% U+2013  
 14241 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
 14242 \DeclareTextCommand{\textflorin}{PD1}{\206}% U+0192  
 14243 % U+2044 FRACTION SLASH; fraction  
 14244 \DeclareTextCommand{\textfractionsolidus}{PD1}{\207}% U+2044  
 14245 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
 lingleft  
 14246 \DeclareTextCommand{\guilsinglleft}{PD1}{\210}% U+2039  
 14247 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
 lingright  
 14248 \DeclareTextCommand{\guilsinglright}{PD1}{\211}% U+203A  
 14249 % U+2212 MINUS SIGN; minus  
 14250 \DeclareTextCommand{\textminus}{PD1}{\212}% U+2212  
 14251 % U+2030 PER MILLE SIGN; perthousand  
 14252 \DeclareTextCommand{\textperthousand}{PD1}{\213}% U+2030  
 14253 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 14254 \DeclareTextCommand{\quotedblbase}{PD1}{\214}% U+201E  
 14255 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 14256 \DeclareTextCommand{\textquotedblleft}{PD1}{\215}% U+201C  
 14257 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 14258 \DeclareTextCommand{\textquotedblright}{PD1}{\216}% U+201D  
 14259 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 14260 \DeclareTextCommand{\textquoteleft}{PD1}{\217}% U+2018  
 14261 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 14262 \DeclareTextCommand{\textquoteright}{PD1}{\220}% U+2019  
 14263 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase

14264 \DeclareTextCommand{\quotesinglbase}{PD1}{\221}% U+201A  
14265 % U+2122 TRADE MARK SIGN; trademark  
14266 \DeclareTextCommand{\texttrademark}{PD1}{\222}% U+2122  
14267 % U+FB01 LATIN SMALL LIGATURE FI; fi  
14268 \DeclareTextCommand{\textfi}{PD1}{\223}% U+FB01  
14269 % U+FB02 LATIN SMALL LIGATURE FL; fl  
14270 \DeclareTextCommand{\textfl}{PD1}{\224}% U+FB02  
14271 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
14272 \DeclareTextCommand{\L}{PD1}{\225}% U+0141  
14273 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
14274 \DeclareTextCommand{\OE}{PD1}{\226}% U+0152  
14275 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
14276 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227}% U+0160  
14277 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
14278 \DeclareTextCompositeCommand{\Y}{PD1}{Y}{\230}% U+0178  
14279 \DeclareTextCommand{\IJ}{PD1}{\230}  
14280 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
14281 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231}% U+017D  
14282 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
14283 \DeclareTextCommand{\i}{PD1}{\232}% U+0131  
14284 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
14285 \DeclareTextCommand{\l}{PD1}{\233}% U+0142  
14286 % U+0153 LATIN SMALL LIGATURE OE; oe  
14287 \DeclareTextCommand{\oe}{PD1}{\234}% U+0153  
14288 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
14289 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235}% U+0161  
14290 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
14291 \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.  
14292 % U+20AC EURO SIGN; \*Euro, euro  
14293 \DeclareTextCommand{\texteuro}{PD1}{\240}% U+20AC  
14294 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
14295 \DeclareTextCommand{\textexclamdown}{PD1}{\241}% U+00A1  
14296 % U+00A2 CENT SIGN; cent  
14297 \DeclareTextCommand{\textcent}{PD1}{\242}% U+00A2  
14298 % U+00A3 POUND SIGN; sterling  
14299 \DeclareTextCommand{\textsterling}{PD1}{\243}% U+00A3  
14300 % U+00A4 CURRENCY SIGN; currency  
14301 \DeclareTextCommand{\textcurrency}{PD1}{\244}% U+00A4  
14302 % U+00A5 YEN SIGN; yen  
14303 \DeclareTextCommand{\textyen}{PD1}{\245}% U+00A5  
14304 % U+00A6 BROKEN BAR; brokenbar  
14305 \DeclareTextCommand{\textbrokenbar}{PD1}{\246}% U+00A6  
14306 % U+00A7 SECTION SIGN; section  
14307 \DeclareTextCommand{\textsection}{PD1}{\247}% U+00A7  
14308 % U+00A8 DIAERESIS; dieresis  
14309 \DeclareTextCommand{\textasciidieresis}{PD1}{\250}% U+00A8  
14310 % U+00A9 COPYRIGHT SIGN; copyright  
14311 \DeclareTextCommand{\textcopyright}{PD1}{\251}% U+00A9  
14312 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
14313 \DeclareTextCommand{\textordfeminine}{PD1}{\252}% U+00AA  
14314 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
motleft  
14315 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB  
14316 % U+00AC NOT SIGN; logicalnot  
14317 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC



14318 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not  
No glyph \255 in PDFDocEncoding.  
14319 % U+00AE REGISTERED SIGN; registered  
14320 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE  
14321 % U+00AF MACRON; \*macron, overscore  
14322 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF  
14323 % U+00B0 DEGREE SIGN; degree  
14324 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0  
14325 % U+00B1 PLUS-MINUS SIGN; plusminus  
14326 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1  
14327 % U+00B2 SUPERSCRIPT TWO; twosuperior  
14328 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}% U+00B2  
14329 % U+00B3 SUPERSCRIPT THREE; threesuperior  
14330 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}% U+00B3  
14331 % U+00B4 ACUTE ACCENT; acute  
14332 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4  
14333 % U+00B5 MICRO SIGN; mu, mul  
14334 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5  
14335 % U+00B6 PILCROW SIGN; paragraph  
14336 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6  
14337 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
14338 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7  
14339 % U+00B8 CEDILLA; cedilla  
14340 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8  
14341 % U+00B9 SUPERSCRIPT ONE; onesuperior  
14342 \DeclareTextCommand{\textonesuperior}{PD1}{\271}% U+00B9  
14343 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
14344 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA  
14345 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
motright  
14346 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB  
14347 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
14348 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC  
14349 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
14350 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD  
14351 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
14352 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE  
14353 % U+00BF INVERTED QUESTION MARK; questiondown  
14354 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF  
14355 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
14356 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0  
14357 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
14358 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1  
14359 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
14360 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2  
14361 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
14362 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3  
14363 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
14364 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304}% U+00C4  
14365 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
14366 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5  
14367 % U+00C6 LATIN CAPITAL LETTER AE; AE  
14368 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6  
14369 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
14370 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7  
14371 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
14372 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310}% U+00C8

14373 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
14374 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311}% U+00C9  
14375 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
14376 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312}% U+00CA  
14377 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
14378 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313}% U+00CB  
14379 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
14380 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314}% U+00CC  
14381 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
14382 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315}% U+00CD  
14383 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
14384 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316}% U+00CE  
14385 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
14386 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317}% U+00CF  
14387 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
14388 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0  
14389 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0  
14390 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
14391 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321}% U+00D1  
14392 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
14393 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322}% U+00D2  
14394 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
14395 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323}% U+00D3  
14396 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
14397 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324}% U+00D4  
14398 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
14399 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325}% U+00D5  
14400 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
14401 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326}% U+00D6  
14402 % U+00D7 MULTIPLICATION SIGN; multiply  
14403 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7  
14404 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
14405 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8  
14406 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
14407 \DeclareTextCompositeCommand{\`}{PD1}{U}{\331}% U+00D9  
14408 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
14409 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332}% U+00DA  
14410 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
14411 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333}% U+00DB  
14412 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
14413 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334}% U+00DC  
14414 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
14415 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335}% U+00DD  
14416 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
14417 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE  
14418 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
14419 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF  
14420 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
14421 \DeclareTextCompositeCommand{\`}{PD1}{a}{\340}% U+00E0  
14422 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
14423 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341}% U+00E1  
14424 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
14425 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342}% U+00E2  
14426 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
14427 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343}% U+00E3  
14428 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
14429 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344}% U+00E4

14430 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
14431 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345}% U+00E5  
14432 % U+00E6 LATIN SMALL LETTER AE; ae  
14433 \DeclareTextCommand{\ae}{PD1}{\346}% U+00E6  
14434 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
14435 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347}% U+00E7  
14436 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
14437 \DeclareTextCompositeCommand{\`}{PD1}{e}{\350}% U+00E8  
14438 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
14439 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351}% U+00E9  
14440 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
14441 \DeclareTextCompositeCommand{\^}{PD1}{e}{\352}% U+00EA  
14442 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
14443 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353}% U+00EB  
14444 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
14445 \DeclareTextCompositeCommand{\`}{PD1}{i}{\354}% U+00EC  
14446 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354}% U+00EC  
14447 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
14448 \DeclareTextCompositeCommand{\^}{PD1}{i}{\355}% U+00ED  
14449 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
14450 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
14451 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
14452 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
14453 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
14454 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
14455 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
14456 % U+00F0 LATIN SMALL LETTER ETH; eth  
14457 \DeclareTextCommand{\dh}{PD1}{\360}% U+00F0  
14458 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
14459 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361}% U+00F1  
14460 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
14461 \DeclareTextCompositeCommand{\`}{PD1}{o}{\362}% U+00F2  
14462 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
14463 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363}% U+00F3  
14464 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
14465 \DeclareTextCompositeCommand{\^}{PD1}{o}{\364}% U+00F4  
14466 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
14467 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365}% U+00F5  
14468 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
14469 \DeclareTextCompositeCommand{\"}{PD1}{o}{\366}% U+00F6  
14470 % U+00F7 DIVISION SIGN; divide  
14471 \DeclareTextCommand{\textdivide}{PD1}{\367}% U+00F7  
14472 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
14473 \DeclareTextCommand{\o}{PD1}{\370}% U+00F8  
14474 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
14475 \DeclareTextCompositeCommand{\`}{PD1}{u}{\371}% U+00F9  
14476 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
14477 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372}% U+00FA  
14478 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
14479 \DeclareTextCompositeCommand{\^}{PD1}{u}{\373}% U+00FB  
14480 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
14481 \DeclareTextCompositeCommand{\"}{PD1}{u}{\374}% U+00FC  
14482 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
14483 \DeclareTextCompositeCommand{\^}{PD1}{y}{\375}% U+00FD  
14484 % U+00FE LATIN SMALL LETTER THORN; thorn  
14485 \DeclareTextCommand{\th}{PD1}{\376}% U+00FE  
14486 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis

14487 \DeclareTextCompositeCommand{"}{PD1}{y}{\377}% U+00FF  
 14488 \DeclareTextCommand{\ij}{PD1}{\377}% U+00FF

Glyphs that consist of several characters.

14489 \DeclareTextCommand{\SS}{PD1}{SS}  
 14490 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

Aliases (german.sty)

14491 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}  
 14492 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}  
 14493 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}  
 14494 \DeclareTextCommand{\textgrq}{PD1}{\textquotleft}  
 14495 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}  
 14496 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}  
 14497 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}  
 14498 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

Aliases (math names)

14499 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}  
 14500 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}  
 14501 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}  
 14502 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}  
 14503 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}  
 14504 \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).

14505 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek  
 14506 \DeclareTextCompositeCommand{\'}{PD1}{c}{c}% cacute  
 14507 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek  
 14508 \DeclareTextCompositeCommand{\'}{PD1}{n}{n}% nacute  
 14509 \DeclareTextCompositeCommand{\'}{PD1}{s}{s}% sacute  
 14510 \DeclareTextCompositeCommand{\'}{PD1}{z}{z}% zacute  
 14511 \DeclareTextCompositeCommand{\.}{PD1}{z}{z}% zdot  
 14512 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek  
 14513 \DeclareTextCompositeCommand{\'}{PD1}{C}{C}% Cacute  
 14514 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek  
 14515 \DeclareTextCompositeCommand{\'}{PD1}{N}{N}% Nacute  
 14516 \DeclareTextCompositeCommand{\'}{PD1}{S}{S}% Sacute  
 14517 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z}% Zacute  
 14518 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z}% Zdot

14519 </pd1enc>

## 50.2 PU encoding

14520 <\*puenc>  
 14521 \DeclareFontEncoding{PU}{-}{-}

### 50.2.1 NFSS2 accents

14522 % U+0300 COMBINING GRAVE ACCENT; gravecmb, \*gravecomb  
 14523 \DeclareTextCommand{\'}{PU}[1]{\#1\83\000}% U+0300  
 14524 % U+0301 COMBINING ACUTE ACCENT; acutecmb, \*acutecomb  
 14525 \DeclareTextCommand{\'}{PU}[1]{\#1\83\001}% U+0301  
 14526 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb  
 14527 \DeclareTextCommand{\`}{PU}[1]{\#1\83\002}% U+0302  
 14528 % U+0303 COMBINING TILDE; tildecmb, \*tildecmb  
 14529 \DeclareTextCommand{\~}{PU}[1]{\#1\83\003}% U+0303  
 14530 % U+0304 COMBINING MACRON; macroncmb  
 14531 \DeclareTextCommand{\=}{PU}[1]{\#1\83\004}% U+0304

14532 % U+0306 COMBINING BREVE; brevecmb  
14533 \DeclareTextCommand{\u}{PU}[1]{#1\83\006}% U+0306  
14534 \DeclareTextCommand{\U}{PU}[1]{#1\83\006}% U+0306  
14535 % U+0307 COMBINING DOT ABOVE; dotaccentcmb  
14536 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307  
14537 % U+0308 COMBINING DIAERESIS; dieresiscmb  
14538 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308  
14539 % U+030A COMBINING RING ABOVE; ringcmb  
14540 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A  
14541 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb  
14542 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B  
14543 % U+030C COMBINING CARON; caroncmb  
14544 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C  
14545 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb  
14546 \DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F  
14547 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F  
14548 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
14549 \DeclareTextCommand{\newtie}{PU}[1]{#1\83\021}% U+0311  
14550 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcomb  
14551 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323  
14552 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
14553 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331  
14554 % U+0327 COMBINING CEDILLA; cedillacmb  
14555 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327  
14556 % U+0328 COMBINING OGONEK; ogonekcmb  
14557 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328  
14558 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb  
14559 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361  
14560 % U+20DD COMBINING ENCLOSING CIRCLE  
14561 \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.

14562 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textasciigrave}  
14563 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}  
14564 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\textasciicircum}  
14565 \DeclareTextCompositeCommand{\-}{PU}{\@empty}{\texttilde}  
14566 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textasciidieresis}  
14567 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}  
14568 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textasciicaron}  
14569 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}  
14570 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}  
14571 \DeclareTextCompositeCommand{\u}{PU}{\@empty}{\textasciibreve}  
14572 \DeclareTextCompositeCommand{\G}{PU}{\@empty}{\textdoublegrave}  
14573 \DeclareTextCompositeCommand{\=}{PU}{\@empty}{\textasciimacron}  
14574 \DeclareTextCompositeCommand{\H}{PU}{\@empty}{\texthungarumlaut}  
14575 \DeclareTextCompositeCommand{\k}{PU}{\@empty}{\textogonek}  
14576 \DeclareTextCompositeCommand{\b}{PU}{\@empty}{\textmacronbelow}  
14577 \DeclareTextCompositeCommand{\d}{PU}{\@empty}{\textdotbelow}  
14578 \DeclareTextCompositeCommand{\t}{PU}{\@empty}{\texttie}  
14579 \DeclareTextCompositeCommand{\newtie}{PU}{\@empty}{\textnewtie}  
14580 \DeclareTextCompositeCommand{\textcircled}{PU}{\@empty}{\textbigcircle}

14581 \DeclareTextCompositeCommand{\`}{PU}{\ }{\textasciigrave}  
14582 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textacute}  
14583 \DeclareTextCompositeCommand{\~}{PU}{\ }{\textasciicircum}  
14584 \DeclareTextCompositeCommand{\-}{PU}{\ }{\texttilde}  
14585 \DeclareTextCompositeCommand{\"}{PU}{\ }{\textasciidieresis}  
14586 \DeclareTextCompositeCommand{\r}{PU}{\ }{\textring}

```

14587 \DeclareTextCompositeCommand{\v}{PU}{\ }{\textasciicaron}
14588 \DeclareTextCompositeCommand{\.}{PU}{\ }{\textdotaccent}
14589 \DeclareTextCompositeCommand{\c}{PU}{\ }{\textcedilla}
14590 \DeclareTextCompositeCommand{\u}{PU}{\ }{\textasciibreve}
14591 \DeclareTextCompositeCommand{\G}{PU}{\ }{\textdoublegrave}
14592 \DeclareTextCompositeCommand{\=}{PU}{\ }{\textasciimacron}
14593 \DeclareTextCompositeCommand{\H}{PU}{\ }{\texthungarumlaut}
14594 \DeclareTextCompositeCommand{\k}{PU}{\ }{\textogonek}
14595 \DeclareTextCompositeCommand{\b}{PU}{\ }{\textmacronbelow}
14596 \DeclareTextCompositeCommand{\d}{PU}{\ }{\textdotbelow}
14597 \DeclareTextCompositeCommand{\t}{PU}{\ }{\texttie}
14598 \DeclareTextCompositeCommand{\newtie}{PU}{\ }{\textnewtie}
14599 \DeclareTextCompositeCommand{\textcircled}{PU}{\ }{\textbigcircle}

```

Accents for capitals (see encoding TS1)

```

14600 \DeclareTextCommand{\capitalcedilla}{PU}[1]{\c{#1}}
14601 \DeclareTextCommand{\capitalogonek}{PU}[1]{\k{#1}}
14602 \DeclareTextCommand{\capitalgrave}{PU}[1]{\`{#1}}
14603 \DeclareTextCommand{\capitalacute}{PU}[1]{\'{#1}}
14604 \DeclareTextCommand{\capitalcircumflex}{PU}[1]{\^{#1}}
14605 \DeclareTextCommand{\capitaltilde}{PU}[1]{\~{#1}}
14606 \DeclareTextCommand{\capitaldieresis}{PU}[1]{\"{#1}}
14607 \DeclareTextCommand{\capitalhungarumlaut}{PU}[1]{\H{#1}}
14608 \DeclareTextCommand{\capitalring}{PU}[1]{\r{#1}}
14609 \DeclareTextCommand{\capitalcaron}{PU}[1]{\v{#1}}
14610 \DeclareTextCommand{\capitalbreve}{PU}[1]{\u{#1}}
14611 \DeclareTextCommand{\capitalmacron}{PU}[1]{\={#1}}
14612 \DeclareTextCommand{\capitaldotaccent}{PU}[1]{\.{#1}}
14613 \DeclareTextCommand{\capitaltie}{PU}[1]{\t{#1}}
14614 \DeclareTextCommand{\capitalnewtie}{PU}[1]{\newtie{#1}}

```

## 50.2.2 Basic Latin: U+0000 to U+007F

Special white space escape characters.

```

14615 % U+0009 (CHARACTER TABULATION)
14616 \DeclareTextCommand{\textHT}{PU}{\80\011}% U+0009
14617 % U+000A (LINE FEED)
14618 \DeclareTextCommand{\textLF}{PU}{\80\012}% U+000A
14619 % U+000D (CARRIAGE RETURN)
14620 \DeclareTextCommand{\textCR}{PU}{\80\015}% U+000D

\80\040: U+0020 SPACE; space, spacehackarabic
\80\041: U+0021 EXCLAMATION MARK; exclam

14621 % U+0022 QUOTATION MARK; quotedbl
14622 \DeclareTextCommand{\textquotedbl}{PU}{\string"}% \80\042 U+0022
14623 % U+0023 NUMBER SIGN; numbersign
14624 \DeclareTextCommand{\textnumbersign}{PU}{\80\043}% U+0023
14625 % U+0024 DOLLAR SIGN; dollar
14626 \DeclareTextCommand{\textdollar}{PU}{\80\044}% U+0024
14627 % U+0025 PERCENT SIGN; percent
14628 \DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025
14629 % U+0026 AMPERSAND; ampersand
14630 \DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026
14631 % U+0027 APOSTROPHE; quotesingle
14632 \DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027
14633 % U+0028 LEFT PARENTHESIS; parenleft
14634 \DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028
14635 % U+0029 RIGHT PARENTHESIS; parenright
14636 \DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029

```

```

14637 % U+002A ASTERISK; asterisk
14638 \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
14639 % U+003C LESS-THAN SIGN; less
14640 \DeclareTextCommand{\textless}{PU}{<}% \80\074 U+003C
\80\075: U+003D EQUALS SIGN; equal
14641 % U+003E GREATER-THAN SIGN; greater
14642 \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
14643 % U+005C REVERSE SOLIDUS; backslash
14644 \DeclareTextCommand{\textbackslash}{PU}{\80\134}% U+005C
\80\135: U+005D RIGHT SQUARE BRACKET; bracketright
14645 % U+005E CIRCUMFLEX ACCENT; asciicircum
14646 \DeclareTextCommand{\textasciicircum}{PU}{\80\136}% U+005E
14647 % U+005F LOW LINE; underscore
14648 \DeclareTextCommand{\textunderscore}{PU}{\80\137}% U+005F
14649 % U+0060 GRAVE ACCENT; grave
14650 \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
14651 % U+0069 LATIN SMALL LETTER I; i
14652 \DeclareTextCompositeCommand{\.}{PU}{i}{i}% \80\151 U+0069
14653 \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
14654 % U+007B LEFT CURLY BRACKET; braceleft
14655 \DeclareTextCommand{\textbraceleft}{PU}{\80\173}% U+007B
14656 % U+007C VERTICAL LINE; *bar, verticalbar
14657 \DeclareTextCommand{\textbar}{PU}{|}% \80\174 U+007C
14658 % U+007D RIGHT CURLY BRACKET; braceright
14659 \DeclareTextCommand{\textbraceright}{PU}{\80\175}% U+007D
14660 % U+007E TILDE; asciitilde
14661 \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  
14662 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
14663 \DeclareTextCommand{\textexclamdown}{PU}{\80\241}% U+00A1  
14664 % U+00A2 CENT SIGN; cent  
14665 \DeclareTextCommand{\textcent}{PU}{\80\242}% U+00A2  
14666 % U+00A3 POUND SIGN; sterling  
14667 \DeclareTextCommand{\textsterling}{PU}{\80\243}% U+00A3  
14668 % U+00A4 CURRENCY SIGN; currency  
14669 \DeclareTextCommand{\textcurrency}{PU}{\80\244}% U+00A4  
14670 % U+00A5 YEN SIGN; yen  
14671 \DeclareTextCommand{\textyen}{PU}{\80\245}% U+00A5  
14672 % U+00A6 BROKEN BAR; brokenbar  
14673 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246}% U+00A6  
14674 % U+00A7 SECTION SIGN; section  
14675 \DeclareTextCommand{\textsection}{PU}{\80\247}% U+00A7  
14676 % U+00A8 DIAERESIS; dieresis  
14677 \DeclareTextCommand{\textasciidieresis}{PU}{\80\250}% U+00A8  
14678 % U+00A9 COPYRIGHT SIGN; copyright  
14679 \DeclareTextCommand{\textcopyright}{PU}{\80\251}% U+00A9  
14680 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
14681 \DeclareTextCommand{\textordfeminine}{PU}{\80\252}% U+00AA  
14682 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotleft  
14683 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB  
14684 % U+00AC NOT SIGN; logicalnot  
14685 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254}% U+00AC  
14686 \DeclareTextCommand{\textlnot}{PU}{\80\254}% U+00AC  
\\80\255: U+00AD SOFT HYPHEN; sfthyphen, softthyphen  
14687 % U+00AE REGISTERED SIGN; registered  
14688 \DeclareTextCommand{\textregistered}{PU}{\80\256}% U+00AE  
14689 % U+00AF MACRON; \*macron, overscore  
14690 \DeclareTextCommand{\textasciimacron}{PU}{\80\257}% U+00AF  
14691 % U+00B0 DEGREE SIGN; degree  
14692 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0  
14693 % U+00B1 PLUS-MINUS SIGN; plusminus  
14694 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1  
14695 % U+00B2 SUPERScript TWO; twosuperior  
14696 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}% U+00B2  
14697 % U+00B3 SUPERScript THREE; threesuperior  
14698 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}% U+00B3  
14699 % U+00B4 ACUTE ACCENT; acute  
14700 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4  
14701 \DeclareTextCommand{\textasciiacute}{PU}{\80\264}% U+00B4  
14702 % U+00B5 MICRO SIGN; mu, mul  
14703 \DeclareTextCommand{\textmu}{PU}{\80\265}% U+00B5  
14704 % U+00B6 PILCROW SIGN; paragraph  
14705 \DeclareTextCommand{\textparagraph}{PU}{\80\266}% U+00B6  
14706 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
14707 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267}% U+00B7  
14708 % U+00B8 CEDILLA; cedilla  
14709 \DeclareTextCommand{\textcedilla}{PU}{\80\270}% U+00B8  
14710 % U+00B9 SUPERScript ONE; onesuperior  
14711 \DeclareTextCommand{\textonesuperior}{PU}{\80\271}% U+00B9  
14712 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
14713 \DeclareTextCommand{\textordmasculine}{PU}{\80\272}% U+00BA



14714 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotright  
14715 \DeclareTextCommand{\guillemotright}{PU}{\80\273}% U+00BB  
14716 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
14717 \DeclareTextCommand{\textonequarter}{PU}{\80\274}% U+00BC  
14718 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
14719 \DeclareTextCommand{\textonehalf}{PU}{\80\275}% U+00BD  
14720 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
14721 \DeclareTextCommand{\textthreequarters}{PU}{\80\276}% U+00BE  
14722 % U+00BF INVERTED QUESTION MARK; questiondown  
14723 \DeclareTextCommand{\textquestiondown}{PU}{\80\277}% U+00BF  
14724 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
14725 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
14726 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
14727 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
14728 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
14729 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302}% U+00C2  
14730 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
14731 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
14732 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
14733 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304}% U+00C4  
14734 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
14735 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305}% U+00C5  
14736 % U+00C6 LATIN CAPITAL LETTER AE; AE  
14737 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6  
14738 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
14739 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7  
14740 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
14741 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
14742 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
14743 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
14744 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
14745 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312}% U+00CA  
14746 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
14747 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313}% U+00CB  
14748 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
14749 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
14750 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
14751 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
14752 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
14753 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316}% U+00CE  
14754 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
14755 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317}% U+00CF  
14756 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
14757 \DeclareTextCommand{\DH}{PU}{\80\320}% U+00D0  
14758 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
14759 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321}% U+00D1  
14760 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
14761 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
14762 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
14763 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
14764 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
14765 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324}% U+00D4  
14766 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
14767 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
14768 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
14769 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326}% U+00D6

14770 % U+00D7 MULTIPLICATION SIGN; multiply  
 14771 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7  
 14772 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
 14773 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8  
 14774 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
 14775 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331}% U+00D9  
 14776 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
 14777 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA  
 14778 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
 14779 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333}% U+00DB  
 14780 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
 14781 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334}% U+00DC  
 14782 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
 14783 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD  
 14784 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
 14785 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE  
 14786 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
 14787 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF  
 14788 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
 14789 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}% U+00E0  
 14790 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
 14791 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1  
 14792 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
 14793 \DeclareTextCompositeCommand{\^}{PU}{a}{\80\342}% U+00E2  
 14794 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
 14795 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
 14796 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
 14797 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344}% U+00E4  
 14798 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
 14799 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5  
 14800 % U+00E6 LATIN SMALL LETTER AE; ae  
 14801 \DeclareTextCommand{\ae}{PU}{\80\346}% U+00E6  
 14802 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
 14803 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7  
 14804 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
 14805 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}% U+00E8  
 14806 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
 14807 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
 14808 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
 14809 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA  
 14810 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
 14811 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353}% U+00EB  
 14812 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
 14813 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC  
 14814 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC  
 14815 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
 14816 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
 14817 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
 14818 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
 14819 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
 14820 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
 14821 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
 14822 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
 14823 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
 14824 % U+00F0 LATIN SMALL LETTER ETH; eth  
 14825 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0  
 14826 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde

14827 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361}% U+00F1  
 14828 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
 14829 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
 14830 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
 14831 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
 14832 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
 14833 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364}% U+00F4  
 14834 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
 14835 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
 14836 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
 14837 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366}% U+00F6  
 14838 % U+00F7 DIVISION SIGN; divide  
 14839 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7  
 14840 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
 14841 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8  
 14842 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
 14843 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
 14844 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
 14845 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
 14846 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
 14847 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373}% U+00FB  
 14848 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
 14849 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374}% U+00FC  
 14850 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
 14851 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
 14852 % U+00FE LATIN SMALL LETTER THORN; thorn  
 14853 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE  
 14854 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
 14855 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377}% U+00FF

## 50.2.4 Latin Extended-A: U+0080 to U+017F

14856 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron  
 14857 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% U+0100  
 14858 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron  
 14859 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% U+0101  
 14860 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve  
 14861 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% U+0102  
 14862 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve  
 14863 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% U+0103  
 14864 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek  
 14865 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% U+0104  
 14866 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek  
 14867 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% U+0105  
 14868 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacute  
 14869 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% U+0106  
 14870 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacute  
 14871 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% U+0107  
 14872 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex  
 14873 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% U+0108  
 14874 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex  
 14875 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% U+0109  
 14876 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotaccent  
 14877 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% U+010A  
 14878 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent  
 14879 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% U+010B  
 14880 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron

14881 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% U+010C  
14882 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron  
14883 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% U+010D  
14884 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron  
14885 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% U+010E  
14886 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron  
14887 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% U+010F  
14888 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash  
14889 \DeclareTextCommand{\DJ}{PU}{\81\020}% U+0110  
14890 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron  
14891 \DeclareTextCommand{\dj}{PU}{\81\021}% U+0111  
14892 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron  
14893 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% U+0112  
14894 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron  
14895 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% U+0113  
14896 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve  
14897 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% U+0114  
14898 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve  
14899 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% U+0115  
14900 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent  
14901 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% U+0116  
14902 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent  
14903 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% U+0117  
14904 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek  
14905 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% U+0118  
14906 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek  
14907 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% U+0119  
14908 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron  
14909 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% U+011A  
14910 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron  
14911 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% U+011B  
14912 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex  
14913 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% U+011C  
14914 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex  
14915 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% U+011D  
14916 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve  
14917 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% U+011E  
14918 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve  
14919 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% U+011F  
14920 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotaccent  
14921 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% U+0120  
14922 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent  
14923 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% U+0121  
14924 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcommaaccent  
14925 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% U+0122  
14926 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent  
14927 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% U+0123  
14928 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex  
14929 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% U+0124  
14930 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex  
14931 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% U+0125  
14932 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar  
14933 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126  
14934 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar  
14935 \DeclareTextCommand{\texthslash}{PU}{\81\047}% U+0127  
14936 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; Itilde

14937 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\050}% U+0128  
 14938 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde  
 14939 \DeclareTextCompositeCommand{\-}{PU}{i}{\81\051}% U+0129  
 14940 \DeclareTextCompositeCommand{\-}{PU}{i}{\81\051}% U+0129  
 14941 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron  
 14942 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% U+012A  
 14943 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron  
 14944 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
 14945 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
 14946 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibreve  
 14947 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C  
 14948 % U+012D LATIN SMALL LETTER I WITH BREVE; ibreve  
 14949 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
 14950 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
 14951 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek  
 14952 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E  
 14953 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek  
 14954 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
 14955 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
 14956 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent  
 14957 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% U+0130  
 14958 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
 14959 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131  
 14960 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ  
 14961 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132  
 14962 % U+0133 LATIN SMALL LIGATURE IJ; ij  
 14963 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133  
 14964 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex  
 14965 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% U+0134  
 14966 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex  
 14967 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
 14968 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
 14969 % U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaac-  
 cent  
 14970 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136  
 14971 % U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent  
 14972 \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`.

14973 % U+0138 LATIN SMALL LETTER KRA; kgreenlandic  
 14974 \DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138  
 14975 % U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute  
 14976 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071}% U+0139  
 14977 % U+013A LATIN SMALL LETTER L WITH ACUTE; lacute  
 14978 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072}% U+013A  
 14979 % U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaac-  
 cent  
 14980 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B  
 14981 % U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent  
 14982 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C  
 14983 % U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron  
 14984 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D  
 14985 % U+013E LATIN SMALL LETTER L WITH CARON; lcaron  
 14986 \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.

14987 % U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotaccent  
14988 \DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F  
14989 % U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent  
14990 \DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140  
14991 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
14992 \DeclareTextCommand{\L}{PU}{\81\101}% U+0141  
14993 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
14994 \DeclareTextCommand{\l}{PU}{\81\102}% U+0142  
14995 % U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute  
14996 \DeclareTextCompositeCommand{\' }{PU}{N}{\81\103}% U+0143  
14997 % U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute  
14998 \DeclareTextCompositeCommand{\' }{PU}{n}{\81\104}% U+0144  
14999 % U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaaccent  
15000 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105}% U+0145  
15001 % U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent  
15002 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106}% U+0146  
15003 % U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron  
15004 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107}% U+0147  
15005 % U+0148 LATIN SMALL LETTER N WITH CARON; ncaron  
15006 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110}% U+0148  
15007 % U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napostrophe, quoterightn  
15008 \DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149  
15009 % U+014A LATIN CAPITAL LETTER ENG; Eng  
15010 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A  
15011 % U+014B LATIN SMALL LETTER ENG; eng  
15012 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B  
15013 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron  
15014 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114}% U+014C  
15015 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron  
15016 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115}% U+014D  
15017 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve  
15018 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116}% U+014E  
15019 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve  
15020 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117}% U+014F  
15021 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odblacute, Ohungarumlaut  
15022 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120}% U+0150  
15023 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odblacute, ohungarumlaut  
15024 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121}% U+0151  
15025 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
15026 \DeclareTextCommand{\OE}{PU}{\81\122}% U+0152  
15027 % U+0153 LATIN SMALL LIGATURE OE; oe  
15028 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153  
15029 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute  
15030 \DeclareTextCompositeCommand{\' }{PU}{R}{\81\124}% U+0154  
15031 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute  
15032 \DeclareTextCompositeCommand{\' }{PU}{r}{\81\125}% U+0155  
15033 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcommaaccent  
15034 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126}% U+0156  
15035 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcommaaccent  
15036 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127}% U+0157

15037 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron  
 15038 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130}% U+0158  
 15039 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron  
 15040 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131}% U+0159  
 15041 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute  
 15042 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132}% U+015A  
 15043 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute  
 15044 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133}% U+015B  
 15045 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex  
 15046 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134}% U+015C  
 15047 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex  
 15048 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135}% U+015D  
 15049 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla  
 15050 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136}% U+015E  
 15051 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla  
 15052 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137}% U+015F  
 15053 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
 15054 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140}% U+0160  
 15055 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
 15056 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141}% U+0161  
 15057 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcommaac-  
 cent  
 15058 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162  
 15059 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcommaaccent  
 15060 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163  
 15061 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron  
 15062 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164  
 15063 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron  
 15064 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165  
 15065 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar  
 15066 \DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166  
 15067 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar  
 15068 \DeclareTextCommand{\texttslash}{PU}{\81\147}% U+0167  
 15069 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde  
 15070 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168  
 15071 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde  
 15072 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
 15073 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron  
 15074 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152}% U+016A  
 15075 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron  
 15076 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153}% U+016B  
 15077 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve  
 15078 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154}% U+016C  
 15079 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve  
 15080 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155}% U+016D  
 15081 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring  
 15082 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156}% U+016E  
 15083 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring  
 15084 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157}% U+016F  
 15085 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Udbla-  
 cute, Uhungarumlaut  
 15086 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160}% U+0170  
 15087 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; udblacute, uhun-  
 garumlaut  
 15088 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161}% U+0171  
 15089 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek  
 15090 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162}% U+0172

15091 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek  
 15092 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163}% U+0173  
 15093 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex  
 15094 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164}% U+0174  
 15095 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex  
 15096 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165}% U+0175  
 15097 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex  
 15098 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166}% U+0176  
 15099 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex  
 15100 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167}% U+0177  
 15101 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
 15102 \DeclareTextCompositeCommand{"}{PU}{Y}{\81\170}% U+0178  
 15103 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute  
 15104 \DeclareTextCompositeCommand{'}{PU}{Z}{\81\171}% U+0179  
 15105 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute  
 15106 \DeclareTextCompositeCommand{'}{PU}{z}{\81\172}% U+017A  
 15107 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent  
 15108 \DeclareTextCompositeCommand{.}{PU}{Z}{\81\173}% U+017B  
 15109 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent  
 15110 \DeclareTextCompositeCommand{.}{PU}{z}{\81\174}% U+017C  
 15111 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
 15112 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175}% U+017D  
 15113 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
 15114 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176}% U+017E  
 15115 % U+017F LATIN SMALL LETTER LONG S; longs, slong  
 15116 \DeclareTextCommand{\textlongS}{PU}{\81\177}% U+017F

## 50.2.5 Latin Extended-B: U+0180 to U+024F

15117 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
 15118 \DeclareTextCommand{\textflorin}{PU}{\81\222}% U+0192  
 15119 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron  
 15120 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315}% U+01CD  
 15121 % U+01CE LATIN SMALL LETTER A WITH CARON; acaron  
 15122 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316}% U+01CE  
 15123 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icaron  
 15124 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317}% U+01CF  
 15125 % U+01D0 LATIN SMALL LETTER I WITH CARON; icaron  
 15126 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 15127 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 15128 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocaron  
 15129 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1  
 15130 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocaron  
 15131 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2  
 15132 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucaron  
 15133 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3  
 15134 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucaron  
 15135 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4  
 15136 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke  
 15137 \DeclareTextCommand{\textGslash}{PU}{\81\344}% U+01E4  
 15138 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke  
 15139 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5  
 15140 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcaron  
 15141 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6  
 15142 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcaron  
 15143 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7  
 15144 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcaron  
 15145 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8



15146 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcaron  
 15147 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9  
 15148 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek  
 15149 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA  
 15150 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek  
 15151 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB  
 15152 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcaron  
 15153 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
 15154 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
 15155 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute  
 15156 \DeclareTextCompositeCommand{\'}{PU}{G}{\81\364}% U+01F4  
 15157 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute  
 15158 \DeclareTextCompositeCommand{\'}{PU}{g}{\81\365}% U+01F5  
 15159 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE  
 15160 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\370}% U+01F8  
 15161 % U+01F9 LATIN SMALL LETTER N WITH GRAVE  
 15162 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\371}% U+01F9  
 15163 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute  
 15164 \DeclareTextCompositeCommand{\'}{PU}{AE}{\81\374}% U+01FC  
 15165 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute  
 15166 \DeclareTextCompositeCommand{\'}{PU}{ae}{\81\375}% U+01FD  
 15167 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE; \*Oslasha-  
 cute, Ostrokeacut  
 15168 \DeclareTextCompositeCommand{\'}{PU}{O}{\81\376}% U+01FE  
 15169 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE; \*oslasha-  
 cute, ostrokeacute  
 15170 \DeclareTextCompositeCommand{\'}{PU}{o}{\81\377}% U+01FF  
 15171 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave  
 15172 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200  
 15173 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave  
 15174 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201  
 15175 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave  
 15176 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204  
 15177 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave  
 15178 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205  
 15179 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; Idblgrave  
 15180 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208  
 15181 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave  
 15182 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
 15183 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
 15184 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave  
 15185 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C  
 15186 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave  
 15187 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D  
 15188 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave  
 15189 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210  
 15190 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave  
 15191 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211  
 15192 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave  
 15193 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214  
 15194 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave  
 15195 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215  
 15196 % U+021E LATIN CAPITAL LETTER H WITH CARON  
 15197 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E  
 15198 % U+021F LATIN SMALL LETTER H WITH CARON  
 15199 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F  
 15200 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE

15201 \DeclareTextCompositeCommand{\.}{PU}{A}{\82\046}% U+0226  
 15202 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE  
 15203 \DeclareTextCompositeCommand{\.}{PU}{a}{\82\047}% U+0227  
 15204 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA  
 15205 \DeclareTextCompositeCommand{\c}{PU}{E}{\82\050}% U+0228  
 15206 % U+0229 LATIN SMALL LETTER E WITH CEDILLA  
 15207 \DeclareTextCompositeCommand{\c}{PU}{e}{\82\051}% U+0229  
 15208 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE  
 15209 \DeclareTextCompositeCommand{\.}{PU}{O}{\82\056}% U+022E  
 15210 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE  
 15211 \DeclareTextCompositeCommand{\.}{PU}{o}{\82\057}% U+022F  
 15212 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON  
 15213 \DeclareTextCompositeCommand{\=}{PU}{Y}{\82\062}% U+0232  
 15214 % U+0233 LATIN SMALL LETTER Y WITH MACRON  
 15215 \DeclareTextCompositeCommand{\=}{PU}{y}{\82\063}% U+0233  
 15216 % U+0237 LATIN SMALL LETTER DOTLESS J  
 15217 \DeclareTextCommand{\j}{PU}{\82\067}% U+0237

## 50.2.6 Spacing Modifier Letters: U+02B0 to U+02FF

15218 % U+02C7 CARON; caron  
 15219 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7  
 15220 % U+02D8 BREVE; breve  
 15221 \DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8  
 15222 % U+02D9 DOT ABOVE; dotaccent  
 15223 \DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9  
 15224 % U+02DA RING ABOVE; ring  
 15225 \DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA  
 15226 % U+02DB OGONEK; ogonek  
 15227 \DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB  
 15228 % U+02DC SMALL TILDE; ilde, \*tilde  
 15229 \DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC  
 15230 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
 15231 \DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD  
 15232 \DeclareTextCommand{\textacutedbl}{PU}{\texthungarumlaut}% U+02DD  
 15233 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT  
 15234 \DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5  
 15235 % U+02F7 MODIFIER LETTER LOW TILDE  
 15236 \DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7

## 50.2.7 Combining Diacritical Marks: U+0300 to U+036F

15237 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb  
 15238 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017}% U+030F  
 15239 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
 15240 \DeclareTextCommand{\textnewtie}{PU}{\83\021}% U+0311  
 15241 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcomb  
 15242 \DeclareTextCommand{\textdotbelow}{PU}{\83\043}% U+0323  
 15243 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
 15244 \DeclareTextCommand{\textmacronbelow}{PU}{\83\061}% U+0331  
 15245 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb  
 15246 \DeclareTextCommand{\texttie}{PU}{\83\141}% U+0361

## 50.2.8 Greek and Coptic: U+0370 to U+03FF

15247 % U+0374 GREEK NUMERAL SIGN; numeralsigngreek  
 15248 \DeclareTextCommand{\textnumeralsigngreek}{PU}{\83\164}% U+0374  
 15249 % U+0375 GREEK LOWER NUMERAL SIGN; numeralsignlowergreek  
 15250 \DeclareTextCommand{\textnumeralsignlowergreek}{PU}{\83\165}% U+0375  
 15251 % U+0386 GREEK CAPITAL LETTER ALPHA WITH TONOS; Alphanos

15252 \DeclareTextCompositeCommand{'}{PU}{\textAlpha}{\83\206}% U+0386  
15253 % U+0388 GREEK CAPITAL LETTER EPSILON WITH TONOS; Epsilontonos  
15254 \DeclareTextCompositeCommand{'}{PU}{\textEpsilon}{\83\210}% U+0388  
15255 % U+0389 GREEK CAPITAL LETTER ETA WITH TONOS; Etatonos  
15256 \DeclareTextCompositeCommand{'}{PU}{\textEta}{\83\211}% U+0389  
15257 % U+038A GREEK CAPITAL LETTER IOTA WITH TONOS; Iotatonos  
15258 \DeclareTextCompositeCommand{'}{PU}{\textIota}{\83\212}% U+038A  
15259 % U+038C GREEK CAPITAL LETTER OMICRON WITH TONOS; Omi-  
crintonos  
15260 \DeclareTextCompositeCommand{'}{PU}{\textOmicron}{\83\214}% U+038C  
15261 % U+038E GREEK CAPITAL LETTER UPSILON WITH TONOS; Upsilonontonos  
15262 \DeclareTextCompositeCommand{'}{PU}{\textUpsilon}{\83\216}% U+038E  
15263 % U+038F GREEK CAPITAL LETTER OMEGA WITH TONOS; Omegatonos  
15264 \DeclareTextCompositeCommand{'}{PU}{\textOmega}{\83\217}% U+038F  
15265 % U+0390 GREEK SMALL LETTER IOTA WITH DIALYTIKA AND TONOS; io-  
tadiesisistonos  
15266 \DeclareTextCompositeCommand{'}{PU}{\textIotadiesis}{\83\220}% U+0390  
15267 % U+0391 GREEK CAPITAL LETTER ALPHA; Alpha  
15268 \DeclareTextCommand{\textAlpha}{PU}{\83\221}% U+0391  
15269 % U+0392 GREEK CAPITAL LETTER BETA; Beta  
15270 \DeclareTextCommand{\textBeta}{PU}{\83\222}% U+0392  
15271 % U+0393 GREEK CAPITAL LETTER GAMMA; Gamma  
15272 \DeclareTextCommand{\textGamma}{PU}{\83\223}% U+0393  
15273 % U+0394 GREEK CAPITAL LETTER DELTA; Deltagreek, \*Delta  
15274 \DeclareTextCommand{\textDelta}{PU}{\83\224}% U+0394  
15275 % U+0395 GREEK CAPITAL LETTER EPSILON; Epsilon  
15276 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}% U+0395  
15277 % U+0396 GREEK CAPITAL LETTER ZETA; Zeta  
15278 \DeclareTextCommand{\textZeta}{PU}{\83\226}% U+0396  
15279 % U+0397 GREEK CAPITAL LETTER ETA; Eta  
15280 \DeclareTextCommand{\textEta}{PU}{\83\227}% U+0397  
15281 % U+0398 GREEK CAPITAL LETTER THETA; Theta  
15282 \DeclareTextCommand{\textTheta}{PU}{\83\230}% U+0398  
15283 % U+0399 GREEK CAPITAL LETTER IOTA; Iota  
15284 \DeclareTextCommand{\textIota}{PU}{\83\231}% U+0399  
15285 % U+039A GREEK CAPITAL LETTER KAPPA; Kappa  
15286 \DeclareTextCommand{\textKappa}{PU}{\83\232}% U+039A  
15287 % U+039B GREEK CAPITAL LETTER LAMDA; Lambda  
15288 \DeclareTextCommand{\textLambda}{PU}{\83\233}% U+039B  
15289 % U+039C GREEK CAPITAL LETTER MU; Mu  
15290 \DeclareTextCommand{\textMu}{PU}{\83\234}% U+039C  
15291 % U+039D GREEK CAPITAL LETTER NU; Nu  
15292 \DeclareTextCommand{\textNu}{PU}{\83\235}% U+039D  
15293 % U+039E GREEK CAPITAL LETTER XI; Xi  
15294 \DeclareTextCommand{\textXi}{PU}{\83\236}% U+039E  
15295 % U+039F GREEK CAPITAL LETTER OMICRON; Omicron  
15296 \DeclareTextCommand{\textOmicron}{PU}{\83\237}% U+039F  
15297 % U+03A0 GREEK CAPITAL LETTER PI; Pi  
15298 \DeclareTextCommand{\textPi}{PU}{\83\240}% U+03A0  
15299 % U+03A1 GREEK CAPITAL LETTER RHO; Rho  
15300 \DeclareTextCommand{\textRho}{PU}{\83\241}% U+03A1  
15301 % U+03A3 GREEK CAPITAL LETTER SIGMA; Sigma  
15302 \DeclareTextCommand{\textSigma}{PU}{\83\243}% U+03A3  
15303 % U+03A4 GREEK CAPITAL LETTER TAU; Tau  
15304 \DeclareTextCommand{\textTau}{PU}{\83\244}% U+03A4  
15305 % U+03A5 GREEK CAPITAL LETTER UPSILON; Upsilon  
15306 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}% U+03A5

15307 % U+03A6 GREEK CAPITAL LETTER PHI; Phi  
 15308 \DeclareTextCommand{\textPhi}{PU}{\83\246}% U+03A6  
 15309 % U+03A7 GREEK CAPITAL LETTER CHI; Chi  
 15310 \DeclareTextCommand{\textChi}{PU}{\83\247}% U+03A7  
 15311 % U+03A8 GREEK CAPITAL LETTER PSI; Psi  
 15312 \DeclareTextCommand{\textPsi}{PU}{\83\250}% U+03A8  
 15313 % U+03A9 GREEK CAPITAL LETTER OMEGA; Omegagreek, \*Omega  
 15314 \DeclareTextCommand{\textOmega}{PU}{\83\251}% U+03A9  
 15315 % U+03AA GREEK CAPITAL LETTER IOTA WITH DIALYTIKA; Iotadieresis  
 15316 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}% U+03AA  
 15317 \DeclareTextCompositeCommand{"}{PU}{\textIota}{\83\252}% U+03AA  
 15318 % U+03AB GREEK CAPITAL LETTER UPSILON WITH DIALYTIKA; Up-  
 silondieresis  
 15319 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}% U+03AB  
 15320 % U+03AC GREEK SMALL LETTER ALPHA WITH TONOS; alphanos  
 15321 \DeclareTextCompositeCommand{'}{PU}{\textalpha}{\83\254}% U+03AC  
 15322 % U+03AD GREEK SMALL LETTER EPSILON WITH TONOS; epsilonos  
 15323 \DeclareTextCompositeCommand{'}{PU}{\textepsilon}{\83\255}% U+03AD  
 15324 % U+03AE GREEK SMALL LETTER ETA WITH TONOS; etanos  
 15325 \DeclareTextCompositeCommand{'}{PU}{\texteta}{\83\256}% U+03AE  
 15326 % U+03AF GREEK SMALL LETTER IOTA WITH TONOS; iotanos  
 15327 \DeclareTextCompositeCommand{'}{PU}{\textiota}{\83\257}% U+03AF  
 15328 % U+03B0 GREEK SMALL LETTER UPSILON WITH DIALYTIKA AND TONOS; up-  
 silondieresis  
 15329 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\260}% U+03B0  
 15330 % U+03B1 GREEK SMALL LETTER ALPHA; alpha  
 15331 \DeclareTextCommand{\textalpha}{PU}{\83\261}% U+03B1  
 15332 % U+03B2 GREEK SMALL LETTER BETA; beta  
 15333 \DeclareTextCommand{\textbeta}{PU}{\83\262}% U+03B2  
 15334 % U+03B3 GREEK SMALL LETTER GAMMA; gamma  
 15335 \DeclareTextCommand{\textgamma}{PU}{\83\263}% U+03B3  
 15336 % U+03B4 GREEK SMALL LETTER DELTA; delta  
 15337 \DeclareTextCommand{\textdelta}{PU}{\83\264}% U+03B4  
 15338 % U+03B5 GREEK SMALL LETTER EPSILON; epsilon  
 15339 \DeclareTextCommand{\textepsilon}{PU}{\83\265}% U+03B5  
 15340 % U+03B6 GREEK SMALL LETTER ZETA; zeta  
 15341 \DeclareTextCommand{\textzeta}{PU}{\83\266}% U+03B6  
 15342 % U+03B7 GREEK SMALL LETTER ETA; eta  
 15343 \DeclareTextCommand{\texteta}{PU}{\83\267}% U+03B7  
 15344 % U+03B8 GREEK SMALL LETTER THETA; theta  
 15345 \DeclareTextCommand{\texttheta}{PU}{\83\270}% U+03B8  
 15346 % U+03B9 GREEK SMALL LETTER IOTA; iota  
 15347 \DeclareTextCommand{\textiota}{PU}{\83\271}% U+03B9  
 15348 % U+03BA GREEK SMALL LETTER KAPPA; kappa  
 15349 \DeclareTextCommand{\textkappa}{PU}{\83\272}% U+03BA  
 15350 % U+03BB GREEK SMALL LETTER LAMDA; lambda  
 15351 \DeclareTextCommand{\textlambda}{PU}{\83\273}% U+03BB  
 15352 % U+03BC GREEK SMALL LETTER MU; mugreek, \*mu  
 15353 \DeclareTextCommand{\textmugreek}{PU}{\83\274}% U+03BC  
 15354 % U+03BD GREEK SMALL LETTER NU; nu  
 15355 \DeclareTextCommand{\textnu}{PU}{\83\275}% U+03BD  
 15356 % U+03BE GREEK SMALL LETTER XI; xi  
 15357 \DeclareTextCommand{\textxi}{PU}{\83\276}% U+03BE  
 15358 % U+03BF GREEK SMALL LETTER OMICRON; omicron  
 15359 \DeclareTextCommand{\textomicron}{PU}{\83\277}% U+03BF  
 15360 % U+03C0 GREEK SMALL LETTER PI; pi  
 15361 \DeclareTextCommand{\textpi}{PU}{\83\300}% U+03C0

15362 % U+03C1 GREEK SMALL LETTER RHO; rho  
 15363 \DeclareTextCommand{\textrho}{PU}{\83\301}% U+03C1  
 15364 % U+03C2 GREEK SMALL LETTER FINAL SIGMA; \*sigma1, sigmafinal  
 15365 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}% U+03C2  
 15366 % U+03C3 GREEK SMALL LETTER SIGMA; sigma  
 15367 \DeclareTextCommand{\textsigma}{PU}{\83\303}% U+03C3  
 15368 % U+03C4 GREEK SMALL LETTER TAU; tau  
 15369 \DeclareTextCommand{\texttau}{PU}{\83\304}% U+03C4  
 15370 % U+03C5 GREEK SMALL LETTER UPSILON; upsilon  
 15371 \DeclareTextCommand{\textupsilon}{PU}{\83\305}% U+03C5  
 15372 % U+03C6 GREEK SMALL LETTER PHI; phi  
 15373 \DeclareTextCommand{\textphi}{PU}{\83\306}% U+03C6  
 15374 % U+03C7 GREEK SMALL LETTER CHI; chi  
 15375 \DeclareTextCommand{\textchi}{PU}{\83\307}% U+03C7  
 15376 % U+03C8 GREEK SMALL LETTER PSI; psi  
 15377 \DeclareTextCommand{\textpsi}{PU}{\83\310}% U+03C8  
 15378 % U+03C9 GREEK SMALL LETTER OMEGA; omega  
 15379 \DeclareTextCommand{\textomega}{PU}{\83\311}% U+03C9  
 15380 % U+03CA GREEK SMALL LETTER IOTA WITH DIALYTIKA; iotadieresis  
 15381 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}% U+03CA  
 15382 % U+03CB GREEK SMALL LETTER UPSILON WITH DIALYTIKA; up-  
 silondieresis  
 15383 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}% U+03CB  
 15384 % U+03CC GREEK SMALL LETTER OMICRON WITH TONOS; omicrontonos  
 15385 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}% U+03CC  
 15386 % U+03CD GREEK SMALL LETTER UPSILON WITH TONOS; upsilontonos  
 15387 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}% U+03CD  
 15388 \DeclareTextCompositeCommand{'}{PU}{\textupsilon}{\83\315}% U+03CD  
 15389 % U+03CE GREEK SMALL LETTER OMEGA WITH TONOS; omegatonos  
 15390 \DeclareTextCompositeCommand{'}{PU}{\textomega}{\83\316}% U+03CE  
 15391 % U+03DA GREEK LETTER STIGMA; Stigmagreek  
 15392 \DeclareTextCommand{\textStigmagreek}{PU}{\83\332}% U+03DA  
 15393 % U+03DB GREEK SMALL LETTER STIGMA  
 15394 \DeclareTextCommand{\textstigmagreek}{PU}{\83\333}% U+03DB  
 15395 % U+03DC GREEK LETTER DIGAMMA; Digammagreek  
 15396 \DeclareTextCommand{\textDigammagreek}{PU}{\83\334}% U+03DC  
 15397 % U+03DD GREEK SMALL LETTER DIGAMMA  
 15398 \DeclareTextCommand{\textdigammagreek}{PU}{\83\335}% U+03DD  
 15399 % U+03DE GREEK LETTER KOPPA; Koppagreek  
 15400 \DeclareTextCommand{\textKoppagreek}{PU}{\83\336}% U+03DE  
 15401 % U+03DF GREEK SMALL LETTER KOPPA  
 15402 \DeclareTextCommand{\textkoppagreek}{PU}{\83\337}% U+03DF  
 15403 % U+03E0 GREEK LETTER SAMPI; Sampigreek  
 15404 \DeclareTextCommand{\textSampigreek}{PU}{\83\340}% U+03E0  
 15405 % U+03E1 GREEK SMALL LETTER SAMPI  
 15406 \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.

15407 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE  
 15408 \DeclareTextCompositeCommand{'}{PU}{\CYRE}{\84\000}% U+0400  
 15409 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrillic, \*afii10023  
 15410 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401  
 15411 \DeclareTextCompositeCommand{"}{PU}{\CYRE}{\84\001}% ???  
 15412 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, \*afii10051  
 15413 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402

15414 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, \*afii10052  
 15415 \DeclareTextCompositeCommand{\'}{PU}{\CYRG}{\84\003}% U+0403  
 15416 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrillic, \*afii10053  
 15417 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404  
 15418 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzecyrillic, \*afii10054  
 15419 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405  
 15420 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I; Icyril-  
 lic, \*afii10055  
 15421 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406  
 15422 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrillic, \*afii10056  
 15423 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407  
 15424 \DeclareTextCompositeCommand{\"}{PU}{\CYRII}{\84\007}% U+0407  
 15425 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, \*afii10057  
 15426 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408  
 15427 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, \*afii10058  
 15428 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409  
 15429 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, \*afii10059  
 15430 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A  
 15431 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, \*afii10060  
 15432 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B  
 15433 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, \*afii10061  
 15434 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% U+040C  
 15435 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE  
 15436 \DeclareTextCompositeCommand{\`}{PU}{\CYRI}{\84\015}% U+040D  
 15437 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrillic, \*afii10062  
 15438 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E  
 15439 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\016}% U+040E  
 15440 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, \*afii10145  
 15441 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F  
 15442 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, \*afii10017  
 15443 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410  
 15444 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrillic, \*afii10018  
 15445 \DeclareTextCommand{\CYRB}{PU}{\84\021}% U+0411  
 15446 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, \*afii10019  
 15447 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412  
 15448 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, \*afii10020  
 15449 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413  
 15450 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, \*afii10021  
 15451 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414  
 15452 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, \*afii10022  
 15453 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415  
 15454 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, \*afii10024  
 15455 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416  
 15456 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, \*afii10025  
 15457 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417  
 15458 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrillic, \*afii10026  
 15459 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418  
 15460 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; Iishortcyrillic, \*afii10027  
 15461 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419  
 15462 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}% U+0419  
 15463 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, \*afii10028  
 15464 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A  
 15465 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, \*afii10029  
 15466 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B  
 15467 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, \*afii10030  
 15468 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C  
 15469 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, \*afii10031

15470 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D  
15471 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, \*afii10032  
15472 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E  
15473 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, \*afii10033  
15474 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F  
15475 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, \*afii10034  
15476 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420  
15477 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, \*afii10035  
15478 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421  
15479 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, \*afii10036  
15480 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422  
15481 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, \*afii10037  
15482 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423  
15483 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, \*afii10038  
15484 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424  
15485 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, \*afii10039  
15486 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425  
15487 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, \*afii10040  
15488 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426  
15489 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, \*afii10041  
15490 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427  
15491 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, \*afii10042  
15492 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428  
15493 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, \*afii10043  
15494 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429  
15495 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN; Hardsigncyrillic, \*afii10044  
15496 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A  
15497 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, \*afii10045  
15498 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B  
15499 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN; Softsigncyrillic, \*afii10046  
15500 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C  
15501 % U+042D CYRILLIC CAPITAL LETTER E; Ereversedcyrillic, \*afii10047  
15502 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D  
15503 % U+042E CYRILLIC CAPITAL LETTER YU; IUcyrillic, \*afii10048  
15504 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E  
15505 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, \*afii10049  
15506 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F  
15507 % U+0430 CYRILLIC SMALL LETTER A; acyrillic, \*afii10065  
15508 \DeclareTextCommand{\cyra}{PU}{\84\060}% U+0430  
15509 % U+0431 CYRILLIC SMALL LETTER BE; \*afii10066, becyrillic  
15510 \DeclareTextCommand{\cyrb}{PU}{\84\061}% U+0431  
15511 % U+0432 CYRILLIC SMALL LETTER VE; \*afii10067, vecyrillic  
15512 \DeclareTextCommand{\cyrv}{PU}{\84\062}% U+0432  
15513 % U+0433 CYRILLIC SMALL LETTER GHE; \*afii10068, gecyrillic  
15514 \DeclareTextCommand{\cyrg}{PU}{\84\063}% U+0433  
15515 % U+0434 CYRILLIC SMALL LETTER DE; \*afii10069, decyrillic  
15516 \DeclareTextCommand{\cyrd}{PU}{\84\064}% U+0434  
15517 % U+0435 CYRILLIC SMALL LETTER IE; \*afii10070, iecyrillic  
15518 \DeclareTextCommand{\cyre}{PU}{\84\065}% U+0435  
15519 % U+0436 CYRILLIC SMALL LETTER ZHE; \*afii10072, zhacyrillic  
15520 \DeclareTextCommand{\cyrz}{PU}{\84\066}% U+0436  
15521 % U+0437 CYRILLIC SMALL LETTER ZE; \*afii10073, zecyrillic  
15522 \DeclareTextCommand{\cyrz}{PU}{\84\067}% U+0437  
15523 % U+0438 CYRILLIC SMALL LETTER I; \*afii10074, iicyrillic  
15524 \DeclareTextCommand{\cyri}{PU}{\84\070}% U+0438  
15525 % U+0439 CYRILLIC SMALL LETTER SHORT I; \*afii10075, iishortcyrillic  
15526 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% U+0439

15527 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}% U+0439  
15528 % U+043A CYRILLIC SMALL LETTER KA; \*afii10076, kacyrillic  
15529 \DeclareTextCommand{\cyrk}{PU}{\84\072}% U+043A  
15530 % U+043B CYRILLIC SMALL LETTER EL; \*afii10077, elcyrillic  
15531 \DeclareTextCommand{\cyrI}{PU}{\84\073}% U+043B  
15532 % U+043C CYRILLIC SMALL LETTER EM; \*afii10078, emcyrillic  
15533 \DeclareTextCommand{\cyrm}{PU}{\84\074}% U+043C  
15534 % U+043D CYRILLIC SMALL LETTER EN; \*afii10079, encyrillic  
15535 \DeclareTextCommand{\cyrn}{PU}{\84\075}% U+043D  
15536 % U+043E CYRILLIC SMALL LETTER O; \*afii10080, ocyrillic  
15537 \DeclareTextCommand{\cyro}{PU}{\84\076}% U+043E  
15538 % U+043F CYRILLIC SMALL LETTER PE; \*afii10081, pecyrillic  
15539 \DeclareTextCommand{\cyrp}{PU}{\84\077}% U+043F  
15540 % U+0440 CYRILLIC SMALL LETTER ER; \*afii10082, ercyrillic  
15541 \DeclareTextCommand{\cyr r}{PU}{\84\100}% U+0440  
15542 % U+0441 CYRILLIC SMALL LETTER ES; \*afii10083, escyrillic  
15543 \DeclareTextCommand{\cyr s}{PU}{\84\101}% U+0441  
15544 % U+0442 CYRILLIC SMALL LETTER TE; \*afii10084, tecyrillic  
15545 \DeclareTextCommand{\cyr t}{PU}{\84\102}% U+0442  
15546 % U+0443 CYRILLIC SMALL LETTER U; \*afii10085, ucyrillic  
15547 \DeclareTextCommand{\cyr u}{PU}{\84\103}% U+0443  
15548 % U+0444 CYRILLIC SMALL LETTER EF; \*afii10086, efcyrillic  
15549 \DeclareTextCommand{\cyr f}{PU}{\84\104}% U+0444  
15550 % U+0445 CYRILLIC SMALL LETTER HA; \*afii10087, khacyrillic  
15551 \DeclareTextCommand{\cyr h}{PU}{\84\105}% U+0445  
15552 % U+0446 CYRILLIC SMALL LETTER TSE; \*afii10088, tsecyrillic  
15553 \DeclareTextCommand{\cyr c}{PU}{\84\106}% U+0446  
15554 % U+0447 CYRILLIC SMALL LETTER CHE; \*afii10089, checyrillic  
15555 \DeclareTextCommand{\cyr ch}{PU}{\84\107}% U+0447  
15556 % U+0448 CYRILLIC SMALL LETTER SHA; \*afii10090, shacyrillic  
15557 \DeclareTextCommand{\cyr sh}{PU}{\84\110}% U+0448  
15558 % U+0449 CYRILLIC SMALL LETTER SHCHA; \*afii10091, shchacyrillic  
15559 \DeclareTextCommand{\cyr shch}{PU}{\84\111}% U+0449  
15560 % U+044A CYRILLIC SMALL LETTER HARD SIGN; \*afii10092, hardsigncyrillic  
15561 \DeclareTextCommand{\cyr hrdsn}{PU}{\84\112}% U+044A  
15562 % U+044B CYRILLIC SMALL LETTER YERU; \*afii10093, yericyrillic  
15563 \DeclareTextCommand{\cyr ery}{PU}{\84\113}% U+044B  
15564 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; \*afii10094, softsigncyrillic  
15565 \DeclareTextCommand{\cyr sftsn}{PU}{\84\114}% U+044C  
15566 % U+044D CYRILLIC SMALL LETTER E; \*afii10095, ereversedcyrillic  
15567 \DeclareTextCommand{\cyr rerev}{PU}{\84\115}% U+044D  
15568 % U+044E CYRILLIC SMALL LETTER YU; \*afii10096, iucyrillic  
15569 \DeclareTextCommand{\cyr yu}{PU}{\84\116}% U+044E  
15570 % U+044F CYRILLIC SMALL LETTER YA; \*afii10097, iacyrillic  
15571 \DeclareTextCommand{\cyr ya}{PU}{\84\117}% U+044F  
15572 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE  
15573 \DeclareTextCompositeCommand{\`}{PU}{\cyre}{\84\120}% U+0450  
15574 % U+0451 CYRILLIC SMALL LETTER IO; \*afii10071, iocyrillic  
15575 \DeclareTextCommand{\cyr yo}{PU}{\84\121}% U+0451  
15576 \DeclareTextCompositeCommand{\"}{PU}{\cyre}{\84\121}% U+0451  
15577 % U+0452 CYRILLIC SMALL LETTER DJE; \*afii10099, djecyrillic  
15578 \DeclareTextCommand{\cyr dje}{PU}{\84\122}% U+0452  
15579 % U+0453 CYRILLIC SMALL LETTER GJE; \*afii10100, gjecyrillic  
15580 \DeclareTextCompositeCommand{\'}{PU}{\cyr g}{\84\123}% U+0453  
15581 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; \*afii10101, ecyrillic  
15582 \DeclareTextCommand{\cyr ie}{PU}{\84\124}% U+0454  
15583 % U+0455 CYRILLIC SMALL LETTER DZE; \*afii10102, dzecyrillic



15584 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% U+0455  
15585 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I; \*afii10103, icyril-  
lic  
15586 \DeclareTextCommand{\cyrii}{PU}{\84\126}% U+0456  
15587 % U+0457 CYRILLIC SMALL LETTER YI; \*afii10104, yicyrillic  
15588 \DeclareTextCommand{\cyryi}{PU}{\84\127}% U+0457  
15589 \DeclareTextCompositeCommand{"}{PU}{\cyrii}{\84\127}% U+0457  
15590 % U+0458 CYRILLIC SMALL LETTER JE; \*afii10105, jecyrillic  
15591 \DeclareTextCommand{\cyrje}{PU}{\84\130}% U+0458  
15592 % U+0459 CYRILLIC SMALL LETTER LJE; \*afii10106, ljecyrillic  
15593 \DeclareTextCommand{\cyrlje}{PU}{\84\131}% U+0459  
15594 % U+045A CYRILLIC SMALL LETTER NJE; \*afii10107, njecyrillic  
15595 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% U+045A  
15596 % U+045B CYRILLIC SMALL LETTER TSHE; \*afii10108, tshecyrillic  
15597 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% U+045B  
15598 % U+045C CYRILLIC SMALL LETTER KJE; \*afii10109, kjecyrillic  
15599 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% U+045C  
15600 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE  
15601 \DeclareTextCompositeCommand{\'}{PU}{\cyri}{\84\135}% U+045D  
15602 % U+045E CYRILLIC SMALL LETTER SHORT U; \*afii10110, ushortcyrillic  
15603 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E  
15604 \DeclareTextCompositeCommand{\U}{PU}{\curu}{\84\136}% U+045E  
15605 % U+045F CYRILLIC SMALL LETTER DZHE; \*afii10193, dzhecyrillic  
15606 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% U+045F  
15607 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic  
15608 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460  
15609 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrillic  
15610 \DeclareTextCommand{\cyromega}{PU}{\84\141}% U+0461  
15611 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, \*afii10146  
15612 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462  
15613 % U+0463 CYRILLIC SMALL LETTER YAT; \*afii10194, yatcyrillic  
15614 \DeclareTextCommand{\cyryat}{PU}{\84\143}% U+0463  
15615 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic  
15616 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464  
15617 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrillic  
15618 \DeclareTextCommand{\cyriote}{PU}{\84\145}% U+0465  
15619 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslittlecyrillic  
15620 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466  
15621 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslittlecyrillic  
15622 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467  
15623 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslittleio-  
tifiedcyrillic  
15624 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468  
15625 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslittleioti-  
fiedcyrillic  
15626 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469  
15627 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbigcyrillic  
15628 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A  
15629 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbigcyrillic  
15630 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B  
15631 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbigiotified-  
cyrillic  
15632 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C  
15633 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbigiotifiedcyril-  
lic  
15634 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D  
15635 % U+046E CYRILLIC CAPITAL LETTER KSI; Ksicyrillic

15636 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% U+046E  
 15637 % U+046F CYRILLIC SMALL LETTER KSI; kscyrillic  
 15638 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F  
 15639 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psicyrillic  
 15640 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470  
 15641 % U+0471 CYRILLIC SMALL LETTER PSI; psicyrillic  
 15642 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471  
 15643 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, \*afii10147  
 15644 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472  
 15645 % U+0473 CYRILLIC SMALL LETTER FITA; \*afii10195, fitacyrillic  
 15646 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473  
 15647 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, \*afii10148  
 15648 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474  
 15649 % U+0475 CYRILLIC SMALL LETTER IZHITSA; \*afii10196, izhitsacyrillic  
 15650 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475  
 15651 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE GRAVE AC-  
 CENT; Izhitsadblgravecyrillic  
 15652 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% U+0476  
 15653 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE GRAVE AC-  
 CENT; izhitsadblgravecyrillic  
 15654 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477  
 15655 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic  
 15656 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478  
 15657 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic  
 15658 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479  
 15659 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyril-  
 lic  
 15660 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A  
 15661 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic  
 15662 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B  
 15663 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatitlo-  
 cyrillic  
 15664 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C  
 15665 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlo-  
 cyrillic  
 15666 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D  
 15667 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic  
 15668 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E  
 15669 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic  
 15670 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F  
 15671 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic  
 15672 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480  
 15673 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic  
 15674 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481  
 15675 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic  
 15676 \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

15677 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL  
 15678 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A  
 15679 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL  
 15680 \DeclareTextCommand{\cyrishrtdsc}{PU}{\84\213}% U+048B  
 15681 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN  
 15682 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C  
 15683 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN  
 15684 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D  
 15685 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK  
 15686 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E  
 15687 % U+048F CYRILLIC SMALL LETTER ER WITH TICK  
 15688 \DeclareTextCommand{\cyrrtick}{PU}{\84\217}% U+048F  
 15689 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturn-  
 cyrillic, \*afii10050  
 15690 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490  
 15691 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; \*afii10098, ghe-  
 upturncyrillic  
 15692 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491  
 15693 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestroke-  
 cyrillic  
 15694 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492  
 15695 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic  
 15696 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% U+0493  
 15697 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK; Ghemid-  
 dlehookcyrillic  
 15698 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494  
 15699 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK; ghemid-  
 dlehookcyrillic  
 15700 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495  
 15701 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER; Zhedescen-  
 dercyrillic  
 15702 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496  
 15703 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER; zhedescen-  
 dercyrillic  
 15704 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% U+0497  
 15705 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescen-  
 dercyrillic  
 15706 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498  
 15707 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498  
 15708 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescender-  
 cyrillic  
 15709 \DeclareTextCommand{\cyrzdsd}{PU}{\84\231}% U+0499  
 15710 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499  
 15711 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescen-  
 dercyrillic  
 15712 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A  
 15713 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kadescender-  
 cyrillic  
 15714 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% U+049B  
 15715 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE; Kaver-  
 ticalstrokecyrillic  
 15716 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C  
 15717 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE; kaver-  
 ticalstrokecyrillic  
 15718 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D  
 15719 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic  
 15720 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E

15721 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic  
 15722 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% U+049F  
 15723 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic  
 15724 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0  
 15725 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic  
 15726 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1  
 15727 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescendercyrillic  
 15728 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2  
 15729 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endescendercyrillic  
 15730 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3  
 15731 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic  
 15732 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4  
 15733 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic  
 15734 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5  
 15735 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemiddlehookcyrillic  
 15736 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6  
 15737 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddlehookcyrillic  
 15738 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7  
 15739 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyrillic  
 15740 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8  
 15741 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic  
 15742 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% U+04A9  
 15743 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescendercyrillic  
 15744 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA  
 15745 \DeclareTextCompositeCommand{\CYRSDSC}{PU}{\CYRS}{\84\252}% U+04AA  
 15746 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescendercyrillic  
 15747 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% U+04AB  
 15748 \DeclareTextCompositeCommand{\k}{PU}{\cyr}{\84\253}% U+04AB  
 15749 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescendercyrillic  
 15750 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC  
 15751 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescendercyrillic  
 15752 \DeclareTextCommand{\cyrtdsc}{PU}{\84\255}% U+04AD  
 15753 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic  
 15754 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE  
 15755 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; ustraightcyrillic  
 15756 \DeclareTextCommand{\cyr}{PU}{\84\257}% U+04AF  
 15757 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Ustraightstrokecyrillic  
 15758 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0  
 15759 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; usstraightstrokecyrillic  
 15760 \DeclareTextCommand{\cyrhcrs}{PU}{\84\261}% U+04B1  
 15761 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hadescendercyrillic  
 15762 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% U+04B2  
 15763 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadescendercyrillic  
 15764 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% U+04B3

15765 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetsecyrillic  
 15766 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4  
 15767 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetsecyrillic  
 15768 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% U+04B5  
 15769 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER; Chedescendercyrillic  
 15770 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6  
 15771 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescendercyrillic  
 15772 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% U+04B7  
 15773 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE; Chev-  
 erticalstrokecyrillic  
 15774 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8  
 15775 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE; chev-  
 erticalstrokecyrillic  
 15776 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9  
 15777 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic  
 15778 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA  
 15779 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic  
 15780 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB  
 15781 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasian-  
 cyrillic  
 15782 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC  
 15783 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyril-  
 lic  
 15784 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% U+04BD  
 15785 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCEN-  
 DER; Chedescenderabkhasiancyrillic  
 15786 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE  
 15787 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE  
 15788 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCEN-  
 DER; chedescenderabkhasiancyrillic  
 15789 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% U+04BF  
 15790 \DeclareTextCompositeCommand{\k}{PU}{\cyrabhch}{\84\277}% U+04BF  
 15791 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic  
 15792 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0  
 15793 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic  
 15794 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1  
 15795 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic  
 15796 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% U+04C2  
 15797 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic  
 15798 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3  
 15799 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic  
 15800 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% U+04C4  
 15801 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL  
 15802 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5  
 15803 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL  
 15804 \DeclareTextCommand{\cyrldsc}{PU}{\84\306}% U+04C6  
 15805 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic  
 15806 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7  
 15807 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic  
 15808 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% U+04C8  
 15809 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakassian-  
 cyrillic  
 15810 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB  
 15811 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassian-  
 cyrillic

15812 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% U+04CC  
15813 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL  
15814 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD  
15815 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL  
15816 \DeclareTextCommand{\cyrmdsc}{PU}{\84\316}% U+04CE  
\84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA  
15817 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevacyrillic  
15818 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0  
15819 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevacyrillic  
15820 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% U+04D1  
15821 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyrillic  
15822 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\322}% U+04D2  
15823 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresiscyrillic  
15824 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\323}% U+04D3  
15825 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aiecyrillic  
15826 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4  
15827 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aiecyrillic  
15828 \DeclareTextCommand{\cyrae}{PU}{\84\325}% U+04D5  
15829 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrevacyrillic  
15830 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6  
15831 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrevacyrillic  
15832 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% U+04D7  
15833 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwacyrillic  
15834 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8  
15835 % U+04D9 CYRILLIC SMALL LETTER SCHWA; \*afii10846, schwacyrillic  
15836 \DeclareTextCommand{\cyrschwa}{PU}{\84\331}% U+04D9  
15837 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS; Schwadiere-  
15838 \DeclareTextCompositeCommand{\U}{PU}{\CYRSCHWA}{\84\332}% U+04DA  
15839 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS; schwadiere-  
15840 \DeclareTextCompositeCommand{\U}{PU}{\cyrschwa}{\84\333}% U+04DB  
15841 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhediere-  
15842 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\334}% U+04DC  
15843 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedieresis-  
15844 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\335}% U+04DD  
15845 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedieresis-  
15846 \DeclareTextCompositeCommand{\U}{PU}{\CYRZ}{\84\336}% U+04DE  
15847 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedieresiscyrillic  
15848 \DeclareTextCompositeCommand{\U}{PU}{\cyrz}{\84\337}% U+04DF  
15849 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasian-  
15850 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0  
15851 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasiancyrillic  
15852 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% U+04E1  
15853 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Imacroncyrillic  
15854 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\342}% U+04E2  
15855 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacroncyrillic  
15856 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\343}% U+04E3  
15857 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresiscyrillic  
15858 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\344}% U+04E4  
15859 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresiscyrillic  
15860 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\345}% U+04E5

15861 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresiscyrillic  
 15862 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% U+04E6  
 15863 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresiscyrillic  
 15864 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% U+04E7  
 15865 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarredcyrillic  
 15866 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8  
 15867 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarredcyrillic  
 15868 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9  
 15869 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERESIS; Obarreddieresiscyrillic  
 15870 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% U+04EA  
 15871 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS; obarreddieresiscyrillic  
 15872 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% U+04EB  
 15873 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS  
 15874 \DeclareTextCompositeCommand{"}{PU}{\CYREREV}{\84\354}% U+04EC  
 15875 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS  
 15876 \DeclareTextCompositeCommand{"}{PU}{\cyreref}{\84\355}% U+04ED  
 15877 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacroncyrillic  
 15878 \DeclareTextCompositeCommand{=}{PU}{\CYRU}{\84\356}% U+04EE  
 15879 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacroncyrillic  
 15880 \DeclareTextCompositeCommand{=}{PU}{\cyru}{\84\357}% U+04EF  
 15881 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udieresiscyrillic  
 15882 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U+04F0  
 15883 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udieresiscyrillic  
 15884 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% U+04F1  
 15885 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhungarumlautcyrillic  
 15886 \DeclareTextCompositeCommand{H}{PU}{\CYRU}{\84\362}% U+04F2  
 15887 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhungarumlautcyrillic  
 15888 \DeclareTextCompositeCommand{H}{PU}{\cyru}{\84\363}% U+04F3  
 15889 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chedieresiscyrillic  
 15890 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% U+04F4  
 15891 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieresiscyrillic  
 15892 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% U+04F5  
 15893 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER  
 15894 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6  
 15895 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER  
 15896 \DeclareTextCommand{\cyrgdsc}{PU}{\84\367}% U+04F7  
 15897 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudieresiscyrillic  
 15898 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% U+04F8  
 15899 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudieresiscyrillic  
 15900 \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  
 15901 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK  
 15902 \DeclareTextCommand{\CYRHHK}{PU}{\84\374}% U+04FC  
 15903 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK  
 15904 \DeclareTextCommand{\cyrrhk}{PU}{\84\375}% U+04FD

\84\376: U+04FE CYRILLIC CAPITAL LETTER HA WITH STROKE  
 \84\377: U+04FF CYRILLIC SMALL LETTER HA WITH STROKE

### 50.2.10 Thai: U+0E00 to U+0E7F

15905 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai  
 15906 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

### 50.2.11 Latin Extended Additional: U+1E00 to U+1EFF

15907 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent  
 15908 \DeclareTextCompositeCommand{\.}{PU}{B}{\9036\002}% U+1E02  
 15909 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent  
 15910 \DeclareTextCompositeCommand{\.}{PU}{b}{\9036\003}% U+1E03  
 15911 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow  
 15912 \DeclareTextCompositeCommand{\b}{PU}{B}{\9036\006}% U+1E06  
 15913 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow  
 15914 \DeclareTextCompositeCommand{\b}{PU}{b}{\9036\007}% U+1E07  
 15915 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent  
 15916 \DeclareTextCompositeCommand{\.}{PU}{D}{\9036\012}% U+1E0A  
 15917 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent  
 15918 \DeclareTextCompositeCommand{\.}{PU}{d}{\9036\013}% U+1E0B  
 15919 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow  
 15920 \DeclareTextCompositeCommand{\b}{PU}{D}{\9036\016}% U+1E0E  
 15921 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow  
 15922 \DeclareTextCompositeCommand{\b}{PU}{d}{\9036\017}% U+1E0F  
 15923 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla  
 15924 \DeclareTextCompositeCommand{\c}{PU}{D}{\9036\020}% U+1E10  
 15925 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla  
 15926 \DeclareTextCompositeCommand{\c}{PU}{d}{\9036\021}% U+1E11  
 15927 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent  
 15928 \DeclareTextCompositeCommand{\.}{PU}{F}{\9036\036}% U+1E1E  
 15929 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent  
 15930 \DeclareTextCompositeCommand{\.}{PU}{f}{\9036\037}% U+1E1F  
 15931 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron  
 15932 \DeclareTextCompositeCommand{\=}{PU}{G}{\9036\040}% U+1E20  
 15933 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron  
 15934 \DeclareTextCompositeCommand{\=}{PU}{g}{\9036\041}% U+1E21  
 15935 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent  
 15936 \DeclareTextCompositeCommand{\.}{PU}{H}{\9036\042}% U+1E22  
 15937 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent  
 15938 \DeclareTextCompositeCommand{\.}{PU}{h}{\9036\043}% U+1E23  
 15939 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis  
 15940 \DeclareTextCompositeCommand{\"}{PU}{H}{\9036\046}% U+1E26  
 15941 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis  
 15942 \DeclareTextCompositeCommand{\"}{PU}{h}{\9036\047}% U+1E27  
 15943 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla  
 15944 \DeclareTextCompositeCommand{\c}{PU}{H}{\9036\050}% U+1E28  
 15945 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla  
 15946 \DeclareTextCompositeCommand{\c}{PU}{h}{\9036\051}% U+1E29  
 15947 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute  
 15948 \DeclareTextCompositeCommand{\'}{PU}{K}{\9036\060}% U+1E30  
 15949 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute  
 15950 \DeclareTextCompositeCommand{\'}{PU}{k}{\9036\061}% U+1E31  
 15951 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow  
 15952 \DeclareTextCompositeCommand{\b}{PU}{K}{\9036\064}% U+1E34  
 15953 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow  
 15954 \DeclareTextCompositeCommand{\b}{PU}{k}{\9036\065}% U+1E35



15955 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow  
15956 \DeclareTextCompositeCommand{\b}{PU}{L}{\9036\072}% U+1E3A  
15957 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow  
15958 \DeclareTextCompositeCommand{\b}{PU}{l}{\9036\073}% U+1E3B  
15959 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute  
15960 \DeclareTextCompositeCommand{\'}{PU}{M}{\9036\076}% U+1E3E  
15961 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute  
15962 \DeclareTextCompositeCommand{\'}{PU}{m}{\9036\077}% U+1E3F  
15963 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent  
15964 \DeclareTextCompositeCommand{\.}{PU}{M}{\9036\100}% U+1E40  
15965 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent  
15966 \DeclareTextCompositeCommand{\.}{PU}{m}{\9036\101}% U+1E41  
15967 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent  
15968 \DeclareTextCompositeCommand{\.}{PU}{N}{\9036\104}% U+1E44  
15969 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent  
15970 \DeclareTextCompositeCommand{\.}{PU}{n}{\9036\105}% U+1E45  
15971 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow  
15972 \DeclareTextCompositeCommand{\b}{PU}{N}{\9036\110}% U+1E48  
15973 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow  
15974 \DeclareTextCompositeCommand{\b}{PU}{n}{\9036\111}% U+1E49  
15975 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute  
15976 \DeclareTextCompositeCommand{\'}{PU}{P}{\9036\124}% U+1E54  
15977 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute  
15978 \DeclareTextCompositeCommand{\'}{PU}{p}{\9036\125}% U+1E55  
15979 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent  
15980 \DeclareTextCompositeCommand{\.}{PU}{P}{\9036\126}% U+1E56  
15981 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent  
15982 \DeclareTextCompositeCommand{\.}{PU}{p}{\9036\127}% U+1E57  
15983 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent  
15984 \DeclareTextCompositeCommand{\.}{PU}{R}{\9036\130}% U+1E58  
15985 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent  
15986 \DeclareTextCompositeCommand{\.}{PU}{r}{\9036\131}% U+1E59  
15987 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow  
15988 \DeclareTextCompositeCommand{\b}{PU}{R}{\9036\136}% U+1E5E  
15989 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow  
15990 \DeclareTextCompositeCommand{\b}{PU}{r}{\9036\137}% U+1E5F  
15991 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent  
15992 \DeclareTextCompositeCommand{\.}{PU}{S}{\9036\140}% U+1E60  
15993 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent  
15994 \DeclareTextCompositeCommand{\.}{PU}{s}{\9036\141}% U+1E61  
15995 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow  
15996 \DeclareTextCompositeCommand{\b}{PU}{T}{\9036\156}% U+1E6E  
15997 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow  
15998 \DeclareTextCompositeCommand{\b}{PU}{t}{\9036\157}% U+1E6F  
15999 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde  
16000 \DeclareTextCompositeCommand{\~}{PU}{V}{\9036\174}% U+1E7C  
16001 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde  
16002 \DeclareTextCompositeCommand{\~}{PU}{v}{\9036\175}% U+1E7D  
16003 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave  
16004 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\200}% U+1E80  
16005 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave  
16006 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\201}% U+1E81  
16007 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute  
16008 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\202}% U+1E82  
16009 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute  
16010 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\203}% U+1E83  
16011 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis

16012 \DeclareTextCompositeCommand{"}{PU}{W}{\9036\204}% U+1E84  
16013 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis  
16014 \DeclareTextCompositeCommand{"}{PU}{w}{\9036\205}% U+1E85  
16015 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent  
16016 \DeclareTextCompositeCommand{.}{PU}{W}{\9036\206}% U+1E86  
16017 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent  
16018 \DeclareTextCompositeCommand{.}{PU}{w}{\9036\207}% U+1E87  
16019 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent  
16020 \DeclareTextCompositeCommand{.}{PU}{X}{\9036\212}% U+1E8A  
16021 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent  
16022 \DeclareTextCompositeCommand{.}{PU}{x}{\9036\213}% U+1E8B  
16023 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis  
16024 \DeclareTextCompositeCommand{"}{PU}{X}{\9036\214}% U+1E8C  
16025 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis  
16026 \DeclareTextCompositeCommand{"}{PU}{x}{\9036\215}% U+1E8D  
16027 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent  
16028 \DeclareTextCompositeCommand{.}{PU}{Y}{\9036\216}% U+1E8E  
16029 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent  
16030 \DeclareTextCompositeCommand{.}{PU}{y}{\9036\217}% U+1E8F  
16031 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex  
16032 \DeclareTextCompositeCommand{^}{PU}{Z}{\9036\220}% U+1E90  
16033 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex  
16034 \DeclareTextCompositeCommand{^}{PU}{z}{\9036\221}% U+1E91  
16035 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow  
16036 \DeclareTextCompositeCommand{\b}{PU}{Z}{\9036\224}% U+1E94  
16037 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow  
16038 \DeclareTextCompositeCommand{\b}{PU}{z}{\9036\225}% U+1E95  
16039 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow  
16040 \DeclareTextCompositeCommand{\b}{PU}{h}{\9036\226}% U+1E96  
16041 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis  
16042 \DeclareTextCompositeCommand{"}{PU}{t}{\9036\227}% U+1E97  
16043 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring  
16044 \DeclareTextCompositeCommand{\r}{PU}{w}{\9036\230}% U+1E98  
16045 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring  
16046 \DeclareTextCompositeCommand{\r}{PU}{y}{\9036\231}% U+1E99  
16047 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdotac-  
cent  
16048 \DeclareTextCompositeCommand{.}{PU}{\textlongs}{\9036\233}% U+1E9B  
16049 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde  
16050 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
16051 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde  
16052 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
16053 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave  
16054 \DeclareTextCompositeCommand{`}{PU}{Y}{\9036\362}% U+1EF2  
16055 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave  
16056 \DeclareTextCompositeCommand{`}{PU}{y}{\9036\363}% U+1EF3  
16057 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde  
16058 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8  
16059 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde  
16060 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9

## 50.2.12 General Punctuation: U+2000 to U+206F

16061 % U+200C ZERO WIDTH NON-JOINER; \*afi61664, zerowidthnonjoiner  
16062 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C  
16063 % U+2013 EN DASH; endash  
16064 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013  
16065 % U+2014 EM DASH; emdash

16066 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014  
 16067 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar  
 16068 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016  
 16069 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 16070 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018  
 16071 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 16072 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019  
 16073 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 16074 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A  
 16075 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 16076 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034}% U+201C  
 16077 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 16078 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035}% U+201D  
 16079 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 16080 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E  
 16081 % U+2020 DAGGER; dagger  
 16082 \DeclareTextCommand{\textdagger}{PU}{\9040\040}% U+2020  
 16083 % U+2021 DOUBLE DAGGER; daggerdbl  
 16084 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021  
 16085 % U+2022 BULLET; bullet  
 16086 \DeclareTextCommand{\textbullet}{PU}{\9040\042}% U+2022  
 16087 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 16088 \DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026  
 16089 % U+2030 PER MILLE SIGN; perthousand  
 16090 \DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030  
 16091 % U+2031 PER TEN THOUSAND SIGN  
 16092 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031  
 16093 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
 ingleft  
 16094 \DeclareTextCommand{\guilsingleft}{PU}{\9040\071}% U+2039  
 16095 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
 singright  
 16096 \DeclareTextCommand{\guilsingright}{PU}{\9040\072}% U+203A  
 16097 % U+203B REFERENCE MARK; referencemark  
 16098 \DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B  
 16099 % U+203D INTERROBANG  
 16100 \DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D  
 16101 % U+2044 FRACTION SLASH; fraction  
 16102 \DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044  
 16103 % U+2045 LEFT SQUARE BRACKET WITH QUILL  
 16104 \DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045  
 16105 % U+2046 RIGHT SQUARE BRACKET WITH QUILL  
 16106 \DeclareTextCommand{\textrquill}{PU}{\9040\106}% U+2046  
 16107 % U+2052 COMMERCIAL MINUS SIGN  
 16108 \DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052

### 50.2.13 Superscripts and Subscripts: U+2070 to U+209F

16109 % U+2070 SUPERSCRIPT ZERO; zerosuperior  
 16110 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}% U+2070  
 16111 % U+2074 SUPERSCRIPT FOUR; foursuperior  
 16112 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}% U+2074  
 16113 % U+2075 SUPERSCRIPT FIVE; fivesuperior  
 16114 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}% U+2075  
 16115 % U+2076 SUPERSCRIPT SIX; sixsuperior  
 16116 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}% U+2076  
 16117 % U+2077 SUPERSCRIPT SEVEN; sevensuperior  
 16118 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}% U+2077

16119 % U+2078 SUPERSCRIPT EIGHT; eightsuperior  
 16120 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170}% U+2078  
 16121 % U+2079 SUPERSCRIPT NINE; ninesuperior  
 16122 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171}% U+2079  
 16123 % U+207A SUPERSCRIPT PLUS SIGN; plussuperior  
 16124 \DeclareTextCommand{\textplussuperior}{PU}{\9040\172}% U+207A  
 16125 % U+207B SUPERSCRIPT MINUS  
 16126 \DeclareTextCommand{\textminussuperior}{PU}{\9040\173}  
 16127 % U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior  
 16128 \DeclareTextCommand{\textequalsuperior}{PU}{\9040\174}  
 16129 % U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftsuperior  
 16130 \DeclareTextCommand{\textparenleftsuperior}{PU}{\9040\175}  
 16131 % U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightsuperior  
 16132 \DeclareTextCommand{\textparenrightsuperior}{PU}{\9040\176}  
 16133 % U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior  
 16134 \DeclareTextCommand{\textnsuperior}{PU}{\9040\177}  
 16135 % U+2080 SUBSCRIPT ZERO; zeroinferior  
 16136 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}% U+2080  
 16137 % U+2081 SUBSCRIPT ONE; oneinferior  
 16138 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201}% U+2081  
 16139 % U+2082 SUBSCRIPT TWO; twoinferior  
 16140 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}% U+2082  
 16141 % U+2083 SUBSCRIPT THREE; threeinferior  
 16142 \DeclareTextCommand{\textthreeinferior}{PU}{\9040\203}% U+2083  
 16143 % U+2084 SUBSCRIPT FOUR; fourinferior  
 16144 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204}% U+2084  
 16145 % U+2085 SUBSCRIPT FIVE; fiveinferior  
 16146 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}% U+2085  
 16147 % U+2086 SUBSCRIPT SIX; sixinferior  
 16148 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}% U+2086  
 16149 % U+2087 SUBSCRIPT SEVEN; seveninferior  
 16150 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}% U+2087  
 16151 % U+2088 SUBSCRIPT EIGHT; eightinferior  
 16152 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}% U+2088  
 16153 % U+2089 SUBSCRIPT NINE; nineinferior  
 16154 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}% U+2089  
 16155 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior  
 16156 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}% U+208D  
 16157 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior  
 16158 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}% U+208E

#### 50.2.14 Currency Symbols: U+20A0 to U+20CF

16159 % U+20A1 COLON SIGN; \*colonmonetary, colonsign  
 16160 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1  
 16161 % U+20A4 LIRA SIGN; afii08941, \*lira  
 16162 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4  
 16163 % U+20A6 NAIRA SIGN  
 16164 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6  
 16165 % U+20A7 PESETA SIGN; peseta  
 16166 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7  
 16167 % U+20A9 WON SIGN; won  
 16168 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9  
 16169 % U+20AB DONG SIGN; dong  
 16170 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB  
 16171 % U+20AC EURO SIGN; \*Euro, euro  
 16172 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC  
 16173 % U+20B1 PESO SIGN

16174 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1  
 16175 % U+20B2 GUARANI SIGN  
 16176 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

### 50.2.15 Letterlike Symbols: U+2100 to U+214F

16177 % U+2103 DEGREE CELSIUS; centigrade  
 16178 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103  
 16179 % U+2116 NUMERO SIGN; \*afi61352, numero  
 16180 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116  
 16181 % U+2117 SOUND RECORDING COPYRIGHT  
 16182 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117  
 16183 % U+211E PRESCRIPTION TAKE; prescription  
 16184 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E  
 16185 % U+2120 SERVICE MARK  
 16186 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120  
 16187 % U+2122 TRADE MARK SIGN; trademark  
 16188 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122  
 16189 % U+2126 OHM SIGN; Ohm, Omega  
 16190 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126  
 16191 % U+2127 INVERTED OHM SIGN  
 16192 \DeclareTextCommand{\textmho}{PU}{\9041\047}% U+2127  
 16193 % U+212B ANGSTROM SIGN; angstrom  
 16194 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B  
 16195 % U+212E ESTIMATED SYMBOL; estimated  
 16196 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E  
 16197 % U+2135 ALEF SYMBOL; aleph  
 16198 \DeclareTextCommand{\textaleph}{PU}{\9041\065}% U+2135

### 50.2.16 Arrows: U+2190 to U+21FF

16199 % U+2190 LEFTWARDS ARROW; arrowleft  
 16200 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}% U+2190  
 16201 % U+2191 UPWARDS ARROW; arrowup  
 16202 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}% U+2191  
 16203 % U+2192 RIGHTWARDS ARROW; arrowright  
 16204 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}% U+2192  
 16205 % U+2193 DOWNWARDS ARROW; arrowdown  
 16206 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}% U+2193

### 50.2.17 Mathematical Operators: U+2200 to U+22FF

16207 % U+2212 MINUS SIGN; minus  
 16208 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212  
 16209 % U+221A SQUARE ROOT; radical  
 16210 \DeclareTextCommand{\textsurd}{PU}{\9042\032}% U+221A

### 50.2.18 Miscellaneous Technical: U+2300 to U+23FF

16211 % U+2329 LEFT-POINTING ANGLE BRACKET; angleleft  
 16212 \DeclareTextCommand{\textlangle}{PU}{\9043\051}% U+2329  
 16213 % U+232A RIGHT-POINTING ANGLE BRACKET; angleright  
 16214 \DeclareTextCommand{\textrangle}{PU}{\9043\052}% U+232A

### 50.2.19 Control Pictures: U+2400 to U+243F

16215 % U+2422 BLANK SYMBOL  
 16216 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422  
 16217 % U+2423 OPEN BOX; blank  
 16218 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

### 50.2.20 Enclosed Alphanumerics: U+2460 to U+24FF

16219 % U+2460 CIRCLED DIGIT ONE; onecircle  
 16220 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460  
 16221 % U+2461 CIRCLED DIGIT TWO; twocircle  
 16222 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461  
 16223 % U+2462 CIRCLED DIGIT THREE; threecircle  
 16224 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462  
 16225 % U+2463 CIRCLED DIGIT FOUR; fourcircle  
 16226 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463  
 16227 % U+2464 CIRCLED DIGIT FIVE; fivecircle  
 16228 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464  
 16229 % U+2465 CIRCLED DIGIT SIX; sixcircle  
 16230 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465  
 16231 % U+2466 CIRCLED DIGIT SEVEN; sevenscircle  
 16232 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466  
 16233 % U+2467 CIRCLED DIGIT EIGHT; eightcircle  
 16234 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467  
 16235 % U+2468 CIRCLED DIGIT NINE; ninecircle  
 16236 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468  
 16237 % U+2469 CIRCLED NUMBER TEN; tencircle  
 16238 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469  
 16239 % U+246A CIRCLED NUMBER ELEVEN; elevencircle  
 16240 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A  
 16241 % U+246B CIRCLED NUMBER TWELVE; twelvecircle  
 16242 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B  
 16243 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle  
 16244 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C  
 16245 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle  
 16246 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D  
 16247 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle  
 16248 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E  
 16249 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle  
 16250 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F  
 16251 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle  
 16252 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470  
 16253 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle  
 16254 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471  
 16255 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle  
 16256 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472  
 16257 % U+2473 CIRCLED NUMBER TWENTY; twentycircle  
 16258 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473  
 16259 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle  
 16260 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6  
 16261 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle  
 16262 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7  
 16263 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle  
 16264 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8  
 16265 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle  
 16266 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9  
 16267 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle  
 16268 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA  
 16269 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle  
 16270 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB  
 16271 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle  
 16272 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC  
 16273 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle  
 16274 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD  
 16275 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle

16276 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE  
 16277 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle  
 16278 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF  
 16279 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle  
 16280 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0  
 16281 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle  
 16282 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1  
 16283 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle  
 16284 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2  
 16285 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle  
 16286 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3  
 16287 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle  
 16288 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4  
 16289 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle  
 16290 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5  
 16291 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle  
 16292 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6  
 16293 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle  
 16294 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7  
 16295 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle  
 16296 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8  
 16297 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle  
 16298 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9  
 16299 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle  
 16300 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA  
 16301 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle  
 16302 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB  
 16303 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle  
 16304 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC  
 16305 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle  
 16306 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD  
 16307 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle  
 16308 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE  
 16309 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle  
 16310 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF  
 16311 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle  
 16312 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0  
 16313 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle  
 16314 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1  
 16315 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle  
 16316 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2  
 16317 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle  
 16318 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3  
 16319 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle  
 16320 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4  
 16321 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle  
 16322 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5  
 16323 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle  
 16324 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6  
 16325 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle  
 16326 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7  
 16327 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle  
 16328 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8  
 16329 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcircle  
 16330 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9  
 16331 % U+24DA CIRCLED LATIN SMALL LETTER K; kcircle  
 16332 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA

16333 % U+24DB CIRCLED LATIN SMALL LETTER L; lcircle  
16334 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB  
16335 % U+24DC CIRCLED LATIN SMALL LETTER M; mcircle  
16336 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC  
16337 % U+24DD CIRCLED LATIN SMALL LETTER N; ncircle  
16338 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD  
16339 % U+24DE CIRCLED LATIN SMALL LETTER O; ocircle  
16340 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE  
16341 % U+24DF CIRCLED LATIN SMALL LETTER P; pcircle  
16342 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF  
16343 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcircle  
16344 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0  
16345 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcircle  
16346 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1  
16347 % U+24E2 CIRCLED LATIN SMALL LETTER S; scircle  
16348 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2  
16349 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcircle  
16350 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3  
16351 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucircle  
16352 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4  
16353 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcircle  
16354 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5  
16355 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcircle  
16356 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6  
16357 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcircle  
16358 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7  
16359 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycircle  
16360 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8  
16361 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcircle  
16362 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9  
16363 % U+24EA CIRCLED DIGIT ZERO  
16364 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

### 50.2.21 Box Drawing: U+2500 to U+257F

16365 % U+25E6 WHITE BULLET; \*openbullet, whitebullet  
16366 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}% U+25E6  
16367 % U+25EF LARGE CIRCLE; largecircle  
16368 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}% U+25EF

### 50.2.22 Miscellaneous Symbols: U+2600 to U+26FF

16369 % U+266A EIGHTH NOTE; musicalnote  
16370 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}% U+266A  
16371 % U+26AD MARRIAGE SYMBOL  
16372 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD  
16373 % U+26AE DIVORCE SYMBOL  
16374 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE

### 50.2.23 Miscellaneous Mathematical Symbols-A: U+27C0 to U+27EF

16375 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET  
16376 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}% U+27E6  
16377 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET  
16378 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}% U+27E7

### 50.2.24 Alphabetic Presentation Forms: U+FB00 to U+FB4F

16379 % U+FB01 LATIN SMALL LIGATURE FI; fi  
16380 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01  
16381 % U+FB02 LATIN SMALL LIGATURE FL; fl



```
16382 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02
```

### 50.2.25 Miscellaneous

```
16383 \DeclareTextCommand{\SS}{PU}{SS}
```

### 50.2.26 Aliases

Aliases (german.sty)

```
16384 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}
16385 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}
16386 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}
16387 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}
16388 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}
16389 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}
16390 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}
16391 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}
```

Aliases (math names)

```
16392 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}
16393 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}
16394 \DeclareTextCommand{\textdiv}{PU}{\textdivide}
16395 \DeclareTextCommand{\textpm}{PU}{\textplusminus}
16396 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}
16397 </puenc>
```

## 50.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```
16398 <*puvnenc>
16399 \DeclareTextCommand{\abreve}{PU}{\81\003}
16400 \DeclareTextCommand{\acircumflex}{PU}{\80\342}
16401 \DeclareTextCommand{\dj}{PU}{\81\021}
16402 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}
16403 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}
16404 \DeclareTextCommand{\ohorn}{PU}{\81\241}
16405 \DeclareTextCommand{\uhorn}{PU}{\81\260}
16406 \DeclareTextCommand{\ABREVE}{PU}{\81\002}
16407 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}
16408 \DeclareTextCommand{\DJ}{PU}{\81\020}
16409 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}
16410 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}
16411 \DeclareTextCommand{\OHORN}{PU}{\81\240}
16412 \DeclareTextCommand{\UHORN}{PU}{\81\257}
16413 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}
16414 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}
16415 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}
16416 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}
16417 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}
16418 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}
16419 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}
16420 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}
16421 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}
16422 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}
16423 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}
16424 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}
16425 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}
```

16426 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}  
16427 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}  
16428 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}  
16429 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}  
16430 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}  
16431 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}  
16432 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}  
16433 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}  
16434 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}  
16435 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}  
16436 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}  
16437 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}  
16438 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}  
16439 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}  
16440 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}  
16441 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}  
16442 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}  
16443 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}  
16444 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}  
16445 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}  
16446 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}  
16447 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}  
16448 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}  
16449 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}  
16450 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\323}  
16451 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}  
16452 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}  
16453 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}  
16454 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}  
16455 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\335}  
16456 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}  
16457 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}  
16458 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}  
16459 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}  
16460 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}  
16461 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}  
16462 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}  
16463 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}  
16464 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}  
16465 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\353}  
16466 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}  
16467 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}  
16468 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}  
16469 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}  
16470 \DeclareTextCompositeCommand{\'}{PU}{y}{\9036\363}  
16471 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}  
16472 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}  
16473 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}  
16474 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}  
16475 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\300}  
16476 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}  
16477 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}  
16478 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}  
16479 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}  
16480 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\260}  
16481 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}  
16482 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}

```

16483 \DeclareTextCompositeCommand{'}{PU}{\ACIRCUMFLEX}{\9036\244}
16484 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}
16485 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\246}
16486 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}
16487 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}
16488 \DeclareTextCompositeCommand{'}{PU}{E}{\80\311}
16489 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}
16490 \DeclareTextCompositeCommand{'}{PU}{E}{\80\310}
16491 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}
16492 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}
16493 \DeclareTextCompositeCommand{'}{PU}{\ECIRCUMFLEX}{\9036\276}
16494 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}
16495 \DeclareTextCompositeCommand{'}{PU}{\ECIRCUMFLEX}{\9036\300}
16496 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}
16497 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}
16498 \DeclareTextCompositeCommand{'}{PU}{I}{\80\315}
16499 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}
16500 \DeclareTextCompositeCommand{'}{PU}{I}{\80\314}
16501 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}
16502 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}
16503 \DeclareTextCompositeCommand{'}{PU}{O}{\80\323}
16504 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}
16505 \DeclareTextCompositeCommand{'}{PU}{O}{\80\322}
16506 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}
16507 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}
16508 \DeclareTextCompositeCommand{'}{PU}{\OCIRCUMFLEX}{\9036\320}
16509 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}
16510 \DeclareTextCompositeCommand{'}{PU}{\OCIRCUMFLEX}{\9036\322}
16511 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}
16512 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}
16513 \DeclareTextCompositeCommand{'}{PU}{\OHORN}{\9036\332}
16514 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}
16515 \DeclareTextCompositeCommand{'}{PU}{\OHORN}{\9036\334}
16516 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}
16517 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}
16518 \DeclareTextCompositeCommand{'}{PU}{U}{\80\332}
16519 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}
16520 \DeclareTextCompositeCommand{'}{PU}{U}{\80\331}
16521 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}
16522 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}
16523 \DeclareTextCompositeCommand{'}{PU}{\UHORN}{\9036\350}
16524 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}
16525 \DeclareTextCompositeCommand{'}{PU}{\UHORN}{\9036\352}
16526 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}
16527 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}
16528 \DeclareTextCompositeCommand{'}{PU}{Y}{\80\335}
16529 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}
16530 \DeclareTextCompositeCommand{'}{PU}{Y}{\9036\362}
16531 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}
16532 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}
16533 </puvnenc>

```

## 50.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```
16534 <*puarenc>
```

16535 \DeclareTextCommand{\hamza}{PU}{\86\041}% 0621;afi57409;ARABIC LETTER HAMZA

16536 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% 0622;afi57410;ARABIC LETTER ALEF WITH MADDA ABOVE

16537 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% 0623;afi57411;ARABIC LETTER ALEF WITH HAMZA ABOVE

16538 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% 0624;afi57412;ARABIC LETTER WAW WITH HAMZA ABOVE

16539 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% 0625;afi57413;ARABIC LETTER ALEF WITH HAMZA BELOW

16540 \DeclareTextCommand{\yahamza}{PU}{\86\046}% 0626;afi57414;ARABIC LETTER YEH WITH HAMZA ABOVE

16541 \DeclareTextCommand{\alef}{PU}{\86\047}% 0627;afi57415;ARABIC LETTER ALEF

16542 \DeclareTextCommand{\baa}{PU}{\86\050}% 0628;afi57416;ARABIC LETTER BEH

16543 \DeclareTextCommand{\T}{PU}{\86\051}% 0629;afi57417;ARABIC LETTER TEH MARBUTA

16544 \DeclareTextCommand{\taa}{PU}{\86\052}% 062A;afi57418;ARABIC LETTER TEH

16545 \DeclareTextCommand{\thaa}{PU}{\86\053}% 062B;afi57419;ARABIC LETTER THEH

16546 \DeclareTextCommand{\jeem}{PU}{\86\054}% 062C;afi57420;ARABIC LETTER JEEM

16547 \DeclareTextCommand{\Haa}{PU}{\86\055}% 062D;afi57421;ARABIC LETTER HAH

16548 \DeclareTextCommand{\kha}{PU}{\86\056}% 062E;afi57422;ARABIC LETTER KHAH

16549 \DeclareTextCommand{\dal}{PU}{\86\057}% 062F;afi57423;ARABIC LETTER DAL

16550 \DeclareTextCommand{\dhal}{PU}{\86\060}% 0630;afi57424;ARABIC LETTER THAL

16551 \DeclareTextCommand{\ra}{PU}{\86\061}% 0631;afi57425;ARABIC LETTER REH

16552 \DeclareTextCommand{\zay}{PU}{\86\062}% 0632;afi57426;ARABIC LETTER ZAIN

16553 \DeclareTextCommand{\seen}{PU}{\86\063}% 0633;afi57427;ARABIC LETTER SEEN

16554 \DeclareTextCommand{\sheen}{PU}{\86\064}% 0634;afi57428;ARABIC LETTER SHEEN

16555 \DeclareTextCommand{\sad}{PU}{\86\065}% 0635;afi57429;ARABIC LETTER SAD

16556 \DeclareTextCommand{\dad}{PU}{\86\066}% 0636;afi57430;ARABIC LETTER DAD

16557 \DeclareTextCommand{\Ta}{PU}{\86\067}% 0637;afi57431;ARABIC LETTER TAH

16558 \DeclareTextCommand{\za}{PU}{\86\070}% 0638;afi57432;ARABIC LETTER ZAH

16559 \DeclareTextCommand{\ayn}{PU}{\86\071}% 0639;afi57433;ARABIC LETTER AIN

16560 \DeclareTextCommand{\ghayn}{PU}{\86\072}% 063A;afi57434;ARABIC LETTER GHAIN

16561 \DeclareTextCommand{\tatweel}{PU}{\86\100}% 0640;afi57440;ARABIC TATWHEEL

16562 \DeclareTextCommand{\fa}{PU}{\86\101}% 0641;afi57441;ARABIC LETTER FEH

16563 \DeclareTextCommand{\qaf}{PU}{\86\102}% 0642;afi57442;ARABIC LETTER QAF

16564 \DeclareTextCommand{\kaf}{PU}{\86\103}% 0643;afi57443;ARABIC LETTER KAF

16565 \DeclareTextCommand{\lam}{PU}{\86\104}% 0644;afi57444;ARABIC LETTER LAM

16566 \DeclareTextCommand{\meem}{PU}{\86\105}% 0645;afi57445;ARABIC LETTER MEEM

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16568 \DeclareTextCommand{\ha}{PU}{\86\107}% 0647;afi57470;ARABIC LETTER HEH

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16570 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% 0649;afi57449;ARABIC LETTER ALEF MAKSURA

16571 \DeclareTextCommand{\ya}{PU}{\86\112}% 064A;afi57450;ARABIC LETTER YEH

16572 \DeclareTextCommand{\nasb}{PU}{\86\113}% 064B;afi57451;ARABIC FATHATAN

16573 \DeclareTextCommand{\raff}{PU}{\86\114}% 064C;afi57452;ARABIC DAMMATAN

16574 \DeclareTextCommand{\jarr}{PU}{\86\115}% 064D;afi57453;ARABIC KASRATAN

16575 \DeclareTextCommand{\fatha}{PU}{\86\116}% 064E;afi57454;ARABIC FATHA

16576 \DeclareTextCommand{\damma}{PU}{\86\117}% 064F;afi57455;ARABIC DAMMA

16577 \DeclareTextCommand{\kasra}{PU}{\86\120}% 0650;afi57456;ARABIC KASRA

16578 \DeclareTextCommand{\shadda}{PU}{\86\121}% 0651;afi57457;ARABIC SHADDA

16579 \DeclareTextCommand{\sukun}{PU}{\86\122}% 0652;afi57458;ARABIC SUKUN

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16580 \DeclareTextCommand{\peh}{PU}{\86\176}% 067E;afi57506;ARABIC LETTER PEH
16581 \DeclareTextCommand{\tcheh}{PU}{\86\206}% 0686;afi57507;ARABIC LET-
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16583 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% 06A9???;afi????;FARSI LET-
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16584 \DeclareTextCommand{\gaf}{PU}{\86\257}% 06AF;afi57509;ARABIC LETTER GAF
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16587 \DeclareTextCommand{\noboundary}{PU}{\86\325}% 200D;ZWJ
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