

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

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## 1 Documentation overview for hyperref

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

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

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


[ChangeLog](#) This file records the version history (also available as text file).

[Options](#) This file provides a short option summary.

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

[Bookmark talk, paper](#) The paper version of the talk.

Source code documentation:

 [hyperref.dtx](#) This is the source code documentation for hyperref (this file).

[backref.dtx](#) “Back referencing from bibliographical citations”

[nameref.dtx](#) “Section name references in L<sup>A</sup>T<sub>E</sub>X”

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### 3 File hycheck.tex

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

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

`\checklatex` Optional argument: release date of L<sup>A</sup>T<sub>E</sub>X.

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

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

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

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

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

`\HyC@checkPackage`

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

```

40 }%
41 }

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

`\HyC@noValue`

```

85 \def\HyC@noValue{NoValue}

```



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

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

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

```
90 \newtoks\HyC@Toks
```

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

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

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

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

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

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

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

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

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

`\HyC@edef`

```

125 \def\HyC@def#1#{%
126   \HyC@Toks={#1}%
127   \HyC@nc@noopt
128 }
129 \let\HyC@edef\HyC@def

```

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

```

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

```

`\HyC@checkItem` A single check.

```

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

```

`\HyC@string` Some shorthands.

`\HyC@meaning`

```

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

```

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

```

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

```

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

```

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

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

```

## 4 Package options and setup

### 4.1 Save catcodes

There are many packages that change the standard catcodes.

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

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

\Hy@SetCatcodes

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

\Hy@RestoreCatcodes

```
205 \begingroup
206 \def\x#1{\catcode'\noexpand#1=\the\catcode'#1\relax}%
207 \xdef\Hy@RestoreCatcodes{%
208   \the\toks@
209   \x\$%
```

```

210 \x\&%
211 \x\^%
212 \x\_%
213 \x\|%
214 \x\:%
215 \x\( %
216 \x\) %
217 \x\[ %
218 \x\] %
219 \x\/%
220 \x\!%
221 \x\<%
222 \x\>%
223 \x\.%
224 \x\;%
225 \x\+%
226 \x\-%
227 \x\"%
228 \x\'%
229 }%
230 \endgroup

```

```

231 \Hy@SetCatcodes

```

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

Use package `hobsub-hyperref` for faster package loading.

```

232 \IfFileExists{hobsub-hyperref.sty}{%
233 \RequirePackage{hobsub-hyperref}[2011/01/30]%
234 }{}

235 \RequirePackage{ltxcmds}[2010/10/25]
236 \RequirePackage{ifpdf}[2006/02/20]
237 \RequirePackage{pdftexcmds}[2009/04/10]
238 \@ifpackagelater{pdftexcmds}{2010/11/04}{%}{%
239 \ltx@ifundefined{pdfdraftmode}{%
240 \let\pdf@ifdraftmode\ltx@secondoftwo
241 }{%
242 \ifpdf
243 \def\pdf@ifdraftmode{%
244 \ifnum\pdfdraftmode=\ltx@one
245 \expandafter\ltx@firstoftwo
246 \else
247 \expandafter\ltx@secondoftwo
248 \fi
249 }%
250 \else
251 \let\pdf@ifdraftmode\ltx@secondoftwo
252 \fi
253 }%
254 }

255 \RequirePackage{infwarerr}[2010/04/08]
256 \RequirePackage{keyval}[1997/11/10]
257 \RequirePackage{kvsetkeys}[2007/09/29]
258 \RequirePackage{pdfescape}[2007/11/11]
259 \RequirePackage{ifvtex}
260 \RequirePackage{ifxetex}[2006/08/21]

```

```

261 \RequirePackage{hycolor}
262 \RequirePackage{letltxmacro}[2008/06/13]
263 \def\Hy@Error{\@PackageError{hyperref}}
264 \def\Hy@Warning{\@PackageWarning{hyperref}}
265 \def\Hy@WarningNoLine{\@PackageWarningNoLine{hyperref}}
266 \def\Hy@Info{\@PackageInfo{hyperref}}
267 \def\Hy@InfoNoLine{\@PackageInfoNoLine{hyperref}}
268 \def\Hy@Message#1{%
269   \GenericWarning{%
270     (hyperref)\@spaces\@spaces\@spaces\@spaces
271   }{%
272     Package hyperref Message: #1\ltx@gobble
273   }%
274 }

```

## 4.2 Version check

\Hy@VersionChecked

```

275 \chardef\Hy@VersionChecked=0 %

```

\Hy@VersionCheck

```

276 \def\Hy@VersionCheck#1{%
277   \begingroup
278   \ltx@ifundefined{ver@hyperref.sty}{%
279     \Hy@Error{%
280       This should not happen!\MessageBreak
281       Missing hyperref version%
282     }\@ehd
283   }{%
284     \ltx@ifundefined{ver@#1}{%
285       \Hy@Error{%
286         This should not happen!\MessageBreak
287         Missing version of '#1'%
288       }\@ehd
289     }{%
290       \def\x##1##2##3{%
291         \expandafter\expandafter\expandafter\Hy@@VersionCheck
292         \expandafter\expandafter\expandafter##2%
293         \csname ver@##3\endcsname##1##1\@nil
294       }%
295       \x{ }\y{hyperref.sty}%
296       \x{ }\z{#1}%
297       \ifx\y\z
298       \else
299         \Hy@Error{%
300           Version mismatch!\MessageBreak
301           * \y: hyperref.sty\MessageBreak
302           * \z: #1%
303         }\@ehd
304       \fi
305     }%
306   }%
307   \endgroup
308   \chardef\Hy@VersionChecked=1 %
309 }

```

\Hy@@VersionCheck

```

310 \def\Hy@@VersionCheck #1#2 #3 #4\@nil{%
311   \def#1{#2 #3}%
312 }

```

### 4.3 Checks with regular expressions

```

313 \ltx@ifundefined{pdfmatch}{%
314   \let\Hy@Match\ltx@gobblefour
315 }{%
316   \def\Hy@Match#1#2{%
317     \begingroup
318     \edef\^{\ltx@backslashchar\string^}%
319     \edef\.\{\ltx@backslashchar.}%
320     \edef\[\{\ltx@backslashchar[]%
321     \edef\${\ltx@backslashchar$}%
322     \edef\(\{\ltx@backslashchar(%
323     \edef\)\{\ltx@backslashchar)%
324     \edef\|\{\ltx@backslashchar|}%
325     \edef\*\{\ltx@backslashchar*}%
326     \edef\+\{\ltx@backslashchar+}%
327     \edef\?\{\ltx@backslashchar?}%
328     \edef\{\{\ltx@backslashchar\ltx@leftbracechar}%
329     \edef\}\{\ltx@rightbracechar}%
330     \edef\\{\ltx@backslashchar\ltx@backslashchar}%
331     \let\ \ltx@space
332     \ifcase\pdfmatch{#2}{#1} %
333       \endgroup
334       \expandafter\ltx@secondoftwo
335     \or
336       \endgroup
337       \expandafter\ltx@firstoftwo
338     \else
339       \Hy@Warning{%
340         Internal error: Wrong pattern!\MessageBreak
341         --> #2 <--\MessageBreak
342         Pattern check ignored%
343       }%
344       \endgroup
345       \expandafter\ltx@firstoftwo
346     \fi
347   }%
348   \ltx@ifpackagelater{ltxcmds}{2010/09/11}{%
349     \begingroup
350     \lccode'0=\{\relax
351     \lowercase{\endgroup
352       \def\ltx@leftbracechar{0}%
353     }%
354     \begingroup
355     \lccode'0=\}\relax
356     \lowercase{\endgroup
357       \def\ltx@rightbracechar{0}%
358     }%
359   }%
360 }

```

## 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 L<sup>A</sup>T<sub>E</sub>X processing.

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

```
361 \@ifundefined{AfterBeginDocument}{%
362   \def\AfterBeginDocument{\AtBeginDocument}%
363 }{}%
```

`\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.

```
364 \def\Hy@AtBeginDocument{%
365   \ltx@LocalAppendToMacro\Hy@AtBeginDocumentHook
366 }
```

`\Hy@AtEndOfPackage`

```
367 \def\Hy@AtEndOfPackage{%
368   \ltx@LocalAppendToMacro\Hy@AtEndOfPackageHook
369 }
```

`\Hy@AtBeginDocumentHook`

```
370 \let\Hy@AtBeginDocumentHook\ltx@empty
```

`\Hy@AtEndOfPackageHook`

```
371 \let\Hy@AtEndOfPackageHook\ltx@empty
```

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

```
372 \AtEndOfPackage{%
373   \Hy@AtEndOfPackageHook
374   \let\Hy@AtEndOfPackageHook\@undefined
375   \AfterBeginDocument{%
376     \Hy@AtBeginDocumentHook}%
377   \let\Hy@AtBeginDocumentHook\@undefined
378 }%
379 }
```

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

```
380 \RequirePackage{kvoptions}[2009/07/21]
```

## 4.5 Switches

```
381 \newif\ifHy@stoppedearly
382 \newif\ifHy@typexml
383 \newif\ifHy@activeanchor
384 \newif\ifHy@backref
385 \newif\ifHy@bookmarks
386 \newif\ifHy@bookmarksnumbered
387 \newif\ifHy@bookmarksopen
388 \newif\ifHy@breaklinks
```

```

389 \newif\ifHy@pdfcenterwindow
390 \newif\ifHy@CJKbookmarks
391 \newif\ifHy@colorlinks
392 \newif\ifHy@draft
393 \let\Hy@finaltrue\Hy@draftfalse
394 \let\Hy@finalfalse\Hy@drafttrue
395 \newif\ifHy@pdfescapeform
396 \newif\ifHy@hyperfigures
397 \newif\ifHy@pdffitwindow
398 \newif\ifHy@frenchlinks
399 \newif\ifHy@hyperfootnotes
400 \newif\ifHy@hyperindex
401 \newif\ifHy@hypertextnames
402 \newif\ifHy@implicit
403 \newif\ifHy@linktocpage
404 \newif\ifHy@localanchorname
405 \newif\ifHy@pdfmenubar
406 \newif\ifHy@naturalnames
407 \newif\ifHy@nesting
408 \newif\ifHy@pdfnewwindowset
409 \newif\ifHy@pdfnewwindow
410 \newif\ifHy@ocgcolorlinks
411 \newif\ifHy@pageanchor
412 \newif\ifHy@pdfpagelabels
413 \newif\ifHy@pdfpagehidden
414 \newif\ifHy@pdfstring
415 \newif\ifHy@plainpages
416 \newif\ifHy@psize
417 \newif\ifHy@raiselinks
418 \newif\ifHy@seminarslides
419 \newif\ifHy@setpagesize
420 \newif\ifHy@texht
421 \newif\ifHy@psdextra
422 \newif\ifHy@pdftoolbar
423 \newif\ifHy@unicode
424 \newif\ifHy@pdfusetitle
425 \newif\ifHy@verbose
426 \let\Hy@debugtrue\Hy@verbosetrue
427 \let\Hy@debugfalse\Hy@verbosefalse
428 \newif\ifHy@pdfwindowui
429 \newif\ifHy@pdfdisplaydoctitle
430 \newif\ifHy@pdfa

```

Defaults for the switches are now set.

```

431 \Hy@backreffalse
432 \Hy@bookmarksnumberedfalse
433 \Hy@bookmarksopenfalse
434 \Hy@bookmarkstrue
435 \Hy@breaklinksfalse
436 \Hy@pdfcenterwindowfalse
437 \Hy@CJKbookmarksfalse
438 \Hy@pdfescapeformfalse
439 \Hy@hyperfiguresfalse
440 \Hy@pdffitwindowfalse
441 \Hy@hyperfootnotetrue
442 \Hy@hyperindextrue
443 \Hy@hypertextnametrue
444 \Hy@implicittrue

```



```

445 \Hy@linktocpagefalse
446 \Hy@localanchornamefalse
447 \Hy@pdfmenubartrue
448 \Hy@naturalnamesfalse
449 \Hy@nestingfalse
450 \Hy@pdfnewwindowsetfalse
451 \Hy@pdfnewwindowfalse
452 \Hy@pageanchortrue
453 \Hy@pdfpagelabelstrue
454 \Hy@pdfpagehiddenfalse
455 \Hy@pdfstringfalse
456 \Hy@plainpagesfalse
457 \Hy@raiselinksfalse
458 \Hy@setpagesizetrue
459 \Hy@texhtfalse
460 \Hy@psdextrafalse
461 \Hy@pdftoolbartrue
462 \Hy@typexmlfalse
463 \Hy@unicodetrue
464 \Hy@pdfusetitlefalse
465 \Hy@verbosefalse
466 \Hy@pdfwindowuitrue
467 \Hy@pdfdisplaydoctitlefalse
468 \Hy@pdfafalse

```

## 5 Common help macros

\Hy@StepCount

```

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

```

\Hy@GlobalStepCount

```

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

471 \newdimen\@linkdim
472 \let\Hy@driver\ltx@empty
473 \let\MaybeStopEarly\relax
474 \newcount\Hy@linkcounter
475 \newcount\Hy@pagecounter
476 \Hy@linkcounter0
477 \Hy@pagecounter0

```

### 5.1 Macros for recursions

```

478 \let\Hy@ReturnEnd\@empty
479 \long\def\Hy@ReturnAfterFiFiEnd#1\fi#2\Hy@ReturnEnd{\fi\fi#1}
480 \long\def\Hy@ReturnAfterElseFiFiEnd#1\else#2\Hy@ReturnEnd{\fi\fi#1}

```

### 5.2 Babel's protection of shorthand characters

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

```

481 \def\Hy@safe@activetrue{\csname @safe@activetrue\endcsname}
482 \def\Hy@safe@activesfalse{\csname @safe@activesfalse\endcsname}

```

### 5.3 Coordinate transformations

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

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

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

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

Example (TeX):

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

`\hypercalcbp`

```
483 \begingroup\expandafter\expandafter\expandafter\endgroup
484 \expandafter\ifx\csname dimexpr\endcsname\relax
485   \def\hypercalcbpdef#1#2{%
486     \begingroup
487       \toks@{}%
488       \HyCal@scan#2\hypercalcbp\@nil
489     \expandafter\endgroup
490     \expandafter\def\expandafter#1\expandafter{\the\toks@}%
491   }%
492   \def\HyCal@scan#1\hypercalcbp#2\@nil{%
493     \toks@\expandafter{\the\toks@ #1}%
494     \ifx\#2\%
495       \else
496         \ltx@ReturnAfterFi{%
497           \HyCal@do#2\@nil
498         }%
499       \fi
500     }%
501   \def\HyCal@do#1#2\@nil{%
502     \@ifpackageloaded{calc}{-}{%
503       \Hy@Warning{%
504         For calculations \string\hypercalcbp\space needs\MessageBreak
505         package calc or e-TeX%
506       }%
507     }%
508     \setlength{\dimen@}{#1}%
509     \setlength{\dimen@}{0.99626401\dimen@}%
510     \edef\x{%
511       \toks@{%
512         \the\toks@
```

```

513     \strip@pt\dimen@
514   }%
515 } \x
516   \HyCal@scan#2\@nil
517 }%
518 \else
519   \def\hypercalcbp#1{%
520     \strip@pt\dimexpr 0.99626401\dimexpr(#1)\relax\relax
521   }%
522   \def\hypercalcbpdef{\def}%
523 \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 <code>ddd</code>
- Strings are stored either in `PDFDocEncoding`, which is a superset of ISO-Latin1 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  $\mathrm{T}_{\mathrm{E}}\mathrm{X}$ , because the tokens have only cat-codes 10 until 12.

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

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

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

```
525 \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  $\mathrm{T}_{\mathrm{E}}\mathrm{X}$  escape character indeed prints as a normal backslash. Eventually this line can be removed, because this is standard  $\mathrm{L}^{\mathrm{A}}\mathrm{T}_{\mathrm{E}}\mathrm{X}$  behaviour.

```
526 \escapechar'\%
```

From the view of  $\mathrm{T}_{\mathrm{E}}\mathrm{X}$  an 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.

```
527 \edef\0{\string\0}%
528 \edef\1{\string\1}%
529 \edef\2{\string\2}%
530 \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.

```
531 \ifHy@unicode
532 \edef\8{\string\8}%
533 \edef\9{\string\9}%
534 \fontencoding{PU}%
535 \HyPsd@UTFviii
536 \def\ifpdfstringunicode##1##2{##1}%
537 \else
538 \fontencoding{PD1}%
```

```

539 \def\ifpdfstringunicode##1##2{##2}%
540 \fi
541 \let\utf@viii@undeferr\HyPsd@utf@viii@undeferr
542 \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).

```

543 \@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).

```

544 \let\@inmathwarn\HyPsd@inmathwarn

```

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

```

545 \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.

```

546 \let\{\textbraceleft
547 \let\}\textbraceright
548 \let\\\textbackslash
549 \let\#\textnumbersign
550 \let\$\textdollar
551 \let\%\textpercent
552 \let\&\textampersand
553 % \let~\textasciitilde
554 \let\_ \textunderscore
555 \let\P\textparagraph
556 \let\ldots\textellipsis
557 \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.

```

558 \def\\{\pdfstringdefWarn\\}%
559 \def\newline{\pdfstringdefWarn\newline}%

```

**Logos.** Because the box shifting used in the T<sub>E</sub>X logo does not work while writing to a file, the standard T<sub>E</sub>X logos are redefined.

```

560 \def\TeX{\TeX}%
561 \def\LaTeX{\LaTeX}%
562 \def\LaTeXe{%
563   \LaTeX2%
564   \ifHy@unicode\textepsilon\else e\fi
565 }%
566 \def\eTeX{%
567   \ifHy@unicode\textepsilon\else e\fi
568   -\TeX%
569 }%
570 \def\SliTeX{\SliTeX}%
571 \def\MF{Metafont}%
572 \def\MP{Metapost}%

```

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

```

573 \let\fontencoding\@gobble
574 \let\fontfamily\@gobble
575 \let\fontseries\@gobble
576 \let\fontshape\@gobble
577 \let\fontsize\@gobbletwo
578 \let\selectfont\@empty
579 \let\usefont\@gobblefour
580 \let\emph\@firstofone
581 \let\textnormal\@firstofone
582 \let\textrm\@firstofone
583 \let\textsf\@firstofone
584 \let\texttt\@firstofone
585 \let\textbf\@firstofone
586 \let\textmd\@firstofone
587 \let\textit\@firstofone
588 \let\textsc\@firstofone
589 \let\textsl\@firstofone
590 \let\textup\@firstofone
591 \let\normalfont\@empty
592 \let\rmfamily\@empty
593 \let\sffamily\@empty
594 \let\ttfamily\@empty
595 \let\bfseries\@empty
596 \let\mdseries\@empty
597 \let\itshape\@empty
598 \let\scshape\@empty
599 \let\slshape\@empty
600 \let\upshape\@empty
601 \let\em\@empty
602 \let\rm\@empty
603 \let\Huge\@empty
604 \let\LARGE\@empty
605 \let\Large\@empty
606 \let\footnotesize\@empty
607 \let\huge\@empty
608 \let\large\@empty
609 \let\normalsize\@empty
610 \let\scriptsize\@empty

```

```

611 \let\small\@empty
612 \let\tiny\@empty
613 \let\mathversion\@gobble
614 \let\phantom\@gobble
615 \let\vphantom\@gobble
616 \let\hphantom\@gobble

```

### Package pifont.

```

617 \let\ding\HyPsd@ding
618 \let\Cube\HyPsd@DieFace
619 %* \HyPsd@DieFace -> \epsdice (epsdice)
620 %* \HyPsd@DieFace -> \fcdice (hhcount)

```

### Environments.

```

621 \def\begin#1{\csname#1\endcsname}%
622 \def\end#1{\csname end#1\endcsname}%

```

### Package color.

```

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

```

### Upper- and lowercase.

```

624 \def\MakeUppercase{\MakeUppercaseUnsupportedInPdfStrings}%
625 \def\MakeLowercase{\MakeLowercaseUnsupportedInPdfStrings}%

```

**Support of math commands without prefix text.** This is controlled by option “psdextra” and only activated with Unicode PDF strings.

```

626 \ifHy@psdextra
627 \ifHy@unicode
628 \csname psdmapshortnames\endcsname
629 \csname psdaliasnames\endcsname
630 \fi
631 \fi

```

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

```

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

```

Disable \cyr, used in russianb.ldf.

```

643 \let\cyr\relax

```

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

```

644 \let\es@roman\@Roman

```

**Package german.**

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

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

**AMS classes.**

```
654 \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.

```
655 \let\hspace\HyPsd@hspace
```

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

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

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

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

**Miscellaneous commands.**

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

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

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

**Patch for `cjk` bookmarks.**

```
670 \HyPsd@CJKhook
```



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

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

```
671 \Hy@pdfstringtrue
672 \pdfstringdefPreHook
```

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

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

**Package `xspace`.**

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

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

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

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

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

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

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

Support for package 'xargs':

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

## 6.2.2 Expansion

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

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

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

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

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

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

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

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

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

```
699 \let\Hy@temp\xdef
700 \let\def\HyPsd@DefCommand
701 \let\gdef\HyPsd@DefCommand
702 \let\edef\HyPsd@DefCommand
```

```

703 \let\xdef\HyPsd@DefCommand
704 \let\futurelet\HyPsd@LetCommand
705 \let\let\HyPsd@LetCommand
706 \Hy@temp#1{#2}%
707 \endgroup

```

### 6.2.3 Postprocessing

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

```

708 \ifx#1\@empty
709 \else

```

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

- $\text{\TeX}$  does not accept a space as an undelimited argument, it cancels space tokens while looking for an undelimited argument. Therefore we must protect the spaces now.
- An argument can be a single token or a group of many tokens. And within curly braces tokens aren't found by  $\text{\TeX}$ 's argument scanning process. Third curly braces as grouping characters cannot be expanded further, so they don't vanish by the string expansion above. So these characters with catcode 1 and 2 are removed in the following and replaced by a marker for the xspace support.
- $\text{\TeX}$  silently removes the 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.

```

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

```

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

```

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

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

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

```

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

```

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

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

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

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

```

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

```

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

```

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

```

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

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

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

```

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

```

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

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

```

761 \HyPsd@Subst{---}\textemdash#1%
762 \HyPsd@Subst{--}\textendash#1%

```

```

763 % \HyPsd@Subst{fi}\textfi#1%
764 % \HyPsd@Subst{fi}\textfi#1%
765 \HyPsd@Subst{!}\textexclamdown#1%
766 \HyPsd@Subst{?}\textquestiondown#1%

```

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

```

767 \let\HyPsd@empty\@empty

```

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

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

```

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

```

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

With `Unicode` the spaces are replaced by their octal sequences.

```

776 \ifHy@unicode
777 \edef\HyPsd@SPACEOPTI{\80\040}%
778 \else
779 \let\HyPsd@SPACEOPTI\HyPsd@spaceopti
780 \fi
781 \xdef#1{#1\@empty}%
782 \fi

```

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

```

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

```

**Try conversion back to PDFDocEncoding.**

```

787 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
788 \ltx@ifundefined{StringEncodingConvertTest}{%
789 }{%
790 \EdefUnescapeString\HyPsd@temp#1%
791 \ifxetex
792 \let\HyPsd@UnescapedString\HyPsd@temp
793 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
794 {utf16be}{ascii-print}{%
795 \EdefEscapeString\HyPsd@temp\HyPsd@temp
796 \global\let#1\HyPsd@temp
797 \HyPsd@EscapeTeX#1%
798 \Hy@unicodedefalse

```

```

799     }{%
800     \HyPsd@ToBigChars#1%
801     }%
802     \else
803     \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
804         {utf16be}{pdfdoc}{%
805     \EdefEscapeString\HyPsd@temp\HyPsd@temp
806     \global\let#1\HyPsd@temp
807     \HyPsd@EscapeTeX#1%
808     \Hy@unicodedefalse
809     }{%}%
810     \fi
811     }%
812     \fi
813     \fi
814     \HyPsd@XeTeXBigCharsfalse

```

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

```

815     \pdfstringdefPostHook#1%
816     \endgroup
817 }

```

`\Hy@pdfstringdef`

```

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

```

## 6.3 Encodings

### 6.3.1 XeTeX

```

822 \edef\Hy@temp{\catcode0=\the\catcode0\relax}
823 \catcode\z@=12 %
824 \ifxetex
825     \expandafter\@firstofone
826 \else
827     \let\HyPsd@XeTeXBigCharstrue\@empty
828     \let\HyPsd@XeTeXBigCharsfalse\@empty
829     \expandafter\@gobble
830 \fi
831 {%
832     \newif\ifHyPsd@XeTeXBigChars
833     \def\HyPsd@XeTeXBigCharsfalse{%
834         \global\let\ifHyPsd@XeTeXBigChars\iffalse
835     }%
836     \def\HyPsd@XeTeXBigCharstrue{%
837         \global\let\ifHyPsd@XeTeXBigChars\iftrue
838     }%
839     \def\HyPsd@ToBigChars#1{%
840         \ifHyPsd@XeTeXBigChars
841             \EdefEscapeHex\HyPsd@UnescapedString{%
842                 \expandafter\@gobbletwo\HyPsd@UnescapedString
843             }%
844         \begingroup
845             \toks@{ }%

```

```

846 \escapechar=92\relax
847 \let\x\HyPsd@ToBigChar
848 \expandafter\HyPsd@ToBigChar\HyPsd@UnescapedString
849 \relax\relax\relax\relax\relax\relax\relax
850 \edef\x{%
851 \endgroup
852 \gdef\noexpand#1{\the\toks@}%
853 }%
854 \x
855 \fi
856 }%
857 \def\HyPsd@ToBigChar#1#2#3#4{%
858 \ifx\relax#1\relax
859 \let\x\relax
860 \else
861 \count@=#1#2#3#4\relax
862 \let\y\@empty
863 \lccode\z@=\count@
864 \ifnum\count@=40 % (
865 \let\y\@backslashchar
866 \else
867 \ifnum\count@=41 % )
868 \let\y\@backslashchar
869 \else
870 \ifnum\count@=92 % backslash
871 \let\y\@backslashchar
872 \else
873 \ifnum\count@=10 % newline
874 \edef\y##1{\string\n}%
875 \else
876 \ifnum\count@=13 % carriage return
877 \edef\y##1{\string\r}%
878 \fi
879 \fi
880 \fi
881 \fi
882 \fi
883 \lowercase{%
884 \toks@\expandafter{%
885 \the\expandafter\toks@
886 \y
887 ^^@%
888 }%
889 }%
890 \fi
891 \x
892 }%
893 }
894 \Hy@temp

```

### 6.3.2 Workaround for package linguex

```

895 \@ifpackageloaded{linguex}{%
896 \let\HyLinguex@OrgB\b
897 \let\HyLinguex@OrgC\c
898 \let\HyLinguex@OrgD\d
899 \def\HyLinguex@Restore{%
900 \let\b\HyLinguex@OrgB

```



```

901 \let\c\HyLinguex@OrgC
902 \let\d\HyLinguex@OrgD
903 }%
904 \Hy@AtEndOfPackage{%
905 \pdfstringdefDisableCommands{%
906 \ltx@ifundefined{oldb}{\let\b\oldb}%
907 \ltx@ifundefined{oldc}{\let\c\oldc}%
908 \ltx@ifundefined{oldd}{\let\d\oldd}%
909 }%
910 }%
911 }{%
912 \let\HyLinguex@Restore\relax
913 }%

```

### 6.3.3 PD1 encoding

The PD1 encoding implements the PDFDocEncoding for use with  $\text{\LaTeX}$  2 $\epsilon$ 's NFSS. Because the informational strings are not set by  $\text{\TeX}$ '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  $\text{\TeX}$  does not process it anyway. So use CM.

```

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

```

### 6.3.4 PU encoding

The PU encoding implements the Unicode encoding for use with  $\text{\LaTeX}$ '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@LoadUnicode` Because the file `puenc.def` takes a lot of memory, the loading is defined in the macro `\HyPsd@LoadUnicode` called by the package option `unicode`.

```

921 \def\HyPsd@LoadUnicode{%
922 \@ifundefined{T@PU}{%
923 \input{puenc.def}%
924 \HyLinguex@Restore
925 }{}%
926 \DeclareFontFamily{PU}{pdf}{}%
927 \DeclareFontShape{PU}{pdf}{m}{n}{<-> cmr10 }{}%
928 \DeclareFontSubstitution{PU}{pdf}{m}{n}%
929 \input{psdextra.def}%
930 \let\HyPsd@LoadUnicode\relax
931 }

```

## 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 ar-

guments, the first contains the string that will be set and processed by T<sub>E</sub>X's stomach, the second contains the replacement for PDF strings.

```

932 \def\texorpdfstring{%
933   \ifHy@pdfstring
934     \expandafter\@secondoftwo
935   \else
936     \expandafter\@firstoftwo
937   \fi
938 }
```

#### 6.4.2 Hooks for `\pdfstringdef`

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

```

939 \@ifundefined{pdfstringdefPreHook}{%
940   \let\pdfstringdefPreHook\@empty
941 }{}
942 \@ifundefined{pdfstringdefPostHook}{%
943   \let\pdfstringdefPostHook\@gobble
944 }{}
```

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

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

```

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

In the argument of `\pdfstringdefDisableCommands` the character `@` can be used in command names. So it is easy to use useful L<sup>A</sup>T<sub>E</sub>X commands like `\@gobble` or `\@firstofone`.

```

945 \def\pdfstringdefDisableCommands{%
946   \begingroup
947     \makeatletter
948     \HyPsd@DisableCommands
949 }
```

`\HyPsd@DisableCommands`

```

950 \long\def\HyPsd@DisableCommands#1{%
951   \ltx@GlobalAppendToMacro\pdfstringdefPreHook{#1}%
952   \endgroup
953 }
```

`\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`.

```

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

```

## 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.

```

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

```

966 \def\HyPsd@BabelPatch{%
967   \let\HyOrg@languageshorthands\languageshorthands
968   \let\languageshorthands\HyPsd@LanguageShorthands
969 }
970 \begingroup\expandafter\expandafter\expandafter\endgroup
971 \expandafter\ifx\csname pdf@strcmp\endcsname\relax
972   \let\HyPsd@langshort@system\@empty
973   \def\HyPsd@LanguageShorthands#1{%
974     \expandafter\ifx\csname HyPsd@langshort@#1\endcsname
975       \HyPsd@langshort@system
976     \expandafter\@gobble
977   \else
978     \expandafter\@firstofone
979   \fi
980   {%
981     \HyOrg@languageshorthands{#1}%
982   }%
983 }%
984 \else

```

```

985 \def\HyPsd@LanguageShorthands#1{%
986   \ifnum\pdf@strcmp{#1}{system}=\z@
987     \expandafter\@gobble
988   \else
989     \expandafter\@firstofone
990   \fi
991   {%
992     \HyOrg@languageshorthands{#1}%
993   }%
994 }%
995 \fi
996 \def\Hy@temp{%
997   \@ifpackageloaded{babel}{%
998     \@ifpackagelater{babel}{2008/03/16}{%
999       \let\Hy@temp\@empty
1000     }{%
1001       \def\HyPsd@BabelPatch{%
1002         \let\HyOrg@languageshorthands\languageshorthands
1003       }%
1004     }%
1005   }{%
1006 }
1007 \Hy@temp
1008 \expandafter\Hy@AtBeginDocument\expandafter{\Hy@temp}
1009 \newif\ifHy@next

```

Nothing to do for english.

```

1010 \ltx@ifundefined{danish@sh@}{}{}%
1011 \def\HyPsd@babel@danish{%
1012   \declare@shorthand{danish}{"}|{}%
1013   \declare@shorthand{danish}{"}~{}-{}%
1014 }%
1015 }
1016 \ltx@ifundefined{dutch@sh@}{}{}%
1017 \def\HyPsd@babel@dutch{%
1018   \declare@shorthand{dutch}{"}|{}%
1019   \declare@shorthand{dutch}{"}~{}-{}%
1020 }%
1021 }
1022 \ltx@ifundefined{finnish@sh@}{}{}%
1023 \def\HyPsd@babel@finnish{%
1024   \declare@shorthand{finnish}{"}|{}%
1025 }%
1026 }
1027 \ltx@ifundefined{french@sh@}{}{}%
1028 \def\HyPsd@babel@frenchb{%
1029   \def\guill@spacing{ }%
1030 }%
1031 }
1032 \ltx@ifundefined{german@sh@}{}{}%
1033 \def\HyPsd@babel@german{%
1034   \declare@shorthand{german}{"}f{}f{}%
1035   \declare@shorthand{german}{"}|{}%
1036   \declare@shorthand{german}{"}~{}-{}%
1037 }%
1038 }
1039 \ltx@ifundefined{macedonian@sh@}{}{}%

```

```

1040 \def\HyPsd@babel@macedonian{%
1041   \declare@shorthand{macedonian}{"}|{}%
1042   \declare@shorthand{macedonian}{"}~{}-%
1043 }%
1044 }
1045 \ltx@ifundefined{ngerman@sh@"@sel}{%}{%
1046   \def\HyPsd@babel@ngerman{%
1047     \declare@shorthand{ngerman}{"}|{}%
1048     \declare@shorthand{ngerman}{"}~{}-%
1049   }%
1050 }
1051 \ltx@ifundefined{portuges@sh@"@sel}{%}{%
1052   \def\HyPsd@babel@portuges{%
1053     \declare@shorthand{portuges}{"}|{}%
1054   }%
1055 }
1056 \ltx@ifundefined{russian@sh@"@sel}{%}{%
1057   \def\HyPsd@babel@russian{%
1058     \declare@shorthand{russian}{"}|{}%
1059     \declare@shorthand{russian}{"}~{}-%
1060   }%
1061 }
1062 \ltx@ifundefined{slovene@sh@"@sel}{%}{%
1063   \def\HyPsd@babel@slovene{%
1064     \declare@shorthand{slovene}{"}|{}%
1065   }%
1066 }

```

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

```

1067 \ltx@ifundefined{spanish@sh>@sel}{%}{%
1068   \def\HyPsd@babel@spanish{%
1069     \declare@shorthand{spanish}{<<}{\guillemotleft}%
1070     \declare@shorthand{spanish}{>>}{\guillemotright}%
1071     \declare@shorthand{spanish}{"}=}{-}%
1072     \declare@shorthand{spanish}{"}~}{-}%
1073     \declare@shorthand{spanish}{"}!}{\textexclamdown}%
1074     \declare@shorthand{spanish}{"}?}{\textquestiondown}%
1075   }%
1076 }
1077 \ltx@ifundefined{swedish@sh@"@sel}{%}{%
1078   \def\HyPsd@babel@swedish{%
1079     \declare@shorthand{swedish}{"}|{}%
1080     \declare@shorthand{swedish}{"}~{}-%
1081   }%
1082 }
1083 \ltx@ifundefined{ukrainian@sh@"@sel}{%}{%
1084   \def\HyPsd@babel@ukrainian{%
1085     \declare@shorthand{ukrainian}{"}|{}%
1086     \declare@shorthand{ukrainian}{"}~{}-%
1087   }%
1088 }
1089 \ltx@ifundefined{usorbian@sh@"@sel}{%}{%
1090   \def\HyPsd@babel@usorbian{%
1091     \declare@shorthand{usorbian}{"}f}{f}%
1092     \declare@shorthand{usorbian}{"}|{}%
1093   }%
1094 }
1095 \ltx@ifundefined{greek@sh@\string~@sel}{%

```

```

1096 \let\HyPsd@GreekPatch\@empty
1097 }{%
1098 \def\HyPsd@GreekPatch{%
1099 \let\greeknumeral\HyPsd@greeknumeral
1100 \let\Greeknnumeral\HyPsd@Greeknnumeral
1101 }%
1102 }
1103 \def\HyPsd@greeknumeral#1{%
1104 \HyPsd@GreekNum\@firsttwo{#1}%
1105 }
1106 \def\HyPsd@Greeknnumeral#1{%
1107 \HyPsd@GreekNum\@secondtwo{#1}%
1108 }
1109 \def\HyPsd@GreekNum#1#2{%
1110 \ifHy@unicode
1111 \ifnum#2<\@ne
1112 \@arabic{#2}%
1113 \else
1114 \ifnum#2<1000000 %
1115 \HyPsd@@GreekNum#1{#2}%
1116 \else
1117 \@arabic{#2}%
1118 \fi
1119 \fi
1120 \else
1121 \@arabic{#2}%
1122 \fi
1123 }
1124 \def\HyPsd@@GreekNum#1#2{%
1125 \ifnum#2<\@m
1126 \ifnum#2<10 %
1127 \expandafter\HyPsd@GreekNumI
1128 \expandafter\@gobble\expandafter#1\number#2%
1129 \else
1130 \ifnum#2<100 %
1131 \expandafter\HyPsd@GreekNumII
1132 \expandafter\@gobble\expandafter#1\number#2%
1133 \else
1134 \expandafter\HyPsd@GreekNumIII
1135 \expandafter\@gobble\expandafter#1\number#2%
1136 \fi
1137 \fi
1138 \ifnum#2>\z@
1139 \textnumeralsigngreek
1140 \fi
1141 \else
1142 \ifnum#2<\@M
1143 \expandafter\HyPsd@GreekNumIV\expandafter#1\number#2%
1144 \else
1145 \ifnum#2<100000 %
1146 \expandafter\HyPsd@GreekNumV\expandafter#1\number#2%
1147 \else
1148 \expandafter\HyPsd@GreekNumVI\expandafter#1\number#2%
1149 \fi
1150 \fi
1151 \fi
1152 }

```

```

1153 \def\HyPsd@GreekNumI#1#2#3{%
1154   #1{%
1155     \ifnum#3>\z@
1156       \textnumeralsignlowergreek
1157       \fi
1158   }%
1159   \expandafter#2%
1160   \ifcase#3 %
1161     {}{}%
1162     \or\textalpha\textAlpha
1163     \or\textbeta\textBeta
1164     \or\textgamma\textGamma
1165     \or\textdelta\textDelta
1166     \or\textepsilon\textEpsilon
1167     \or\textstigmagreek\textStigmagreek
1168     \or\textzeta\textZeta
1169     \or\texteta\textEta
1170     \or\texttheta\textTheta
1171   \else
1172     {}{}%
1173   \fi
1174 }
1175 \def\HyPsd@GreekNumII#1#2#3#4{%
1176   #1{%
1177     \ifnum#3>\z@
1178       \textnumeralsignlowergreek
1179       \fi
1180   }%
1181   \expandafter#2%
1182   \ifcase#3 %
1183     {}{}%
1184     \or\textiota\textIota
1185     \or\textkappa\textKappa
1186     \or\textlambda\textLambda
1187     \or\textmu\textMu
1188     \or\textnu\textNu
1189     \or\textxi\textXi
1190     \or\textomicron\textOmicron
1191     \or\textpi\textPi
1192     \or\textkoppagreek\textKoppagreek
1193   \else
1194     {}{}%
1195   \fi
1196   \HyPsd@GreekNumI#1#2#4%
1197 }
1198 \def\HyPsd@GreekNumIII#1#2#3#4#5{%
1199   #1{%
1200     \ifnum#3>\z@
1201       \textnumeralsignlowergreek
1202       \fi
1203   }%
1204   \expandafter#2%
1205   \ifcase#3 %
1206     {}{}%
1207     \or\textrho\textRho
1208     \or\textsigma\textSigma
1209     \or\texttau\textTau

```

```

1210 \or\textuppsilon\textUpsilon
1211 \or\textphi\textPhi
1212 \or\textchi\textChi
1213 \or\textpsi\textPsi
1214 \or\textomega\textOmega
1215 \or\textsamplegreek\textSampigreek
1216 \else
1217   {}{}%
1218 \fi
1219 \HyPsd@GreekNumII#1#2#4#5%
1220 }
1221 \def\HyPsd@GreekNumIV#1#2#3#4#5{%
1222   \HyPsd@GreekNumI\@firstofone#1#2%
1223   \HyPsd@@@GreekNum#1{#3#4#5}%
1224 }
1225 \def\HyPsd@GreekNumV#1#2#3#4#5#6{%
1226   \HyPsd@GreekNumII\@firstofone#1#2#3%
1227   \HyPsd@@@GreekNum#1{#4#5#6}%
1228 }
1229 \def\HyPsd@GreekNumVI#1#2#3#4#5#6#7{%
1230   \HyPsd@GreekNumIII\@firstofone#1#2#3#4%
1231   \HyPsd@@@GreekNum#1{#5#6#7}%
1232 }

1233 \def\HyPsd@SpanishPatch{%
1234   \ltx@ifundefined{es@save@dot}{%
1235     }{%
1236       \let\.\es@save@dot
1237     }%
1238 }

```

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

```

1239 \def\HyPsd@RussianPatch{%
1240   \ltx@ifundefined{russian@sh@"@-@}{%
1241     }{%
1242       \@namedef{russian@sh@"@-@}{-}%
1243     }%
1244 }

```

### 6.5.3 CJK patch

```

1245 \RequirePackage{intcalc}[2007/09/27]

\HyPsd@CJKhook

1246 \def\HyPsd@CJKhook{%
1247   \ltx@ifpackageloaded{CJK}{%
1248     \let\CJK@kern\relax
1249     \let\CJKkern\relax
1250     \let\CJK@CJK\relax
1251     \ifHy@CJKbookmarks
1252       \HyPsd@CJKhook@bookmarks
1253     \fi
1254     \HyPsd@CJKhook@unicode
1255   }{}%
1256 }

```



### 6.5.4 CJK bookmarks

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

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

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

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

```

1257 \begingroup
1258   \catcode"7F=\active
1259   \toks@{%
1260     \let\CJK@ignorespaces\empty
1261     \def\CJK@char#1{\@gobbletwo}%
1262     \let\CJK@charx\@gobblefour
1263     \let\CJK@punctchar\@gobblefour
1264     \def\CJK@punctcharx#1{\@gobblefour}%
1265     \catcode"7F=\active
1266     \def^^7f#1^^7f#2^^7f{%
1267       \string #1\HyPsd@DecimalToOctal{#2}%
1268     }%
1269     % ... ?
1270     \ifHy@unicode
1271       \def\Hy@cjkpu{\80}%
1272     \else
1273       \let\Hy@cjkpu\@empty
1274     \fi
1275     \HyPsd@CJKActiveChars
1276   }%
1277   \count@=127 %
1278   \@whilenum\count@<255 \do{%
1279     \advance\count@ by 1 %
1280     \lccode'\~=\count@
1281     \lowercase{%
1282       \toks@\expandafter{\the\toks@ ~}%
1283     }%
1284   }%
1285   \toks@\expandafter{\the\toks@ !}%
1286   \xdef\HyPsd@CJKhook@bookmarks{%
1287     \the\toks@
1288   }%
1289 \endgroup

```

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

```

1290 \def\HyPsd@CJKActiveChars#1{%
1291   \ifx#1!%
1292     \let\HyPsd@CJKActiveChars\relax
1293   \else
1294     \edef#1{\noexpand\Hy@cjkpu\string#1}%
1295   \fi
1296   \HyPsd@CJKActiveChars
1297 }

```

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

```

1298 \def\HyPsd@DecimalToOctal#1{%
1299 \ifcase #1 %
1300 \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
1301 \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
1302 \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
1303 \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
1304 \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
1305 \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
1306 \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1307 \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
1308 \or @\or A\or B\or C\or D\or E\or F\or G%
1309 \or H\or I\or J\or K\or L\or M\or N\or O%
1310 \or P\or Q\or R\or S\or T\or U\or V\or W%
1311 \or X\or Y\or Z\or \133\or \134\or \135\or \136\or \137%
1312 \or \140\or a\or b\or c\or d\or e\or f\or g%
1313 \or h\or i\or j\or k\or l\or m\or n\or o%
1314 \or p\or q\or r\or s\or t\or u\or v\or w%
1315 \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
1316 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
1317 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
1318 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1319 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
1320 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1321 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1322 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1323 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1324 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1325 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1326 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1327 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1328 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1329 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1330 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1331 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1332 \fi
1333 }

```

### 6.5.5 CJK unicode

\HyPsd@CJKhook@unicode

```

1334 \def\HyPsd@CJKhook@unicode{%
1335 \let\Unicode\HyPsd@CJK@Unicode
1336 \let\CJKnumber\HyPsd@CJKnumber
1337 \let\CJKdigits\HyPsd@CJKdigits
1338 }

```

\HyPsd@CJK@Unicode

```

1339 \def\HyPsd@CJK@Unicode#1#2{%
1340 \ifnum#1<256 %
1341 \HyPsd@DecimalToOctalFirst{#1}%
1342 \HyPsd@DecimalToOctalSecond{#2}%
1343 \else
1344 \933%
1345 \expandafter\expandafter\expandafter\HyPsd@HighA
1346 \intcalcDiv{#1}{4}!%
1347 \933%
1348 \ifcase\intcalcMod{#1}{4} %

```

```

1349     4\or 5\or 6\or 7%
1350     \fi
1351     \HyPsd@DecimalToOctalSecond{#2}%
1352     \fi
1353 }

1354 \def\HyPsd@HighA#1!{%
1355     \expandafter\expandafter\expandafter\HyPsd@HighB
1356     \IntCalcDiv#1!64!!%
1357     \expandafter\expandafter\expandafter\HyPsd@HighD
1358     \IntCalcMod#1!64!!%
1359 }
1360 \def\HyPsd@HighB#1!{%
1361     \expandafter\expandafter\expandafter\HyPsd@HighC
1362     \IntCalcDec#1!!%
1363 }
1364 \def\HyPsd@HighC#1!{%
1365     \IntCalcDiv#1!4!%
1366     \@backslashchar
1367     \IntCalcMod#1!4!%
1368 }
1369 \def\HyPsd@HighD#1!{%
1370     \ifcase\IntCalcDiv#1!8! %
1371         0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1372     \fi
1373     \ifcase\IntCalcMod#1!8! %
1374         0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1375     \fi
1376 }
1377 \def\HyPsd@DecimalToOctalFirst#1{%
1378     \9%
1379     \ifcase#1 %
1380         000\or 001\or 002\or 003\or 004\or 005\or 006\or 007%
1381         \or 010\or 011\or 012\or 013\or 014\or 015\or 016\or 017%
1382         \or 020\or 021\or 022\or 023\or 024\or 025\or 026\or 027%
1383         \or 030\or 031\or 032\or 033\or 034\or 035\or 036\or 037%
1384         \or 040\or 041\or 042\or 043\or 044\or 045\or 046\or 047%
1385         \or 050\or 051\or 052\or 053\or 054\or 055\or 056\or 057%
1386         \or 060\or 061\or 062\or 063\or 064\or 065\or 066\or 067%
1387         \or 070\or 071\or 072\or 073\or 074\or 075\or 076\or 077%
1388         \or 100\or 101\or 102\or 103\or 104\or 105\or 106\or 107%
1389         \or 120\or 111\or 112\or 113\or 114\or 115\or 116\or 117%
1390         \or 120\or 121\or 122\or 123\or 124\or 125\or 126\or 127%
1391         \or 130\or 131\or 132\or 133\or 134\or 135\or 136\or 137%
1392         \or 140\or 141\or 142\or 143\or 144\or 145\or 146\or 147%
1393         \or 150\or 151\or 152\or 153\or 154\or 155\or 156\or 157%
1394         \or 160\or 161\or 162\or 163\or 164\or 165\or 166\or 167%
1395         \or 170\or 171\or 172\or 173\or 174\or 175\or 176\or 177%
1396         \or 200\or 201\or 202\or 203\or 204\or 205\or 206\or 207%
1397         \or 210\or 211\or 212\or 213\or 214\or 215\or 216\or 217%
1398         \or 220\or 221\or 222\or 223\or 224\or 225\or 226\or 227%
1399         \or 230\or 231\or 232\or 233\or 234\or 235\or 236\or 237%
1400         \or 240\or 241\or 242\or 243\or 244\or 245\or 246\or 247%
1401         \or 250\or 251\or 252\or 253\or 254\or 255\or 256\or 257%
1402         \or 260\or 261\or 262\or 263\or 264\or 265\or 266\or 267%
1403         \or 270\or 271\or 272\or 273\or 274\or 275\or 276\or 277%
1404         \or 300\or 301\or 302\or 303\or 304\or 305\or 306\or 307%
1405         \or 310\or 311\or 312\or 313\or 314\or 315\or 316\or 317%

```

```

1406 \or 320\or 321\or 322\or 323\or 324\or 325\or 326\or 327%
1407 \or 330\or 331\or 332\or 333\or 334\or 335\or 336\or 337%
1408 \or 340\or 341\or 342\or 343\or 344\or 345\or 346\or 347%
1409 \or 350\or 351\or 352\or 353\or 354\or 355\or 356\or 357%
1410 \or 360\or 361\or 362\or 363\or 364\or 365\or 366\or 367%
1411 \or 370\or 371\or 372\or 373\or 374\or 375\or 376\or 377%
1412 \fi
1413 }
1414 \def\HyPsd@DecimalToOctalSecond#1{%
1415 \ifcase #1 %
1416 \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
1417 \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
1418 \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
1419 \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
1420 \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
1421 \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
1422 \or \060\or \061\or \062\or \063\or \064\or \065\or \066\or \067%
1423 \or \070\or \071\or \072\or \073\or \074\or \075\or \076\or \077%
1424 \or \100\or \101\or \102\or \103\or \104\or \105\or \106\or \107%
1425 \or \110\or \111\or \112\or \113\or \114\or \115\or \116\or \117%
1426 \or \120\or \121\or \122\or \123\or \124\or \125\or \126\or \127%
1427 \or \130\or \131\or \132\or \133\or \134\or \135\or \136\or \137%
1428 \or \140\or \141\or \142\or \143\or \144\or \145\or \146\or \147%
1429 \or \150\or \151\or \152\or \153\or \154\or \155\or \156\or \157%
1430 \or \160\or \161\or \162\or \163\or \164\or \165\or \166\or \167%
1431 \or \170\or \171\or \172\or \173\or \174\or \175\or \176\or \177%
1432 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
1433 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
1434 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1435 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
1436 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1437 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1438 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1439 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1440 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1441 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1442 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1443 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1444 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1445 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1446 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1447 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1448 \fi
1449 }
1450 \def\HyPsd@CJKnumber#1{%
1451 \ifnum#1<\z@
1452 \CJK@minus
1453 \expandafter\HyPsd@@CJKnumber\expandafter{\number-\number#1}%
1454 \else
1455 \expandafter\HyPsd@@CJKnumber\expandafter{\number#1}%
1456 \fi
1457 }
1458 \def\HyPsd@@CJKnumber#1{%
1459 \ifcase#1 %
1460 \CJK@zero\or\CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1461 \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine\or
1462 \CJK@ten\or\CJK@ten\CJK@one\or\CJK@ten\CJK@two\or

```

```

1463 \CJK@ten\CJK@three\or\CJK@ten\CJK@four\or\CJK@ten\CJK@five\or
1464 \CJK@ten\CJK@six\or\CJK@ten\CJK@seven\or\CJK@ten\CJK@eight\or
1465 \CJK@ten\CJK@nine
1466 \else
1467 \ifnum#1<10000 %
1468 \HyPsd@CJKnumberFour#1!\@empty{20}%
1469 \@empty
1470 \else
1471 \ifnum#1<100000000 %
1472 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1473 \IntCalcDiv#1!10000!%
1474 !\CJK@zero{20}%
1475 \CJK@tenthousand
1476 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1477 \IntCalcMod#1!10000!%
1478 !\CJK@zero{10}%
1479 \@empty
1480 \else
1481 \expandafter\HyPsd@CJKnumberLarge
1482 \number\IntCalcDiv#1!100000000!\expandafter!%
1483 \number\IntCalcMod#1!100000000!!%
1484 \fi
1485 \fi
1486 \fi
1487 }
1488 \def\HyPsd@CJKnumberLarge#1!#2!{%
1489 \HyPsd@CJKnumberFour#1!\@empty{20}%
1490 \CJK@hundredmillion
1491 \ifnum#2=\z@
1492 \else
1493 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1494 \IntCalcDiv#2!10000!%
1495 !\CJK@zero{10}%
1496 \CJK@tenthousand
1497 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1498 \IntCalcMod#2!10000!%
1499 !\CJK@zero{10}%
1500 \@empty
1501 \fi
1502 }
1503 \def\HyPsd@CJKnumberFour#1!#2#3{%
1504 \ifnum#1=\z@
1505 \expandafter\@gobble
1506 \else
1507 \ifnum#1<1000 %
1508 #2%
1509 \HyPsd@CJKnumberThree#1!\@empty{#3}%
1510 \else
1511 \HyPsd@@CJKnumber{\IntCalcDiv#1!1000!}%
1512 \CJK@thousand
1513 \expandafter\expandafter\expandafter\HyPsd@CJKnumberThree
1514 \IntCalcMod#1!1000!%
1515 !\CJK@zero{10}%
1516 \fi
1517 \fi
1518 }
1519 \def\HyPsd@CJKnumberThree#1!#2#3{%

```

```

1520 \ifnum#1=\z@
1521 \else
1522 \ifnum#1<100 %
1523 #2%
1524 \HyPsd@CJKnumberTwo#1!#{#3}%
1525 \else
1526 \HyPsd@@CJKnumber{\IntCalcDiv#1!100!}%
1527 \CJK@hundred
1528 \expandafter\expandafter\expandafter\HyPsd@CJKnumberTwo
1529 \IntCalcMod#1!100!%
1530 !\CJK@zero{10}%
1531 \fi
1532 \fi
1533 }
1534 \def\HyPsd@CJKnumberTwo#1!#2#3{%
1535 \ifnum#1=\z@
1536 \else
1537 \ifnum#1<#3 %
1538 #2%
1539 \HyPsd@@CJKnumber{#1}%
1540 \else
1541 \HyPsd@@CJKnumber{\IntCalcDiv#1!10!}%
1542 \CJK@ten
1543 \ifnum\IntCalcMod#1!10!=\z@
1544 \else
1545 \HyPsd@@CJKnumber{\IntCalcMod#1!10!}%
1546 \fi
1547 \fi
1548 \fi
1549 }
1550 \def\HyPsd@CJKdigits#1{%
1551 \ifx*#1\relax
1552 \expandafter\HyPsd@@CJKdigits\expandafter\CJK@zero
1553 \else
1554 \HyPsd@@CJKdigits\CJK@null{#1}%
1555 \fi
1556 }
1557 \def\HyPsd@@CJKdigits#1#2{%
1558 \ifx\#2\%
1559 \else
1560 \HyPsd@@@CJKdigits#1#2\@nil
1561 \fi
1562 }%
1563 \def\HyPsd@@@CJKdigits#1#2#3\@nil{%
1564 \HyPsd@CJKdigit#1{#2}%
1565 \ifx\#3\%
1566 \expandafter\@gobble
1567 \else
1568 \expandafter\@firstofone
1569 \fi
1570 {%
1571 \HyPsd@@@CJKdigits#1#3\@nil
1572 }%
1573 }
1574 \def\HyPsd@CJKdigit#1#2{%
1575 \ifcase#2 %
1576 #1\or

```

```

1577 \CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1578 \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine
1579 \fi
1580 }

```

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

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

```

\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}

1581 \def\HyPsd@inmathwarn#1#2{%
1582   \ifx#2\expandafter
1583     \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
1584       \HyPsd@GLYPHERR
1585       \expandafter\@gobble\string#1%
1586     >%
1587     \expandafter\expandafter\expandafter\HyPsd@EndWithElse
1588   \else

```

```

1589 \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
1590 \fi
1591 \else
1592 \expandafter#2%
1593 \fi
1594 }
1595 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
1596 \def\HyPsd@EndWithElse#1\else{\else}

```

\HyPsd@add@accent

```

1597 \def\HyPsd@add@accent#1#2{%
1598 \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
1599 #2%
1600 }%

```

### 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.

```

1601 \def\HyPsd@LetUnexpandableSpace#1{%
1602 \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
1603 }

```

\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.

```

1604 \HyPsd@LetUnexpandableSpace\HyPsd@UnexpandableSpace

```

### 6.5.8 Marker for commands

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

```

1605 \edef\HyPsd@XSPACE{\string#\string X}
1606 \edef\HyPsd@ITALCORR{\string#\string I}
1607 \edef\HyPsd@GLYPHERR{\string#\string G}

```

### 6.5.9 \hspace fix

\HyPsd@hspace

```

1608 \def\HyPsd@hspace#1{\HyPsd@@hspace#1*\END}

```

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

```

1609 \def\HyPsd@@hspace#1*#2\END{%
1610 \ifx\#2\%
1611 \HyPsd@hspacetest{#1}%
1612 \else
1613 \expandafter\HyPsd@hspacetest
1614 \fi
1615 }

```



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

```
1616 \def\HyPsd@hspacetest#1{\ifdim#1>\z@\space\fi}
```

#### 6.5.10 Fix for AMS classes

```
1617 \ltx@ifundefined{tocsection}{%
1618   \let\HyPsd@AMSclassfix\relax
1619 }{%
1620   \def\HyPsd@AMSclassfix{%
1621     \let\tocpart\HyPsd@tocsection
1622     \let\tocchapter\HyPsd@tocsection
1623     \let\tocappendix\HyPsd@tocsection
1624     \let\tocsection\HyPsd@tocsection
1625     \let\tocsubsection\HyPsd@tocsection
1626     \let\tocsubsubsection\HyPsd@tocsection
1627     \let\tocparagraph\HyPsd@tocsection
1628   }%
1629   \def\HyPsd@tocsection#1#2#3{%
1630     \if @#2@\else\if @#1@\else#1 \fi#2. \fi
1631     #3%
1632   }%
1633 }
```

#### 6.5.11 Reference commands

`\HyPsd@href`

```
1634 \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.

```
1635 \def\HyPsd@ref#1{\HyPsd@@ref#1*\END}%
```

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

```
1636 \def\HyPsd@@ref#1*#2\END{%
1637   \ifx\#2\%
1638     \HyPsd@@@ref{#1}%
1639   \else
1640     \expandafter\HyPsd@@@ref
1641   \fi
1642 }
```

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

```
1643 \def\HyPsd@@@ref#1{%
1644   \expandafter\ifx\csname r@#1\endcsname\relax
1645     ??%
1646   \else
1647     \expandafter\expandafter\expandafter
1648     \@car\csname r@#1\endcsname\@nil
1649   \fi
1650 }
```

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

```
1651 \def\HyPsd@pageref#1{\HyPsd@@pageref#1*\END}
```

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

```

1652 \def\HyPsd@@pageref#1*#2\END{%
1653   \ifx\#2\%
1654     \HyPsd@@@pageref{#1}%
1655   \else
1656     \expandafter\HyPsd@@@pageref
1657   \fi
1658 }

```

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

```

1659 \def\HyPsd@@@pageref#1{%
1660   \expandafter\ifx\csname r@#1\endcsname\relax
1661     ??%
1662   \else
1663     \expandafter\expandafter\expandafter\expandafter
1664     \expandafter\expandafter\expandafter\@car
1665     \expandafter\expandafter\expandafter\@gobble
1666     \csname r@#1\endcsname{}\@nil
1667   \fi
1668 }

```

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

```

1669 \def\HyPsd@nameref#1{\HyPsd@@nameref#1*\END}

```

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

```

1670 \def\HyPsd@@nameref#1*#2\END{%
1671   \ifx\#2\%
1672     \HyPsd@@@nameref{#1}%
1673   \else
1674     \expandafter\HyPsd@@@nameref
1675   \fi
1676 }

```

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

```

1677 \def\HyPsd@@@nameref#1{%
1678   \expandafter\ifx\csname r@#1\endcsname\relax
1679     ??%
1680   \else
1681     \expandafter\expandafter\expandafter\expandafter
1682     \expandafter\expandafter\expandafter\@car
1683     \expandafter\expandafter\expandafter\@gobbletwo
1684     \csname r@#1\endcsname{}\@nil
1685   \fi
1686 }

```

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

```

1687 \def\HyPsd@autoref#1{\HyPsd@@autoref#1*\END}

```

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

```

1688 \def\HyPsd@@autoref#1*#2\END{%
1689   \ifx\#2\%
1690     \HyPsd@@@autoref{#1}%
1691   \else
1692     \expandafter\HyPsd@@@autoref
1693   \fi
1694 }

```

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

```

1695 \def\HyPsd@@@autoref#1{%
1696   \expandafter\ifx\csname r@#1\endcsname\relax
1697     ??%
1698   \else
1699     \expandafter\expandafter\expandafter\HyPsd@autorefname
1700       \csname r@#1\endcsname\relax\@nil
1701     \expandafter\expandafter\expandafter
1702       \@car\csname r@#1\endcsname\@nil
1703   \fi
1704 }
```

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

```

1705 \def\HyPsd@autorefname#1#2#3#4#5\@nil{%
1706   \ifx\#4\%
1707   \else
1708     \HyPsd@@@autorefname#4.\@nil
1709   \fi
1710 }
```

`\HyPsd@@@autorefname`

```

1711 \def\HyPsd@@@autorefname#1.#2\@nil{%
1712   \ltx@ifundefined{#1autorefname}{%
1713     \ltx@ifundefined{#1name}{%
1714       }{%
1715         \csname#1name\endcsname\space
1716       }%
1717     }{%
1718       \csname#1autorefname\endcsname\space
1719     }%
1720 }
```

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

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

```
\HyPsd@DefCommand
\HyPsd@LetCommand 1721 \begingroup
1722 \def\x#1#2{%
1723 \endgroup
1724 \let#1\def
1725 \def\HyPsd@DefCommand##1##2###{%
1726 #1%
1727 \expandafter\noexpand
1728 \csname\expandafter\@gobble\string##1\@empty\endcsname
1729 \@gobble
1730 }%
1731 \let#2\let
1732 \def\HyPsd@@LetCommand##1{%
1733 \expandafter\ifx\csname##1\expandafter\endcsname
1734 \csname iftrue\endcsname
1735 \pdfstringdefWarn\let
1736 \expandafter\@gobble
1737 \else
1738 \expandafter\ifx\csname##1\expandafter\endcsname
1739 \csname iffalse\endcsname
1740 \pdfstringdefWarn\let
1741 \expandafter\expandafter\expandafter\@gobble
1742 \else
1743 #2%
1744 \expandafter\noexpand
1745 \csname##1\expandafter\expandafter\expandafter\endcsname
1746 \fi
1747 \fi
1748 }%
1749 }%
1750 \expandafter\x\csname <def>-command\expandafter\endcsname
1751 \csname <let>-command\endcsname
1752 \def\HyPsd@LetCommand#1{%
1753 \expandafter\expandafter\expandafter\HyPsd@@LetCommand
1754 \expandafter\expandafter\expandafter{%
1755 \expandafter\@gobble\string#1\@empty
1756 }%
1757 }
```

### 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).

```
1758 \def\HyPsd@ifnextchar#1{%
1759   \pdfstringdefWarn#1%
1760   \expandafter\@gobbletwo\@gobble
1761 }
```

#### 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`.

```
1762 \def\HyPsd@protected@testopt#1{%
1763   \pdfstringdefWarn#1%
1764   \@gobbletwo
1765 }
```

## 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:

```
1766 \def\HyPsd@Warning#1{%
1767   \begingroup
1768   \let\space\ltx@space
1769   \Hy@Warning{#1}%
1770   \endgroup
1771 }
```

### 6.6.2 Protecting spaces

```
1772 \RequirePackage{etexcmds}[2007/09/09]
1773 \ifetex@unexpanded
1774   \expandafter\@secondoftwo
1775 \else
1776   \expandafter\@firstoftwo
1777 \fi
1778 {%
```

`\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`.

```
1779 \def\HyPsd@ProtectSpaces#1{%
1780   \iftrue
1781     \expandafter\HyPsd@@ProtectSpacesFi
1782     \expandafter|\expandafter\@empty#1| \HyPsd@End#1%
1783   \fi
1784 }%
```

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

```

1785 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@End#3\fi{%
1786   \fi
1787   \ifx\scrollmode#2\scrollmode
1788     \HyPsd@RemoveMask#1\HyPsd@End#3%
1789   \else
1790     \gdef#3{#1\HyPsd@UnexpandableSpace#2}%
1791     \expandafter\HyPsd@@ProtectSpacesFi#3\HyPsd@End#3%
1792   \fi
1793 }%

```

### 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.

```

1794 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1795   \toks@\expandafter{#1}%
1796   \xdef#2{\the\toks@}%
1797 }%

1798 }{%
1799 \let\HyPsd@fi\fi
1800 \def\HyPsd@ProtectSpaces#1{%
1801   \xdef#1{%
1802     \iftrue
1803       \expandafter\HyPsd@@ProtectSpacesFi
1804       \expandafter|\expandafter\@empty#1| %
1805     \HyPsd@fi
1806   }%
1807   \expandafter\HyPsd@RemoveMask#1\HyPsd@End#1%
1808 }%
1809 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@fi{%
1810   \fi
1811   \etex@unexpanded{#1}%
1812   \ifx\scrollmode#2\scrollmode
1813   \else
1814     \HyPsd@@ProtectSpacesFi\HyPsd@UnexpandableSpace#2%
1815     \HyPsd@fi
1816   }%
1817 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1818   \xdef#2{\etex@unexpanded\expandafter{#1}}%
1819 }%
1820 }

```

### 6.6.3 Remove grouping braces

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

```

1821 \def\HyPsd@RemoveBraces#1{%
1822   \ifx\scrollmode#1\scrollmode
1823   \else
1824     \HyPsd@@RemoveBracesFi#1\HyPsd@End{#1}%
1825   \fi
1826 }

```

`\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 `\ltx@ReturnAfterFi`.

```

1827 \def\HyPsd@@RemoveBracesFi#1#2\HyPsd@End#3\fi{%
1828   \fi
1829   \def\Hy@temp@A{#1#2}%
1830   \def\Hy@temp@B{#3}%
1831   \ifx\Hy@temp@A\Hy@temp@B
1832     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1833       \HyPsd@String#1%
1834     }%
1835     \ifx\scrollmode#2\scrollmode
1836     \else
1837       \Hy@ReturnAfterFiFiEnd{%
1838         \HyPsd@RemoveBraces{#2}%
1839       }%
1840     \fi
1841   \else
1842     \def\Hy@temp@A{#1}%
1843     \HyPsd@AppendItalcrr\HyPsd@String
1844     \ifx\Hy@temp@A\@empty
1845       \Hy@ReturnAfterElseFiFiEnd{%
1846         \HyPsd@RemoveBraces{#2}%
1847       }%
1848     \else
1849       \HyPsd@ProtectSpaces\Hy@temp@A
1850       \HyPsd@AppendItalcrr\Hy@temp@A
1851       \Hy@ReturnAfterFiFiEnd{%
1852         \expandafter\HyPsd@RemoveBraces\expandafter
1853           {\Hy@temp@A#2}%
1854       }%
1855     \fi
1856   \fi
1857   \Hy@ReturnEnd
1858 }
```

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

```

1859 \def\HyPsd@AppendItalcrr#1{%
1860   \expandafter\HyPsd@@AppendItalcrr\expandafter{\/#1%
1861 }
1862 \def\HyPsd@@AppendItalcrr#1#2{%
1863   \expandafter\def\expandafter#2\expandafter{#2#1}%
1864 }
```

#### 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`).

```

1865 \def\HyPsd@CheckCatcodes#1#2\HyPsd@end{%
1866   \global\let\HyPsd@Rest\relax
1867   \ifcat\relax\noexpand#1\relax
1868     \ifx#1\protect
1869       \else
1870         \ifx#1\penalty
1871           \setbox\z@=\hbox{%
1872             \afterassignment\HyPsd@AfterCountRemove
1873             \count@=#2\HyPsd@end
1874           }%
1875         \else
1876         \ifx#1\kern
1877           \setbox\z@=\hbox{%
1878             \afterassignment\HyPsd@AfterDimenRemove
1879             \dimen@=#2\HyPsd@end
1880           }%
1881         \else
1882         \ifx#1\hskip
1883           \setbox\z@=\hbox{%
1884             \afterassignment\HyPsd@AfterSkipRemove
1885             \skip@=#2\HyPsd@end
1886           }%
1887         \else
1888           \HyPsd@CatcodeWarning{#1}%
1889         \fi
1890       \fi
1891     \fi
1892   \fi
1893 \else
1894   \ifcat#1A% letter
1895     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1896       \HyPsd@String#1%
1897     }%
1898   \else
1899     \ifcat#1 % SPACE
1900       \expandafter\def\expandafter\HyPsd@String\expandafter{%
1901         \HyPsd@String\HyPsd@SPACEOPTI
1902       }%
1903     \else
1904       \ifcat$#1%
1905         \HyPsd@CatcodeWarning{math shift}%
1906       \else
1907         \ifcat&#1%
1908           \HyPsd@CatcodeWarning{alignment tab}%
1909         \else
1910           \ifcat^#1%
1911             \HyPsd@CatcodeWarning{superscript}%
1912           \else
1913             \ifcat_#1%
1914               \HyPsd@CatcodeWarning{subscript}%

```



```

1915         \else
1916         \expandafter\def\expandafter\HyPsd@String\expandafter{%
1917         \HyPsd@String#1%
1918         }%
1919         \fi
1920     \fi
1921 \fi
1922 \fi
1923 \fi
1924 \fi
1925 \fi
1926 \ifx\HyPsd@Rest\relax
1927 \ifx\scrollmode#2\scrollmode
1928 \else
1929 \Hy@ReturnAfterFiFiEnd{%
1930 \HyPsd@CheckCatcodes#2\HyPsd@End
1931 }%
1932 \fi
1933 \else
1934 \ifx\HyPsd@Rest\@empty
1935 \else
1936 \Hy@ReturnAfterFiFiEnd{%
1937 \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@End
1938 }%
1939 \fi
1940 \fi
1941 \Hy@ReturnEnd
1942 }

```

#### Remove counts, dimens, skips.

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

```

1943 \def\HyPsd@AfterCountRemove#1\HyPsd@End{%
1944 \gdef\HyPsd@Rest{#1}%
1945 }

```

**\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.

```

1946 \def\HyPsd@AfterDimenRemove#1\HyPsd@End{%
1947 \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@>1ex %
1948 \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1949 \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1950 \else
1951 \ifdim\dimen@=\z@
1952 \else
1953 \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1954 \fi
1955 \gdef\HyPsd@Rest{#1}%
1956 \fi
1957 }

```

**\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).

```

1958 \def\HyPsd@AfterSkipRemove#1\HyPsd@End{%
1959 \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@>1ex %

```

```

1960 \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1961 \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1962 \else
1963 \ifdim\skip@=\z@
1964 \else
1965 \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1966 \fi
1967 \gdef\HyPsd@Rest{#1}%
1968 \fi
1969 }

```

### Catcode warnings.

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

```

1970 \def\HyPsd@CatcodeWarning#1{%
1971 \HyPsd@Warning{%
1972 Token not allowed in a PDF string (%)
1973 \ifHy@unicode
1974 Unicode%
1975 \else
1976 PDFDocEncoding%
1977 \fi
1978 }:%
1979 \MessageBreak removing '\HyPsd@RemoveCmdPrefix#1'%
1980 }%
1981 }
1982 \begingroup
1983 \catcode'\|=0 %
1984 \catcode'\|=12 %
1985 \gdef\HyPsd@RemoveCmdPrefix#1{%
1986 |expandafter|HyPsd@@RemoveCmdPrefix
1987 |string#1|@empty\<>-|@empty|@empty
1988 }%
1989 \gdef\HyPsd@@RemoveCmdPrefix#1\<>-#2|@empty#3|@empty{#1#2}%
1990 |endgroup

```

\HyPsd@RemoveSpaceWarning

```

1991 \def\HyPsd@RemoveSpaceWarning#1{%
1992 \HyPsd@Warning{%
1993 Token not allowed in a PDF string (%)
1994 \ifHy@unicode
1995 Unicode%
1996 \else
1997 PDFDocEncoding%
1998 \fi
1999 }:%
2000 \MessageBreak #1\MessageBreak
2001 removed%
2002 }%
2003 }

```

\HyPsd@ReplaceSpaceWarning

```

2004 \def\HyPsd@ReplaceSpaceWarning#1{%
2005 \HyPsd@Warning{%
2006 Token not allowed in a PDF string (%)
2007 \ifHy@unicode
2008 Unicode%

```

```

2009 \else
2010 PDFDocEncoding%
2011 \fi
2012 ):%
2013 \MessageBreak #1\MessageBreak
2014 replaced by space%
2015 }%
2016 }

```

### 6.6.5 Check for wrong glyphs

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

```

2017 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
2018 \expandafter\def\expandafter\HyPsd@String\expandafter{%
2019 \HyPsd@String#1%
2020 }%
2021 \ifx\\#2\\%
2022 \else
2023 \ltx@ReturnAfterFi{%
2024 \HyPsd@GlyphProcessWarning#2\@empty
2025 }%
2026 \fi
2027 }
2028 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
2029 \HyPsd@@@GlyphProcessWarning#1++>%
2030 \HyPsd@GlyphProcess#2\@empty
2031 }
2032 \def\HyPsd@@@GlyphProcessWarning#1+#2+#3>{%
2033 \ifx\\#2\\%
2034 \HyPsd@Warning{%
2035 Glyph not defined in %
2036 P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
2037 removing '@backslashchar#1'%
2038 }%
2039 \else
2040 \HyPsd@Warning{%
2041 Composite letter '@backslashchar#1+#2'\MessageBreak
2042 not defined in P\ifHy@unicode U\else D1\fi\space encoding,%
2043 \MessageBreak
2044 removing '@backslashchar#1'%
2045 }%
2046 \fi
2047 }

```

### 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`.

```

2048 \def\HyPsd@spaceopti#1{ % first space
2049 \ifx\HyPsd@spaceopti#1%
2050 \040%
2051 \else
2052 #1%

```

```

2053 \fi
2054 }%

```

### 6.6.6 Replacing tokens

`\HyPsd@Subst` To save tokens `\HyPsd@StringSubst` is a 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.

```

2055 \def\HyPsd@Subst#1#2#3{%
2056 \def\HyPsd@@ReplaceFi##1#1##2\END\fi{%
2057 \fi
2058 ##1%
2059 \ifx\scrollmode##2\scrollmode
2060 \else
2061 #2%
2062 \HyPsd@@ReplaceFi##2\END
2063 \fi
2064 }%
2065 \xdef#3{%
2066 \iftrue
2067 \expandafter\HyPsd@@ReplaceFi#3#1\END
2068 \fi
2069 }%
2070 }

```

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

```

2071 \def\HyPsd@StringSubst#1{%
2072 \expandafter\HyPsd@Subst\expandafter{\string#1}%
2073 }

```

`\HyPsd@EscapeTeX`

```

2074 \begingroup
2075 \lccode'\!='\%%
2076 \lccode'\|='\%%
2077 \lccode'\(='\{%
2078 \lccode'\)='\}%
2079 \lccode'0=\ltx@zero
2080 \lccode'1=\ltx@zero
2081 \lccode'3=\ltx@zero
2082 \lccode'4=\ltx@zero
2083 \lccode'5=\ltx@zero
2084 \lccode'7=\ltx@zero
2085 \lowercase{\endgroup
2086 \def\HyPsd@EscapeTeX#1{%
2087 \HyPsd@Subst!{|045}#1%
2088 \HyPsd@Subst({|173}#1%
2089 \HyPsd@Subst){|175}#1%
2090 }%
2091 }

```

### 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.

```

2092 \def\HyPsd@doxspace#1{%
2093   \ifx#1\relax\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                   \ifx#1-\else
2102                     \ifx#1'\else
2103                       \HyPsd@SPACEOPTI
2104                     \fi
2105                   \fi
2106                 \fi
2107               \fi
2108             \fi
2109           \fi
2110         \fi
2111       \fi
2112     \fi
2113   \fi
2114   #1%
2115 }%
```

### 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.

```

2116 \begingroup
2117   \catcode'\|=0 %
2118   \catcode'\|=12 %
```

`\HyPsd@ConvertToUnicode`

```

2119 |gdef|HyPsd@ConvertToUnicode#1{%
2120   |xdef#1{%
2121     |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
2122   }%
2123   |ifx#1|@empty
2124   |else
2125     |xdef#1{%
2126       \376\377%
2127       #1%
2128     }%
2129   |fi
2130 }%
```

`\HyPsd@DoConvert`

```

2131 |gdef|HyPsd@DoConvert#1{%
2132   |ifx#1|@empty
```

```

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

```

\HyPsd@DoEscape

```

2145 |gdef|HyPsd@DoEscape#1{%
2146 |ifx#19%
2147 |expandafter|HyPsd@GetTwoBytes
2148 |else
2149 |ltx@ReturnAfterFi{%
2150 |ifx#18%
2151 00%
2152 |expandafter|HyPsd@GetTwoBytes
2153 |else
2154 #1%
2155 |expandafter|HyPsd@GetOneByte
2156 |fi
2157 }%
2158 |fi
2159 }%

```

\HyPsd@GetTwoBytes

```

2160 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
2161 #1\#2#3#4%
2162 |HyPsd@DoConvert
2163 }%

```

\HyPsd@GetOneByte

```

2164 |gdef|HyPsd@GetOneByte#1#2{%
2165 #1#2%
2166 |HyPsd@DoConvert
2167 }%
2168 |endgroup

```

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

```

2169 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
2170 \xdef#4{#4#1#2}%
2171 \HyPsd@@ConvertToUnicode#3\END#4%
2172 }

```

\HyPsd@Char

```

2173 \begingroup
2174 \catcode0=9 %
2175 \catcode'\^=7 %
2176 \catcode'\^^=12 %
2177 \def\x{^^^^0000}%
2178 \expandafter\endgroup

```

```

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

```

2220 \begingroup\expandafter\expandafter\expandafter\endgroup
2221 \expandafter\ifx\csname numexpr\endcsname\relax

```

```

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

```

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.

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

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

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

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

$$(5)$$

```

2241 \def\HyPsd@UTFviii@two#1#2{%
2242 \expandafter\HyPsd@UTFviii@@two
2243 \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter| %
2244 \number'#1\expandafter| %
2245 \number\dimexpr.125\dimexpr'#2sp\expandafter\relax\expandafter| %
2246 \number'#2 \@nil
2247 }%
2248 \def\HyPsd@UTFviii@@two#1|#2|#3|#4\@nil{%
2249 \expandafter\8%
2250 \number\numexpr #1-48\expandafter\relax
2251 \csname\number\numexpr #2-4*#1\relax\expandafter\endcsname
2252 \number\numexpr #3-8*%
2253 \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
2254 \number\numexpr #4-8*#3\relax
2255 }%

```

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

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

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

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

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

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

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

$$(12)$$



```

2256 \def\HyPsd@UTFviii@three#1#2#3{%
2257 \expandafter\HyPsd@UTFviii@@three
2258 \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|
2259 \number'#1\expandafter|
2260 \number\ifnum\dimexpr'#2-128\relax <32 0\else 1\fi\expandafter|
2261 \number\dimexpr.25\dimexpr'#2sp\expandafter\relax\expandafter|
2262 \number'#2\expandafter|
2263 \number\dimexpr.125\dimexpr'#3sp\expandafter\relax\expandafter|
2264 \number'#3 \@nil
2265 }%
2266 \def\HyPsd@UTFviii@@three#1|#2|#3|#4|#5|#6|#7\@nil{%
2267 \expandafter\9%
2268 \number\dimexpr #1-56\expandafter\relax
2269 \number\dimexpr 2*(#2-4*#1)+#3\expandafter\relax
2270 \number\dimexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax
2271 \csname\number\dimexpr #5-4*#4\relax\expandafter\endcsname
2272 \number\dimexpr #6-16\expandafter\relax
2273 \number\dimexpr #7-8*#6\relax
2274 }%

```

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

```

```

2275 \def\HyPsd@UTFviii@four#1#2{%
2276 \expandafter\HyPsd@@UTFviii@four\number
2277 \dimexpr-1+('#1-240)*4+\dimexpr.0625\dimexpr'#2sp-128sp%
2278 \expandafter|\number
2279 \dimexpr'#2-16*\dimexpr.0625\dimexpr'#2sp|
2280 }%
2281 \def\HyPsd@@UTFviii@four#1|#2|#3{%
2282 \933\number\dimexpr.25\dimexpr#1sp\relax\relax
2283 \csname\number\dimexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
2284 \ifodd#2 %
2285 \number\dimexpr(#2-1)/2\relax
2286 \else
2287 \number\dimexpr#2/2\relax
2288 \fi
2289 \number\dimexpr\ifodd#2 4+\fi
2290 \dimexpr.0625\dimexpr'#3sp-128sp\relax\relax\relax
2291 \933%
2292 \expandafter\HyPsd@@@UTFviii@four\number
2293 \dimexpr'#3-16*\dimexpr.0625\dimexpr'#3sp|
2294 }%
2295 \def\HyPsd@@@UTFviii@four#1|#2{%
2296 \number\dimexpr4+\dimexpr.25\dimexpr#1sp\relax\relax\relax
2297 \csname\number\dimexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
2298 \number\dimexpr.125\dimexpr'#2sp-128sp\relax\relax
2299 \number\dimexpr'#2-8*\dimexpr.125\dimexpr'#2sp\relax\relax\relax
2300 }%

```

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

```

2301 \def\HyPsd@unichar#1{%
2302 \ifHy@unicode

```

```

2303 \ifnum#1>"10FFFF %
2304 \HyPsd@UnicodeReplacementCharacter % illegal
2305 \else
2306 \ifnum#1>"FFFF %

```

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

```

2307 \expandafter\HyPsd@unichar\expandafter{%
2308 \number\numexpr 55296+%
2309 \dimexpr.0009765625\dimexpr\number#1sp-\p@
2310 \relax\relax\relax
2311 }%

```

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

```

2312 \expandafter\HyPsd@unichar\expandafter{%
2313 \number\numexpr#1-9216%
2314 -1024*\dimexpr.0009765625\dimexpr\number#1sp-\p@
2315 \relax\relax\relax
2316 }%
2317 \else
2318 \ifnum#1>"7FF %
2319 \9%
2320 \expandafter\HyPsd@unichar@first@byte\expandafter{%
2321 \number
2322 \dimexpr.00390625\dimexpr\number#1sp\relax\relax
2323 }%
2324 \else
2325 \8%
2326 \number\dimexpr.00390625\dimexpr\number#1sp\relax\relax
2327 \fi
2328 \expandafter\HyPsd@unichar@second@byte\expandafter{%
2329 \number
2330 \numexpr#1-256*\number
2331 \dimexpr.00390625\dimexpr\number#1sp\relax\relax\relax
2332 }%
2333 \fi
2334 \fi
2335 \else
2336 .% unsupported (Unicode -> PDF Doc Encoding)
2337 \fi
2338 }%
2339 \def\HyPsd@UnicodeReplacementCharacter{\9377\375}%
2340 \def\HyPsd@unichar@first@byte#1{%
2341 \number\dimexpr.015625\dimexpr#1sp\relax\relax
2342 \expandafter\HyPsd@unichar@octtwo\expandafter{%
2343 \number
2344 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2345 \relax\relax\relax
2346 }%
2347 }%
2348 \def\HyPsd@unichar@second@byte#1{%
2349 \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
2350 \expandafter\HyPsd@unichar@octtwo\expandafter{%
2351 \number
2352 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2353 \relax\relax\relax
2354 }%
2355 }%
2356 \def\HyPsd@unichar@octtwo#1{%

```

```

2357 \number\dimexpr.125\dimexpr#1sp\relax\relax
2358 \number\numexpr#1-8*\number\dimexpr.125\dimexpr#1sp%
2359 \relax\relax\relax
2360 }%
2361 \fi

```

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

```

2362 \def\HyPsd@utf@viii@undeferr#1#2#3#4#5#6{%
2363 \ifx\@gobble#1%
2364 \else
2365 [Please insert \textbackslash PrerenderUnicode%
2366 \textbraceleft#1\textbraceright\space
2367 into preamble]%
2368 \fi
2369 }%

```

### 6.6.10 Support for die faces (ifsym et. al.)

`\HyPsd@DieFace` Die faces are provided by

Package	Macro
ifsym	<code>\Cube</code>
epsdice	<code>\epsdice</code>
hhcount	<code>\fcdice</code>

`\Cube` and `\epsdice` restrict the range to the numbers one to six. `\fcdice` generates for larger numbers several dice faces with the sum matching the number. The implementation for the PDF strings follows `\fcdice`.

```

2370 \def\HyPsd@DieFace#1{%
2371 \ifHy@unicode
2372 \ifnum#1<1 %
2373 \HyPsd@UnicodeReplacementCharacter
2374 \else
2375 \ifnum#1>6 %
2376 \9046\205%
2377 \expandafter\expandafter\expandafter
2378 \HyPsd@DieFaceLarge\intcalcSub{#1}{6}!%
2379 \else
2380 \9046\20\intcalcDec{#1}%
2381 \fi
2382 \fi
2383 \else
2384 .% Die faces are not part of PDFDocEncoding
2385 \fi
2386 }

```

`\HyPsd@DieFaceLarge`

```

2387 \def\HyPsd@DieFaceLarge#1!{%
2388 \ifnum#1>6 %
2389 \expandafter\ltx@firstoftwo
2390 \else
2391 \expandafter\ltx@secondoftwo
2392 \fi
2393 {%
2394 \9046\205%
2395 \expandafter\expandafter\expandafter

```

```

2396 \HyPsd@DieFaceLarge\IntCalcSub#1!6!!%
2397 }{%
2398 \9046\20\IntCalcDec#1!%
2399 }%
2400 }

```

### 6.6.11 Support for moon phases of package china2e

```

2401 \def\HyPsd@MoonPha#1{%
2402 \ifcase\intcalcNum{#1} %
2403 \HyPsd@UnicodeReplacementCharacter
2404 \or % 1
2405 % U+1F31A NEW MOON WITH FACE; \MoonPha{1} (china2e)
2406 \9330\074\9337\032%
2407 \or % 2
2408 \HyPsd@UnicodeReplacementCharacter
2409 \or % 3
2410 % U+1F31D FULL MOON WITH FACE; \MoonPha{3} (china2e)
2411 \9330\074\9337\035%
2412 \or % 4
2413 % U+1F31C LAST QUARTER MOON WITH FACE; \MoonPha{4} (china2e)
2414 \9330\074\9337\034%
2415 \else
2416 \HyPsd@UnicodeReplacementCharacter
2417 \fi
2418 }
2419 %* \HyPsd@MoonPha -> \MoonPha

```

### 6.6.12 Support for package pifont

\HyPsd@ding

```

2420 \def\HyPsd@ding#1{%
2421 \ifHy@unicode
2422 \ifnum#1<32 %
2423 \HyPsd@UnicodeReplacementCharacter
2424 \else
2425 \ifnum#1>254 %
2426 \HyPsd@UnicodeReplacementCharacter
2427 \else
2428 \ifnum#1<127 %
2429 \expandafter\expandafter\expandafter
2430 \HyPsd@@ding\intcalcNum{#1}!%
2431 \else
2432 \ifnum#1>160 %
2433 \expandafter\expandafter\expandafter
2434 \HyPsd@@ding\intcalcNum{#1}!%
2435 \else
2436 \HyPsd@UnicodeReplacementCharacter
2437 \fi
2438 \fi
2439 \fi
2440 \fi
2441 \else
2442 .% Dingbats are not part of PDFDocEncoding
2443 \fi
2444 }

```

\HyPsd@@ding

```

2445 \def\HyPsd@@ding#1!{%
2446   \ltx@ifundefined{HyPsd@ding@#1}{%
2447     \ifnum#1<127 %
2448       \9047%
2449       \HyPsd@DecimalToOctalSecond{\IntCalcSub#1!32!}%
2450     \else
2451       \ifnum#1<168 %
2452         \9047\14\IntCalcSub#1!160!%
2453       \else
2454         \ifnum#1>181 %
2455           \9047\HyPsd@DecimalToOctalSecond{\IntCalcSub#1!64!}%
2456         \else
2457           % 172..181 -> U+2460..U+2469
2458           \9044\HyPsd@DecimalToOctalSecond{\IntCalcSub#1!76!}%
2459         \fi
2460       \fi
2461     \fi
2462   }{%
2463     \csname HyPsd@ding@#1\endcsname
2464   }%
2465 }

2466 \@namedef{HyPsd@ding@32}{\space}
2467 % U+260E BLACK TELEPHONE
2468 \@namedef{HyPsd@ding@37}{\9046\016}% U+260E
2469 % U+261B BLACK RIGHT POINTING INDEX
2470 \@namedef{HyPsd@ding@42}{\9046\033}% U+261B
2471 % U+261E WHITE RIGHT POINTING INDEX
2472 \@namedef{HyPsd@ding@43}{\9046\036}% U+261E
2473 % U+2605 BLACK STAR
2474 \@namedef{HyPsd@ding@72}{\9046\005}% U+2605
2475 % U+25CF BLACK CIRCLE
2476 \@namedef{HyPsd@ding@108}{\9045\317}% U+25CF
2477 % U+25A0 BLACK SQUARE
2478 \@namedef{HyPsd@ding@110}{\9045\240}% U+25A0
2479 % U+25B2 BLACK UP-POINTING TRIANGLE
2480 \@namedef{HyPsd@ding@115}{\9045\262}% U+25B2
2481 % U+25BC BLACK DOWN-POINTING TRIANGLE
2482 \@namedef{HyPsd@ding@116}{\9045\274}% U+25BC
2483 % U+25C6 BLACK DIAMOND
2484 \@namedef{HyPsd@ding@117}{\9045\306}% U+25C6
2485 % U+25D7 RIGHT HALF BLACK CIRCLE
2486 \@namedef{HyPsd@ding@119}{\9045\327}% U+25D7
2487 \@namedef{HyPsd@ding@168}{\textclubsuitblack}%
2488 \@namedef{HyPsd@ding@169}{\textdiamondsuitblack}%
2489 \@namedef{HyPsd@ding@170}{\textheartsuitblack}%
2490 \@namedef{HyPsd@ding@171}{\textspadesuitblack}%
2491 \@namedef{HyPsd@ding@213}{\textrightarrow}%
2492 \@namedef{HyPsd@ding@214}{\textleftarrow}%
2493 \@namedef{HyPsd@ding@215}{\textupdownarrow}%
2494 \@namedef{HyPsd@ding@240}{\HyPsd@UnicodeReplacementCharacter}

```

## 7 Support of other packages

### 7.1 Class memoir

```

2495 \@ifclassloaded{memoir}{%

```

```

2496 \Hy@AtEndOfPackage{\RequirePackage{memhfixc}}}%
2497 }{}

```

## 7.2 Package subfigure

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

```

2498 \ifpackageloaded{subfigure}{%
2499 \ltx@ifundefined{sub@label}{%
2500 \Hy@hypertexnamesfalse
2501 }{%
2502 \renewcommand*{\sub@label}[1]{%
2503 \@bsphack
2504 \subfig@oldlabel{#1}%
2505 \if@filesw
2506 \begingroup
2507 \edef\@currentlabstr{%
2508 \expandafter\strip@prefix\meaning\@currentlabelname
2509 }%
2510 \protected@write\@auxout{}{%
2511 \string\newlabel{sub@#1}{%
2512 {\@nameuse{@@thesub}\@capytype}}%
2513 {\thepage}%
2514 {%
2515 \expandafter\strip@period\@currentlabstr
2516 \relax.\relax\@@@%
2517 }%
2518 {\@currentHref}%
2519 }%
2520 }%
2521 }%
2522 \endgroup
2523 \fi
2524 \@esphack
2525 }%
2526 \@ifpackagelater{subfigure}{2002/03/26}{%
2527 \providecommand*\toclevel@subfigure{1}%
2528 \providecommand*\toclevel@subtable{1}%
2529 }%
2530 }%
2531 }{}

```

## 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:

```

2532 \ltx@ifundefined{XR@addURL}{%
2533 }{}

```

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.

```

2534 \def\xr@addURL#1{\xr@@dURL#1{}{}{}{}\\}%
2535 \def\xr@@dURL#1#2#3#4#5\\{%
2536 {#1}{#2}%
2537 \if!#4!%
2538 \else
2539 {#3}{#4}{\xr@URL}%
2540 \fi
2541 }%

```

```

2542 }
2543 \def\Hy@true{true}
2544 \def\Hy@false{false}

    Providing dummy definitions.
2545 \let\literalps@out\@gobble
2546 \newcommand\pdfbookmark[3][]{ }
2547 \def\Acrobatmenu#1#2{\leavevmode#2}
2548 \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

```

2549 \let\HyperRaiseLinkHook\@empty
2550 \def\HyperRaiseLinkDefault{\baselineskip}

```

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

```

2551 \newcount\Hy@SavedSpaceFactor
2552 \def\Hy@SaveSpaceFactor{%
2553   \global\Hy@SavedSpaceFactor=\ifhmode\spacefactor\else\z@\fi
2554 }
2555 \def\Hy@RestoreSpaceFactor{%
2556   \relax
2557   \ifhmode
2558     \ifnum\Hy@SavedSpaceFactor>\z@
2559       \spacefactor=\Hy@SavedSpaceFactor
2560     \fi
2561   \fi
2562 }
2563 \def\Hy@SaveSavedSpaceFactor{%
2564   \edef\Hy@RestoreSavedSpaceFactor{%
2565     \global\Hy@SavedSpaceFactor=\the\Hy@SavedSpaceFactor\relax
2566   }%
2567 }
2568 \def\Hy@raisedlink#1{%
2569   \ifvmode
2570     #1%
2571   \else
2572     \Hy@SaveSpaceFactor
2573     \penalty\@M
2574     \smash{%
2575       \begingroup
2576         \let\HyperRaiseLinkLength\@tempdima
2577         \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
2578         \HyperRaiseLinkHook

```

```

2579 \expandafter\endgroup
2580 \expandafter\raise\the\HyperRaiseLinkLength\hbox{%
2581 \Hy@RestoreSpaceFactor
2582 #1%
2583 \Hy@SaveSpaceFactor
2584 }%
2585 }%
2586 \Hy@RestoreSpaceFactor
2587 \fi
2588 }

```

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

```

2589 \def\Hy@SaveLastskip{%
2590 \let\Hy@RestoreLastskip\relax
2591 \ifvmode
2592 \ifdim\lastskip=\z@
2593 \let\Hy@RestoreLastskip\nobreak
2594 \else
2595 \begingroup
2596 \skip@=-\lastskip
2597 \edef\x{%
2598 \endgroup
2599 \def\noexpand\Hy@RestoreLastskip{%
2600 \noexpand\ifvmode
2601 \noexpand\nobreak
2602 \vskip\the\skip@
2603 \vskip\the\lastskip\relax
2604 \noexpand\fi
2605 }%
2606 }%
2607 \x
2608 \fi
2609 \else
2610 \ifhmode
2611 \ifdim\lastskip=\z@
2612 \let\Hy@RestoreLastskip\nobreak
2613 \else
2614 \begingroup
2615 \skip@=-\lastskip
2616 \edef\x{%
2617 \endgroup
2618 \def\noexpand\Hy@RestoreLastskip{%
2619 \noexpand\ifhmode
2620 \noexpand\nobreak
2621 \hskip\the\skip@
2622 \hskip\the\lastskip\relax
2623 \noexpand\fi
2624 }%
2625 }%
2626 \x
2627 \fi
2628 \fi
2629 \fi
2630 }%

```



## 9 Options

```
2631 \SetupKeyvalOptions{%
2632   family=Hyp,%
2633   prefix=HyOpt%
2634 }
```

### 9.1 Help macros

\IfHyperBooleanExists

```
2635 \def\IfHyperBooleanExists#1{%
2636   \ltx@ifundefined{Hy@#1false}\ltx@secondoftwo{%
2637     \ltx@ifundefined{KV@Hyp@#1@default}\ltx@secondoftwo\ltx@firstoftwo
2638   }%
2639 }

2640 \@namedef{KV@Hyp@stoppeearly@default}{{}}
```

\IfHyperBoolean

```
2641 \def\IfHyperBoolean#1{%
2642   \IfHyperBooleanExists{#1}{%
2643     \csname ifHy@#1\endcsname
2644     \expandafter\ltx@firstoftwo
2645   \else
2646     \expandafter\ltx@secondoftwo
2647   \fi
2648 } \ltx@secondoftwo
2649 }
```

\Hy@boolkey

```
2650 \def\Hy@boolkey#1#2{%
2651   \edef\Hy@tempa{#2}%
2652   \lowercase\expandafter{%
2653     \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
2654   }%
2655   \ifx\Hy@tempa\@empty
2656     \let\Hy@tempa\Hy@true
2657   \fi
2658   \ifx\Hy@tempa\Hy@true
2659   \else
2660     \ifx\Hy@tempa\Hy@false
2661     \else
2662       \let\Hy@tempa\relax
2663     \fi
2664   \fi
2665   \ifx\Hy@tempa\relax
2666     \Hy@WarnOptionValue{#2}{#1}{‘true’ or ‘false’}%
2667   \else
2668     \Hy@Info{Option ‘#1’ set ‘\Hy@tempa’}%
2669     \csname Hy@#1\Hy@tempa\endcsname
2670   \fi
2671 }
```

\Hy@WarnOptionValue

```
2672 \def\Hy@WarnOptionValue#1#2#3{%
2673   \Hy@Warning{%
2674     Unexpected value ‘#1’\MessageBreak
2675     of option ‘#2’ instead of\MessageBreak
```

```

2676   #3%
2677 }%
2678 }

```

`\Hy@DisableOption`

```

2679 \def\Hy@DisableOption#1{%
2680   \ltx@ifundefined{KV@Hyp@#1@default}{%
2681     \define@key{Hyp}{#1}%
2682   }{%
2683     \define@key{Hyp}{#1}[]%
2684   }%
2685   {\Hy@WarnOptionDisabled{#1}}%
2686 }

```

`\Hy@WarnOptionDisabled`

```

2687 \def\Hy@WarnOptionDisabled#1{%
2688   \Hy@Warning{%
2689     Option ‘#1’ has already been used,\MessageBreak
2690     setting the option has no effect%
2691   }%
2692 }

```

`\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`.

```

2693 \def\Hy@CheckOptionValue#1#2#3{%
2694   \begingroup
2695   \edef\x{#1}%
2696   \@onelevel@sanitize\x
2697   \let\y=y%
2698   \def\do##1##2{%
2699     \def\z{##1}%
2700     \@onelevel@sanitize\z
2701     \ifx\x\z
2702       \let\y=n%
2703       \let\do\@gobbletwo
2704     \fi
2705   }%
2706   #3%
2707   \ifx\y y%
2708     \def\do##1##2{%
2709       * ‘##1’%
2710       \ifx\##2\\\else\space(##2)\fi
2711       \MessageBreak
2712     }%
2713     \Hy@Warning{%
2714       Values of option ‘#2’:\MessageBreak
2715       #3%
2716       * An empty value disables the option.\MessageBreak
2717       Unknown value ‘\x’%
2718     }%
2719   \fi
2720   \endgroup
2721 }

```

`\Hy@DefNameKey` `#1`: option name

`#2`: `\do` list with known values, first argument of `\do` is value, second argument is a comment.

```

2722 \def\Hy@DefNameKey#1{%
2723   \expandafter\Hy@@DefNameKey\csname @#1\endcsname{#1}%
2724 }

```

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

```

2725 \def\Hy@@DefNameKey#1#2#3{%
2726   \define@key{Hyp}{#2}{%
2727     \edef#1{##1}%
2728     \ifx#1\@empty
2729       \else
2730         \Hy@CheckOptionValue{##1}{#2}{#3}%
2731       \fi
2732   }%
2733   \let#1\@empty
2734 }

```

\Hy@UseNameKey

```

2735 \def\Hy@UseNameKey#1#2{%
2736   \ifx#2\@empty
2737   \else
2738     /#1/#2%
2739   \fi
2740 }

```

## 9.2 Defining the options

```

2741 \define@key{Hyp}{implicit}[true]{%
2742   \Hy@boolkey{implicit}{#1}%
2743 }
2744 \define@key{Hyp}{draft}[true]{%
2745   \Hy@boolkey{draft}{#1}%
2746 }
2747 \define@key{Hyp}{final}[true]{%
2748   \Hy@boolkey{final}{#1}%
2749 }
2750 \let\KV@Hyp@nolinks\KV@Hyp@draft
2751 \def\Hy@ObsoletePaperOption#1{%
2752   \Hy@WarningNoLine{%
2753     Option ‘#1’ is no longer used%
2754   }%
2755   \define@key{Hyp}{#1}[true]{}%
2756 }
2757 \def\Hy@temp#1{%
2758   \define@key{Hyp}{#1}[true]{%
2759     \Hy@ObsoletePaperOption{#1}%
2760   }%
2761 }
2762 \Hy@temp{a4paper}
2763 \Hy@temp{a5paper}
2764 \Hy@temp{b5paper}
2765 \Hy@temp{letterpaper}
2766 \Hy@temp{legalpaper}
2767 \Hy@temp{executivepaper}
2768 \define@key{Hyp}{setpagesize}[true]{%

```

```

2769 \Hy@boolkey{setpagesize}{#1}%
2770 }
2771 \define@key{Hyp}{debug}[true]{%
2772 \Hy@boolkey{debug}{#1}%
2773 }
2774 \define@key{Hyp}{linktocpage}[true]{%
2775 \Hy@boolkey{linktocpage}{#1}%
2776 \ifHy@linktocpage
2777 \let\Hy@linktoc\Hy@linktoc@page
2778 \else
2779 \let\Hy@linktoc\Hy@linktoc@section
2780 \fi
2781 }
2782 \chardef\Hy@linktoc@none=0 %
2783 \chardef\Hy@linktoc@section=1 %
2784 \chardef\Hy@linktoc@page=2 %
2785 \chardef\Hy@linktoc@all=3 %
2786 \ifHy@linktocpage
2787 \let\Hy@linktoc\Hy@linktoc@page
2788 \else
2789 \let\Hy@linktoc\Hy@linktoc@section
2790 \fi
2791 \define@key{Hyp}{linktoc}{%
2792 \ifundefined{Hy@linktoc@#1}{%
2793 \Hy@Warning{%
2794 Unexpected value '#1' of\MessageBreak
2795 option 'linktoc' instead of 'none',\MessageBreak
2796 'section', 'page' or 'all'%
2797 }%
2798 }{%
2799 \expandafter\let\expandafter\Hy@linktoc
2800 \csname Hy@linktoc@#1\endcsname
2801 }%
2802 }
2803 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
2804 \let\XR@ext\relax
2805 \define@key{Hyp}{verbose}[true]{%
2806 \Hy@boolkey{verbose}{#1}%
2807 }
2808 \define@key{Hyp}{typexml}[true]{%
2809 \Hy@boolkey{typexml}{#1}%
2810 }

```

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.

```

2811 \define@key{Hyp}{raiselinks}[true]{%
2812 \Hy@boolkey{raiselinks}{#1}%
2813 }

```

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

```

2814 \def\Hy@setbreaklinks#1{%
2815 \csname breaklinks#1\endcsname
2816 }
2817 \def\Hy@breaklinks@unsupported{%
2818 \ifx\Hy@setbreaklinks\@gobble
2819 \ifHy@breaklinks

```

```

2820 \Hy@WarningNoLine{%
2821   You have enabled option 'breaklinks'.\MessageBreak
2822   But driver '\Hy@driver.def' does not support this.\MessageBreak
2823   Expect trouble with the link areas of broken links%
2824 }%
2825 \fi
2826 \fi
2827 }

2828 \define@key{Hyp}{breaklinks}[true]{%
2829 \Hy@boolkey{breaklinks}{#1}%
2830 \let\Hy@setbreaklinks\@gobble
2831 }

2832 \define@key{Hyp}{localanchorname}[true]{%
2833 \Hy@boolkey{localanchorname}{#1}%
2834 }

Determines whether an automatic anchor is put on each page
2835 \define@key{Hyp}{pageanchor}[true]{%
2836 \Hy@boolkey{pageanchor}{#1}%
2837 }

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.
2838 \define@key{Hyp}{plainpages}[true]{%
2839 \Hy@boolkey{plainpages}{#1}%
2840 }

Are the names for anchors made as per the HyperTeX system, or do they simply
use what LATEX provides?
2841 \define@key{Hyp}{naturalnames}[true]{%
2842 \Hy@boolkey{naturalnames}{#1}%
2843 }

Completely ignore the names as per the HyperTeX system, and use unique coun-
ters.
2844 \define@key{Hyp}{hypertexnames}[true]{%
2845 \Hy@boolkey{hypertexnames}{#1}%
2846 }

Currently, dvips doesn't allow anchors nested within targets, so this option tries
to stop that happening. Other processors may be able to cope.
2847 \define@key{Hyp}{nesting}[true]{%
2848 \Hy@boolkey{nesting}{#1}%
2849 }

2850 \define@key{Hyp}{unicode}[true]{%
2851 \Hy@boolkey{unicode}{#1}%
2852 \ifHy@unicode
2853 \def\HyPsd@pdfencoding{unicode}%
2854 \HyPsd@LoadUnicode
2855 \else
2856 \def\HyPsd@pdfencoding{pdfdoc}%
2857 \fi
2858 }

2859 \Hy@AtBeginDocument{%
2860 \ifx\HyPsd@LoadUnicode\relax
2861 \else
2862 \def\HyPsd@LoadUnicode{%
2863 \Hy@Error{%
2864   Unicode support for bookmarks is not available.\MessageBreak

```

```

2865     Activate unicode support by using one of the options\MessageBreak
2866     'unicode', 'pdfencoding=unicode', 'pdfencoding=auto'\MessageBreak
2867     in the preamble%
2868 } \@ehc
2869 \global\let\HyPsd@LoadUnicode\relax
2870 \global\Hy@unicodedefalse
2871 \global\let\Hy@unicodetrue\Hy@unicodedefalse
2872 }%
2873 \fi
2874 }

2875 \define@key{Hyp}{pdfencoding}{%
2876   \edef\HyPsd@temp{#1}%
2877   \ifx\HyPsd@temp\HyPsd@pdfencoding@pdfdoc
2878     \let\HyPsd@pdfencoding\HyPsd@temp
2879     \Hy@unicodedefalse
2880   \else
2881     \ifcase\ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
2882       \z@
2883     \else
2884       \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
2885         \z@
2886       \else
2887         \@ne
2888       \fi
2889     \fi
2890     \let\HyPsd@pdfencoding\HyPsd@temp
2891     \hypersetup{unicode}%
2892   \ifHy@unicode
2893     \def\HyPsd@pdfencoding{#1}%
2894     \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
2895       \HyPsd@LoadStringEncoding
2896     \fi
2897   \else
2898     \Hy@Warning{Cannot switch to unicode bookmarks}%
2899     \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
2900   \fi
2901 \else
2902   \@onelevel@sanitize\HyPsd@temp
2903   \Hy@Warning{%
2904     Values of option 'pdfencoding':\MessageBreak
2905     'pdfdoc', 'unicode', 'auto'.\MessageBreak
2906     Ignoring unknown value '\HyPsd@temp'%
2907   }%
2908 \fi
2909 \fi
2910 }

2911 \def\HyPsd@pdfencoding@auto{auto}
2912 \def\HyPsd@pdfencoding@pdfdoc{pdfdoc}
2913 \def\HyPsd@pdfencoding@unicode{unicode}
2914 \let\HyPsd@pdfencoding\Hy@pdfencoding@pdfdoc
2915 \def\HyPsd@LoadStringEncoding{%
2916   \RequirePackage{stringenc}[2009/12/15]%
2917   \let\HyPsd@LoadStringEncoding\relax
2918 }

2919 \Hy@AtBeginDocument{%
2920   \@ifpackageloaded{stringenc}{%
2921     \let\HyPsd@LoadStringEncoding\relax

```

```

2922 }{%
2923   \def\HyPsd@LoadStringEnc{%
2924     \Hy@WarningNoLine{%
2925       Missing package 'stringenc'. Use 'pdfencoding=auto'\MessageBreak
2926       in the preamble or load the package there%
2927     }%
2928   }%
2929 }%
2930 }

2931 \define@key{Hyp}{psdextra}[true]{%
2932   \Hy@boolkey{psdextra}{#1}%
2933 }

2934 \def\hypersetup{\kvsetkeys{Hyp}}

2935 \newif\ifHy@setpdfversion
2936 \define@key{Hyp}{pdfversion}{%
2937   \ifundefined{Hy@pdfversion@#1}{%
2938     \PackageWarning{hyperref}{%
2939       Unsupported PDF version '#1'.\MessageBreak
2940       Valid values: 1.2 until 1.9%
2941     }%
2942   }{%
2943     \Hy@setpdfversiontrue
2944     \edef\Hy@pdfversion{\@nameuse{Hy@pdfversion@#1}}%
2945   }%
2946 }

2947 \@namedef{Hy@pdfversion@1.2}{2}%
2948 \@namedef{Hy@pdfversion@1.3}{3}%
2949 \@namedef{Hy@pdfversion@1.4}{4}%
2950 \@namedef{Hy@pdfversion@1.5}{5}%
2951 \@namedef{Hy@pdfversion@1.6}{6}%
2952 \@namedef{Hy@pdfversion@1.7}{7}%
2953 \@namedef{Hy@pdfversion@1.8}{8}%
2954 \@namedef{Hy@pdfversion@1.9}{9}%
2955 \def\Hy@pdfversion{2}

```

## 10 Options for different drivers

```

2956 \newif\ifHy@DviMode
2957 \let\Hy@DviErrMsg\ltx@empty
2958 \ifpdf
2959   \def\Hy@DviErrMsg{pdfTeX or LuaTeX is running in PDF mode}%
2960 \else
2961   \ifxetex
2962     \def\Hy@DviErrMsg{XeTeX is running}%
2963   \else
2964     \ifvtex
2965       \ifvtexdvi
2966         \Hy@DviModetrue
2967       \else
2968         \def\Hy@DviErrMsg{VTeX is running, but not in DVI mode}%
2969       \fi
2970     \else
2971       \Hy@DviModetrue
2972     \fi
2973   \fi
2974 \fi

```

```

2975 \def\HyOpt@CheckDvi#1{%
2976   \ifHy@DviMode
2977     \expandafter\ltx@firstofone
2978   \else
2979     \Hy@Error{%
2980       Wrong DVI mode driver option '#1',\MessageBreak
2981       because \Hy@DviErrMsg
2982     }\@ehc
2983   \expandafter\ltx@gobble
2984   \fi
2985 }

2986 \DeclareVoidOption{tex4ht}{%
2987   \Hy@texhttrue
2988   \kvsetkeys{Hyp}{colorlinks=true}%
2989   \def\BeforeTeXIVht{\RequirePackage{color}}}%
2990   \def\Hy@driver{htex4ht}%
2991   \def\MaybeStopEarly{%
2992     \Hy@Message{Stopped early}%
2993   \Hy@AtBeginDocument{%
2994     \PDF@FinishDoc
2995     \gdef\PDF@FinishDoc{}}%
2996   }%
2997   \endinput
2998   }%
2999 }

3000 \DeclareVoidOption{pdftex}{%
3001   \ifpdf
3002     \def\Hy@driver{hpdftex}%
3003   \else
3004     \Hy@Error{%
3005       Wrong driver option 'pdftex',\MessageBreak
3006       because pdfTeX in PDF mode is not detected%
3007     }\@ehc
3008   \fi
3009 }

3010 \DeclareVoidOption{nativepdf}{%
3011   \HyOpt@CheckDvi{nativepdf}{%
3012     \def\Hy@driver{hdvips}%
3013   }%
3014 }

3015 \DeclareVoidOption{dvipdfm}{%
3016   \HyOpt@CheckDvi{dvipdfm}{%
3017     \def\Hy@driver{hdvipdfm}%
3018   }%
3019 }

3020 \DeclareVoidOption{dvipdfmx}{%
3021   \HyOpt@CheckDvi{dvipdfmx}{%
3022     \def\Hy@driver{hdvipdfm}%
3023   }%
3024 }

3025 \define@key{Hyp}{dvipdfmx-outline-open}[true]{%
3026   \expandafter\ifx\csname if#1\expandafter\endcsname
3027     \csname iftrue\endcsname
3028   \chardef\SpecialDvipdfmxOutlineOpen\@ne
3029   \else
3030     \chardef\SpecialDvipdfmxOutlineOpen\z@
3031   \fi

```



```

3032 }
3033 \DeclareVoidOption{xetex}{%
3034   \ifxetex
3035     \def\Hy@driver{hxtex}%
3036   \else
3037     \Hy@Error{%
3038       Wrong driver option 'xetex',\MessageBreak
3039       because XeTeX is not detected%
3040     }\@ehc
3041   \fi
3042 }
3043 \DeclareVoidOption{pdfmark}{%
3044   \HyOpt@CheckDvi{pdfmark}{%
3045     \def\Hy@driver{hdvips}%
3046   }%
3047 }
3048 \DeclareVoidOption{dvips}{%
3049   \HyOpt@CheckDvi{dvips}{%
3050     \def\Hy@driver{hdvips}%
3051   }%
3052 }
3053 \DeclareVoidOption{hypertex}{%
3054   \HyOpt@CheckDvi{hypertex}{%
3055     \def\Hy@driver{hypertex}%
3056   }%
3057 }
3058 \let\Hy@MaybeStopNow\relax
3059 \DeclareVoidOption{vtex}{%
3060   \ifvtex
3061     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
3062     \def\Hy@driver{hvtex}%
3063   \else
3064     \ifnum\OpMode=10\relax
3065       \def\Hy@driver{hvtexhtm}%
3066       \def\MaybeStopEarly{%
3067         \Hy@Message{Stopped early}%
3068         \Hy@AtBeginDocument{%
3069           \PDF@FinishDoc
3070           \gdef\PDF@FinishDoc{}%
3071         }%
3072       \endinput
3073     }%
3074   \else
3075     \Hy@Error{%
3076       Wrong driver option 'vtex',\MessageBreak
3077       because of wrong OpMode (\the\OpMode)%
3078     }\@ehc
3079   \fi
3080 }
3081 \else
3082   \Hy@Error{%
3083     Wrong driver option 'vtex',\MessageBreak
3084     because VTeX is not running%
3085   }\@ehc
3086 }
3087 }
3088 \DeclareVoidOption{vtexpdfmark}{%

```

```

3089 \ifvtex
3090   \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
3091   \def\Hy@driver{hvtexmrk}%
3092   \else
3093   \Hy@Error{%
3094     Wrong driver option 'vtexpdfmark',\MessageBreak
3095     because of wrong OpMode (\the\OpMode)%
3096   }\@ehc
3097   \fi
3098 \else
3099 \Hy@Error{%
3100   Wrong driver option 'vtexpdfmark',\MessageBreak
3101   because VTeX is not running%
3102 }\@ehc
3103 \fi
3104 }
3105 \DeclareVoidOption{dviwindo}{}%
3106 \HyOpt@CheckDvi{dviwindo}{}%
3107 \def\Hy@driver{hdviwind}%
3108 \kvsetkeys{Hyp}{colorlinks}%
3109 \PassOptionsToPackage{dviwindo}{color}%
3110 }%
3111 }
3112 \DeclareVoidOption{dvipsone}{}%
3113 \HyOpt@CheckDvi{dvipsone}{}%
3114 \def\Hy@driver{hdvipson}%
3115 }%
3116 }
3117 \DeclareVoidOption{textures}{}%
3118 \HyOpt@CheckDvi{textures}{}%
3119 \def\Hy@driver{htexture}%
3120 }%
3121 }
3122 \DeclareVoidOption{latex2html}{}%
3123 \HyOpt@CheckDvi{latex2html}{}%
3124 \Hy@AtBeginDocument{\@@@latextohtmlX}%
3125 }%
3126 }

```

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

```

3127 \DeclareVoidOption{ps2pdf}{}%
3128 \HyOpt@CheckDvi{ps2pdf}{}%
3129 \def\Hy@driver{hdvips}%
3130 }%
3131 }
3132 \let\HyOpt@DriverFallback\ltx@empty
3133 \define@key{Hyp}{driverfallback}{}%
3134 \ifHy@DviMode
3135   \def\HyOpt@DriverFallback{#1}%
3136   \Hy@Match\HyOpt@DriverFallback{%
3137     ~(|dvipdfm|dvipdfmx|dvips|dvipsone|dviwindo|hypertex|ps2pdf|
3138     latex2html|tex4ht)$%
3139   }{}{%
3140     \let\HyOpt@DriverFallback\ltx@empty
3141   }%
3142 \fi
3143 }

```

## 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.

```
3144 \define@key{Hyp}{hyperfigures}[true]{%
3145   \Hy@boolkey{hyperfigures}{#1}%
3146 }
```

The automatic footnote linking can be disabled by option hyperfootnotes.

```
3147 \define@key{Hyp}{hyperfootnotes}[true]{%
3148   \Hy@boolkey{hyperfootnotes}{#1}%
3149 }
```

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

```
3150 \def\back@none{none}
3151 \def\back@section{section}
3152 \def\back@page{page}
3153 \def\back@slide{slide}
3154 \define@key{Hyp}{backref}[section]{%
3155   \lowercase{\def\Hy@tempa{#1}}%
3156   \ifx\Hy@tempa\@empty
3157     \let\Hy@tempa\back@section
3158   \fi
3159   \ifx\Hy@tempa\Hy@false
3160     \let\Hy@tempa\back@none
3161   \fi
3162   \ifx\Hy@tempa\back@slide
3163     \let\Hy@tempa\back@section
3164   \fi
3165   \ifx\Hy@tempa\back@page
3166     \PassOptionsToPackage{hyperpageref}{backref}%
3167     \Hy@backreftrue
3168   \else
3169     \ifx\Hy@tempa\back@section
3170       \PassOptionsToPackage{hyperref}{backref}%
3171       \Hy@backreftrue
3172     \else
3173       \ifx\Hy@tempa\back@none
3174         \Hy@backreffalse
3175       \else
3176         \Hy@WarnOptionValue{#1}{backref}{%
3177           'section', 'slide', 'page', 'none', \MessageBreak
3178           or 'false'}%
3179       \fi
3180     \fi
3181   \fi
3182 }
3183 \define@key{Hyp}{pagebackref}[true]{%
3184   \edef\Hy@tempa{#1}%
3185   \lowercase\expandafter{%
3186     \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
3187   }%
3188   \ifx\Hy@tempa\@empty
3189     \let\Hy@tempa\Hy@true
3190   \fi
3191   \ifx\Hy@tempa\Hy@true
3192     \PassOptionsToPackage{hyperpageref}{backref}%
3193     \Hy@backreftrue
```

```

3194 \else
3195   \ifx\Hy@tempa\Hy@false
3196     \Hy@backreffalse
3197   \else
3198     \Hy@WarnOptionValue{#1}{pagebackref}{‘true’ or ‘false’}%
3199   \fi
3200 \fi
3201 }

```

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

```

3202 \define@key{Hyp}{hyperindex}[true]{%
3203   \Hy@boolkey{hyperindex}{#1}%
3204 }

```

Configuration of encap char.

```

3205 \define@key{Hyp}{encap}[|]{%
3206   \def\HyInd@EncapChar{#1}%
3207 }

```

## 12 Language options

The `\autoref` feature depends on the language.

```

3208 \def\HyLang@afrikaans{%
3209   \def\equationautorefname{Vergelyking}%
3210   \def\footnoteautorefname{Voetnota}%
3211   \def\itemautorefname{Item}%
3212   \def\figureautorefname{Figuur}%
3213   \def\tableautorefname{Tabel}%
3214   \def\partautorefname{Deel}%
3215   \def\appendixautorefname{Bylae}%
3216   \def\chapterautorefname{Hoofstuk}%
3217   \def\sectionautorefname{Afdeling}%
3218   \def\subsectionautorefname{Subafdeling}%
3219   \def\subsubsectionautorefname{Subsubafdeling}%
3220   \def\paragraphautorefname{Paragraaf}%
3221   \def\subparagraphautorefname{Subparagraaf}%
3222   \def\FancyVerbLineautorefname{Lyn}%
3223   \def\theoremautorefname{Teorema}%
3224   \def\pageautorefname{Bladsy}%
3225 }
3226 \def\HyLang@english{%
3227   \def\equationautorefname{Equation}%
3228   \def\footnoteautorefname{footnote}%
3229   \def\itemautorefname{item}%
3230   \def\figureautorefname{Figure}%
3231   \def\tableautorefname{Table}%
3232   \def\partautorefname{Part}%
3233   \def\appendixautorefname{Appendix}%
3234   \def\chapterautorefname{chapter}%
3235   \def\sectionautorefname{section}%
3236   \def\subsectionautorefname{subsection}%
3237   \def\subsubsectionautorefname{subsubsection}%
3238   \def\paragraphautorefname{paragraph}%
3239   \def\subparagraphautorefname{subparagraph}%
3240   \def\FancyVerbLineautorefname{line}%
3241   \def\theoremautorefname{Theorem}%

```

```

3242 \def\pageautorefname{page}%
3243 }
3244 \def\HyLang@french{%
3245 \def\equationautorefname{'Equation}%
3246 \def\footnoteautorefname{note}%
3247 \def\itemautorefname{item}%
3248 \def\figureautorefname{Figure}%
3249 \def\tableautorefname{Tableau}%
3250 \def\partautorefname{Partie}%
3251 \def\appendixautorefname{Appendice}%
3252 \def\chapterautorefname{chapitre}%
3253 \def\sectionautorefname{section}%
3254 \def\subsectionautorefname{sous-section}%
3255 \def\subsubsectionautorefname{sous-sous-section}%
3256 \def\paragraphautorefname{paragraphe}%
3257 \def\subparagraphautorefname{sous-paragraphe}%
3258 \def\FancyVerbLineautorefname{ligne}%
3259 \def\theoremautorefname{Th\'eor\`eme}%
3260 \def\pageautorefname{page}%
3261 }
3262 \def\HyLang@german{%
3263 \def\equationautorefname{Gleichung}%
3264 \def\footnoteautorefname{Fu\ss note}%
3265 \def\itemautorefname{Punkt}%
3266 \def\figureautorefname{Abbildung}%
3267 \def\tableautorefname{Tabelle}%
3268 \def\partautorefname{Teil}%
3269 \def\appendixautorefname{Anhang}%
3270 \def\chapterautorefname{Kapitel}%
3271 \def\sectionautorefname{Abschnitt}%
3272 \def\subsectionautorefname{Unterabschnitt}%
3273 \def\subsubsectionautorefname{Unterunterabschnitt}%
3274 \def\paragraphautorefname{Absatz}%
3275 \def\subparagraphautorefname{Unterabsatz}%
3276 \def\FancyVerbLineautorefname{Zeile}%
3277 \def\theoremautorefname{Theorem}%
3278 \def\pageautorefname{Seite}%
3279 }
3280 \def\HyLang@italian{%
3281 \def\equationautorefname{Equazione}%
3282 \def\footnoteautorefname{nota}%
3283 \def\itemautorefname{punto}%
3284 \def\figureautorefname{Figura}%
3285 \def\tableautorefname{Tabella}%
3286 \def\partautorefname{Parte}%
3287 \def\appendixautorefname{Appendice}%
3288 \def\chapterautorefname{Capitolo}%
3289 \def\sectionautorefname{sezione}%
3290 \def\subsectionautorefname{sottosezione}%
3291 \def\subsubsectionautorefname{sottosottosezione}%
3292 \def\paragraphautorefname{paragrafo}%
3293 \def\subparagraphautorefname{sottoparagrafo}%
3294 \def\FancyVerbLineautorefname{linea}%
3295 \def\theoremautorefname{Teorema}%
3296 \def\pageautorefname{Pag.\@}%
3297 }
3298 \def\HyLang@magyar{%

```

```

3299 \def\equationautorefname{Egyenlet}%
3300 \def\footnoteautorefname{l\'abjegyzet}%
3301 \def\itemautorefname{Elem}%
3302 \def\figureautorefname{\'Abra}%
3303 \def\tableautorefname{T\'abl\'azat}%
3304 \def\partautorefname{R\'esz}%
3305 \def\appendixautorefname{F\'uggel\'ek}%
3306 \def\chapterautorefname{fejezet}%
3307 \def\sectionautorefname{szakasz}%
3308 \def\subsectionautorefname{alszakasz}%
3309 \def\subsubsectionautorefname{alalszakasz}%
3310 \def\paragraphautorefname{bekezd\'es}%
3311 \def\subparagraphautorefname{albekezd\'es}%
3312 \def\FancyVerbLineautorefname{sor}%
3313 \def\theoremautorefname{T\'etel}%
3314 \def\pageautorefname{oldal}%
3315 }
3316 \def\HyLang@portuges{%
3317 \def\equationautorefname{Equa\c c\~ao}%
3318 \def\footnoteautorefname{Nota de rodap\'e}%
3319 \def\itemautorefname{Item}%
3320 \def\figureautorefname{Figura}%
3321 \def\tableautorefname{Tabela}%
3322 \def\partautorefname{Parte}%
3323 \def\appendixautorefname{Ap\~endice}%
3324 \def\chapterautorefname{Cap\'itulo}%
3325 \def\sectionautorefname{Se\c c\~ao}%
3326 \def\subsectionautorefname{Subse\c c\~ao}%
3327 \def\subsubsectionautorefname{Subsubse\c c\~ao}%
3328 \def\paragraphautorefname{par\'agrafo}%
3329 \def\subparagraphautorefname{subpar\'agrafo}%
3330 \def\FancyVerbLineautorefname{linha}%
3331 \def\theoremautorefname{Teorema}%
3332 \def\pageautorefname{P\'agina}%
3333 }

```

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`.

```

3334 \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`?

```

3335 \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 `\auto\ref{auto}`” etc. The full name must follow full name of the `\theoremautorefname`.

```

3336 % \def\equationautorefname{%
3337 % \cyr\cyrv\cyrery\cyr\cyra\cyrzh\cyre\cyrn\cyri\cyre
3338 % }%

```

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

obsolete?).

```
3339 \def\footnoteautorefname{%  
3340 \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr.\ \cyrp\cyrr\cyri\cyrm.%  
3341 }%
```

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}”

```
3342 % \def\footnoteautorefname{%  
3343 % \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr\cyro\cyrch\cyrn\cyro\cyre\ %  
3344 % \cyrp\cyrr\cyri\cyrm\cyre\cyrch\cyra\cyrn\cyri\cyre  
3345 % }%
```

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

```
3346 % \def\Nomfootnoteautorefname{\cyr\cyrs\cyrn\cyro\cyrs\cyrk\cyra}%  
3347 % \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.

```
3348 \def\itemautorefname{\cyr\cyrp.}%  
3349 % \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.

```
3350 \def\figureautorefname{\cyr\cyrr\cyri\cyrs.}%  
3351 \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.

```
3352 \def\partautorefname{\cyr\cyrch.}%  
3353 \def\chapterautorefname{\cyr\cyrg\cyrl.}%  
3354 \def\sectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
```

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

```
3355 \def\appendixautorefname{\cyr\cyrp\cyrr\cyri\cyrl.}%  
3356 % \def\appendixautorefname{%  
3357 % \cyr\cyrp\cyrr\cyri\cyrl\cyro\cyrz\cyre\cyrn\cyri\cyre  
3358 % }%
```

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.

```
3359 \def\subsectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%  
3360 \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.

```
3361 \def\paragraphautorefname{\cyr\cyrp.}%  
3362 \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.

3363 % \def\paragraphautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyrt}%  
 3364 % \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.

3365 \def\FancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr.}%

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

3366 % \def\NomFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyra}%  
 3367 % \def\AccFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyru}%

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

3368 % \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 ...

3369 \def\theoremautorefname{\cyr\cyrt\cyre\cyro\cyrr.}%

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

3370 % \def\Nomtheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyra}%  
 3371 % \def\Acctheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyru}%

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

3372 \def\pageautorefname{\cyr\cyrs.}%  
 3373 }

3374 \def\HyLang@spanish{%  
 3375 \def\equationautorefname{Ecuaci'on}%  
 3376 \def\footnoteautorefname{Nota a pie de p'agina}%  
 3377 \def\itemautorefname{Elemento}%  
 3378 \def\figureautorefname{Figura}%  
 3379 \def\tableautorefname{Tabla}%  
 3380 \def\partautorefname{Parte}%  
 3381 \def\appendixautorefname{Ap'endice}%  
 3382 \def\chapterautorefname{Cap'itulo}%  
 3383 \def\sectionautorefname{Secci'on}%  
 3384 \def\subsectionautorefname{Subsecci'on}%  
 3385 \def\subsubsectionautorefname{Subsubsecci'on}%  
 3386 \def\paragraphautorefname{P'arrafo}%  
 3387 \def\subparagraphautorefname{Subp'arrafo}%  
 3388 \def\FancyVerbLineautorefname{L'inea}%  
 3389 \def\theoremautorefname{Teorema}%  
 3390 \def\pageautorefname{P'agina}%  
 3391 }

3392 \def\HyLang@vietnamese{%  
 3393 \def\equationautorefname{Ph\uhorn{}\ohorn{}ng tr'inh}%  
 3394 \def\footnoteautorefname{Ch'u th'ich}%  
 3395 \def\itemautorefname{m\d{u}c}%  
 3396 \def\figureautorefname{H'inh}%  
 3397 \def\tableautorefname{B'h{a}ng}%  
 3398 \def\partautorefname{Ph'\acircumflex{}n}%  
 3399 \def\appendixautorefname{Ph\d{u}l\d{u}c}%  
 3400 \def\chapterautorefname{ch\uhorn{}\ohorn{}ng}%  
 3401 \def\sectionautorefname{m\d{u}c}%  
 3402 \def\subsectionautorefname{m\d{u}c}%



```

3403 \def\subsubsectionautorefname{m\d{u}c}%
3404 \def\paragraphautorefname{dj{o\d{a}n}%
3405 \def\subparagraphautorefname{dj{o\d{a}n}%
3406 \def\FancyVerbLineautorefname{d'ong}%
3407 \def\theoremautorefname{DJ{d{i}nh l'y}%
3408 \def\pageautorefname{Trang}%
3409 }

```

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

```

3410 \def\HyLang@addto#1#2{%
3411   #2%
3412   \@temptokena{#2}%
3413   \ifx#1\relax
3414     \let#1\@empty
3415   \fi
3416   \ifx#1\@undefined
3417     \edef#1{\the\@temptokena}%
3418   \else
3419     \toks@\expandafter{#1}%
3420     \edef#1{\the\toks@\the\@temptokena}%
3421   \fi
3422   \@temptokena{}\toks@\@temptokena
3423 }

3424 \def\HyLang@DeclareLang#1#2#3{%
3425   \ifpackagewith{babel}{#1}{%
3426     \expandafter\HyLang@addto
3427       \csname extras#1\expandafter\endcsname
3428       \csname HyLang@#2\endcsname
3429     \begingroup
3430       \edef\x{\endgroup
3431         #3%
3432       }%
3433     \x
3434     \@namedef{HyLang@#1@done}{}%
3435   }{}%
3436   \begingroup
3437     \edef\x##1#2{%
3438       \noexpand\ifx##2\relax
3439         \errmessage{No definitions for language #2' found!}%
3440       \noexpand\fi
3441     \endgroup
3442     \noexpand\define@key{Hyp}{#1}[]{%
3443       \noexpand\ifundefined{HyLang@#1@done}{%
3444         \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
3445         #3%
3446         \noexpand\@namedef{HyLang@#1@done}{}%
3447       }{}%
3448     }%
3449   }%
3450   \expandafter\x\csname extras#1\expandafter\endcsname
3451     \csname HyLang@#2\endcsname
3452 }

3453 \HyLang@DeclareLang{english}{english}{}
3454 \HyLang@DeclareLang{UKenglish}{english}{}
3455 \HyLang@DeclareLang{british}{english}{}
3456 \HyLang@DeclareLang{USenglish}{english}{}

```

```

3457 \HyLang@DeclareLang{american}{english}{}
3458 \HyLang@DeclareLang{german}{german}{}
3459 \HyLang@DeclareLang{austrian}{german}{}
3460 \HyLang@DeclareLang{ngerman}{german}{}
3461 \HyLang@DeclareLang{naustrian}{german}{}
3462 \HyLang@DeclareLang{russian}{russian}{\noexpand\hypersetup{unicode}}
3463 \HyLang@DeclareLang{brazil}{portuges}{}
3464 \HyLang@DeclareLang{brazilian}{portuges}{}
3465 \HyLang@DeclareLang{portuguese}{portuges}{}
3466 \HyLang@DeclareLang{spanish}{spanish}{}
3467 \HyLang@DeclareLang{afrikaans}{afrikaans}{}
3468 \HyLang@DeclareLang{french}{french}{}
3469 \HyLang@DeclareLang{frenchb}{french}{}
3470 \HyLang@DeclareLang{francais}{french}{}
3471 \HyLang@DeclareLang{acadian}{french}{}
3472 \HyLang@DeclareLang{canadien}{french}{}
3473 \HyLang@DeclareLang{italian}{italian}{}
3474 \HyLang@DeclareLang{magyar}{magyar}{}
3475 \HyLang@DeclareLang{hungarian}{magyar}{}

```

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

```

3476 \DeclareVoidOption{vietnamese}{%
3477   \HyLang@addto\extrasvietnamese\HyLang@vietnamese
3478   \Hy@AtEndOfPackage{%
3479     \@ifundefined{T@PU}{}{}%
3480     \input{puvnenc.def}%
3481   }%
3482 }%
3483 }
3484 \DeclareVoidOption{vietnam}{%
3485   \HyLang@addto\extrasvietnam\HyLang@vietnamese
3486   \Hy@AtEndOfPackage{%
3487     \@ifundefined{T@PU}{}{}%
3488     \input{puvnenc.def}%
3489   }%
3490 }%
3491 }

```

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

```

3492 \DeclareVoidOption{arabic}{%
3493   \Hy@AtEndOfPackage{%
3494     \@ifundefined{T@PU}{}{}%
3495     \input{puarenc.def}%
3496   }%
3497 }%
3498 }

```

## 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.

```

3499 \define@key{Hyp}{colorlinks}[true]{%
3500   \Hy@boolkey{colorlinks}{#1}%
3501 }
3502 \DeclareVoidOption{hidelinks}{%
3503   \Hy@colorlinksfalse
3504   \Hy@ocgcolorlinksfalse
3505   \Hy@frenchlinksfalse

```

```

3506 \def\Hy@colorlink##1{\begingroup}%
3507 \def\Hy@endcolorlink{\endgroup}%
3508 \def\@pdfborder{0 0 0}%
3509 \let\@pdfborderstyle\ltz@empty
3510 }
3511 \define@key{Hyp}{ocgcolorlinks}[true]{%
3512 \Hy@boolkey{ocgcolorlinks}{#1}%
3513 }
3514 \Hy@AtBeginDocument{%
3515 \begingroup
3516 \@ifundefined{OBJ@OCG@view}{%
3517 \ifHy@ocgcolorlinks
3518 \Hy@Warning{%
3519 Driver does not support 'ocgcolorlinks',\MessageBreak
3520 using 'colorlinks' instead%
3521 }%
3522 \fi
3523 }{}%
3524 \endgroup
3525 }
3526 \define@key{Hyp}{frenchlinks}[true]{%
3527 \Hy@boolkey{frenchlinks}{#1}%
3528 }

```

## 14 Bookmarking

```

3529 \begingroup\expandafter\expandafter\expandafter\endgroup
3530 \expandafter\ifx\csname chapter\endcsname\relax
3531 \def\toclevel@part{0}%
3532 \else
3533 \def\toclevel@part{-1}%
3534 \fi
3535 \def\toclevel@chapter{0}
3536 \def\toclevel@section{1}
3537 \def\toclevel@subsection{2}
3538 \def\toclevel@subsubsection{3}
3539 \def\toclevel@paragraph{4}
3540 \def\toclevel@subparagraph{5}
3541 \def\toclevel@figure{0}
3542 \def\toclevel@table{0}
3543 \@ifpackageloaded{listings}{%
3544 \providecommand*\theHlstlisting{\thelstlisting}%
3545 \providecommand*\toclevel@lstlisting{0}%
3546 }{}
3547 \@ifpackageloaded{listing}{%
3548 \providecommand*\theHlisting{\thelisting}%
3549 \providecommand*\toclevel@listing{0}%
3550 }{}
3551 \define@key{Hyp}{bookmarks}[true]{%
3552 \Hy@boolkey{bookmarks}{#1}%
3553 }
3554 \define@key{Hyp}{bookmarksopen}[true]{%
3555 \Hy@boolkey{bookmarksopen}{#1}%
3556 }

```

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.

```

3557 \let\Hy@bookmarksdepth\c@tocdepth
3558 \define@key{Hyp}{bookmarksdepth}[]{%
3559   \begingroup
3560   \edef\x{#1}%
3561   \ifx\x\empty
3562     \global\let\Hy@bookmarksdepth\c@tocdepth
3563   \else
3564     \@ifundefined{toclevel@\x}{%
3565       \@onelevel@sanitize\x
3566       \edef\y{\expandafter\@car\x\@nil}%
3567       \ifcase 0\expandafter\ifx\y-1\fi
3568         \expandafter\ifnum\expandafter\y>47 %
3569           \expandafter\ifnum\expandafter\y<58 1\fi\fi\relax
3570         \Hy@Warning{Unknown document division name (\x)}%
3571       \else
3572         \setbox\z@=\hbox{%
3573           \count@=\x
3574           \xdef\Hy@bookmarksdepth{\the\count@}%
3575         }%
3576       \fi
3577     }{%
3578       \setbox\z@=\hbox{%
3579         \count@=\csname toclevel@\x\endcsname
3580         \xdef\Hy@bookmarksdepth{\the\count@}%
3581       }%
3582     }%
3583   \fi
3584 \endgroup
3585 }

```

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

```

3586 \define@key{Hyp}{bookmarksopenlevel}{%
3587   \def\@bookmarksopenlevel{#1}%
3588 }
3589 \def\@bookmarksopenlevel{\maxdimen}
3590 % ‘bookmarkstype’ to specify which ‘toc’ file to mimic
3591 \define@key{Hyp}{bookmarkstype}{%
3592   \def\Hy@bookmarkstype{#1}%
3593 }
3594 \def\Hy@bookmarkstype{toc}

```

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

```

3595 \define@key{Hyp}{bookmarksnumbered}[true]{%
3596   \Hy@boolkey{bookmarksnumbered}{#1}%
3597 }

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

3598 \define@key{Hyp}{CJKbookmarks}[true]{%
3599   \Hy@boolkey{CJKbookmarks}{#1}%
3600 }

3601 \def\Hy@temp#1{%
3602   \expandafter\Hy@@temp\csname @#1color\endcsname{#1}%
3603 }
3604 \def\Hy@@temp#1#2#3{%
3605   \define@key{Hyp}{#2color}{%
3606     \HyColor@HyperrefColor{##1}#1%
3607   }%
3608   \def#1{#3}%
3609 }
3610 \Hy@temp{link}{red}
3611 \Hy@temp{anchor}{black}
3612 \Hy@temp{cite}{green}
3613 \Hy@temp{file}{cyan}
3614 \Hy@temp{url}{magenta}
3615 \Hy@temp{menu}{red}
3616 \Hy@temp{run}{\@filecolor}
3617 \define@key{Hyp}{pagecolor}{%
3618   \Hy@WarningPageColor
3619 }
3620 \def\Hy@WarningPageColor{%
3621   \Hy@WarningNoLine{Option 'pagecolor' is not available anymore}%
3622   \global\let\Hy@WarningPageColor\relax
3623 }
3624 \define@key{Hyp}{allcolors}{%
3625   \HyColor@HyperrefColor{#1}\@linkcolor
3626   \HyColor@HyperrefColor{#1}\@anchorcolor
3627   \HyColor@HyperrefColor{#1}\@citecolor
3628   \HyColor@HyperrefColor{#1}\@filecolor
3629   \HyColor@HyperrefColor{#1}\@urlcolor
3630   \HyColor@HyperrefColor{#1}\@menucolor
3631   \HyColor@HyperrefColor{#1}\@runcolor
3632 }

3633 \def\hyperbaseurl#1{\def\@baseurl{#1}}
3634 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
3635 \let\@baseurl\@empty
3636 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
3637 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
3638 \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.

```

3639 \let\@pdfpagetransition\relax
3640 \define@key{Hyp}{pdfpagetransition}{%
3641   \def\@pdfpagetransition{#1}%
3642 }

```

`\@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.

```

3643 \let\@pdfpageduration\relax
3644 \define@key{Hyp}{pdfpageduration}{%
3645   \def\@pdfpageduration{#1}%
3646   \Hy@Match\@pdfpageduration{%
3647     ^([0-9]+\.[0-9]*|[0-9]*\.[0-9]+)$%
3648   }{}{%
3649     \Hy@Warning{%
3650       Invalid value '\@pdfpageduration'\MessageBreak
3651       of option 'pdfpageduration'\MessageBreak
3652       is replaced by an empty value%
3653     }%
3654     \let\@pdfpageduration\ltx@empty
3655   }%
3656 }
```

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.

```

3657 \newif\ifHy@useHidKey
3658 \Hy@useHidKeyfalse
3659 \define@key{Hyp}{pdfpagehidden}[true]{%
3660   \Hy@boolkey{pdfpagehidden}{#1}%
3661   \ifHy@pdfpagehidden
3662     \global\Hy@useHidKeytrue
3663   \fi
3664 }
```

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).

```

3665 \def\Hy@ColorList{cite,file,link,menu,run,url}
3666 \@for\Hy@temp:=\Hy@ColorList\do{%
3667   \edef\Hy@temp{%
3668     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
3669       \noexpand\Hy@Color@HyperrefBorderColor
3670       {##1}%
3671       \expandafter\noexpand\csname @\Hy@temp bordercolor\endcsname
3672       {hyperref}%
3673       {\Hy@temp bordercolor}%
3674     }%
3675   }%
3676   \Hy@temp
3677 }
3678 \define@key{Hyp}{pagebordercolor}{%
3679   \Hy@WarningPageBorderColor
3680 }
3681 \def\Hy@WarningPageBorderColor{%
3682   \Hy@WarningNoLine{Option 'pagebordercolor' is not available anymore}%
3683   \global\let\Hy@WarningPageBorderColor\relax
3684 }
3685 \define@key{Hyp}{allbordercolors}{%
```

```

3686 \def\Hy@temp##1##2{%
3687   \HyColor@HyperrefBorderColor{#1}##1{hyperref}{##2bordercolor}%
3688 }%
3689 \Hy@temp\@citebordercolor{cite}%
3690 \Hy@temp\@filebordercolor{file}%
3691 \Hy@temp\@linkbordercolor{link}%
3692 \Hy@temp\@menubordercolor{menu}%
3693 \Hy@temp\@runbordercolor{run}%
3694 \Hy@temp\@urlbordercolor{url}%
3695 }

3696 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{#1}}
3697 \Hy@DefNameKey{pdfhighlight}{%
3698   \do{/I}{Invert}%
3699   \do{/N}{None}%
3700   \do{/O}{Outline}%
3701   \do{/P}{Push}%
3702 }
3703 \define@key{Hyp}{pdfborder}{%
3704   \let\Hy@temp\@pdfborder
3705   \def\@pdfborder{#1}%
3706   \Hy@Match\@pdfborder{%
3707     ^\HyPat@NonNegativeReal/ %
3708     \HyPat@NonNegativeReal/ %
3709     \HyPat@NonNegativeReal/%
3710     ( ?\[\HyPat@NonNegativeReal/( \HyPat@NonNegativeReal/)*\])?%%
3711   }{}{%
3712     \Hy@Warning{%
3713       Invalid value '\@pdfborder'\MessageBreak
3714       for option 'pdfborder'\MessageBreak
3715       Option setting is ignored%
3716     }%
3717     \let\@pdfborder\Hy@temp
3718   }%
3719 }
3720 \define@key{Hyp}{pdfborderstyle}{%
3721   \let\Hy@temp\@pdfborderstyle
3722   \def\@pdfborderstyle{#1}%
3723   \Hy@Match\@pdfborderstyle{%
3724     ^%
3725     ( */Type */Border%
3726     | */W +\HyPat@NonNegativeReal/%
3727     | */S */[SDBIU]%
3728     | */D *\[ *(\HyPat@NonNegativeReal/( \HyPat@NonNegativeReal/))?)?}%
3729     )* *$%
3730   }{}{%
3731     \Hy@Warning{%
3732       Invalid value '\@pdfborderstyle'\MessageBreak
3733       for option 'pdfborderstyle'\MessageBreak
3734       Option setting is ignored%
3735     }%
3736     \let\@pdfborderstyle\Hy@temp
3737   }%
3738 }
3739 \def\Hy@setpdfborder{%
3740   \ifx\@pdfborder\@empty
3741   \else
3742     /Border[\@pdfborder]%

```

```

3743 \fi
3744 \ifx\@pdfborderstyle\@empty
3745 \else
3746 /BS<<\@pdfborderstyle>>%
3747 \fi
3748 }
3749 \Hy@DefNameKey{pdfpagemode}{%
3750 \do{UseNone}{}%
3751 \do{UseOutlines}{}%
3752 \do{UseThumbs}{}%
3753 \do{FullScreen}{}%
3754 \do{UseOC}{PDF 1.5}%
3755 \do{UseAttachments}{PDF 1.6}%
3756 }
3757 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
3758 \do{UseNone}{}%
3759 \do{UseOutlines}{}%
3760 \do{UseThumbs}{}%
3761 \do{FullScreen}{}%
3762 \do{UseOC}{PDF 1.5}%
3763 \do{UseAttachments}{PDF 1.6}%
3764 }
3765 \Hy@DefNameKey{pdfdirection}{%
3766 \do{L2R}{Left to right}%
3767 \do{R2L}{Right to left}%
3768 }
3769 \Hy@DefNameKey{pdfviewarea}{%
3770 \do{MediaBox}{}%
3771 \do{CropBox}{}%
3772 \do{BleedBox}{}%
3773 \do{TrimBox}{}%
3774 \do{ArtBox}{}%
3775 }
3776 \Hy@DefNameKey{pdfviewclip}{%
3777 \do{MediaBox}{}%
3778 \do{CropBox}{}%
3779 \do{BleedBox}{}%
3780 \do{TrimBox}{}%
3781 \do{ArtBox}{}%
3782 }
3783 \Hy@DefNameKey{pdfprintarea}{%
3784 \do{MediaBox}{}%
3785 \do{CropBox}{}%
3786 \do{BleedBox}{}%
3787 \do{TrimBox}{}%
3788 \do{ArtBox}{}%
3789 }
3790 \Hy@DefNameKey{pdfprintclip}{%
3791 \do{MediaBox}{}%
3792 \do{CropBox}{}%
3793 \do{BleedBox}{}%
3794 \do{TrimBox}{}%
3795 \do{ArtBox}{}%
3796 }
3797 \Hy@DefNameKey{pdfprintsampling}{%
3798 \do{AppDefault}{}%
3799 \do{None}{}%

```



```

3800 }
3801 \Hy@DefNameKey{pdfduplex}{%
3802   \do{Simplex}{}%
3803   \do{DuplexFlipShortEdge}{}%
3804   \do{DuplexFlipLongEdge}{}%
3805 }
3806 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
3807   \do{true}{}%
3808   \do{false}{}%
3809 }
3810 \define@key{Hyp}{pdfprintpagerange}{%
3811   \def\@pdfprintpagerange{#1}%
3812 }
3813 \Hy@DefNameKey{pdfnumcopies}{%
3814   \do{2}{two copies}%
3815   \do{3}{three copies}%
3816   \do{4}{four copies}%
3817   \do{5}{five copies}%
3818 }
3819 \define@key{Hyp}{pdfusetitle}[true]{%
3820   \Hy@boolkey{pdfusetitle}{#1}%
3821 }
3822 \def\HyXeTeX@CheckUnicode{%
3823   \ifxetex
3824     \ifHy@unicode
3825     \else
3826       \Hy@WarningNoLine{%
3827         XeTeX driver only supports unicode.\MessageBreak
3828         Enabling option 'unicode'%
3829       }%
3830       \kvsetkeys{Hyp}{unicode}%
3831     \fi
3832   \else
3833     \let\HyXeTeX@CheckUnicode\relax
3834   \fi
3835 }
3836 \def\HyPsd@PrerenderUnicode#1{%
3837   \begingroup
3838     \expandafter\ifx\csname PrerenderUnicode\endcsname\relax
3839     \else
3840       \sbox0{%
3841         \let\GenericInfo\@gobbletwo
3842         \let\GenericWarning\@gobbletwo
3843         \let\GenericError\@gobblefour
3844         \PrerenderUnicode{#1}%
3845       }%
3846     \fi
3847   \endgroup
3848 }
3849 \define@key{Hyp}{pdftitle}{%
3850   \HyXeTeX@CheckUnicode
3851   \HyPsd@XeTeXBigCharstrue
3852   \HyPsd@PrerenderUnicode{#1}%
3853   \pdfstringdef\@pdftitle{#1}%
3854 }
3855 \define@key{Hyp}{pdfauthor}{%
3856   \HyXeTeX@CheckUnicode

```

```

3857 \HyPsd@XeTeXBigCharstrue
3858 \HyPsd@PrerenderUnicode{#1}%
3859 \pdfstringdef\@pdfauthor{#1}%
3860 }
3861 \define@key{Hyp}{pdfproducer}{%
3862 \HyXeTeX@CheckUnicode
3863 \HyPsd@XeTeXBigCharstrue
3864 \HyPsd@PrerenderUnicode{#1}%
3865 \pdfstringdef\@pdfproducer{#1}%
3866 \ifxetex
3867 \Hy@Warning{%
3868 pdfproducer: %
3869 xdvipdfmx will use its own setting\MessageBreak
3870 instead of the value given%
3871 }%
3872 \else
3873 \def\Hy@temp{hdvipdfm}%
3874 \ifx\Hy@driver\Hy@temp
3875 \Hy@Warning{%
3876 pdfproducer: %
3877 dvipdfm(x) will use its own setting\MessageBreak
3878 instead of the value given%
3879 }%
3880 \fi
3881 \fi
3882 }
3883 \define@key{Hyp}{pdfcreator}{%
3884 \HyXeTeX@CheckUnicode
3885 \HyPsd@XeTeXBigCharstrue
3886 \HyPsd@PrerenderUnicode{#1}%
3887 \pdfstringdef\@pdfcreator{#1}%
3888 }
3889 \define@key{Hyp}{pdfcreationdate}{%
3890 \begingroup
3891 \Hy@unicodetfalse
3892 \pdfstringdef\@pdfcreationdate{#1}%
3893 \endgroup
3894 }
3895 \define@key{Hyp}{pdfmoddate}{%
3896 \begingroup
3897 \Hy@unicodetfalse
3898 \pdfstringdef\@pdfmoddate{#1}%
3899 \endgroup
3900 }
3901 \define@key{Hyp}{pdfsubject}{%
3902 \HyXeTeX@CheckUnicode
3903 \HyPsd@XeTeXBigCharstrue
3904 \HyPsd@PrerenderUnicode{#1}%
3905 \pdfstringdef\@pdfsubject{#1}%
3906 }
3907 \define@key{Hyp}{pdfkeywords}{%
3908 \HyXeTeX@CheckUnicode
3909 \HyPsd@XeTeXBigCharstrue
3910 \HyPsd@PrerenderUnicode{#1}%
3911 \pdfstringdef\@pdfkeywords{#1}%
3912 }
3913 \define@key{Hyp}{pdftrapped}{%

```

```

3914 \lowercase{\edef\Hy@temp{#1}}%
3915 \ifx\Hy@temp\HyInfo@trapped@true
3916 \def\@pdftrapped{True}%
3917 \else
3918 \ifx\Hy@temp\HyInfo@trapped@false
3919 \def\@pdftrapped{False}%
3920 \else
3921 \ifx\Hy@temp\HyInfo@trapped@unknown
3922 \def\@pdftrapped{Unknown}%
3923 \else
3924 \ifx\Hy@temp\@empty
3925 \else
3926 \Hy@Warning{%
3927     Unsupported value '#1'\MessageBreak
3928     for option 'pdftrapped'%
3929 }%
3930 \fi
3931 \def\@pdftrapped{}%
3932 \fi
3933 \fi
3934 \fi
3935 }
3936 \def\HyInfo@trapped@true{true}
3937 \def\HyInfo@trapped@false{false}
3938 \def\HyInfo@trapped@unknown{unknown}
3939 \def\HyInfo@TrappedUnsupported{%
3940 \ifx\@pdftrapped\@empty
3941 \else
3942 \Hy@WarningNoLine{'pdftrapped' is not supported by this driver}%
3943 \gdef\HyInfo@TrappedUnsupported{}%
3944 \fi
3945 }
3946 \define@key{Hyp}{pdfinfo}{%
3947 \kvsetkeys{pdfinfo}{#1}}%
3948 }
3949 \def\Hy@temp#1{%
3950 \lowercase{\Hy@temp@A{#1}}{#1}%
3951 }
3952 \def\Hy@temp@A#1#2{%
3953 \define@key{pdfinfo}{#2}{%
3954 \hypersetup{pdf#1={##1}}}%
3955 }%
3956 }
3957 \Hy@temp{Title}
3958 \Hy@temp{Author}
3959 \Hy@temp{Keywords}
3960 \Hy@temp{Subject}
3961 \Hy@temp{Creator}
3962 \Hy@temp{Producer}
3963 \Hy@temp{CreationDate}
3964 \Hy@temp{ModDate}
3965 \Hy@temp{Trapped}
3966 \newif\ifHyInfo@AddonUnsupported
3967 \kv@set@family@handler{pdfinfo}{%
3968 \HyInfo@AddonHandler{#1}{#2}}%
3969 }
3970 \let\HyInfo@do\relax

```

```

3971 \def\HyInfo@AddonHandler#1#2{%
3972   \ifx\kv@value\relax
3973     \Hy@Warning{%
3974       Option 'pdfinfo': ignoring key '\kv@key' without value%
3975     }%
3976   \else
3977     \EdefEscapeName\HyInfo@KeyEscaped{\kv@key}%
3978     \EdefUnescapeName\HyInfo@Key{\HyInfo@KeyEscaped}%
3979     \expandafter\ifx\csname KV@pdfinfo@\HyInfo@Key\endcsname\relax
3980     \ifHyInfo@AddonUnsupported
3981       \Hy@Warning{%
3982         This driver does not support additional\MessageBreak
3983         information entries, therefore\MessageBreak
3984         '\kv@key' is ignored%
3985       }%
3986     \else
3987       \define@key{pdfinfo}{\HyInfo@Key}{%
3988         \HyXeTeX@CheckUnicode
3989         \HyPsd@XeTeXBigCharstrue
3990         \HyPsd@PrerenderUnicode{##1}%
3991         \pdfstringdef\HyInfo@Value{##1}%
3992         \expandafter\let\csname HyInfo@Value@\HyInfo@Key\endcsname
3993         \HyInfo@Value
3994       }%
3995     \edef\HyInfo@AddonList{%
3996       \HyInfo@AddonList
3997       \HyInfo@do{\HyInfo@Key}%
3998     }%
3999     \kv@parse@normalized{%
4000       \HyInfo@Key={#2}%
4001     }{%
4002       \kv@processor@default{pdfinfo}%
4003     }%
4004   \fi
4005 \else
4006   \kv@parse@normalized{%
4007     \HyInfo@Key={#2}%
4008   }{%
4009     \kv@processor@default{pdfinfo}%
4010   }%
4011 \fi
4012 \fi
4013 }
4014 \def\HyInfo@GenerateAddons{%
4015   \ifHyInfo@AddonUnsupported
4016     \def\HyInfo@Addons{%
4017   \else
4018     \begingroup
4019     \toks@{%
4020       \def\HyInfo@do##1{%
4021         \EdefEscapeName\HyInfo@Key{##1}%
4022         \edef\x{%
4023           \toks@{%
4024             \the\toks@
4025             /\HyInfo@Key(\csname HyInfo@Value@##1\endcsname)%
4026           }%
4027         }%

```

```

4028     \x
4029 }%
4030 \HyInfo@AddonList
4031 \edef\x{\endgroup
4032     \def\noexpand\HyInfo@Addons{\the\toks@}%
4033 }%
4034 \x
4035 \fi
4036 }
4037 \let\HyInfo@AddonList\ltx@empty

4038 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \\\}
4039 \define@key{Hyp}{pdfinkmargin}{\setpdfinkmargin{#1}}
4040 \let\setpdfinkmargin\gobble
4041 \def\calculate@pdfview#1 #2\\\{%
4042     \def\@pdfview{#1}%
4043     \ifx\#2\\\%
4044         \def\@pdfviewparams{-32768}%
4045     \else
4046         \def\@pdfviewparams{ #2}%
4047     \fi
4048 }
4049 \begingroup\expandafter\expandafter\expandafter\endgroup
4050 \expandafter\ifx\csname numexpr\endcsname\relax
4051     \def\Hy@number#1{%
4052         \expandafter\@firstofone\expandafter{\number#1}%
4053     }%
4054 \else
4055     \def\Hy@number#1{%
4056         \the\numexpr#1\relax
4057     }%
4058 \fi
4059 \define@key{Hyp}{pdfstartpage}{\%
4060     \ifx\#1\\\%
4061         \let\@pdfstartpage\ltx@empty
4062     \else
4063         \edef\@pdfstartpage{\Hy@number{#1}}%
4064     \fi
4065 }%
4066 \define@key{Hyp}{pdfstartview}{\%
4067     \ifx\#1\\\%
4068         \let\@pdfstartview\ltx@empty
4069     \else
4070         \hypercalcbpdef\@pdfstartview{/#1}%
4071     \fi
4072 }
4073 \def\HyPat@NonNegativeReal/{\%
4074     \ *([0-9]+\.[0-9]*|[0-9]*\.[0-9]+) *%
4075 }
4076 \define@key{Hyp}{pdfremotestartview}{\%
4077     \ifx\#1\\\%
4078         \def\@pdfremotestartview{/Fit}%
4079     \else
4080         \hypercalcbpdef\@pdfremotestartview{#1}%
4081         \edef\@pdfremotestartview{\@pdfremotestartview}%
4082         \Hy@Match\@pdfremotestartview{%
4083             ^{XYZ}-(null|\HyPat@NonNegativeReal/) %
4084             -(null|\HyPat@NonNegativeReal/) %

```

```

4085         (null|\HyPat@NonNegativeReal/)|%
4086     Fit(|B|)%
4087     (H|V|BH|BV) (null|\HyPat@NonNegativeReal/)|%
4088     R \HyPat@NonNegativeReal/ \HyPat@NonNegativeReal/ %
4089     \HyPat@NonNegativeReal/ \HyPat@NonNegativeReal/%
4090 ))$%
4091 }-}{%
4092 \Hy@Warning{%
4093     Invalid value '\@pdfremotestartview'\MessageBreak
4094     of 'pdfremotestartview'\MessageBreak
4095     is replaced by 'Fit'%
4096 }%
4097 \let\@pdfremotestartview\@empty
4098 }%
4099 \ifx\@pdfremotestartview\@empty
4100 \def\@pdfremotestartview{/Fit}%
4101 \else
4102 \edef\@pdfremotestartview{/ \@pdfremotestartview}%
4103 \fi
4104 \fi
4105 }
4106 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
4107 \define@key{Hyp}{pdftoolbar}[true]{%
4108 \Hy@boolkey{pdftoolbar}{#1}%
4109 }
4110 \define@key{Hyp}{pdfmenubar}[true]{%
4111 \Hy@boolkey{pdfmenubar}{#1}%
4112 }
4113 \define@key{Hyp}{pdfwindowui}[true]{%
4114 \Hy@boolkey{pdfwindowui}{#1}%
4115 }
4116 \define@key{Hyp}{pdffitwindow}[true]{%
4117 \Hy@boolkey{pdffitwindow}{#1}%
4118 }
4119 \define@key{Hyp}{pdfcenterwindow}[true]{%
4120 \Hy@boolkey{pdfcenterwindow}{#1}%
4121 }
4122 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
4123 \Hy@boolkey{pdfdisplaydoctitle}{#1}%
4124 }
4125 \define@key{Hyp}{pdfa}[true]{%
4126 \Hy@boolkey{pdfa}{#1}%
4127 }
4128 \define@key{Hyp}{pdfnewwindow}[true]{%
4129 \def\Hy@temp{#1}%
4130 \ifx\Hy@temp\@empty
4131 \Hy@pdfnewwindowsetfalse
4132 \else
4133 \Hy@pdfnewwindowsettrue
4134 \Hy@boolkey{pdfnewwindow}{#1}%
4135 \fi
4136 }
4137 \def\Hy@SetNewWindow{%
4138 \ifHy@pdfnewwindowset
4139 /NewWindow %
4140 \ifHy@pdfnewwindow true\else false\fi
4141 \fi

```

```

4142 }
4143 \Hy@DefNameKey{pdfpagelayout}{%
4144   \do{SinglePage}{}%
4145   \do{OneColumn}{}%
4146   \do{TwoColumnLeft}{}%
4147   \do{TwoColumnRight}{}%
4148   \do{TwoPageLeft}{PDF 1.5}%
4149   \do{TwoPageRight}{PDF 1.5}%
4150 }
4151 \define@key{Hyp}{pdflang}{%
4152   \def\@pdflang{#1}%
4153 }
4154 \define@key{Hyp}{pdfpagelabels}[true]{%
4155   \Hy@boolkey{pdfpagelabels}{#1}%
4156 }
4157 \define@key{Hyp}{pdfescapeform}[true]{%
4158   \Hy@boolkey{pdfescapeform}{#1}%
4159 }

```

Default values:

```

4160 \def\@linkbordercolor{1 0 0}
4161 \def\@urlbordercolor{0 1 1}
4162 \def\@menubordercolor{1 0 0}
4163 \def\@filebordercolor{0 .5 .5}
4164 \def\@runbordercolor{0 .7 .7}
4165 \def\@citebordercolor{0 1 0}
4166 \def\@pdfhighlight{/I}
4167 \let\@pdftitle\ltx@empty
4168 \let\@pdfauthor\ltx@empty
4169 \let\@pdfproducer\relax
4170 \def\@pdfcreator{LaTeX with hyperref package}
4171 \let\@pdfcreationdate\ltx@empty
4172 \let\@pdfmoddate\ltx@empty
4173 \let\@pdfsubject\ltx@empty
4174 \let\@pdfkeywords\ltx@empty
4175 \let\@pdftrapped\ltx@empty
4176 \let\@pdfpagescrop\ltx@empty
4177 \def\@pdfstartview{/Fit}
4178 \def\@pdfremotestartview{/Fit}
4179 \def\@pdfstartpage{1}
4180 \let\@pdfprintpagerange\ltx@empty
4181 \let\@pdflang\ltx@empty
4182 \let\PDF@SetupDoc\@empty
4183 \let\PDF@FinishDoc\@empty
4184 \let\phantomsection\@empty
4185 \let\special@paper\@empty
4186 \def\HyperDestNameFilter#1{#1}
4187 \Hy@AtBeginDocument{%
4188   \begingroup
4189     \edef\x{\@ifundefined{stockheight}\paperheight\stockheight}%
4190     \dimen@=\x\relax
4191     \ifdim\dimen@>\z@
4192       \else
4193         \dimen@=11in\relax
4194         \Hy@WarningNoLine{%
4195           Height of page (\expandafter\string\x) %
4196           is invalid (\the\x),\MessageBreak
4197           using 11in%

```

```

4198 }%
4199 \fi
4200 \dimen@=0.99626401\dimen@
4201 \xdef\Hy@pageheight{\strip@pt\dimen@}%
4202 \endgroup
4203 }
4204 \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.

```

4205 \let\hyper@normalise\ExecuteOptions
4206 \let\ExecuteOptions\hypersetup
4207 \Hy@RestoreCatcodes
4208 \InputIfFileExists{hyperref.cfg}{-}{-}
4209 \Hy@SetCatcodes
4210 \let\ExecuteOptions\hyper@normalise
4211 \ifx\Hy@MaybeStopNow\relax
4212 \else
4213 \Hy@stoppedearlytrue
4214 \expandafter\Hy@MaybeStopNow
4215 \fi
4216 \Hy@stoppedearlyfalse

```

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.

```

4217 \SetupKeyvalOptions{family=Hyp}
4218 \DeclareLocalOptions{%
4219 a4paper,a5paper,b5paper,letterpaper,legalpaper,executivepaper%
4220 }

```

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

```

4221 \@ifpackageloaded{tex4ht}{%
4222 \@ifpackagewith{hyperref}{tex4ht}{-}{-}%
4223 \PassOptionsToPackage{tex4ht}{hyperref}%
4224 }%
4225 }{-}

4226 \let\ReadBookmarks\relax
4227 \ProcessKeyvalOptions{Hyp}

```

After processing options.

## 15.1 Package `xspace` support

```

4228 \def\Hy@xspace@end{}
4229 \ltx@ifundefined{xspaceaddexceptions}{-}{%
4230 \Hy@AtBeginDocument{%
4231 \ltx@ifundefined{xspaceaddexceptions}{-}{%
4232 }{-}%
4233 \def\Hy@xspace@end{%
4234 \ltx@gobble{end for xspace}%
4235 }%
4236 \xspaceaddexceptions{%
4237 \Hy@xspace@end,\hyper@linkend,\hyper@anchorend
4238 }%
4239 }%
4240 }%
4241 }{-}%

```



```

4242 \def\Hy@xspace@end{%
4243   \ltx@gobble{end for xspace}%
4244 }%
4245 \xspaceaddeceptions{\Hy@xspace@end,\hyper@linkend,\hyper@anchorend}%
4246 }

```

## 15.2 Option draft

```

4247 \Hy@AtBeginDocument{%
4248   \ifHy@draft
4249     \let\hyper@@anchor\@gobble
4250     \gdef\hyper@link#1#2#3{#3\Hy@xspace@end}%
4251     \def\hyper@anchorstart#1#2{#2\Hy@xspace@end}%
4252     \def\hyper@anchorend{\Hy@xspace@end}%
4253     \let\hyper@linkstart\@gobbletwo
4254     \def\hyper@linkend{\Hy@xspace@end}%
4255     \def\hyper@linkurl#1#2{#1\Hy@xspace@end}%
4256     \def\hyper@linkfile#1#2#3{#1\Hy@xspace@end}%
4257     \def\hyper@link@[#1]#2#3#4{#4\Hy@xspace@end}%
4258     \def\Acrobatmenu#1#2{\leavevmode#2\Hy@xspace@end}%
4259     \let\PDF@SetupDoc\@empty
4260     \let\PDF@FinishDoc\@empty
4261     \let\@fifthoffive\@secondoftwo
4262     \let\@secondoffive\@secondoftwo
4263     \let\ReadBookmarks\relax
4264     \let\WriteBookmarks\relax
4265     \Hy@WarningNoLine{Draft mode on}%
4266   \fi
4267   \Hy@DisableOption{draft}%
4268   \Hy@DisableOption{nolinks}%
4269   \Hy@DisableOption{final}%
4270 }

```

## 15.3 PDF/A

```

4271 \Hy@DisableOption{pdfa}
4272 \ifHy@pdfa
4273   \kvsetkeys{Hyp}{pdfversion=1.4}%
4274   \def\Hy@Acrobatmenu#1#2{%
4275     \leavevmode
4276     \begingroup
4277     \edef\x{#1}%
4278     \@onelevel@sanitize\x
4279     \ifx\x\Hy@NextPage
4280       \let\y=Y%
4281     \else
4282       \ifx\x\Hy@PrevPage
4283         \let\y=Y%
4284       \else
4285         \ifx\x\Hy@FirstPage
4286           \let\y=Y%
4287         \else
4288           \ifx\x\Hy@LastPage
4289             \let\y=Y%
4290           \else
4291             \let\y=N%
4292           \fi
4293         \fi
4294       \fi

```

```

4295 \fi
4296 \expandafter\endgroup
4297 \ifx\y Y%
4298 \else
4299 \Hy@Error{%
4300 PDF/A: Named action ‘#1’ is not permitted%
4301 }\@ehc
4302 {#2}%
4303 \expandafter\@gobble
4304 \fi
4305 }%
4306 \def\Hy@temp#1{%
4307 \expandafter\def\csname Hy@#1\endcsname{#1}%
4308 \expandafter\@onelevel@sanitize\csname Hy@#1\endcsname
4309 }%
4310 \Hy@temp{NextPage}%
4311 \Hy@temp{PrevPage}%
4312 \Hy@temp{FirstPage}%
4313 \Hy@temp{LastPage}%
4314 \else
4315 \def\Hy@Acrobatmenu#1#2{\leavevmode}%
4316 \fi

```

## 15.4 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.

```

4317 \Hy@nextfalse
4318 \ltx@ifundefined{spanish@sh@}{\Hy@nexttrue}
4319 \ltx@ifundefined{galician@sh@}{\Hy@nexttrue}
4320 \ltx@ifundefined{estonian@sh@}{\Hy@nexttrue}
4321 \ifHy@next
4322 \let\texttilde\~%
4323 \fi

4324 \def\Hy@wrapper@babel#1#2{%
4325 \begingroup
4326 \Hy@safe@activetrue
4327 \set@display@protect
4328 \edef\x{#2}%
4329 \@onelevel@sanitize\x
4330 \toks@{#1}%
4331 \edef\x{\endgroup\the\toks@{\x}}%
4332 \x
4333 }

4334 \def\Hy@WrapperDef#1{%
4335 \begingroup
4336 \escapechar=\m@ne
4337 \xdef\Hy@gtemp{%
4338 \expandafter\noexpand\csname HyWrap@\string#1\endcsname
4339 }%
4340 \endgroup
4341 \edef#1{%
4342 \noexpand\Hy@wrapper@babel
4343 \expandafter\noexpand\Hy@gtemp
4344 }%
4345 \expandafter\def\Hy@gtemp

```

```

4346 }
4347 \ifHy@hyperfigures
4348 \Hy@Info{Hyper figures ON}%
4349 \else
4350 \Hy@Info{Hyper figures OFF}%
4351 \fi
4352 \ifHy@nesting
4353 \Hy@Info{Link nesting ON}%
4354 \else
4355 \Hy@Info{Link nesting OFF}%
4356 \fi
4357 \ifHy@hyperindex
4358 \Hy@Info{Hyper index ON}%
4359 \else
4360 \Hy@Info{Hyper index OFF}%
4361 \fi
4362 \ifHy@plainpages
4363 \Hy@Info{Plain pages ON}%
4364 \else
4365 \Hy@Info{Plain pages OFF}%
4366 \fi
4367 \ifHy@backref
4368 \Hy@Info{Backreferencing ON}%
4369 \else
4370 \Hy@Info{Backreferencing OFF}%
4371 \fi
4372 \ifHy@typexml
4373 \Hy@AtEndOfPackage{%
4374 \RequirePackage{color}%
4375 \RequirePackage{nameref}%
4376 }%
4377 \fi
4378 \Hy@DisableOption{typexml}
4379 \ifHy@implicit
4380 \Hy@InfoNoLine{Implicit mode ON; LaTeX internals redefined}%
4381 \else
4382 \Hy@InfoNoLine{Implicit mode OFF; no redefinition of LaTeX internals}%
4383 \def\MaybeStopEarly{%
4384 \Hy@Message{Stopped early}%
4385 \Hy@AtBeginDocument{%
4386 \PDF@FinishDoc
4387 \gdef\PDF@FinishDoc{}%
4388 }%
4389 \endinput
4390 }%
4391 \Hy@AtBeginDocument{%
4392 \let\autoref\ref
4393 \let\autopageref\pageref
4394 \ifx\@pdfpagemode\@empty
4395 \gdef\@pdfpagemode{UseNone}%
4396 \fi
4397 \global\Hy@backreffalse
4398 }%
4399 \Hy@AtEndOfPackage{%
4400 \global\let\ReadBookmarks\relax
4401 \global\let\WriteBookmarks\relax
4402 }%

```

```

4403 \fi
4404 \Hy@DisableOption{implicit}

```

### 15.4.1 Driver loading

```

4405 \Hy@AtEndOfPackage{%
4406 \ifpackageloaded{tex4ht}{%
4407 \def\Hy@driver{htex4ht}%
4408 \Hy@texhttrue
4409 }{}%

```

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.

```

4410 \ifx\Hy@driver\@empty
4411 \else
4412 \def\Hy@temp{hpdftex}%
4413 \ifpdf
4414 \ifx\Hy@driver\Hy@temp
4415 \else
4416 \Hy@WarningNoLine{%
4417 Wrong driver ‘\Hy@driver.def’;\MessageBreak
4418 pdfTeX is running in PDF mode.\MessageBreak
4419 Forcing driver ‘\Hy@temp.def’%
4420 }%
4421 \let\Hy@driver\Hy@temp
4422 \fi
4423 \else
4424 \ifx\Hy@driver\Hy@temp
4425 \Hy@WarningNoLine{%
4426 Wrong driver ‘\Hy@driver.def’;\MessageBreak
4427 pdfTeX is not running in PDF mode.\MessageBreak
4428 Using default driver%
4429 }%
4430 \let\Hy@driver\@empty
4431 \fi
4432 \fi
4433 \fi
4434 \ifHy@texht
4435 \else
4436 \ifx\Hy@driver\@empty
4437 \else
4438 \def\Hy@temp{hxetex}%
4439 \ifxetex
4440 \ifx\Hy@driver\Hy@temp
4441 \else
4442 \Hy@WarningNoLine{%
4443 Wrong driver ‘\Hy@driver.def’;\MessageBreak
4444 XeTeX is running.\MessageBreak
4445 Forcing driver ‘\Hy@temp.def’ for XeTeX%
4446 }%
4447 \let\Hy@driver\Hy@temp
4448 \fi
4449 \fi
4450 \fi
4451 \fi
4452 \ifx\Hy@driver\@empty
4453 \else
4454 \def\Hy@temp{hvtexhtm}%

```

```

4455 \ifvtexhtml
4456 \ifx\Hy@driver\Hy@temp
4457 \else
4458 \Hy@WarningNoLine{%
4459 Wrong driver '\Hy@driver.def';\MessageBreak
4460 VTeX is running in HTML mode.\MessageBreak
4461 Forcing driver '\Hy@temp.def'%
4462 }%
4463 \let\Hy@driver\Hy@temp
4464 \fi
4465 \else
4466 \ifx\Hy@driver\Hy@temp
4467 \Hy@WarningNoLine{%
4468 Wrong driver '\Hy@driver.def';\MessageBreak
4469 VTeX is not running in HTML mode.\MessageBreak
4470 Using default driver%
4471 }%
4472 \let\Hy@driver\@empty
4473 \fi
4474 \fi
4475 \fi

```

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

```

4476 \def\HyOpt@DriverType{%
4477 \ifx\Hy@driver\@empty
4478 \def\HyOpt@DriverType{ (autodetected)}%
4479 \providecommand*\Hy@defaultdriver{hypertex}%
4480 \ifpdf
4481 \def\Hy@driver{hpdftex}%
4482 \else
4483 \ifxetex
4484 \def\Hy@driver{hxdetex}%
4485 \else
4486 \ifvtexhtml
4487 \def\Hy@driver{hvtexhtm}%
4488 \def\MaybeStopEarly{%
4489 \Hy@Message{Stopped early}%
4490 \Hy@AtBeginDocument{%
4491 \PDF@FinishDoc
4492 \gdef\PDF@FinishDoc{}}%
4493 }%
4494 \endinput
4495 }%
4496 \else
4497 \ifvtexpdf
4498 \def\Hy@driver{hvtex}%
4499 \else
4500 \ifvtexps
4501 \def\Hy@driver{hvtex}%
4502 \else
4503 \ifx\HyOpt@DriverFallback\ltx@empty
4504 \let\Hy@driver\Hy@defaultdriver
4505 \def\HyOpt@DriverType{ (default)}%
4506 \else
4507 \begingroup
4508 \toks@{\expandafter{\HyOpt@DriverFallback}}%
4509 \edef\x{\endgroup
4510 \noexpand\kvsetkeys{Hyp}{\the\toks@}%

```

```

4511         }%
4512     \x
4513     \ifx\Hy@driver\ltx@empty
4514         \let\Hy@driver\Hy@defaultdriver
4515         \def\HyOpt@DriverType{ (default)}%
4516     \else
4517         \def\HyOpt@DriverType{ (fallback)}%
4518     \fi
4519 \fi
4520 \fi
4521 \fi
4522 \fi
4523 \fi
4524 \fi
4525 \ifx\Hy@driver\Hy@defaultdriver
4526     \def\Hy@temp{hdvwind}%
4527     \ifx\Hy@temp\Hy@driver
4528         \kvsetkeys{Hyp}{colorlinks}%
4529         \PassOptionsToPackage{dviwindo}{color}%
4530     \fi
4531 \fi
4532 \fi
4533 \Hy@Message{Driver\HyOpt@DriverType: \Hy@driver}%
4534 \chardef\Hy@VersionChecked=0 %
4535 \input{\Hy@driver.def}%
4536 \ifcase\Hy@VersionChecked
4537     \Hy@VersionCheck{\Hy@driver.def}%
4538 \fi
4539 \let\@unprocessedoptions\relax
4540 \Hy@RestoreCatcodes
4541 \Hy@DisableOption{tex4ht}%
4542 \Hy@DisableOption{pdftex}%
4543 \Hy@DisableOption{nativepdf}%
4544 \Hy@DisableOption{dvipdfm}%
4545 \Hy@DisableOption{dvipdfmx}%
4546 \Hy@DisableOption{dvipdfmx-outline-open}%
4547 \Hy@DisableOption{pdfmark}%
4548 \Hy@DisableOption{dvips}%
4549 \Hy@DisableOption{hypertex}%
4550 \Hy@DisableOption{vtex}%
4551 \Hy@DisableOption{vtexpdfmark}%
4552 \Hy@DisableOption{dviwindo}%
4553 \Hy@DisableOption{dvipsone}%
4554 \Hy@DisableOption{textures}%
4555 \Hy@DisableOption{latex2html}%
4556 \Hy@DisableOption{ps2pdf}%
4557 \Hy@DisableOption{xetex}%
4558 \Hy@DisableOption{pdfversion}%
4559 }

```

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.

```

4560 \newif\ifHy@DvipdfmxOutlineOpen
4561 \ifxetex
4562     \ifdim\number\XeTeXversion\XeTeXrevision in<0.9995in %
4563     \else
4564         \chardef\SpecialDvipdfmxOutlineOpen\@ne

```

```

4565 \Hy@DvipdfmxOutlineOpentru
4566 \fi
4567 \fi
4568 \begingroup\expandafter\expandafter\expandafter\endgroup
4569 \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax
4570 \else
4571 \ifnum\SpecialDvipdfmxOutlineOpen>\z@
4572 \Hy@DvipdfmxOutlineOpentru
4573 \fi
4574 \fi

```

### 15.4.2 Bookmarks

```

4575 \def\WriteBookmarks{0}
4576 \def\@bookmarkopenstatus#1{%
4577 \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:

```

4578 \ifnum#1<\expandafter\@firstofone\expandafter
4579 \{number\@bookmarkopenlevel} % explicit space
4580 \else
4581 -%
4582 \fi
4583 \else
4584 -%
4585 \fi
4586 }
4587 \ifHy@bookmarks
4588 \Hy@Info{Bookmarks ON}%
4589 \ifx\@pdfpagemode\@empty
4590 \def\@pdfpagemode{UseOutlines}%
4591 \fi
4592 \else
4593 \let\@bookmarkopenstatus\ltx@gobble
4594 \Hy@Info{Bookmarks OFF}%
4595 \Hy@AtEndOfPackage{%
4596 \global\let\ReadBookmarks\relax
4597 \global\let\WriteBookmarks\relax
4598 }%
4599 \ifx\@pdfpagemode\@empty
4600 \def\@pdfpagemode{UseNone}%
4601 \fi
4602 \fi
4603 \Hy@DisableOption{bookmarks}

```

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

```

4604 \def\Hy@CatcodeWrapper#1{%
4605 \let\Hy@endWrap\ltx@empty
4606 \def\TMP@EnsureCode##1##2{%
4607 \edef\Hy@endWrap{%
4608 \Hy@endWrap
4609 \catcode##1 \the\catcode##1\relax
4610 }%
4611 \catcode##1 ##2\relax
4612 }%
4613 \TMP@EnsureCode{10}{12}% ^^J
4614 \TMP@EnsureCode{33}{12}% !
4615 \TMP@EnsureCode{34}{12}% "
4616 \TMP@EnsureCode{36}{3}% $ (math)

```

```

4617 \TMP@EnsureCode{38}{4}% & (alignment)
4618 \TMP@EnsureCode{39}{12}% '
4619 \TMP@EnsureCode{40}{12}% (
4620 \TMP@EnsureCode{41}{12}% )
4621 \TMP@EnsureCode{42}{12}% *
4622 \TMP@EnsureCode{43}{12}% +
4623 \TMP@EnsureCode{44}{12}% ,
4624 \TMP@EnsureCode{45}{12}% -
4625 \TMP@EnsureCode{46}{12}% .
4626 \TMP@EnsureCode{47}{12}% /
4627 \TMP@EnsureCode{58}{12}% :
4628 \TMP@EnsureCode{59}{12}% ;
4629 \TMP@EnsureCode{60}{12}% <
4630 \TMP@EnsureCode{61}{12}% =
4631 \TMP@EnsureCode{62}{12}% >
4632 \TMP@EnsureCode{63}{12}% ?
4633 \TMP@EnsureCode{91}{12}% [
4634 \TMP@EnsureCode{93}{12}% ]
4635 \TMP@EnsureCode{94}{7}% ^ (superscript)
4636 \TMP@EnsureCode{95}{8}% _ (subscript)
4637 \TMP@EnsureCode{96}{12}% '
4638 \TMP@EnsureCode{124}{12}% |
4639 \TMP@EnsureCode{126}{13}% ~ (active)
4640 #1\relax
4641 \Hy@EndWrap
4642 }

```

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

```

4643 \Hy@AtBeginDocument{%
4644   \ifHy@ocgcolorlinks
4645     \kvsetkeys{Hyp}{colorlinks}%
4646     \ifHy@pdfa
4647       \Hy@Warning{%
4648         PDF/A: Optional Content Groups are prohibited,\MessageBreak
4649         using 'colorlinks' instead of 'ocgcolorlinks'%
4650       }%
4651     \Hy@ocgcolorlinksfalse
4652   \fi
4653 \fi
4654 \ifHy@ocgcolorlinks
4655 \else
4656   \Hy@DisableOption{ocgcolorlinks}%
4657 \fi
4658 \ifHy@colorlinks
4659   \def\@pdfborder{0 0 0}%
4660   \let\@pdfborderstyle\@empty
4661   \ifHy@typexml
4662   \else
4663     \Hy@CatcodeWrapper{%
4664       \RequirePackage{color}%
4665     }%
4666   \fi
4667   \def\Hy@colorlink#1{%
4668     \begingroup
4669     \HyColor@UseColor#1%
4670   }%
4671   \def\Hy@endcolorlink{\endgroup}%

```



```

4672 \Hy@Info{Link coloring ON}%
4673 \else
4674 \ifHy@frenchlinks
4675 \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
4676 \def\Hy@endcolorlink{\endgroup}%
4677 \Hy@Info{French linking ON}%
4678 \else
for grouping consistency:
4679 \def\Hy@colorlink#1{\begingroup}%
4680 \def\Hy@endcolorlink{\endgroup}%
4681 \Hy@Info{Link coloring OFF}%
4682 \fi
4683 \fi
4684 \Hy@DisableOption{colorlinks}%
4685 \Hy@DisableOption{frenchlinks}%
4686 \ifHy@texht
4687 \long\def\@firstoffive#1#2#3#4#5{#1}%
4688 \long\def\@secondoffive#1#2#3#4#5{#2}%
4689 \long\def\@thirdoffive#1#2#3#4#5{#3}%
4690 \long\def\@fourthoffive#1#2#3#4#5{#4}%
4691 \long\def\@fifthoffive#1#2#3#4#5{#5}%
4692 \providecommand*\@safe@activetrue{}%
4693 \providecommand*\@safe@activesfalse{}%
4694 \def\T@ref#1{%
4695 \Hy@safe@activetrue
4696 \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
4697 \Hy@safe@activesfalse
4698 }%
4699 \def\T@pageref#1{%
4700 \Hy@safe@activetrue
4701 \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
4702 \Hy@safe@activesfalse
4703 }%
4704 \else
4705 \ifHy@typexml
4706 \else
4707 \Hy@CatcodeWrapper{%
4708 \RequirePackage{nameref}%
4709 }%
4710 \fi
4711 \fi
4712 \DeclareRobustCommand\ref{%
4713 \@ifstar\@refstar\T@ref
4714 }%
4715 \DeclareRobustCommand\pageref{%
4716 \@ifstar\@pagerefstar\T@pageref
4717 }%
4718 % \ifclassloaded{memoir}{%
4719 % \ltx@ifundefined{@mem@titlerefno link}\ltx@secondoftwo{%
4720 % \ltx@ifundefined{@mem@titleref}\ltx@secondoftwo\ltx@firstoftwo
4721 % }%
4722 % }\ltx@secondoftwo
4723 % {%
4724 % \DeclareRobustCommand*{\nameref}{%
4725 % \@ifstar\@mem@titlerefno link\@mem@titleref
4726 % }%
4727 % }{%

```

```

4728 \DeclareRobustCommand*\nameref{%
4729 \ifstar\@namerefstar\T@nameref
4730 }%
4731 %}%
4732 }
4733 \Hy@AtBeginDocument{%
4734 \ifHy@texht
4735 \else
4736 \Hy@CatcodeWrapper\ReadBookmarks
4737 \fi
4738 }
4739 \ifHy@backref
4740 \RequirePackage{backref}%
4741 \else
4742 \let\Hy@backout\@gobble
4743 \fi
4744 \Hy@DisableOption{backref}
4745 \Hy@DisableOption{pagebackref}
4746 \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`.

```

4747 \begingroup
4748 \endlinechar=-1 %
4749 \catcode'\^^A=14 %
4750 \catcode'\^^M\active
4751 \catcode'\%\active
4752 \catcode'\#\active
4753 \catcode'\_\active
4754 \catcode'\$\active
4755 \catcode'\&\active
4756 \gdef\hyper@normalise{^^A
4757 \begingroup
4758 \catcode'\^^M\active
4759 \def^^M{ }^^A
4760 \catcode'\%\active
4761 \let%\@percentchar
4762 \let%\@percentchar
4763 \catcode'\#\active
4764 \def#{\hyper@hash}^^A
4765 \def\#{\hyper@hash}^^A
4766 \@makeother\&^^A
4767 \edef&{\string&}^^A
4768 \edef&{\string&}^^A
4769 \edef\textunderscore{\string_}^^A
4770 \let_\textunderscore
4771 \catcode'\_\active
4772 \let_\textunderscore
4773 \let~\hyper@tilde

```

```

4774 \let\-\hyper@tilde
4775 \let\textasciitilde\hyper@tilde
4776 \let\\\@backslashchar
4777 \edef$\string$}^^A
4778 \Hy@safe@activetrue
4779 \hyper@n@rmalise
4780 }^^A
4781 \catcode'\# =6 ^^A
4782 \gdef\Hy@ActiveCarriageReturn{^^M}^^A
4783 \gdef\hyper@n@rmalise#1#2{^^A
4784 \def\Hy@tempa{#2}^^A
4785 \ifx\Hy@tempa\Hy@ActiveCarriageReturn
4786 \ltx@ReturnAfterElseFi{^^A
4787 \hyper@@normalise{#1}^^A
4788 }^^A
4789 \else
4790 \ltx@ReturnAfterFi{^^A
4791 \hyper@@normalise{#1}{#2}^^A
4792 }^^A
4793 \fi
4794 }^^A
4795 \gdef\hyper@@normalise#1#2{^^A
4796 \edef\Hy@tempa{^^A
4797 \endgroup
4798 \noexpand#1{\Hy@RemovePercentCr#2%^^M\@nil}^^A
4799 }^^A
4800 \Hy@tempa
4801 }^^A
4802 \gdef\Hy@RemovePercentCr#1%^^M#2\@nil{^^A
4803 #1^^A
4804 \ifx\limits#2\limits
4805 \else
4806 \ltx@ReturnAfterFi{^^A
4807 \Hy@RemovePercentCr #2\@nil
4808 }^^A
4809 \fi
4810 }^^A
4811 \endgroup
4812 \providecommand*\hyper@chars{%
4813 \let\#\hyper@hash
4814 \let\%\@percentchar
4815 \Hy@safe@activetrue
4816 }

4817 \def\hyperlink#1#2{%
4818 \hyper@@link{#1}{#2}%
4819 }

4820 \def\Hy@VerboseLinkStart#1#2{%
4821 \ifHy@verbose
4822 \begingroup
4823 \Hy@safe@activetrue
4824 \xdef\Hy@VerboseGlobalTemp{(#1) '#2'}%
4825 \Hy@Info{Reference \Hy@VerboseGlobalTemp}%
4826 \xdef\Hy@VerboseGlobalTemp{%
4827 \Hy@VerboseGlobalTemp, %
4828 line \the\inputlineno
4829 }%
4830 \endgroup

```

```

4831 \let\Hy@VerboseLinkInfo\Hy@VerboseGlobalTemp
4832 \@onelevel@sanitize\Hy@VerboseLinkInfo
4833 \fi
4834 }

4835 \def\Hy@VerboseLinkInfo{<VerboseLinkInfo>}
4836 \def\Hy@VerboseLinkStop{%
4837 \ifHy@verbose
4838 \begingroup
4839 \edef\x{\endgroup
4840 \write\m@ne{%
4841 Package 'hyperref' Info: %
4842 End of reference \Hy@VerboseLinkInfo.%
4843 }%
4844 }%
4845 \x
4846 \fi
4847 }

4848 \def\Hy@VerboseAnchor#1{%
4849 \ifHy@verbose
4850 \begingroup
4851 \Hy@safe@activertrue
4852 \Hy@Info{Anchor '\HyperDestNameFilter{#1}'}%
4853 \endgroup
4854 \fi
4855 }

4856 \def\Hy@AllowHyphens{%
4857 \relax
4858 \ifhmode
4859 \penalty\@M
4860 \hskip\z@skip
4861 \fi
4862 }

4863 \DeclareRobustCommand*{\href}[1][]{%
4864 \begingroup
4865 \setkeys{href}{#1}%
4866 \@ifnextchar\bgroup\Hy@href{\hyper@normalise\href@}%
4867 }
4868 \def\Hy@href#1{%
4869 \hyper@normalise\href@
4870 }
4871 \begingroup
4872 \catcode'\$=6 %
4873 \catcode'\#=12 %
4874 \gdef\href$1{\expandafter\href@split$1##\}%
4875 \gdef\href@split$1##$2##$3\\$4{%
4876 \hyper@@link{$1}{$2}{$3}{$4}%
4877 \endgroup
4878 }%
4879 \endgroup

```

Option 'page'.

```

4880 \define@key{href}{page}{%
4881 \def\Hy@href@page{#1}%
4882 }
4883 \let\Hy@href@page\@empty
4884 \newcount\c@Hy@tempcnt

```

```

4885 \def\theHy@tempcnt{\the\c@Hy@tempcnt}
4886 \def\Hy@MakeRemoteAction{%
4887   \ifx\Hy@href@page\@empty
4888     \def\Hy@href@page{0}%
4889   \else
4890     \setcounter{Hy@tempcnt}{\Hy@href@page}%
4891     \ifnum\c@Hy@tempcnt<\@ne
4892       \Hy@Warning{%
4893         Invalid page number (\theHy@tempcnt)\MessageBreak
4894         for remote PDF file.\MessageBreak
4895         Using page 1%
4896       }%
4897     \def\Hy@href@page{0}%
4898   \else
4899     \global\advance\c@Hy@tempcnt\m@ne
4900     \edef\Hy@href@page{\theHy@tempcnt}%
4901   \fi
4902 \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.

```

4903 \ifx\Hy@href@nextactionraw\@empty
4904 \else
4905   \Hy@pdfnewwindowsettrue
4906   \Hy@pdfnewwindowtrue
4907 \fi
4908 }

```

Option ‘pdfremotestartview’.

```

4909 \define@key{href}{pdfremotestartview}{%
4910   \setkeys{Hyp}{pdfremotestartview={#1}}%
4911 }

```

Option ‘pdfnewwindow’.

```

4912 \let\KV@href@pdfnewwindow\KV@Hyp@pdfnewwindow
4913 \let\KV@href@pdfnewwindow@default\KV@Hyp@pdfnewwindow@default

```

Option ‘ismap’.

```

4914 \newif\ifHy@href@ismap
4915 \define@key{href}{ismap}[true]{%
4916   \ltx@ifundefined{Hy@href@ismap#1}{%
4917     \Hy@Error{%
4918       Invalid value (#1) for key ‘ismap’.\MessageBreak
4919       Permitted values are ‘true’ or ‘false’.\MessageBreak
4920       Ignoring ‘ismap’%
4921     }\@ehc
4922   }{%
4923     \csname Hy@href@ismap#1\endcsname
4924   }%
4925 }

```

Option ‘nextactionraw’.

```

4926 \let\Hy@href@nextactionraw\@empty
4927 \define@key{href}{nextactionraw}{%
4928   \edef\Hy@href@nextactionraw{#1}%
4929   \ifx\Hy@href@nextactionraw\@empty
4930   \else
4931     \Hy@Match\Hy@href@nextactionraw{%
4932       ^(\HyPat@ObjRef/|<<.*[/S[/|. +>>|)%

```

```

4933 \[( ?\HyPat@ObjRef/|<<.*[/S[ /.+>>)+ ?)]$%
4934 }{}{%
4935 \Hy@Warning{Invalid value for 'nextactionraw':\MessageBreak
4936 \Hy@href@nextactionraw\MessageBreak
4937 The action is discarded%
4938 }%
4939 }%
4940 \ifx\Hy@href@nextactionraw\@empty
4941 \else
4942 \edef\Hy@href@nextactionraw{/Next \Hy@href@nextactionraw}%
4943 \fi
4944 \fi
4945 }
4946 \def\HyPat@ObjRef/{.+}

```

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

```

4947 \RequirePackage{url}
4948 \let\HyOrg@url\url
4949 \def\Hurl{\begingroup \Url}
4950 \DeclareRobustCommand*\nolinkurl{\hyper@normalise\nolinkurl@}
4951 \def\nolinkurl@#1{\Hurl{#1}}
4952 \DeclareRobustCommand*\url{\hyper@normalise:url@}
4953 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}
4954 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
4955 \providecommand\hyper@image[2]{#2}
4956 \def\hypertarget#1#2{%
4957 \ifHy@nesting
4958 \hyper@@anchor{#1}{#2}%
4959 \else
4960 \hyper@@anchor{#1}{\relax}#2%
4961 \fi
4962 }

```

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

```

4963 \DeclareRobustCommand*\hyperref{%
4964 \@ifnextchar{\Hy@babelnormalise\label@hyperref}\@hyperref
4965 }
4966 \def\Hy@babelnormalise#1[#2]{%
4967 \begingroup
4968 \Hy@safe@activetrue
4969 \edef\Hy@tempa{%
4970 \endgroup
4971 \noexpand#1[#2]}%
4972 }%
4973 \Hy@tempa
4974 }
4975 \def\@hyperref{\hyper@normalise\@hyperref}
4976 \def\@hyperref#1#2#3{%
4977 \edef\ref@one{\ifx\\#2\\ \else#2.\fi#3}%
4978 \expandafter\tryhyper@link\ref@one\{#1}%
4979 }

```

```

4980 \def\tryhyper@link#1\#2{%
4981   \hyper@@link{#2}{#1}%
4982 }

4983 \def\hyperdef{\@ifnextchar[{\label@hyperdef}{\@hyperdef}}
4984 \def\@hyperdef#1#2#3{%, category, name, text
4985   \ifx\#1\%
4986     \def\Hy@AnchorName{#2}%
4987   \else
4988     \def\Hy@AnchorName{#1.#2}%
4989   \fi
4990   \ifHy@nesting
4991     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#3}%
4992   \else
4993     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#3%
4994   \fi
4995 }

```

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.

```

4996 \def\label@hyperref[#1]{%
4997   \expandafter\label@@hyperref\csname r@#1\endcsname{#1}%
4998 }%
4999 \def\label@@hyperref#1#2#3{%
5000   \ifx#1\relax
5001     \protect\G@refundefinedtrue
5002     \@latex@warning{%
5003       Hyper reference ‘#2’ on page \thepage \space undefined%
5004     }%
5005     \begingroup
5006       #3%
5007     \endgroup
5008   \else
5009     \hyper@@link{\expandafter\@fifthoffive#1}%
5010     {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
5011   \fi
5012 }
5013 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
5014                               % anchor text
5015   \@bsphack
5016   \ifx\#2\%
5017     \def\Hy@AnchorName{#3}%
5018   \else
5019     \def\Hy@AnchorName{#2.#3}%
5020   \fi
5021   \if@filesw
5022     \protected@write\@auxout{}{%
5023       \string\newlabel{#1}{\{ }\}{\{ }\Hy@AnchorName}{ }\}%
5024     }%
5025   \fi
5026   \@esphack
5027   \ifHy@nesting
5028     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#4}%
5029   \else
5030     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#4%
5031   \fi
5032 }

```

## 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.

```

5033 \def\hyper@@link{\let\Hy@reserved@a\relax
5034 \@ifnextchar{\hyper@link@}{\hyper@link@[link]}%
5035 }
5036 \def\hyper@link@[#1]#2#3#4{%
5037 \begingroup
5038 \protected@edef\Hy@tempa{#2}%
5039 \Hy@safe@activetrue
5040 \edef\x{#3}%
5041 \ifx\Hy@tempa\@empty
5042 \toks0{\hyper@link{#1}}%
5043 \else
5044 \toks0{\expandafter\hyper@readexternallink#2\{#1}}%
5045 \fi
5046 \toks2{%
5047 \Hy@safe@activesfalse
5048 #4%
5049 }%
5050 \edef\Hy@tempa{\the\toks2}%
5051 \edef\x{\endgroup
5052 \ifx\Hy@tempa\@empty
5053 \noexpand\Hy@Warning{Suppressing empty link}%
5054 \else
5055 \the\toks0 \x\the\toks2}%
5056 \fi
5057 }%
5058 \x
5059 }

```

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.

```

5060 \def\hyper@readexternallink#1\{#2#3#4{%
5061 \begingroup
5062 \let\\\relax
5063 \expandafter\endgroup
5064 \expandafter\@hyper@@readexternallink#1\{#2}{#3}{#4}%
5065 }
5066 \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.



```

5067 \@hyper@readexternallink{#2}{#3}{#4}#1::\{#1}%
5068 }

```

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

```

5069 \def\@pdftempwordfile{file}%
5070 \def\@pdftempwordrun{run}%
5071 \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:

```

5072 \ifx\\#6\\%
5073 \@hyper@linkfile file:#7\\{#3}{#2}{#7}%
5074 \else
5075 \ifx\\#4\\%
5076 \@hyper@linkfile file:#7\\{#3}{#2}{#7}%
5077 \else

```

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

```

5078 \def\@pdftempa{#4}%
5079 \ifx\@pdftempa\@pdftempwordfile
5080 \@hyper@linkfile#7\\{#3}{#2}{#7}%
5081 \else

```

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

```

5082 \ifx\@pdftempa\@pdftempwordrun
5083 \ifHy@pdfa
5084 \Hy@Error{%
5085 PDF/A: Launch action is prohibited%
5086 }\@ehc
5087 \begingroup
5088 \leavevmode
5089 #2%
5090 \endgroup
5091 \else
5092 \@hyper@launch#7\\{#3}{#2}%
5093 \fi
5094 \else

```

otherwise its a URL

```

5095 \hyper@linkurl{#3}{#7\ifx\\#2\\%}\else\hyper@hash#2\fi}%
5096 \fi
5097 \fi
5098 \fi
5099 \fi
5100 }

```

By default, turn run: into file:

```

5101 \def\@hyper@launch run:#1\\#2#3{% filename, anchor text, linkname
5102 \hyper@linkurl{#2}{%
5103 \Hy@linkfileprefix
5104 #1%
5105 \ifx\\#3\\%
5106 \else
5107 \hyper@hash
5108 #3%

```

```

5109 \fi
5110 }%
5111 }

```

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

```

5112 \def\@hyper@linkfile file:#1\|#2#3#4{%
5113   %file url,link string, name, original uri
5114   \filename@parse{#1}%
5115   \ifx\filename@ext\relax
5116     \edef\filename@ext{\XR@ext}%
5117   \fi
5118   \def\use@file{\filename@area\filename@base.\filename@ext}%
5119   \Hy@ifStringEndsWith\filename@ext\XR@ext{%
5120     \hyper@linkfile{#2}{\use@file}{#3}%
5121   }{%
5122     \ifx\@baseurl\@empty
5123       \hyper@linkurl{#2}{%
5124         #4\ifx\|#3\\\else\hyper@hash#3\fi
5125       }%
5126     \else
5127       \hyper@linkurl{#2}{\use@file\ifx\|#3\\\else\hyper@hash#3\fi}%
5128     \fi
5129   }%
5130 }

5131 \def\Hy@ifStringEndsWith#1#2{%
5132   \begingroup
5133   \edef\x{#1}%
5134   \@onelevel@sanitize\x
5135   \edef\x{.\x}%
5136   \edef\y{#2}%
5137   \@onelevel@sanitize\y
5138   \edef\y{.\y}%
5139   \expandafter\def\expandafter\z\expandafter##\expandafter1\y##2\@nil{%
5140     \endgroup
5141     \ifx\relax##2\relax
5142       \expandafter\ltx@secondoftwo
5143     \else
5144       \expandafter\ltx@firstoftwo
5145     \fi
5146   }%
5147   \expandafter\expandafter\expandafter\z\expandafter\x\y\@nil
5148 }

5149 \def\Hy@StringLocalhost{localhost}
5150 \@onelevel@sanitize\Hy@StringLocalhost
5151 \def\Hy@CleanupFile#1{%
5152   \edef#1{#1}%
5153   \expandafter\Hy@@CleanupFile#1\hbox{//\hbox\@nil{#1}%
5154 }
5155 \def\Hy@@CleanupFile#1//#2/#3\hbox#4\@nil#5{%
5156   \begingroup
5157   \toks@{\endgroup}%
5158   \def\x{#1}%
5159   \ifx\x\@empty
5160     \def\x{#2}%
5161   \ifx\x\@empty
5162     \toks@{\endgroup\def#5{/#3}}%

```

```

5163 \else
5164 \@onelevel@sanitize\x
5165 \ifx\x\Hy@StringLocalhost
5166 \toks@{\endgroup\def#5{/#3}}}%
5167 \fi
5168 \fi
5169 \fi
5170 \the\toks@
5171 }

```

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.

```

5172 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
5173 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
5174 \ifx\#1\%
5175 #2\Hy@Warning{Ignoring empty anchor}%
5176 \else
5177 \def\anchor@spot{#2#3}%
5178 \let\put@me@back\@empty
5179 \ifx\relax#2\relax
5180 \else
5181 \ifHy@nesting
5182 \else
5183 \ifcat a\noexpand#2\relax
5184 \else
5185 \ifcat 0\noexpand#2 \relax
5186 \else
5187 % \typeout{Anchor start is not alphanumeric %
5188 % on input line\the\inputlineno%
5189 % }%
5190 \let\anchor@spot\@empty
5191 \def\put@me@back{#2#3}%
5192 \fi
5193 \fi
5194 \fi
5195 \fi
5196 \ifHy@activeanchor
5197 \anchor@spot
5198 \else
5199 \hyper@anchor{#1}%
5200 \fi
5201 \expandafter\put@me@back
5202 \fi
5203 \let\anchor@spot\@empty
5204 }
5205 \let\anchor@spot\ltx@empty

```

## 18 Compatibility with the *L<sup>A</sup>T<sub>E</sub>X2html* package

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

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

```

5206 \let\htmladdimg\hyperimage
5207 \def\htmladdnormallink#1#2{\href{#2}{#1}}
5208 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
5209 \def\htmlref#1#2{% anchor text, label
5210   \label@hyperref{#2}{#1}%
5211 }

```

This is really too much. The L<sup>A</sup>T<sub>E</sub>X2html package defines its own `\hyperref` command, with a different syntax. Was this always here? Its weird, anyway. We interpret it in the ‘printed’ way, since we are about fidelity to the page.

```

5212 \def\@@latextohtmlX{%
5213   \let\hhyperref\hyperref
5214   \def\hyperref##1##2##3##4{% anchor text for HTML
5215     % text to print before label in print
5216     % label
5217     % post-label text in print
5218     ##2\ref{##4}##3%
5219   }%
5220 }

```

## 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.

```

5221 \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
5222 \def\HyField@NewFlag#1#2{%
5223   \lowercase{\HyField@NewOption{#2}}%
5224   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5225 }

```

```

\HyField@NewFlagOnly
5226 \def\HyField@NewFlagOnly#1#2{%
5227   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5228 }

```

`\HyField@NewOption` #1: option name

```
5229 \def\HyField@NewOption#1{%
5230   \expandafter\newif\csname ifFld@#1\endcsname
5231   \define@key{Field}{#1}[true]{%
5232     \lowercase{\Field@boolkey{##1}}{#1}%
5233   }%
5234 }
```

`\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

```
5235 \def\HyField@NewBitsetFlag#1#2#3#4{%
5236   \begingroup
5237   \count@=#4\relax
5238   \advance\count@\m@ne
5239   \def\x##1{%
5240     \endgroup
5241     \expandafter\def\csname HyField@#3@#1\endcsname{##1}%
5242     \expandafter\ifx\csname HyField@#3@#1\endcsname\relax
5243       \expandafter\edef\csname HyField@#3@#1\endcsname{%
5244         (\number#4) #2%
5245       }%
5246     \else
5247       \expandafter\edef\csname HyField@#3@#1\endcsname{%
5248         \csname HyField@#3@#1\endcsname
5249         /#2%
5250       }%
5251     \fi
5252   }%
5253   \expandafter\x\expandafter{\the\count@}%
5254 }
```

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

```
5255 \def\HyField@UseFlag#1#2{%
5256   \lowercase{\HyField@@UseFlag{#2}}{#1}%
5257 }
```

`\HyField@@UseFlag`

```
5258 \def\HyField@@UseFlag#1#2{%
5259   \bitsetSetValue{HyField@#2}{%
5260     \csname HyField@#2@#1\endcsname
5261   }{%
5262     \csname ifFld@#1\endcsname 1\else 0\fi
5263   }%
5264 }
```

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

```
5265 \def\HyField@SetFlag#1#2{%
5266   \lowercase{\HyField@@SetFlag{#2}}{#1}%
5267 }
```

`\HyField@@SetFlag`

```
5268 \def\HyField@@SetFlag#1#2{%
5269   \bitsetSetValue{HyField@#2}{%
```

```

5270 \csname HyField@#2@#1\endcsname
5271 }{1}%
5272 }

```

\HyField@PrintFlags

```

5273 \def\HyField@PrintFlags#1#2{%
5274 \ifHy@verbose
5275 \begingroup
5276 \let\Hy@temp\@empty
5277 \let\MessageBreak\relax
5278 \expandafter\@for\expandafter\x\expandafter:\expandafter=%
5279 \bitsetGetSetBitList{HyField@#1}\do{%
5280 \edef\Hy@temp{%
5281 \Hy@temp
5282 \csname HyField@#1@\x\endcsname\MessageBreak
5283 }%
5284 }%
5285 \edef\x{\endgroup
5286 \noexpand\Hy@Info{%
5287 Field flags: %
5288 \expandafter\ifx\@car#1\@nil S\else/\fi
5289 #1 %
5290 \bitsetGetDec{HyField@#1} %
5291 (0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
5292 \Hy@temp
5293 for #2%
5294 }%
5295 }\x
5296 \fi
5297 }

```

### 19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```

5298 \HyField@NewFlag{Ff}{ReadOnly}{1}
5299 \HyField@NewFlag{Ff}{Required}{2}
5300 \HyField@NewFlag{Ff}{NoExport}{3}

```

“Table 8.75 Field flags specific to button fields”

```

5301 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
5302 \HyField@NewFlag{Ff}{Radio}{16}
5303 \HyField@NewFlag{Ff}{Pushbutton}{17}
5304 \HyField@NewFlag{Ff}{RadiosInUnison}{26}

```

“Table 8.77 Field flags specific to text fields”

```

5305 \HyField@NewFlag{Ff}{Multiline}{13}
5306 \HyField@NewFlag{Ff}{Password}{14}
5307 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
5308 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5309 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4
5310 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4
5311 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5

```

“Table 8.79 field flags specific to choice fields”

```

5312 \HyField@NewFlag{Ff}{Combo}{18}
5313 \HyField@NewFlag{Ff}{Edit}{19}
5314 \HyField@NewFlag{Ff}{Sort}{20}
5315 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4

```

```

5316 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5317 \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.

```

5318 \newif\ifFld@popdown
5319 \define@key{Field}{popdown}[true]{%
5320   \lowercase{\Field@boolkey{#1}}{popdown}%
5321 }

```

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.

```

5322 \HyField@NewFlag{F}{Invisible}{1}
5323 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2
5324 \HyField@NewFlag{F}{Print}{3}% PDF 1.2
5325 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2
5326 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3
5327 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3
5328 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4
5329 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5
5330 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7

5331 \ifHy@pdfa
5332   \def\HyField@PDFAFldWarning#1#2{%
5333     \Hy@Warning{%
5334       PDF/A: Annotation flag ‘#1’ must\MessageBreak
5335       be set to ‘#2’%
5336     }%
5337   }%
5338   \Fld@invisiblefalse
5339   \def\Fld@invisibletrue{%
5340     \HyField@PDFAFldWarning{invisible}{false}%
5341   }%
5342   \Fld@hiddenfalse
5343   \def\Fld@hiddenttrue{%
5344     \HyField@PDFAFldWarning{hidden}{false}%
5345   }%
5346   \Fld@printtrue
5347   \def\Fld@printfalse{%
5348     \HyField@PDFAFldWarning{print}{true}%
5349   }%
5350   \Fld@nozoomtrue
5351   \def\Fld@nozoomfalse{%
5352     \HyField@PDFAFldWarning{nozoom}{true}%
5353   }%
5354   \Fld@norotatetrue
5355   \def\Fld@norotatefalse{%
5356     \HyField@PDFAFldWarning{norotate}{true}%
5357   }%
5358   \Fld@noviewfalse
5359   \def\Fld@noviewtrue{%
5360     \HyField@PDFAFldWarning{noview}{false}%
5361   }%
5362 \fi

```

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

```

5363 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
5364 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
5365 \HyField@NewFlag{Submit}{GetMethod}{4}
5366 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
5367 \HyField@NewFlagOnly{Submit}{XFDF}{6}
5368 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}
5369 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
5370 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}
5371 \HyField@NewFlag{Submit}{CanonicalFormat}{10}
5372 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
5373 \HyField@NewFlag{Submit}{ExclFKey}{12}
5374 \HyField@NewFlag{Submit}{EmbedForm}{14}

5375 \define@key{Field}{export}{%
5376   \lowercase{\def\Hy@temp{#1}}%
5377   \@ifundefined{Fld@export@\Hy@temp}{%
5378     \@onelevel@sanitize\Hy@temp
5379     \Hy@Error{%
5380       Unknown export format '\Hy@temp'.\MessageBreak
5381       Known formats are 'FDF', 'HTML', 'XFDF', and 'PDF'%
5382     }}\@ehc
5383 }{%
5384   \let\Fld@export\Hy@temp
5385 }%
5386 }
5387 \def\Fld@export{fdf}
5388 \@namedef{Fld@export@fdf}{0}%
5389 \@namedef{Fld@export@html}{1}%
5390 \@namedef{Fld@export@xfdf}{2}%
5391 \@namedef{Fld@export@pdf}{3}%

```

### 19.1.2 Set submit flags

\HyField@FlagsSubmit

```

5392 \def\HyField@FlagsSubmit{%
5393   \bitsetReset{HyField@Submit}%
5394   \ifcase\@nameuse{Fld@export@\Fld@export} %
5395     % FDF
5396     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5397     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5398     \HyField@UseFlag{Submit}{IncludeAppendSaves}%
5399     \HyField@UseFlag{Submit}{IncludeAnnotations}%
5400     \HyField@UseFlag{Submit}{CanonicalFormat}%
5401     \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
5402     \HyField@UseFlag{Submit}{ExclFKey}%
5403     \HyField@UseFlag{Submit}{EmbedForm}%
5404   \or % HTML
5405     \HyField@SetFlag{Submit}{ExportFormat}%
5406     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5407     \HyField@UseFlag{Submit}{GetMethod}%
5408     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5409     \HyField@UseFlag{Submit}{CanonicalFormat}%
5410   \or % XFDF
5411     \HyField@SetFlag{Submit}{XFDF}%
5412     \HyField@UseFlag{Submit}{IncludeNoValueFields}%

```



```

5413 \HyField@UseFlag{Submit}{SubmitCoordinates}%
5414 \HyField@UseFlag{Submit}{CanonicalFormat}%
5415 \or % PDF
5416 \HyField@SetFlag{Submit}{SubmitPDF}%
5417 \HyField@UseFlag{Submit}{GetMethod}%
5418 \fi
5419 \HyField@PrintFlags{Submit}{submit button field}%
5420 \bitsetIsEmpty{HyField@Submit}{%
5421 \let\Fld@submitflags\ltx@empty
5422 }{%
5423 \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}%
5424 }%
5425 }

```

### 19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

5426 \def\HyField@FlagsAnnot#1{%
5427 \bitsetReset{HyField@F}%
5428 \HyField@UseFlag{F}{Invisible}%
5429 \HyField@UseFlag{F}{Hidden}%
5430 \HyField@UseFlag{F}{Print}%
5431 \HyField@UseFlag{F}{NoZoom}%
5432 \HyField@UseFlag{F}{NoRotate}%
5433 \HyField@UseFlag{F}{NoView}%
5434 \HyField@UseFlag{F}{Locked}%
5435 \HyField@UseFlag{F}{ToggleNoView}%
5436 \HyField@UseFlag{F}{LockedContents}%
5437 \HyField@PrintFlags{F}{#1}%
5438 \bitsetIsEmpty{HyField@F}{%
5439 \let\Fld@annotflags\ltx@empty
5440 }{%
5441 \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}%
5442 }%
5443 }

```

### 19.1.4 Pushbutton field

\HyField@FlagsPushButton

```

5444 \def\HyField@FlagsPushButton{%
5445 \HyField@FlagsAnnot{push button field}%
5446 \bitsetReset{HyField@Ff}%
5447 \HyField@UseFlag{Ff}{ReadOnly}%
5448 \HyField@UseFlag{Ff}{Required}%
5449 \HyField@UseFlag{Ff}{NoExport}%
5450 \HyField@SetFlag{Ff}{Pushbutton}%
5451 \HyField@PrintFlags{Ff}{push button field}%
5452 \bitsetIsEmpty{HyField@Ff}{%
5453 \let\Fld@flags\ltx@empty
5454 }{%
5455 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5456 }%
5457 }

```

### 19.1.5 Check box field

\HyField@FlagsCheckBox

```

5458 \def\HyField@FlagsCheckBox{%
5459   \HyField@FlagsAnnot{check box field}%
5460   \bitsetReset{HyField@Ff}%
5461   \HyField@UseFlag{Ff}{ReadOnly}%
5462   \HyField@UseFlag{Ff}{Required}%
5463   \HyField@UseFlag{Ff}{NoExport}%
5464   \HyField@PrintFlags{Ff}{check box field}%
5465   \bitsetIsEmpty{HyField@Ff}{%
5466     \let\Fld@flags\ltx@empty
5467   }{%
5468     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5469   }%
5470 }

```

### 19.1.6 Radio button field

\HyField@FlagsRadioButton

```

5471 \def\HyField@FlagsRadioButton{%
5472   \HyField@FlagsAnnot{radio button field}%
5473   \bitsetReset{HyField@Ff}%
5474   \HyField@UseFlag{Ff}{ReadOnly}%
5475   \HyField@UseFlag{Ff}{Required}%
5476   \HyField@UseFlag{Ff}{NoExport}%
5477   \HyField@UseFlag{Ff}{NoToggleToOff}%
5478   \HyField@SetFlag{Ff}{Radio}%
5479   \HyField@UseFlag{Ff}{RadiosInUnison}%
5480   \HyField@PrintFlags{Ff}{radio button field}%
5481   \bitsetIsEmpty{HyField@Ff}{%
5482     \let\Fld@flags\ltx@empty
5483   }{%
5484     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5485   }%
5486 }

```

### 19.1.7 Text fields

\HyField@FlagsText

```

5487 \def\HyField@FlagsText{%
5488   \HyField@FlagsAnnot{text field}%
5489   \bitsetReset{HyField@Ff}%
5490   \HyField@UseFlag{Ff}{ReadOnly}%
5491   \HyField@UseFlag{Ff}{Required}%
5492   \HyField@UseFlag{Ff}{NoExport}%
5493   \HyField@UseFlag{Ff}{Multiline}%
5494   \HyField@UseFlag{Ff}{Password}%
5495   \HyField@UseFlag{Ff}{FileSelect}%
5496   \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5497   \HyField@UseFlag{Ff}{DoNotScroll}%
5498   \ifFld@comb
5499     \ifcase0\ifFld@multiline
5500       \else\ifFld@password
5501       \else\ifFld@fileselect
5502       \else 1\fi\fi\fi\relax
5503     \Hy@Error{%
5504       Field option ‘comb’ cannot used together with\MessageBreak
5505       ‘multiline’, ‘password’, or ‘fileselect’%
5506     }\@ehc

```

```

5507 \else
5508 \HyField@UseFlag{Ff}{Comb}%
5509 \fi
5510 \fi
5511 \HyField@UseFlag{Ff}{RichText}%
5512 \HyField@PrintFlags{Ff}{text field}%
5513 \bitsetIsEmpty{HyField@Ff}{%
5514 \let\Fld@flags\ltx@empty
5515 }{%
5516 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5517 }%
5518 }

```

### 19.1.8 Choice fields

\HyField@FlagsChoice

```

5519 \def\HyField@FlagsChoice{%
5520 \HyField@FlagsAnnot{choice field}%
5521 \bitsetReset{HyField@Ff}%
5522 \HyField@UseFlag{Ff}{ReadOnly}%
5523 \HyField@UseFlag{Ff}{Required}%
5524 \HyField@UseFlag{Ff}{NoExport}%
5525 \HyField@UseFlag{Ff}{Combo}%
5526 \ifFld@combo
5527 \HyField@UseFlag{Ff}{Edit}%
5528 \fi
5529 \HyField@UseFlag{Ff}{Sort}%
5530 \HyField@UseFlag{Ff}{MultiSelect}%
5531 \ifFld@combo
5532 \ifFld@edit
5533 \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5534 \fi
5535 \fi
5536 \HyField@UseFlag{Ff}{CommitOnSelChange}%
5537 \HyField@PrintFlags{Ff}{choice field}%
5538 \bitsetIsEmpty{HyField@Ff}{%
5539 \let\Fld@flags\ltx@empty
5540 }{%
5541 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5542 }%
5543 }

```

## 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.

```

5544 \def\HyField@PDFChoices#1{%
5545 \begingroup
5546 \global\let\Fld@choices\ltx@empty
5547 \let\HyTmp@optlist\ltx@empty
5548 \let\HyTmp@optitem\relax
5549 \count@=0 %
5550 \kv@parse{#1}{%
5551 \Hy@pdfstringdef\kv@key\kv@key

```

```

5552 \ifx\kv@value\relax
5553 \ifnum\Hy@pdfversion<3 % implementation note 122, PDF spec 1.7
5554 \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@key)]}%
5555 \else
5556 \xdef\Fld@choices{\Fld@choices(\kv@key)}%
5557 \fi
5558 \else
5559 \Hy@pdfstringdef\kv@value\kv@value
5560 \xdef\Fld@choices{\Fld@choices[(\kv@value)(\kv@key)]}%
5561 \fi
5562 \edef\HyTmp@optlist{%
5563 \HyTmp@optlist
5564 \HyTmp@optitem{the\count@}{\kv@key}0%
5565 }%
5566 \advance\count@ by 1 %
5567 \@gobbletwo
5568 }%
5569 \xdef\Fld@choices{/Opt[\Fld@choices]}%
5570 \ifFld@multiselect
5571 \HyField@@PDFChoices{DV}\Fld@default
5572 \HyField@@PDFChoices{V}\Fld@value
5573 \else
5574 \ifx\Fld@default\relax
5575 \else
5576 \pdfstringdef\Hy@gtemp\Fld@default
5577 \xdef\Fld@choices{\Fld@choices/DV(\Hy@gtemp)}%
5578 \fi
5579 \ifx\Fld@value\relax
5580 \else
5581 \pdfstringdef\Hy@gtemp\Fld@value
5582 \xdef\Fld@choices{\Fld@choices/V(\Hy@gtemp)}%
5583 \fi
5584 \fi
5585 \endgroup
5586 }

```

\HyField@@PDFChoices

```

5587 \def\HyField@@PDFChoices#1#2{%
5588 \ifx#2\relax
5589 \else
5590 \count@=0 %
5591 \def\HyTmp@optitem##1##2##3{%
5592 \def\HyTmp@key{##2}%
5593 \ifx\HyTmp@key\Hy@gtemp
5594 \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5595 \HyTmp@optlist
5596 \HyTmp@optitem{##1}{##2}1%
5597 }%
5598 \let\HyTmp@found=Y%
5599 \else
5600 \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5601 \HyTmp@optlist
5602 \HyTmp@optitem{##1}{##2}##3%
5603 }%
5604 \fi
5605 }%
5606 \expandafter\comma@parse\expandafter{#2}{%
5607 \pdfstringdef\Hy@gtemp\comma@entry

```

```

5608 \let\HyTmp@found=N %
5609 \expandafter\let\expandafter\HyTmp@optlist\expandafter\@empty
5610 \HyTmp@optlist
5611 \ifx\HyTmp@found Y%
5612 \advance\count@ by 1 %
5613 \else
5614 \@onelevel@sanitize\comma@entry
5615 \PackageWarning{hyperref}{%
5616 \string\ChoiceBox: Ignoring value '\comma@entry',%
5617 \MessageBreak
5618 it cannot be found in the choices%
5619 }%
5620 \fi
5621 \@gobble
5622 }%
5623 \def\HyTmp@optitem##1##2##3{%
5624 \ifnum##3=1 %
5625 (##2)%
5626 \fi
5627 }%
5628 \ifcase\count@
5629 \or
5630 \xdef\Fld@choices{\Fld@choices/#1\HyTmp@optlist}%
5631 \else
5632 \xdef\Fld@choices{\Fld@choices/#1[\HyTmp@optlist]}%
5633 \ifx#1V%
5634 \def\HyTmp@optitem##1##2##3{%
5635 \ifnum##3=1 %
5636 \@firstofone{ ##1}%
5637 \fi
5638 }%
5639 \edef\HyTmp@optlist{\HyTmp@optlist}%
5640 \xdef\Fld@choices{%
5641 \Fld@choices
5642 /I\expandafter\@firstofone\HyTmp@optlist}%
5643 }%
5644 \fi
5645 \fi
5646 \fi
5647 }

```

## 19.3 Forms

\HyField@SetKeys

```

5648 \def\HyField@SetKeys{%
5649 \kvsetkeys{Field}%
5650 }

5651 \newif\ifFld@checked
5652 \newif\ifFld@disabled
5653 \Fld@checkedfalse
5654 \Fld@disabledfalse
5655 \newcount\Fld@menulength
5656 \newdimen\Field@Width
5657 \newdimen\Fld@charsize
5658 \Fld@charsize=10\p@
5659 \def\Fld@maxlen{0}

```

```

5660 \def\Fld@align{0}
5661 \def\Fld@color{0 0 0 rg}
5662 \def\Fld@bcolor{1 1 1}
5663 \def\Fld@bordercolor{1 0 0}
5664 \def\Fld@bordersep{1\p@}
5665 \def\Fld@borderwidth{1}
5666 \def\Fld@borderstyle{S}
5667 \def\Fld@cbsymbol{4}
5668 \def\Fld@radiosymbol{H}
5669 \def\Fld@rotation{0}
5670 \def\Fld@Form{\@ifnextchar{\@Form}{\@Form[]}}
5671 \def\endForm{\@endForm}
5672 \newif\ifForm@html
5673 \Form@htmlfalse
5674 \def\Fld@boolkey#1#2{%
5675   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5676 }
5677 \define@key{Form}{action}{%
5678   \hyper@normalise\Hy@DefFormAction{#1}%
5679 }
5680 \def\Hy@DefFormAction{\def\Fld@action}
5681 \def\enc@html{html}
5682 \define@key{Form}{encoding}{%
5683   \def\Hy@tempa{#1}%
5684   \ifx\Hy@tempa\enc@html
5685     \Form@htmltrue
5686     \def\Fld@export{html}%
5687   \else
5688     \Hy@Warning{%
5689       Form 'encoding' key with \MessageBreak
5690       unknown value '#1'%
5691     }%
5692     \Form@htmlfalse
5693   \fi
5694 }
5695 \define@key{Form}{method}{%
5696   \lowercase{\def\Hy@temp{#1}}%
5697   \@ifundefined{Form@method@\Hy@temp}{%
5698     \@onelevel@sanitize\Hy@temp
5699     \Hy@Error{%
5700       Unknown method '\Hy@temp'.\MessageBreak
5701       Known values are 'post' and 'get'%
5702     } \@ehc
5703   }{%
5704     \let\Fld@method\Hy@temp
5705     \ifcase\@nameuse{Form@method@\Hy@temp} %
5706       \Fld@getmethodfalse
5707     \else
5708       \Fld@getmethodtrue
5709     \fi
5710   }%
5711 }
5712 \def\Fld@Form@method{}
5713 \@namedef{Form@method@post}{0}
5714 \@namedef{Form@method@get}{1}
5715 \newif\ifHyField@NeedAppearances
5716 \def\HyField@NeedAppearancesfalse{%

```

```

5717 \global\let\ifHyField@NeedAppearances\iffalse
5718 }
5719 \def\HyField@NeedAppearancetrue{%
5720 \global\let\ifHyField@NeedAppearances\iftrue
5721 }
5722 \HyField@NeedAppearancetrue
5723 \define@key{Form}{NeedAppearances}[true]{%
5724 \edef\Hy@tempa{#1}%
5725 \ifx\Hy@tempa\Hy@true
5726 \HyField@NeedAppearancetrue
5727 \else
5728 \ifx\Hy@tempa\Hy@false
5729 \HyField@NeedAppearancesfalse
5730 \else
5731 \Hy@Error{%
5732 Unexpected value '\Hy@tempa'\MessageBreak
5733 of option 'NeedAppearances' instead of\MessageBreak
5734 'true' or 'false'%
5735 }\@ehc
5736 \fi
5737 \fi
5738 }
5739 \def\Field@boolkey#1#2{%
5740 \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5741 }
5742 \ifHy@texht
5743 \newtoks\Field@toks
5744 \Field@toks={ }%
5745 \def\Field@addtoks#1#2{%
5746 \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}%
5747 \@processme
5748 }%
5749 \else
5750 \def\Hy@WarnHTMLFieldOption#1{%
5751 \Hy@Warning{%
5752 HTML field option '#1'\MessageBreak
5753 is ignored%
5754 }%
5755 }%
5756 \fi
5757 \def\Fld@checkequals#1=#2=#3\\{%
5758 \def\@currDisplay{#1}%
5759 \ifx\\#2\\%
5760 \def\@currValue{#1}%
5761 \else
5762 \def\@currValue{#2}%
5763 \fi
5764 }
5765 \define@key{Field}{loc}{%
5766 \def\Fld@loc{#1}%
5767 }
5768 \define@key{Field}{checked}[true]{%
5769 \lowercase{\Field@boolkey{#1}}{checked}%
5770 }
5771 \define@key{Field}{disabled}[true]{%
5772 \lowercase{\Field@boolkey{#1}}{disabled}%
5773 }

```

```

5774 \ifHy@texht
5775   \define@key{Field}{accesskey}{%
5776     \Field@addtoks{accesskey}{#1}%
5777   }%
5778   \define@key{Field}{tabkey}{%
5779     \Field@addtoks{tabkey}{#1}%
5780   }%
5781 \else
5782   \define@key{Field}{accesskey}{%
5783     \Hy@WarnHTMLFieldOption{accesskey}%
5784   }%
5785   \define@key{Field}{tabkey}{%
5786     \Hy@WarnHTMLFieldOption{tabkey}%
5787   }%
5788 \fi
5789 \define@key{Field}{name}{%
5790   \def\Fld@name{#1}%
5791 }
5792 \let\Fld@altname\relax
5793 \define@key{Field}{altname}{%
5794   \def\Fld@altname{#1}%
5795 }
5796 \let\Fld@mappingname\relax
5797 \define@key{Field}{mappingname}{%
5798   \def\Fld@mappingname{#1}%
5799 }
5800 \define@key{Field}{width}{%
5801   \def\Fld@width{#1}%
5802   \Field@Width#1\setbox0=\hbox{m}%
5803 }
5804 \define@key{Field}{maxlen}{%
5805   \def\Fld@maxlen{#1}%
5806 }
5807 \define@key{Field}{menulength}{%
5808   \Fld@menulength=#1\relax
5809 }
5810 \define@key{Field}{height}{%
5811   \def\Fld@height{#1}%
5812 }
5813 \define@key{Field}{charsize}{%
5814   \setlength{\Fld@charsize}{#1}%
5815 }
5816 \define@key{Field}{borderwidth}{%
5817   \Hy@defaultbp\Fld@borderwidth{#1}%
5818 }
5819 \def\Hy@defaultbp#1#2{%
5820   \begingroup
5821     \afterassignment\Hy@defaultbpAux
5822     \dimen@=#2bp\relax{#1}{#2}%
5823 }
5824 \begingroup\expandafter\expandafter\expandafter\endgroup
5825 \expandafter\ifx\csname dimexpr\endcsname\relax
5826   \def\Hy@defaultbpAux#1\relax#2#3{%
5827     \ifx!#1!%
5828       \endgroup
5829       \def#2{#3}%
5830     \else

```



```

5831 \dimen@=.99626\dimen@
5832 \edef\x{\endgroup
5833 \def\noexpand#2{%
5834 \strip@pt\dimen@
5835 }%
5836 }\x
5837 \fi
5838 }%
5839 \else
5840 \def\Hy@defaultbpAux#1\relax#2#3{%
5841 \ifx!#1!%
5842 \endgroup
5843 \def#2{#3}%
5844 \else
5845 \edef\x{\endgroup
5846 \def\noexpand#2{%
5847 \strip@pt\dimexpr\dimen@*800/803\relax
5848 }%
5849 }\x
5850 \fi
5851 }%
5852 \fi
5853 \define@key{Field}{borderstyle}{%
5854 \let\Hy@temp\Fld@borderstyle
5855 \def\Fld@borderstyle{#1}%
5856 \Hy@Match\Fld@borderstyle{%
5857 ~[SDBIU]$%
5858 }~}{%
5859 \Hy@Warning{%
5860 Invalid value '\@pdfborderstyle'\MessageBreak
5861 for option 'pdfborderstyle'. Valid values:\MessageBreak
5862 \space\space S (Solid), D (Dashed), B (Beveled),\MessageBreak
5863 \space\space I (Inset), U (Underline)\MessageBreak
5864 Option setting is ignored%
5865 }%
5866 \let\Fld@borderstyle\Hy@temp
5867 }%
5868 }
5869 \define@key{Field}{bordersep}{%
5870 \def\Fld@bordersep{#1}%
5871 }
5872 \define@key{Field}{default}{%
5873 \def\Fld@default{#1}%
5874 }
5875 \define@key{Field}{align}{%
5876 \def\Fld@align{#1}%
5877 }
5878 \define@key{Field}{value}{%
5879 \def\Fld@value{#1}%
5880 }
5881 \define@key{Field}{checkboxsymbol}{%
5882 \Fld@DingDef\Fld@cbsymbol{#1}%
5883 }
5884 \define@key{Field}{radiosymbol}{%
5885 \Fld@DingDef\Fld@radiosymbol{#1}%
5886 }
5887 \def\Fld@DingDef#1#2{%

```

```

5888 \let\Fld@temp\ltx@empty
5889 \Fld@@DingDef#2\ding{ }\@nil
5890 \let#1\Fld@temp
5891 }
5892 \def\Fld@@DingDef#1\ding#2#3\@nil{%
5893 \expandafter\def\expandafter\Fld@temp\expandafter{%
5894 \Fld@temp
5895 #1%
5896 }%
5897 \ifx\#3\%
5898 \expandafter\@gobble
5899 \else
5900 \begingroup
5901 \lccode'0=#2\relax
5902 \lowercase{\endgroup
5903 \expandafter\def\expandafter\Fld@temp\expandafter{%
5904 \Fld@temp
5905 0%
5906 }%
5907 }%
5908 \expandafter\@firstofone
5909 \fi
5910 {%
5911 \Fld@@DingDef#3\@nil
5912 }%
5913 }

5914 \define@key{Field}{rotation}{%
5915 \def\Fld@rotation{#1}%
5916 }

5917 \define@key{Field}{backgroundcolor}{%
5918 \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
5919 }
5920 \define@key{Field}{bordercolor}{%
5921 \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
5922 }
5923 \define@key{Field}{color}{%
5924 \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
5925 }

5926 \let\Fld@onclick@code\ltx@empty
5927 \let\Fld@format@code\ltx@empty
5928 \let\Fld@validate@code\ltx@empty
5929 \let\Fld@calculate@code\ltx@empty
5930 \let\Fld@keystroke@code\ltx@empty
5931 \let\Fld@onfocus@code\ltx@empty
5932 \let\Fld@onblur@code\ltx@empty
5933 \let\Fld@onmousedown@code\ltx@empty
5934 \let\Fld@onmouseup@code\ltx@empty
5935 \let\Fld@onenter@code\ltx@empty
5936 \let\Fld@onexit@code\ltx@empty
5937 \def\Hy@temp#1{%
5938 \expandafter\Hy@@temp\csname Fld@#1@code\endcsname{#1}%
5939 }
5940 \def\Hy@@temp#1#2{%
5941 \ifHy@pdfa
5942 \define@key{Field}{#2}{%
5943 \Hy@Error{%

```

```

5944     PDF/A: Additional action '#2' is prohibited%
5945     }\@ehc
5946     }%
5947     \else
5948     \define@key{Field}{#2}{%
5949     \def#1{##1}%
5950     }%
5951     \fi
5952 }
5953 \Hy@temp{keystroke}
5954 \Hy@temp{format}
5955 \Hy@temp{validate}
5956 \Hy@temp{calculate}
5957 \Hy@temp{onfocus}
5958 \Hy@temp{onblur}
5959 \Hy@temp{onenter}
5960 \Hy@temp{onexit}
5961 \ifHy@texht
5962   \def\Hy@temp#1{%
5963     \define@key{Field}{#1}{%
5964       \Field@addtoks{#1}{##1}%
5965     }%
5966   }%
5967   \else
5968     \def\Hy@temp#1{%
5969       \define@key{Field}{#1}{%
5970         \Hy@WarnHTMLFieldOption{#1}%
5971       }%
5972     }%
5973   \fi
5974   \Hy@temp{ondblclick}
5975   \Hy@temp{onmousedown}
5976   \Hy@temp{onmouseup}
5977   \Hy@temp{onmouseover}
5978   \Hy@temp{onmousemove}
5979   \Hy@temp{onmouseout}
5980   \Hy@temp{onkeydown}
5981   \Hy@temp{onkeyup}
5982   \Hy@temp{onselect}
5983   \Hy@temp{onchange}
5984   \Hy@temp{onkeypress}
5985   \ifHy@texht
5986     \define@key{Field}{onclick}{%
5987       \Field@addtoks{onclick}{#1}%
5988     }%
5989   \else
5990     \ifHy@pdfa
5991       \define@key{Field}{onclick}{%
5992         \Hy@Error{%
5993           PDF/A: Action 'onclick' is prohibited%
5994         }\@ehc
5995       }%
5996     \else
5997       \define@key{Field}{onclick}{%
5998         \def\Fld@onclick@code{#1}%
5999       }%
6000     \fi

```

```

6001 \fi

6002 \DeclareRobustCommand\TextField{%
6003   \@ifnextchar[{\@TextField}{\@TextField[]}%
6004 }
6005 \DeclareRobustCommand\ChoiceMenu{%
6006   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
6007 }
6008 \DeclareRobustCommand\CheckBox{%
6009   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
6010 }
6011 \DeclareRobustCommand\PushButton{%
6012   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
6013 }
6014 \DeclareRobustCommand\Gauge{%
6015   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
6016 }
6017 \DeclareRobustCommand\Submit{%
6018   \@ifnextchar[{\@Submit}{\@Submit[]}%
6019 }
6020 \DeclareRobustCommand\Reset{%
6021   \@ifnextchar[{\@Reset}{\@Reset[]}%
6022 }
6023 \def\LayoutTextField#1#2{% label, field
6024   #1 #2%
6025 }
6026 \def\LayoutChoiceField#1#2{% label, field
6027   #1 #2%
6028 }
6029 \def\LayoutCheckField#1#2{% label, field
6030   #1 #2%
6031 }
6032 \def\LayoutPushButtonField#1{% button
6033   #1%
6034 }
6035 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6036 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6037 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6038 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6039 \def\MakeButtonField#1{%
6040   \sbox0{%
6041     \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
6042   }%
6043   \@tempdima\ht0 %
6044   \advance\@tempdima by \Fld@borderwidth bp %
6045   \advance\@tempdima by \Fld@borderwidth bp %
6046   \ht0\@tempdima
6047   \@tempdima\dp0 %
6048   \advance\@tempdima by \Fld@borderwidth bp %
6049   \advance\@tempdima by \Fld@borderwidth bp %
6050   \dp0\@tempdima
6051   \box0\relax
6052 }
6053 \def\DefaultHeightofSubmit{14pt}
6054 \def\DefaultWidthofSubmit{2cm}
6055 \def\DefaultHeightofReset{14pt}
6056 \def\DefaultWidthofReset{2cm}
6057 \def\DefaultHeightofCheckBox{\baselineskip}

```

```

6058 \def\DefaultWidthofCheckBox{\baselineskip}
6059 \def\DefaultHeightofChoiceMenu{\baselineskip}
6060 \def\DefaultWidthofChoiceMenu{\baselineskip}
6061 \def\DefaultHeightofText{\baselineskip}
6062 \def\DefaultHeightofTextMultiline{4\baselineskip}
6063 \def\DefaultWidthofText{3cm}
6064 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
6065 \def\DefaultOptionsofReset{print,name=Reset,noexport}
6066 \def\DefaultOptionsofPushButton{print}
6067 \def\DefaultOptionsofCheckBox{print}
6068 \def\DefaultOptionsofText{print}

```

Default options for the types of \ChoiceMenu.

```

6069 \def\DefaultOptionsofListBox{print}
6070 \def\DefaultOptionsofComboBox{print,edit,sort}
6071 \def\DefaultOptionsofPopdownBox{print}
6072 \def\DefaultOptionsofRadio{print,notoggletooff}

```

## 20 Setup

```

6073 \ifHy@hyperfigures
6074 \Hy@Info{Hyper figures ON}%
6075 \else
6076 \Hy@Info{Hyper figures OFF}%
6077 \fi
6078 \ifHy@nesting
6079 \Hy@Info{Link nesting ON}%
6080 \else
6081 \Hy@Info{Link nesting OFF}%
6082 \fi
6083 \ifHy@hyperindex
6084 \Hy@Info{Hyper index ON}%
6085 \else
6086 \Hy@Info{Hyper index OFF}%
6087 \fi
6088 \ifHy@backref
6089 \Hy@Info{backreferencing ON}%
6090 \else
6091 \Hy@Info{backreferencing OFF}%
6092 \fi
6093 \ifHy@colorlinks
6094 \Hy@Info{Link coloring ON}%
6095 \else
6096 \Hy@Info{Link coloring OFF}%
6097 \fi
6098 \ifHy@ocgcolorlinks
6099 \Hy@Info{Link coloring with OCG ON}%
6100 \else
6101 \Hy@Info{Link coloring with OCG OFF}%
6102 \fi
6103 \ifHy@pdfa
6104 \Hy@Info{PDF/A mode ON}%
6105 \else
6106 \Hy@Info{PDF/A mode OFF}%
6107 \fi

```

## 21 Low-level utility macros

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

```
6108 \edef\hyper@hash{\string#}
6109 \edef\hyper@tilde{\string~}
6110 \edef\hyper@quote{\string"}
```

Support \label before \begin{document}.

```
6111 \def\@currentHref{Doc-Start}
6112 \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.

```
6113 \Hy@AtBeginDocument{%
6114   \Hy@pdfstringtrue
6115   \PDF@SetupDoc
6116   \let\PDF@SetupDoc\@empty
6117   \Hy@DisableOption{pdfpagescrop}%
6118   \Hy@DisableOption{pdfpagemode}%
6119   \Hy@DisableOption{pdfnonfullscreenpagemode}%
6120   \Hy@DisableOption{pdfdirection}%
6121   \Hy@DisableOption{pdfviewarea}%
6122   \Hy@DisableOption{pdfviewclip}%
6123   \Hy@DisableOption{pdfprintarea}%
6124   \Hy@DisableOption{pdfprintclip}%
6125   \Hy@DisableOption{pdfprintscaling}%
6126   \Hy@DisableOption{pdfduplex}%
6127   \Hy@DisableOption{pdfpicktraybypdfsize}%
6128   \Hy@DisableOption{pdfprintpagerange}%
6129   \Hy@DisableOption{pdfnumcopies}%
6130   \Hy@DisableOption{pdfstartview}%
6131   \Hy@DisableOption{pdfstartpage}%
6132   \Hy@DisableOption{pdftoolbar}%
6133   \Hy@DisableOption{pdfmenubar}%
6134   \Hy@DisableOption{pdfwindowui}%
6135   \Hy@DisableOption{pdfwindow}%
6136   \Hy@DisableOption{pdfcenterwindow}%
6137   \Hy@DisableOption{pdfdisplaydoctitle}%
6138   \Hy@DisableOption{pdfpagelayout}%
6139   \Hy@DisableOption{pdflang}%
6140   \Hy@DisableOption{baseurl}%
6141   \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
6142   \Hy@pdfstringfalse
6143 }
```

Ignore star from referencing macros:

```
6144 \LetLtxMacro\NoHy@OrgRef\ref
6145 \DeclareRobustCommand*{\ref}{%
6146   \@ifstar\NoHy@OrgRef\NoHy@OrgRef
6147 }
6148 \LetLtxMacro\NoHy@OrgPageRef\pageref
6149 \DeclareRobustCommand*{\pageref}{%
6150   \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
6151 }
```

## 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.

```

6152 \def\NoHyper{%
6153   \def\hyper@link@[##1]##2##3##4{##4\Hy@xspace@end}%
6154   \def\hyper@@anchor##1##2{##2\Hy@xspace@end}%
6155   \global\let\hyper@livelink\hyper@link
6156   \gdef\hyper@link##1##2##3{##3\Hy@xspace@end}%
6157   \let\hyper@anchor\ltx@gobble
6158   \let\hyper@anchorstart\ltx@gobble
6159   \def\hyper@anchorend{\Hy@xspace@end}%
6160   \let\hyper@linkstart\ltx@gobbletwo
6161   \def\hyper@linkend{\Hy@xspace@end}%
6162   \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%
6163   \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
6164   \let\Hy@backout\@gobble
6165 }
6166 \def\stop@hyper{%
6167   \def\hyper@link@[##1]##2##3##4{##4\Hy@xspace@end}%
6168   \let\Hy@backout\@gobble
6169   \let\hyper@@anchor\ltx@gobble
6170   \def\hyper@link##1##2##3{##3\Hy@xspace@end}%
6171   \let\hyper@anchor\ltx@gobble
6172   \let\hyper@anchorstart\ltx@gobble
6173   \def\hyper@anchorend{\Hy@xspace@end}%
6174   \let\hyper@linkstart\ltx@gobbletwo
6175   \def\hyper@linkend{\Hy@xspace@end}%
6176   \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%
6177   \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
6178 }
6179 \def\endNoHyper{%
6180   \global\let\hyper@link\hyper@livelink
6181 }
6182 \end{package}

```

## 23 Package nohyperref

This package is introduced by Sebastian Rahtz.

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

Some low-level commands:

```

6183 \nohyperref
6184 \RequirePackage{letltxmacro}[2008/06/13]
6185 \let\hyper@@anchor\@gobble
6186 \def\hyper@link##1##2##3{##3}%
6187 \let\hyper@anchorstart\@gobble
6188 \let\hyper@anchorend\@empty
6189 \let\hyper@linkstart\@gobbletwo
6190 \let\hyper@linkend\@empty
6191 \def\hyper@linkurl##1##2{##1}%

```

```

6192 \def\hyper@linkfile#1#2#3{#1}%
6193 \def\hyper@link@{#1}#2#3{#1}%
6194 \let\PDF@SetupDoc\@empty
6195 \let\PDF@FinishDoc\@empty
6196 \def\nohyperpage#1{#1}

```

Some top-level commands:

```

6197 \def\Acrobatmenu#1#2{\leavevmode#2}
6198 \let\pdfstringdefDisableCommands\@gobbletwo
6199 \let\texorpdfstring\@firstoftwo
6200 \let\pdfbookmark\@undefined
6201 \newcommand\pdfbookmark[3]{}
6202 \let\phantomsection\@empty
6203 \let\hypersetup\@gobble
6204 \let\hyperbaseurl\@gobble
6205 \newcommand*\href[3]{}
6206 \let\hyperdef\@gobbletwo
6207 \let\hyperlink\@gobble
6208 \let\hypertarget\@gobble
6209 \def\hyperref{%
6210   \ifnextchar\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
6211 }
6212 \long\def\@gobbleopt[#1]{}
6213 \let\hyperpage\@empty

```

Ignore star from referencing macros:

```

6214 \LetLtxMacro\NoHy@OrgRef\ref
6215 \DeclareRobustCommand*\ref{%
6216   \ifstar\NoHy@OrgRef\NoHy@OrgRef
6217 }
6218 \LetLtxMacro\NoHy@OrgPageRef\pageref
6219 \DeclareRobustCommand*\pageref{%
6220   \ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
6221 }
6222 \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}`

```

6223 \*package
6224 \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.

```

6225 \if@filesw
6226   \ifHy@typexml
6227     \immediate\closeout\@mainaux
6228     \immediate\openout\@mainaux\jobname.aux\relax
6229     \immediate\write\@auxout{<relaxxml>\relax}%
6230   \fi
6231   \immediate\write\@auxout{%
6232     \string\providecommand\string\HyperFirstAtBeginDocument{%
6233       \string\AtBeginDocument}^^J%
6234     \string\HyperFirstAtBeginDocument{%

```



```

6235 \string\ifx\string\hyper@anchor\string\@undefined^^J%
6236 \string\global\string\let\string\oldcontentsline\string\contentsline^^J%
6237 \string\gdef\string\contentsline%
6238 \string#1\string#2\string#3\string#4{%
6239 \string\oldcontentsline%
6240 {\string#1}{\string#2}{\string#3}}^^J%
6241 \string\global\string\let\string\oldnewlabel\string\newlabel^^J%
6242 \string\gdef\string\newlabel\string#1\string#2{%
6243 \string\newlabelxx{\string#1}\string#2}^^J%
6244 \string\gdef\string\newlabelxx%
6245 \string#1\string#2\string#3\string#4\string#5\string#6{%
6246 \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.

```

6247 \string\AtEndDocument{%
6248 \string\ifx\string\hyper@anchor\string\@undefined^^J%
6249 \string\let\string\contentsline\string\oldcontentsline^^J%
6250 \string\let\string\newlabel\string\oldnewlabel^^J%
6251 \string\fi%
6252 }^^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.

```

6253 \string\fi%
6254 }^^J%
6255 \string\global\string\let\string\hyper@last\relax^^J%
6256 \string\gdef\string\HyperFirstAtBeginDocument\string#1{\string#1}%
6257 }%
6258 \fi
6259 \let\HyperFirstAtBeginDocument\ltx@firstofone

```

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.

```

6260 \ifx\hyper@last\@undefined
6261 \def\@starttoc#1{%
6262 \begingroup
6263 \makeatletter
6264 \IfFileExists{\jobname.#1}{%
6265 \Hy@WarningNoLine{%
6266 old #1 file detected, not used; run LaTeX again%
6267 }%
6268 }{}%
6269 \if@filesw
6270 \expandafter\newwrite\csname tf@#1\endcsname
6271 \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
6272 \fi
6273 \@nobreakfalse
6274 \endgroup
6275 }%
6276 \def\newlabel#1#2{\@newl@bel r{#1}{#2}{-}{-}{-}}%
6277 \fi
6278 }

```

## 25 Title strings

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

```

6279 \ifHy@pdfusetitle
6280   \let\HyOrg@title\title
6281   \let\HyOrg@author\author
6282   \def\title{\@ifnextchar{\Hy@scanopttitle}{\Hy@scantitle}}%
6283   \def\Hy@scanopttitle[#1]{%
6284     \gdef\Hy@title{#1}%
6285     \HyOrg@title{#1}%
6286   }%
6287   \def\Hy@scantitle#1{%
6288     \gdef\Hy@title{#1}%
6289     \HyOrg@title{#1}%
6290   }%
6291   \def\author{\@ifnextchar{\Hy@scanoptauthor}{\Hy@scanauthor}}%
6292   \def\Hy@scanoptauthor[#1]{%
6293     \gdef\Hy@author{#1}%
6294     \HyOrg@author{#1}%
6295   }%
6296   \def\Hy@scanauthor#1{%
6297     \gdef\Hy@author{#1}%
6298     \HyOrg@author{#1}%
6299   }%

```

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.

```

6300 \begingroup
6301   \def\process@me#1\@nil#2{%
6302     \expandafter\let\expandafter\x\csname @#2\endcsname
6303     \edef\y{\expandafter\strip@prefix\meaning\x}%
6304     \def\c##1##2\@nil{%
6305       \ifx\\##1\\%
6306         \else
6307           \expandafter\gdef\csname Hy@#2\expandafter\endcsname
6308             \expandafter{\x}%
6309         \fi
6310       }%
6311       \expandafter\c\y\relax#1\@nil
6312     }%
6313     \expandafter\process@me\string\@latex@\@nil{title}%
6314     \expandafter\process@me\string\@latex@\@nil{author}%
6315   \endgroup
6316 \fi
6317 \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.

```

6318 \def\Hy@UseMaketitleString#1{%
6319 \ltx@ifundefined{Hy@#1}{}%
6320 \begingroup
6321 \let\Hy@saved@hook\pdfstringdefPreHook
6322 \pdfstringdefDisableCommands{%
6323 \expandafter\let\expandafter\\\csname Hy@newline@#1\endcsname
6324 \let\newline\\%
6325 }%
6326 \expandafter\ifx\csname @pdf#1\endcsname\@empty
6327 \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
6328 \csname Hy@#1\endcsname\@empty
6329 }%
6330 \fi
6331 \global\let\pdfstringdefPreHook\Hy@saved@hook
6332 \endgroup
6333 }%
6334 }
6335 \def\Hy@newline@title#1{ #1}
6336 \def\Hy@newline@author#1{, #1}
6337 \def\Hy@UseMaketitleInfos{%
6338 \Hy@UseMaketitleString{title}%
6339 \Hy@UseMaketitleString{author}%
6340 }

```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.

## 27 Every page

```

6341 \RequirePackage{atbegshi}[2007/09/09]
6342 \let\Hy@EveryPageHook\ltx@empty
6343 \let\Hy@EveryPageBoxHook\ltx@empty
6344 \let\Hy@FirstPageHook\ltx@empty
6345 \AtBeginShipout{%
6346 \Hy@EveryPageHook
6347 \ifx\Hy@EveryPageBoxHook\ltx@empty
6348 \else
6349 \setbox\AtBeginShipoutBox=\vbox{%
6350 \offinterlineskip
6351 \Hy@EveryPageBoxHook
6352 \box\AtBeginShipoutBox
6353 }%
6354 \fi
6355 }
6356 \ltx@iffileloaded{pdfmark.def}{%
6357 \AtBeginShipoutFirst{%
6358 \Hy@FirstPageHook
6359 }%
6360 }{%
6361 \AtBeginShipout{%
6362 \Hy@FirstPageHook
6363 \global\let\Hy@FirstPageHook\ltx@empty
6364 }%
6365 }
6366 \g@addto@macro\Hy@FirstPageHook{%

```

```

6367 \PDF@FinishDoc
6368 \global\let\PDF@FinishDoc\ltx@empty
6369 }

```

## 27.1 PDF /PageLabels

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

```

6370 \ifHy@pdfpagelabels
6371 \begingroup\expandafter\expandafter\expandafter\endgroup
6372 \expandafter\ifx\csname thepage\endcsname\relax
6373 \Hy@pdfpagelabelsfalse
6374 \Hy@WarningNoLine{%
6375   Option 'pdfpagelabels' is turned off\MessageBreak
6376   because \string\thepage\space is undefined%
6377 }%
6378 \csname fi\endcsname
6379 \csname iffalse\expandafter\endcsname
6380 \fi

```

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

```

6381 \def\thispdfpagelabel#1{%
6382   \gdef\HyPL@thisLabel{#1}%
6383 }%
6384 \global\let\HyPL@thisLabel\relax

```

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

```

6385 \let\HyPL@Labels\ltx@empty

```

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

```

6386 \newcount\Hy@abspage
6387 \Hy@abspage=0 %

```

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

```

6388 \def\HyPL@LastType{init}%
6389 \def\HyPL@LastNumber{0}%
6390 \let\HyPL@LastPrefix\ltx@empty

```

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

```

6391 \def\HyPL@arabic{D}%
6392 \def\HyPL@Roman{R}%
6393 \def\HyPL@roman{r}%
6394 \def\HyPL@Alph{A}%
6395 \def\HyPL@alph{a}%
6396 \let\HyPL@SlidesSetPage\ltx@empty
6397 \ltx@ifclassloaded{slides}{%
6398   \def\HyPL@SlidesSetPage{%
6399     \advance\c@page\ltx@one
6400     \ifnum\value{page}>\ltx@one
6401       \protected@edef\HyPL@SlidesOptionalPage{%
6402         \Hy@SlidesFormatOptionalPage{\thepage}%
6403       }%
6404     \else
6405       \let\HyPL@SlidesOptionalPage\ltx@empty
6406     \fi
6407     \advance\c@page-\ltx@one

```

```

6408 \def\HyPL@page{%
6409 \csname the\Hy@SlidesPage\endcsname
6410 \HyPL@SlidesOptionalPage
6411 }%
6412 }%
6413 }{}%

```

`\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.

```

6414 \def\HyPL@EveryPage{%
6415 \begingroup
6416 \ifx\HyPL@thisLabel\relax
6417 \let\HyPL@page\thepage
6418 \HyPL@SlidesSetPage
6419 \else
6420 \let\HyPL@page\HyPL@thisLabel
6421 \global\let\HyPL@thisLabel\relax
6422 \fi
6423 \let\HyPL@Type\relax
6424 \ifnum\c@page>0 %
6425 \ifx\HyPL@SlidesSetPage\ltx@empty
6426 \expandafter\HyPL@CheckThePage\HyPL@page\@nil
6427 \fi
6428 \fi
6429 \let\Hy@temp Y%
6430 \ifx\HyPL@Type\HyPL@LastType
6431 \else
6432 \let\Hy@temp N%
6433 \fi
6434 \ifx\HyPL@Type\relax
6435 \pdfstringdef\HyPL@Prefix{\HyPL@page}%
6436 \else
6437 \pdfstringdef\HyPL@Prefix\HyPL@Prefix
6438 \fi
6439 \ifx\HyPL@Prefix\HyPL@LastPrefix
6440 \else
6441 \let\Hy@temp N%
6442 \fi
6443 \if Y\Hy@temp
6444 \advance\c@page by -1 %
6445 \ifnum\HyPL@LastNumber=\the\c@page\relax
6446 \else
6447 \let\Hy@temp N%
6448 \fi
6449 \Hy@StepCount\c@page
6450 \fi
6451 \if N\Hy@temp
6452 \ifx\HyPL@Type\relax
6453 \HyPL@StorePageLabel{/P(\HyPL@Prefix)}%
6454 \else
6455 \HyPL@StorePageLabel{%
6456 \ifx\HyPL@Prefix\@empty
6457 \else
6458 /P(\HyPL@Prefix)%
6459 \fi
6460 /S/\csname HyPL\HyPL@Type\endcsname
6461 \ifnum\the\c@page=1 %

```

```

6462         \else
6463         \space/St \the\c@page
6464         \fi
6465     }%
6466     \fi
6467 \fi
6468 \xdef\HyPL@LastNumber{\the\c@page}%
6469 \global\let\HyPL@LastType\HyPL@Type
6470 \global\let\HyPL@LastPrefix\HyPL@Prefix
6471 \endgroup
6472 \Hy@GlobalStepCount\Hy@abspage
6473 }%

```

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

```

6474 \def\HyPL@CheckThePage#1\@nil{%
6475   \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
6476 }%

```

`\HyPL@@CheckThePage` The first check is, is `\thepage` is defined such as in L<sup>A</sup>T<sub>E</sub>X, e.g.: `\csname @arabic\endcsname\c@page`. In the current implementation the check fails, if there is another `\csname` before.

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

```

6477 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
6478   \def\Hy@tempa{#4}%
6479   \def\Hy@tempb{\csname\endcsname\c@page}%
6480   \ifx\Hy@tempa\Hy@tempb
6481     \expandafter\ifx\csname HyPL#3\endcsname\relax
6482     \else
6483       \def\HyPL@Type{#3}%
6484       \def\HyPL@Prefix{#2}%
6485     \fi
6486   \else
6487     \begingroup
6488     \let\Hy@next\endgroup
6489     \let\HyPL@found\@undefined
6490     \def\arabic{\HyPL@Format{arabic}}%
6491     \def\Roman{\HyPL@Format{Roman}}%
6492     \def\roman{\HyPL@Format{roman}}%
6493     \def\Alph{\HyPL@Format{Alph}}%
6494     \def\alph{\HyPL@Format{alph}}%
6495     \protected@edef\Hy@temp{#1}%
6496     \ifx\HyPL@found\relax
6497       \toks@{\expandafter{\Hy@temp}}%
6498       \edef\Hy@next{\endgroup
6499         \noexpand\HyPL@@@CheckThePage\the\toks@
6500         \noexpand\HyPL@found\relax\noexpand\@nil
6501       }%
6502     \fi
6503     \Hy@next
6504   \fi
6505 }%

```

`\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`.

```

6506 \def\HyPL@Format#1#2{%

```

```

6507 \ifx\HyPL@found\@undefined
6508 \expandafter\ifx\csname c@#2\endcsname\c@page
6509 \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
6510 \else
6511 \expandafter\noexpand\csname#1\endcsname{#2}%
6512 \fi
6513 \else
6514 \expandafter\noexpand\csname#1\endcsname{#2}%
6515 \fi
6516 }%

```

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

```

6517 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
6518 \def\Hy@tempa{#3}%
6519 \def\Hy@tempb{\HyPL@found\relax}%
6520 \ifx\Hy@tempa\Hy@tempb
6521 \def\HyPL@Type{#2}%
6522 \def\HyPL@Prefix{#1}%
6523 \fi
6524 }%

```

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

```

6525 \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`.

```

6526 \def\HyPL@Useless{0<</S/D>>}%
6527 \@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.

```

6528 \def\HyPL@SetPageLabels{%
6529 \@onelevel@sanitize\HyPL@Labels
6530 \ifx\HyPL@Labels\@empty
6531 \else
6532 \ifx\HyPL@Labels\HyPL@Useless
6533 \else
6534 \Hy@PutCatalog{/PageLabels<</Nums[\HyPL@Labels]>>}%
6535 \fi
6536 \fi
6537 }%

```

```

6538 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
6539 \fi

```

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

```

6540 \Hy@DisableOption{pdfpagelabels}
6541 \</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

```

6542 < *pdfTeX>
6543 \pdf@ifdraftmode{%
6544   \let\Hy@PutCatalog\ltx@gobble
6545 }{%
6546   \let\Hy@PutCatalog\pdfcatalog
6547 }
6548 < /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.

```

6549 < *vTeX>
6550 \providecommand*{\XR@ext}{pdf}
6551 \edef\Hy@VTeXversion{%
6552   \ifx\VTeXversion\@undefined
6553     \z@
6554   \else
6555     \ifx\VTeXversion\relax
6556       \z@
6557     \else
6558       \VTeXversion
6559     \fi
6560   \fi
6561 }
6562 \begingroup
6563   \ifnum\Hy@VTeXversion<660 %
6564     \gdef\Hy@PutCatalog#1{%
6565       \Hy@WarningNoLine{%
6566         VTeX 6.59g or above required for pdfpagelabels%
6567       }%
6568     }%
6569   \else
6570     \gdef\Hy@PutCatalog#1{%
6571       \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
6572     }%
6573     \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
6574       \ifx\#2\%
6575         \else
6576           \immediate\special{!pdfpagelabels #2}%
6577         \fi
6578       }%
6579     \fi
6580   \endgroup
6581 < /vTeX>

6582 < *pdfTeX | vTeX>

```

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

```

6583 \ifHy@pdfpagelabels
6584   \def\HyPL@StorePageLabel#1{%
6585     \toks@\expandafter{\HyPL@Labels}%
6586     \xdef\HyPL@Labels{%
6587       \the\toks@
6588       \the\Hy@abspace<<#1>>%

```



```

6589 }%
6590 }%

```

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.

```

6591 \RequirePackage{atveryend}[2009/12/07]%
6592 \AtVeryEndDocument{%
6593   \HyPL@SetPageLabels
6594 }%

6595 \fi
6596 </pdfTeX | vtex>

```

### 27.1.2 xetex

```

6597 <*xetex>
6598 \HyPsd@LoadUnicode
6599 \Hy@unicodetrue
6600 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
6601 \else
6602   \let\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
6603 \fi
6604 \HyPsd@LoadStringEnc
6605 \define@key{Hyp}{unicode}[true]{%
6606   \Hy@boolkey{unicode}{#1}%
6607   \ifHy@unicode
6608   \else
6609     \Hy@Warning{%
6610       XeTeX driver only supports 'unicode=true'. Ignoring\MessageBreak
6611       option setting 'unicode=false'%
6612     }%
6613   \Hy@unicodetrue
6614 \fi
6615 }
6616 \define@key{Hyp}{pdfencoding}{%
6617   \edef\HyPsd@temp{#1}%
6618   \ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
6619     \let\HyPsd@pdfencoding\HyPsd@temp
6620   \else
6621     \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
6622       \let\HyPsd@pdfencoding\HyPsd@temp
6623     \else
6624       \Hy@Warning{%
6625         XeTeX driver only supports\MessageBreak
6626         'pdfencoding=unicode|auto'. Ignoring option\MessageBreak
6627         setting 'pdfencoding=\HyPsd@temp'%
6628       }%
6629     \fi
6630   \fi
6631 }
6632 \let\HyXeTeX@CheckUnicode\relax
6633 </xetex>

```

### 27.1.3 pdfmarkbase, dvipdfm, xetex

```

6634 <*pdfmarkbase>
6635 \begingroup
6636 \@ifundefined{headerps@out}{-}{%

```

```

6637 \toks@\expandafter{\Hy@FirstPageHook}%
6638 \xdef\Hy@FirstPageHook{%
6639 \noexpand\headerps@out{%
6640 systemdict /pdfmark known%
6641 {%
6642 userdict /?pdfmark systemdict /exec get put%
6643 }{%
6644 userdict /?pdfmark systemdict /pop get put %
6645 userdict /pdfmark systemdict /cleartomark get put%
6646 }%
6647 ifelse%
6648 }%
6649 \the\toks@
6650 }%
6651 }%
6652 \endgroup
6653 \pdfmarkbase

```

\Hy@PutCatalog

```

6654 \dvi\pdfm | xetex\def\Hy@PutCatalog#1{\@pdfm@mark{docview << #1 >>}}
6655 \*pdfmarkbase
6656 \def\Hy@PutCatalog#1{%
6657 \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} << #1 >>}}%
6658 }
6659 \pdfmarkbase

6660 \*pdfmarkbase | dvi\pdfm | xetex
6661 \ifHy@pdfpagelabels

```

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

```

6662 \def\HyPL@StorePageLabel#1{%
6663 \if@files
6664 \begin{group}
6665 \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
6666 \immediate\write\@mainaux{%
6667 \string\HyPL@Entry{\Hy@tempa}%
6668 }%
6669 \end{group}
6670 \fi
6671 }%

```

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.

```

6672 \Hy@AtBeginDocument{%
6673 \if@files
6674 \immediate\write\@mainaux{%
6675 \string\providecommand\string*\string\HyPL@Entry[1]{}%
6676 }%
6677 \fi
6678 \ifx\HyPL@Labels\@empty
6679 \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
6680 \else
6681 \HyPL@SetPageLabels
6682 \fi
6683 \let\HyPL@Entry\@gobble
6684 }%

```

`\HyPL@Entry`

```

6685 \def\HyPL@Entry#1{%
6686   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
6687     \HyPL@Labels
6688     #1%
6689   }%
6690 }%

6691 \fi
6692 </pdfmarkbase | dvipdfm | xetex>
6693 <*package>

6694 \ifx\MaybeStopEarly\relax
6695 \else
6696   \Hy@stoppedearlytrue
6697   \expandafter\MaybeStopEarly
6698 \fi
6699 \Hy@stoppedearlyfalse

```

## 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

```

6700 \def\Hy@CounterExists#1{%
6701   \begingroup\expandafter\expandafter\expandafter\endgroup
6702   \expandafter\ifx\csname c@#1\endcsname\relax
6703     \expandafter\@gobble
6704   \else
6705     \begingroup\expandafter\expandafter\expandafter\endgroup
6706     \expandafter\ifx\csname the#1\endcsname\relax
6707       \expandafter\expandafter\expandafter\@gobble
6708     \else
6709       \expandafter\expandafter\expandafter\@firstofone
6710     \fi
6711   \fi
6712 }
6713 \Hy@CounterExists{section}{%
6714   \providecommand\theHequation{\theHsection.\arabic{equation}}}%
6715 }

```

```

6716 \Hy@CounterExists{part}{%
6717 \providecommand\theHpart{\arabic{part}}}%
6718 }
6719 \ltx@ifundefined{thechapter}{%
6720 \providecommand\theHsection {\arabic{section}}%
6721 \providecommand\theHfigure {\arabic{figure}}%
6722 \providecommand\theHtable {\arabic{table}}%
6723 }{%
6724 \providecommand\theHchapter {\arabic{chapter}}%
6725 \providecommand\theHfigure {\theHchapter.\arabic{figure}}%
6726 \providecommand\theHtable {\theHchapter.\arabic{table}}%
6727 \providecommand\theHsection {\theHchapter.\arabic{section}}%
6728 }
6729 \providecommand\theHsubsection {\theHsection.\arabic{subsection}}
6730 \providecommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
6731 \providecommand\theHparagraph {\theHsubsubsection.\arabic{paragraph}}
6732 \providecommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
6733 \providecommand\theHtheorem {\theHsection.\arabic{theorem}}
6734 \providecommand\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.

```

6735 \let\H@item\item
6736 \newcounter{Item}
6737 \def\theHItem{\arabic{Item}}
6738 \def\item{%
6739 \@hyper@itemfalse
6740 \if@nmbrlist\@hyper@itemtrue\fi
6741 \H@item
6742 }
6743 \providecommand\theHenumi {\theHItem}
6744 \providecommand\theHenumii {\theHItem}
6745 \providecommand\theHenumiii {\theHItem}
6746 \providecommand\theHenumiv {\theHItem}
6747 \providecommand\theHHfootnote {\arabic{Hfootnote}}
6748 \providecommand\theHmpfootnote{\arabic{mpfootnote}}
6749 \@ifundefined{theHHmpfootnote}{%
6750 \let\theHHmpfootnote\theHHfootnote
6751 }{}

```

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.

```

6752 \let\H@refstepcounter\refstepcounter
6753 \edef\name@of@eq{equation}%
6754 \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.

```

6755 \newif\if@hyper@item
6756 \newif\if@skiphyperref
6757 \@hyper@itemfalse
6758 \@skiphyperreffalse
6759 \def\refstepcounter#1{%
6760 \ifHy@pdfstring
6761 \else

```

```

6762 \H@refstepcounter{#1}%
6763 \edef\This@name{#1}%
6764 \ifx\This@name\name@of@slide
6765 \else
6766 \if@skiphyperref
6767 \else
6768 \if@hyper@item
6769 \stepcounter{Item}%
6770 \hyper@refstepcounter{Item}%
6771 \@hyper@itemfalse
6772 \else
6773 \hyper@refstepcounter{#1}%
6774 \fi
6775 \fi
6776 \fi
6777 \fi
6778 }
6779 \let\Hy@saved@refstepcounter\refstepcounter

```

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

```

6780 \@ifpackageloaded{amsmath}{\newif\ifmeasuring@\measuring@false}

```

`\hyper@refstepcounter`

```

6781 \def\hyper@refstepcounter#1{%
6782 \edef\This@name{#1}%
6783 \ifx\This@name\name@of@eq
6784 \@ifundefined{theHequation}{%
6785 \make@stripped@name{\theequation}%
6786 \let\theHequation\newname
6787 }{}%
6788 \fi
6789 \@ifundefined{theH#1}{%
6790 \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
6791 }{}%
6792 \hyper@makecurrent{#1}%
6793 \ifmeasuring@
6794 \else
6795 \Hy@raisedlink{%
6796 \hyper@anchorstart{\@currentHref}\hyper@anchorend
6797 }%
6798 \fi
6799 }

```

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`.

```

6800 \begingroup\expandafter\expandafter\expandafter\endgroup
6801 \expandafter\ifx\csname chapter\endcsname\relax
6802 \def\Hy@chapterstring{section}%
6803 \else
6804 \def\Hy@chapterstring{chapter}%
6805 \fi

```

```

6806 \def\Hy@appendixstring{appendix}
6807 \def\Hy@chapapp{\Hy@chapterstring}
6808 \ltx@ifundefined{appendix}{%
6809 }{%
6810 \let\HyOrg@appendix\appendix
6811 \def\Hy@AlphNoErr#1{%
6812   \ifnum\value{#1}>26 %
6813     Alph\number\value{#1}%
6814   \else
6815     \ifnum\value{#1}<1 %
6816       Alph\number\value{#1}%
6817     \else
6818       \Alph{#1}%
6819     \fi
6820   \fi
6821 }%
6822 \def\appendix{%
6823   \ltx@ifundefined{chapter}{%
6824     \gdef\theHsection{\Hy@AlphNoErr{section}}%
6825   }{%
6826     \gdef\theHchapter{\Hy@AlphNoErr{chapter}}%
6827   }%
6828   \xdef\Hy@chapapp{\Hy@appendixstring}%
6829   \HyOrg@appendix
6830 }%
6831 }

```

\Hy@Test@alph

```

6832 \def\Hy@Test@alph#1{%
6833   \ifcase#1\or
6834     a\or b\or c\or d\or e\or f\or g\or h\or i\or j\or
6835     k\or l\or m\or n\or o\or p\or q\or r\or s\or t\or
6836     u\or v\or w\or x\or y\or z%
6837   \else
6838     \@ctrerr
6839   \fi
6840 }

```

\Hy@Test@Alph

```

6841 \def\Hy@Test@Alph#1{%
6842   \ifcase#1\or
6843     A\or B\or C\or D\or E\or F\or G\or H\or I\or J\or
6844     K\or L\or M\or N\or O\or P\or Q\or R\or S\or T\or
6845     U\or V\or W\or X\or Y\or Z%
6846   \else
6847     \@ctrerr
6848   \fi
6849 }

```

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

```

6850 \def\hyper@makecurrent#1{%
6851   \begingroup
6852   \edef\Hy@param{#1}%
6853   \ifx\Hy@param\Hy@chapterstring
6854     \let\Hy@param\Hy@chapapp
6855   \fi

```

```

6856 \ifHy@hypertextnames
6857 \let\@number\@firstofone
6858 \def\@fnsymbol##1{fnsymbol\number##1}%
6859 \def\@arabic##1{\number##1}%
6860 \ifx\@alph\Hy@Test@alph
6861 \else
6862 \def\@alph{alph\number}%
6863 \fi
6864 \ifx\@Alph\Hy@Test@Alph
6865 \else
6866 \def\@Alph{Alph\number}%
6867 \fi
6868 \ifHy@naturalnames
6869 \let\textlatin\@firstofone
6870 \xdef\HyperGlobalCurrentHref{\csname the#1\endcsname}%
6871 \else
6872 \xdef\HyperGlobalCurrentHref{%
6873 \csname
6874 the%
6875 \expandafter\ifx\csname theH#1\endcsname\relax\else H\fi
6876 #1%
6877 \endcsname
6878 }%
6879 \fi
6880 \xdef\HyperGlobalCurrentHref{%
6881 \Hy@param.\expandafter\strip@prefix\meaning\HyperGlobalCurrentHref
6882 }%
6883 \else
6884 \Hy@GlobalStepCount\Hy@linkcounter
6885 \xdef\HyperGlobalCurrentHref{\Hy@param.\the\Hy@linkcounter}%
6886 \fi
6887 \endgroup
6888 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
6889 \ifHy@localanchorname
6890 \let\@currentHref\HyperLocalCurrentHref
6891 \else
6892 \global\let\@currentHref\HyperGlobalCurrentHref
6893 \fi
6894 }

```

\Hy@MakeCurrentHref

```

6895 \def\Hy@MakeCurrentHref#1{%
6896 \edef\HyperLocalCurrentHref{#1}%
6897 \@onelevel@sanitize\HyperLocalCurrentHref
6898 \global\let\HyperGlobalCurrentHref\HyperLocalCurrentHref
6899 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
6900 \ifHy@localanchorname
6901 \let\@currentHref\HyperLocalCurrentHref
6902 \else
6903 \global\let\@currentHref\HyperGlobalCurrentHref
6904 \fi
6905 }

```

\Hy@MakeCurrentHrefAuto

```

6906 \def\Hy@MakeCurrentHrefAuto#1{%
6907 \Hy@GlobalStepCount\Hy@linkcounter
6908 \Hy@MakeCurrentHref{#1.\the\Hy@linkcounter}%
6909 }

```

```

\@currentHlabel \@currentHlabel is only defined for compatibility with package ‘hypdvips’.
6910 \def\@currentHlabel{\@currentHref}

6911 \@ifpackageloaded{fancyvrb}{%
6912   \@ifpackagelater{fancyvrb}{1998/05/20}{-}{-}%
6913   \def\FV@StepLineNo{%
6914     \FV@SetLineNo
6915     \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}}%
6916   \FV@StepLineNo
6917 }%
6918 }%
6919 }{}

```

## 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
6920 \Hy@AtBeginDocument{%
6921   \@ifclassloaded{revtex4}{%
6922     \@namedef{ver@lastpage.sty}{1994/06/25}%
6923   }{}%
6924   \@ifpackageloaded{lastpage}{%
6925     \ifHy@pageanchor
6926     \else
6927       \Hy@WarningNoLine{%
6928         The \string\pageref{LastPage} link doesn't work\MessageBreak
6929         with disabled option ‘pageanchor’%
6930       }%
6931     \fi
6932     \def\lastpage@putlabel{%
6933       \addtocounter{page}{-1}%
6934       \if@filesw
6935         \begingroup
6936         \let\@number\@firstofone
6937         \ifHy@pageanchor
6938           \ifHy@hypertexnames
6939             \ifHy@plainpages
6940               \def\Hy@temp{\arabic{page}}%
6941             \else
6942               \Hy@unicodedefalse
6943               \pdfstringdef\Hy@temp{\thepage}%
6944             \fi
6945           \else
6946             \def\Hy@temp{\the\Hy@pagecounter}%
6947           \fi
6948         \fi
6949         \immediate\write\@auxout{%
6950           \string\newlabel
6951           {LastPage}{-}{\thepage}{-}%

```



```

6952         \ifHy@pageanchor page.\Hy@temp\fi}{}}%
6953     }%
6954     \endgroup
6955     \fi
6956     \addtocounter{page}{1}%
6957 }%
6958 \@ifclassloaded{revtex4}{%
6959     \begingroup
6960     \toks@{\expandafter{\lastpage@putlabel}}%
6961     \edef\x{\endgroup
6962         \def\noexpand\lastpage@putlabel{%
6963             \noexpand\stepcounter{page}%
6964             \the\toks@
6965             \noexpand\addtocounter{page}\noexpand\m@ne
6966         }%
6967     }%
6968     \x
6969 }{}%
6970 }{}%
6971 }
6972 \</package>
6973 \<*check>
6974 \checkpackage{lastpage}[1994/06/25]
6975 \checkcommand\def\lastpage@putlabel{%
6976     \addtocounter{page}{-1}%
6977     \immediate\write\@auxout{%
6978         \string\newlabel{LastPage}{{}\{\thepage}}}%
6979 }%
6980 \addtocounter{page}{1}%
6981 }
6982 \</check>
6983 \<*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.

```

6984 \def\hypergetref#1{\getrefbykeydefault{#1}{}}{??}}
6985 \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:

```

6986 \@ifpackageloaded{titlesec}{%
6987     \def\ttl@Hy@steplink#1{%
6988         \Hy@MakeCurrentHrefAuto{#1*}%
6989         \edef\ttl@Hy@saveanchor{%
6990             \noexpand\Hy@raisedlink{%
6991                 \noexpand\hyper@anchorstart{\@currentHref}%
6992                 \noexpand\hyper@anchorend
6993                 \def\noexpand\ttl@Hy@SavedCurrentHref{\@currentHref}%
6994                 \noexpand\ttl@Hy@PatchSaveWrite
6995             }%

```

```

6996 }%
6997 }%
6998 \def\ttl@Hy@PatchSaveWrite{%
6999 \begingroup
7000 \toks@{\expandafter{\ttl@savewrite}}%
7001 \edef\x{\endgroup
7002 \def\noexpand\ttl@savewrite{%
7003 \let\noexpand\@currentHref
7004 \noexpand\ttl@Hy@SavedCurrentHref
7005 \the\toks@
7006 }%
7007 }%
7008 \x
7009 }%
7010 \def\ttl@Hy@refstepcounter#1{%
7011 \let\ttl@b\Hy@raisedlink
7012 \def\Hy@raisedlink##1{%
7013 \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
7014 }%
7015 \refstepcounter{#1}%
7016 \let\Hy@raisedlink\ttl@b
7017 }%
7018 }{}

Package titletoc support:
7019 \@ifpackageloaded{titletoc}{%
7020 \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
7021 }{}

```

## 32 Package varioref support

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

```

7022 \def\Hy@varioref@undefined{???}{??}{-}{-}{-}
7023 \@ifpackageloaded{varioref}{%
7024 \def\vref@pagenum#1#2{%
7025 \@ifundefined{r@#2}{%
7026 \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
7027 }{}%
7028 \edef#1{\getpagerefnumber{#2}}%
7029 }%
7030 }{}

```

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

```

7031 \def\Hy@varioref@refstepcounter#1{%
7032 \stepcounter{#1}%
7033 \protected@edef\@currentlabel{%
7034 \csname p@#1\endcsname\expandafter\endcsname\csname the#1\endcsname
7035 }%
7036 }
7037 \AtBeginDocument{%
7038 \ifx\refstepcounter\Hy@varioref@refstepcounter
7039 \let\H@refstepcounter\refstepcounter
7040 \let\refstepcounter\Hy@saved@refstepcounter
7041 \fi
7042 }

```

### 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

```

7043 \ifpackageloaded{longtable}{%
7044   \begingroup
7045   \def\y{\LT@array}%
7046   \@ifundefined{scr@LT@array}{%
7047     \@ifundefined{adl@LT@array}{\def\y{\adl@LT@array}}{%
7048       \def\y{\scr@LT@array}}%
7049   \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
7050     \expandafter\endgroup
7051     \expandafter\def\y[##1]##2{%
7052       \H@refstepcounter{#1}%
7053       \hyper@makecurrent{table}%
7054       \let\Hy@LT@currentHref\@currentHref
7055       #2\@sharp###4%
7056     }%
7057   }%
7058   \expandafter\expandafter\expandafter\x\y[{#1}]{#2}\@nil

```

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

```

7059 \begingroup
7060 \def\x#1\ifvoid\LT@foot#2\fi#3\@nil{%
7061   \endgroup
7062   \def\LT@start{%
7063     #1%
7064     \ifvoid\LT@foot#2\fi
7065     \let\@currentHref\Hy@LT@currentHref
7066     \Hy@raisedlink{%
7067       \hyper@anchorstart{\@currentHref}\hyper@anchorend
7068     }%
7069     #3%
7070   }%
7071 }%
7072 \expandafter\x\LT@start\@nil
7073 }{}

```

### 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.

```

7074 \let\new@refstepcounter\refstepcounter
7075 \let\H@equation\equation
7076 \let\H@endequation\endequation
7077 \ifpackageloaded{amsmath}{%
7078   \long\def\Hy@temp{%
7079     \incr@eqnum
7080     \mathdisplay@push

```

```

7081 \st@rredfalse \global\@eqnswtrue
7082 \mathdisplay{equation}%
7083 }%
7084 \ifx\Hy@temp\equation
7085 \expandafter\ifx\csname if@fleqn\expandafter\endcsname
7086 \csname iftrue\endcsname
7087 \else
7088 \long\def\equation{%
7089 \mathdisplay@push
7090 \st@rredfalse \global\@eqnswtrue
7091 \mathdisplay{equation}%
7092 \incr@eqnum
7093 }%
7094 \fi
7095 \fi
7096 }{%
7097 \def\equation{%
7098 \let\refstepcounter\H@refstepcounter
7099 \H@equation
7100 \@ifundefined{theHequation}{%
7101 \make@stripped@name{\theequation}%
7102 \let\theHequation\newname
7103 }{}%
7104 \hyper@makecurrent{equation}%

```

`\mathopen` is needed in case the equation starts with an unary minus, for example.

```

7105 \mathopen{%
7106 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}}%
7107 }%
7108 \let\refstepcounter\new@refstepcounter
7109 }%
7110 \def\endequation{%
7111 \ifx\Hy@raisedlink\ltx@empty
7112 \hyper@anchorend
7113 \else
7114 \mathclose{\Hy@raisedlink{\hyper@anchorend}}}%
7115 \fi
7116 \H@endequation
7117 }%
7118 }

```

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.

```

7119 \newif\if@eqnstar
7120 \@eqnstarfalse
7121 \let\H@eqnarray\eqnarray
7122 \let\H@endeqnarray\endeqnarray
7123 \def\eqnarray{%
7124 \let\Hy@reserved@a\relax
7125 \def\@currentHref{}%
7126 \H@eqnarray
7127 \if@eqnstar
7128 \else
7129 \ifx\\\@currentHref\\%
7130 \else

```

```

7131 \ifundefined{theHequation}{%
7132 \make@stripped@name{\theequation}%
7133 \let\theHequation\newname
7134 }{}%
7135 \hyper@makecurrent{equation}%
7136 \mathopen{%
7137 \Hy@raisedlink{%
7138 \hyper@anchorstart{\@currentHref}\hyper@anchorend
7139 }%
7140 }%
7141 \fi
7142 \fi
7143 }
7144 \def\endeqnarray{%
7145 \H@endeqnarray
7146 }

```

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.

```

7147 \@namedef{eqnarray*}{%
7148 \def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
7149 }
7150 \@namedef{endeqnarray*}{%
7151 \nonumber\endeqnarray\@eqnstarfalse
7152 }

```

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

```

7153 \ltx@ifundefined{subeqnarray}{}{%
7154 \let\H@subeqnarray\subeqnarray
7155 \let\H@endsubeqnarray\endsubeqnarray
7156 \def\subeqnarray{%
7157 \let\Hy@reserved@a\relax
7158 \H@subeqnarray
7159 \@ifundefined{theHequation}{%
7160 \make@stripped@name{\theequation}%
7161 \let\theHequation\newname
7162 }{}%
7163 \hyper@makecurrent{equation}%
7164 \hyper@anchorstart{\@currentHref}{\hyper@anchorend
7165 }%
7166 \def\endsubeqnarray{%
7167 \H@endsubeqnarray
7168 }%
7169 \providecommand\theHsubequation{\theHequation\alph{subequation}}%
7170 }

```

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

```

7171 \def\make@stripped@name#1{%
7172 \begingroup
7173 \escapechar\m@ne
7174 \global\let\newname\@empty
7175 \protected@edef\Hy@tempa{#1}%
7176 \edef\@tempb{%
7177 \noexpand\@tfor\noexpand\Hy@tempa:=%
7178 \expandafter\strip@prefix\meaning\Hy@tempa

```

```

7179 }%
7180 \@tempb\do{%
7181   \if{\Hy@tempa\else
7182     \if{\Hy@tempa\else
7183       \xdef\newname{\newname\Hy@tempa}%
7184     \fi
7185   \fi
7186 }%
7187 \endgroup
7188 }

```

Support for amsmath's subequations:

```

7189 \begingroup\expandafter\expandafter\expandafter\endgroup
7190 \expandafter\ifx\csname subequations\endcsname\relax
7191 \else
7192   \let\HyOrg@subequations\subequations
7193   \def\subequations{%
7194     \stepcounter{equation}%
7195     \protected@edef\theHparentequation{%
7196       \ifundefined{theHequation}\theequation\theHequation
7197     }%
7198     \addtocounter{equation}{-1}%
7199     \HyOrg@subequations
7200     \def\theHequation{\theHparentequation\alph{equation}}%
7201     \ignorespaces
7202   }%
7203 \fi

```

Support for package `amsthm` (Daniel Müllner):

```

7204 \@ifpackageloaded{amsthm}{%

```

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

```

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

7205 \def\Hy@temp#1#2#3{%
7206   \ifhmode\unskip\unskip\par\fi
7207   \normalfont
7208   \trivlist
7209   \let\thmheadnl\relax
7210   \let\thm@swap\@gobble
7211   \let\thm@indent\indent % indent
7212   \thm@headfont{\scshape}% heading font small caps
7213   \thm@notefont{\fontseries\mddefault\upshape}%
7214   \thm@headpunct{.}% add period after heading
7215   \thm@headsep 5\p@ plus\p@ minus\p@\relax
7216   \thm@space@setup
7217   #1% style overrides
7218   \@topsep \thm@preskip % used by thm head
7219   \@topsepadd \thm@postskip % used by \@endparenv
7220   \def\@tempa{#2}\ifx\@empty\@tempa
7221     \def\@tempa{\@oparg{\@begintheorem{#3}{}}{}}%
7222   \else
7223     \refstepcounter{#2}%
7224     \def\@tempa{%
7225       \@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}{}}%
7226   }%
7227 \fi

```

```

7228 \@tempa
7229 }%
7230 \ifx\Hy@temp\@thm
7231 \def\@thm#1#2#3{%
7232 \ifhmode
7233 \unskip\unskip\par
7234 \fi
7235 \normalfont
7236 \trivlist
7237 \let\thmheadnl\relax
7238 \let\thm@swap\@gobble
7239 \let\thm@indent\indent % indent
7240 \thm@headfont{\scshape}% heading font small caps
7241 \thm@notefont{\fontseries\mddefault\upshape}%
7242 \thm@headpunct{.}% add period after heading
7243 \thm@headsep 5\p@ plus\p@ minus\p@\relax
7244 \thm@space@setup
7245 #1% style overrides
7246 \@topsep \thm@preskip % used by thm head
7247 \@topsepadd \thm@postskip % used by \@endparenv
7248 \def\dth@counter{#2}%
7249 \ifx\@empty\dth@counter
7250 \def\@tempa{%
7251 \@oparg{\@begintheorem{#3}{}}{}%
7252 }%
7253 \else
7254 \H@refstepcounter{#2}%
7255 \hyper@makecurrent{#2}%
7256 \let\Hy@dth@currentHref\@currentHref
7257 \def\@tempa{%
7258 \@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}{}%
7259 }%
7260 \fi
7261 \@tempa
7262 }%
7263 \else
7264 \def\@thm#1#2#3{%
7265 \ifhmode
7266 \unskip\unskip\par
7267 \fi
7268 \normalfont
7269 \trivlist
7270 \let\thmheadnl\relax
7271 \let\thm@swap\@gobble
7272 \thm@notefont{\fontseries\mddefault\upshape}%
7273 \thm@headpunct{.}% add period after heading
7274 \thm@headsep 5\p@ plus\p@ minus\p@\relax
7275 \thm@space@setup
7276 #1% style overrides
7277 \@topsep \thm@preskip % used by thm head
7278 \@topsepadd \thm@postskip % used by \@endparenv
7279 \def\dth@counter{#2}%
7280 \ifx\@empty\dth@counter
7281 \def\@tempa{%
7282 \@oparg{\@begintheorem{#3}{}}{}%
7283 }%
7284 \else

```

```

7285 \H@refstepcounter{#2}%
7286 \hyper@makecurrent{#2}%
7287 \let\Hy@dth@currentHref\@currentHref
7288 \def\@tempa{%
7289 \@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}{}%
7290 }%
7291 \fi
7292 \@tempa
7293 }%
7294 \fi
7295 \dth@everypar={%
7296 \@minipagefalse
7297 \global\@newlistfalse
7298 \@noparitemfalse
7299 \if@inlabel
7300 \global\@inlabelfalse
7301 \begingroup
7302 \setbox\z@\lastbox
7303 \ifvoid\z@
7304 \kern-\itemindent
7305 \fi
7306 \endgroup
7307 \ifx\@empty\dth@counter
7308 \else
7309 \Hy@raisedlink{%
7310 \hyper@anchorstart{%
7311 \ltx@ifundefined{Hy@dth@currentHref}%
7312 \@currentHref\Hy@dth@currentHref
7313 }\hyper@anchorend
7314 }%
7315 \fi
7316 \unhbox\@labels
7317 \fi
7318 \if@nobreak
7319 \@nobreakfalse \clubpenalty\@M
7320 \else
7321 \clubpenalty\@clubpenalty \everypar{}%
7322 \fi
7323 }%
7324 }{}

```

## 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.

```

7325 \ifHy@hyperfootnotes
7326 \newcounter{Hfootnote}%
7327 \let\H@@footnotetext\@footnotetext
7328 \let\H@@footnotemark\@footnotemark
7329 \def\@xfootnotenext[#1]{%
7330 \begingroup
7331 \csname c@\@mpfn\endcsname #1\relax
7332 \unrestored@protected@xdef\@thefnmark{\thempfn}%

```



```

7333 \endgroup
7334 \ifx\@footnotetext\@mpfootnotetext
7335 \expandafter\H@@mpfootnotetext
7336 \else
7337 \expandafter\H@@footnotetext
7338 \fi
7339 }%
7340 \def\@xfootnotemark[#1]{%
7341 \begingroup
7342 \c@footnote #1\relax
7343 \unrestored@protected@xdef\@thefnmark{\thefnnote}%
7344 \endgroup
7345 \H@@footnotemark
7346 }%
7347 \let\H@@mpfootnotetext\@mpfootnotetext
7348 \long\def\@mpfootnotetext#1{%
7349 \H@@mpfootnotetext{%
7350 \ifHy@nesting
7351 \expandafter\ltx@firstoftwo
7352 \else
7353 \expandafter\ltx@secondoftwo
7354 \fi
7355 {%
7356 \expandafter\hyper@@anchor\expandafter{%
7357 \Hy@footnote@currentHref
7358 }{#1}%
7359 }{%
7360 \Hy@raisedlink{%
7361 \expandafter\hyper@@anchor\expandafter{%
7362 \Hy@footnote@currentHref
7363 }{\relax}%
7364 }#1%
7365 }%
7366 }%
7367 }%
7368 \long\def\@footnotetext#1{%
7369 \H@@footnotetext{%
7370 \ifHy@nesting
7371 \expandafter\ltx@firstoftwo
7372 \else
7373 \expandafter\ltx@secondoftwo
7374 \fi
7375 {%
7376 \expandafter\hyper@@anchor\expandafter{%
7377 \Hy@footnote@currentHref
7378 }{#1}%
7379 }{%
7380 \Hy@raisedlink{%
7381 \expandafter\hyper@@anchor\expandafter{%
7382 \Hy@footnote@currentHref
7383 }{\relax}%
7384 }%
7385 \let\@currentHref\Hy@footnote@currentHref
7386 \let\@currentlabelname\@empty
7387 #1%
7388 }%
7389 }%

```

7390 }%

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.

```

7391 \def\@footnotemark{%
7392   \leavevmode
7393   \ifhmode\edef\x@sf{\the\spacefactor}\nobreak\fi
7394   \stepcounter{Hfootnote}%
7395   \global\let\Hy@saved@currentHref\@currentHref
7396   \hyper@makecurrent{Hfootnote}%
7397   \global\let\Hy@footnote@currentHref\@currentHref
7398   \global\let\@currentHref\Hy@saved@currentHref
7399   \hyper@linkstart{link}{\Hy@footnote@currentHref}%
7400   \@makefnmark
7401   \hyper@linkend
7402   \ifhmode\spacefactor\x@sf\fi
7403   \relax
7404 }%
```

Tabularx causes footnote problems, disable the linking if that is loaded. Since v6.82i footnotes are only disabled inside the environment ‘`tabularx`’.

```

7405 \@ifpackageloaded{tabularx}{%
7406   \let\HyOrg@TX@endtabularx\TX@endtabularx
7407   \def\Hy@tabularx@hook{%
7408     \let\@footnotetext\H@@footnotetext
7409     \let\@footnotemark\H@@footnotemark
7410     \let\@mpfootnotetext\H@@mpfootnotetext
7411   }%
7412   \begingroup
7413     \toks@\expandafter{\TX@endtabularx}%
7414     \xdef\Hy@gtemp{%
7415       \noexpand\Hy@tabularx@hook
7416       \the\toks@
7417     }%
7418   \endgroup
7419   \let\TX@endtabularx\Hy@gtemp
7420 }{ }%
```

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

```

7421 \@ifpackageloaded{longtable}{%
7422   \CheckCommand*{\LT@p@ftntext}[1]{%
7423     \edef\@tempa{%
7424       \the\LT@p@ftn
7425       \noexpand\footnotetext[\the\c@footnote]%
7426     }%
7427     \global\LT@p@ftn\expandafter{\@tempa{#1}}%
7428   }%
7429   \long\def\LT@p@ftntext#1{%
7430     \edef\@tempa{%
7431       \the\LT@p@ftn
7432     }%
7433     \begingroup
7434       \noexpand\c@footnote=\the\c@footnote\relax
```

```

7434 \noexpand\protected@xdef\noexpand\@thefnmark{%
7435 \noexpand\thempfn
7436 }%
7437 \noexpand\Hy@LT@footnotetext{%
7438 \Hy@footnote@currentHref
7439 }%
7440 }%
7441 \global\LT@p@ftn\expandafter{%
7442 \@tempa{#1}%
7443 \endgroup
7444 }%
7445 }%
7446 \long\def\Hy@LT@footnotetext#1#2{%
7447 \H@@@footnotetext{%
7448 \ifHy@nesting
7449 \hyper@@anchor{#1}{#2}%
7450 \else
7451 \Hy@raisedlink{%
7452 \hyper@@anchor{#1}{\relax}%
7453 }%
7454 \def\@currentHref{#1}%
7455 \let\@currentlabelname\@empty
7456 #2%
7457 \fi
7458 }%
7459 }%
7460 }{}%

```

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

```

7461 \@ifpackageloaded{fancyvrb}{%
7462 \def\V@@@footnotetext{%
7463 \insert\footins\bgroup
7464 \csname reset@font\endcsname
7465 \footnotesize
7466 \interlinepenalty\interfootnotelinepenalty
7467 \splittopskip\footnotesep
7468 \splitmaxdepth\dp\strutbox
7469 \floatingpenalty \@MM
7470 \hsize\columnwidth
7471 \@parboxrestore
7472 \edef\@currentlabel{\csname p@footnote\endcsname\@thefnmark}%
7473 \@makefntext{}%
7474 \rule{\z@}{\footnotesep}%
7475 \bgroup
7476 \aftergroup\V@@@footnotetext
7477 \Hy@raisedlink{%
7478 \expandafter\hyper@@anchor\expandafter{%
7479 \Hy@footnote@currentHref
7480 }{\relax}%
7481 }%
7482 \let\@currentHref\Hy@footnote@currentHref
7483 \let\@currentlabelname\@empty
7484 \ignorespaces
7485 }%
7486 }{}%

```

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

```

7487 \def\Hy@temp#1{%
7488   \begingroup
7489     \unrestored@protected@xdef\@thefnmark{\ref{#1}}}%
7490   \endgroup
7491   \@footnotemark
7492 }%
7493 \ifx\Hy@temp\footref
7494   \def\footref#1{%
7495     \begingroup
7496       \unrestored@protected@xdef\@thefnmark{\ref{#1}}}%
7497     \endgroup
7498     \H@@@footnotemark
7499   }%
7500 \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.

```

7501 \let\HyOrg@maketitle\maketitle
7502 \def\maketitle{%
7503   \let\Hy@saved@footnotemark\@footnotemark
7504   \let\Hy@saved@footnotetext\@footnotetext
7505   \let\@footnotemark\H@@@footnotemark
7506   \let\@footnotetext\H@@@footnotetext
7507   \@ifnextchar[\Hy@maketitle@optarg{% ]
7508     \HyOrg@maketitle
7509     \Hy@maketitle@end
7510   }%
7511 }%
7512 \def\Hy@maketitle@optarg[#1]{%
7513   \HyOrg@maketitle[{#1}]%
7514   \Hy@maketitle@end
7515 }%
7516 \def\Hy@maketitle@end{%
7517   \ifx\@footnotemark\H@@@footnotemark
7518     \let\@footnotemark\Hy@saved@footnotemark
7519   \fi
7520   \ifx\@footnotetext\H@@@footnotetext
7521     \let\@footnotetext\Hy@saved@footnotetext
7522   \fi
7523 }%

```

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

```

7524 \def\realfootnote{%
7525   \@ifnextchar[\@xfootnote{%
7526     \stepcounter{\@mpfn}%
7527     \protected@xdef\@thefnmark{\thempfn}%
7528     \H@@@footnotemark\H@@@footnotetext
7529   }%
7530 }%
7531 \fi
7532 \Hy@DisableOption{hyperfootnotes}
7533 \</package>
7534 \< *check>
7535 \checklatex
7536 \checkcommand\def\@xfootnotenext[#1]{%

```

```

7537 \begingroup
7538   \csname c@\@mpfn\endcsname #1\relax
7539   \unrestored@protected@xdef\@thefnmark{\thempfn}%
7540 \endgroup
7541 \@footnotetext
7542 }
7543 \checkcommand\def\@xfootnotemark[#1]{%
7544   \begingroup
7545     \c@footnote #1\relax
7546     \unrestored@protected@xdef\@thefnmark{\thefnmark}%
7547   \endgroup
7548   \@footnotemark
7549 }
7550 \checkcommand\def\@footnotemark{%
7551   \leavevmode
7552   \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7553   \@makefnmark
7554   \ifhmode\spacefactor\@x@sf\fi
7555   \relax
7556 }
7557 </check>
7558 <*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.

```

7559 \def\caption{%
7560   \ifx\@captive\@undefined
7561     \@latex@error{\noexpand\caption outside float}\@ehd
7562     \expandafter\@gobble
7563   \else
7564     \H@refstepcounter\@captive
7565     \let\Hy@tempa\@caption
7566     \@ifundefined{float@caption}{%
7567       }{%
7568         \expandafter\ifx\csname @float@c@\@captive\endcsname
7569           \float@caption
7570           \let\Hy@tempa\Hy@float@caption
7571         \fi
7572       }%
7573     \expandafter\@firstofone
7574     \fi
7575     {\@dblarg{\Hy@tempa\@captive}}%
7576 }
7577 \long\def\@caption#1[#2]#3{%
7578   \expandafter\ifx\csname if@capstart\expandafter\endcsname
7579     \csname iftrue\endcsname
7580     \global\let\@currentHref\hc@currentHref
7581   \else
7582     \hyper@makecurrent{\@captive}%
7583   \fi
7584   \@ifundefined{NR@getttitle}{%
7585     \def\@currentlabelname{#2}%
7586   }{%
7587     \NR@getttitle{#2}%

```

```

7588 }%
7589 \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
7590 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7591 }%
7592 \begingroup
7593 \@@parboxrestore
7594 \if@minipage
7595 \@@setminipage
7596 \fi
7597 \normalsize
7598 \expandafter\ifx\csname if@capstart\expandafter\endcsname
7599 \csname iftrue\endcsname
7600 \global\@capstartfalse
7601 \@@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
7602 \else
7603 \@@makecaption{\csname fnum@#1\endcsname}{%
7604 \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

7605 \ifHy@nesting
7606 \expandafter\hyper@@anchor\expandafter{\@currentHref}{#3}%
7607 \else
7608 \Hy@raisedlink{%
7609 \expandafter\hyper@@anchor\expandafter{%
7610 \@currentHref
7611 }{\relax}%
7612 }%
7613 #3%
7614 \fi
7615 }%
7616 \fi
7617 \par
7618 \endgroup
7619 }

```

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.

`\HyNew@float@makebox` is introduced as feature request of Axel Sommerfeldt to make the life easier for his package ‘caption’.

```

7620 \let\Hy@float@caption\@caption
7621 \newcommand{\HyNew@float@makebox}[1]{%
7622 \HyOrg@float@makebox{%
7623 #1\relax
7624 \ifx\Hy@float@currentHref\@undefined
7625 \else
7626 \expandafter\hyper@@anchor\expandafter{%
7627 \Hy@float@currentHref
7628 }{\relax}%
7629 \global\let\Hy@float@currentHref\@undefined
7630 \fi
7631 }%
7632 }%
7633 \ifpackageloaded{float}{%
7634 \def\Hy@float@caption{%
7635 \ifx\Hy@float@currentHref\@undefined
7636 \hyper@makecurrent{\@cuptype}%
7637 \global\let\Hy@float@currentHref\@currentHref

```

```

7638 \else
7639 \let\@currentHref\Hy@float@currentHref
7640 \fi
7641 \float@caption
7642 }%
7643 \let\HyOrg@float@makebox\float@makebox
7644 \let\float@makebox\HyNew@float@makebox
7645 }{}

7646 \</package>
7647 \< *check>
7648 \checklatex[1999/06/01 - 2000/06/01]
7649 \checkcommand\def\caption{%
7650 \ifx\@capttype\@undefined
7651 \< @latex@error{\noexpand\caption outside float}\@ehd
7652 \expandafter\@gobble
7653 \else
7654 \refstepcounter\@capttype
7655 \expandafter\@firstofone
7656 \fi
7657 {\@dblarg{\@caption\@capttype}}}%
7658 }
7659 \checkcommand\long\def\@caption#1[#2]#3{%
7660 \par
7661 \addcontentsline{\csname ext@#1\endcsname}{#1}{%
7662 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7663 }%
7664 \begingroup
7665 \< @parboxrestore
7666 \if@minipage
7667 \< @setminipage
7668 \fi
7669 \normalsize
7670 \< @makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
7671 \endgroup
7672 }
7673 \< /check>
7674 \< *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](mailto:daly@linmpi.mpg.de)) has provided hooks for us, so all we need to do is activate them.

```

7675 \def\hyper@natlinkstart#1{%
7676 \Hy@backout{#1}%
7677 \hyper@linkstart{cite}{cite.#1}%
7678 \def\hyper@nat@current{#1}%
7679 }
7680 \def\hyper@natlinkend{%
7681 \hyper@linkend

```

```

7682 }
7683 \def\hyper@natlinkbreak#1#2{%
7684   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
7685 }
7686 \def\hyper@natanchorstart#1{%
7687   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
7688 }
7689 \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.

```

7690 \ltx@ifundefined{NAT@parse}{%
7691   \providecommand*\@extra@binfo{}%
7692   \providecommand*\@extra@b@citeb{}%
7693   \def\bibcite#1#2{%
7694     \@newl@bel{b}{#1\@extra@binfo}{%
7695       \hyper@link{cite}{cite.#1\@extra@b@citeb}{#2}%
7696     }%
7697   }%
7698   \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.”.

```

7699 \let\Hy@bibcite\bibcite
7700 \begingroup
7701   \@ifundefined{bbl@cite@choice}{}{%
7702     \g@addto@macro\bbl@cite@choice{%
7703       \let\bibcite\Hy@bibcite
7704     }%
7705   }%
7706 \endgroup

```

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

```

7707 \providecommand*\@BIBLABEL{\@biblabel}%
7708 \def\@bibitem[#1]#2{%
7709   \@skiphyperreftrue
7710   \H@item[%
7711     \ifx\Hy@raisedlink\@empty
7712       \hyper@anchorstart{cite.#2\@extra@b@citeb}%
7713       \@BIBLABEL{#1}%
7714       \hyper@anchorend
7715     \else
7716       \Hy@raisedlink{%
7717         \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
7718       }%
7719     \@BIBLABEL{#1}%
7720   \fi
7721   \hfill
7722 ]%
7723   \@skiphyperreffalse
7724   \if@filesw
7725     \begingroup
7726       \let\protect\noexpand
7727       \immediate\write\@auxout{%
7728         \string\bibcite{#2}{#1}%
7729       }%

```



```

7730 \endgroup
7731 \fi
7732 \ignorespaces
7733 }%

```

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

```

7734 \def\@bibitem#1{%
7735 \@skiphyperreftrue\H@item\@skiphyperreffalse
7736 \Hy@raisedlink{%
7737 \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
7738 }%
7739 \if@filesw
7740 \begingroup
7741 \let\protect\noexpand
7742 \immediate\write\@auxout{%
7743 \string\bibcite{#1}{\the\value{\@listctr}}}%
7744 }%
7745 \endgroup
7746 \fi
7747 \ignorespaces
7748 }%
7749 }{}

7750 \</package>
7751 \< *check>
7752 \checklatex
7753 \checkcommand\def\@lbibitem[#1]#2{%
7754 \item[\@biblabel{#1}\hfill]%
7755 \if@filesw
7756 {%
7757 \let\protect\noexpand
7758 \immediate\write\@auxout{%
7759 \string\bibcite{#2}{#1}%
7760 }%
7761 }%
7762 \fi
7763 \ignorespaces
7764 }
7765 \checkcommand\def\@bibitem#1{%
7766 \item
7767 \if@filesw
7768 \immediate\write\@auxout{%
7769 \string\bibcite{#1}{\the\value{\@listctr}}}%
7770 }%
7771 \fi
7772 \ignorespaces
7773 }
7774 \</check>
7775 \< *package>

```

RevTeX (bless its little heart) takes over `\bibcite` and looks at the result to measure something. Make this a hypertext link and it goes ape. Therefore, make an anodyne result first, call its business, then go back to the real thing.

```

7776 \ifclassloaded{revtex}{%
7777 \Hy@Info{*** compatibility with revtex **** }%
7778 \def\revtex@checking#1#2{%
7779 \expandafter\let\expandafter\T@temp\csname b@#1\endcsname

```

```

7780 \expandafter\def\csname b@#1\endcsname{#2}%
7781 \@SetMaxRnhefLabel{#1}%
7782 \expandafter\let\csname b@#1\endcsname\T@temp
7783 }%

```

Tanmoy provided this replacement for CITEX. Lord knows what it does. For chapterbib added: extra@b@citeb

```

7784 \ifundefined{@CITE}{\def\CITE{\@cite}}}%
7785 \providecommand*\@extra@b@citeb{}%
7786 \def\CITEX[#1]#2{%
7787 \let\@citea\@empty
7788 \leavevmode
7789 \unskip
7790 $~{%
7791 \scriptstyle
7792 \@CITE{%
7793 \@for\@citeb:=#2\do{%
7794 \@citea
7795 \def\@citea{,\penalty\@m\ }%
7796 \edef\@citeb{\expandafter\@firstofone\@citeb}%
7797 \if@filesw
7798 \immediate\write\@auxout{\string\citation{\@citeb}}%
7799 \fi
7800 \ifundefined{b@\@citeb\extra@b@citeb}{%
7801 \mbox{\reset@font\bfseries ?}%
7802 \G@refundefinedtrue
7803 \@latex@warning{%
7804 Citation '\@citeb' on page \thepage \space undefined%
7805 }%
7806 }{%
7807 {\csname b@\@citeb\@extra@b@citeb\endcsname}%
7808 }%
7809 }%
7810 }{#1}%
7811 }$%
7812 }%

```

No, life is too short. I am not going to understand the Revtex \@collapse macro, I shall just restore the original behaviour of \citex; sigh. This is SO vile.

```

7813 \def\citex[#1]#2{%
7814 \let\@citea\@empty
7815 \@cite{%
7816 \@for\@citeb:=#2\do{%
7817 \@citea
7818 \def\@citea{,\penalty\@m\ }%
7819 \edef\@citeb{\expandafter\@firstofone\@citeb}%
7820 \if@filesw
7821 \immediate\write\@auxout{\string\citation{\@citeb}}%
7822 \fi
7823 \ifundefined{b@\@citeb\@extra@b@citeb}{%
7824 \mbox{\reset@font\bfseries ?}%
7825 \G@refundefinedtrue
7826 \@latex@warning{%
7827 Citation '\@citeb' on page \thepage \space undefined%
7828 }%
7829 }{%
7830 \hbox{\csname b@\@citeb\@extra@b@citeb\endcsname}%
7831 }%

```

```

7832 }%
7833 }{#1}%
7834 }%
7835 }{}

```

## 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.

```

7836 \@ifpackageloaded{harvard}{%
7837   \Hy@AtBeginDocument{%
7838     \Hy@Info{*** compatibility with harvard **** }%
7839     \Hy@raiselinksfalse
7840     \def\harvardcite#1#2#3#4{%
7841       \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{}{cite.#1}{#2}}%
7842       \global\@namedef{HAR@an@#1}{\hyper@link[cite]{}{cite.#1}{#3}}%
7843       \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{}{cite.#1}{#4}}%
7844       \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
7845     }%
7846     \def\HAR@citetoaux#1{%
7847       \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
7848       \ifHy@backref
7849         \ifx\@empty\@currentlabel
7850         \else
7851           \@bsphack
7852           \if@filesw
7853             \protected@write\@auxout{}{%
7854               \string\@writefile{brf}{%
7855                 \string\backcite{#1}{%
7856                   {thepage}{\@currentlabel}{\@currentHref}%
7857                 }%
7858             }%
7859           }%
7860         \fi
7861         \@esphack
7862       \fi
7863     \fi
7864   }%
7865   \def\harvarditem{%
7866     \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
7867   }%
7868   \def\@harvarditem[#1]#2#3#4#5\par{%
7869     \item[]%
7870     \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
7871     \if@filesw
7872       \begingroup
7873       \def\protect##1{\string ##1\space}%
7874       \ifthenelse{\equal{#1}{\null}}{%
7875         {\def\next{{#4}{#2}{#3}}}%
7876         {\def\next{{#4}{#2}{#1}{#3}}}%
7877       \immediate\write\@auxout{\string\harvardcite\codeof\next}%

```

```

7878 \endgroup
7879 \fi
7880 \protect\hspace*{-\labelwidth}%
7881 \protect\hspace*{-\labelsep}%
7882 \ignorespaces
7883 #5%
7884 \ifHy@backref
7885 \newblock
7886 \backref{\csname br@#4\endcsname}%
7887 \fi
7888 \par
7889 }%

```

\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:

```

7890 \long\def\HAR@checkcitations#1#2#3#4{%
7891 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%
7892 \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
7893 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#3}}%
7894 \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
7895 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#4}}%
7896 \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
7897 \else
7898 \@tempswatrue
7899 \fi
7900 \else
7901 \@tempswatrue
7902 \fi
7903 \else
7904 \@tempswatrue
7905 \fi
7906 }%
7907 }%

7908 }{}

```

## 37.2 Package chicago

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

```

7909 \@ifpackageloaded{chicago}{%

```

\citeN

```

7910 \def\citeN{%
7911 \def\@citesep{~1000}%
7912 \def\@cite##1##2{##1}%
7913 \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
7914 \@citedata@opt
7915 }%

```

\shortciteN

```

7916 \def\shortciteN{%
7917 \def\@citesep{~1000}%
7918 \def\@cite##1##2{##1}%
7919 \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
7920 \@citedata@opt
7921 }%

```

\@citedata@opt

```
7922 \def\@citedata@opt{%
7923   \let\@cite@opt\@empty
7924   \@ifnextchar [{%
7925     \@tempswatrue
7926     \@citedatax@opt
7927   }{%
7928     \@tempswafalse
7929     \@citedatax[]%
7930   }%
7931 }%
```

\@citedatax@opt

```
7932 \def\@citedatax@opt[#1]{%
7933   \def\@cite@opt{, #1}%
7934   \@citedatax[{#1}]%
7935 }%

7936 {}%
```

## 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.

```
7937 \ltx@ifclassloaded{slides}{%
7938   \def\Hy@SlidesFormatOptionalPage#1{(#1)}%
7939   \def\Hy@PageAnchorSlidesPlain{%
7940     \advance\c@page\ltx@one
7941     \edef\Hy@TempPageAnchor{%
7942       \noexpand\hyper@%
7943       \the\c@slide.\the\c@overlay.\the\c@note%
7944       \ifnum\c@page=\ltx@one
7945         \else
7946         .\the\c@page
7947       \fi
7948     }%
7949   }%
7950   \advance\c@page-\ltx@one
7951 }%
7952 \def\Hy@PageAnchorSlide{%
7953   \advance\c@page\ltx@one
7954   \ifnum\c@page>\ltx@one
7955     \ltx@ifundefined{theHpage}{%
7956       \protected@edef\Hy@TheSlideOptionalPage{%
7957         \Hy@SlidesFormatOptionalPage{theHpage}%
7958       }%
7959     }{%
7960       \protected@edef\Hy@TheSlideOptionalPage{%
7961         \Hy@SlidesFormatOptionalPage{theHpage}%
7962       }%
7963     }%
7964   \else
```

```

7965 \def\Hy@TheSlideOptionalPage{}%
7966 \fi
7967 \advance\c@page-\ltx@one
7968 \pdfstringdef\@the@H@page{%
7969 \csname
7970 the%
7971 \ltx@ifundefined{theH\Hy@SlidesPage}{H}%
7972 \Hy@SlidesPage
7973 \endcsname
7974 \Hy@TheSlideOptionalPage
7975 }%
7976 \ltx@gobblethree
7977 }%
7978 \def\Hy@SlidesPage{slide}%
7979 \g@addto@macro\slide{%
7980 \def\Hy@SlidesPage{slide}%
7981 }%
7982 \g@addto@macro\overlay{%
7983 \def\Hy@SlidesPage{overlay}%
7984 }%
7985 \g@addto@macro\note{%
7986 \def\Hy@SlidesPage{note}%
7987 }%
7988 }{%
7989 \def\Hy@PageAnchorSlidesPlain{}%
7990 \def\Hy@PageAnchorSlide{}%
7991 }
7992 \def\Hy@EveryPageAnchor{%
7993 \Hy@DistillerDestFix
7994 \ifHy@pageanchor
7995 \ifHy@hypertexnames
7996 \ifHy@plainpages
7997 \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
7998 \Hy@PageAnchorSlidesPlain
7999 \else
8000 \begingroup
8001 \let\@number\@firstofone
8002 \Hy@unicodefalse
8003 \Hy@PageAnchorSlide
8004 \pdfstringdef\@the@H@page{\thepage}%
8005 \endgroup
8006 \EdefUnescapeString\@the@H@page{\@the@H@page}%
8007 \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
8008 \fi
8009 \else
8010 \Hy@GlobalStepCount\Hy@pagecounter
8011 \def\Hy@TempPageAnchor{%
8012 \hyper@@anchor{page.\the\Hy@pagecounter}%
8013 }%
8014 \fi
8015 \vbox to 0pt{%
8016 \kern\voffset
8017 \kern\topmargin
8018 \kern-1bp\relax
8019 \hbox to 0pt{%
8020 \kern\hoffset
8021 \kern@ifodd\value{page}%

```

```

8022         \oddsidemargin
8023         \else
8024         \evensidemargin
8025     \fi
8026     \kern-1bp\relax
8027     \Hy@TempPageAnchor\relax
8028     \hss
8029 }%
8030 \vss
8031 }%
8032 \fi
8033 }
8034 \g@addto@macro\Hy@EveryPageBoxHook{%
8035   \Hy@EveryPageAnchor
8036 }

```

## 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.

```

8037 \def\addcontentsline#1#2#3{% toc extension, type, tag
8038   \begingroup
8039   \let\label\@gobble
8040   \ifx\@currentHref\@empty
8041     \Hy@Warning{%
8042       No destination for bookmark of \string\addcontentsline,%
8043       \MessageBreak destination is added%
8044     }%
8045     \phantomsection
8046   \fi
8047   \expandafter\ifx\csname toplevel@#2\endcsname\relax
8048     \begingroup
8049     \def\Hy@tempa{#1}%
8050     \ifx\Hy@tempa\Hy@bookmarkstype
8051       \Hy@WarningNoLine{%
8052         bookmark level for unknown #2 defaults to 0%
8053       }%
8054     \else
8055       \Hy@Info{bookmark level for unknown #2 defaults to 0}%
8056     \fi
8057   \endgroup
8058   \expandafter\gdef\csname toplevel@#2\endcsname{0}%
8059   \fi
8060   \edef\Hy@toclevel{\csname toplevel@#2\endcsname}%
8061   \Hy@writebookmark{\csname the#2\endcsname}%
8062     {#3}%
8063     {\@currentHref}%
8064     {\Hy@toclevel}%
8065     {#1}%
8066   \ifHy@verbose
8067     \begingroup
8068     \def\Hy@tempa{#3}%
8069     \@onelevel@sanitize\Hy@tempa
8070     \let\temp@online\on@line
8071     \let\on@line\@empty

```

```

8072 \Hy@Info{%
8073   bookmark\temp@online:\MessageBreak
8074   thecounter {\csname the#2\endcsname}\MessageBreak
8075   text {\Hy@tempa}\MessageBreak
8076   reference {\@currentHref}\MessageBreak
8077   toplevel {\Hy@toclevel}\MessageBreak
8078   type {#1}%
8079 }%
8080 \endgroup
8081 \fi
8082 \addtocontents{#1}{%
8083   \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
8084 }%
8085 \endgroup
8086 }
8087 \def\contentsline#1#2#3#4{%
8088   \ifx\#4\%
8089     \csname l@#1\endcsname{#2}{#3}%
8090   \else
8091     \ifcase\Hy@linktoc % none
8092       \csname l@#1\endcsname{#2}{#3}%
8093     \or % section
8094       \csname l@#1\endcsname{%
8095         \hyper@linkstart{link}{#4}{#2}\hyper@linkend
8096       }{#3}%
8097     \or % page
8098       \csname l@#1\endcsname{{#2}}{%
8099         \hyper@linkstart{link}{#4}{#3}\hyper@linkend
8100       }%
8101     \else % all
8102       \csname l@#1\endcsname{%
8103         \hyper@linkstart{link}{#4}{#2}\hyper@linkend
8104       }{%
8105         \hyper@linkstart{link}{#4}{#3}\hyper@linkend
8106       }%
8107     \fi
8108   \fi
8109 }
8110 \</package>
8111 \< *check>
8112 \checklatex
8113 \checkcommand\def\addcontentsline#1#2#3{%
8114   \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
8115 }
8116 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
8117 \</check>
8118 \< *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.

```

8119 \let\H@definecounter\@definecounter
8120 \def\@definecounter#1{%
8121   \H@definecounter{#1}%
8122   \expandafter\gdef\csname theH#1\endcsname{\arabic{#1}}%

```



```
8123 }
```

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.

```
8124 \let\H@newctr\@newctr
8125 \def\@newctr#1[#2]{%
8126   \H@newctr#1[#2]}%
8127 \expandafter\gdef\csname theH#1\endcsname{%
8128   \csname the\@ifundefined{theH#2}{H}#2\endcsname.\arabic{#1}%
8129   }%
8130 }
```

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

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

Version 6.77p uses a patch by Ross Moore.

```
8131 \@ifpackageloaded{amsmath}{%
8132   \def\Hy@make@anchor{%
8133     \Hy@MakeCurrentHrefAuto{AMS}%
8134     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
8135   }%
8136   \def\Hy@make@df@tag@@#1{%
8137     \gdef\df@tag{%
8138       \maketag@@@{\Hy@make@anchor#1}%
8139       \def\@currentlabel{#1}%
8140     }%
8141   }%
8142   \def\Hy@make@df@tag@@@#1{%
8143     \gdef\df@tag{%
8144       \tagform@{\Hy@make@anchor#1}%
8145       \toks@{\xp{\p@equation{#1}}}%
8146       \edef\@currentlabel{\the\toks@}%
8147     }%
8148   }%
8149   \let\HyOrg@make@df@tag@@\make@df@tag@@
8150   \let\HyOrg@make@df@tag@@@ \make@df@tag@@@
8151   \let\make@df@tag@@\Hy@make@df@tag@@
8152   \let\make@df@tag@@@ \Hy@make@df@tag@@@
8153 }{}
```

Only play with `\seteqlebal` if we are using pdf $\text{\TeX}$ . Other drivers cause problems; requested by Michael Downes (AMS).

```
8154 \@ifpackagewith{hyperref}{pdf $\text{\TeX}$ }{%
8155   \let\H@seteqlabel\@seteqlabel
8156   \def\@seteqlabel#1{%
8157     \H@seteqlabel{#1}%
8158     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
8159     \Hy@raisedlink{%
8160       \hyper@anchorstart{\@currentHref}\hyper@anchorend
8161     }%
8162   }%
8163 }
```

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.

```
8164 \let\HyOrg@addtoreset\@addtoreset
8165 \def\@addtoreset#1#2{%
8166   \HyOrg@addtoreset{#1}{#2}%
8167   \expandafter\xdef\csname theH#1\endcsname{%
8168     \expandafter\noexpand
8169     \csname the\@ifundefined{theH#2}{H#2}\endcsname
8170     .\noexpand\the\noexpand\value{#1}%
8171   }%
8172 }
```

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

```
8173 </package>
8174 <*check>
8175 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
8176 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
8177   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
8178     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
8179       \@addtoreset{#2}{#3}%
8180       \@xp\xdef\csname the#2\endcsname{%
8181         \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8182       }%
8183     }%
8184   }%
8185 }%
8186 </check>
8187 <*package>
8188 \ifpackageloaded{amsmath}{%
8189   \@ifpackagelater{amsmath}{1999/12/14}{%
8190     \renewcommand*\numberwithin[3][\arabic]{%
8191       \@ifundefined{c@#2}{\@nocounterr{#2}}{%
8192         \@ifundefined{c@#3}{\@nocnterr{#3}}{%
8193           \HyOrg@addtoreset{#2}{#3}%
8194           \@xp\xdef\csname the#2\endcsname{%
8195             \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8196           }%
8197           \@xp\xdef\csname theH#2\endcsname{%
8198             \@xp\@nx
8199             \csname the\@ifundefined{theH#3}{H#3}\endcsname
8200             .\@nx#1{#2}%
8201           }%
8202         }%
8203       }%
8204     }%
8205   }%
8206 }
```

```

8202     }%
8203     }%
8204     }%
8205   }{%
8206     \Hy@WarningNoLine{%
8207       \string\numberwithin\space of package ‘amsmath’ %
8208       only fixed\MessageBreak
8209       for version 2000/06/06 v2.12 or newer%
8210     }%
8211   }%
8212 }{}

```

## 42 Included figures

Simply intercept the low level graphics package macro.

```

8213 \ifHy@hyperfigures
8214 \let\Hy@Gin@setfile\Gin@setfile
8215 \def\Gin@setfile#1#2#3{%
8216   \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
8217 }%
8218 \fi
8219 \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.

```

8220 \ifHy@hyperindex
8221 \def\HyInd@ParenLeft{({}%
8222 \def\HyInd@ParenRight{)}}%
8223 \def\hyperindexformat#1#2{%
8224   \let\HyOrg@hyperpage\hyperpage
8225   \let\hyperpage\@firstofone
8226   #1{\HyOrg@hyperpage{#2}}%
8227   \let\hyperpage\HyOrg@hyperpage
8228 }%
8229 \Hy@nextfalse
8230 \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
8231 \@ifpackageloaded{index}{\Hy@nexttrue}{}%
8232 \@ifpackageloaded{amsmidx}{\Hy@nexttrue}{}%
8233 \begingroup
8234   \lccode‘\|=\expandafter‘\HyInd@EncapChar\relax
8235   \lccode‘\/=‘\\\relax
8236 \lowercase{\endgroup
8237 \ifHy@next
8238   \let\HyInd@org@wrindex\@wrindex
8239   \def\@wrindex#1#2{\HyInd@@wrindex{#1}{#2|\\\}}%

```

```

8240 \def\HyInd@@wrindex#1#2|#3|#4\\{%
8241 \ifx\\#3\\%
8242 \HyInd@org@wrindex{#1}{#2|hyperpage}%
8243 \else
8244 \HyInd@@@wrindex{#1}{#2}#3\\%
8245 \fi
8246 }%
8247 \def\HyInd@@@wrindex#1#2#3#4\\{%
8248 \def\Hy@temp@A{#3}%
8249 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8250 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8251 \relax
8252 \HyInd@org@wrindex{#1}{%
8253 #2|hyperindexformat{/#3#4}%
8254 }%
8255 \else
8256 \ifx\\#4\\%
8257 \ifx\Hy@temp@A\HyInd@ParenRight
8258 \HyInd@org@wrindex{#1}{#2|#3}%
8259 \else
8260 \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
8261 \fi
8262 \else
8263 \HyInd@org@wrindex{#1}{%
8264 #2|#3hyperindexformat{/#4}%
8265 }%
8266 \fi
8267 \fi
8268 }%
8269 \else
8270 \def\@wrindex#1{\@wrindex#1||\\}%
8271 \def\@wrindex#1|#2|#3\\{%
8272 \if@filesw
8273 \ifx\\#2\\%
8274 \protected@write\@indexfile{}{%
8275 \string\indexentry{#1|hyperpage}{\thepage}%
8276 }%
8277 \else
8278 \HyInd@@@wrindex{#1}#2\\%
8279 \fi
8280 \fi
8281 \endgroup
8282 \@esphack
8283 }%
8284 \def\HyInd@@@wrindex#1#2#3\\{%
8285 \def\Hy@temp@A{#2}%
8286 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8287 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8288 \relax
8289 \protected@write\@indexfile{}{%
8290 \string\indexentry{%
8291 #1|hyperindexformat{/#2#3}%
8292 }{\thepage}%
8293 }%
8294 \else
8295 \ifx\\#3\\%
8296 \ifx\Hy@temp@A\HyInd@ParenRight

```

```

8297         \protected@write\@indexfile{}\{%
8298             \string\indexentry{#1|#2}{\thepage}%
8299         }%
8300     \else
8301         \protected@write\@indexfile{}\{%
8302             \string\indexentry{#1|#2hyperpage}{\thepage}%
8303         }%
8304     \fi
8305 \else
8306     \protected@write\@indexfile{}\{%
8307         \string\indexentry{%
8308             #1|#2hyperindexformat{/#3}%
8309         }{\thepage}%
8310     }%
8311 \fi
8312 \fi
8313 }%
8314 \fi
8315 }%
8316 \fi
8317 \Hy@DisableOption{hyperindex}
8318 \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.

```

8319 \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.

```

8320 \def\hyperpage#1{%
8321     \HyInd@hyperpage#1\nohyperpage{}\@nil
8322 }
8323 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{%
8324     \HyInd@@hyperpage{#1}%
8325     #2%
8326     \def\Hy@temp{#3}%
8327     \ifx\Hy@temp\@empty
8328     \else
8329         \ltx@ReturnAfterFi{%
8330             \HyInd@hyperpage#3\@nil
8331         }%
8332     \fi
8333 }
8334 \def\HyInd@@hyperpage#1{\@hyperpage#1----\}
8335 \def\@hyperpage#1--#2--#3\{%
8336     \ifx\#2\%
8337         \@commahyperpage{#1}%
8338     \else
8339         \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
8340     \fi
8341 }
8342 \def\@commahyperpage#1{\@commahyperpage#1, \}
8343 \def\@commahyperpage#1, #2,#3\{%
8344     \ifx\#2\%
8345         \HyInd@pagelink{#1}%
8346     \else
8347         \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%

```

```

8348 \fi
8349 }

```

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

```

8350 \def\HyInd@pagelink#1{%
8351   \begingroup
8352   \toks@={}%
8353   \HyInd@removespaces#1 \@nil
8354 \endgroup
8355 }
8356 \def\HyInd@removespaces#1 #2\@nil{%
8357   \toks@=\expandafter{\the\toks@#1}%
8358   \ifx\#2\%
8359     \edef\x{\the\toks@}%
8360     \ifx\x\@empty
8361       \else
8362         \hyperlink{page.\the\toks@}{\the\toks@}%
8363       \fi
8364     \else
8365       \ltx@ReturnAfterFi{%
8366         \HyInd@removespaces#2\@nil
8367       }%
8368     \fi
8369 }

```

## 44 Compatibility with foiltex

```

8370 \@ifclassloaded{foils}{%
8371   \providecommand*\ext@table{lot}%
8372   \providecommand*\ext@figure{lof}%
8373 }{}

```

## 45 Compatibility with seminar slide package

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

```

8374 \@ifclassloaded{seminar}{%
8375   \Hy@seminarslidestrue
8376   \providecommand\theHslide{\arabic{slide}}%
8377 }{%
8378   \Hy@seminarslidesfalse
8379 }
8380 \@ifpackageloaded{slidesec}{%
8381   \providecommand\theHslidesection {\arabic{slidesection}}%
8382   \providecommand\theHslidesubsection{%
8383     \theHslidesection.\arabic{slidesubsection}}%
8384   }%
8385   \def\slide@heading[#1]#2{%
8386     \H@refstepcounter{slidesection}%
8387     \@addtoreset{slidesubsection}{slidesection}%
8388     \addtocontents{los}{%
8389       \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
8390       {\@SCTR}{slideheading.\theslidesection}}%
8391     }%
8392   \def\Hy@tempa{#2}%

```

```

8393 \ifx\Hy@tempa\@empty
8394 \else
8395 {%
8396 \edef\@currentlabel{%
8397 \csname p@slidesection\endcsname\theslidesection
8398 }%
8399 \makeslideheading{#2}%
8400 }%
8401 \fi
8402 \gdef\theslideheading{#1}%
8403 \gdef\theslidesubheading{}%
8404 \ifHy@bookmarksnumbered
8405 \def\Hy@slidetitle{\theslidesection\space #1}%
8406 \else
8407 \def\Hy@slidetitle{#1}%
8408 \fi
8409 \ifHy@hypertextnames
8410 \ifHy@naturalnames
8411 \hyper@@anchor{slideheading.\theslidesection}{\relax}%
8412 \Hy@writebookmark
8413 {\theslidesection}%
8414 {\Hy@slidetitle}%
8415 {slideheading.\theslidesection}%
8416 {1}%
8417 {toc}%
8418 \else
8419 \hyper@@anchor{slideheading.\theHslidesection}{\relax}%
8420 \Hy@writebookmark
8421 {\theslidesection}%
8422 {\Hy@slidetitle}%
8423 {slideheading.\theHslidesection}%
8424 {1}%
8425 {toc}%
8426 \fi
8427 \else
8428 \Hy@GlobalStepCount\Hy@linkcounter
8429 \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
8430 \Hy@writebookmark
8431 {\theslidesection}%
8432 {\Hy@slidetitle}%
8433 {slideheading.\the\Hy@linkcounter}%
8434 {1}%
8435 {toc}%
8436 \fi
8437 }%
8438 \def\slide@subheading[#1]#2{%
8439 \H@refstepcounter{slidesubsection}%
8440 \addtocontents{los}{%
8441 \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
8442 {\@SCTR}{slideheading.\theslidesubsection}%
8443 }%
8444 \def\Hy@tempa{#2}%
8445 \ifx\Hy@tempa\@empty
8446 \else
8447 {%
8448 \edef\@currentlabel{%
8449 \csname p@slidesubsection\endcsname\theslidesubsection

```

```

8450     }%
8451     \makeslidesubheading{#2}%
8452 }%
8453 \fi
8454 \gdef\theslidesubheading{#1}%
8455 \ifHy@bookmarksnumbered
8456     \def\Hy@slidetitle{\theslidesubsection\space #1}%
8457 \else
8458     \def\Hy@slidetitle{#1}%
8459 \fi
8460 \ifHy@hypertextnames
8461     \ifHy@naturalnames
8462         \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
8463         \Hy@writebookmark
8464             {\theslidesubsection}%
8465             {\Hy@slidetitle}%
8466             {slideheading.\theslidesubsection}%
8467             {2}%
8468             {toc}%
8469     \else
8470         \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
8471         \Hy@writebookmark
8472             {\theslidesubsection}%
8473             {\Hy@slidetitle}%
8474             {slideheading.\theHslidesubsection}%
8475             {2}%
8476             {toc}%
8477     \fi
8478 \else
8479     \Hy@GlobalStepCount\Hy@linkcounter
8480     \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
8481     \Hy@writebookmark
8482         {\theslidesubsection}%
8483         {\Hy@slidetitle}%
8484         {slideheading.\the\Hy@linkcounter}%
8485         {1}%
8486         {toc}%
8487 \fi
8488 }%
8489 \providecommand*\listslidenamename{List of Slides}%
8490 \def\listofslides{%
8491     \section*{%
8492         \listslidenamename
8493         \@mkboth{%
8494             \expandafter\MakeUppercase\listslidenamename
8495         }{%
8496             \expandafter\MakeUppercase\listslidenamename
8497         }%
8498     }%
8499     \def\l@slide##1##2##3##4{%
8500         \slide@undottedcline{%
8501             \slidenumberline{##3}{\hyperlink{##4}{##2}}%
8502         }{%
8503         }%
8504         \let\l@subslide\l@slide
8505         \@startlos
8506     }%

```



```

8507 \def\slide@contents{%
8508   \def\l@slide##1##2##3##4{%
8509     \slide@cline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
8510   }%
8511   \let\l@subslide\@gobblefour
8512   \@startlos
8513 }%
8514 \def\Slide@contents{%
8515   \def\l@slide##1##2##3##4{%
8516     \ifcase\lslide@flag
8517       \message{##1 ** \the\c@slidesection}%
8518       \ifnum##1>\c@slidesection
8519         \def\lslide@flag{1}%
8520         {%
8521           \large
8522           \slide@cline{%
8523             \slidenumberline{$\rightarrow\bullet$}%
8524             {\hyperlink{##4}{##2}}%
8525           }{##3}%
8526         }%
8527       \else
8528         {%
8529           \large
8530           \slide@cline{%
8531             \slidenumberline{$\surd\;\bullet$}%
8532             {\hyperlink{##4}{##2}}%
8533           }{##3}%
8534         }%
8535       \fi
8536     \or
8537       \def\lslide@flag{2}%
8538       {%
8539         \large
8540         \slide@cline{%
8541           \slidenumberline{$\bullet$}%
8542           {\hyperlink{##4}{##2}}%
8543         }{##3}%
8544       }%
8545     \or
8546       {%
8547         \large
8548         \slide@cline{%
8549           \slidenumberline{$\bullet$}%
8550           {\hyperlink{##4}{##2}}%
8551         }{##3}%
8552       }%
8553     \fi
8554   }%
8555   \def\l@subslide##1##2##3##4{%
8556     \ifnum\lslide@flag=1 %
8557       \undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}{}%
8558     \fi
8559   }%
8560   \def\lslide@flag{0}%
8561   \@startlos
8562 }%
8563 }{}

```

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.)

```

8564 \ifHy@texht
8565   \expandafter\endinput
8566 \fi
8567 \let\real@setref\@setref
8568 \def\@setref#1#2#3{% csname, extract group, refname
8569   \ifx#1\relax
8570     \protect\G@refundefinedtrue
8571     \nfss@text{\reset@font\bfseries ??}%
8572     \@latex@warning{%
8573       Reference ‘#3’ on page \thepage \space undefined%
8574     }%
8575   \else
8576     \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
8577   \fi
8578 }
```

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

```

8579 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
8580   \begingroup
8581   \toks0={\hyper@link{#5}{#4}}%
8582   \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
8583   \edef\x{\endgroup
8584     \the\toks0 {\the\toks1 }%
8585   }%
8586   \x
8587 }
8588 \def\@pagesetref#1#2#3{% csname, extract macro, ref
8589   \ifx#1\relax
8590     \protect\G@refundefinedtrue
8591     \nfss@text{\reset@font\bfseries ??}%
8592     \@latex@warning{%
8593       Reference ‘#3’ on page \thepage \space undefined%
8594     }%
8595   \else
8596     \protect\hyper@link
8597     {\expandafter\@fifthoffive#1}%
8598     {page.\expandafter\@secondoffive#1}%
8599     {\expandafter\@secondoffive#1}%
8600   \fi
8601 }

8602 \</package>
8603 \< *check>
8604 \checklatex
8605 \checkcommand\def\@setref#1#2#3{%
8606   \ifx#1\relax
8607     \protect\G@refundefinedtrue
8608     \nfss@text{\reset@font\bfseries ??}%
8609     \@latex@warning{%
8610       Reference ‘#3’ on page \thepage \space undefined%
8611     }%
8612   \else
8613     \expandafter#2#1\< null
8614   \fi

```

```

8615 }
8616 </check>
8617 <*package>

```

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

```

8618 \def\HyRef@StarSetRef#1{%
8619   \begingroup
8620   \Hy@safe@activestrue
8621   \edef\x{#1}%
8622   \@onelevel@sanitize\x
8623   \edef\x{\endgroup
8624     \noexpand\HyRef@@StarSetRef
8625     \expandafter\noexpand\csname r@\x\endcsname{\x}%
8626   }%
8627   \x
8628 }
8629 \def\HyRef@@StarSetRef#1#2#3{%
8630   \ifx#1\@undefined
8631     \let#1\relax
8632   \fi
8633   \real@setref#1#3{#2}%
8634 }
8635 \def\@refstar#1{%
8636   \HyRef@StarSetRef{#1}\@firstoffive
8637 }
8638 \def\@pagerefstar#1{%
8639   \HyRef@StarSetRef{#1}\@secondoffive
8640 }
8641 \def\@namerefstar#1{%
8642   \HyRef@StarSetRef{#1}\@thirdoffive
8643 }
8644 \Hy@AtBeginDocument{%
8645   \@ifpackageloaded{varioref}{%
8646     \def\@Refstar#1{%
8647       \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
8648     }%
8649     \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
8650       \MakeUppercase#1%
8651     }%
8652     \DeclareRobustCommand*\@Ref*{%
8653       \@ifstar\@Refstar\HyRef@Ref
8654     }%
8655     \def\HyRef@Ref#1{%
8656       \hyperref[{#1}]{\@Ref*{#1}}%
8657     }%
8658     \def\Vr@f#1{%
8659       \leavevmode\unskip\vref@space
8660       \hyperref[{#1}]{%
8661         \@Ref*{#1}%
8662         \let\vref@space\nobreakspace
8663         \@vpageref\unskip}{#1}%
8664       }%
8665     }%
8666     \def\vr@f#1{%
8667       \leavevmode\unskip\vref@space
8668       \begingroup
8669       \let\T@pageref\@pagerefstar

```

```

8670     \hyperref[#1]{%
8671     \ref*{#1}%
8672     \vpageref[unskip]{#1}%
8673     }%
8674     \endgroup
8675     }%
8676     }{}%
8677 }
8678 \DeclareRobustCommand*\autopageref{%
8679     \@ifstar{%
8680         \HyRef@autopagerefname\pageref*%
8681     }\HyRef@autopageref
8682 }
8683 \def\HyRef@autopageref#1{%
8684     \hyperref[#1]{\HyRef@autopagerefname\pageref*{#1}}%
8685 }
8686 \def\HyRef@autopagerefname{%
8687     \ltx@ifundefined{pageautorefname}{%
8688         \ltx@ifundefined{pagename}{%
8689             \Hy@Warning{No autoref name for 'page'}%
8690         }{}%
8691         \pagename\nobreakspace
8692     }%
8693     }{}%
8694     \pageautorefname\nobreakspace
8695     }%
8696 }

```

\leavevmode is added to make package wrapfigure happy, if \autoref starts a paragraph.

```

8697 \DeclareRobustCommand*\autoref{%
8698     \leavevmode
8699     \@ifstar{\HyRef@autoref@gobbletwo}{\HyRef@autoref\hyper@@link}%
8700 }
8701 \def\HyRef@autoref#1#2{%
8702     \begingroup
8703     \Hy@safe@activetrue
8704     \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
8705     \endgroup
8706 }
8707 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
8708     \HyRef@ShowKeysRef{#2}%
8709     \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
8710         \edef\HyRef@thisref{%
8711             \expandafter\@fourthoffive#1\@empty\@empty\@empty
8712         }%
8713         \expandafter\HyRef@testreftype\HyRef@thisref.\.%
8714         \Hy@safe@activesfalse
8715         #3{%
8716             \expandafter\@fifthoffive#1\@empty\@empty\@empty
8717         }{}%
8718         \expandafter\@fourthoffive#1\@empty\@empty\@empty
8719         }{}%
8720         \HyRef@currentHtag
8721         \expandafter\@firstoffive#1\@empty\@empty\@empty
8722         \null
8723     }%
8724     \else

```

```

8725 \protect\G@refundefinedtrue
8726 \nfss@text{\reset@font\bfseries ??}%
8727 \@latex@warning{%
8728   Reference '#2' on page \thepage\space undefined%
8729 }%
8730 \fi
8731 }
8732 \def\HyRef@testreftype#1.#2\{\%
8733 \ltx@ifundefined{#1autorefname}\%
8734 \ltx@ifundefined{#1name}\%
8735 \HyRef@StripStar#1\*\@nil{#1}%
8736 \ltx@ifundefined{\HyRef@name autorefname}\%
8737 \ltx@ifundefined{\HyRef@name name}\%
8738 \def\HyRef@currentHtag{\%
8739 \Hy@Warning{No autoref name for '#1'}%
8740 }%
8741 \edef\HyRef@currentHtag{\%
8742 \expandafter\noexpand\csname\HyRef@name name\endcsname
8743 \noexpand~%
8744 }%
8745 }%
8746 }{%
8747 \edef\HyRef@currentHtag{\%
8748 \expandafter\noexpand
8749 \csname\HyRef@name autorefname\endcsname
8750 \noexpand~%
8751 }%
8752 }%
8753 }{%
8754 \edef\HyRef@currentHtag{\%
8755 \expandafter\noexpand\csname#1name\endcsname
8756 \noexpand~%
8757 }%
8758 }%
8759 }{%
8760 \edef\HyRef@currentHtag{\%
8761 \expandafter\noexpand\csname#1autorefname\endcsname
8762 \noexpand~%
8763 }%
8764 }%
8765 }
8766 \def\HyRef@StripStar#1*\@nil#3{%
8767 \def\HyRef@name{#2}%
8768 \ifx\HyRef@name\HyRef@CaseStar
8769 \def\HyRef@name{#1}%
8770 \else
8771 \def\HyRef@name{#3}%
8772 \fi
8773 }
8774 \def\HyRef@CaseStar{*\\}
8775 \def\HyRef@currentHtag{

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

8776 \let\HyRef@ShowKeysRef\@gobble
8777 \def\HyRef@ShowKeysInit{%
8778 \begingroup\expandafter\expandafter\expandafter\endgroup

```

```

8779 \expandafter\ifx\csname SK@@label\endcsname\relax
8780 \else
8781 \ifx\SK@ref\@empty
8782 \else
8783 \def\HyRef@ShowKeysRef{%
8784 \SK@\SK@@ref
8785 }%
8786 \fi
8787 \fi
8788 }
8789 \@ifpackageloaded{showkeys}{%
8790 \HyRef@ShowKeysInit
8791 }{%
8792 \Hy@AtBeginDocument{%
8793 \ifpackageloaded{showkeys}{%
8794 \HyRef@ShowKeysInit
8795 }{}%
8796 }%
8797 }

```

Defaults for the names that `\autoref` uses.

```

8798 \providecommand*\AMSautorefname{\equationautorefname}
8799 \providecommand*\Hfootnoteautorefname{\footnoteautorefname}
8800 \providecommand*\Itemautorefname{\itemautorefname}
8801 \providecommand*\itemautorefname{item}
8802 \providecommand*\equationautorefname{Equation}
8803 \providecommand*\footnoteautorefname{footnote}
8804 \providecommand*\itemautorefname{item}
8805 \providecommand*\figureautorefname{Figure}
8806 \providecommand*\tableautorefname{Table}
8807 \providecommand*\partautorefname{Part}
8808 \providecommand*\appendixautorefname{Appendix}
8809 \providecommand*\chapterautorefname{chapter}
8810 \providecommand*\sectionautorefname{section}
8811 \providecommand*\subsectionautorefname{subsection}
8812 \providecommand*\subsubsectionautorefname{subsubsection}
8813 \providecommand*\paragraphautorefname{paragraph}
8814 \providecommand*\subparagraphautorefname{subparagraph}
8815 \providecommand*\FancyVerbLineautorefname{line}
8816 \providecommand*\theoremautorefname{Theorem}
8817 \providecommand*\pageautorefname{page}
8818 \endpackage

```

## 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 pdfTeX offers `\pdfescapestring`.

```

8819 \ifx\pdfescapestring\relax
8820 \begingroup\expandafter\expandafter\expandafter\endgroup

```

```

8821 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
8822 \begingroup
8823 \catcode'\|=0 %
8824 \@makeother\|%
8825 |@firstofone{|endgroup
8826 |def|Hy@pstringdef#1#2{%
8827 |begingroup
8828 |edef~{|string~}%
8829 |xdef|Hy@gtemp{#2}%
8830 |endgroup
8831 |let#1|Hy@gtemp
8832 |@onelevel@sanitize#1%
8833 |edef#1{|expandafter|Hy@ExchangeBackslash#1\|@nil}%
8834 |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
8835 |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
8836 }%
8837 |def|Hy@ExchangeBackslash#1\#2|@nil{%
8838 #1%
8839 |ifx|\#2|\%%
8840 |else
8841 \\\%
8842 |ltx@ReturnAfterFi{%
8843 |Hy@ExchangeBackslash#2|@nil
8844 }%
8845 |fi
8846 }%
8847 }%
8848 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
8849 #1%
8850 \ifx\#2\%%
8851 \else
8852 \@backslashchar(%
8853 \ltx@ReturnAfterFi{%
8854 \Hy@ExchangeLeftParenthesis#2\@nil
8855 }%
8856 \fi
8857 }%
8858 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
8859 #1%
8860 \ifx\#2\%%
8861 \else
8862 \@backslashchar)%
8863 \ltx@ReturnAfterFi{%
8864 \Hy@ExchangeRightParenthesis#2\@nil
8865 }%
8866 \fi
8867 }%
8868 \else
8869 \def\Hy@pstringdef#1#2{%
8870 \begingroup
8871 \edef~{\string~}%
8872 \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
8873 \endgroup
8874 \let#1\Hy@gtemp
8875 }%
8876 \fi
8877 </pdfTeX> dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>

```

## 46.2 pdftex

```

8878 ⟨*pdftex⟩
8879 \providecommand*{\XR@ext}{pdf}
8880 \Hy@setbreaklinks{true}
8881 \def\HyPat@ObjRef{%
8882   [0-9]*[1-9][0-9]* 0 R%
8883 }

```

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

```

8884 \let\Hy@pdfminorversion\relax
8885 \begingroup\expandafter\expandafter\expandafter\endgroup
8886 \expandafter\ifx\csname pdfminorversion\endcsname\relax
8887   \begingroup\expandafter\expandafter\expandafter\endgroup
8888   \expandafter\ifx\csname pdfoptionpdfminorversion\endcsname\relax
8889     \else
8890       \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
8891     \fi
8892   \else
8893     \def\Hy@pdfminorversion{\pdfminorversion}%
8894   \fi
8895 \@ifundefined{Hy@pdfminorversion}{%
8896   \PackageInfo{hyperref}{%
8897     PDF version is not set, because pdfTeX is too old (<1.10a)%
8898   }%
8899 }{%
8900   \ifHy@ocgcolorlinks
8901     \ifnum\Hy@pdfminorversion<5 %
8902       \kvsetkeys{Hyp}{pdfversion=1.5}%
8903     \fi
8904   \fi
8905   \ifHy@setpdfversion
8906     \ifnum\Hy@pdfminorversion=\Hy@pdfversion\relax
8907   \else
8908     \Hy@pdfminorversion=\Hy@pdfversion\relax
8909   \fi
8910   \PackageInfo{hyperref}{%
8911     \expandafter\string\Hy@pdfminorversion
8912     :=\number\Hy@pdfversion\space
8913   }%
8914   \fi
8915   \edef\Hy@pdfversion{\number\Hy@pdfminorversion}%
8916 }
8917 \Hy@DisableOption{pdfversion}%
8918 \ifHy@ocgcolorlinks
8919   \pdf@ifdraftmode{}{%
8920     \immediate\pdfobj{%
8921       <<%
8922       /Type/OCG%
8923       /Name(View)%
8924       /Usage<<%

```



```

8925      /Print<<%
8926      /PrintState/OFF%
8927      >>%
8928      /View<<%
8929      /ViewState/ON%
8930      >>%
8931      >>%
8932      >>%
8933      }%
8934      \edef\OBJ@OCG@view{\the\pdffastobj\space 0 R}%
8935      \immediate\pdfobj{%
8936      <<%
8937      /Type/OCG%
8938      /Name(Print)%
8939      /Usage<<%
8940      /Print<<%
8941      /PrintState/ON%
8942      >>%
8943      /View<<%
8944      /ViewState/OFF%
8945      >>%
8946      >>%
8947      >>%
8948      }%
8949      \edef\OBJ@OCG@print{\the\pdffastobj\space 0 R}%
8950      \immediate\pdfobj{%
8951      [%
8952      \OBJ@OCG@view\space\OBJ@OCG@print
8953      ]%
8954      }%
8955      \edef\OBJ@OCGs{\the\pdffastobj\space 0 R}%
8956      \pdfcatalog{%
8957      /OCProperties<<%
8958      /OCGs \OBJ@OCGs
8959      /D<<%
8960      /OFF[\OBJ@OCG@print]%
8961      /AS[%
8962      <<%
8963      /Event/View%
8964      /OCGs \OBJ@OCGs
8965      /Category[/View]%
8966      >>%
8967      <<%
8968      /Event/Print%
8969      /OCGs \OBJ@OCGs
8970      /Category[/Print]%
8971      >>%
8972      <<%
8973      /Event/Export%
8974      /OCGs \OBJ@OCGs
8975      /Category[/Print]%
8976      >>%
8977      ]%
8978      >>%
8979      >>%
8980      }%
8981      \begingroup

```

```

8982 \edef\x{\endgroup
8983 \pdfpageresources{%
8984 /Properties<<%
8985 /OCView \OBJ@OCG@view
8986 /OCPrint \OBJ@OCG@print
8987 >>%
8988 }%
8989 }%
8990 \x
8991 }%
8992 \Hy@AtBeginDocument{%
8993 \def\Hy@colorlink#1{%
8994 \begingroup
8995 \ifHy@ocgcolorlinks
8996 \def\Hy@ocgcolor{#1}%
8997 \setbox0=\hbox\bgroup\color@begingroup
8998 \else
8999 \HyColor@UseColor#1%
9000 \fi
9001 }%
9002 \def\Hy@endcolorlink{%
9003 \ifHy@ocgcolorlinks
9004 \color@endgroup\egroup
9005 \mbox{%
9006 \pdfliteral page{/OC/OCPrint BDC}%
9007 \rlap{\copy0}%
9008 \pdfliteral page{EMC/OC/OCView BDC}%
9009 \begingroup
9010 \expandafter\HyColor@UseColor\Hy@ocgcolor
9011 \box0 %
9012 \endgroup
9013 \pdfliteral page{EMC}%
9014 }%
9015 \fi
9016 \endgroup
9017 }%
9018 }%
9019 \else
9020 \Hy@DisableOption{ocgcolorlinks}%
9021 \fi

```

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

```

9022 \def\setpdfinkmargin#1{\pdfinkmargin#1}
9023 \ifx\pdfstartlink\@undefined% less than version 14
9024 \let\pdfstartlink\pdfannotlink
9025 \let\pdfinkmargin\@tempdima
9026 \let\pdfxform\pdfform
9027 \let\pdflastxform\pdfastform
9028 \let\pdfrefxform\pdfrefform
9029 \else
9030 \pdfinkmargin1pt %
9031 \fi

```

First set up the default linking

```
9032 \providecommand*\@pdfview{XYZ}
```

First define the anchors:

```

9033 \Hy@WrapperDef\new@pdfink#1{%
9034 \ifhmode

```

```

9035 \savsf\spacefactor
9036 \fi
9037 \Hy@SaveLastskip
9038 \Hy@VerboseAnchor{#1}%
9039 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9040 \Hy@DestName\Hy@pstringDest\@pdfview
9041 \Hy@RestoreLastskip
9042 \ifhmode
9043 \spacefactor\@savsf
9044 \fi
9045 }
9046 \let\pdf@endanchor\@empty

```

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

```

9047 \def\Hy@DestName#1#2{%
9048 \pdfdest name{#1}#2\relax
9049 }

```

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.

```

9050 \providecommand*\@pdfborder{0 0 1}
9051 \providecommand*\@pdfborderstyle{}
9052 \def\Hy@undefinedname{UNDEFINED}
9053 \def\find@pdflink#1#2{%
9054 \leavevmode
9055 \protected@edef\Hy@testname{#2}%
9056 \ifx\Hy@testname\@empty
9057 \Hy@Warning{%
9058 Empty destination name,\MessageBreak
9059 using '\Hy@undefinedname'%
9060 }%
9061 \let\Hy@testname\Hy@undefinedname
9062 \else
9063 \Hy@pstringdef\Hy@testname{%
9064 \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
9065 }%
9066 \fi
9067 \Hy@StartlinkName{%
9068 \ifHy@pdfa /F 4\fi
9069 \Hy@setpdfborder
9070 \ifx\@pdfhighlight\@empty
9071 \else
9072 /H\@pdfhighlight
9073 \fi
9074 \ifx\CurrentBorderColor\relax
9075 \else
9076 /C[\CurrentBorderColor]%
9077 \fi
9078 }\Hy@testname
9079 \expandafter\Hy@colorlink\csname @#1color\endcsname
9080 }
9081 \def\Hy@StartlinkName#1#2{%
9082 \pdfstartlink attr{#1}goto name{#2}\relax
9083 }

```

```

9084 \def\close@pdfink{%
9085   \Hy@endcolorlink
9086   \Hy@VerboseLinkStop
9087   \pdfendlink
9088 }
9089 \def\hyper@anchor#1{%
9090   \new@pdfink{#1}\anchor@spot\pdf@endanchor
9091 }
9092 \def\hyper@anchorstart#1{%
9093   \new@pdfink{#1}%
9094   \Hy@activeanchortrue
9095 }
9096 \def\hyper@anchorend{%
9097   \pdf@endanchor
9098   \Hy@activeanchorfalse
9099 }
9100 \def\hyper@linkstart#1#2{%
9101   \Hy@VerboseLinkStart{#1}{#2}%
9102   \ltx@ifundefined{@#1bordercolor}{%
9103     \let\CurrentBorderColor\relax
9104   }{%
9105     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
9106   }%
9107   \find@pdfink{#1}{#2}%
9108 }
9109 \def\hyper@linkend{\close@pdfink}
9110 \def\hyper@link#1#2#3{%
9111   \Hy@VerboseLinkStart{#1}{#2}%
9112   \ltx@ifundefined{@#1bordercolor}{%
9113     \let\CurrentBorderColor\relax
9114   }{%
9115     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
9116   }%
9117   \find@pdfink{#1}{#2}#3\Hy@xspace@end
9118   \close@pdfink
9119 }
9120 \let\CurrentBorderColor\@linkbordercolor
9121 \def\hyper@linkurl#1#2{%
9122   \begingroup
9123     \Hy@pstringdef\Hy@pstringURI{#2}%
9124     \hyper@chars
9125     \leavevmode
9126     \pdfstartlink
9127     attr{%
9128       \Hy@setpdfborder
9129       \ifx\@pdfhighlight\@empty
9130       \else
9131         /H\@pdfhighlight
9132       \fi
9133       \ifx\@urlbordercolor\relax
9134       \else
9135         /C[\@urlbordercolor]%
9136       \fi
9137     }%
9138     user{%
9139       /Subtype/Link%
9140       \ifHy@pdfa /F 4\fi

```

```

9141      /A<<%
9142      /Type/Action%
9143      /S/URI%
9144      /URI(\Hy@pstringURI)%
9145      \ifHy@href@ismap
9146      /IsMap true%
9147      \fi
9148      \Hy@href@nextactionraw
9149      >>%
9150      }%
9151      \relax
9152      \Hy@colorlink\@urlcolor#1\Hy@xspace@end
9153      \close@pdflink
9154      \endgroup
9155 }
9156 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
9157 \begingroup
9158 \def\Hy@pstringF{#2}%
9159 \Hy@CleanupFile\Hy@pstringF
9160 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
9161 \Hy@pstringdef\Hy@pstringD{#3}%
9162 \Hy@MakeRemoteAction
9163 \leavevmode
9164 \pdfstartlink
9165 attr{%
9166 \Hy@setpdfborder
9167 \ifx\@pdfhighlight\@empty
9168 \else
9169 /H\@pdfhighlight
9170 \fi
9171 \ifx\@filebordercolor\relax
9172 \else
9173 /C[\@filebordercolor]%
9174 \fi
9175 }%
9176 user {%
9177 /Subtype/Link%
9178 \ifHy@pdfa /F 4\fi
9179 /A<<%
9180 /F(\Hy@pstringF)%
9181 /S/GoToR%
9182 \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}

```

```

9183 \ifx\#3\%
9184 /D[\Hy@href@page\@pdfremotestartview]%
9185 \else

```

```

9186         /D(\Hy@pstringD)%
9187     \fi
9188     \Hy@href@nextactionraw
9189     >>%
9190 }%
9191 \relax
9192 \Hy@colorlink\@filecolor#1\Hy@xspace@end
9193 \close@pdflink
9194 \endgroup
9195 }
9196 \def\@hyper@launch run:#1\|#2#3{% filename, anchor text linkname
9197 \begingroup
9198 \Hy@pstringdef\Hy@pstringF{#1}%
9199 \Hy@pstringdef\Hy@pstringP{#3}%
9200 \leavevmode
9201 \pdfstartlink
9202 attr{%
9203 \Hy@setpdfborder
9204 \ifx\@pdfhighlight\@empty
9205 \else
9206 /H\@pdfhighlight
9207 \fi
9208 \ifx\@runbordercolor\relax
9209 \else
9210 /C\@runbordercolor}%
9211 \fi
9212 }%
9213 user {%
9214 /Subtype/Link%
9215 \ifHy@pdfa /F 4\fi
9216 /A<<%
9217 /F(\Hy@pstringF)%
9218 /S/Launch%
9219 \Hy@SetNewWindow
9220 \ifx\|#3\|
9221 \else
9222 /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
9223 \fi
9224 \Hy@href@nextactionraw
9225 >>%
9226 }%
9227 \relax
9228 \Hy@colorlink\@runcolor#2\Hy@xspace@end
9229 \close@pdflink
9230 \endgroup
9231 }

```

\@pdfproducer

```

9232 \ifx\@pdfproducer\relax
9233 \begingroup\expandafter\expandafter\expandafter\endgroup
9234 \expandafter\ifx\csname luatexversion\endcsname\relax
9235 \def\@pdfproducer{pdfTeX}%
9236 \ifx\eTeXversion\@undefined
9237 \else
9238 \ifx\eTeXversion\relax
9239 \else
9240 \ifnum\eTeXversion>0 %

```

```

9241     \def\@pdfproducer{pdfTeX}%
9242     \fi
9243     \fi
9244     \fi
9245     \ifx\pdfTeXversion\@undefined
9246     \else
9247     \ifnum\pdfTeXversion<100 %
9248     \edef\@pdfproducer{%
9249     \@pdfproducer
9250     \the\pdfTeXversion.\pdfTeXrevision
9251     }%
9252     \else
9253     \ifnum\pdfTeXversion<130 %
9254     \edef\@pdfproducer{%
9255     \@pdfproducer-
9256     \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
9257     \expandafter\@cdr\the\pdfTeXversion\@empty\@nil
9258     \pdfTeXrevision
9259     }%
9260     \else
9261     \ifnum\pdfTeXversion<140 %
9262     \else
9263     \def\@pdfproducer{pdfTeX}%
9264     \fi
9265     \edef\@pdfproducer{%
9266     \@pdfproducer-
9267     \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
9268     \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
9269     \pdfTeXrevision
9270     }%
9271     \fi
9272     \fi
9273     \fi
9274     \else
9275     \begingroup
9276     \count@=\luatexversion
9277     \divide\count@ by 100 %
9278     \edef\x{\the\count@}%
9279     \count@=-\x\relax
9280     \multiply\count@ by 100 %
9281     \advance\count@ by \luatexversion
9282     \edef\x{\endgroup
9283     \def\noexpand\@pdfproducer{%
9284     LuaTeX-\x.\the\count@.\luatexrevision
9285     }%
9286     }%
9287     \x
9288     \fi
9289     \fi

```

\PDF@SetupDox

```

9290 \def\PDF@SetupDoc{%
9291 \ifx\@pdfpagescrop\@empty
9292 \else
9293 \edef\process@me{%
9294 \pdfpagesattr={%
9295 /CropBox[\@pdfpagescrop]%
9296 \expandafter\ifx\expandafter\\\the\pdfpagesattr\\%

```

```

9297     \else
9298         ^^J\the\pdfpagesattr
9299     \fi
9300 }%
9301 }%
9302 \process@me
9303 \fi
9304 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9305 \pdfcatalog{%
9306     /PageMode/\@pdfpagemode
9307     \ifx\@baseurl\@empty
9308     \else
9309         /URI<</Base(\Hy@pstringB)>>%
9310     \fi
9311 }%
9312 \ifx\@pdfstartpage\@empty
9313 \else
9314     \ifx\@pdfstartview\@empty
9315     \else
9316         openaction goto page\@pdfstartpage{\@pdfstartview}%
9317     \fi
9318 \fi
9319 \edef\Hy@temp{%
9320     \ifHy@pdftoolbar\else /HideToolbar true\fi
9321     \ifHy@pdfmenubar\else /HideMenubar true\fi
9322     \ifHy@pdfwindowui\else /HideWindowUI true\fi
9323     \ifHy@pdfwindow /FitWindow true\fi
9324     \ifHy@pdfcenterwindow /CenterWindow true\fi
9325     \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9326     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9327     \Hy@UseNameKey{Direction}\@pdfdirection
9328     \Hy@UseNameKey{ViewArea}\@pdfviewarea
9329     \Hy@UseNameKey{ViewClip}\@pdfviewclip
9330     \Hy@UseNameKey{PrintArea}\@pdfprintarea
9331     \Hy@UseNameKey{PrintClip}\@pdfprintclip
9332     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9333     \Hy@UseNameKey{Duplex}\@pdfduplex
9334     \ifx\@pdfpicktraybypdfsize\@empty
9335     \else
9336         /PickTrayByPDFSize \@pdfpicktraybypdfsize
9337     \fi
9338     \ifx\@pdfprintpagerange\@empty
9339     \else
9340         /PrintPageRange[\@pdfprintpagerange]%
9341     \fi
9342     \ifx\@pdfnumcopies\@empty
9343     \else
9344         /NumCopies \@pdfnumcopies
9345     \fi
9346 }%
9347 \pdfcatalog{%
9348     \ifx\Hy@temp\@empty
9349     \else
9350         /ViewerPreferences<<\Hy@temp>>%
9351     \fi
9352     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9353     \ifx\@pdflang\@empty

```



```

9354 \else
9355 /Lang(\@pdflang)%
9356 \fi
9357 }%
9358 }

```

\PDF@FinishDoc

```

9359 \def\PDF@FinishDoc{%
9360 \pdf@ifdraftmode{}{%
9361 \Hy@UseMaketitleInfos
9362 \HyInfo@GenerateAddons
9363 \pdfinfo{%
9364 /Author(\@pdfauthor)%
9365 /Title(\@pdftitle)%
9366 /Subject(\@pdfsubject)%
9367 /Creator(\@pdfcreator)%
9368 \ifx\@pdfcreationdate\@empty
9369 \else
9370 /CreationDate(\@pdfcreationdate)%
9371 \fi
9372 \ifx\@pdfmoddate\@empty
9373 \else
9374 /ModDate(\@pdfmoddate)%
9375 \fi
9376 \ifx\@pdfproducer\relax
9377 \else
9378 /Producer(\@pdfproducer)%
9379 \fi
9380 /Keywords(\@pdfkeywords)%
9381 \ifx\@pdftrapped\@empty
9382 \else
9383 /Trapped/\@pdftrapped
9384 \fi
9385 \HyInfo@Addons
9386 }%
9387 }%
9388 \Hy@DisableOption{pdfauthor}%
9389 \Hy@DisableOption{pdftitle}%
9390 \Hy@DisableOption{pdfsubject}%
9391 \Hy@DisableOption{pdfcreator}%
9392 \Hy@DisableOption{pdfcreationdate}%
9393 \Hy@DisableOption{pdfmoddate}%
9394 \Hy@DisableOption{pdfproducer}%
9395 \Hy@DisableOption{pdfkeywords}%
9396 \Hy@DisableOption{pdftrapped}%
9397 \Hy@DisableOption{pdfinfo}%
9398 }

```

\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.

```

9399 \def\hyper@pagetransition{%
9400 \ifx\@pdfpagetransition\relax
9401 \else
9402 \expandafter\Hy@RemoveTransPageAttr
9403 \the\pdfpageattr^^J/Trans{}}>>\END
9404 \ifx\@pdfpagetransition\@empty

```

```

9405 \else
9406 \edef\@processme{%
9407 \global\pdfpageattr{%
9408 \the\pdfpageattr
9409 ^^J/Trans << /S /\@pdfpagetransition\space >>%
9410 }%
9411 }%
9412 \@processme
9413 \fi
9414 \fi
9415 }

```

`\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.

```

9416 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
9417 \ifx\#2\%
9418 \global\pdfpageattr{#1}%
9419 \else
9420 \Hy@RemoveTransPageAttr#1#4\END
9421 \fi
9422 }

```

`\hyper@pageduration` `\@pdfpageduration` is initialized with `\relax`. So it indicates, if option `pdfpage-duration` is used. First previous `/Dur` entries are removed. If a new `/Dur` key exists, it is appended to `\pdfpageattr`.

```

9423 \def\hyper@pageduration{%
9424 \ifx\@pdfpageduration\relax
9425 \else
9426 \expandafter
9427 \Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
9428 \ifx\@pdfpageduration\@empty
9429 \else
9430 \edef\@processme{%
9431 \global\pdfpageattr{%
9432 \the\pdfpageattr
9433 ^^J/Dur \@pdfpageduration\space
9434 }%
9435 }%
9436 \@processme
9437 \fi
9438 \fi
9439 }

```

`\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.

```

9440 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
9441 \ifx\#2\%
9442 \global\pdfpageattr{#1}%
9443 \else
9444 \Hy@RemoveDurPageAttr#1#4\END
9445 \fi
9446 }

```

`\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).

```

9447 \def\hyper@pagehidden{%
9448   \ifHy@useHidKey
9449     \expandafter
9450     \Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END
9451     \ifHy@pdfpagehidden
9452       \edef\@processme{%
9453         \global\pdfpageattr{%
9454           \the\pdfpageattr
9455             ^^J/Hid true % SPACE
9456         }%
9457       }%
9458       \@processme
9459     \fi
9460   \fi
9461 }
```

`\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.

```

9462 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
9463   \ifx\#2\%
9464     \global\pdfpageattr{#1}%
9465   \else
9466     \Hy@RemoveHidPageAttr#1#4\END
9467   \fi
9468 }

9469 \pdf@ifdraftmode{}{%
9470   \g@addto@macro\Hy@EveryPageHook{%
9471     \hyper@pagetransition
9472     \hyper@pageduration
9473     \hyper@pagehidden
9474   }%
9475 }
```

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

```

9476 \</pdfTeX>
9477 \<{*pdfTeX|xetex}>
9478 \Hy@AtBeginDocument{%
9479   \ifHy@setpagesize
9480     \expandafter\@firstofone
9481   \else
9482     \expandafter\@gobble
9483   \fi
9484   {%
9485     \@ifclassloaded{seminar}{%
9486       \<{*pdfTeX}>
9487       \setlength{\pdfhorigin}{1truein}%
9488       \setlength{\pdfvorigin}{1truein}%
9489     \</pdfTeX>
9490     \ifportrait
9491       \ifdim\paperwidth=\z@
```

```

9492     \else
9493       \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
9494     \fi
9495     \ifdim\paperheight=\z@
9496     \else
9497       \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
9498     \fi
9499   \else
9500     \ifdim\paperheight=\z@
9501     \else
9502       \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
9503     \fi
9504     \ifdim\paperwidth=\z@
9505     \else
9506       \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
9507     \fi
9508   \fi
9509 }{%
9510   \ltx@ifundefined{stockwidth}{%
9511     \ifdim\paperwidth>\z@
9512       \setlength{\pdfpagewidth}{\paperwidth}%
9513     \fi
9514     \ifdim\paperheight>\z@
9515       \setlength{\pdfpageheight}{\paperheight}%
9516     \fi
9517   }{%
9518     \ifdim\stockwidth>\z@
9519       \setlength{\pdfpagewidth}{\stockwidth}%
9520     \fi
9521     \ifdim\stockheight>\z@
9522       \setlength{\pdfpageheight}{\stockheight}%
9523     \fi
9524   }%
9525 }%
9526 }%
9527 \Hy@DisableOption{setpagesize}%
9528 }
9529 </pdfTeX | xetex>
9530 <*pdfTeX>
9531 \def\Acrobatmenu#1#2{%
9532   \Hy@Acrobatmenu{#1}{#2}{%
9533     \leavevmode
9534     \EdefEscapeName\Hy@temp@menu{#1}%
9535     \pdfstartlink
9536     attr{%
9537       \Hy@setpdfborder
9538       \ifx\@pdfhighlight\@empty
9539         \else
9540           /H\@pdfhighlight
9541         \fi
9542       \ifx\@menubordercolor\relax
9543         \else
9544           /C[\@menubordercolor]%
9545         \fi
9546     }%
9547     user{%
9548       /Subtype/Link%

```

```

9549     \ifHy@pdfa /F 4\fi
9550     /A<<%
9551     /S/Named%
9552     /N/\Hy@temp@menu
9553     \Hy@href@nextactionraw
9554     >>%
9555     }%
9556     \relax
9557     \Hy@colorlink\@menucolor#2%
9558     \close@pdflink
9559     }%
9560 }

```

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

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

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

Since version 2011/10/05 v1.16 of package 'atbegshi' `\AtBeginShipoutFirst` does not add a additional box layer.

```

9561 \def\Hy@FixNotFirstPage{%
9562   \gdef\Hy@FixNotFirstPage{%
9563     \setbox\AtBeginShipoutBox=\hbox{%
9564       \copy\AtBeginShipoutBox
9565     }%
9566   }%
9567 }
9568 \ltx@ifpackagelater{atbegshi}{2011/10/05}{%
9569 }{%
9570   \AtBeginShipout{\Hy@FixNotFirstPage}%
9571 }
9572 \</pdfTeX>

```

### 46.3 hypertext

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

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

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

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

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

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

The *href*, *name* and *end* commands are used to do the basic hypertext operations of establishing links between sections of documents. The *image* command is intended (as with current html viewers) to place an image of arbitrary graphical format on the page in the current location. The *base\_name* command is be used

to communicate to the *dvi* viewer the full (URL) location of the current document so that files specified by relative URL's may be retrieved correctly.

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

```

9573 (*hypertext)
9574 \providecommand*\XR@ext}{dvi}
9575 \let\PDF@FinishDoc\ltx@empty
9576 \def\PDF@SetupDoc{%
9577   \ifx\@baseurl\@empty
9578     \else
9579       \special{html:<base href="\@baseurl">}%
9580     \fi
9581 }
9582 \Hy@WrapperDef\hyper@anchor#1{%
9583   \Hy@SaveLastskip
9584   \Hy@VerboseAnchor{#1}%
9585   \begingroup
9586     \let\protect=\string
9587     \hyper@chars
9588     \special{html:<a name=%
9589       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9590   \endgroup
9591   \Hy@activeanchortrue
9592   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9593   \special{html:</a>}%
9594   \Hy@activeanchorfalse
9595   \Hy@RestoreLastskip
9596 }
9597 \Hy@WrapperDef\hyper@anchorstart#1{%
9598   \Hy@SaveLastskip
9599   \Hy@VerboseAnchor{#1}%
9600   \begingroup
9601     \hyper@chars
9602     \special{html:<a name=%
9603       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9604   \endgroup
9605   \Hy@activeanchortrue
9606 }
9607 \def\hyper@anchorend{%
9608   \special{html:</a>}%
9609   \Hy@activeanchorfalse
9610   \Hy@RestoreLastskip
9611 }
9612 \def\@urltype{url}
9613 \def\hyper@linkstart#1#2{%
9614   \Hy@VerboseLinkStart{#1}{#2}%

```

```

9615 \expandafter\Hy@colorlink\csname @#1color\endcsname
9616 \def\Hy@tempa{#1}%
9617 \ifx\Hy@tempa\@urlltype
9618   \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9619 \else
9620   \begingroup
9621     \hyper@chars
9622     \special{html:<a href=%
9623       \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
9624   \endgroup
9625 \fi
9626 }
9627 \def\hyper@linkend{%
9628   \special{html:</a>}%
9629   \Hy@endcolorlink
9630 }
9631 \def\hyper@linkfile#1#2#3{%
9632   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
9633 }
9634 \def\hyper@linkurl#1#2{%

```

If we want to raise up the final link `\special`, we need to get its height; ask me why  $\text{\LaTeX}$  constructs make this totally foul up, and make us revert to basic  $\text{\TeX}$ . I do not know.

```

9635 \leavevmode
9636 \ifHy@raiselinks
9637   \Hy@SaveSpaceFactor
9638   \Hy@SaveSavedSpaceFactor
9639   \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9640   \Hy@RestoreSavedSpaceFactor
9641   \@linkdim\dp\@tempboxa
9642   \lower\@linkdim\hbox{%
9643     \hyper@chars
9644     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9645   }%
9646   \Hy@colorlink\@urllcolor
9647   \Hy@RestoreSpaceFactor
9648   #1%
9649   \Hy@SaveSpaceFactor
9650   \@linkdim\ht\@tempboxa

```

Because of the interaction with the `dvilhs` 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).

```

9651 \advance\@linkdim by -6.5\p@
9652 \raise\@linkdim\hbox{\special{html:</a>}}%
9653 \Hy@endcolorlink
9654 \Hy@RestoreSpaceFactor
9655 \else
9656   \begingroup
9657     \hyper@chars
9658     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9659     \Hy@colorlink\@urllcolor#1\Hy@xspace@end
9660     \special{html:</a>}%
9661     \Hy@endcolorlink
9662   \endgroup
9663 \fi
9664 }

```

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

```

9665 \def\hyper@link#1#2#3{%
9666   \Hy@VerboseLinkStart{#1}{#2}%
9667   \hyper@linkurl{#3}{\#\HyperDestNameFilter{#2}}%
9668 }

9669 \def\hyper@image#1#2{%
9670   \begingroup
9671     \hyper@chars
9672     \special{html:<img src=\hyper@quote#1\hyper@quote>}%
9673   \endgroup
9674 }
9675 </hypertex>
9676 <*dviwindo>

```

## 46.4 dviwindo

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

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

```

9677 \providecommand*\XR@ext}{dvi}
9678 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
9679 \Hy@WrapperDef\hyper@anchor#1{%
9680   \Hy@SaveLastskip
9681   \Hy@VerboseAnchor{#1}%
9682   \begingroup
9683     \let\protect=\string
9684     \special{mark: #1}%
9685   \endgroup
9686   \Hy@activeanchortrue
9687   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9688   \Hy@activeanchorfalse
9689   \Hy@RestoreLastskip
9690 }
9691 \Hy@WrapperDef\hyper@anchorstart#1{%
9692   \Hy@SaveLastskip
9693   \Hy@VerboseAnchor{#1}%
9694   \special{mark: #1}%
9695   \Hy@activeanchortrue
9696 }
9697 \def\hyper@anchorend{%
9698   \Hy@activeanchorfalse
9699   \Hy@RestoreLastskip
9700 }
9701 \def\hyper@linkstart#1#2{%
9702   \Hy@VerboseLinkStart{#1}{#2}%
9703   \expandafter\Hy@colorlink\csname @#1color\endcsname
9704   \special{button: %

```



```

9705 10000000 %
9706 \number\baselineskip\space
9707 #2%
9708 }%
9709 }
9710 \def\hyper@linkend{%
9711 \Hy@endcolorlink
9712 }
9713 \def\hyper@link#1#2#3{%
9714 \Hy@VerboseLinkStart{#1}{#2}%
9715 \leavevmode
9716 \ifHy@raiselinks
9717 \Hy@SaveSpaceFactor
9718 \Hy@SaveSavedSpaceFactor
9719 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#3}%
9720 \Hy@RestoreSavedSpaceFactor
9721 \@linkdim\dp\@tempboxa
9722 \lower\@linkdim\hbox{%
9723 \special{button: %
9724 \number\wd\@tempboxa\space
9725 \number\ht\@tempboxa\space
9726 #2%
9727 }%
9728 \expandafter\Hy@colorlink\csname @#1color\endcsname
9729 \Hy@RestoreSpaceFactor
9730 #3\Hy@xspace@end
9731 \Hy@SaveSpaceFactor
9732 \Hy@endcolorlink
9733 }%
9734 \@linkdim\ht\@tempboxa
9735 \advance\@linkdim by -6.5\p@
9736 \raise\@linkdim\hbox{}}%
9737 \Hy@RestoreSpaceFactor
9738 \else
9739 \special{button: %
9740 \number\wd\@tempboxa\space
9741 \number\ht\@tempboxa\space
9742 #2%
9743 }%
9744 \expandafter\Hy@colorlink\csname @#1color\endcsname
9745 #3\Hy@xspace@end
9746 \Hy@endcolorlink
9747 \fi
9748 }
9749 \def\hyper@linkurl#1#2{%
9750 \begingroup
9751 \hyper@chars
9752 \leavevmode
9753 \ifHy@raiselinks
9754 \Hy@SaveSpaceFactor
9755 \Hy@SaveSavedSpaceFactor
9756 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9757 \Hy@RestoreSavedSpaceFactor
9758 \@linkdim\dp\@tempboxa
9759 \lower\@linkdim\hbox{%
9760 \special{button: %
9761 \number\wd\@tempboxa\space

```

```

9762      \number\ht\@tempboxa\space
9763      launch: \wwwbrowser\space
9764      #2%
9765  }%
9766  \Hy@colorlink\@urlcolor
9767  \Hy@RestoreSpaceFactor
9768  #1\Hy@xspace@end
9769  \Hy@SaveSpaceFactor
9770  \Hy@endcolorlink
9771  }%
9772  \@linkdim\ht\@tempboxa
9773  \advance\@linkdim by -6.5\p@
9774  \raise\@linkdim\hbox{}%
9775  \Hy@RestoreSpaceFactor
9776  \else
9777  \special{button: %
9778  \number\wd\@tempboxa\space
9779  \number\ht\@tempboxa\space
9780  launch: \wwwbrowser\space
9781  #2%
9782  }%
9783  \Hy@colorlink\@urlcolor
9784  #1\Hy@xspace@end
9785  \Hy@endcolorlink
9786  \fi
9787  \endgroup
9788 }
9789 \def\hyper@linkfile#1#2#3{%
9790 \begingroup
9791 \hyper@chars
9792 \leavevmode
9793 \ifHy@raiselinks
9794 \Hy@SaveSpaceFactor
9795 \Hy@SaveSavedSpaceFactor
9796 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9797 \Hy@RestoreSavedSpaceFactor
9798 \@linkdim\dp\@tempboxa
9799 \lower\@linkdim\hbox{%
9800 \special{button: %
9801 \number\wd\@tempboxa\space
9802 \number\ht\@tempboxa\space
9803 #3,%
9804 file: #2%
9805 }%
9806 \Hy@colorlink\@filecolor
9807 \Hy@RestoreSpaceFactor
9808 #1\Hy@xspace@end
9809 \Hy@SaveSpaceFactor
9810 \Hy@endcolorlink
9811 }%
9812 \@linkdim\ht\@tempboxa
9813 \advance\@linkdim by -6.5\p@
9814 \raise\@linkdim\hbox{}%
9815 \Hy@RestoreSpaceFactor
9816 \else
9817 \special{button: %
9818 \number\wd\@tempboxa\space

```

```

9819     \number\ht\@tempboxa\space
9820     #3,%
9821     file: #2%
9822 }%
9823 \Hy@colorlink\@filecolor
9824 #1\Hy@xspace@end
9825 \Hy@endcolorlink
9826 \fi
9827 \endgroup
9828 }
9829 \ifx\@pdfproducer\relax
9830 \def\@pdfproducer{dviwindo + Distiller}%
9831 \fi
9832 \HyInfo@AddonUnsupportedtrue
9833 \def\PDF@FinishDoc{%
9834 \Hy@UseMaketitleInfos
9835 \HyInfo@TrappedUnsupported
9836 \special{PDF: Keywords \@pdfkeywords}%
9837 \special{PDF: Title \@pdftitle}%
9838 \special{PDF: Creator \@pdfcreator}%
9839 \ifx\@pdfcreationdate\@empty
9840 \else
9841 \special{PDF: CreationDate \@pdfcreationdate}%
9842 \fi
9843 \ifx\@pdfmoddate\@empty
9844 \else
9845 \special{PDF: ModDate \@pdfmoddate}%
9846 \fi
9847 \special{PDF: Author \@pdfauthor}%
9848 \ifx\@pdfproducer\relax
9849 \else
9850 \special{PDF: Producer \@pdfproducer}%
9851 \fi
9852 \special{PDF: Subject \@pdfsubject}%
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 \ifx\@baseurl\@empty
9866 \else
9867 \special{PDF: Base \@baseurl}%
9868 \fi
9869 \ifx\@pdfpagescrop\@empty\else
9870 \special{PDF: BBox \@pdfpagescrop}%
9871 \fi
9872 \def\Hy@temp{}%
9873 \ifx\@pdfstartpage\@empty
9874 \else
9875 \ifx\@pdfstartview\@empty

```

```

9876 \else
9877 \edef\Hy@temp{%
9878 ,Page=\@pdfstartpage
9879 ,View=\@pdfstartview
9880 }%
9881 \fi
9882 \fi
9883 \edef\Hy@temp{%
9884 \noexpand\pdfmark{%
9885 pdfmark=/DOCVIEW,%
9886 PageMode=/\@pdfpagemode
9887 \Hy@temp
9888 }%
9889 }%
9890 \Hy@temp
9891 \ifx\@pdfpagescrop\@empty
9892 \else
9893 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9894 \fi
9895 \edef\Hy@temp{%
9896 \ifHy@pdftoolbar\else /HideToolbar true\fi
9897 \ifHy@pdfmenubar\else /HideMenubar true\fi
9898 \ifHy@pdfwindowui\else /HideWindowUI true\fi
9899 \ifHy@pdffitwindow /FitWindow true\fi
9900 \ifHy@pdfcenterwindow /CenterWindow true\fi
9901 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9902 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9903 \Hy@UseNameKey{Direction}\@pdfdirection
9904 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9905 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9906 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9907 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9908 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9909 \Hy@UseNameKey{Duplex}\@pdfduplex
9910 \ifx\@pdfpicktraybypdfsize\@empty
9911 \else
9912 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9913 \fi
9914 \ifx\@pdfprintpagerange\@empty
9915 \else
9916 /PrintPageRange[\@pdfprintpagerange]%
9917 \fi
9918 \ifx\@pdfnumcopies\@empty
9919 \else
9920 /NumCopies \@pdfnumcopies
9921 \fi
9922 }%
9923 \pdfmark{pdfmark=/PUT,%
9924 Raw={%
9925 \string{Catalog\string}<<%
9926 \ifx\Hy@temp\@empty
9927 \else
9928 /ViewerPreferences<<\Hy@temp>>%
9929 \fi
9930 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9931 \ifx\@pdflang\@empty
9932 \else

```

```

9933      /Lang(\@pdflang)%
9934      \fi
9935      >>%
9936    }%
9937  }%
9938 }
9939 </dviwindo>
9940 <{*dvipdfm | xetex>

```

## 46.5 dvipdfm/xetex dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

9941 \providecommand*\XR@ext}{pdf}
9942 \Hy@setbreaklinks{true}
9943 \def\HyPat@ObjRef{%
9944   @[\^ ]+{%
9945 }
9946 \newsavebox{\pdfm@box}
9947 \def\@pdfm@mark#1{\special{pdf:#1}}
9948 \Hy@WrapperDef\@pdfm@dest#1{%
9949   \Hy@SaveLastskip
9950   \Hy@VerboseAnchor{#1}%
9951   \begingroup
9952     \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9953     \def\x{XYZ}%
9954     \ifx\x\@pdfview
9955       \def\x{XYZ @xpos @ypos null}%
9956     \else
9957       \def\x{FitH}%
9958       \ifx\x\@pdfview
9959         \def\x{FitH @ypos}%
9960       \else
9961         \def\x{FitBH}%
9962         \ifx\x\@pdfview
9963           \def\x{FitBH @ypos}%
9964         \else
9965           \def\x{FitV}%
9966           \ifx\x\@pdfview
9967             \def\x{FitV @xpos}%
9968           \else
9969             \def\x{FitBV}%
9970             \ifx\x\@pdfview
9971               \def\x{FitBV @xpos}%
9972             \else
9973               \def\x{Fit}%
9974               \ifx\x\@pdfview
9975                 \let\x\@pdfview
9976               \else
9977                 \def\x{FitB}%
9978                 \ifx\x\@pdfview
9979                   \let\x\@pdfview
9980                 \else
9981                   \def\x{FitR}%
9982                   \ifx\x\@pdfview
9983                     \Hy@Warning{'pdfview=FitR' is not supported}%
9984                     \def\x{XYZ @xpos @ypos null}%
9985                   \else

```

```

9986         \@onelevel@sanitize\@pdfview
9987         \Hy@Warning{%
9988             Unknown value '\@pdfview' for pdfview%
9989         }%
9990         \def\x{XYZ @xpos @ypos null}%
9991     \fi
9992 \fi
9993 \fi
9994 \fi
9995 \fi
9996 \fi
9997 \fi
9998 \fi
9999 \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
10000 \endgroup
10001 \Hy@RestoreLastskip
10002 }
10003 \providecommand*\@pdfview{XYZ}
10004 \providecommand*\@pdfborder{0 0 1}
10005 \providecommand*\@pdfborderstyle{}
10006 \def\hyper@anchor#1{%
10007     \@pdfm@dest{#1}%
10008 }
10009 \def\hyper@anchorstart#1{%
10010     \Hy@activeanchortrue
10011     \@pdfm@dest{#1}%
10012 }
10013 \def\hyper@anchorend{%
10014     \Hy@activeanchorfalse
10015 }
10016 \newcounter{Hy@AnnotLevel}
10017 \ifHy@ocgcolorlinks
10018     \def\OBJ@OCG@view{@OCG@view}%
10019     \@pdfm@mark{%
10020         obj \OBJ@OCG@view <<%
10021             /Type/OCG%
10022             /Name(View)%
10023             /Usage<<%
10024             /Print<<%
10025             /PrintState/OFF%
10026             >>%
10027             /View<<%
10028             /ViewState/ON%
10029             >>%
10030             >>%
10031             >>%
10032         }%
10033     \@pdfm@mark{close \OBJ@OCG@view}%
10034     \def\OBJ@OCG@print{@OCG@print}%
10035     \@pdfm@mark{%
10036         obj \OBJ@OCG@print <<%
10037             /Type/OCG%
10038             /Name(Print)%
10039             /Usage<<%
10040             /Print<<%
10041             /PrintState/ON%
10042             >>%

```

```

10043     /View<<%
10044     /ViewState/OFF%
10045     >>%
10046     >>%
10047     >>%
10048 }%
10049 \@pdfm@mark{close \OBJ@OCG@print}%
10050 \def\OBJ@OCGs{@OCGs}%
10051 \@pdfm@mark{%
10052   obj \OBJ@OCGs [%
10053     \OBJ@OCG@view\space\OBJ@OCG@print
10054   ]%
10055 }%
10056 \@pdfm@mark{close \OBJ@OCGs}%
10057 \@pdfm@mark{%
10058   put @catalog <<%
10059     /OCProperties<<%
10060     /OCGs \OBJ@OCGs
10061     /D<<%
10062     /OFF[\OBJ@OCG@print]%
10063     /AS[%
10064       <<%
10065         /Event/View%
10066         /OCGs \OBJ@OCGs
10067         /Category[/View]%
10068       >>%
10069       <<%
10070         /Event/Print%
10071         /OCGs \OBJ@OCGs
10072         /Category[/Print]%
10073       >>%
10074       <<%
10075         /Event/Export%
10076         /OCGs \OBJ@OCGs
10077         /Category[/Print]%
10078       >>%
10079     ]%
10080     >>%
10081     >>%
10082     >>%
10083 }%
10084 \AtBeginShipout{%
10085   \setbox\AtBeginShipoutBox=\hbox{%
10086     \copy\AtBeginShipoutBox
10087     \@pdfm@mark{%
10088       put @resources <<%
10089         /Properties<<%
10090         /OCView \OBJ@OCG@view
10091         /OCPrint \OBJ@OCG@print
10092       >>%
10093       >>%
10094     }%
10095   }%
10096 }%
10097 \Hy@AtBeginDocument{%
10098   \def\Hy@colorlink#1{%
10099     \begingroup

```

```

10100 \ifHy@ocgcolorlinks
10101 \def\Hy@ocgcolor{#1}%
10102 \setbox0=\hbox\bgroup\color@begingroup
10103 \else
10104 \HyColor@UseColor#1%
10105 \fi
10106 }%
10107 \def\Hy@endcolorlink{%
10108 \ifHy@ocgcolorlinks
10109 \color@endgroup\egroup
10110 \mbox{%
10111 \@pdfm@mark{content /OC/OCPrint BDC}%
10112 \rlap{\copy0}%
10113 \@pdfm@mark{content EMC/OC/OCView BDC}%
10114 \begingroup
10115 \expandafter\HyColor@UseColor\Hy@ocgcolor
10116 \box0 %
10117 \endgroup
10118 \@pdfm@mark{content EMC}%
10119 }%
10120 \fi
10121 \endgroup
10122 }%
10123 }%
10124 \else
10125 \Hy@DisableOption{ocgcolorlinks}%
10126 \fi

10127 \def\Hy@BeginAnnot#1{%
10128 \stepcounter{Hy@AnnotLevel}%
10129 \ifnum\value{Hy@AnnotLevel}=\@ne
10130 #1%
10131 \fi
10132 }
10133 \def\Hy@endAnnot{%
10134 \ifnum\value{Hy@AnnotLevel}=\@ne
10135 \Hy@endcolorlink
10136 \@pdfm@mark{eann}%
10137 \fi
10138 \addtocounter{Hy@AnnotLevel}\m@ne
10139 }

10140 \def\Hy@undefinedname{UNDEFINED}
10141 \def\hyper@linkstart#1#2{%
10142 \Hy@VerboseLinkStart{#1}{#2}%
10143 \leavevmode
10144 \Hy@BeginAnnot{%
10145 \protected@edef\Hy@testname{#2}%
10146 \ifx\Hy@testname\@empty
10147 \Hy@Warning{%
10148 Empty destination name,\MessageBreak
10149 using '\Hy@undefinedname'%
10150 }%
10151 \let\Hy@testname\Hy@undefinedname
10152 \else
10153 \Hy@pstringdef\Hy@testname{%
10154 \expandafter\HyperDestNameFilter\expandafter{%
10155 \Hy@testname
10156 }%

```



```

10157 }%
10158 \fi
10159 \@pdfm@mark{%
10160   bann<<%
10161     /Type/Annot%
10162     /Subtype/Link%
10163     \ifHy@pdfa /F 4\fi
10164     \Hy@setpdfborder
10165     \expandafter\ifx\csname @#1bordercolor\endcsname\relax
10166     \else
10167       /C[\csname @#1bordercolor\endcsname]%
10168     \fi
10169     /A<<%
10170     /S/GoTo%
10171     /D(\Hy@testname)%
10172     \Hy@href@nextactionraw
10173     >>%
10174     >>%
10175   }%
10176   \expandafter\Hy@colorlink\csname @#1color\endcsname
10177 }%
10178 }
10179 \def\hyper@linkend{\Hy@EndAnnot}%
10180 \def\hyper@link#1#2#3{%
10181   \hyper@linkstart{#1}{#2}#3\Hy@xspace@end\hyper@linkend
10182 }
10183 \def\hyper@linkfile#1#2#3{%
10184   \leavevmode
10185   \Hy@BeginAnnot{%
10186     \def\Hy@pstringF{#2}%
10187     \Hy@CleanupFile\Hy@pstringF
10188     \Hy@pstringdef\Hy@pstringF\Hy@pstringF
10189     \Hy@pstringdef\Hy@pstringD{#3}%
10190     \Hy@MakeRemoteAction
10191     \@pdfm@mark{%
10192       bann<<%
10193         /Type/Annot%
10194         /Subtype/Link%
10195         \ifHy@pdfa /F 4\fi
10196         \Hy@setpdfborder
10197         \ifx\@filebordercolor\relax
10198         \else
10199           /C[\@filebordercolor]%
10200         \fi
10201         /A<<%
10202         /S/GoToR%
10203         /F(\Hy@pstringF)%
10204         /D%
10205         \ifx\#3\%
10206           [\Hy@href@page\@pdfremotestartview]%
10207         \else
10208           (\Hy@pstringD)%
10209         \fi
10210         \Hy@SetNewWindow
10211         \Hy@href@nextactionraw
10212       >>%
10213       >>%

```

```

10214 }%
10215 \Hy@colorlink\@filecolor
10216 }%
10217 #1\Hy@xspace@end
10218 \Hy@EndAnnot
10219 }
10220 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
10221 \leavevmode
10222 \Hy@BeginAnnot{%
10223 \Hy@pstringdef\Hy@pstringF{#1}%
10224 \Hy@pstringdef\Hy@pstringP{#3}%
10225 \@pdfm@mark{%
10226 bann<<%
10227 /Type/Annot%
10228 /Subtype/Link%
10229 \ifHy@pdfa /F 4\fi
10230 \Hy@setpdfborder
10231 \ifx\@runbordercolor\relax
10232 \else
10233 /C[\@runbordercolor]%
10234 \fi
10235 /A<<%
10236 /F(\Hy@pstringF)%
10237 /S/Launch%
10238 \Hy@SetNewWindow
10239 \ifx\#3\%
10240 \else
10241 /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
10242 \fi
10243 \Hy@href@nextactionraw
10244 >>%
10245 >>%
10246 }%
10247 \Hy@colorlink\@runcolor
10248 }%
10249 #2\Hy@xspace@end
10250 \Hy@EndAnnot
10251 }
10252 \def\hyper@linkurl#1#2{%
10253 \leavevmode
10254 \Hy@BeginAnnot{%
10255 \Hy@pstringdef\Hy@pstringURI{#2}%
10256 \@pdfm@mark{%
10257 bann<<%
10258 /Type/Annot%
10259 /Subtype/Link%
10260 \ifHy@pdfa /F 4\fi
10261 \Hy@setpdfborder
10262 \ifx\@urlbordercolor\relax
10263 \else
10264 /C[\@urlbordercolor]%
10265 \fi
10266 /A<<%
10267 /S/URI%
10268 /URI(\Hy@pstringURI)%
10269 \ifHy@href@ismap
10270 /IsMap true%

```

```

10271      \fi
10272      \Hy@href@nextactionraw
10273      >>%
10274      >>%
10275      }%
10276      \Hy@colorlink\@urlcolor
10277      }%
10278      #1\Hy@xspace@end
10279      \Hy@EndAnnot
10280  }
10281  \def\Acrobatmenu#1#2{%
10282    \Hy@Acrobatmenu{#1}{#2}{%
10283      \Hy@BeginAnnot{%
10284        \EdefEscapeName\Hy@temp@menu{#1}%
10285        \@pdfm@mark{%
10286          bann<<%
10287            /Type/Annot%
10288            /Subtype/Link%
10289            \ifHy@pdfa /F 4\fi
10290            \Hy@setpdfborder
10291            \ifx\@menubordercolor\relax
10292              \else
10293                /C[\@menubordercolor]%
10294              \fi
10295              /A<<%
10296              /S/Named%
10297              /N/\Hy@temp@menu
10298              \Hy@href@nextactionraw
10299              >>%
10300              >>%
10301            }%
10302            \Hy@colorlink\@menucolor
10303          }%
10304          #2\Hy@xspace@end
10305          \Hy@EndAnnot
10306        }%
10307      }
10308      \ifx\@pdfproducer\relax
10309        \def\@pdfproducer{dvipdfm}%
10310        \begingroup\expandafter\expandafter\expandafter\endgroup
10311        \expandafter\ifx\csname XeTeXversion\endcsname\relax
10312          \else
10313            \edef\@pdfproducer{XeTeX \the\XeTeXversion\XeTeXrevision}%
10314          \fi
10315        \fi
10316        \def\PDF@FinishDoc{%
10317          \Hy@UseMaketitleInfos
10318          \HyInfo@GenerateAddons
10319          \@pdfm@mark{%
10320            docinfo<<%
10321              /Title(\@pdftitle)%
10322              /Subject(\@pdfsubject)%
10323              /Creator(\@pdfcreator)%
10324              \ifx\@pdfcreationdate\@empty
10325                \else
10326                  /CreationDate(\@pdfcreationdate)%

```

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

```

10327 \fi
10328 \ifx\@pdfmoddate\@empty
10329 \else
10330 /ModDate(\@pdfmoddate)%
10331 \fi
10332 /Author(\@pdfauthor)%
10333 \ifx\@pdfproducer\relax
10334 \else
10335 /Producer(\@pdfproducer)%
10336 \fi
10337 /Keywords(\@pdfkeywords)%
10338 \ifx\@pdftrapped\@empty
10339 \else
10340 /Trapped/\@pdftrapped
10341 \fi
10342 \HyInfo@Addons
10343 >>%
10344 }%
10345 \Hy@DisableOption{pdfauthor}%
10346 \Hy@DisableOption{pdftitle}%
10347 \Hy@DisableOption{pdfsubject}%
10348 \Hy@DisableOption{pdfcreator}%
10349 \Hy@DisableOption{pdfcreationdate}%
10350 \Hy@DisableOption{pdfmoddate}%
10351 \Hy@DisableOption{pdfproducer}%
10352 \Hy@DisableOption{pdfkeywords}%
10353 \Hy@DisableOption{pdftrapped}%
10354 \Hy@DisableOption{pdfinfo}%
10355 }

10356 \def\PDF@SetupDoc{%
10357 \edef\Hy@temp{%
10358 \ifHy@pdftoolbar\else /HideToolbar true\fi
10359 \ifHy@pdfmenubar\else /HideMenubar true\fi
10360 \ifHy@pdfwindowui\else /HideWindowUI true\fi
10361 \ifHy@pdfwindow /FitWindow true\fi
10362 \ifHy@pdfcenterwindow /CenterWindow true\fi
10363 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10364 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10365 \Hy@UseNameKey{Direction}\@pdfdirection
10366 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10367 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10368 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10369 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10370 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10371 \Hy@UseNameKey{Duplex}\@pdfduplex
10372 \ifx\@pdfpicktraybypdfsize\@empty
10373 \else
10374 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10375 \fi
10376 \ifx\@pdfprintpagerange\@empty
10377 \else
10378 /PrintPageRange[\@pdfprintpagerange]%
10379 \fi
10380 \ifx\@pdfnumcopies\@empty
10381 \else
10382 /NumCopies \@pdfnumcopies
10383 \fi

```

```

10384 }%
10385 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10386 \@pdfm@mark{%
10387   docview<<%
10388     \ifx\@pdfstartpage\@empty
10389     \else
10390     \ifx\@pdfstartview\@empty
10391     \else
10392       /OpenAction[@page\@pdfstartpage\@pdfstartview]%
10393     \fi
10394   \fi
10395   \ifx\@baseurl\@empty
10396   \else
10397     /URI<</Base(\Hy@pstringB)>>%
10398   \fi
10399   /PageMode/\@pdfpagemode
10400   \ifx\Hy@temp\@empty
10401   \else
10402     /ViewerPreferences<<\Hy@temp>>%
10403   \fi
10404   \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10405   \ifx\@pdflang\@empty
10406   \else
10407     /Lang(\@pdflang)%
10408   \fi
10409   >>%
10410 }%
10411 \ifx\@pdfpagescrop\@empty
10412 \else
10413   \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}}%
10414 \fi
10415 }
10416 </dvipdfm | xetex>
10417 < *dvipdfm | xetex>

```

#### \hyper@pagetransition

```

10418 \def\hyper@pagetransition{%
10419   \ifx\@pdfpagetransition\relax
10420   \else
10421     \ifx\@pdfpagetransition\@empty
10422     \else
10423       \special{pdf:put @thispage %
10424         <</Trans<</S/\@pdfpagetransition>>>>%
10425       }%
10426     \fi
10427   \fi
10428 }

```

#### \hyper@pageduration

```

10429 \def\hyper@pageduration{%
10430   \ifx\@pdfpageduration\relax
10431   \else
10432     \ifx\@pdfpageduration\@empty
10433     \else
10434       \special{pdf:put @thispage %
10435         <</Dur \@pdfpageduration>>%
10436     }%

```

```

10437 \fi
10438 \fi
10439 }

```

\hyper@pagehidden

```

10440 \def\hyper@pagehidden{%
10441 \ifHy@useHidKey
10442 \special{pdf:put @thispage %
10443 <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
10444 }%
10445 \fi
10446 }

```

```

10447 \g@addto@macro\Hy@EveryPageBoxHook{%
10448 \hyper@pagetransition
10449 \hyper@pageduration
10450 \hyper@pagehidden
10451 }

```

```

10452 </dvipdfm | xetex>

```

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

```

10453 <*dvipdfm>
10454 \AtBeginShipoutFirst{%
10455 \ifHy@setpagesize
10456 \begingroup
10457 \@ifundefined{stockwidth}{%
10458 \ifdim\paperwidth>\z@
10459 \ifdim\paperheight>\z@
10460 \special{papersize=\the\paperwidth,\the\paperheight}%
10461 \fi
10462 \fi
10463 }{%
10464 \ifdim\stockwidth>\z@
10465 \ifdim\stockheight>\z@
10466 \special{papersize=\the\stockwidth,\the\stockheight}%
10467 \fi
10468 \fi
10469 }%
10470 \endgroup
10471 \fi
10472 \Hy@DisableOption{setpagesize}%
10473 }
10474 </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.

```

10475 <*vtexhtml>
10476 \providecommand*\XR@ext}{htm}
10477 \RequirePackage{vtexhtml}
10478 \newif\if@Localurl
10479 \let\PDF@FinishDoc\ltx@empty
10480 \def\PDF@SetupDoc{%
10481 \ifx\@baseurl\@empty
10482 \else

```

```

10483 \special{!direct <base href="\@baseurl">}%
10484 \fi
10485 }
10486 \def\@urltype{url}
10487 \def\hyper@link#1#2#3{%
10488 \Hy@VerboseLinkStart{#1}{#2}%
10489 \leavevmode
10490 \special{!direct <a href=%
10491 \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
10492 #3\Hy@xspace@end
10493 \special{!direct </a>}%
10494 }
10495 \def\hyper@linkurl#1#2{%
10496 \begingroup
10497 \hyper@chars
10498 \leavevmode
10499 \MathBSuppress=1\relax
10500 \special{!direct <a href=%
10501 \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}%
10502 #1\Hy@xspace@end
10503 \MathBSuppress=0\relax
10504 \special{!direct </a>}%
10505 \endgroup
10506 }
10507 \def\hyper@linkfile#1#2#3{%
10508 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
10509 }
10510 \def\hyper@linkstart#1#2{%
10511 \Hy@VerboseLinkStart{#1}{#2}%
10512 \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
10513 \@Localurltrue
10514 \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
10515 \else
10516 \@Localurlfalse
10517 \begingroup
10518 \hyper@chars
10519 \special{!aref \HyperDestNameFilter{#2}}%
10520 \endgroup
10521 \fi
10522 }
10523 \def\hyper@linkend{%
10524 \if@Localurl
10525 \special{!endaref}%
10526 \else
10527 \special{!direct </a>}%
10528 \fi
10529 }
10530 \Hy@WrapperDef\hyper@anchorstart#1{%
10531 \Hy@SaveLastskip
10532 \Hy@VerboseAnchor{#1}%
10533 \begingroup
10534 \hyper@chars
10535 \special{!aname #1}%
10536 \special{!direct <a name=%
10537 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10538 \endgroup
10539 \Hy@activeanchortrue

```

```

10540 }
10541 \def\hyper@anchorend{%
10542   \special{!direct </a>}%
10543   \Hy@activeanchorfalse
10544   \Hy@RestoreLastskip
10545 }
10546 \Hy@WrapperDef\hyper@anchor#1{%
10547   \Hy@SaveLastskip
10548   \Hy@VerboseAnchor{#1}%
10549   \begingroup
10550     \let\protect=\string
10551     \hyper@chars
10552     \leavevmode
10553     \special{!aname #1}%
10554     \special{!direct <a name=%
10555       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10556   \endgroup
10557   \Hy@activeanchortrue
10558   \bgroup\anchor@spot\egroup
10559   \special{!direct </a>}%
10560   \Hy@activeanchorfalse
10561   \Hy@RestoreLastskip
10562 }
10563 \def\@Form[#1]{%
10564   \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10565 }
10566 \let\@endForm\ltx@empty
10567 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10568   \Hy@Message{Sorry, TeXpider does not yet support FORM gauges}%
10569 }
10570 \def\@TextField[#1]#2{% parameters, label
10571   \Hy@Message{Sorry, TeXpider does not yet support FORM text fields}%
10572 }
10573 \def\@CheckBox[#1]#2{% parameters, label
10574   \Hy@Message{Sorry, TeXpider does not yet support FORM checkboxes}%
10575 }
10576 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10577   \Hy@Message{Sorry, TeXpider does not yet support FORM choice menus}%
10578 }
10579 \def\@PushButton[#1]#2{% parameters, label
10580   \Hy@Message{Sorry, TeXpider does not yet support FORM pushbuttons}%
10581 }
10582 \def\@Reset[#1]#2{%
10583   \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10584 }
10585 \def\@Submit[#1]#2{%
10586   \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10587 }
10588 </vtexhtml>
10589 <*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.

```

10590 \ifx\mediaheight\@undefined
10591 \else
10592   \ifx\mediaheight\relax

```



```

10593 \else
10594   \ifHy@setpagesize
10595     \providecommand*\VTeXInitMediaSize{%
10596       \ltx@ifundefined{stockwidth}{%
10597         \ifdim\paperheight>0pt %
10598           \setlength\mediaheight\paperheight
10599         \fi
10600         \ifdim\paperheight>0pt %
10601           \setlength\mediawidth\paperwidth
10602         \fi
10603       }{%
10604         \ifdim\stockheight>0pt %
10605           \setlength\mediaheight\stockheight
10606         \fi
10607         \ifdim\stockwidth>0pt %
10608           \setlength\mediawidth\stockwidth
10609         \fi
10610       }%
10611     }%
10612   \Hy@AtBeginDocument{\VTeXInitMediaSize}%
10613 \fi
10614 \Hy@DisableOption{setpagesize}%
10615 \fi
10616 \fi

```

Older versions of VTeX require xyz in lower case.

```

10617 \providecommand*\@pdfview{xyz}
10618 \providecommand*\@pdfborder{0 0 1}
10619 \providecommand*\@pdfborderstyle{}
10620 \let\CurrentBorderColor\@linkbordercolor
10621 \Hy@WrapperDef\hyper@anchor#1{%
10622   \Hy@SaveLastskip
10623   \Hy@VerboseAnchor{#1}%
10624   \begingroup
10625     \let\protect=\string
10626     \hyper@chars
10627     \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10628   \endgroup
10629   \Hy@activeanchortrue
10630   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
10631   \Hy@activeanchorfalse
10632   \Hy@RestoreLastskip
10633 }
10634 \Hy@WrapperDef\hyper@anchorstart#1{%
10635   \Hy@SaveLastskip
10636   \Hy@VerboseAnchor{#1}%
10637   \begingroup
10638     \hyper@chars
10639     \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10640   \endgroup
10641   \Hy@activeanchortrue
10642 }
10643 \def\hyper@anchorend{%
10644   \Hy@activeanchorfalse
10645   \Hy@RestoreLastskip
10646 }
10647 \def\@urltype{url}
10648 \def\Hy@undefinedname{UNDEFINED}

```

```

10649 \def\hyper@linkstart#1#2{%
10650   \Hy@VerboseLinkStart{#1}{#2}%
10651   \Hy@pstringdef\Hy@pstringURI{#2}%
10652   \expandafter\Hy@colorlink\csname @#1color\endcsname
10653   \ltx@ifundefined{#@#1bordercolor}{%
10654     \let\CurrentBorderColor\relax
10655   }{%
10656     \edef\CurrentBorderColor{%
10657       \csname @#1bordercolor\endcsname
10658     }%
10659   }%
10660   \def\Hy@tempa{#1}%
10661   \ifx\Hy@tempa\@urlltype
10662     \special{!%
10663       aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10664         \ifHy@href@ismap
10665           /IsMap true%
10666         \fi
10667         \Hy@href@nextactionraw
10668       >,%
10669       a=<%
10670         \ifHy@pdfa /F 4\fi
10671         \Hy@setpdfborder
10672         \ifx\CurrentBorderColor\relax
10673           \else
10674             /C [\CurrentBorderColor]%
10675           \fi
10676         >%
10677       }%
10678     \else
10679       \protected@edef\Hy@testname{#2}%
10680       \ifx\Hy@testname\@empty
10681         \Hy@Warning{%
10682           Empty destination name,\MessageBreak
10683           using '\Hy@undefinedname'%
10684         }%
10685         \let\Hy@testname\Hy@undefinedname
10686       \fi
10687       \special{!%
10688         aref \expandafter\HyperDestNameFilter
10689           \expandafter{\Hy@testname};%
10690         a=<%
10691           \ifHy@pdfa /F 4\fi
10692           \Hy@setpdfborder
10693           \ifx\CurrentBorderColor\relax
10694             \else
10695               /C [\CurrentBorderColor]%
10696             \fi
10697           >%
10698         }%
10699       \fi
10700     }
10701   \def\hyper@linkend{%
10702     \special{!endaref}%
10703     \Hy@endcolorlink
10704   }
10705   \def\hyper@linkfile#1#2#3{%

```

```

10706 \leavevmode
10707 \def\Hy@pstringF{#2}%
10708 \Hy@CleanupFile\Hy@pstringF
10709 \special{!%
10710   aref <%
10711   \ifnum\Hy@VTeXversion>753 \ifHy@pdfnewwindow n\fi\fi
10712   f=\Hy@pstringF>#3;%
10713   a=<%
10714     \ifHy@pdfa /F 4\fi
10715     \Hy@setpdfborder
10716     \ifx\@filebordercolor\relax
10717     \else
10718       /C [\@filebordercolor]%
10719     \fi
10720   >%
10721 }%
10722 \Hy@colorlink\@filecolor
10723 #1\Hy@xspace@end
10724 \Hy@endcolorlink
10725 \special{!endaref}%
10726 }
10727 \def\hyper@linkurl#1#2{%
10728 \begingroup
10729 \Hy@pstringdef\Hy@pstringURI{#2}%
10730 \hyper@chars
10731 \leavevmode
10732 \special{!%
10733   aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10734   \ifHy@href@ismap
10735     /IsMap true%
10736   \fi
10737   \Hy@href@nextactionraw
10738   >,%
10739   a=<%
10740     \ifHy@pdfa /F 4\fi
10741     \Hy@setpdfborder
10742     \ifx\@urlbordercolor\relax
10743     \else
10744       /C [\@urlbordercolor]%
10745     \fi
10746   >%
10747 }%
10748 \Hy@colorlink\@urlcolor
10749 #1\Hy@xspace@end
10750 \Hy@endcolorlink
10751 \special{!endaref}%
10752 \endgroup
10753 }
10754 \def\hyper@link#1#2#3{%
10755 \Hy@VerboseLinkStart{#1}{#2}%
10756 \ltx@ifundefined{@#1bordercolor}{%
10757 \let\CurrentBorderColor\relax
10758 }{%
10759 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
10760 }%
10761 \leavevmode
10762 \protected@edef\Hy@testname{#2}%

```

```

10763 \ifx\Hy@testname\@empty
10764   \Hy@Warning{%
10765     Empty destination name,\MessageBreak
10766     using '\Hy@undefinedname'%
10767   }%
10768   \let\Hy@testname\Hy@undefinedname
10769 \fi
10770 \special{!%
10771   aref \expandafter\HyperDestNameFilter
10772     \expandafter{\Hy@testname};%
10773   a=<%
10774     \ifHy@pdfa /F 4\fi
10775     \Hy@setpdfborder
10776     \ifx\CurrentBorderColor\relax
10777       \else
10778         /C [\CurrentBorderColor]%
10779       \fi
10780   >%
10781 }%
10782 \expandafter
10783 \Hy@colorlink\csname @#1color\endcsname
10784   #3\Hy@xspace@end
10785 \Hy@endcolorlink
10786 \special{!endaref}%
10787 }
10788 \def\hyper@image#1#2{%
10789   \hyper@linkurl{#2}{#1}%
10790 }
10791 \def\@hyper@launch run:#1\#2#3{%
10792   \Hy@pstringdef\Hy@pstringF{#1}%
10793   \Hy@pstringdef\Hy@pstringP{#3}%
10794   \leavevmode
10795   \special{!aref %
10796     <u=%
10797       /Type/Action%
10798       /S/Launch%
10799       /F(\Hy@pstringF)%
10800       \Hy@SetNewWindow
10801       \ifx\#3\%
10802         \else
10803           /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>%
10804         \fi
10805       \Hy@href@nextactionraw
10806     >:%
10807     a=<%
10808       \ifHy@pdfa /F 4\fi
10809       \Hy@setpdfborder
10810       \ifx\@runbordercolor\relax
10811         \else
10812           /C[\@runbordercolor]%
10813         \fi
10814     >%
10815   }%
10816   \Hy@colorlink\@runcolor
10817   #2\Hy@xspace@end
10818 \Hy@endcolorlink
10819 \special{!endaref}%

```

```

10820 }
10821 \def\Acrobatmenu#1#2{%
10822 \EdefEscapeName\Hy@temp@menu{#1}%
10823 \Hy@Acrobatmenu{#1}{#2}{%
10824 \special{!%
10825 aref <u=/S /Named /N /\Hy@temp@menu>;%
10826 a=<%
10827 \ifHy@pdfa /F 4\fi
10828 \Hy@setpdfborder
10829 \ifx\@menubordercolor\relax
10830 \else
10831 /C[\@menubordercolor]%
10832 \fi
10833 >%
10834 }%
10835 \Hy@colorlink\@menucolor
10836 #2\Hy@xspace@end
10837 \Hy@endcolorlink
10838 \special{!endaref}%
10839 }%
10840 }

```

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

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

Please never use \@ifundefined{V<sub>T</sub>E<sub>X</sub>version}{..}{..} *globally*.

```

10841 \ifnum\Hy@VTeXversion<702 %
10842 \else
10843 \def\hyper@pagetransition{%
10844 \ifx\@pdfpagetransition\relax
10845 \else
10846 \ifx\@pdfpagetransition\@empty

```

Standard incantation.

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

```

10847 \else
10848 \hvtex@parse@trans\@pdfpagetransition
10849 \fi
10850 \fi
10851 }%

```

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

Syntax of V<sub>T</sub>E<sub>X</sub> \special{!trans <transition\_effect>}:

```

<transition_effect> ::= <transition_style>[,<transition_duration>]
<transition_style> ::= <Blinds_effect> | <Box_effect> |
                     <Dissolve_effect> | <Glitter_effect> |
                     <Split_effect> | <Wipe_effect>
<Blinds_effect> ::= B[<effect_dimension>]
<Box_effect> ::= X[<effect_motion>]
<Dissolve_effect> ::= D
<Glitter_effect> ::= G[<effect_direction>]
<Split_effect> ::= S[<effect_motion>][<effect_dimension>]
<Wipe_effect> ::= W[<effect_direction>]
<Replace_effect> ::= R
<effect_direction> ::= <number>
<effect_dimension> ::= H | V
<effect_motion> ::= I | O
<transition_duration> ::= <number>

```

Transition codes:

```

10852 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
10853 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
10854 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
10855 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
10856 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
10857 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
10858 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%

```

Optional parameters:

```

10859 \def\hvtex@par@dimension{/Dm}%
10860 \def\hvtex@par@direction{/Di}%
10861 \def\hvtex@par@duration{/D}%
10862 \def\hvtex@par@motion{/M}%

```

Tokenizer:

```

10863 \def\hvtex@gettoken{%
10864   \expandafter\hvtex@gettoken@\hvtex@buffer\@nil
10865 }%

```

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

```

10866 \def\hvtex@gettoken@#1 #2\@nil{%
10867   \edef\hvtex@token{#1}%
10868   \edef\hvtex@buffer{#2}%
10869 }%
10870 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

10871 \let\hvtex@trans@code\@empty
10872 \let\hvtex@param@dimension\@empty
10873 \let\hvtex@param@direction\@empty
10874 \let\hvtex@param@duration\@empty
10875 \let\hvtex@param@motion\@empty
10876 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

10877 \hvtex@gettoken
10878 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

10879   \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

10880   \else
10881     \hvtex@gettoken
10882   \fi
10883 \fi
10884 \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```

10885 \hvtex@trans@params
10886 }%

```

Reentrant macro to parse optional parameters.

```

10887 \def\hvtex@trans@params{%
10888   \ifx\hvtex@buffer\@empty
10889   \else
10890     \hvtex@gettoken
10891     \let\hvtex@trans@par\hvtex@token
10892     \ifx\hvtex@buffer\@empty
10893     \else

```

```

10894     \hvtex@gettoken
10895     \ifx\hvtex@trans@par\hvtex@par@duration
/D is the effect duration in seconds. VTEX special takes it in milliseconds.

```

```

10896     \let\hvtex@param@duration\hvtex@token
10897     \else \ifx\hvtex@trans@par\hvtex@par@motion
/M can be either /I or /O

```

```

10898     \expandafter\edef\expandafter\hvtex@param@motion
10899     \expandafter{\expandafter\@gobble\hvtex@token}%
10900     \else \ifx\hvtex@trans@par\hvtex@par@dimension

```

```

/Dm can be either /H or /V
10901     \expandafter\edef\expandafter\hvtex@param@dimension
10902     \expandafter{\expandafter\@gobble\hvtex@token}%
10903     \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).

```

10904     \let\hvtex@param@direction\hvtex@token
10905     \fi\fi\fi\fi
10906     \fi
10907     \fi
10908     \ifx\hvtex@buffer\@empty
10909     \let\next\hvtex@produce@trans
10910     \else
10911     \let\next\hvtex@trans@params
10912     \fi
10913     \next
10914 }%

```

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

```

10915 \def\hvtex@produce@trans{%
10916 \let\vtex@trans@special\@empty
10917 \if S\hvtex@trans@code
10918 \edef\vtex@trans@special{\hvtex@trans@code
10919 \hvtex@param@dimension\hvtex@param@motion}%
10920 \else\if B\hvtex@trans@code
10921 \edef\vtex@trans@special{%
10922 \hvtex@trans@code\hvtex@param@dimension
10923 }%
10924 \else\if X\hvtex@trans@code
10925 \edef\vtex@trans@special{%
10926 \hvtex@trans@code\hvtex@param@motion
10927 }%
10928 \else\if W\hvtex@trans@code
10929 \edef\vtex@trans@special{%
10930 \hvtex@trans@code\hvtex@param@direction
10931 }%
10932 \else\if D\hvtex@trans@code
10933 \let\vtex@trans@special\hvtex@trans@code
10934 \else\if R\hvtex@trans@code
10935 \let\vtex@trans@special\hvtex@trans@code
10936 \else\if G\hvtex@trans@code
10937 \edef\vtex@trans@special{%
10938 \hvtex@trans@code\hvtex@param@direction
10939 }%
10940 \fi\fi\fi\fi\fi\fi

```

```

10941 \ifx\vtex@trans@special\@empty
10942 \else
10943 \ifx\hvtex@param@duration\@empty
10944 \else
10945 \setlength{\dimen@}{\hvtex@param@duration\p@}%

```

I'm not guilty of possible overflow.

```

10946 \multiply\dimen@\@m
10947 \edef\vtex@trans@special{%
10948 \vtex@trans@special,\strip@pt\dimen@
10949 }%
10950 \fi

```

And all the mess is just for this.

```

10951 \special{!trans \vtex@trans@special}%
10952 \fi
10953 }%

10954 \def\hyper@pageduration{%
10955 \ifx\@pdfpageduration\relax
10956 \else
10957 \ifx\@pdfpageduration\@empty
10958 \special{!duration-}%
10959 \else
10960 \special{!duration \@pdfpageduration}%
10961 \fi
10962 \fi
10963 }%

10964 \def\hyper@pagehidden{%
10965 \ifHy@useHidKey
10966 \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
10967 \fi
10968 }%

10969 \g@addto@macro\Hy@EveryPageBoxHook{%
10970 \hyper@pagetransition
10971 \hyper@pageduration
10972 \hyper@pagehidden
10973 }%
10974 \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

```

10975 \ifx\@pdfproducer\relax
10976 \def\@pdfproducer{VTeX}%
10977 \ifnum\Hy@VTeXversion>\z@
10978 \count@\VTeXversion
10979 \divide\count@ 100 %
10980 \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
10981 \multiply\count@ -100 %
10982 \advance\count@\VTeXversion

```



```

10983 \edef\@pdfproducer{%
10984 \@pdfproducer
10985 .\ifnum\count@<10 0\fi\the\count@
10986 \ifx\VTeXOS\@undefined\else
10987 \ifnum\VTeXOS>0 %
10988 \ifnum\VTeXOS<6 %
10989 \space%
10990 \ifcase\VTeXOS
10991 \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
10992 \fi
10993 )%
10994 \fi
10995 \fi
10996 \fi
10997 ,\space
10998 \ifnum\OpMode=\@ne PDF\else PS\fi
10999 \space backend%
11000 \ifx\gexmode\@undefined\else
11001 \ifnum\gexmode>\z@\space with GeX\fi
11002 \fi
11003 }%
11004 \fi
11005 \fi

```

Current `!pdfinfo` key syntax:

Key	Field	Type
<b>a</b>	<b>A</b> uthor	String
<b>b</b>	<b>C</b> rop <b>B</b> ox	String
<b>c</b>	<b>C</b> reator	String
<b>k</b>	<b>K</b> eywords	String
<b>l</b>	<b>P</b> age <b>L</b> ayout	PS
<b>p</b>	<b>P</b> age <b>M</b> ode	PS
<b>r</b>	<b>P</b> roducer	String
<b>s</b>	<b>S</b> ubject	String
<b>t</b>	<b>T</b> itle	String
<b>u</b>	<b>U</b> RI	PS
<b>v</b>	<b>V</b> iew <b>P</b> references	PS

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

```

11006 \def\PDF@SetupDoc{%
11007 \ifx\@pdfpagescrop\@empty
11008 \else
11009 \special{!pdfinfo b=<\@pdfpagescrop>}%
11010 \fi
11011 \ifx\@pdfstartpage\@empty
11012 \else
11013 \ifx\@pdfstartview\@empty
11014 \else
11015 \special{!onopen Page\@pdfstartpage}%
11016 \fi
11017 \fi
11018 \special{!pdfinfo p=</\@pdfpagemode>}%
11019 \ifx\@baseurl\@empty
11020 \else
11021 \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
11022 \fi
11023 \special{!pdfinfo v=<<<%
11024 \ifHy@pdftoolbar\else /HideToolbar true\fi

```

```

11025 \ifHy@pdfmenubar\else /HideMenubar true\fi
11026 \ifHy@pdfwindowui\else /HideWindowUI true\fi
11027 \ifHy@pdfwindow /FitWindow true\fi
11028 \ifHy@pdfcenterwindow /CenterWindow true\fi
11029 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
11030 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
11031 \Hy@UseNameKey{Direction}\@pdfdirection
11032 \Hy@UseNameKey{ViewArea}\@pdfviewarea
11033 \Hy@UseNameKey{ViewClip}\@pdfviewclip
11034 \Hy@UseNameKey{PrintArea}\@pdfprintarea
11035 \Hy@UseNameKey{PrintClip}\@pdfprintclip
11036 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
11037 \Hy@UseNameKey{Duplex}\@pdfduplex
11038 \ifx\@pdfpicktraybypdfsize\@empty
11039 \else
11040 /PickTrayByPDFSize \@pdfpicktraybypdfsize
11041 \fi
11042 \ifx\@pdfprintpagerange\@empty
11043 \else
11044 /PrintPageRange[\@pdfprintpagerange]%
11045 \fi
11046 \ifx\@pdfnumcopies\@empty
11047 \else
11048 /NumCopies \@pdfnumcopies
11049 \fi
11050 >>>}%
11051 \ifx\@pdfpagelayout\@empty
11052 \else
11053 \special{!pdfinfo l=</\@pdfpagelayout\space>}%
11054 \fi
11055 }%
11056 \HyInfo@AddonUnsupportedtrue
11057 \define@key{Hyp}{pdfcreationdate}{%
11058 \Hy@Warning{%
11059 VTeX does not support pdfcreationdate.\MessageBreak
11060 Therefore its setting is ignored%
11061 }%
11062 }
11063 \define@key{Hyp}{pdfmoddate}{%
11064 \Hy@Warning{%
11065 VTeX does not support pdfmoddate.\MessageBreak
11066 Therefore its setting is ignored%
11067 }%
11068 }
11069 \def\PDF@FinishDoc{%
11070 \Hy@UseMaketitleInfos
11071 \HyInfo@TrappedUnsupported
11072 \special{!pdfinfo a=<\@pdfauthor>}%
11073 \special{!pdfinfo t=<\@pdftitle>}%
11074 \special{!pdfinfo s=<\@pdfsubject>}%
11075 \special{!pdfinfo c=<\@pdfcreator>}%
11076 \ifx\@pdfproducer\relax
11077 \else
11078 \special{!pdfinfo r=<\@pdfproducer>}%
11079 \fi
11080 \special{!pdfinfo k=<\@pdfkeywords>}%
11081 \Hy@DisableOption{pdfauthor}%

```

```

11082 \Hy@DisableOption{pdftitle}%
11083 \Hy@DisableOption{pdfsubject}%
11084 \Hy@DisableOption{pdfcreator}%
11085 \Hy@DisableOption{pdfcreationdate}%
11086 \Hy@DisableOption{pdfmoddate}%
11087 \Hy@DisableOption{pdfproducer}%
11088 \Hy@DisableOption{pdfkeywords}%
11089 \Hy@DisableOption{pdftrapped}%
11090 \Hy@DisableOption{pdfinfo}%
11091 }
11092 </vtx>

```

## 46.7 Fix for Adobe bug number 466320

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

```

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

```

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

```

11093 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
11094 <package>\providecommand*{\Hy@DistillerDestFix}{}
11095 <*pdfmark | dviwindo>
11096 \def\Hy@DistillerDestFix{%
11097   \begingroup
11098   \let\x\literalps@out

```

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

```

11099   \ifnum \@ifundefined{OpMode}{0}{}%
11100     \@ifundefined{gexmode}{0}{}%
11101     \ifnum\gexmode>0 \OpMode\else 0\fi
11102   }>1 %
11103   \def\x##1{%
11104     \immediate\special{!=##1}%
11105   }%
11106   \fi
11107   \x{%
11108     /product where{%
11109       pop %
11110       product(Distiller)search{%
11111         pop pop pop %
11112         version(.)search{%
11113           exch pop exch pop%
11114           (3011)eq{%
11115             gsave %
11116             newpath 0 0 moveto closepath clip%
11117             /Courier findfont 10 scalefont setfont %
11118             72 72 moveto(.)show %
11119             grestore%
11120           }if%
11121         }{pop}ifelse%
11122       }{pop}ifelse%
11123     }if%

```

```

11124 }%
11125 \endgroup
11126 }
11127 </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

```

```

11128 <*pdfmark>
11129 \Hy@breaklinks@unsupported
11130 \def\HyPat@ObjRef{%
11131   \[~{}]+\}%
11132 }
11133 \Hy@WrapperDef\hyper@anchor#1{%
11134   \Hy@SaveLastskip
11135   \Hy@VerboseAnchor{#1}%
11136   \begingroup
11137     \pdfmark[\anchor@spot]{%
11138       pdfmark=/DEST,%
11139       linktype=anchor,%
11140       View=/\@pdfview \@pdfviewparams,%
11141       DestAnchor={#1}%
11142     }%
11143   \endgroup
11144   \Hy@RestoreLastskip
11145 }
11146 \ltx@ifundefined{hyper@anchorstart}{\endinput}
11147 \Hy@WrapperDef\hyper@anchorstart#1{%
11148   \Hy@SaveLastskip
11149   \Hy@VerboseAnchor{#1}%
11150   \literalps@out{H.S}%
11151   \Hy@AllowHyphens
11152   \xdef\hyper@currentanchor{#1}%
11153   \Hy@activeanchortrue
11154 }
11155 \def\hyper@anchorend{%
11156   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
11157   \pdfmark{%
11158     pdfmark=/DEST,%
11159     linktype=anchor,%
11160     View=/\@pdfview \@pdfviewparams,%
11161     DestAnchor=\hyper@currentanchor,%
11162   }%
11163   \Hy@activeanchortrue
11164   \Hy@RestoreLastskip

```

```

11165 }
11166 \def\hyper@linkstart#1#2{%
11167   \Hy@VerboseLinkStart{#1}{#2}%
11168   \ifHy@breaklinks
11169   \else
11170     \leavevmode
11171     \ifmmode
11172       \def\Hy@LinkMath{$}%
11173     \else
11174       \let\Hy@LinkMath\ltx@empty
11175     \fi
11176     \Hy@SaveSpaceFactor
11177     \hbox\bgroup
11178     \Hy@RestoreSpaceFactor
11179     \Hy@LinkMath
11180   \fi
11181   \expandafter\Hy@colorlink\csname @#1color\endcsname
11182   \literalps@out{H.S}%
11183   \Hy@AllowHyphens
11184   \xdef\hyper@currentanchor{#2}%
11185   \gdef\hyper@currentlinktype{#1}%
11186 }
11187 \def\hyper@linkend{%
11188   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
11189   \ltx@ifundefined{@\hyper@currentlinktype bordercolor}{%
11190     \let\Hy@tempcolor\relax
11191   }{%
11192     \edef\Hy@tempcolor{%
11193       \csname @\hyper@currentlinktype bordercolor\endcsname
11194     }%
11195   }%
11196   \pdfmark{%
11197     pdfmark=/ANN,%
11198     linktype=link,%
11199     Subtype=/Link,%
11200     PDFAMlags=4,%
11201     Dest=\hyper@currentanchor,%
11202     AcroHighlight=\@pdfhighlight,%
11203     Border=\@pdfborder,%
11204     BorderStyle=\@pdfborderstyle,%
11205     Color=\Hy@tempcolor,%
11206     Raw=H.B%
11207   }%
11208   \Hy@endcolorlink
11209   \ifHy@breaklinks
11210   \else
11211     \Hy@LinkMath
11212     \Hy@SaveSpaceFactor
11213     \egroup
11214     \Hy@RestoreSpaceFactor
11215   \fi
11216 }

```

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.

```

11217 \begingroup
11218 \catcode'P=12 %

```

```

11219 \catcode'T=12 %
11220 \lowercase{\endgroup
11221 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
11222 }
11223 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

#### \hyper@pagetransition

```

11224 \def\hyper@pagetransition{%
11225 \ifx\@pdfpagetransition\relax
11226 \else
11227 \ifx\@pdfpagetransition\@empty
11228 % 1. Does an old entry have to be deleted?
11229 % 2. If 1=yes, how to delete?
11230 \else
11231 \pdfmark{%
11232 pdfmark=/PUT,%
11233 Raw={%
11234 \string{ThisPage\string}%
11235 <</Trans << /S /\@pdfpagetransition\space >> >>%
11236 }%
11237 }%
11238 \fi
11239 \fi
11240 }

```

#### \hyper@pageduration

```

11241 \def\hyper@pageduration{%
11242 \ifx\@pdfpageduration\relax
11243 \else
11244 \ifx\@pdfpageduration\@empty
11245 % 1. Does an old entry have to be deleted?
11246 % 2. If 1=yes, how to delete?
11247 \else
11248 \pdfmark{%
11249 pdfmark=/PUT,%
11250 Raw={%
11251 \string{ThisPage\string}%
11252 <</Dur \@pdfpageduration>>%
11253 }%
11254 }%
11255 \fi
11256 \fi
11257 }

```

#### \hyper@pagehidden

```

11258 \def\hyper@pagehidden{%
11259 \ifHy@useHidKey
11260 \pdfmark{%
11261 pdfmark=/PUT,%
11262 Raw={%
11263 \string{ThisPage\string}%
11264 <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
11265 }%
11266 }%
11267 \fi
11268 }

```

```

11269 \g@addto@macro\Hy@EveryPageBoxHook{%
11270   \hyper@pagetransition
11271   \hyper@pageduration
11272   \hyper@pagehidden
11273 }

11274 \def\hyper@image#1#2{%
11275   \hyper@linkurl{#2}{#1}%
11276 }
11277 \def\Hy@undefinedname{UNDEFINED}
11278 \def\hyper@link#1#2#3{%
11279   \Hy@VerboseLinkStart{#1}{#2}%
11280   \ltx@ifundefined{c#1bordercolor}{%
11281     \let\Hy@tempcolor\relax
11282   }{%
11283     \edef\Hy@tempcolor{\csname c#1bordercolor\endcsname}%
11284   }%
11285   \begingroup
11286     \protected@edef\Hy@testname{#2}%
11287     \ifx\Hy@testname\@empty
11288       \Hy@Warning{%
11289         Empty destination name,\MessageBreak
11290         using '\Hy@undefinedname'%
11291       }%
11292     \let\Hy@testname\Hy@undefinedname
11293   \fi
11294   \pdfmark[{#3}]{%
11295     Color=\Hy@tempcolor,%
11296     linktype={#1},%
11297     AcroHighlight=\@pdfhighlight,%
11298     Border=\@pdfborder,%
11299     BorderStyle=\@pdfborderstyle,%
11300     pdfmark=/ANN,%
11301     Subtype=/Link,%
11302     PDFAFlags=4,%
11303     Dest=\Hy@testname
11304   }%
11305   \endgroup
11306 }
11307 \newtoks\pdf@docset
11308 \def\PDF@FinishDoc{%
11309   \Hy@UseMaketitleInfos
11310   \HyInfo@GenerateAddons
11311   \let\Hy@temp\@empty
11312   \ifx\@pdfcreationdate\@empty
11313   \else
11314     \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
11315   \fi
11316   \ifx\@pdfmoddate\@empty
11317   \else
11318     \expandafter\def\expandafter\Hy@temp\expandafter{%
11319       \Hy@temp
11320       ModDate=\@pdfmoddate,%
11321     }%
11322   \fi
11323   \ifx\@pdfproducer\relax
11324   \else
11325     \expandafter\def\expandafter\Hy@temp\expandafter{%

```

```

11326     \Hy@temp
11327     Producer=\@pdfproducer,%
11328 }%
11329 \fi
11330 \expandafter
11331 \pdfmark\expandafter{%
11332     \Hy@temp
11333     pdfmark=/DOCINFO,%
11334     Title=\@pdftitle,%
11335     Subject=\@pdfsubject,%
11336     Creator=\@pdfcreator,%
11337     Author=\@pdfauthor,%
11338     Keywords=\@pdfkeywords,%
11339     Trapped=\@pdftrapped
11340 }%
11341 \ifx\HyInfo@Addons\@empty
11342 \else
11343     \pdfmark{%
11344         pdfmark=/DOCINFO,%
11345         Raw={\HyInfo@Addons}%
11346     }%
11347 \fi
11348 \Hy@DisableOption{pdfauthor}%
11349 \Hy@DisableOption{pdftitle}%
11350 \Hy@DisableOption{pdfsubject}%
11351 \Hy@DisableOption{pdfcreator}%
11352 \Hy@DisableOption{pdfcreationdate}%
11353 \Hy@DisableOption{pdfmoddate}%
11354 \Hy@DisableOption{pdfproducer}%
11355 \Hy@DisableOption{pdfkeywords}%
11356 \Hy@DisableOption{pdftrapped}%
11357 \Hy@DisableOption{pdfinfo}%
11358 }
11359 \def\PDF@SetupDoc{%
11360     \def\Hy@temp{}%
11361     \ifx\@pdfstartpage\@empty
11362     \else
11363         \ifx\@pdfstartview\@empty
11364         \else
11365             \edef\Hy@temp{%
11366                 ,Page=\@pdfstartpage
11367                 ,View=\@pdfstartview
11368             }%
11369         \fi
11370     \fi
11371     \edef\Hy@temp{%
11372         \noexpand\pdfmark{%
11373             pdfmark=/DOCVIEW,%
11374             PageMode=/\@pdfpagemode
11375         }%
11376     }%
11377 }%
11378 \Hy@temp
11379 \ifx\@pdfpagescrop\@empty
11380 \else
11381     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
11382 \fi

```



```

11383 \edef\Hy@temp{%
11384   \ifHy@pdftoolbar\else /HideToolbar true\fi
11385   \ifHy@pdfmenubar\else /HideMenubar true\fi
11386   \ifHy@pdfwindowui\else /HideWindowUI true\fi
11387   \ifHy@pdfwindow /FitWindow true\fi
11388   \ifHy@pdfcenterwindow /CenterWindow true\fi
11389   \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
11390   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
11391   \Hy@UseNameKey{Direction}\@pdfdirection
11392   \Hy@UseNameKey{ViewArea}\@pdfviewarea
11393   \Hy@UseNameKey{ViewClip}\@pdfviewclip
11394   \Hy@UseNameKey{PrintArea}\@pdfprintarea
11395   \Hy@UseNameKey{PrintClip}\@pdfprintclip
11396   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
11397   \Hy@UseNameKey{Duplex}\@pdfduplex
11398   \ifx\@pdfpicktraybypdfsize\@empty
11399   \else
11400     /PickTrayByPDFSize \@pdfpicktraybypdfsize
11401   \fi
11402   \ifx\@pdfprintpagerange\@empty
11403   \else
11404     /PrintPageRange[\@pdfprintpagerange]%
11405   \fi
11406   \ifx\@pdfnumcopies\@empty
11407   \else
11408     /NumCopies \@pdfnumcopies
11409   \fi
11410 }%
11411 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
11412 \pdfmark{%
11413   pdfmark=/PUT,%
11414   Raw={%
11415     \string{Catalog\string}<<%
11416     \ifx\Hy@temp\@empty
11417     \else
11418       /ViewerPreferences<<\Hy@temp>>%
11419     \fi
11420     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
11421     \ifx\@pdflang\@empty
11422     \else
11423       /Lang(\@pdflang)%
11424     \fi
11425     \ifx\@baseurl\@empty
11426     \else
11427       /URI<</Base(\Hy@pstringB)>>%
11428     \fi
11429     >>%
11430   }%
11431 }%
11432 }
11433 \pdfmark>
11434 \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.

```

11435 \newif\ifHy@pdfmarkerror
11436 \def\pdfmark{\@ifnextchar{\pdfmark@}{\pdfmark@[]}}
11437 \def\pdfmark@[#1]#2{%
11438   \Hy@pdfmarkerrorfalse
11439   \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
11440   \@processme
11441   \let\pdf@type\relax
11442   \kvsetkeys{PDF}{#2}%
11443   \ifHy@pdfmarkerror
11444   \else
11445     \ifx\pdf@type\relax
11446       \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
11447       \ifx\\#1\\%
11448       \else
11449         \pdf@rect{#1}%
11450       \fi
11451     \else
11452       \ifx\\#1\\%
11453         \literalps@out{%
11454           [\the\pdf@toks\space\pdf@type\space pdfmark%
11455           ]%
11456         \else
11457           \ltx@ifundefined{@pdf@linktype color}{%
11458             \Hy@colorlink\@linkcolor
11459           }{%
11460             \expandafter\Hy@colorlink
11461               \csname @pdf@linktype color\endcsname
11462           }%
11463           \pdf@rect{#1}%
11464           \literalps@out{%
11465             [\the\pdf@toks\space\pdf@type\space pdfmark%
11466             ]%
11467             \Hy@endcolorlink
11468           \fi
11469         \fi
11470       \fi
11471 }

```

The complicated bit is working out the right enclosing rectangle of some piece of T<sub>E</sub>X text, needed by the /Rect key. This solution originates with Toby Thain (toby@netspace.net.au).

For the case breaklinks is enabled, I have added two hooks, the first one for package setouterhbox, it provides a hopefully better method without setting the text twice.

```
\usepackage[hyperref]{setouterhbox}
```

With the second hook, also you can set the text twice, e.g.:

```

\long\def\Hy@setouterhbox#1#2{\long\def\my@temp{#2}}
\def\Hy@breaklinksunhbox#1{\my@temp}

```

```

11472 \newsavebox{\pdf@box}
11473 \providecommand*{\Hy@setouterhbox}{\sbox}
11474 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
11475 \def\Hy@DEST{/DEST}
11476 \def\pdf@rect#1{%

```

```

11477 \begingroup
11478 \chardef\x=1 %
11479 \def\Hy@temp{#1}%
11480 \ifx\Hy@temp\ltx@empty
11481 \chardef\x=0 %
11482 \else
11483 \def\y{\anchor@spot}%
11484 \ifx\Hy@temp\y
11485 \def\y{\relax}%
11486 \ifx\anchor@spot\y
11487 \chardef\x=0 %
11488 \fi
11489 \fi
11490 \fi
11491 \expandafter\endgroup
11492 \ifcase\x
11493 \literalps@out{H.S}%
11494 \literalps@out{H.R}%
11495 \else
11496 \leavevmode
11497 \Hy@SaveSpaceFactor
11498 \ifmmode
11499 \def\Hy@LinkMath{$}%
11500 \else
11501 \let\Hy@LinkMath\ltx@empty
11502 \fi
11503 \ifHy@breaklinks
11504 \Hy@setouterhbox\pdf@box{%
11505 \Hy@RestoreSpaceFactor
11506 \Hy@LinkMath
11507 \Hy@AllowHyphens#1\Hy@xspace@end
11508 \Hy@LinkMath
11509 \Hy@SaveSpaceFactor
11510 }%
11511 \else
11512 \sbox\pdf@box{%
11513 \Hy@RestoreSpaceFactor
11514 \Hy@LinkMath
11515 #1\Hy@xspace@end
11516 \Hy@LinkMath
11517 \Hy@SaveSpaceFactor
11518 }%
11519 \fi
11520 \dimen@ \ht\pdf@box
11521 \ifdim\dp\pdf@box=\z@
11522 \literalps@out{H.S}%
11523 \else
11524 \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
11525 \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...).

```

11526 \ifHy@breaklinks
11527 \ifhmode
11528 \Hy@breaklinksunhbox\pdf@box
11529 \else
11530 \box\pdf@box
11531 \fi

```

```

11532 \else
11533 \expandafter\box\pdf@box
11534 \fi

```

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

11535 \ifdim\dimen@=\z@
11536 \literalps@out{H.R}%
11537 \else
11538 \raise\dimen@\hbox{\literalps@out{H.R}}%
11539 \fi
11540 \Hy@RestoreSpaceFactor
11541 \fi
11542 \ifx\pdf@type\Hy@DEST
11543 \else
11544 \pdf@addtoksx{H.B}%
11545 \fi
11546 }

```

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.

```

11547 \newtoks\pdf@toks
11548 \newtoks\pdf@defaulttoks
11549 \pdf@defaulttoks={}%
11550 \def\pdf@addtoks#1#2{%
11551 \edef\@processme{\pdf@toks{\the\pdf@toks/#2 #1}}%
11552 \@processme
11553 }
11554 \def\pdf@addtoksx#1{%
11555 \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
11556 \@processme
11557 }
11558 \def\PDFdefaults#1{%
11559 \pdf@defaulttoks={#1}%
11560 }

```

This is the list of allowed keys. See the Acrobat manual for an explanation.

```

11561 % what is the type of pdfmark?
11562 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
11563 % what is the link type?
11564 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
11565 \def\pdf@linktype{link}
11566 % parameter is a stream of PDF
11567 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
11568 % parameter is a name
11569 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
11570 % parameter is a array
11571 \define@key{PDF}{Border}{%
11572 \edef\Hy@temp{#1}%
11573 \ifx\Hy@temp\empty
11574 \else
11575 \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
11576 \fi
11577 }

```

```

11578 \let\Hy@BorderArrayPatch\@empty
11579 % parameter is a dictionary
11580 \define@key{PDF}{BorderStyle}{%
11581   \edef\Hy@temp{#1}%
11582   \ifx\Hy@temp\@empty
11583     \else
11584       \pdf@addtoks{<<#1>>}{BS}%
11585     \fi
11586 }
11587 % parameter is a array
11588 \define@key{PDF}{Color}{%
11589   \ifx\relax#1\relax
11590     \else
11591       \pdf@addtoks{[#1]}{Color}% hash-ok
11592     \fi
11593 }
11594 % parameter is a string
11595 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
11596 % parameter is a integer
11597 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
11598 % parameter is a array
11599 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
11600 % parameter is a string
11601 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
11602 % parameter is a string or file
11603 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
11604 % parameter is a destination
11605 \define@key{PDF}{Dest}{%
11606   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11607   \ifx\Hy@pstringDest\@empty
11608     \Hy@pdfmarkerrortrue
11609     \Hy@Warning{Destination with empty name ignored}%
11610   \else
11611     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11612   \fi
11613 }
11614 \define@key{PDF}{DestAnchor}{%
11615   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11616   \ifx\Hy@pstringDest\@empty
11617     \Hy@pdfmarkerrortrue
11618     \Hy@Warning{Destination with empty name ignored}%
11619   \else
11620     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11621   \fi
11622 }
11623 % parameter is a string
11624 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
11625 % parameter is a string
11626 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
11627 % parameter is a int
11628 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
11629 \define@key{PDF}{PDFAFlags}{%
11630   \ifHy@pdfa
11631     \pdf@addtoks{#1}{F}%
11632   \fi
11633 }
11634 % parameter is a name

```

```

11635 \define@key{PDF}{AcroHighlight}{%
11636   \begingroup
11637     \edef\x{#1}%
11638     \expandafter\endgroup\ifx\x\@empty
11639     \else
11640       \pdf@addtoks{#1}{H}%
11641     \fi
11642 }
11643 % parameter is a string
11644 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
11645 % parameter is a string
11646 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
11647 % parameter is a string
11648 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11649 % parameter is a string
11650 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
11651 % parameter is a Boolean
11652 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
11653 % parameter is a integer or name
11654 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
11655 % parameter is a name
11656 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
11657 % parameter is a string
11658 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
11659 % parameter is an array
11660 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
11661 % parameter is a integer
11662 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
11663 % parameter is a name
11664 \define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
11665 % parameter is a string
11666 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
11667 % parameter is a string
11668 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
11669 % parameter is a string
11670 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
11671 % parameter is an array
11672 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
11673 % parameter is a string
11674 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

11675 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
11676 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
11677 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
11678 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11679 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
11680 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
11681 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
11682 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11683 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
11684 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}
11685 \define@key{PDF}{Trapped}{%
11686   \edef\Hy@temp{#1}%
11687   \ifx\Hy@temp\@empty
11688   \else
11689     \pdf@addtoks{/#1}{Trapped}%
11690   \fi

```

```

11691 }
11692
11693 </pdfmarkbase>
11694 <*pdfmark>
11695 \def\Acrobatmenu#1#2{%
11696   \EdefEscapeName\Hy@temp@menu{#1}%
11697   \Hy@Acrobatmenu{#1}{#2}{%
11698     \pdfmark[{#2}]{%
11699       linktype=menu,%
11700       pdfmark=/ANN,%
11701       AcroHighlight=\@pdfhighlight,%
11702       Border=\@pdfborder,%
11703       BorderStyle=\@pdfborderstyle,%
11704       Color=\@menubordercolor,%
11705       Action={<</Subtype/Named/N/\Hy@temp@menu>>},%
11706       Subtype=/Link,%
11707       PDFAFlags=4%
11708     }%
11709   }%
11710 }

```

And now for some useful examples:

```

11711 \def\PDFNextPage{\@ifnextchar{\PDFNextPage@}{\PDFNextPage@[]}}
11712 \def\PDFNextPage@[#1]#2{%
11713   \pdfmark[{#2}]{%
11714     #1,%
11715     Border=\@pdfborder,%
11716     BorderStyle=\@pdfborderstyle,%
11717     Color=.2 .1 .5,%
11718     pdfmark=/ANN,%
11719     Subtype=/Link,%
11720     PDFAFlags=4,%
11721     Page=/Next%
11722   }%
11723 }
11724 \def\PDFPreviousPage{%
11725   \@ifnextchar{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
11726 }
11727 \def\PDFPreviousPage@[#1]#2{%
11728   \pdfmark[{#2}]{%
11729     #1,%
11730     Border=\@pdfborder,%
11731     BorderStyle=\@pdfborderstyle,%
11732     Color=.4 .4 .1,%
11733     pdfmark=/ANN,%
11734     Subtype=/Link,%
11735     PDFAFlags=4,%
11736     Page=/Prev%
11737   }%
11738 }
11739 \def\PDFOpen#1{%
11740   \pdfmark{#1,pdfmark=/DOCVIEW}%
11741 }

```

This will only work if you use Distiller 2.1 or higher.

```

11742 \def\hyper@linkurl#1#2{%
11743   \begingroup
11744     \Hy@pstringdef\Hy@pstringURI{#2}%

```

```

11745 \hyper@chars
11746 \leavevmode
11747 \pdfmark[{#1}]{%
11748   pdfmark=/ANN,%
11749   linktype=url,%
11750   AcroHighlight=\@pdfhighlight,%
11751   Border=\@pdfborder,%
11752   BorderStyle=\@pdfborderstyle,%
11753   Color=\@urlbordercolor,%
11754   Action={<<%
11755     /Subtype/URI%
11756     /URI(\Hy@pstringURI)%
11757     \ifHy@href@ismap
11758       /IsMap true%
11759     \fi
11760   >>},%
11761   Subtype=/Link,%
11762   PDFAFlags=4%
11763 }%
11764 \endgroup
11765 }
11766 \def\hyper@linkfile#1#2#3{%
11767 \begingroup
11768   \def\Hy@pstringF{#2}%
11769   \Hy@CleanupFile\Hy@pstringF
11770   \Hy@pstringdef\Hy@pstringF\Hy@pstringF
11771   \Hy@pstringdef\Hy@pstringD{#3}%
11772   \Hy@MakeRemoteAction
11773   \leavevmode
11774   \pdfmark[{#1}]{%
11775     pdfmark=/ANN,%
11776     Subtype=/Link,%
11777     PDFAFlags=4,%
11778     AcroHighlight=\@pdfhighlight,%
11779     Border=\@pdfborder,%
11780     BorderStyle=\@pdfborderstyle,%
11781     linktype=file,%
11782     Color=\@filebordercolor,%
11783     Action={%
11784       <<%
11785       /S/GoToR%
11786       \Hy@SetNewWindow
11787       /F(\Hy@pstringF)%
11788       /D%
11789       \ifx\#3\%
11790         [\Hy@href@page\@pdfremotestartview]%
11791       \else
11792         (\Hy@pstringD)cvn%
11793       \fi
11794       \Hy@href@nextactionraw
11795     >>%
11796   }%
11797 }%
11798 \endgroup
11799 }
11800 \def\@hyper@launch run:#1\#2#3{%
11801 \begingroup

```



```

11802 \Hy@pstringdef\Hy@pstringF{#1}%
11803 \Hy@pstringdef\Hy@pstringP{#3}%
11804 \leavevmode
11805 \pdfmark[{#2}]{%
11806   pdfmark=/ANN,%
11807   Subtype=/Link,%
11808   PDFAFlags=4,%
11809   AcroHighlight=\@pdfhighlight,%
11810   Border=\@pdfborder,%
11811   BorderStyle=\@pdfborderstyle,%
11812   linktype=run,%
11813   Color=\@runbordercolor,%
11814   Action={%
11815     <<%
11816     /S/Launch%
11817     \Hy@SetNewWindow
11818     /F(\Hy@pstringF)%
11819     \ifx\#3\%
11820     \else
11821     /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
11822     \fi
11823     \Hy@href@nextactionraw
11824     >>%
11825   }%
11826 }%
11827 \endgroup
11828 }
11829 </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.

```

11830 (*dvips)
11831 \providecommand*{\XR@ext}{pdf}
11832 \let\Hy@raisedlink\ltx@empty
11833 \def\literals@out#1{\special{ps:SDict begin #1 end}}%
11834 \def\headerps@out#1{\special{! #1}}%
11835 \input{pdfmark.def}%
11836 \ifx\@pdfproducer\relax
11837 \def\@pdfproducer{dvips + Distiller}%
11838 \fi
11839 \providecommand*\@pdfborder{0 0 1}
11840 \providecommand*\@pdfborderstyle{}
11841 \providecommand*\@pdfview{XYZ}
11842 \providecommand*\@pdfviewparams{ H.V}
11843 \def\Hy@BorderArrayPatch{BorderArrayPatch}
11844 \g@addto@macro\Hy@FirstPageHook{%
11845   \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.

```

11846 /DvipsToPDF{72.27 mul Resolution div} def%
11847 /PDFToDvips{72.27 div Resolution mul} def%
11848 /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.

```

11849 /BorderArrayPatch{%
11850   [exch{%
11851     dup dup type/integertype eq exch type/realtype eq or%
11852     {BPToDvips}if%
11853   }forall]%
11854 }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.

```

11855 /HyperBorder {1 PDFToDvips} def%
11856 /H.V {pdf@hoff pdf@voff null} def%
11857 /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

```

11858 /H.S {%
11859   currentpoint %
11860   HyperBorder add /pdf@lly exch def %
11861   dup DvipsToPDF 72 add /pdf@hoff exch def %
11862   HyperBorder sub /pdf@llx exch def%
11863 } def%

```

The calculation of upper left  $y$  is done without raising the point in  $\text{T}_{\text{E}}\text{X}$ , 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

```

11864 /H.L {%
11865   2 sub dup%
11866   /HyperBasePt exch def %
11867   PDFToDvips /HyperBaseDvips exch def %
11868   currentpoint %
11869   HyperBaseDvips sub /pdf@ury exch def%
11870   /pdf@urx exch def%
11871 } def%
11872 /H.A {%
11873   H.L %
11874 % |pdf@voff| = the distance from the top of the page to a point
11875 % |\baselineskip| above the current point in PDF coordinates

```

```

11876    currentpoint exch pop %
11877    vsize 72 sub exch DvipsToPDF %
11878    HyperBasePt sub % baseline skip
11879    sub /pdf@voff exch def%
11880  } def%
11881  /H.R {%
11882    currentpoint %
11883    HyperBorder sub /pdf@ury exch def %
11884    HyperBorder add /pdf@urx exch def %
11885  % | /pdf@voff| = the distance from the top of the page to the current point, in
11886  % PDF coordinates
11887    currentpoint exch pop vsize 72 sub %
11888    exch DvipsToPDF sub /pdf@voff exch def%
11889  } def%
11890 }%
11891 }
11892 \AtBeginShipoutFirst{%
11893   \ifHy@setpagesize
11894     \begingroup
11895       \@ifundefined{stockwidth}{-%
11896         \ifdim\paperwidth>\z@
11897           \ifdim\paperheight>\z@
11898             \special{papersize=\the\paperwidth,\the\paperheight}%
11899           \fi
11900         \fi
11901       }{%
11902         \ifdim\stockwidth>\z@
11903           \ifdim\stockheight>\z@
11904             \special{papersize=\the\stockwidth,\the\stockheight}%
11905           \fi
11906         \fi
11907       }%
11908     \endgroup
11909   \fi
11910   \Hy@DisableOption{setpagesize}%
11911 }
11912 </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.

```

11913 (*vtexpdfmark)
11914 \providecommand*\XR@ext}{pdf}
11915 \let\Hy@raisedlink\ltx@empty
11916 \def\literalps@out#1{\special{pS:#1}}%
11917 \def\headerps@out#1{\immediate\special{pS:#1}}%
11918 \input{pdfmark.def}%
11919 \ifx\@pdfproducer\relax
11920   \ifnum\OpMode=\@ne
11921     \def\@pdfproducer{VTeX}%
11922   \else
11923     \def\@pdfproducer{VTeX + Distiller}%
11924   \fi
11925 \fi

```

```

11926 \providecommand*\@pdfborder{0 0 1}
11927 \providecommand*\@pdfborderstyle{}
11928 \providecommand*\@pdfview{XYZ}
11929 \providecommand*\@pdfviewparams{ H.V}

```

```

11930 \g@addto@macro\Hy@FirstPageHook{%
11931   \headerps@out{%
11932     /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.

```

11933   /HyperBorder {1} def%
11934   /H.V {pdf@hoff pdf@voff null} def%
11935   /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:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

11936   /H.S {%
11937     currentpoint %
11938     HyperBorder sub%
11939     /pdf@lly exch def %
11940     dup 72 add /pdf@hoff exch def %
11941     HyperBorder sub%
11942     /pdf@llx exch def%
11943   } def%

```

The  $x$  and  $y$  coordinates of the current point, minus the `\baselineskip`:  $\text{pdf@ury} = Y_c + \text{HyperBasePt} + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

11944   /H.L {%
11945     2 sub%
11946     /HyperBasePt exch def %
11947     currentpoint %
11948     HyperBasePt add HyperBorder add%
11949     /pdf@ury exch def %
11950     HyperBorder add%
11951     /pdf@urx exch def%
11952   } def%
11953   /H.A {%
11954     H.L %
11955     currentpoint exch pop %
11956     vsize 72 sub exch %
11957     HyperBasePt add add%
11958     /pdf@voff exch def%
11959   } def%

```

$\text{pdf@ury} = Y_c + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

11960   /H.R {%
11961     currentpoint %
11962     HyperBorder add%
11963     /pdf@ury exch def %
11964     HyperBorder add%
11965     /pdf@urx exch def %
11966     currentpoint exch pop vsize 72 sub add%
11967     /pdf@voff exch def%
11968   } def%
11969 }%
11970 }
11971 \</vtxpdfmark>

```

## 46.11 Textures

```
11972 \<{*textures}
11973 \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.

```
11974 \begingroup
11975   \obeylines %
11976   \gdef\Hy@ps@CR{\noexpand
11977   }%
11978 \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`.

```
11979 \def\literalps@out#1{%
11980   \special{postscript 0 0 transform}%
11981   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
11982 }%
11983 %
```

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.

```
11984 \def\headerps@out#1{%
11985   \special{%
11986     prepostscript TeXdict begin\Hy@ps@CR
11987     #1\Hy@ps@CR
11988     end%
11989   }%
11990 }%
11991 %
```

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.

```
11992 \g@addto@macro\Hy@FirstPageHook{%
11993   \headerps@out{%
11994     /betterpdfmark {%
11995       systemdict begin %
11996       dup /BP eq%
11997       {cleartomark gsave nulldevice []%

```

```

11998      {dup /EP eq%
11999      {cleartomark cleartomark grestore}%
12000      {cleartomark}%
12001      ifelse%
12002      }ifelse %
12003      end%
12004      }def\Hy@ps@CR
12005      ____pdfmark__ not{/pdfmark /betterpdfmark load def}if%
12006      }% end of \headerps@out
12007      }% end of \AtBeginShipoutFirst
12008      %
12009      \input{pdfmark.def}%
12010      %
12011      \ifx\@pdfproducer\relax
12012      \def\@pdfproducer{Textures + Distiller}%
12013      \fi
12014      \providecommand*\@pdfborder{0 0 1}
12015      \providecommand*\@pdfborderstyle{}
12016      \providecommand*\@pdfview{XYZ}
12017      \providecommand*\@pdfviewparams{ H.V}
12018      %

```

These are called at the start and end of unboxed links; their job is to leave available PS variables called `pdf@llx pdf@lly pdf@urx pdf@ury`, which are the coordinates of the bounding rectangle of the link, and `pdf@hoff pdf@voff` which are the PDF page offsets. The Rect pair are called at the LL and UR corners of a box known to T<sub>E</sub>X.

```

12019 \Hy@AtBeginDocument{%
12020 \headerps@out{%

```

Textures lives in normal points, I think. So conversion from one coordinate system to another involves doing nothing.

```

12021 /vsize {\Hy@pageheight} def%
12022 /DvipsToPDF {} def%
12023 /PDFToDvips {} def%
12024 /BPTToDvips {} def%
12025 /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
12026 /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
12027 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
12028 /H.S {%
12029     currentpoint %
12030     HyperBorder add /pdf@lly exch def %
12031     dup DvipsToPDF 72 add /pdf@hoff exch def %
12032     HyperBorder sub /pdf@llx exch def%
12033     } def\Hy@ps@CR
12034 /H.L {%
12035     2 sub %
12036     PDFToDvips /HyperBase exch def %
12037     currentpoint %
12038     HyperBase sub /pdf@ury exch def%
12039     /pdf@urx exch def%
12040     } def\Hy@ps@CR
12041 /H.A {%
12042     H.L %
12043     currentpoint exch pop %
12044     vsize 72 sub exch DvipsToPDF %
12045     HyperBase sub % baseline skip
12046     sub /pdf@voff exch def%

```

```

12047 } def\Hy@ps@CR
12048 /H.R {%
12049   currentpoint %
12050   HyperBorder sub /pdf@ury exch def %
12051   HyperBorder add /pdf@urx exch def %
12052   currentpoint exch pop vsize 72 sub %
12053   exch DvipsToPDF sub /pdf@voff exch def%
12054 } def\Hy@ps@CR
12055 }%
12056 }

12057 \Hy@AtBeginDocument{%
12058   \ifHy@colorlinks
12059     \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
12060   \fi
12061 }

```

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.

```

12062 \expandafter\let\expandafter\keepPDF@SetupDoc
12063   \csname PDF@SetupDoc\endcsname
12064 \def\PDF@SetupDoc{%
12065   \ifx\@baseurl\@empty
12066     \else
12067       \special{html:<base href="\@baseurl">}%
12068     \fi
12069   \keepPDF@SetupDoc
12070 }

12071 \Hy@WrapperDef\hyper@anchor#1{%
12072   \Hy@SaveLastskip
12073   \Hy@VerboseAnchor{#1}%
12074   \begingroup
12075     \let\protect=\string
12076     \special{html:<a name=%
12077       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12078   \endgroup
12079   \Hy@activeanchortrue
12080   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
12081   \special{html:</a>}%
12082   \Hy@activeanchorfalse
12083   \Hy@RestoreLastskip
12084 }

12085 \Hy@WrapperDef\hyper@anchorstart#1{%
12086   \Hy@SaveLastskip
12087   \Hy@VerboseAnchor{#1}%
12088   \begingroup
12089     \hyper@chars
12090     \special{html:<a name=%
12091       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12092   \endgroup
12093   \Hy@activeanchortrue
12094 }

12095 \def\hyper@anchorend{%
12096   \special{html:</a>}%
12097   \Hy@activeanchorfalse
12098   \Hy@RestoreLastskip
12099 }

```

```

12100 \def\@urltype{url}
12101 \def\hyper@linkstart#1#2{%
12102   \Hy@VerboseLinkStart{#1}{#2}%
12103   \expandafter\Hy@colorlink\csname @#1color\endcsname
12104   \def\Hy@tempa{#1}%
12105   \ifx\Hy@tempa\@urltype
12106     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
12107   \else
12108     \begingroup
12109     \hyper@chars
12110     \special{%
12111       html:<a href=%
12112       \hyper@quote\#\Hy@DestNameFilter{#2}\hyper@quote>%
12113     }%
12114     \endgroup
12115   \fi
12116 }
12117 \def\hyper@linkend{%
12118   \special{html:</a>}%
12119   \Hy@endcolorlink
12120 }
12121 \def\hyper@linkfile#1#2#3{%
12122   \hyper@linkurl{#1}{%
12123     \Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi
12124   }%
12125 }
12126 \def\hyper@linkurl#1#2{%
12127   \leavevmode
12128   \ifHy@raiselinks
12129     \Hy@SaveSpaceFactor
12130     \Hy@SaveSavedSpaceFactor
12131     \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
12132     \Hy@RestoreSavedSpaceFactor
12133     \@linkdim\dp\@tempboxa
12134     \lower\@linkdim\hbox{%
12135       \hyper@chars
12136       \special{html:<a href=\hyper@quote#2\hyper@quote>}%
12137     }%
12138     \Hy@colorlink\@urlcolor
12139     \Hy@RestoreSpaceFactor
12140     #1\Hy@xspace@end
12141     \Hy@SaveSpaceFactor
12142     \@linkdim\ht\@tempboxa
12143     \advance\@linkdim by -6.5\p@
12144     \raise\@linkdim\hbox{\special{html:</a>}}%
12145     \Hy@endcolorlink
12146     \Hy@RestoreSpaceFactor
12147   \else
12148     \begingroup
12149     \hyper@chars
12150     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
12151     \Hy@colorlink\@urlcolor#1\Hy@xspace@end
12152     \special{html:</a>}%
12153     \Hy@endcolorlink
12154   \endgroup
12155   \fi
12156 }

```



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

```
12157 \def\hyper@link#1#2#3{%
12158   \Hy@VerboseLinkStart{#1}{#2}%
12159   \hyper@linkurl{#3}{\# \HyperDestNameFilter{#2}}%
12160 }
12161 \def\hyper@image#1#2{%
12162   \begingroup
12163   \hyper@chars
12164   \special{html:<img src=\hyper@quote#1\hyper@quote>}%
12165   \endgroup
12166 }
12167 </textures>
```

## 46.12 dvipsone

```
12168 % \subsection{dvipsone driver}
12169 % Over-ride the default setup macro in pdftmark driver to use Y\&Y
12170 % | \special| commands.
12171 (*dvipsone)
12172 \providecommand*\XR@ext{pdf}
12173 \let\Hy@raisedlink\ltx@empty
12174 \providecommand*\@pdfborder{0 0 1}
12175 \providecommand*\@pdfborderstyle{}
12176 \def\literalps@out#1{\special{ps:#1}}%
12177 \def\headerps@out#1{\special{headertext=#1}}%
12178 \input{pdfmark.def}%
12179 \ifx\@pdfproducer\relax
12180   \def\@pdfproducer{dvipsone + Distiller}%
12181 \fi
12182 \HyInfo@AddonUnsupportedtrue
12183 \def\PDF@FinishDoc{%
12184   \Hy@UseMaketitleInfos
12185   \HyInfo@TrappedUnsupported
12186   \special{PDF: Keywords \@pdfkeywords}%
12187   \special{PDF: Title \@pdftitle}%
12188   \special{PDF: Creator \@pdfcreator}%
12189   \ifx\@pdfcreationdate\@empty
12190     \else
12191       \special{PDF: CreationDate \@pdfcreationdate}%
12192   \fi
12193   \ifx\@pdfmoddate\@empty
12194     \else
12195       \special{PDF: ModDate \@pdfmoddate}%
12196   \fi
12197   \special{PDF: Author \@pdfauthor}%
12198   \ifx\@pdfproducer\relax
12199     \else
12200       \special{PDF: Producer \@pdfproducer}%
12201   \fi
12202   \special{PDF: Subject \@pdfsubject}%
12203   \Hy@DisableOption{pdfauthor}%
12204   \Hy@DisableOption{pdftitle}%
12205   \Hy@DisableOption{pdfsubject}%
12206   \Hy@DisableOption{pdfcreator}%
12207   \Hy@DisableOption{pdfcreationdate}%
12208   \Hy@DisableOption{pdfmoddate}%
12209   \Hy@DisableOption{pdfproducer}%

```

```

12210 \Hy@DisableOption{pdfkeywords}%
12211 \Hy@DisableOption{pdftrapped}%
12212 \Hy@DisableOption{pdfinfo}%
12213 }
12214 \def\PDF@SetupDoc{%
12215 \def\Hy@temp{}%
12216 \ifx\@pdfstartpage\@empty
12217 \else
12218 \ifx\@pdfstartview\@empty
12219 \else
12220 \edef\Hy@temp{%
12221 ,Page=\@pdfstartpage
12222 ,View=\@pdfstartview
12223 }%
12224 \fi
12225 \fi
12226 \edef\Hy@temp{%
12227 \noexpand\pdfmark{%
12228 pdfmark=/DOCVIEW,%
12229 PageMode=/\@pdfpagemode
12230 \Hy@temp
12231 }%
12232 }%
12233 \Hy@temp
12234 \ifx\@pdfpagescrop\@empty
12235 \else
12236 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
12237 \fi
12238 \edef\Hy@temp{%
12239 \ifHy@pdftoolbar\else /HideToolbar true\fi
12240 \ifHy@pdfmenubar\else /HideMenubar true\fi
12241 \ifHy@pdfwindowui\else /HideWindowUI true\fi
12242 \ifHy@pdfwindow /FitWindow true\fi
12243 \ifHy@pdfcenterwindow /CenterWindow true\fi
12244 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
12245 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
12246 \Hy@UseNameKey{Direction}\@pdfdirection
12247 \Hy@UseNameKey{ViewArea}\@pdfviewarea
12248 \Hy@UseNameKey{ViewClip}\@pdfviewclip
12249 \Hy@UseNameKey{PrintArea}\@pdfprintarea
12250 \Hy@UseNameKey{PrintClip}\@pdfprintclip
12251 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
12252 \Hy@UseNameKey{Duplex}\@pdfduplex
12253 \ifx\@pdfpicktraybypdfsize\@empty
12254 \else
12255 /PickTrayByPDFSize \@pdfpicktraybypdfsize
12256 \fi
12257 \ifx\@pdfprintpagerange\@empty
12258 \else
12259 /PrintPageRange[\@pdfprintpagerange]%
12260 \fi
12261 \ifx\@pdfnumcopies\@empty
12262 \else
12263 /NumCopies \@pdfnumcopies
12264 \fi
12265 }%
12266 \Hy@pstringdef\Hy@pstringB{\@baseurl}%

```

```

12267 \pdfmark{%
12268   pdfmark=/PUT,%
12269   Raw={%
12270     \string{Catalog\string}<<%
12271     \ifx\Hy@temp\@empty
12272     \else
12273       /ViewerPreferences<<\Hy@temp>>%
12274     \fi
12275     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
12276     \ifx\@pdflang\@empty
12277     \else
12278       /Lang(\@pdflang)%
12279     \fi
12280     \ifx\@baseurl\@empty
12281     \else
12282       /URI<</Base(\Hy@pstringB)>>%
12283     \fi
12284   >>%
12285 }%
12286 }%
12287 }
12288 \providecommand*\@pdfview{XYZ}
12289 \providecommand*\@pdfviewparams{ %
12290   gsave revscl currentpoint grestore %
12291   72 add exch pop null exch null%
12292 }
12293 \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  $\TeX$ .

```

12294 \g@addto@macro\Hy@FirstPageHook{%
12295   \headerps@out{%

```

dvipsone lives in scaled points; does this mean 65536 or 65781?

```

12296   /DvipsToPDF { 65781 div } def%
12297   /PDFToDvips { 65781 mul } def%
12298   /BPToDvips{65781 mul}def%
12299   /HyperBorder { 1 PDFToDvips } def%
12300   /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.

```

12301   /BorderArrayPatch{%
12302     [exch{%
12303       dup dup type/integertype eq exch type/realtype eq or%
12304       {BPToDvips}if%
12305     }forall]%
12306   }def%
12307   /H.S {%
12308     currentpoint %
12309     HyperBorder add /pdf@lly exch def %
12310     dup DvipsToPDF 72 add /pdf@hoff exch def %
12311     HyperBorder sub /pdf@llx exch def%
12312   } def%
12313   /H.L {%

```

```

12314      2 sub %
12315      PDFToDvips /HyperBase exch def %
12316      currentpoint %
12317      HyperBase sub /pdf@ury exch def%
12318      /pdf@urx exch def%
12319      } def%
12320      /H.A {%
12321      H.L %
12322      currentpoint exch pop %
12323      HyperBase sub % baseline skip
12324      DvipsToPDF /pdf@voff exch def%
12325      } def%
12326      /H.R {%
12327      currentpoint %
12328      HyperBorder sub /pdf@ury exch def %
12329      HyperBorder add /pdf@urx exch def %
12330      currentpoint exch pop DvipsToPDF /pdf@voff exch def%
12331      } def%
12332      }%
12333      }
12334      </dvipsone>

```

## 46.13 TeX4ht

```

12335      (*tex4ht)
12336      \providecommand*\XR@ext>{html}
12337      \let\Hy@raisedlink\ltx@empty
12338      \@ifpackageloaded{tex4ht}{%
12339      \Hy@InfoNoLine{tex4ht is already loaded}%
12340      }{%
12341      \RequirePackage[hx4ht]{tex4ht}%
12342      }
12343      \hyperlinkfileprefix{}
12344      \let\PDF@FinishDoc\ltx@empty
12345      \def\PDF@SetupDoc{%
12346      \ifx\@baseurl\@empty
12347      \else
12348      \special{t4ht=<base href="\@baseurl">}%
12349      \fi
12350      }
12351      \Hy@WrapperDef\hyper@anchor#1{%
12352      \Hy@SaveLastskip
12353      \Hy@VerboseAnchor{#1}%
12354      \begingroup
12355      \let\protect=\string
12356      \special{t4ht=<a name=%
12357      \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12358      \endgroup
12359      \Hy@activeanchortrue
12360      \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
12361      \special{t4ht=</a>}%
12362      \Hy@activeanchorfalse
12363      \Hy@RestoreLastskip
12364      }
12365      \Hy@WrapperDef\hyper@anchorstart#1{%
12366      \Hy@SaveLastskip
12367      \Hy@VerboseAnchor{#1}%
12368      \begingroup

```

```

12369 \hyper@chars\special{t4ht=<a name=%
12370 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12371 \endgroup
12372 \Hy@activeanchortrue
12373 }
12374 \def\hyper@anchorend{%
12375 \special{t4ht=</a>}%
12376 \Hy@activeanchorfalse
12377 \Hy@RestoreLastskip
12378 }
12379 \def\@urltype{url}
12380 \def\hyper@linkstart#1#2{%
12381 \Hy@VerboseLinkStart{#1}{#2}%
12382 \expandafter\Hy@colorlink\csname @#1color\endcsname
12383 \def\Hy@tempa{#1}%
12384 \ifx\Hy@tempa\@urltype
12385 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12386 \else
12387 \begingroup
12388 \hyper@chars
12389 \special{t4ht=<a href=%
12390 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
12391 \endgroup
12392 \fi
12393 }
12394 \def\hyper@linkend{%
12395 \special{t4ht=</a>}%
12396 \Hy@endcolorlink
12397 }
12398 \def\hyper@linkfile#1#2#3{%
12399 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
12400 }
12401 \def\hyper@linkurl#1#2{%
12402 \leavevmode
12403 \ifHy@raiselinks
12404 \Hy@SaveSpaceFactor
12405 \Hy@SaveSavedSpaceFactor
12406 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
12407 \Hy@RestoreSavedSpaceFactor
12408 \@linkdim\dp\@tempboxa
12409 \lower\@linkdim\hbox{%
12410 \begingroup
12411 \hyper@chars
12412 \special{%
12413 t4ht=<a href=\hyper@quote#2\hyper@quote>%
12414 }%
12415 \endgroup
12416 }%
12417 \Hy@colorlink\@urlcolor
12418 \Hy@RestoreSpaceFactor
12419 #1\Hy@xspace@end
12420 \Hy@SaveSpaceFactor
12421 \Hy@endcolorlink
12422 \@linkdim\ht\@tempboxa
12423 \advance\@linkdim by -6.5\p@
12424 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
12425 \Hy@RestoreSpaceFactor

```

```

12426 \else
12427 \begingroup
12428 \hyper@chars
12429 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12430 \Hy@colorlink\@urlcolor
12431 #1\Hy@xspace@end
12432 \Hy@endcolorlink
12433 \special{t4ht=</a>}%
12434 \endgroup
12435 \fi
12436 }

Poor implementation of \hyper@link without considering #1.
12437 \def\hyper@link#1#2#3{%
12438 \Hy@VerboseLinkStart{#1}{#2}%
12439 \hyper@linkurl{#3}{\# \Hy@HyperDestNameFilter{#2}}%
12440 }
12441 \def\hyper@image#1#2{%
12442 \begingroup
12443 \hyper@chars
12444 \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
12445 \endgroup
12446 }
12447 \let\autoref\ref
12448 \ifx \rEfLiNK \UnDef
12449 \def\rEfLiNK #1#2{#2}%
12450 \fi
12451 \let\backref\ltx@gobble

Fix for tex4ht.
12452 \AtBeginDocument{%
12453 \expandafter
12454 \let\expandafter\Hy@OrgMakeLabel\csname Make:Label\endcsname
12455 \expandafter\def\csname Make:Label\endcsname#1#2{%
12456 \ifhmode
12457 \Hy@SaveSpaceFactor
12458 \else
12459 \global\Hy@SavedSpaceFactor=1000 %
12460 \fi
12461 \Hy@OrgMakeLabel{#1}{%
12462 \Hy@RestoreSpaceFactor
12463 #2\Hy@xspace@end%
12464 \Hy@SaveSpaceFactor
12465 }%
12466 \Hy@RestoreSpaceFactor
12467 }%
12468 }
12469 </tex4ht>
12470 <*tex4htcfg>
12471 \IfFileExists{\jobname.cfg}{\endinput}{}
12472 \Preamble{html}
12473 \begin{document}%
12474 \EndPreamble
12475 \def\TeX{TeX}
12476 \def\OMEGA{Omega}
12477 \def\LaTeX{LaTeX}
12478 \def\LaTeXe{\LaTeX2e}
12479 \def\eTeX{e-TeX}
12480 \def\MF{Metafont}

```

```

12481 \def\MP{MetaPost}
12482 \</tex4htcfg>

```

## 47 Driver-specific form support

### 47.1 pdfmarks

```

12483 \<*pdfmark>
12484 \long\def\@Form[#1]{%
12485 \g@addto@macro\Hy@FirstPageHook{%
12486 \headerps@out{%
12487 [%
12488 /_objdef{pdfDocEncoding}%
12489 /type/dict%
12490 /OBJ pdfmark%
12491 [%
12492 {pdfDocEncoding}%
12493 <<%
12494 /Type/Encoding%
12495 /Differences[%
12496 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
12497 /tilde %
12498 39/quotesingle %
12499 96/grave %
12500 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
12501 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
12502 /quotedblbase/quotedblleft/quotedblright/quoteleft%
12503 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%
12504 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
12505 164/currency %
12506 166/brokenbar %
12507 168/dieresis/copyright/ordfeminine %
12508 172/logicalnot/.notdef/registered/macron/degree/plusminus%
12509 /twosuperior/threesuperior/acute/mu %
12510 183/periodcentered/cedilla/onesuperior/ordmasculine %
12511 188/onequarter/onehalf/threequarters %
12512 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
12513 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
12514 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
12515 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
12516 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
12517 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
12518 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
12519 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
12520 /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%
12521 /ucircumflex/udieresis/yacute/thorn/ydieresis%
12522 ]%
12523 >>%
12524 /PUT pdfmark%
12525 [%
12526 /_objdef{ZaDb}%
12527 /type/dict%
12528 /OBJ pdfmark%
12529 [%
12530 {ZaDb}%
12531 <<%
12532 /Type/Font%
12533 /Subtype/Type1%

```

```

12534 /Name/ZaDb%
12535 /BaseFont/ZapfDingbats%
12536 >>%
12537 /PUT pdfmark%
12538 [%
12539 /__objdef{Helv}%
12540 /type/dict%
12541 /OBJ pdfmark%
12542 [%
12543 {Helv}%
12544 <<%
12545 /Type/Font%
12546 /Subtype/Type1%
12547 /Name/Helv%
12548 /BaseFont/Helvetica%
12549 /Encoding{pdfDocEncoding}%
12550 >>%
12551 /PUT pdfmark%
12552 [%
12553 /__objdef{aform}%
12554 /type/dict%
12555 /OBJ pdfmark%
12556 [%
12557 /__objdef{afields}%
12558 /type/array%
12559 /OBJ pdfmark%
12560 {%
12561 [%
12562 /BBox[0 0 100 100]%
12563 /__objdef{Check}%
12564 /BP pdfmark %
12565 1 0 0 setrgbcolor%
12566 /ZapfDingbats 80 selectfont %
12567 20 20 moveto%
12568 (4)show%
12569 [/EP pdfmark%
12570 [%
12571 /BBox[0 0 100 100]%
12572 /__objdef{Cross}%
12573 /BP pdfmark %
12574 1 0 0 setrgbcolor%
12575 /ZapfDingbats 80 selectfont %
12576 20 20 moveto%
12577 (8)show%
12578 [/EP pdfmark%
12579 [%
12580 /BBox[0 0 250 100]%
12581 /__objdef{Submit}%
12582 /BP pdfmark %
12583 0.6 setgray %
12584 0 0 250 100 rectfill %
12585 1 setgray %
12586 2 2 moveto %
12587 2 98 lineto %
12588 248 98 lineto %
12589 246 96 lineto %
12590 4 96 lineto %

```



```

12591 4 4 lineto %
12592 fill %
12593 0.34 setgray %
12594 248 98 moveto %
12595 248 2 lineto %
12596 2 2 lineto %
12597 4 4 lineto %
12598 246 4 lineto %
12599 246 96 lineto %
12600 fill%
12601 /Helvetica 76 selectfont %
12602 0 setgray %
12603 8 22.5 moveto%
12604 (Submit)show%
12605 [/EP pdfmark%
12606 [%
12607 /BBox[0 0 250 100]%
12608 /__objdef{SubmitP}%
12609 /BP pdfmark %
12610 0.6 setgray %
12611 0 0 250 100 rectfill %
12612 0.34 setgray %
12613 2 2 moveto %
12614 2 98 lineto %
12615 248 98 lineto %
12616 246 96 lineto %
12617 4 96 lineto %
12618 4 4 lineto %
12619 fill %
12620 1 setgray %
12621 248 98 moveto %
12622 248 2 lineto %
12623 2 2 lineto %
12624 4 4 lineto %
12625 246 4 lineto %
12626 246 96 lineto %
12627 fill%
12628 /Helvetica 76 selectfont %
12629 0 setgray %
12630 10 20.5 moveto%
12631 (Submit)show%
12632 [/EP pdfmark%
12633 } ?pdfmark%
12634 [%
12635 {aform}%
12636 <<%
12637 /Fields{afields}%
12638 /DR<<%
12639 /Font<<%
12640 /ZaDb{ZaDb}%
12641 /Helv{Helv}%
12642 >>%
12643 >>%
12644 /DA(/Helv 10 Tf 0 g)%
12645 /CO{corder}%
12646 \ifHy@pdfa
12647 \else

```

```

12648     \ifHyField@NeedAppearances
12649         /NeedAppearances true%
12650     \fi
12651 \fi
12652 >>%
12653 /PUT pdfmark%
12654 [%
12655     {Catalog}%
12656     <<%
12657         /AcroForm{aform}%
12658     >>%
12659 /PUT pdfmark%
12660 [%
12661     /_objdef{corder}%
12662     /type/array%
12663 /OBJ pdfmark% dps
12664 }}%
12665     \kvsetkeys{Form}{#1}%
12666 }
12667 \let\@endForm\ltx@empty
12668 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12669     \Hy@Message{Sorry, pdfmark drivers do not support FORM gauges}%
12670 }
12671 \def\@TextField[#1]#2{% parameters, label
12672     \def\Fld@name{#2}%
12673     \let\Fld@default\ltx@empty
12674     \let\Fld@value\@empty
12675     \def\Fld@width{\DefaultWidthofText}%
12676     \def\Fld@height{%
12677         \ifFld@multiline
12678             \DefaultHeightofTextMultiline
12679         \else
12680             \DefaultHeightofText
12681         \fi
12682     }%
12683     \begingroup
12684         \expandafter\HyField@SetKeys\expandafter{%
12685             \DefaultOptionsofText,#1%
12686         }%
12687         \HyField@FlagsText
12688         \ifFld@hidden\def\Fld@width{1sp}\fi
12689         \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12690         \LayoutTextField{#2}{%
12691             \leavevmode
12692             \Hy@escapeform\PDFForm@Text
12693             \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
12694                 pdfmark=/ANN,Raw={\PDFForm@Text}%
12695             }%
12696         }%
12697     \endgroup
12698 }
12699 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12700     \def\Fld@name{#2}%
12701     \let\Fld@default\relax
12702     \let\Fld@value\relax
12703     \def\Fld@width{\DefaultWidthofChoiceMenu}%
12704     \def\Fld@height{\DefaultHeightofChoiceMenu}%

```

```

12705 \begingroup
12706 \Fld@menulength=0 %
12707 \@tempdima\z@
12708 \@for\@curropt:=#3\do{%
12709 \expandafter\Fld@checkequals\@curropt==\\%
12710 \Hy@StepCount\Fld@menulength
12711 \settowidth{\@tempdimb}{\@currDisplay}%
12712 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12713 }%
12714 \advance\@tempdima by 15\p@
12715 \begingroup
12716 \HyField@SetKeys{#1}%
12717 \edef\x{\endgroup
12718 \noexpand\expandafter
12719 \noexpand\HyField@SetKeys
12720 \noexpand\expandafter{%
12721 \expandafter\noexpand\csname DefaultOptionsof%
12722 \ifFld@radio
12723 Radio%
12724 \else
12725 \ifFld@combo
12726 \ifFld@popdown
12727 PopdownBox%
12728 \else
12729 ComboBox%
12730 \fi
12731 \else
12732 ListBox%
12733 \fi
12734 \fi
12735 \endcsname
12736 }%
12737 }\x
12738 \HyField@SetKeys{#1}%
12739 \ifFld@hidden\def\Fld@width{1sp}\fi
12740 \ifx\Fld@value\relax
12741 \let\Fld@value\Fld@default
12742 \fi
12743 \LayoutChoiceField{#2}{%
12744 \ifFld@radio
12745 \HyField@FlagsRadioButton
12746 \@@Radio{#3}%
12747 \else
12748 \begingroup
12749 \HyField@FlagsChoice
12750 \ifdim\Fld@width<\@tempdima
12751 \ifdim\@tempdima<1cm\@tempdima1cm\fi
12752 \edef\Fld@width{\the\@tempdima}%
12753 \fi
12754 \ifFld@combo
12755 \else
12756 \@tempdima=\the\Fld@menulength\Fld@charsize
12757 \advance\@tempdima by \Fld@borderwidth bp %
12758 \advance\@tempdima by \Fld@borderwidth bp %
12759 \edef\Fld@height{\the\@tempdima}%
12760 \fi
12761 \@@ListBox{#3}%

```

```

12762     \endgroup
12763     \fi
12764 }%
12765 \endgroup
12766 }
12767 \def\@@Radio#1{%
12768   \Fld@listcount=0 %
12769   \EdefEscapeName\Fld@default{\Fld@default}%
12770   \@for\@curropt:=#1\do{%
12771     \expandafter\Fld@checkequals\@curropt==\%
12772     \EdefEscapeName\@currValue{\@currValue}%
12773     \Hy@StepCount\Fld@listcount
12774     \@currDisplay\space
12775     \Hy@escapeform\PDFForm@Radio
12776     \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
12777       pdfmark=/ANN,%
12778       Raw={%
12779         \PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>%
12780       }%
12781     } % deliberate space between radio buttons
12782   }%
12783 }
12784 \newcount\Fld@listcount
12785 \def\@@Listbox#1{%
12786   \HyField@PDFChoices{#1}%
12787   \Hy@escapeform\PDFForm@List
12788   \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
12789     pdfmark=/ANN,Raw={\PDFForm@List}%
12790   }%
12791 }
12792 \def\@PushButton[#1]#2{% parameters, label
12793   \def\Fld@name{#2}%
12794   \begingroup
12795     \expandafter\HyField@SetKeys\expandafter{%
12796       \DefaultOptionsofPushButton,#1%
12797     }%
12798     \ifHy@pdfa
12799       \Hy@Error{%
12800         PDF/A: Push button with JavaScript is prohibited%
12801       }\@ehc
12802       \LayoutPushButtonField{%
12803         \leavevmode
12804         \MakeButtonField{#2}%
12805       }%
12806     \else
12807       \HyField@FlagsPushButton
12808       \iffld@hidden\def\Fld@width{1sp}\fi
12809       \LayoutPushButtonField{%
12810         \leavevmode
12811         \Hy@escapeform\PDFForm@Push
12812         \pdfmark[\MakeButtonField{#2}]{%
12813           pdfmark=/ANN,Raw={\PDFForm@Push}%
12814         }%
12815       }%
12816     \fi
12817   \endgroup
12818 }

```

```

12819 \def\@Submit[#1]#2{%
12820   \def\Fld@width{\DefaultWidthofSubmit}%
12821   \def\Fld@height{\DefaultHeightofSubmit}%
12822   \begingroup
12823     \expandafter\HyField@SetKeys\expandafter{%
12824       \DefaultOptionsofSubmit,#1%
12825     }%
12826     \HyField@FlagsPushButton
12827     \HyField@FlagsSubmit
12828     \ifFld@hidden\def\Fld@width{1sp}\fi
12829     \Hy@escapeform\PDFForm@Submit
12830     \pdfmark[\MakeButtonField{#2}]{%
12831       pdfmark=/ANN,%
12832       Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
12833     }%
12834   \endgroup
12835 }
12836 \def\@Reset[#1]#2{%
12837   \def\Fld@width{\DefaultWidthofReset}%
12838   \def\Fld@height{\DefaultHeightofReset}%
12839   \begingroup
12840     \expandafter\HyField@SetKeys\expandafter{%
12841       \DefaultOptionsofReset,#1%
12842     }%
12843     \leavevmode
12844     \ifHy@pdfa
12845       \Hy@Error{%
12846         PDF/A: Reset action is prohibited%
12847       }\@ehc
12848       \MakeButtonField{#2}%
12849     \else
12850       \HyField@FlagsPushButton
12851       \ifFld@hidden\def\Fld@width{1sp}\fi
12852       \Hy@escapeform\PDFForm@Reset
12853       \pdfmark[\MakeButtonField{#2}]{%
12854         pdfmark=/ANN,Raw={\PDFForm@Reset}%
12855       }%
12856     \fi
12857   \endgroup
12858 }%
12859 \def\@CheckBox[#1]#2{% parameters, label
12860   \def\Fld@name{#2}%
12861   \def\Fld@default{0}%
12862   \begingroup
12863     \def\Fld@width{\DefaultWidthofCheckBox}%
12864     \def\Fld@height{\DefaultHeightofCheckBox}%
12865     \expandafter\HyField@SetKeys\expandafter{%
12866       \DefaultOptionsofCheckBox,#1%
12867     }%
12868     \HyField@FlagsCheckBox
12869     \ifFld@hidden\def\Fld@width{1sp}\fi
12870     \LayoutCheckField{#2}{%
12871       \leavevmode
12872       \Hy@escapeform\PDFForm@Check
12873       \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
12874         pdfmark=/ANN,Raw={\PDFForm@Check}%
12875       }%

```

```

12876 }%
12877 \endgroup
12878 }
12879 </pdfmark>

```

## 47.2 HyperTeX

```

12880 (*hypertex)
12881 \def\@Form[#1]{%
12882   \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12883 }
12884 \let\@endForm\ltx@empty
12885 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12886   \Hy@Message{Sorry, HyperTeX does not support FORM gauges}%
12887 }
12888 \def\@TextField[#1]#2{% parameters, label
12889   \Hy@Message{Sorry, HyperTeX does not support FORM text fields}%
12890 }
12891 \def\@CheckBox[#1]#2{% parameters, label
12892   \Hy@Message{Sorry, HyperTeX does not support FORM checkboxes}%
12893 }
12894 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12895   \Hy@Message{Sorry, HyperTeX does not support FORM choice menus}%
12896 }
12897 \def\@PushButton[#1]#2{% parameters, label
12898   \Hy@Message{Sorry, HyperTeX does not support FORM pushbuttons}%
12899 }
12900 \def\@Reset[#1]#2{%
12901   \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12902 }
12903 \def\@Submit[#1]#2{%
12904   \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12905 }
12906 </hypertex>

```

## 47.3 TeX4ht

```

12907 (*tex4ht)
12908 \def\@Form[#1]{%
12909   \kvsetkeys{Form}{#1}%
12910   \HCode{<form action="\Form@action" method="\Form@method">}%
12911 }
12912 \def\@endForm{\HCode{</form>}}
12913 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12914   \Hy@Message{Sorry, TeX4ht does not support gauges}%
12915 }
12916 \def\@TextField[#1]#2{% parameters, label
12917   \let\Hy@reserved@a\@empty
12918   \def\Fld@name{#2}%
12919   \let\Fld@default\ltx@empty
12920   \bgroup
12921     \Field@toks={ }%
12922     \kvsetkeys{Field}{#1}%
12923     \HCode{<label for="\Fld@name">#2</label>}%
12924     \ifFld@password
12925       \@@PasswordField
12926     \else
12927       \@@TextField
12928     \fi

```

```

12929 \egroup
12930 }
12931 \def\@@PasswordField{%
12932   \HCode{%
12933     <input type="password" %
12934     id="\Fld@name" %
12935     name="\Fld@name" %
12936     \ifFld@hidden type="hidden" \fi
12937     value="\Fld@default" %
12938     \the\Field@toks
12939   >%
12940   }%
12941 }
12942 \def\@@TextField{%
12943   \ifFld@multiline
12944     \HCode{<textarea %
12945       \ifFld@readonly readonly \fi
12946       id="\Fld@name" %
12947       name="\Fld@name" %
12948       \ifFld@hidden type="hidden" \fi
12949       \the\Field@toks>%
12950     }%
12951     \Fld@default
12952     \HCode{</textarea>}%
12953   \else
12954     \HCode{<input type="text" %
12955       \ifFld@readonly readonly \fi
12956       id="\Fld@name" %
12957       name="\Fld@name" %
12958       \ifFld@hidden type="hidden" \fi
12959       value="\Fld@default" %
12960       \the\Field@toks>%
12961     }%
12962   \fi
12963 }
12964 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12965   \def\Fld@name{#2}%
12966   \let\Fld@default\ltx@empty
12967   \let\Hy@reserved@a\relax
12968   \begingroup
12969     \expandafter\Fld@findlength#3\\%
12970     \Field@toks={ }%
12971     \kvsetkeys{Field}{#1}%
12972     #2%
12973     \ifFld@radio
12974       \expandafter\@@Radio#3\\%
12975     \else
12976       \expandafter\@@Menu#3\\%
12977     \fi
12978   \endgroup
12979 }
12980 \def\Fld@findlength#1\\{%
12981   \Fld@menulength=0 %
12982   \@for\@currupt:=#1\do{\Hy@StepCount\Fld@menulength}%
12983 }
12984 \def\@@Menu#1\\{%
12985   \HCode{<select size="\the\Fld@menulength" %

```

```

12986     name="\Fld@name" %
12987     \the\Field@toks>%
12988 }%
12989 \@for\@curropt:=#1\do{%
12990     \expandafter\Fld@checkequals\@curropt==\\%
12991     \HCode{<option %
12992         \ifx\@curropt\Fld@default selected \fi
12993         value="\@currValue">\@currDisplay</option>%
12994     }%
12995 }%
12996 \HCode{</select>}%
12997 }
12998 \def\@@Radio#1\\{%
12999     \@for\@curropt:=#1\do{%
13000         \expandafter\Fld@checkequals\@curropt==\\%
13001         \HCode{<input type="radio" %
13002             \ifx\@curropt\Fld@default checked \fi
13003             name="\Fld@name" %
13004             value="\@currValue" %
13005             \the\Field@toks>%
13006         }%
13007         \@currDisplay
13008     }%
13009 }
13010 \def\@PushButton[#1]#2{% parameters, label
13011     \def\Fld@name{#2}%
13012     \bgroup
13013     \Field@toks={ }%
13014     \kvsetkeys{Field}{#1}%
13015     \HCode{<input type="button" %
13016         name="\Fld@name" %
13017         value="#2" %
13018         \the\Field@toks>%
13019     }%
13020     \HCode{</button>}%
13021     \egroup
13022 }
13023 \def\@Submit[#1]#2{%
13024     \HCode{<button type="submit">#2</button>}%
13025 }
13026 \def\@Reset[#1]#2{%
13027     \HCode{<button type="reset">#2</button>}%
13028 }
13029 \def\@CheckBox[#1]#2{% parameters, label
13030     \let\Hy@reserved@a\@empty
13031     \def\Fld@name{#2}%
13032     \def\Fld@default{0}%
13033     \bgroup
13034     \Field@toks={ }%
13035     \kvsetkeys{Field}{#1}%
13036     \HCode{<input type="checkbox" %
13037         \ifFld@checked checked \fi
13038         \ifFld@disabled disabled \fi
13039         \ifFld@readonly readonly \fi
13040         name="\Fld@name" %
13041         \ifFld@hidden type="hidden" \fi
13042         value="\Fld@default" %

```



```

13043 \the\Field@toks>%
13044 #2%
13045 }%
13046 \egroup
13047 }
13048 \tex4ht

```

## 47.4 pdfTeX

```

13049 (*pdfTeX)
13050 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
13051 \Hy@Message{Sorry, pdfTeX does not support FORM gauges}%
13052 }
13053 \def\MakeFieldObject#1#2{\sbox0{#1}%
13054 \immediate\pdfxform0 %
13055 \expandafter\edef\csname #2Object\endcsname{%
13056 \the\pdfastxform\space 0 R%
13057 }%
13058 % \hbox to Opt{\hskip-\maxdimen{\pdfrefxform \the\pdfastxform}}}%
13059 }%
13060 \let\HyField@afields\ltx@empty
13061 \begingroup\expandafter\expandafter\expandafter\endgroup
13062 \expandafter\ifx\csname pdfastlink\endcsname\relax
13063 \let\HyField@AddToFields\relax
13064 \PackageInfo{hyperref}{%
13065 You need pdfTeX 1.40.0 for setting the /Fields entry.%
13066 \MessageBreak
13067 Adobe Reader/Acrobat accepts an empty /Field array,%
13068 \MessageBreak
13069 but other PDF viewers might complain%
13070 }%
13071 \else
13072 \let\HyField@AuxAddToFields\ltx@gobble
13073 \def\HyField@AfterAuxOpen{\Hy@AtBeginDocument}%
13074 \Hy@AtBeginDocument{%
13075 \if@filesw
13076 \immediate\write\@mainaux{%
13077 \string\providecommand\string\HyField@AuxAddToFields[1]{}%
13078 }%
13079 \fi
13080 \let\HyField@AfterAuxOpen\@firstofone
13081 \def\HyField@AuxAddToFields#1{%
13082 \xdef\HyField@afields{%
13083 \ifx\HyField@afields\@empty
13084 \else
13085 \HyField@afields
13086 \space
13087 \fi
13088 #1 0 R%
13089 }%
13090 }%
13091 }%
13092 \def\HyField@AddToFields{%
13093 \expandafter\HyField@@AddToFields\expandafter{%
13094 \the\pdfastlink
13095 }%
13096 }%
13097 \def\HyField@@AddToFields#1{%

```

```

13098 \HyField@AfterAuxOpen{%
13099 \if@filesw
13100 \write\@mainaux{%
13101 \string\HyField@AuxAddToFields{#1}%
13102 }%
13103 \fi
13104 }%
13105 }%
13106 \fi
13107 \def\@Form[#1]{%
13108 \ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13109 \kvsetkeys{Form}{#1}%
13110 \pdf@ifdraftmode{}{%
13111 \Hy@FormObjects
13112 \ifnum\pdfTeXversion>13 %
13113 \pdfrefobj\OBJ@pdfdocencoding
13114 \pdfrefobj\OBJ@ZaDb
13115 \pdfrefobj\OBJ@Helv
13116 \fi
13117 \AtVeryEndDocument{%
13118 \immediate\pdfobj{%
13119 <<%
13120 /Fields[\HyField@afields]%
13121 /DR<<%
13122 /Font<<%
13123 /ZaDb \OBJ@ZaDb\space 0 R%
13124 /Helv \OBJ@Helv\space 0 R%
13125 >>%
13126 >>%
13127 /DA(/Helv 10 Tf 0 g)%
13128 \ifHy@pdfa
13129 \else
13130 \ifHyField@NeedAppearances
13131 /NeedAppearances true%
13132 \fi
13133 \fi
13134 >>%
13135 }%
13136 \edef\OBJ@acroform{\the\pdflastobj}%
13137 \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
13138 }%
13139 }%
13140 \MakeFieldObject{%

```

Same as \ding{123} of package pifont.

```

13141 \begingroup
13142 \fontfamily{pzd}%
13143 \fontencoding{U}%
13144 \fontseries{m}%
13145 \fontshape{n}%
13146 \selectfont
13147 \char123 %
13148 \endgroup
13149 }{Ding}%
13150 \MakeFieldObject{%
13151 \fbox{\textcolor{yellow}{\textsf{Submit}}}%
13152 }{Submit}%
13153 \MakeFieldObject{%

```

```

13154 \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
13155 }{\SubmitP}%
13156 }
13157 \let\@endForm\ltx@empty
13158 \def\@TextField[#1]#2{% parameters, label
13159 \def\Fld@name{#2}%
13160 \let\Fld@default\ltx@empty
13161 \let\Fld@value\@empty
13162 \def\Fld@width{\DefaultWidthofText}%
13163 \def\Fld@height{%
13164 \ifFld@multiline
13165 \DefaultHeightofTextMultiline
13166 \else
13167 \DefaultHeightofText
13168 \fi
13169 }%
13170 \begingroup
13171 \expandafter\HyField@SetKeys\expandafter{%
13172 \DefaultOptionsofText,#1%
13173 }%
13174 \PDFForm@Name
13175 \HyField@FlagsText
13176 \ifFld@hidden\def\Fld@width{1sp}\fi
13177 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13178 \LayoutTextField{#2}{%
13179 \leavevmode
13180 \Hy@escapeform\PDFForm@Text
13181 \pdfstartlink user {\PDFForm@Text}\relax
13182 \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
13183 \HyField@AddToFields
13184 }%
13185 \endgroup
13186 }
13187 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13188 \def\Fld@name{#2}%
13189 \let\Fld@default\relax
13190 \let\Fld@value\relax
13191 \def\Fld@width{\DefaultWidthofChoiceMenu}%
13192 \def\Fld@height{\DefaultHeightofChoiceMenu}%
13193 \begingroup
13194 \Fld@menulength=0 %
13195 \@tempdima\z@
13196 \@for\@curropt:=#3\do{%
13197 \expandafter\Fld@checkequals\@curropt==\%
13198 \Hy@StepCount\Fld@menulength
13199 \settowidth{\@tempdimb}{\@currDisplay}%
13200 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13201 }%
13202 \advance\@tempdima by 15\p@
13203 \begingroup
13204 \HyField@SetKeys{#1}%
13205 \edef\x{\endgroup
13206 \noexpand\expandafter
13207 \noexpand\HyField@SetKeys
13208 \noexpand\expandafter{%
13209 \expandafter\noexpand\curname DefaultOptionsof%
13210 \ifFld@radio

```

```

13211         Radio%
13212     \else
13213         \ifFld@combo
13214             \ifFld@popdown
13215                 PopdownBox%
13216             \else
13217                 ComboBox%
13218             \fi
13219         \else
13220             ListBox%
13221         \fi
13222     \fi
13223 \endcsname
13224 }%
13225 }\x
13226 \HyField@SetKeys{#1}%
13227 \PDFForm@Name
13228 \ifFld@hidden\def\Fld@width{1sp}\fi
13229 \ifx\Fld@value\relax
13230     \let\Fld@value\Fld@default
13231 \fi
13232 \LayoutChoiceField{#2}{%
13233     \ifFld@radio
13234         \HyField@FlagsRadioButton
13235         \@@Radio{#3}%
13236     \else
13237         \begingroup
13238         \HyField@FlagsChoice
13239         \ifdim\Fld@width<\@tempdima
13240             \ifdim\@tempdima<1cm\@tempdima1cm\fi
13241             \edef\Fld@width{\the\@tempdima}%
13242         \fi
13243         \ifFld@combo
13244         \else
13245             \@tempdima=\the\Fld@menulength\Fld@charsize
13246             \advance\@tempdima by \Fld@borderwidth bp %
13247             \advance\@tempdima by \Fld@borderwidth bp %
13248             \edef\Fld@height{\the\@tempdima}%
13249         \fi
13250         \@@ListBox{#3}%
13251     \endgroup
13252 \fi
13253 }%
13254 \endgroup
13255 }
13256 \def\@@Radio#1{%
13257     \Fld@listcount=0 %
13258     \EdefEscapeName\Fld@default{\Fld@default}%
13259     \@for\@curropt:=#1\do{%
13260         \expandafter\Fld@checkequals\@curropt==\%
13261         \EdefEscapeName\@currValue{\@currValue}%
13262         \Hy@StepCount\Fld@listcount
13263         \@currDisplay\space
13264         \leavevmode
13265         \Hy@escapeform\PDFForm@Radio
13266         \pdfstartlink user {%
13267             \PDFForm@Radio

```

```

13268 /AP<<%
13269 /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.

13270 /\@currValue\space \DingObject
13271 >>%
13272 >>%
13273 }%
13274 \relax
13275 \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
13276 \ifnum\Fld@listcount=1 %
13277 \HyField@AddToFields
13278 \fi
13279 \space % deliberate space between radio buttons
13280 }%
13281 }
13282 \newcount\Fld@listcount
13283 \def\@@Listbox#1{%
13284 \HyField@PDFChoices{#1}%
13285 \leavevmode
13286 \Hy@escapeform\PDFForm@List
13287 \pdfstartlink user {\PDFForm@List}\relax
13288 \MakeChoiceField{\Fld@width}{\Fld@height}%
13289 \pdfendlink
13290 \HyField@AddToFields
13291 }
13292 \def\@PushButton[#1]#2{% parameters, label
13293 \def\Fld@name{#2}%
13294 \begingroup
13295 \expandafter\HyField@SetKeys\expandafter{%
13296 \DefaultOptionsofPushButton,#1%
13297 }%
13298 \PDFForm@Name
13299 \ifHy@pdfa
13300 \Hy@Error{%
13301 PDF/A: Push button with JavaScript is prohibited%
13302 }\@ehc
13303 \LayoutPushButtonField{%
13304 \leavevmode
13305 \MakeButtonField{#2}%
13306 }%
13307 \else
13308 \HyField@FlagsPushButton
13309 \ifFld@hidden\def\Fld@width{1sp}\fi
13310 \LayoutPushButtonField{%
13311 \leavevmode
13312 \Hy@escapeform\PDFForm@Push
13313 \pdfstartlink user {\PDFForm@Push}\relax
13314 \MakeButtonField{#2}%
13315 \pdfendlink
13316 \HyField@AddToFields
13317 }%
13318 \fi
13319 \endgroup
13320 }
13321 \def\@Submit[#1]#2{%

```

```

13322 \def\Fld@width{\DefaultWidthofSubmit}%
13323 \def\Fld@height{\DefaultHeightofSubmit}%
13324 \begingroup
13325   \expandafter\HyField@SetKeys\expandafter{%
13326     \DefaultOptionsofSubmit,#1%
13327   }%
13328   \HyField@FlagsPushButton
13329   \HyField@FlagsSubmit
13330   \ifFld@hidden\def\Fld@width{1sp}\fi
13331   \leavevmode
13332   \Hy@escapeform\PDFForm@Submit
13333   \pdfstartlink user {%
13334     \PDFForm@Submit
13335     /AP<</N \SubmitObject/D \SubmitPObject>>%
13336   }%
13337   \relax
13338   \MakeButtonField{#2}%
13339   \pdfendlink
13340   \HyField@AddToFields
13341 \endgroup
13342 }
13343 \def\@Reset[#1]#2{%
13344   \def\Fld@width{\DefaultWidthofReset}%
13345   \def\Fld@height{\DefaultHeightofReset}%
13346   \begingroup
13347     \expandafter\HyField@SetKeys\expandafter{%
13348       \DefaultOptionsofReset,#1%
13349     }%
13350     \leavevmode
13351     \ifHy@pdfa
13352       \Hy@Error{%
13353         PDF/A: Reset action is prohibited%
13354       }\@ehc
13355       \MakeButtonField{#2}%
13356     \else
13357       \HyField@FlagsPushButton
13358       \ifFld@hidden\def\Fld@width{1sp}\fi
13359       \Hy@escapeform\PDFForm@Reset
13360       \pdfstartlink user {\PDFForm@Reset}\relax
13361       \MakeButtonField{#2}%
13362       \pdfendlink
13363       \HyField@AddToFields
13364     \fi
13365   \endgroup
13366 }
13367 \def\@CheckBox[#1]#2{% parameters, label
13368   \def\Fld@name{#2}%
13369   \def\Fld@default{0}%
13370   \begingroup
13371     \def\Fld@width{\DefaultWidthofCheckBox}%
13372     \def\Fld@height{\DefaultHeightofCheckBox}%
13373     \expandafter\HyField@SetKeys\expandafter{%
13374       \DefaultOptionsofCheckBox,#1%
13375     }%
13376     \PDFForm@Name
13377     \HyField@FlagsCheckBox
13378     \ifFld@hidden\def\Fld@width{1sp}\fi

```

```

13379 \LayoutCheckField{#2}{}%
13380 \leavevmode
13381 \Hy@escapeform\PDFForm@Check
13382 \pdfstartlink user {\PDFForm@Check}\relax
13383 \MakeCheckField{\Fld@width}{\Fld@height}%
13384 \pdfendlink
13385 \HyField@AddToFields
13386 }%
13387 \endgroup
13388 }
13389 \def\Hy@FormObjects{%
13390 \pdfobj {%
13391 <<%
13392 /Type/Encoding%
13393 /Differences[%
13394 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
13395 /ring/tilde %
13396 39/quotesingle %
13397 96/grave %
13398 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13399 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
13400 /quotedblbase/quotedblleft/quotedblright/quoteleft%
13401 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
13402 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13403 164/currency %
13404 166/brokenbar %
13405 168/dieresis/copyright/ordfeminine %
13406 172/logicalnot/.notdef/registered/macron/degree/plusminus%
13407 /twosuperior/threesuperior/acute/mu %
13408 183/periodcentered/cedilla/onesuperior/ordmasculine %
13409 188/onequarter/onehalf/threequarters %
13410 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13411 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
13412 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
13413 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
13414 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
13415 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
13416 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
13417 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
13418 /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
13419 /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
13420 ]%
13421 >>%
13422 }%
13423 \xdef\OBJ@pdfdocencoding{\the\pdfastobj}%
13424 \pdfobj{%
13425 <<%
13426 /Type/Font%
13427 /Subtype/Type1%
13428 /Name/ZaDb%
13429 /BaseFont/ZapfDingbats%
13430 >>%
13431 }%
13432 \xdef\OBJ@ZaDb{\the\pdfastobj}%
13433 \pdfobj{%
13434 <<%
13435 /Type/Font%

```

```

13436 /Subtype/Type1%
13437 /Name/Helv%
13438 /BaseFont/Helvetica%
13439 /Encoding \OBJ@pdfdocencoding\space 0 R%
13440 >>%
13441 }%
13442 \xdef\OBJ@Helv{\the\pdfastobj}%
13443 \global\let\Hy@FormObjects\relax
13444 }
13445 \pdfTeX

```

## 47.5 dvipdfm, xetex

D. P. Story adapted the pdfTeX forms part for dvipdfm, of which version 0.12.7b or higher is required because of a bug.

```
13446 \*dvipdfm|xetex
```

\@Gauge

```

13447 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
13448 \Hy@Message{Sorry, dvipdfm/XeTeX does not support FORM gauges}%
13449 }

```

\@Form

```

13450 \def\@Form[#1]{%
13451 \ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13452 \kvsetkeys{Form}{#1}%
13453 \Hy@FormObjects
13454 \@pdfm@mark{obj @afields []}%
13455 \@pdfm@mark{obj @corder []}%
13456 \@pdfm@mark{%
13457 obj @aform <<%
13458 /Fields @afields%
13459 /DR<<%
13460 /Font<<%
13461 /ZaDb @OBJZaDb%
13462 /Helv @OBJHelv%
13463 >>%
13464 >>%
13465 /DA(/Helv 10 Tf 0 g)%
13466 /CO @corder%
13467 \ifHy@pdfa
13468 \else
13469 \ifHyField@NeedAppearances
13470 /NeedAppearances true%
13471 \fi
13472 \fi
13473 >>%
13474 }%
13475 \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
13476 }

```

\@endForm

```
13477 \let\@endForm\ltx@empty
```

\dvipdfm@setdim \dvipdfm@setdim sets dimensions for ann using \pdfm@box.

```

13478 \def\dvipdfm@setdim{%
13479 height \the\ht\pdfm@box\space

```



```

13480 width \the\wd\pdfm@box\space
13481 depth \the\dp\pdfm@box\space
13482 }

```

\HyField@AnnotCount

```

13483 \newcount\HyField@AnnotCount
13484 \HyField@AnnotCount=\z@

```

\HyField@AdvanceAnnotCount

```

13485 \def\HyField@AdvanceAnnotCount{%
13486 \global\advance\HyField@AnnotCount\@ne
13487 }

```

\HyField@TheAnnotCount

```

13488 \def\HyField@TheAnnotCount{%
13489 \the\HyField@AnnotCount
13490 }

```

\@TextField

```

13491 \def\@TextField[#1]#2{% parameters, label
13492 \def\Fld@name{#2}%
13493 \let\Fld@default\ltx@empty
13494 \let\Fld@value\@empty
13495 \def\Fld@width{\DefaultWidthofText}%
13496 \def\Fld@height{%
13497 \ifFld@multiline
13498 \DefaultHeightofTextMultiline
13499 \else
13500 \DefaultHeightofText
13501 \fi
13502 }%
13503 \begingroup
13504 \expandafter\HyField@SetKeys\expandafter{%
13505 \DefaultOptionsofText,#1%
13506 }%
13507 \PDFForm@Name
13508 \HyField@FlagsText
13509 \ifFld@hidden\def\Fld@width{1sp}\fi
13510 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13511 \setbox\pdfm@box=\hbox{%
13512 \MakeTextField{\Fld@width}{\Fld@height}%
13513 }%
13514 \HyField@AdvanceAnnotCount
13515 \LayoutTextField{#2}{%
13516 \leavevmode
13517 \Hy@escapeform\PDFForm@Text
13518 \@pdfm@mark{%
13519 ann @text\HyField@TheAnnotCount\space
13520 \dvi pdfm@setdim << \PDFForm@Text >>%
13521 }%
13522 }%
13523 \unhbox\pdfm@box
13524 \@pdfm@mark{put @afields @text\HyField@TheAnnotCount}%
13525 % record in @afields array
13526 \endgroup
13527 }

```

\@ChoiceMenu

```

13528 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13529 \def\Fld@name{#2}%
13530 \let\Fld@default\relax
13531 \let\Fld@value\relax
13532 \def\Fld@width{\DefaultWidthofChoiceMenu}%
13533 \def\Fld@height{\DefaultHeightofChoiceMenu}%
13534 \begingroup
13535 \Fld@menulength=0 %
13536 \@tempdima\z@
13537 \@for\@curropt:=#3\do{%
13538 \expandafter\Fld@checkequals\@curropt==\\%
13539 \Hy@StepCount\Fld@menulength
13540 \settowidth{\@tempdimb}{\@currDisplay}%
13541 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13542 }%
13543 \advance\@tempdima by 15\p@
13544 \begingroup
13545 \HyField@SetKeys{#1}%
13546 \edef\x{\endgroup
13547 \noexpand\expandafter
13548 \noexpand\HyField@SetKeys
13549 \noexpand\expandafter{%
13550 \expandafter\noexpand\csname DefaultOptionsof%
13551 \ifFld@radio
13552 Radio%
13553 \else
13554 \ifFld@combo
13555 \ifFld@popdown
13556 PopdownBox%
13557 \else
13558 ComboBox%
13559 \fi
13560 \else
13561 ListBox%
13562 \fi
13563 \fi
13564 \endcsname
13565 }%
13566 }\x
13567 \HyField@SetKeys{#1}%
13568 \PDFForm@Name
13569 \ifFld@hidden\def\Fld@width{1sp}\fi
13570 \ifx\Fld@value\relax
13571 \let\Fld@value\Fld@default
13572 \fi
13573 \LayoutChoiceField{#2}{%
13574 \ifFld@radio
13575 \HyField@FlagsRadioButton
13576 \@@Radio{#3}%
13577 \else
13578 \begingroup
13579 \HyField@FlagsChoice
13580 \ifdim\Fld@width<\@tempdima
13581 \ifdim\@tempdima<1cm\@tempdima1cm\fi
13582 \edef\Fld@width{\the\@tempdima}%
13583 \fi

```

```

13584      \ifFld@combo
13585      \else
13586        \@tempdima=\the\Fld@menulength\Fld@charsize
13587        \advance\@tempdima by \Fld@borderwidth bp %
13588        \advance\@tempdima by \Fld@borderwidth bp %
13589        \edef\Fld@height{\the\@tempdima}%
13590      \fi
13591      \@@ListBox{#3}%
13592    \endgroup
13593  \fi
13594  }%
13595  \endgroup
13596 }

```

\@@Radio

```

13597 \def\@@Radio#1{%
13598   \Fld@listcount=0 %
13599   \EdefEscapeName\Fld@default{\Fld@default}%
13600   \setbox\pdfm@box=\hbox{%
13601     \MakeRadioField{\Fld@width}{\Fld@height}%
13602   }%
13603   \@for\@curropt:=#1\do{%
13604     \expandafter\Fld@checkequals\@curropt==\%
13605     \EdefEscapeName\@currValue{\@currValue}%
13606     \Hy@StepCount\Fld@listcount
13607     \@currDisplay\space
13608     \leavevmode
13609     \Hy@escapeform\PDFForm@Radio
13610     \ifnum\Fld@listcount=1 %
13611       \HyField@AdvanceAnnotCount
13612     \fi
13613     \@pdfm@mark{%
13614       ann %
13615       \ifnum\Fld@listcount=1 %
13616         @radio\HyField@TheAnnotCount%
13617       \space
13618     \fi
13619     \dvipdfm@setdim
13620     <<%
13621     \PDFForm@Radio
13622     /AP<</N<</\@currValue /null>>>>%
13623     >>%
13624   }%
13625   \unhcopy\pdfm@box\space% deliberate space between radio buttons
13626   \ifnum\Fld@listcount=1 %
13627     \@pdfm@mark{%
13628       put @afields @radio\HyField@TheAnnotCount
13629     }%
13630   \fi
13631 }%
13632 }

```

\Fld@listcount

```

13633 \newcount\Fld@listcount

```

\@@ListBox

```

13634 \def\@@ListBox#1{%

```

```

13635 \HyField@PDFChoices{#1}%
13636 \setbox\pdfm@box=\hbox{%
13637   \MakeChoiceField{\Fld@width}{\Fld@height}%
13638 }%
13639 \leavevmode
13640 \Hy@escapeform\PDFForm@List
13641 \HyField@AdvanceAnnotCount
13642 \@pdfm@mark{%
13643   ann @list\HyField@TheAnnotCount\space
13644   \dvipdfm@setdim
13645   <<\PDFForm@List>>%
13646 }%
13647 \unhbox\pdfm@box
13648 \@pdfm@mark{put @afields @list\HyField@TheAnnotCount}%
13649 }

```

\@PushButton

```

13650 \def\@PushButton[#1]#2{% parameters, label
13651   \def\Fld@name{#2}%
13652   \begingroup
13653     \expandafter\HyField@SetKeys\expandafter{%
13654       \DefaultOptionsofPushButton,#1%
13655     }%
13656     \PDFForm@Name
13657     \ifHy@pdfa
13658       \Hy@Error{%
13659         PDF/A: Push button with JavaScript is prohibited%
13660       }\@ehc
13661       \LayoutPushButtonField{%
13662         \leavevmode
13663         \MakeButtonField{#2}%
13664       }%
13665     \else
13666       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13667       \HyField@FlagsPushButton
13668       \ifFld@hidden\def\Fld@width{1sp}\fi
13669       \HyField@AdvanceAnnotCount
13670       \LayoutPushButtonField{%
13671         \leavevmode
13672         \Hy@escapeform\PDFForm@Push
13673         \@pdfm@mark{%
13674           ann @push\HyField@TheAnnotCount\space
13675           \dvipdfm@setdim
13676           <<\PDFForm@Push>>%
13677         }%
13678       }%
13679       \unhbox\pdfm@box
13680       \@pdfm@mark{put @afields @push\HyField@TheAnnotCount}%
13681     \fi
13682   \endgroup
13683 }

```

\@Submit

```

13684 \def\@Submit[#1]#2{%
13685   \def\Fld@width{\DefaultWidthofSubmit}%
13686   \def\Fld@height{\DefaultHeightofSubmit}%
13687   \begingroup

```

```

13688 \expandafter\HyField@SetKeys\expandafter{%
13689 \DefaultOptionsofSubmit,#1%
13690 }%
13691 \HyField@FlagsPushButton
13692 \HyField@FlagsSubmit
13693 \ifFld@hidden\def\Fld@width{1sp}\fi
13694 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13695 \leavevmode
13696 \Hy@escapeform\PDFForm@Submit
13697 \HyField@AdvanceAnnotCount
13698 \@pdfm@mark{%
13699 ann @submit\HyField@TheAnnotCount\space
13700 \dvi pdfm@setdim
13701 <<\PDFForm@Submit>>%
13702 }%
13703 \unhbox\pdfm@box%
13704 \@pdfm@mark{put @afields @submit\HyField@TheAnnotCount}%
13705 \endgroup
13706 }

```

\@Reset

```

13707 \def\@Reset[#1]#2{%
13708 \def\Fld@width{\DefaultWidthofReset}%
13709 \def\Fld@height{\DefaultHeightofReset}%
13710 \begingroup
13711 \expandafter\HyField@SetKeys\expandafter{%
13712 \DefaultOptionsofReset,#1%
13713 }%
13714 \leavevmode
13715 \ifHy@pdfa
13716 \Hy@Error{%
13717 PDF/A: Reset action is prohibited%
13718 }\@ehc
13719 \MakeButtonField{#2}%
13720 \else
13721 \HyField@FlagsPushButton
13722 \ifFld@hidden\def\Fld@width{1sp}\fi
13723 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13724 \Hy@escapeform\PDFForm@Reset
13725 \HyField@AdvanceAnnotCount
13726 \@pdfm@mark{%
13727 ann @reset\HyField@TheAnnotCount\space
13728 \dvi pdfm@setdim
13729 <<\PDFForm@Reset>>%
13730 }%
13731 \unhbox\pdfm@box
13732 \@pdfm@mark{put @afields @reset\HyField@TheAnnotCount}%
13733 \fi
13734 \endgroup
13735 }

```

\@CheckBox

```

13736 \def\@CheckBox[#1]#2{% parameters, label
13737 \def\Fld@name{#2}%
13738 \def\Fld@default{0}%
13739 \begingroup
13740 \def\Fld@width{\DefaultWidthofCheckBox}%

```

```

13741 \def\Fld@height{\DefaultHeightofCheckBox}%
13742 \expandafter\HyField@SetKeys\expandafter{%
13743 \DefaultOptionsofCheckBox,#1%
13744 }%
13745 \PDFForm@Name
13746 \HyField@FlagsCheckBox
13747 \ifFld@hidden\def\Fld@width{1sp}\fi
13748 \setbox\pdfm@box=\hbox{%
13749 \MakeCheckField{\Fld@width}{\Fld@height}%
13750 }%
13751 \HyField@AdvanceAnnotCount
13752 \LayoutCheckField{#2}{%
13753 \leavevmode
13754 \Hy@escapeform\PDFForm@Check
13755 \@pdfm@mark{%
13756 ann @check\HyField@TheAnnotCount\space
13757 \dvi pdfm@setdim
13758 <<\PDFForm@Check>>%
13759 }%
13760 \unhbox\pdfm@box
13761 \@pdfm@mark{put @afields @check\HyField@TheAnnotCount}%
13762 }%
13763 \endgroup
13764 }

13765 \def\Hy@FormObjects{%
13766 \@pdfm@mark{obj @OBJpdfdocencoding%
13767 <<%
13768 /Type/Encoding%
13769 /Differences[%
13770 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
13771 39/quotesingle %
13772 96/grave %
13773 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13774 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
13775 /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
13776 /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
13777 /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13778 164/currency %
13779 166/brokenbar %
13780 168/dieresis/copyright/ordfeminine %
13781 172/logicalnot/.notdef/registered/macron/degree/plusminus%
13782 /twosuperior/threesuperior/acute/mu %
13783 183/periodcentered/cedilla/onesuperior/ordmasculine %
13784 188/onequarter/onehalf/threequarters %
13785 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13786 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
13787 /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
13788 /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
13789 /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
13790 /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
13791 /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
13792 /eth/ntilde/ograve/oacute/ocircumflex/otilde/odieresis%
13793 /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
13794 /thorn/ydieresis%
13795 ]%
13796 >>%
13797 }%

```

```

13798 \@pdfm@mark{obj @OBJZaDb%
13799 <<%
13800 /Type/Font%
13801 /Subtype/Type1%
13802 /Name/ZaDb%
13803 /BaseFont/ZapfDingbats%
13804 >>%
13805 }%
13806 \@pdfm@mark{obj @OBJHelv%
13807 <<%
13808 /Type/Font%
13809 /Subtype/Type1%
13810 /Name/Helv%
13811 /BaseFont/Helvetica%
13812 /Encoding @OBJpdfdocencoding%
13813 >>%
13814 }%
13815 \global\let\Hy@FormObjects\relax
13816 }
13817 </dvipdfm|xetex>

```

## 47.6 Common forms part

```

13818 <*pdfform>

\Hy@escapestring
13819 \begingroup\expandafter\expandafter\expandafter\endgroup
13820 \expandafter\ifx\csname pdfescapestring\endcsname\relax
13821 \let\Hy@escapestring\@firstofone
13822 \def\Hy@escapeform#1{%
13823 \ifHy@pdfescapeform
13824 \def\Hy@escapestring##1{%
13825 \noexpand\Hy@escapestring{\noexpand##1}%
13826 }%
13827 \edef\Hy@temp{#1}%
13828 \expandafter\Hy@@@escapeform\Hy@temp\Hy@escapestring{}\@nil
13829 \def\Hy@escapestring##1{%
13830 \@ifundefined{Hy@esc@\string##1}{%
13831 ##1%
13832 \ThisShouldNotHappen
13833 }{%
13834 \csname Hy@esc@\string##1\endcsname
13835 }%
13836 }%
13837 \else
13838 \let\Hy@escapestring\@firstofone
13839 \fi
13840 }%
13841 \def\Hy@@@escapeform#1\Hy@escapestring#2#3\@nil{%
13842 \ifx\#3\%
13843 \else
13844 \expandafter
13845 \Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
13846 \ltx@ReturnAfterFi{%
13847 \Hy@@@escapeform#3\@nil
13848 }%
13849 \fi
13850 }%

```

```

13851 \else
13852 \def\Hy@escapeform#1{%
13853 \ifHy@pdfescapeform
13854 \let\Hy@escapestring\pdfescapestring
13855 \else
13856 \let\Hy@escapestring\@firstofone
13857 \fi
13858 }%
13859 \Hy@escapeform{}%
13860 \fi

```

#### \PDFForm@Name

```

13861 \def\PDFForm@Name{%
13862 \PDFForm@@Name\Fld@name
13863 \ifx\Fld@altname\relax
13864 \else
13865 \PDFForm@@Name\Fld@altname
13866 \fi
13867 \ifx\Fld@mappingname\relax
13868 \else
13869 \PDFForm@@Name\Fld@mappingname
13870 \fi
13871 }

```

#### \PDFForm@@Name

```

13872 \def\PDFForm@@Name#1{%
13873 \begingroup
13874 \ifnum\Hy@pdfversion<5 % implementation note 117, PDF spec 1.7
13875 \ifHy@unicode
13876 \Hy@unicodedefalse
13877 \fi
13878 \fi
13879 \HyPsd@XeTeXBigCharstrue
13880 \pdfstringdef\Hy@gtemp#1%
13881 \endgroup
13882 \let#1\Hy@gtemp
13883 }

```

#### \Fld@additionalactions

```

13884 \def\Fld@@additionalactions{%
K input (keystroke) format
13885 \ifx\Fld@keystroke@code\@empty
13886 \else
13887 /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
13888 \fi
F display format
13889 \ifx\Fld@format@code\@empty
13890 \else
13891 /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
13892 \fi
V validation
13893 \ifx\Fld@validate@code\@empty
13894 \else
13895 /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
13896 \fi

```



C calculation

```
13897 \ifx\Fld@calculate@code\@empty
13898 \else
13899 /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
13900 \fi
```

Fo receiving the input focus

```
13901 \ifx\Fld@onfocus@code\@empty
13902 \else
13903 /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
13904 \fi
```

Bl loosing the input focus (blurred)

```
13905 \ifx\Fld@onblur@code\@empty
13906 \else
13907 /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
13908 \fi
```

D pressing the mouse button (down)

```
13909 \ifx\Fld@onmousedown@code\@empty
13910 \else
13911 /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
13912 \fi
```

U releasing the mouse button (up)

```
13913 \ifx\Fld@onmouseup@code\@empty
13914 \else
13915 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
13916 \fi
```

E cursor enters the annotation's active area.

```
13917 \ifx\Fld@onenter@code\@empty
13918 \else
13919 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
13920 \fi
```

X cursor exits the annotation's active area.

```
13921 \ifx\Fld@onexit@code\@empty
13922 \else
13923 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
13924 \fi
13925 }
```

```
13926 \def\Fld@additionalactions{%
13927 \if-\Fld@@additionalactions-%
13928 \else
13929 \ifHy@pdfa
13930 \else
13931 /AA<<\Fld@@additionalactions>>%
13932 \fi
13933 \fi
13934 }
```

\Fld@annotnames

```
13935 \def\Fld@annotnames{%
13936 /T(\Fld@name)%
13937 \ifx\Fld@altname\relax
13938 \else
13939 /TU(\Fld@altname)%
13940 \fi
```

```

13941 \ifx\Fld@mappingname\relax
13942 \else
13943 /TM(\Fld@mappingname)%
13944 \fi
13945 }

```

#### \PDFForm@Check

```

13946 \def\PDFForm@Check{%
13947 /Subtype/Widget%
13948 \Fld@annotflags
13949 \Fld@annotnames
13950 /FT/Btn%
13951 \Fld@flags
13952 /Q \Fld@align
13953 /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
13954 /MK<<%
13955 \ifnum\Fld@rotation=\z@
13956 \else
13957 /R \Fld@rotation
13958 \fi
13959 \ifx\Fld@bordercolor\relax
13960 \else
13961 /BC[\Fld@bordercolor]%
13962 \fi
13963 \ifx\Fld@bcolor\relax
13964 \else
13965 /BG[\Fld@bcolor]%
13966 \fi
13967 /CA(\Hy@escapestring{\Fld@cbsymbol})%
13968 >>%
13969 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13970 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13971 /H/P%
13972 \ifFld@checked /V/Yes\else /V/Off\fi
13973 \Fld@additionalactions
13974 }

```

#### \PDFForm@Push

```

13975 \ifHy@pdfa
13976 \else
13977 \def\PDFForm@Push{%
13978 /Subtype/Widget%
13979 \Fld@annotflags
13980 \Fld@annotnames
13981 /FT/Btn%
13982 \Fld@flags
13983 /H/P%
13984 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13985 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13986 \ifx\Fld@bordercolor\relax\else 1\fi
13987 \space
13988 \else
13989 /MK<<%
13990 \ifnum\Fld@rotation=\z@
13991 \else
13992 /R \Fld@rotation
13993 \fi

```

```

13994     \ifx\Fld@bordercolor\relax
13995     \else
13996     /BC[\Fld@bordercolor]%
13997     \fi
13998     >>%
13999     \fi
14000     /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick@code})>>%
14001     \Fld@additionalactions
14002   }%
14003 \fi

```

#### \PDFForm@List

```

14004 \def\PDFForm@List{%
14005   /Subtype/Widget%
14006   \Fld@annotflags
14007   \Fld@annotnames
14008   /FT/Ch%
14009   \Fld@flags
14010   /Q \Fld@align
14011   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14012   \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14013     \ifx\Fld@bordercolor\relax\else 1\fi
14014     \ifx\Fld@bcolor\relax \else 1\fi
14015     \space
14016   \else
14017     /MK<<%
14018     \ifnum\Fld@rotation=\z@
14019     \else
14020     /R \Fld@rotation
14021     \fi
14022     \ifx\Fld@bordercolor\relax
14023     \else
14024     /BC[\Fld@bordercolor]%
14025     \fi
14026     \ifx\Fld@bcolor\relax
14027     \else
14028     /BG[\Fld@bcolor]%
14029     \fi
14030     >>%
14031   \fi
14032   /DA(/Helv \strip@pt\Fld@charsize\space Tf%
14033     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14034   \Fld@choices
14035   \Fld@additionalactions
14036 }

```

#### \PDFForm@Radio

```

14037 \def\PDFForm@Radio{%
14038   /Subtype/Widget%
14039   \Fld@annotflags
14040   \Fld@annotnames
14041   /FT/Btn%
14042   \Fld@flags
14043   /H/P%
14044   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14045   /MK<<%
14046   \ifnum\Fld@rotation=\z@

```

```

14047 \else
14048 /R \Fld@rotation
14049 \fi
14050 \ifx\Fld@bordercolor\relax
14051 \else
14052 /BC[\Fld@bordercolor]%
14053 \fi
14054 \ifx\Fld@bcolor\relax
14055 \else
14056 /BG[\Fld@bcolor]%
14057 \fi
14058 /CA(\Fld@radiosymbol)%
14059 >>%
14060 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
14061 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14062 \ifx\@currValue\Fld@default
14063 /V/\Fld@default
14064 /DV/\Fld@default
14065 \else
14066 /V/Off%
14067 /DV/Off%
14068 \fi
14069 \Fld@additionalactions
14070 }

```

\PDFForm@Text

```

14071 \def\PDFForm@Text{%
14072 /Subtype/Widget%
14073 \Fld@annotflags
14074 \Fld@annotnames
14075 /FT/Tx%
14076 \Fld@flags
14077 /Q \Fld@align
14078 /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
14079 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14080 \ifx\Fld@bordercolor\relax\else 1\fi
14081 \ifx\Fld@bcolor\relax \else 1\fi
14082 \space
14083 \else
14084 /MK<<%
14085 \ifnum\Fld@rotation=\z@
14086 \else
14087 /R \Fld@rotation
14088 \fi
14089 \ifx\Fld@bordercolor\relax
14090 \else
14091 /BC[\Fld@bordercolor]%
14092 \fi
14093 \ifx\Fld@bcolor\relax
14094 \else
14095 /BG[\Fld@bcolor]%
14096 \fi
14097 >>%
14098 \fi
14099 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
14100 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14101 /DV(\Hy@escapestring{\Fld@default})%
14102 /V(\Hy@escapestring{\Fld@value})%

```

```

14103 \Fld@additionalactions
14104 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
14105 }

```

\PDFForm@Submit

```

14106 \def\PDFForm@Submit{%
14107 /Subtype/Widget%
14108 \Fld@annotflags
14109 \Fld@annotnames
14110 /FT/Btn%
14111 \Fld@flags
14112 /H/P%
14113 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14114 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14115     \ifx\Fld@bordercolor\relax\else 1\fi
14116     \space
14117 \else
14118 /MK<<%
14119     \ifnum\Fld@rotation=\z@
14120     \else
14121     /R \Fld@rotation
14122     \fi
14123     \ifx\Fld@bordercolor\relax
14124     \else
14125     /BC[\Fld@bordercolor]%
14126     \fi
14127 >>%
14128 \fi
14129 /A<<%
14130 /S/SubmitForm%
14131 /F<<%
14132 /FS/URL%
14133 /F(\Hy@escapestring{\Form@action})%
14134 >>%
14135 \Fld@submitflags
14136 >>%
14137 \Fld@additionalactions
14138 }

```

\PDFForm@Reset

```

14139 \ifHy@pdfa
14140 \else
14141 \def\PDFForm@Reset{%
14142 /Subtype/Widget%
14143 \Fld@annotflags
14144 \Fld@annotnames
14145 /FT/Btn%
14146 \Fld@flags
14147 /H/P%
14148 /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
14149 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14150     \ifx\Fld@bordercolor\relax\else 1\fi
14151     \space
14152 \else
14153 /MK<<%
14154     \ifnum\Fld@rotation=\z@
14155     \else

```

```

14156      /R \Fld@rotation
14157      \fi
14158      \ifx\Fld@bordercolor\relax
14159      \else
14160      /BC[\Fld@bordercolor]%
14161      \fi
14162 %      /CA (Clear)
14163 %      /AC (Done)
14164      >>%
14165      \fi
14166      /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14167      /A<</S/ResetForm>>%
14168      \Fld@additionalactions
14169      }%
14170 \fi

14171 </pdfform>
14172 <*package>

```

## 48 Bookmarks in the PDF file

This was originally developed by Yannis Haralambous (it was the separate `reperestty`); it needed the `reperest` or `makebook.pl` post-processor to work properly. Now redundant, as it is done entirely in  $\text{\LaTeX}$  macros.

To write out the current section title, and its rationalized number, we have to intercept the `\@sect` command, which is rather dangerous. But how else to see the 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`

```

14173 \def\phantomsection{%
14174   \Hy@MakeCurrentHrefAuto{section*}%
14175   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
14176 }
14177 </package>

```

### 48.1 Bookmarks

```
14178 <*outlines>
```

This section was written by Heiko Oberdiek; the code replaces an earlier version by David Carlisle.

The first part of bookmark code is in section 6. Further documentation is available as paper and slides of the talk, that Heiko Oberdiek has given at the EuroTeX'99 meeting in Heidelberg. See `paper.pdf` and `slides.pdf` in the `doc` directory of `hyperref`.

When using the right-to-left typesetting based on  $\varepsilon\text{-TeX}$ , the order of the `\BOOKMARK` commands written to the `\@outlinefile` could appear wrong, because of mis-feature of  $\varepsilon\text{-TeX}$ 's implementation (that it processes the shipped out lines left-to-right, instead of the order in which they appear in the document). The wrong order will appear when the file contains two bookmarks on the same line typeset right-to-left.

To work around this problem, the `bookmark@seq@number` counter is used to write the bookmark's sequential number into a comment in the `\@outlinefile`, which could be used to post-process it to achieve the proper ordering of `\BOOKMARK` commands in that file.

```

14179 \def\Hy@writebookmark#1#2#3#4#5{%
14180   % section number, text, label, level, file
14181   \ifx\WriteBookmarks\relax%
14182   \else
14183     \ifnum#4>\Hy@bookmarksdepth\relax
14184     \else
14185       \@@writetorep{#1}{#2}{#3}{#4}{#5}%
14186     \fi
14187   \fi
14188 }
14189 \def\Hy@currentbookmarklevel{0}
14190 \def\Hy@numberline#1{#1 }
14191 \def\@@writetorep#1#2#3#4#5{%
14192   \begingroup
14193   \edef\Hy@tempa{#5}%
14194   \ifx\Hy@tempa\Hy@bookmarkstype
14195     \edef\Hy@level{#4}%
14196     \ifx\Hy@levelcheck Y%
14197       \@tempcnta\Hy@level\relax
14198       \advance\@tempcnta by -1 %
14199       \ifnum\Hy@currentbookmarklevel<\@tempcnta
14200         \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
14201         \advance\@tempcnta by 1 %
14202         \Hy@Warning{%
14203           Difference (\the\@tempcnta) between bookmark levels is %
14204           greater \MessageBreak than one, level fixed%
14205         }%
14206         \@tempcnta\Hy@currentbookmarklevel
14207         \advance\@tempcnta by 1 %
14208         \edef\Hy@level{\the\@tempcnta}%
14209       \fi
14210     \else
14211       \global\let\Hy@levelcheck Y%
14212     \fi
14213     \global\let\Hy@currentbookmarklevel\Hy@level
14214     \@tempcnta\Hy@level\relax
14215     \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
14216     \advance\@tempcnta by -1 %
14217     \edef\Hy@tempa{#3}%
14218     \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
14219     \ifx\Hy@tempa\Hy@tempb
14220       \Hy@Warning{%
14221         The anchor of a bookmark and its parent's must not%
14222         \MessageBreak be the same. Added a new anchor%
14223       }%
14224     \phantomsection
14225   \fi
14226   \ifHy@bookmarksnumbered
14227     \let\numberline\Hy@numberline
14228     \let\booknumberline\Hy@numberline
14229     \let\partnumberline\Hy@numberline
14230     \let\chapternumberline\Hy@numberline
14231   \else
14232     \let\numberline\@gobble
14233     \let\booknumberline\@gobble
14234     \let\partnumberline\@gobble
14235     \let\chapternumberline\@gobble

```

```

14236 \fi
14237 \HyPsd@XeTeXBigCharstrue
14238 \pdfstringdef\Hy@tempa{#2}%
14239 \HyPsd@SanitizeForOutFile\Hy@tempa
14240 \if@filesw
14241 \stepcounter{bookmark@seq@number}%
14242 \@ifundefined{@outlinefile}{%
14243 }{%
14244 \protected@write\@outlinefile{}{%
14245 \protect\BOOKMARK
14246 [\Hy@level][\@bookmarkopenstatus{\Hy@level}]{#3}%
14247 {\Hy@tempa}{\Hy@tempb}%
14248 \@percentchar\space\thebookmark@seq@number
14249 }%
14250 }%
14251 \fi
14252 \fi
14253 \endgroup
14254 }
14255 \newcounter{bookmark@seq@number}

14256 \begingroup
14257 \lccode'('= '{%
14258 \lccode')='}%
14259 \lccode'1=\z@
14260 \lccode'2=\z@
14261 \lccode'3=\z@
14262 \lccode'5=\z@
14263 \lccode'7=\z@
14264 \lccode'\#=\z@
14265 \lccode'\='=\z@
14266 \lccode'\{=\z@
14267 \lccode'\}=\z@
14268 \lowercase{%
14269 \endgroup
14270 \def\HyPsd@SanitizeForOutFile#1{%
14271 \@onelevel@sanitize\Hy@tempa
14272 \escapechar'\%
14273 \edef\Hy@tempa{%
14274 \expandafter\HyPsd@SanitizeOut@BraceLeft\Hy@tempa(\@nil
14275 }%
14276 \edef\Hy@tempa{%
14277 \expandafter\HyPsd@SanitizeOut@BraceRight\Hy@tempa)\@nil
14278 }%
14279 }%
14280 \def\HyPsd@SanitizeOut@BraceLeft#1(#2\@nil{%
14281 #1%
14282 \ifx\#2\%
14283 \expandafter\ltx@gobble
14284 \else
14285 \expandafter\ltx@firstofone
14286 \fi
14287 {%
14288 \string\173%
14289 \HyPsd@SanitizeOut@BraceLeft#2\@nil
14290 }%
14291 }%
14292 \def\HyPsd@SanitizeOut@BraceRight#1)#2\@nil{%

```



```

14293   #1%
14294   \ifx\|#2\|%
14295     \expandafter\ltx@gobble
14296   \else
14297     \expandafter\ltx@firstofone
14298   \fi
14299   {%
14300     \string\175%
14301     \HyPsd@SanitizeOut@BraceRight#2\@nil
14302   }%
14303 }%
14304 }

```

In the call of `\BOOKMARK` the braces around `#4` are omitted, because it is not likely, that the level number contains `]`.

```

14305 \newcommand{\currentpdfbookmark}{%
14306   \pdfbookmark[\Hy@currentbookmarklevel]%
14307 }
14308 \newcommand{\subpdfbookmark}{%
14309   \@tempcnta\Hy@currentbookmarklevel
14310   \Hy@StepCount\@tempcnta
14311   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
14312 }
14313 \newcommand{\belowpdfbookmark}[2]{%
14314   \@tempcnta\Hy@currentbookmarklevel
14315   \Hy@StepCount\@tempcnta
14316   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
14317   \advance\@tempcnta by -1 %
14318   \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
14319 }

```

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.

```

14320 \renewcommand\pdfbookmark[3][0]{%
14321   \Hy@writebookmark{#2}{#3.#1}{#1}{toc}%
14322   \hyper@anchorstart{#3.#1}\hyper@anchorend
14323 }
14324 \def\BOOKMARK{%
14325   \@ifnextchar{\@BOOKMARK}{\@@BOOKMARK[1][-]}%
14326 }
14327 \def\@BOOKMARK[#1]{%
14328   \@ifnextchar{\@@BOOKMARK[#1]}{\@@BOOKMARK[#1][-]}%
14329 }

```

The macros for calculating structure of outlines are derived from those by Petr Olsak used in the `texinfo` macros.

#### 48.1.1 Rerun warning

`\Hy@OutlineRerunCheck`

```

14330 \RequirePackage{rerunfilecheck}[2009/12/10]
14331 \def\Hy@OutlineRerunCheck{%
14332   \RerunFileCheck{\jobname.out}{%
14333     \immediate\closeout\@outlinefile
14334   }{%
14335     Rerun to get outlines right\MessageBreak
14336     or use package 'bookmark'%
14337   }%

```

14338 }

#### 48.1.2 Driver stuff

The VTEX section was written originally by VTEX, but then amended by Denis Girou ([denis.girou@idris.fr](mailto:denis.girou@idris.fr)), then by Taco Hoekwater ([taco.hoekwater@wkap.nl](mailto:taco.hoekwater@wkap.nl)). The problem is that VTEX, with its close integration of the PDF backend, does look at the contents of bookmarks, escaping \ and the like.

14339  $\langle *vtx \rangle$

14340  $\backslash newcount \backslash @serial@counter \backslash @serial@counter=1 \backslash relax$

$\backslash hv@pdf@char$  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  $\backslash ifcase$ , but I'm too lazy to sort that out now.

14341  $\backslash begingroup$

14342  $\backslash catcode'\'=12 \%$

14343  $\backslash ifnum \backslash Hy@VTeXversion < 650 \%$

14344  $\backslash catcode'\'=12 \%$

14345  $\backslash gdef \backslash hv@pdf@char \#1 \#2 \#3 \{ \%$

14346  $\backslash char$

14347  $\backslash ifcase \#1 \#2 \#3 \%$

14348  $"00 \backslash or "01 \backslash or "02 \backslash or "03 \backslash or "04 \backslash or "05 \backslash or "06 \backslash or "07 \%$

14349  $\backslash or "08 \backslash or "09 \backslash or "0A \backslash or "0B \backslash or "0C \backslash or "0D \backslash or "0E \backslash or "0F \%$

14350  $\backslash or "10 \backslash or "11 \backslash or "12 \backslash or "13 \backslash or "14 \backslash or "15 \backslash or "16 \backslash or "17 \%$

14351  $\backslash or "18 \backslash or "19 \backslash or "1A \backslash or "1B \backslash or "1C \backslash or "1D \backslash or "1E \backslash or "1F \%$

14352  $\backslash or "20 \backslash or "21 \backslash or "22 \backslash or "23 \backslash or "24 \backslash or "25 \backslash or "26 \backslash or "27 \%$

14353  $\backslash or "28 \backslash or "29 \backslash or "2A \backslash or "2B \backslash or "2C \backslash or "2D \backslash or "2E \backslash or "2F \%$

14354  $\backslash or "30 \backslash or "31 \backslash or "32 \backslash or "33 \backslash or "34 \backslash or "35 \backslash or "36 \backslash or "37 \%$

14355  $\backslash or "38 \backslash or "39 \backslash or "3A \backslash or "3B \backslash or "3C \backslash or "3D \backslash or "3E \backslash or "3F \%$

14356  $\backslash or "40 \backslash or "41 \backslash or "42 \backslash or "43 \backslash or "44 \backslash or "45 \backslash or "46 \backslash or "47 \%$

14357  $\backslash or "48 \backslash or "49 \backslash or "4A \backslash or "4B \backslash or "4C \backslash or "4D \backslash or "4E \backslash or "4F \%$

14358  $\backslash or "50 \backslash or "51 \backslash or "52 \backslash or "53 \backslash or "54 \backslash or "55 \backslash or "56 \backslash or "57 \%$

14359  $\backslash or "58 \backslash or "59 \backslash or "5A \backslash or "5B \backslash or "5C \backslash or "5D \backslash or "5E \backslash or "5F \%$

14360  $\backslash or "60 \backslash or "61 \backslash or "62 \backslash or "63 \backslash or "64 \backslash or "65 \backslash or "66 \backslash or "67 \%$

14361  $\backslash or "68 \backslash or "69 \backslash or "6A \backslash or "6B \backslash or "6C \backslash or "6D \backslash or "6E \backslash or "6F \%$

14362  $\backslash or "70 \backslash or "71 \backslash or "72 \backslash or "73 \backslash or "74 \backslash or "75 \backslash or "76 \backslash or "77 \%$

14363  $\backslash or "78 \backslash or "79 \backslash or "7A \backslash or "7B \backslash or "7C \backslash or "7D \backslash or "7E \backslash or "7F \%$

14364  $\backslash or "80 \backslash or "81 \backslash or "82 \backslash or "83 \backslash or "84 \backslash or "85 \backslash or "86 \backslash or "87 \%$

14365  $\backslash or "88 \backslash or "89 \backslash or "8A \backslash or "8B \backslash or "8C \backslash or "8D \backslash or "8E \backslash or "8F \%$

14366  $\backslash or "90 \backslash or "91 \backslash or "92 \backslash or "93 \backslash or "94 \backslash or "95 \backslash or "96 \backslash or "97 \%$

14367  $\backslash or "98 \backslash or "99 \backslash or "9A \backslash or "9B \backslash or "9C \backslash or "9D \backslash or "9E \backslash or "9F \%$

14368  $\backslash or "A0 \backslash or "A1 \backslash or "A2 \backslash or "A3 \backslash or "A4 \backslash or "A5 \backslash or "A6 \backslash or "A7 \%$

14369  $\backslash or "A8 \backslash or "A9 \backslash or "AA \backslash or "AB \backslash or "AC \backslash or "AD \backslash or "AE \backslash or "AF \%$

14370  $\backslash or "B0 \backslash or "B1 \backslash or "B2 \backslash or "B3 \backslash or "B4 \backslash or "B5 \backslash or "B6 \backslash or "B7 \%$

14371  $\backslash or "B8 \backslash or "B9 \backslash or "BA \backslash or "BB \backslash or "BC \backslash or "BD \backslash or "BE \backslash or "BF \%$

14372  $\backslash or "C0 \backslash or "C1 \backslash or "C2 \backslash or "C3 \backslash or "C4 \backslash or "C5 \backslash or "C6 \backslash or "C7 \%$

14373  $\backslash or "C8 \backslash or "C9 \backslash or "CA \backslash or "CB \backslash or "CC \backslash or "CD \backslash or "CE \backslash or "CF \%$

14374  $\backslash or "D0 \backslash or "D1 \backslash or "D2 \backslash or "D3 \backslash or "D4 \backslash or "D5 \backslash or "D6 \backslash or "D7 \%$

14375  $\backslash or "D8 \backslash or "D9 \backslash or "DA \backslash or "DB \backslash or "DC \backslash or "DD \backslash or "DE \backslash or "DF \%$

14376  $\backslash or "E0 \backslash or "E1 \backslash or "E2 \backslash or "E3 \backslash or "E4 \backslash or "E5 \backslash or "E6 \backslash or "E7 \%$

14377  $\backslash or "E8 \backslash or "E9 \backslash or "EA \backslash or "EB \backslash or "EC \backslash or "ED \backslash or "EE \backslash or "EF \%$

14378  $\backslash or "F0 \backslash or "F1 \backslash or "F2 \backslash or "F3 \backslash or "F4 \backslash or "F5 \backslash or "F6 \backslash or "F7 \%$

14379  $\backslash or "F8 \backslash or "F9 \backslash or "FA \backslash or "FB \backslash or "FC \backslash or "FD \backslash or "FE \backslash or "FF \%$

14380  $\backslash fi$

14381  $\}%$

14382  $\backslash else$

```

14383 \gdef\hv@pdf@char{\char'}%
14384 \fi
14385 \endgroup

```

# \@@BOOKMARK

```

14386 \def\@@BOOKMARK[#1][#2]#3#4#5{%
14387 \expandafter\edef\csname @count@#3\endcsname{%
14388 \the\@serial@counter
14389 }%
14390 \edef\@mycount{\the\@serial@counter}%
14391 \Hy@StepCount\@serial@counter
14392 \edef\@parcount{%
14393 \expandafter\ifx\csname @count@#5\endcsname\relax
14394 0%
14395 \else
14396 \csname @count@#5\endcsname
14397 \fi
14398 }%
14399 \immediate\special{%
14400 !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
14401 s=\ifx#2-c\else o\fi,t=#4%
14402 }%
14403 }%

```

# \ReadBookmarks

```

14404 \def\ReadBookmarks{%
14405 \begingroup
14406 \def\0{\hv@pdf@char 0}%
14407 \def\1{\hv@pdf@char 1}%
14408 \def\2{\hv@pdf@char 2}%
14409 \def\3{\hv@pdf@char 3}%
14410 \def\({}%
14411 \def\)}%
14412 \def\do##1{%
14413 \ifnum\catcode'##1=\active
14414 \@makeother##1%
14415 \else
14416 \ifnum\catcode'##1=6 %
14417 \@makeother##1%
14418 \fi
14419 \fi
14420 }%
14421 \dospecials
14422 \Hy@safe@activetrue
14423 \InputIfFileExists{jobname.out}{-}{-}%
14424 \endgroup
14425 \ifx\WriteBookmarks\relax
14426 \else
14427 \if@files
14428 \newwrite\@outlinefile
14429 \Hy@OutlineRerunCheck
14430 \immediate\openout\@outlinefile=jobname.out\relax
14431 \ifHy@typexml
14432 \immediate\write\@outlinefile{<relaxxml>\relax}%
14433 \fi
14434 \fi
14435 \fi
14436 }

```

```

14437 </vtex>
14438 <!*vtex>
14439 \def\ReadBookmarks{%
14440 \pdf@ifdraftmode{}{%
14441 \begingroup
14442 \def\do##1{%
14443 \ifnum\catcode'##1=\active
14444 \@makeother##1%
14445 \else
14446 \ifnum\catcode'##1=6 %
14447 \@makeother##1%
14448 \fi
14449 \fi
14450 }%
14451 \dospecials
14452 \Hy@safe@activetrue
14453 \escapechar=\%
14454 \def\@@BOOKMARK[##1][##2]##3##4##5{%
14455 \calc@bm@number{##5}%
14456 }%
14457 \InputIfFileExists{\jobname.out}{-}{-}%
14458 \ifx\WriteBookmarks\relax
14459 \global\let\WriteBookmarks\relax
14460 \fi
14461 \def\@@BOOKMARK[##1][##2]##3##4##5{%
14462 \def\Hy@temp{##4}%
14463 <*pdftex>
14464 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14465 \Hy@OutlineName{}\Hy@pstringName{%
14466 ##2\check@bm@number{##3}%
14467 }{%
14468 \expandafter\strip@prefix\meaning\Hy@temp
14469 }%
14470 </pdftex>
14471 <*pdfmark>
14472 \pdfmark{%
14473 pdfmark=/OUT,%
14474 Count={##2\check@bm@number{##3}},%
14475 Dest={##3},%
14476 Title=\expandafter\strip@prefix\meaning\Hy@temp
14477 }%
14478 </pdfmark>
14479 <*dvipdfm|xetex>
14480 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14481 \@pdfm@mark{%
14482 outline \ifHy@DvipdfmxOutlineOpen
14483 [%
14484 \ifnum##21>\z@
14485 \else
14486 -%
14487 \fi
14488 ] %
14489 \fi
14490 ##1<<%
14491 /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
14492 /A<<%
14493 /S/GoTo%

```

```

14494      /D(\Hy@pstringName)%
14495      >>%
14496      >>%
14497      }%
14498 </dvipdfm | xetex>
14499      }%
14500      \begingroup
14501      \def\WriteBookmarks{0}%
14502      \InputIfFileExists{jobname.out}{-}{-}%
14503      \endgroup
14504      %f\escapechar\m@ne\InputIfFileExists{jobname.out}{-}{-}%
14505      \endgroup
14506      }%
14507      \ifx\WriteBookmarks\relax
14508      \else
14509      \if@filesw
14510      \newwrite\@outlinefile
14511      \Hy@OutlineRerunCheck
14512      \immediate\openout\@outlinefile=jobname.out\relax
14513      \ifHy@typexml
14514      \immediate\write\@outlinefile{<relaxxml>\relax}%
14515      \fi
14516      \fi
14517      \fi
14518      }
14519 <*pdfTeX>
14520 \def\Hy@OutlineName#1#2#3#4{%
14521   \pdfoutline goto name{#2}count#3{#4}%
14522 }
14523 </pdfTeX>
14524 \def\check@bm@number#1{%
14525   \expandafter\ifx\csname B_#1\endcsname\relax
14526   0%
14527   \else
14528   \csname B_#1\endcsname
14529   \fi
14530 }
14531 \def\calc@bm@number#1{%
14532   \@tempcnta=\check@bm@number{#1}\relax
14533   \advance\@tempcnta by 1 %
14534   \expandafter\xdef\csname B_#1\endcsname{the\@tempcnta}%
14535 }
14536 </!vTeX>

14537 \ifHy@implicit
14538 \else
14539   \expandafter\endinput
14540 \fi

14541 </outlines>
14542 <*outlines | hypertex>

14543 \newlength\Hy@SectionHShift
14544 \def\Hy@SectionAnchorHref#1{%
14545   \ifx\protect\@typeset@protect
14546     \Hy@@@SectionAnchor{#1}%
14547   \fi
14548 }
14549 \DeclareRobustCommand*\Hy@@@SectionAnchor[1]{%

```

```

14550 \leavevmode
14551 \hbox to Opt{%
14552   \kern-\Hy@SectionHShift
14553   \Hy@raisedlink{%
14554     \hyper@anchorstart{#1}\hyper@anchorend
14555   }%
14556   \hss
14557 }%
14558 }
14559 \let\H@old@ssect\@ssect
14560 \def\@ssect#1#2#3#4#5{%
14561   \Hy@MakeCurrentHrefAuto{section*}%
14562   \setlength{\Hy@SectionHShift}{#1}%
14563   \begingroup
14564     \toks@{\H@old@ssect{#1}{#2}{#3}{#4}}%
14565     \toks\tw@\expandafter{%
14566       \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14567       #5%
14568     }%
14569   \edef\x{\endgroup
14570     \the\toks@\the\toks\tw@}%
14571   }\x
14572 }
14573 \let\H@old@schapter\@schapter
14574 \def\@schapter#1{%
14575   \begingroup
14576     \let\@mkboth\@gobbletwo
14577     \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14578     \Hy@raisedlink{%
14579       \hyper@anchorstart{\@currentHref}\hyper@anchorend
14580     }%
14581   \endgroup
14582   \H@old@schapter{#1}%
14583 }

```

If there is no chapter number (`\frontmatter` or `\backmatter`) then the counting by `\refstepcounter{chapter}` is not executed, so there will be no destination for `\ddcontentsline`. So `\@chapter` is overloaded to avoid this:

```

14584 \ltx@ifundefined{@chapter}{-}{%
14585   \let\Hy@org@chapter\@chapter
14586   \def\@chapter{%
14587     \def\Hy@next{%
14588       \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14589       \Hy@raisedlink{%
14590         \hyper@anchorstart{\@currentHref}\hyper@anchorend
14591       }%
14592     }%
14593     \ifnum\c@secnumdepth>\m@ne
14594       \ltx@ifundefined{if@mainmatter}%
14595       \iftrue{\csname if@mainmatter\endcsname}%
14596       \let\Hy@next\relax
14597     \fi
14598     \fi
14599     \Hy@next
14600     \Hy@org@chapter
14601   }%
14602 }

```

```

14603 \let\H@old@part\@part
14604 \begingroup\expandafter\expandafter\expandafter\endgroup
14605 \expandafter\ifx\csname chapter\endcsname\relax
14606 \let\Hy@secnum@part\z@
14607 \else
14608 \let\Hy@secnum@part\m@ne
14609 \fi
14610 \def\@part{%
14611 \ifnum\Hy@secnum@part>\c@secnumdepth
14612 \phantomsection
14613 \fi
14614 \H@old@part
14615 }

14616 \let\H@old@spart\@spart
14617 \def\@spart#1{%
14618 \Hy@MakeCurrentHrefAuto{part*}%
14619 \Hy@raisedlink{%
14620 \hyper@anchorstart{\@currentHref}\hyper@anchorend
14621 }%
14622 \H@old@spart{#1}%
14623 }

14624 \let\H@old@sect\@sect
14625 \def\@sect#1#2#3#4#5#6[#7]#8{%
14626 \ifnum #2>\c@secnumdepth
14627 \expandafter\@firstoftwo
14628 \else
14629 \expandafter\@secondoftwo
14630 \fi
14631 {%
14632 \Hy@MakeCurrentHrefAuto{section*}%
14633 \setlength{\Hy@SectionHShift}{#3}%
14634 \begingroup
14635 \toks@{\H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}}%
14636 \toks\tw@\expandafter{%
14637 \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14638 #8%
14639 }%
14640 \edef\x{\endgroup
14641 \the\toks@\the\toks\tw@}%
14642 }\x
14643 }{%
14644 \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}{#8}%
14645 }%
14646 }

14647 </outlines | hypertex>
14648 <*outlines>

14649 \expandafter\def\csname Parent-4\endcsname{}
14650 \expandafter\def\csname Parent-3\endcsname{}
14651 \expandafter\def\csname Parent-2\endcsname{}
14652 \expandafter\def\csname Parent-1\endcsname{}
14653 \expandafter\def\csname Parent0\endcsname{}
14654 \expandafter\def\csname Parent1\endcsname{}
14655 \expandafter\def\csname Parent2\endcsname{}
14656 \expandafter\def\csname Parent3\endcsname{}
14657 \expandafter\def\csname Parent4\endcsname{}

14658 </outlines>

```

## 49 Compatibility with koma-script classes

14659  $\langle$ \*outlines | hypertex $\rangle$

Hard-wire in an unpleasant over-ride of komascript ‘scrbook’ class for Tobias Isenberg (Tobias.Isenberg@gmx.de). With version 6.71b the hack is also applied to ‘scrreprt’ class and is removed for koma-script versions since 2001/01/01, because Markus Kohm supports hyperref in komascript.

```
14660 \def\Hy@tempa{%
14661   \def\@addchap{##1}##2{%
14662     \typeout{##2}%
14663     \if@twoside
14664       \@mkboth{##1}{}%
14665     \else
14666       \@mkboth{}{##1}%
14667     \fi
14668     \addtocontents{lof}{\protect\addvspace{10\p@}}%
14669     \addtocontents{lot}{\protect\addvspace{10\p@}}%
14670     \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14671     \Hy@raisedlink{%
14672       \hyper@anchorstart{\@currentHref}\hyper@anchorend
14673     }%
14674     \if@twocolumn
14675       \@topnewpage[\@makeschapterhead{##2}]%
14676     \else
14677       \@makeschapterhead{##2}%
14678       \@afterheading
14679     \fi
14680     \addcontentsline{toc}{chapter}{##1}%
14681   }%
14682 }
14683 \@ifclassloaded{scrbook}{%
14684   \@ifclasslater{scrbook}{2001/01/01}{%
14685     \let\Hy@tempa\@empty
14686   }{}%
14687 }{%
14688   \@ifclassloaded{scrreprt}{%
14689     \@ifclasslater{scrreprt}{2001/01/01}{%
14690       \let\Hy@tempa\@empty
14691     }{}%
14692   }{%
14693     \let\Hy@tempa\@empty
14694   }%
14695 }%
14696 \Hy@tempa
14697  $\rangle$ /outlines | hypertex
```

## 50 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek.

### 50.1 PD1 encoding

```
14698  $\langle$ *pd1enc $\rangle$ 
14699 \DeclareFontEncoding{PD1}{}{}
```



## Accents

```

14700 \DeclareTextAccent{\'}{PD1}{\textasciigrave}
14701 \DeclareTextAccent{\'}{PD1}{\textacute}
14702 \DeclareTextAccent{\^}{PD1}{\textasciicircum}
14703 \DeclareTextAccent{\~}{PD1}{\texttilde}
14704 \DeclareTextAccent{\"}{PD1}{\textasciidieresis}
14705 \DeclareTextAccent{\r}{PD1}{\textring}
14706 \DeclareTextAccent{\v}{PD1}{\textasciicaron}
14707 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
14708 \DeclareTextAccent{\c}{PD1}{\textcedilla}
14709 \DeclareTextAccent{=} {PD1}{\textasciimacron}
14710 \DeclareTextAccent{\b}{PD1}{\textmacronbelow}
14711 \DeclareTextAccent{\d}{PD1}{\textdotbelow}
14712 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textasciigrave}
14713 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
14714 \DeclareTextCompositeCommand{\^}{PD1}{\@empty}{\textasciicircum}
14715 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
14716 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textasciidieresis}
14717 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
14718 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textasciicaron}
14719 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
14720 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
14721 \DeclareTextCompositeCommand{=} {PD1}{\@empty}{\textasciimacron}
14722 \DeclareTextCompositeCommand{\b}{PD1}{\@empty}{\textmacronbelow}
14723 \DeclareTextCompositeCommand{\d}{PD1}{\@empty}{\textdotbelow}
14724 \DeclareTextCompositeCommand{\'}{PD1}{\ }{\textasciigrave}
14725 \DeclareTextCompositeCommand{\'}{PD1}{\ }{\textacute}
14726 \DeclareTextCompositeCommand{\^}{PD1}{\ }{\textasciicircum}
14727 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\texttilde}
14728 \DeclareTextCompositeCommand{\"}{PD1}{\ }{\textasciidieresis}
14729 \DeclareTextCompositeCommand{\r}{PD1}{\ }{\textring}
14730 \DeclareTextCompositeCommand{\v}{PD1}{\ }{\textasciicaron}
14731 \DeclareTextCompositeCommand{\.}{PD1}{\ }{\textdotaccent}
14732 \DeclareTextCompositeCommand{\c}{PD1}{\ }{\textcedilla}
14733 \DeclareTextCompositeCommand{=} {PD1}{\ }{\textasciimacron}
14734 \DeclareTextCompositeCommand{\b}{PD1}{\ }{\textmacronbelow}
14735 \DeclareTextCompositeCommand{\d}{PD1}{\ }{\textdotbelow}
14736 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}
14737 \DeclareTextCommand{\t}{PD1}[1]{\TextSymbolUnavailable{\t{#1}}#1}
14738 \DeclareTextCommand{\newtie}{PD1}[1]{%
14739 \TextSymbolUnavailable{\newtie{#1}}#1%
14740 }

```

Special white space escape characters not for use in bookmarks but for other PDF strings.

```

14741 % U+0009 (CHARACTER TABULATION)
14742 \DeclareTextCommand{\textHT}{PD1}{\011}% U+0009
14743 % U+000A (LINE FEED)
14744 \DeclareTextCommand{\textLF}{PD1}{\012}% U+000A
14745 % U+000D (CARRIAGE RETURN)
14746 \DeclareTextCommand{\textCR}{PD1}{\015}% U+000D

```

## Accent glyph names

```

14747 % U+02D8 BREVE; breve
14748 \DeclareTextCommand{\textasciibreve}{PD1}{\030}% U+02D8
14749 % U+02C7 CARON; caron
14750 \DeclareTextCommand{\textasciicaron}{PD1}{\031}% U+02C7
14751 % U+02C6 MODIFIER LETTER CIRCUMFLEX ACCENT; circumflex
14752 \DeclareTextCommand{\textcircumflex}{PD1}{\032}% U+02C6

```

14753 % U+02D9 DOT ABOVE; dotaccent  
 14754 \DeclareTextCommand{\textdotaccent}{PD1}{\033}% U+02D9  
 14755 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
 14756 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034}% U+02DD  
 14757 % U+02DB OGONEK; ogonek  
 14758 \DeclareTextCommand{\textogonek}{PD1}{\035}% U+02DB  
 14759 % U+02DA RING ABOVE; ring  
 14760 \DeclareTextCommand{\textring}{PD1}{\036}% U+02DA  
 14761 % U+02DC SMALL TILDE; ilde, \*tilde  
 14762 \DeclareTextCommand{\texttilde}{PD1}{\037}% U+02DC  
 \040: U+0020 SPACE; \*space, spacehackarabic  
 \041: U+0021 EXCLAMATION MARK; exclam  
 14763 % U+0022 QUOTATION MARK; quotedbl  
 14764 \DeclareTextCommand{\textquotedbl}{PD1}{\string"}% \042 U+0022  
 14765 % U+0023 NUMBER SIGN; numbersign  
 14766 \DeclareTextCommand{\textnumbersign}{PD1}{\043}% U+0023  
 14767 % U+0024 DOLLAR SIGN; dollar  
 14768 \DeclareTextCommand{\textdollar}{PD1}{\044}% U+0024  
 14769 % U+0025 PERCENT SIGN; percent  
 14770 \DeclareTextCommand{\textpercent}{PD1}{\045}% U+0025  
 14771 % U+0026 AMPERSAND; ampersand  
 14772 \DeclareTextCommand{\textampersand}{PD1}{\046}% U+0026  
 \047: U+0027 APOSTROPHE; quotesingle  
  
 14773 % U+0028 LEFT PARENTHESIS; parenleft  
 14774 \DeclareTextCommand{\textparenleft}{PD1}{\string\(% \050 U+0028  
 14775 % U+0029 RIGHT PARENTHESIS; parenright  
 14776 \DeclareTextCommand{\textparenright}{PD1}{\string\)% \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  
 14777 % U+002E FULL STOP; period  
 14778 \DeclareTextCommand{\textdotbelow}{PD1}{.}% \056 U+002E  
 \057: U+002F SOLIDUS; slash  
 \060: U+0030 DIGIT ZERO; zero  
 ...  
 \071: U+0039 DIGIT NINE; nine  
 \072: U+003A COLON; colon  
 \073: U+003B SEMICOLON; semicolon  
 14779 % U+003C LESS-THAN SIGN; less  
 14780 \DeclareTextCommand{\textless}{PD1}{<}% \074 U+003C  
 \075: U+003D EQUALS SIGN; equal  
 14781 % U+003E GREATER-THAN SIGN; greater  
 14782 \DeclareTextCommand{\textgreater}{PD1}{>}% \076 U+003E  
 \077: U+003F QUESTION MARK; question  
 \100: U+0040 COMMERCIAL AT; at  
 \101: U+0041 LATIN CAPITAL LETTER A; A  
 ...  
 \132: U+005A LATIN CAPITAL LETTER Z; Z  
 \133: U+005B LEFT SQUARE BRACKET; bracketleft  
 14783 % U+005C REVERSE SOLIDUS; backslash  
 14784 \DeclareTextCommand{\textbackslash}{PD1}{\134}% U+005C

14785 % "U+2216 SET MINUS" simulated by "U+005C REVERSE SOLIDUS"  
 14786 \DeclareTextCommand{\textsetminus}{PD1}{\textbackslash}  
 \135: U+005D RIGHT SQUARE BRACKET; bracketright  
 14787 % U+005E CIRCUMFLEX ACCENT; asciicircum  
 14788 \DeclareTextCommand{\textasciicircum}{PD1}{\136}% U+005E  
 14789 % U+005F LOW LINE; underscore  
 14790 \DeclareTextCommand{\textunderscore}{PD1}{\137}% U+005F  
 14791 \DeclareTextCommand{\textmacronbelow}{PD1}{\137}% U+005F  
 14792 % U+0060 GRAVE ACCENT; grave  
 14793 \DeclareTextCommand{\textasciigrave}{PD1}{\140}% U+0060  
 \141: U+0061 LATIN SMALL LETTER A; a  
 ...  
 \150: U+0068 LATIN SMALL LETTER H; h  
 14794 % U+0069 LATIN SMALL LETTER I; i  
 14795 \DeclareTextCompositeCommand{\.}{PD1}{i}{i}% \151 U+0069  
 \152: U+006A LATIN SMALL LETTER J; j  
 ...  
 \172: U+007A LATIN SMALL LETTER Z; z  
 14796 % U+007B LEFT CURLY BRACKET; braceleft  
 14797 \DeclareTextCommand{\textbraceleft}{PD1}{\173}% U+007B  
 14798 % U+007C VERTICAL LINE; \*bar, verticalbar  
 14799 \DeclareTextCommand{\textbar}{PD1}{|}% U+007C  
 14800 % U+007D RIGHT CURLY BRACKET; braceright  
 14801 \DeclareTextCommand{\textbraceright}{PD1}{\175}% U+007D  
 14802 % U+007E TILDE; asciitilde  
 14803 \DeclareTextCommand{\textasciitilde}{PD1}{\176}% U+007E  
 Slot \177 (0x7F) is undefined in PDFDocEncoding.  
 14804 % U+2022 BULLET; bullet  
 14805 \DeclareTextCommand{\textbullet}{PD1}{\200}% U+2022  
 14806 % U+2020 DAGGER; dagger  
 14807 \DeclareTextCommand{\textdagger}{PD1}{\201}% U+2020  
 14808 % U+2021 DOUBLE DAGGER; daggerdbl; \ddagger (LaTeX)  
 14809 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202}% U+2021  
 14810 \DeclareTextCommand{\textddagger}{PD1}{\textddagger}  
 14811 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 14812 \DeclareTextCommand{\textellipsis}{PD1}{\203}% U+2026  
 14813 % U+2014 EM DASH; emdash  
 14814 \DeclareTextCommand{\textemdash}{PD1}{\204}% U+2014  
 14815 % U+2013 EN DASH; endash  
 14816 \DeclareTextCommand{\textendash}{PD1}{\205}% U+2013  
 14817 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
 14818 \DeclareTextCommand{\textflorin}{PD1}{\206}% U+0192  
 14819 % U+2044 FRACTION SLASH; fraction  
 14820 \DeclareTextCommand{\textfractionsolidus}{PD1}{\207}% U+2044  
 14821 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
 lingleft  
 14822 \DeclareTextCommand{\guilsingleft}{PD1}{\210}% U+2039  
 14823 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
 lingright  
 14824 \DeclareTextCommand{\guilsingright}{PD1}{\211}% U+203A  
 14825 % U+2212 MINUS SIGN; minus  
 14826 \DeclareTextCommand{\textminus}{PD1}{\212}% U+2212  
 14827 % U+2030 PER MILLE SIGN; perthousand  
 14828 \DeclareTextCommand{\textperthousand}{PD1}{\213}% U+2030  
 14829 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 14830 \DeclareTextCommand{\quotedblbase}{PD1}{\214}% U+201E

14831 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 14832 \DeclareTextCommand{\textquotedblleft}{PD1}{\215}% U+201C  
 14833 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 14834 \DeclareTextCommand{\textquotedblright}{PD1}{\216}% U+201D  
 14835 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 14836 \DeclareTextCommand{\textquoteleft}{PD1}{\217}% U+2018  
 14837 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 14838 \DeclareTextCommand{\textquoteright}{PD1}{\220}% U+2019  
 14839 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 14840 \DeclareTextCommand{\quotesinglbase}{PD1}{\221}% U+201A  
 14841 % U+2122 TRADE MARK SIGN; trademark  
 14842 \DeclareTextCommand{\texttrademark}{PD1}{\222}% U+2122  
 14843 % U+FB01 LATIN SMALL LIGATURE FI; fi  
 14844 \DeclareTextCommand{\textfi}{PD1}{\223}% U+FB01  
 14845 % U+FB02 LATIN SMALL LIGATURE FL; fl  
 14846 \DeclareTextCommand{\textfl}{PD1}{\224}% U+FB02  
 14847 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
 14848 \DeclareTextCommand{\L}{PD1}{\225}% U+0141  
 14849 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
 14850 \DeclareTextCommand{\OE}{PD1}{\226}% U+0152  
 14851 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
 14852 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227}% U+0160  
 14853 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
 14854 \DeclareTextCompositeCommand{\"}{PD1}{Y}{\230}% U+0178  
 14855 \DeclareTextCommand{\IJ}{PD1}{\230}  
 14856 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
 14857 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231}% U+017D  
 14858 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
 14859 \DeclareTextCommand{\i}{PD1}{\232}% U+0131  
 14860 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
 14861 \DeclareTextCommand{\l}{PD1}{\233}% U+0142  
 14862 % U+0153 LATIN SMALL LIGATURE OE; oe  
 14863 \DeclareTextCommand{\oe}{PD1}{\234}% U+0153  
 14864 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
 14865 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235}% U+0161  
 14866 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
 14867 \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.  
 14868 % U+20AC EURO SIGN; \*Euro, euro  
 14869 \DeclareTextCommand{\texteuro}{PD1}{\240}% U+20AC  
 14870 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
 14871 \DeclareTextCommand{\textexclamdown}{PD1}{\241}% U+00A1  
 14872 % U+00A2 CENT SIGN; cent  
 14873 \DeclareTextCommand{\textcent}{PD1}{\242}% U+00A2  
 14874 % U+00A3 POUND SIGN; sterling  
 14875 \DeclareTextCommand{\textsterling}{PD1}{\243}% U+00A3  
 14876 % U+00A4 CURRENCY SIGN; currency  
 14877 \DeclareTextCommand{\textcurrency}{PD1}{\244}% U+00A4  
 14878 % U+00A5 YEN SIGN; yen  
 14879 \DeclareTextCommand{\textyen}{PD1}{\245}% U+00A5  
 14880 % U+00A6 BROKEN BAR; brokenbar  
 14881 \DeclareTextCommand{\textbrokenbar}{PD1}{\246}% U+00A6  
 14882 % U+00A7 SECTION SIGN; section  
 14883 \DeclareTextCommand{\textsection}{PD1}{\247}% U+00A7  
 14884 % U+00A8 DIAERESIS; dieresis  
 14885 \DeclareTextCommand{\textasciidieresis}{PD1}{\250}% U+00A8

14886 % U+00A9 COPYRIGHT SIGN; copyright  
 14887 \DeclareTextCommand{\textcopyright}{PD1}{\251}% U+00A9  
 14888 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
 14889 \DeclareTextCommand{\textordfeminine}{PD1}{\252}% U+00AA  
 14890 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotleft  
 14891 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB  
 14892 % U+00AC NOT SIGN; logicalnot  
 14893 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC  
 14894 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not  
 No glyph \255 in PDFDocEncoding.  
 14895 % U+00AE REGISTERED SIGN; registered  
 14896 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE  
 14897 % U+00AF MACRON; \*macron, overscore  
 14898 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF  
 14899 % U+00B0 DEGREE SIGN; degree  
 14900 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0  
 14901 % U+00B1 PLUS-MINUS SIGN; plusminus  
 14902 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1  
 14903 % U+00B2 SUPERSCRIPT TWO; twosuperior  
 14904 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}%\* U+00B2  
 14905 % U+00B3 SUPERSCRIPT THREE; threesuperior  
 14906 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}%\* U+00B3  
 14907 % U+00B4 ACUTE ACCENT; acute  
 14908 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4  
 14909 % U+00B5 MICRO SIGN; mu, mul  
 14910 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5  
 14911 % U+00B6 PILCROW SIGN; paragraph  
 14912 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6  
 14913 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
 14914 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7  
 14915 % U+00B8 CEDILLA; cedilla  
 14916 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8  
 14917 % U+00B9 SUPERSCRIPT ONE; onesuperior  
 14918 \DeclareTextCommand{\textonesuperior}{PD1}{\271}%\* U+00B9  
 14919 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
 14920 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA  
 14921 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotright  
 14922 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB  
 14923 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
 14924 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC  
 14925 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
 14926 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD  
 14927 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
 14928 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE  
 14929 % U+00BF INVERTED QUESTION MARK; questiondown  
 14930 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF  
 14931 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
 14932 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0  
 14933 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
 14934 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1  
 14935 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
 14936 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2  
 14937 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
 14938 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3  
 14939 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis

14940 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304}% U+00C4  
14941 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
14942 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5  
14943 % U+00C6 LATIN CAPITAL LETTER AE; AE  
14944 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6  
14945 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
14946 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7  
14947 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
14948 \DeclareTextCompositeCommand{\'}{PD1}{E}{\310}% U+00C8  
14949 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
14950 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311}% U+00C9  
14951 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
14952 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312}% U+00CA  
14953 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
14954 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313}% U+00CB  
14955 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
14956 \DeclareTextCompositeCommand{\'}{PD1}{I}{\314}% U+00CC  
14957 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
14958 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315}% U+00CD  
14959 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
14960 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316}% U+00CE  
14961 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
14962 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317}% U+00CF  
14963 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
14964 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0  
14965 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0  
14966 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
14967 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321}% U+00D1  
14968 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
14969 \DeclareTextCompositeCommand{\'}{PD1}{O}{\322}% U+00D2  
14970 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
14971 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323}% U+00D3  
14972 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
14973 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324}% U+00D4  
14974 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
14975 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325}% U+00D5  
14976 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
14977 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326}% U+00D6  
14978 % U+00D7 MULTIPLICATION SIGN; multiply  
14979 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7  
14980 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
14981 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8  
14982 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
14983 \DeclareTextCompositeCommand{\'}{PD1}{U}{\331}% U+00D9  
14984 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
14985 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332}% U+00DA  
14986 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
14987 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333}% U+00DB  
14988 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
14989 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334}% U+00DC  
14990 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
14991 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335}% U+00DD  
14992 % U+00DE LATIN CAPITAL LETTER THORN; Thorn; \TH, \Thorn (wasysym)  
14993 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE  
14994 \DeclareTextCommand{\textThorn}{PD1}{\336}%\* U+00DE  
14995 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
14996 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF

14997 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
14998 \DeclareTextCompositeCommand{\`}{PD1}{a}{\340}% U+00E0  
14999 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
15000 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341}% U+00E1  
15001 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
15002 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342}% U+00E2  
15003 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
15004 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343}% U+00E3  
15005 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
15006 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344}% U+00E4  
15007 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
15008 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345}% U+00E5  
15009 % U+00E6 LATIN SMALL LETTER AE; ae  
15010 \DeclareTextCompositeCommand{\ae}{PD1}{\346}% U+00E6  
15011 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
15012 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347}% U+00E7  
15013 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
15014 \DeclareTextCompositeCommand{\`}{PD1}{e}{\350}% U+00E8  
15015 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
15016 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351}% U+00E9  
15017 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
15018 \DeclareTextCompositeCommand{\^}{PD1}{e}{\352}% U+00EA  
15019 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
15020 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353}% U+00EB  
15021 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
15022 \DeclareTextCompositeCommand{\`}{PD1}{i}{\354}% U+00EC  
15023 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354}% U+00EC  
15024 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
15025 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
15026 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
15027 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
15028 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
15029 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
15030 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
15031 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
15032 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
15033 % U+00F0 LATIN SMALL LETTER ETH; eth  
15034 \DeclareTextCommand{\dh}{PD1}{\360}% U+00F0  
15035 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
15036 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361}% U+00F1  
15037 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
15038 \DeclareTextCompositeCommand{\`}{PD1}{o}{\362}% U+00F2  
15039 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
15040 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363}% U+00F3  
15041 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
15042 \DeclareTextCompositeCommand{\^}{PD1}{o}{\364}% U+00F4  
15043 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
15044 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365}% U+00F5  
15045 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
15046 \DeclareTextCompositeCommand{\"}{PD1}{o}{\366}% U+00F6  
15047 % U+00F7 DIVISION SIGN; divide  
15048 \DeclareTextCommand{\textdivide}{PD1}{\367}% U+00F7  
15049 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
15050 \DeclareTextCommand{\o}{PD1}{\370}% U+00F8  
15051 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
15052 \DeclareTextCompositeCommand{\`}{PD1}{u}{\371}% U+00F9  
15053 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute

```

15054 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372}% U+00FA
15055 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex
15056 \DeclareTextCompositeCommand{\^}{PD1}{u}{\373}% U+00FB
15057 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis
15058 \DeclareTextCompositeCommand{\"}{PD1}{u}{\374}% U+00FC
15059 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute
15060 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375}% U+00FD
15061 % U+00FE LATIN SMALL LETTER THORN; thorn; \th, \thorn (wasysym)
15062 \DeclareTextCommand{\th}{PD1}{\376}% U+00FE
15063 \DeclareTextCommand{\textthorn}{PD1}{\376}%* U+00FE
15064 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis
15065 \DeclareTextCompositeCommand{\"}{PD1}{y}{\377}% U+00FF
15066 \DeclareTextCommand{\ij}{PD1}{\377}% U+00FF

```

Glyphs that consist of several characters.

```

15067 \DeclareTextCommand{\SS}{PD1}{SS}
15068 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

```

Aliases (german.sty)

```

15069 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}
15070 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}
15071 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}
15072 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}
15073 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}
15074 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}
15075 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}
15076 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

```

Aliases (math names)

```

15077 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}
15078 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}
15079 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}
15080 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}
15081 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}
15082 \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).

```

15083 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek
15084 \DeclareTextCompositeCommand{\'}{PD1}{c}{c}% cacute
15085 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek
15086 \DeclareTextCompositeCommand{\'}{PD1}{n}{n}% nacute
15087 \DeclareTextCompositeCommand{\'}{PD1}{s}{s}% sacute
15088 \DeclareTextCompositeCommand{\'}{PD1}{z}{z}% zacute
15089 \DeclareTextCompositeCommand{\.}{PD1}{z}{z}% zdot
15090 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek
15091 \DeclareTextCompositeCommand{\'}{PD1}{C}{C}% Cacute
15092 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek
15093 \DeclareTextCompositeCommand{\'}{PD1}{N}{N}% Nacute
15094 \DeclareTextCompositeCommand{\'}{PD1}{S}{S}% Sacute
15095 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z}% Zacute
15096 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z}% Zdot

```

```

15097 </pd1enc>

```

## 50.2 PU encoding

```

15098 (*puenc)
15099 \DeclareFontEncoding{PU}{}{}

```



### 50.2.1 NFSS2 accents

```

15100 % U+0300 COMBINING GRAVE ACCENT; gravecmb, *gravecomb
15101 \DeclareTextCommand{\`}{PU}[1]{#1\83\000}% U+0300
15102 % U+0301 COMBINING ACUTE ACCENT; acutecmb, *acutecomb
15103 \DeclareTextCommand{\'}{PU}[1]{#1\83\001}% U+0301
15104 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb
15105 \DeclareTextCommand{\^}{PU}[1]{#1\83\002}% U+0302
15106 % U+0303 COMBINING TILDE; tildecmb, *tildecmb
15107 \DeclareTextCommand{\~}{PU}[1]{#1\83\003}% U+0303
15108 % U+0304 COMBINING MACRON; macroncmb
15109 \DeclareTextCommand{\=}{PU}[1]{#1\83\004}% U+0304
15110 % U+0306 COMBINING BREVE; brevecmb
15111 \DeclareTextCommand{\u}{PU}[1]{#1\83\006}% U+0306
15112 \DeclareTextCommand{\U}{PU}[1]{#1\83\006}% U+0306
15113 % U+0307 COMBINING DOT ABOVE; dotaccentcmb
15114 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307
15115 % U+0308 COMBINING DIAERESIS; dieresiscmb
15116 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308
15117 % U+030A COMBINING RING ABOVE; ringcmb
15118 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A
15119 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb
15120 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B
15121 % U+030C COMBINING CARON; caroncmb
15122 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C
15123 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb
15124 \DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F
15125 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F
15126 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb
15127 \DeclareTextCommand{\textinvbreve}{PU}[1]{#1\83\021}% U+0311
15128 % U+0323 COMBINING DOT BELOW; dotbelowcmb, *dotbelowcomb
15129 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323
15130 % U+0324 COMBINING DIAERESIS BELOW; dieresisbelowcmb; \textsubum-
    laut (tipa)
15131 \DeclareTextCommand{\textsubumlaut}{PU}[1]{#1\83\044}% U+0324
15132 % U+0325 COMBINING RING BELOW; ringbelowcmb; \textsubring (tipa)
15133 \DeclareTextCommand{\textsubring}{PU}[1]{#1\83\045}% U+0325
15134 % U+0327 COMBINING CEDILLA; cedillacmb
15135 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327
15136 % U+0328 COMBINING OGONEK; ogonekcmb
15137 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328
15138 % U+032D COMBINING CIRCUMFLEX ACCENT BELOW;
15139 % \textsubcircum (tipa)
15140 \DeclareTextCommand{\textsubcircum}{PU}[1]{#1\83\055}% U+032D
15141 % U+032E COMBINING BREVE BELOW; brevebelowcmb
15142 \DeclareTextCommand{\textsubbreve}{PU}[1]{#1\83\056}% U+032E
15143 % U+0330 COMBINING TILDE BELOW; tildebelowcmb; \textsubtilde (tipa)
15144 \DeclareTextCommand{\textsubtilde}{PU}[1]{#1\83\060}% U+0330
15145 % U+0331 COMBINING MACRON BELOW; macronbelowcmb
15146 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331
15147 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddou-
    blecmb
15148 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361
15149 % U+20DD COMBINING ENCLOSING CIRCLE
15150 \DeclareTextCommand{\textcircled}{PU}[1]{#1\9040\335}% U+20DD

    Double accents.
15151 \DeclareTextCommand{\textacutemacron}{PU}[1]{#1\83\001\83\004}

```

```

15152 \DeclareTextCommand{\textgravemacron}{PU}[1]{#1\83\000\83\004}
    \@empty is an artefact of the NFSS2 machinery, it gets inserted for empty
arguments and spaces.
15153 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textasciigrave}
15154 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}
15155 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\textasciicircum}
15156 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}
15157 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textasciidieresis}
15158 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}
15159 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textasciicaron}
15160 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}
15161 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}
15162 \DeclareTextCompositeCommand{\u}{PU}{\@empty}{\textasciibreve}
15163 \DeclareTextCompositeCommand{\G}{PU}{\@empty}{\textdoublegrave}
15164 \DeclareTextCompositeCommand{\=}{PU}{\@empty}{\textasciimacron}
15165 \DeclareTextCompositeCommand{\H}{PU}{\@empty}{\texthungarumlaut}
15166 \DeclareTextCompositeCommand{\k}{PU}{\@empty}{\textogonek}
15167 \DeclareTextCompositeCommand{\textinvbreve}{PU}{\@empty}{\83\021}
15168 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{\@empty}{\83\044}
15169 \DeclareTextCompositeCommand{\textsubring}{PU}{\@empty}{\textringlow}
15170 \DeclareTextCompositeCommand{\textsubcircum}{PU}{\@empty}{\textcircum-
low}
15171 \DeclareTextCompositeCommand{\textsubbreve}{PU}{\@empty}{\83\056}
15172 \DeclareTextCompositeCommand{\textsubtilde}{PU}{\@empty}{\texttildebelow}
15173 \DeclareTextCompositeCommand{\b}{PU}{\@empty}{\textmacronbelow}
15174 \DeclareTextCompositeCommand{\d}{PU}{\@empty}{\textdotbelow}
15175 \DeclareTextCompositeCommand{\t}{PU}{\@empty}{\texttie}
15176 \DeclareTextCompositeCommand{\newtie}{PU}{\@empty}{\textnewtie}
15177 \DeclareTextCompositeCommand{\textcircled}{PU}{\@empty}{\textbigcircle}
15178 \DeclareTextCompositeCommand{\textacutemacron}{PU}{\@empty}{\83\001\83\004}
15179 \DeclareTextCompositeCommand{\textgravemacron}{PU}{\@empty}{\83\000\83\004}

15180 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textasciigrave}
15181 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textacute}
15182 \DeclareTextCompositeCommand{\~}{PU}{\ }{\textasciicircum}
15183 \DeclareTextCompositeCommand{\~}{PU}{\ }{\texttilde}
15184 \DeclareTextCompositeCommand{\"}{PU}{\ }{\textasciidieresis}
15185 \DeclareTextCompositeCommand{\r}{PU}{\ }{\textring}
15186 \DeclareTextCompositeCommand{\v}{PU}{\ }{\textasciicaron}
15187 \DeclareTextCompositeCommand{\.}{PU}{\ }{\textdotaccent}
15188 \DeclareTextCompositeCommand{\c}{PU}{\ }{\textcedilla}
15189 \DeclareTextCompositeCommand{\u}{PU}{\ }{\textasciibreve}
15190 \DeclareTextCompositeCommand{\G}{PU}{\ }{\textdoublegrave}
15191 \DeclareTextCompositeCommand{\=}{PU}{\ }{\textasciimacron}
15192 \DeclareTextCompositeCommand{\H}{PU}{\ }{\texthungarumlaut}
15193 \DeclareTextCompositeCommand{\k}{PU}{\ }{\textogonek}
15194 \DeclareTextCompositeCommand{\textinvbreve}{PU}{\ }{\83\021}
15195 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{\ }{\83\044}
15196 \DeclareTextCompositeCommand{\textsubring}{PU}{\ }{\textringlow}
15197 \DeclareTextCompositeCommand{\textsubcircum}{PU}{\ }{\textcircumlow}
15198 \DeclareTextCompositeCommand{\textsubbreve}{PU}{\ }{\83\056}
15199 \DeclareTextCompositeCommand{\textsubtilde}{PU}{\ }{\texttildebelow}
15200 \DeclareTextCompositeCommand{\b}{PU}{\ }{\textmacronbelow}
15201 \DeclareTextCompositeCommand{\d}{PU}{\ }{\textdotbelow}
15202 \DeclareTextCompositeCommand{\t}{PU}{\ }{\texttie}
15203 \DeclareTextCompositeCommand{\newtie}{PU}{\ }{\textnewtie}
15204 \DeclareTextCompositeCommand{\textcircled}{PU}{\ }{\textbigcircle}
15205 \DeclareTextCompositeCommand{\textacutemacron}{PU}{\ }{\83\001\83\004}

```

15206 \DeclareTextCompositeCommand{\textgravemacron}{PU}{\ }{{ \83\000\83\004}}

Accents for capitals (see encoding TS1)

15207 \DeclareTextCommand{\capitalcedilla}{PU}[1]{\c{#1}}  
 15208 \DeclareTextCommand{\capitalogonek}{PU}[1]{\k{#1}}  
 15209 \DeclareTextCommand{\capitalgrave}{PU}[1]{\`{#1}}  
 15210 \DeclareTextCommand{\capitalacute}{PU}[1]{\^{#1}}  
 15211 \DeclareTextCommand{\capitalcircumflex}{PU}[1]{\~{#1}}  
 15212 \DeclareTextCommand{\capitaltilde}{PU}[1]{\~{#1}}  
 15213 \DeclareTextCommand{\capitaldieresis}{PU}[1]{\"{#1}}  
 15214 \DeclareTextCommand{\capitalhungarumlaut}{PU}[1]{\H{#1}}  
 15215 \DeclareTextCommand{\capitalring}{PU}[1]{\r{#1}}  
 15216 \DeclareTextCommand{\capitalcaron}{PU}[1]{\v{#1}}  
 15217 \DeclareTextCommand{\capitalbreve}{PU}[1]{\u{#1}}  
 15218 \DeclareTextCommand{\capitalmacron}{PU}[1]{\={#1}}  
 15219 \DeclareTextCommand{\capitaldotaccent}{PU}[1]{\.{#1}}  
 15220 \DeclareTextCommand{\capitaltie}{PU}[1]{\t{#1}}  
 15221 \DeclareTextCommand{\capitalnewtie}{PU}[1]{\newtie{#1}}

## 50.2.2 Basic Latin: U+0000 to U+007F

Special white space escape characters.

15222 % U+0009 (CHARACTER TABULATION)  
 15223 \DeclareTextCommand{\textHT}{PU}{\80\011}% U+0009  
 15224 % U+000A (LINE FEED)  
 15225 \DeclareTextCommand{\textLF}{PU}{\80\012}% U+000A  
 15226 % U+000D (CARRIAGE RETURN)  
 15227 \DeclareTextCommand{\textCR}{PU}{\80\015}% U+000D  
 \80\040: U+0020 SPACE; space, spacehackarabic  
 \80\041: U+0021 EXCLAMATION MARK; exclam  
 15228 % U+0022 QUOTATION MARK; quotedbl  
 15229 \DeclareTextCommand{\textquotedbl}{PU}{\string"}% \80\042 U+0022  
 15230 % U+0023 NUMBER SIGN; numbersign  
 15231 \DeclareTextCommand{\textnumbersign}{PU}{\80\043}% U+0023  
 15232 % U+0024 DOLLAR SIGN; dollar  
 15233 \DeclareTextCommand{\textdollar}{PU}{\80\044}% U+0024  
 15234 %\* \textdollar -> \mathdollar  
 15235 % U+0025 PERCENT SIGN; percent  
 15236 \DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025  
 15237 % U+0026 AMPERSAND; ampersand  
 15238 \DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026  
 15239 %\* \textampersand -> \binampersand (stmaryrd)  
 15240 %\* \textampersand -> \with (cml)  
 15241 % U+0027 APOSTROPHE; quotesingle  
 15242 \DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027  
 15243 % U+0028 LEFT PARENTHESIS; parenleft  
 15244 \DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028  
 15245 % U+0029 RIGHT PARENTHESIS; parenright  
 15246 \DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029  
 15247 % U+002A ASTERISK; asterisk  
 15248 \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

15249 % U+003C LESS-THAN SIGN; less

15250 \DeclareTextCommand{\textless}{PU}{<}% \80\074 U+003C

\80\075: U+003D EQUALS SIGN; equal

15251 % U+003E GREATER-THAN SIGN; greater

15252 \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

15253 % U+005C REVERSE SOLIDUS; backslash

15254 \DeclareTextCommand{\textbackslash}{PU}{\80\134}% U+005C

\80\135: U+005D RIGHT SQUARE BRACKET; bracketright

15255 % U+005E CIRCUMFLEX ACCENT; asciicircum

15256 \DeclareTextCommand{\textasciicircum}{PU}{\80\136}% U+005E

15257 % U+005F LOW LINE; underscore

15258 \DeclareTextCommand{\textunderscore}{PU}{\80\137}% U+005F

15259 %\* \textunderscore -> \mathunderscore (LaTeX)

15260 % U+0060 GRAVE ACCENT; grave

15261 \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

15262 % U+0069 LATIN SMALL LETTER I; i

15263 \DeclareTextCompositeCommand{\.}{PU}{i}{i} % \80\151 U+0069

15264 \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

15265 % U+007B LEFT CURLY BRACKET; braceleft

15266 \DeclareTextCommand{\textbraceleft}{PU}{\80\173}% U+007B

15267 % U+007C VERTICAL LINE; \*bar, verticalbar

15268 \DeclareTextCommand{\textbar}{PU}{|}% \80\174 U+007C

15269 %\* \textbar -> \textvbarline (tipa)

15270 % U+007D RIGHT CURLY BRACKET; braceright

15271 \DeclareTextCommand{\textbraceright}{PU}{\80\175}% U+007D

15272 % U+007E TILDE; asciitilde

15273 \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

15274 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown

15275 \DeclareTextCommand{\textexclamdown}{PU}{\80\241}% U+00A1

15276 % U+00A2 CENT SIGN; cent

15277 \DeclareTextCommand{\textcent}{PU}{\80\242}% U+00A2

15278 % U+00A3 POUND SIGN; sterling

15279 \DeclareTextCommand{\textsterling}{PU}{\80\243}% U+00A3

15280 %\* \textsterling -> \mathsterling (LaTeX)  
15281 %\* \textsterling -> \pounds (LaTeX)  
15282 % U+00A4 CURRENCY SIGN; currency  
15283 \DeclareTextCommand{\textcurrency}{PU}{\80\244}% U+00A4  
15284 % U+00A5 YEN SIGN; yen  
15285 \DeclareTextCommand{\textyen}{PU}{\80\245}% U+00A5  
15286 % U+00A6 BROKEN BAR; brokenbar  
15287 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246}% U+00A6  
15288 %\* \textbrokenbar -> \brokenvert (wasysym)  
15289 % U+00A7 SECTION SIGN; section  
15290 \DeclareTextCommand{\textsection}{PU}{\80\247}% U+00A7  
15291 %\* \textsection -> \mathsection (LaTeX)  
15292 %\* \textsection -> \S (LaTeX)  
15293 % U+00A8 DIAERESIS; dieresis  
15294 \DeclareTextCommand{\textasciidieresis}{PU}{\80\250}% U+00A8  
15295 % U+00A9 COPYRIGHT SIGN; copyright  
15296 \DeclareTextCommand{\textcopyright}{PU}{\80\251}%\* U+00A9  
15297 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
15298 \DeclareTextCommand{\textordfeminine}{PU}{\80\252}% U+00AA  
15299 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
motleft  
15300 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB  
15301 % U+00AC NOT SIGN; logicalnot  
15302 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254}% U+00AC  
15303 \DeclareTextCommand{\textlnot}{PU}{\80\254}% U+00AC  
\80\255: U+00AD SOFT HYPHEN; sftthyphen, softthyphen  
15304 % U+00AE REGISTERED SIGN; registered  
15305 \DeclareTextCommand{\textregistered}{PU}{\80\256}% U+00AE  
15306 % U+00AF MACRON; \*macron, overscore  
15307 \DeclareTextCommand{\textasciimacron}{PU}{\80\257}% U+00AF  
15308 % U+00B0 DEGREE SIGN; degree  
15309 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0  
15310 % U+00B1 PLUS-MINUS SIGN; plusminus  
15311 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1  
15312 % U+00B2 SUPERSCRIPT TWO; twosuperior  
15313 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}%\* U+00B2  
15314 % U+00B3 SUPERSCRIPT THREE; threesuperior  
15315 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}%\* U+00B3  
15316 % U+00B4 ACUTE ACCENT; acute  
15317 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4  
15318 \DeclareTextCommand{\textasciiacute}{PU}{\80\264}% U+00B4  
15319 % U+00B5 MICRO SIGN; mu, mul  
15320 \DeclareTextCommand{\textmu}{PU}{\80\265}% U+00B5  
15321 % U+00B6 PILCROW SIGN; paragraph  
15322 \DeclareTextCommand{\textparagraph}{PU}{\80\266}% U+00B6  
15323 %\* \textparagraph -> \mathparagraph (LaTeX)  
15324 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
15325 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267}% U+00B7  
15326 % U+00B8 CEDILLA; cedilla  
15327 \DeclareTextCommand{\textcedilla}{PU}{\80\270}% U+00B8  
15328 % U+00B9 SUPERSCRIPT ONE; onesuperior  
15329 \DeclareTextCommand{\textonesuperior}{PU}{\80\271}%\* U+00B9  
15330 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
15331 \DeclareTextCommand{\textordmasculine}{PU}{\80\272}% U+00BA  
15332 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
motright  
15333 \DeclareTextCommand{\guillemotright}{PU}{\80\273}% U+00BB

15334 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
15335 \DeclareTextCommand{\textonequarter}{PU}{\80\274}% U+00BC  
15336 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
15337 \DeclareTextCommand{\textonehalf}{PU}{\80\275}% U+00BD  
15338 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
15339 \DeclareTextCommand{\textthreequarters}{PU}{\80\276}% U+00BE  
15340 % U+00BF INVERTED QUESTION MARK; questiondown  
15341 \DeclareTextCommand{\textquestiondown}{PU}{\80\277}% U+00BF  
15342 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
15343 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
15344 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
15345 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
15346 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
15347 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302}% U+00C2  
15348 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
15349 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
15350 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
15351 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304}% U+00C4  
15352 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
15353 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305}% U+00C5  
15354 % U+00C6 LATIN CAPITAL LETTER AE; AE  
15355 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6  
15356 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
15357 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7  
15358 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
15359 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
15360 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
15361 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
15362 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
15363 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312}% U+00CA  
15364 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
15365 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313}% U+00CB  
15366 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
15367 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
15368 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
15369 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
15370 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
15371 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316}% U+00CE  
15372 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
15373 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317}% U+00CF  
15374 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
15375 \DeclareTextCommand{\DH}{PU}{\80\320}% U+00D0  
15376 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
15377 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321}% U+00D1  
15378 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
15379 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
15380 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
15381 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
15382 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
15383 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324}% U+00D4  
15384 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
15385 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
15386 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
15387 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326}% U+00D6  
15388 % U+00D7 MULTIPLICATION SIGN; multiply  
15389 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7  
15390 %\* \textmultiply -> \vartimes (stmaryrd)

15391 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
15392 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8  
15393 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
15394 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331}% U+00D9  
15395 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
15396 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA  
15397 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
15398 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333}% U+00DB  
15399 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
15400 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334}% U+00DC  
15401 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
15402 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD  
15403 % U+00DE LATIN CAPITAL LETTER THORN; Thorn; \TH, \Thorn (wasysym)  
15404 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE  
15405 \DeclareTextCommand{\textThorn}{PU}{\80\336}%\* U+00DE  
15406 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
15407 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF  
15408 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
15409 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}% U+00E0  
15410 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
15411 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1  
15412 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
15413 \DeclareTextCompositeCommand{\^}{PU}{a}{\80\342}% U+00E2  
15414 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
15415 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
15416 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
15417 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344}% U+00E4  
15418 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
15419 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5  
15420 % U+00E6 LATIN SMALL LETTER AE; ae  
15421 \DeclareTextCommand{\ae}{PU}{\80\346}% U+00E6  
15422 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
15423 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7  
15424 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
15425 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}% U+00E8  
15426 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
15427 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
15428 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
15429 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA  
15430 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
15431 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353}% U+00EB  
15432 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
15433 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC  
15434 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC  
15435 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
15436 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
15437 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\355}% U+00ED  
15438 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
15439 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
15440 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
15441 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
15442 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
15443 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
15444 % U+00F0 LATIN SMALL LETTER ETH; eth  
15445 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0  
15446 %\* \dh -> \eth (wsuipa, phonetic)  
15447 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde

15448 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361}% U+00F1  
15449 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
15450 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}% U+00F2  
15451 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
15452 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
15453 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
15454 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364}% U+00F4  
15455 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
15456 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
15457 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
15458 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366}% U+00F6  
15459 % U+00F7 DIVISION SIGN; divide  
15460 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7  
15461 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
15462 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8  
15463 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
15464 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}% U+00F9  
15465 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
15466 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
15467 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
15468 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373}% U+00FB  
15469 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
15470 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374}% U+00FC  
15471 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
15472 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
15473 % U+00FE LATIN SMALL LETTER THORN; thorn;  
15474 % \th, \thorn (wasysym), \textthorn (tipa)  
15475 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE  
15476 \DeclareTextCommand{\textthorn}{PU}{\80\376}%\* U+00FE  
15477 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
15478 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377}% U+00FF

#### 50.2.4 Latin Extended-A: U+0080 to U+017F

15479 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron  
15480 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% U+0100  
15481 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron  
15482 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% U+0101  
15483 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve  
15484 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% U+0102  
15485 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve  
15486 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% U+0103  
15487 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek  
15488 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% U+0104  
15489 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek  
15490 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% U+0105  
15491 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacute  
15492 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% U+0106  
15493 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacute  
15494 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% U+0107  
15495 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex  
15496 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% U+0108  
15497 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex  
15498 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% U+0109  
15499 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotac-  
cent  
15500 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% U+010A



15501 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent  
15502 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% U+010B  
15503 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron  
15504 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% U+010C  
15505 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron  
15506 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% U+010D  
15507 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron  
15508 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% U+010E  
15509 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron  
15510 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% U+010F  
15511 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash  
15512 \DeclareTextCommand{\DJ}{PU}{\81\020}% U+0110  
15513 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron;  
15514 % \textcrd (tipa)  
15515 \DeclareTextCommand{\dj}{PU}{\81\021}% U+0111  
15516 \DeclareTextCommand{\textcrd}{PU}{\81\021}% U+0111  
15517 %\* \textcrd -> \crossd (wsuipa)  
15518 % An alternate glyph with the stroke through the bowl:  
15519 %\* \textcrd -> \textbard (tipa)  
15520 %\* \textcrd -> \bard (wsuipa)  
15521 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron  
15522 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% U+0112  
15523 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron  
15524 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% U+0113  
15525 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve  
15526 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% U+0114  
15527 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve  
15528 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% U+0115  
15529 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent  
15530 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% U+0116  
15531 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent  
15532 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% U+0117  
15533 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek  
15534 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% U+0118  
15535 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek  
15536 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% U+0119  
15537 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron  
15538 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% U+011A  
15539 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron  
15540 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% U+011B  
15541 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex  
15542 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% U+011C  
15543 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex  
15544 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% U+011D  
15545 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve  
15546 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% U+011E  
15547 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve  
15548 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% U+011F  
15549 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotac-  
cent  
15550 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% U+0120  
15551 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent  
15552 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% U+0121  
15553 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcom-  
maaccent  
15554 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% U+0122  
15555 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent

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15556 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% U+0123
15557 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex
15558 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% U+0124
15559 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex
15560 \DeclareTextCompositeCommand{\~}{PU}{h}{\81\045}% U+0125
15561 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar
15562 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126
15563 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar; \hbar (AmS)
15564 \DeclareTextCommand{\textthbar}{PU}{\81\047}%* U+127
15565 %* \textthbar -> \textcrh (tipa)
15566 %* \textthbar -> \crossh (wsuipa)
15567 %* \textthbar -> \planck (phonetic)
15568 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; Itilde
15569 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128
15570 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde
15571 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129
15572 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129
15573 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron
15574 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% U+012A
15575 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron
15576 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B
15577 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B
15578 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibreve
15579 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C
15580 % U+012D LATIN SMALL LETTER I WITH BREVE; ibreve
15581 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D
15582 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D
15583 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek
15584 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E
15585 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek
15586 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F
15587 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F
15588 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent
15589 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% U+0130
15590 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi
15591 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131
15592 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ
15593 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132
15594 % U+0133 LATIN SMALL LIGATURE IJ; ij
15595 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133
15596 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex
15597 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% U+0134
15598 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex
15599 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135
15600 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135
15601 % U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaac-
cent
15602 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136
15603 % U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent
15604 \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`.

```

15605 % U+0138 LATIN SMALL LETTER KRA; kgreenlandic
15606 \DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138
15607 % U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute
15608 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071}% U+0139

```

15609 % U+013A LATIN SMALL LETTER L WITH ACUTE; lacute  
 15610 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072}% U+013A  
 15611 % U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaac-  
 cent  
 15612 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B  
 15613 % U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent  
 15614 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C  
 15615 % U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron  
 15616 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D  
 15617 % U+013E LATIN SMALL LETTER L WITH CARON; lcaron  
 15618 \DeclareTextCompositeCommand{\v}{PU}{l}{\81\076}% U+013E  
 There seems to be no variants of letters 'L' and 'l' with a dot above (reasonable).  
 Therefore the \. accent is reused instead of making a separate accent macro  
 \textmiddledot.  
 15619 % U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotac-  
 cent  
 15620 \DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F  
 15621 % U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent  
 15622 \DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140  
 15623 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
 15624 \DeclareTextCommand{\L}{PU}{\81\101}% U+0141  
 15625 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
 15626 \DeclareTextCommand{\l}{PU}{\81\102}% U+0142  
 15627 % U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute  
 15628 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103}% U+0143  
 15629 % U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute  
 15630 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104}% U+0144  
 15631 % U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaac-  
 cent  
 15632 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105}% U+0145  
 15633 % U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent  
 15634 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106}% U+0146  
 15635 % U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron  
 15636 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107}% U+0147  
 15637 % U+0148 LATIN SMALL LETTER N WITH CARON; ncaron  
 15638 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110}% U+0148  
 15639 % U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napos-  
 trophe, quoterightn  
 15640 \DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149  
 15641 % U+014A LATIN CAPITAL LETTER ENG; Eng  
 15642 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A  
 15643 % U+014B LATIN SMALL LETTER ENG; eng  
 15644 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B  
 15645 %\* \ng -> \eng (wsuipa)  
 15646 %\* \ng -> \engma (phonetic)  
 15647 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron  
 15648 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114}% U+014C  
 15649 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron  
 15650 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115}% U+014D  
 15651 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve  
 15652 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116}% U+014E  
 15653 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve  
 15654 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117}% U+014F  
 15655 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odblac-  
 ute, Ohungarumlaut  
 15656 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120}% U+0150

15657 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odbla-  
 cute, ohungarumlaut  
 15658 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121}% U+0151  
 15659 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
 15660 \DeclareTextCommand{\OE}{PU}{\81\122}% U+0152  
 15661 % U+0153 LATIN SMALL LIGATURE OE; oe  
 15662 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153  
 15663 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute  
 15664 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124}% U+0154  
 15665 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute  
 15666 \DeclareTextCompositeCommand{\r}{PU}{r}{\81\125}% U+0155  
 15667 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcommaac-  
 cent  
 15668 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126}% U+0156  
 15669 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcommaaccent  
 15670 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127}% U+0157  
 15671 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron  
 15672 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130}% U+0158  
 15673 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron  
 15674 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131}% U+0159  
 15675 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute  
 15676 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132}% U+015A  
 15677 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute  
 15678 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133}% U+015B  
 15679 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex  
 15680 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134}% U+015C  
 15681 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex  
 15682 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135}% U+015D  
 15683 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla  
 15684 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136}% U+015E  
 15685 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla  
 15686 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137}% U+015F  
 15687 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
 15688 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140}% U+0160  
 15689 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
 15690 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141}% U+0161  
 15691 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcommaac-  
 cent  
 15692 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162  
 15693 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcommaaccent  
 15694 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163  
 15695 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron  
 15696 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164  
 15697 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron  
 15698 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165  
 15699 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar  
 15700 \DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166  
 15701 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar  
 15702 \DeclareTextCommand{\texttslash}{PU}{\81\147}% U+0167  
 15703 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde  
 15704 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168  
 15705 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde  
 15706 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
 15707 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron  
 15708 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152}% U+016A  
 15709 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron  
 15710 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153}% U+016B

15711 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve  
 15712 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154}% U+016C  
 15713 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve  
 15714 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155}% U+016D  
 15715 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring  
 15716 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156}% U+016E  
 15717 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring  
 15718 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157}% U+016F  
 15719 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Udbla-  
 cute, Uhungarumlaut  
 15720 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160}% U+0170  
 15721 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; udbla-  
 cute, uhungarumlaut  
 15722 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161}% U+0171  
 15723 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek  
 15724 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162}% U+0172  
 15725 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek  
 15726 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163}% U+0173  
 15727 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex  
 15728 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164}% U+0174  
 15729 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex  
 15730 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165}% U+0175  
 15731 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex  
 15732 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166}% U+0176  
 15733 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex  
 15734 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167}% U+0177  
 15735 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
 15736 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170}% U+0178  
 15737 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute  
 15738 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171}% U+0179  
 15739 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute  
 15740 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172}% U+017A  
 15741 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent  
 15742 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173}% U+017B  
 15743 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent  
 15744 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174}% U+017C  
 15745 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
 15746 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175}% U+017D  
 15747 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
 15748 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176}% U+017E  
 15749 % U+017F LATIN SMALL LETTER LONG S; longs, slong  
 15750 \DeclareTextCommand{\textlongS}{PU}{\81\177}% U+017F

## 50.2.5 Latin Extended-B: U+0180 to U+024F

15751 % U+0180 LATIN SMALL LETTER B WITH STROKE; bstroke; \textcrb (tipa)  
 15752 \DeclareTextCommand{\textcrb}{PU}{\81\200}% U+0180  
 15753 %\* \textcrb -> \crossb (wsuipa)  
 15754 % An alternate glyph with the stroke through the bowl:  
 15755 %\* \textcrb -> \textbarb (tipa)  
 15756 %\* \textcrb -> \barb (wsuipa)  
 15757 % U+0181 LATIN CAPITAL LETTER B WITH HOOK; Bhook; \hausaB (pho-  
 netic)  
 15758 \DeclareTextCommand{\texthausaB}{PU}{\81\201}%\* U+0181  
 15759 % U+0188 LATIN SMALL LETTER C WITH HOOK; chook; \texthtc (tipa)  
 15760 \DeclareTextCommand{\texthtc}{PU}{\81\210}% U+0188  
 15761 % U+018A LATIN CAPITAL LETTER D WITH HOOK; Dhook; \hausaD (pho-  
 netic)

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15762 \DeclareTextCommand{\texthausaD}{PU}{\81\212}%* U+018A
15763 % U+018E LATIN CAPITAL LETTER REVERSED E; Ereversed
15764 \DeclareTextCommand{\textEreversed}{PU}{\81\216}% U+018E
15765 \DeclareTextCommand{\textrevE}{PU}{\81\216}% U+018E
15766 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin
15767 \DeclareTextCommand{\textflorin}{PU}{\81\222}% U+0192
15768 % U+0195 LATIN SMALL LETTER HV; hv; \texthvlig (tipa)
15769 \DeclareTextCommand{\texthvlig}{PU}{\81\225}% U+0195
15770 %* \texthvlig -> \hv (wsuipa)
15771 % U+0198 LATIN CAPITAL LETTER K WITH HOOK; Khook; \hausak (pho-
      netic)
15772 \DeclareTextCommand{\texthausaK}{PU}{\81\230}%* U+0198
15773 % U+0199 LATIN SMALL LETTER K WITH HOOK; khook; \texthtk (tipa)
15774 \DeclareTextCommand{\texthtk}{PU}{\81\231}% U+0199
15775 %* \texthtk -> \hausak (phonetic)
15776 % U+019A LATIN SMALL LETTER L WITH BAR; lbar;
15777 % \textbarl (tipa), \barl (wsuipa)
15778 \DeclareTextCommand{\textbarl}{PU}{\81\232}%* U+019A
15779 % U+019B LATIN SMALL LETTER LAMBDA WITH STROKE/
15780 % LATIN SMALL LETTER BARRED LAMBDA; lambdastroke;
15781 % \textcrlambda (tipa)
15782 \DeclareTextCommand{\textcrlambda}{PU}{\81\233}% U+019B
15783 %* \textcrlambda -> \crossnilambda (wsuipa)
15784 %* \textcrlambda -> \barlambd (phonetic)
15785 %* \textcrlambda -> \lambdabar (txfonts/pxfonts)
15786 %* \textcrlambda -> \lambdaslash (txfonts/pxfonts)
15787 % U+019E LATIN SMALL LETTER N WITH LONG RIGHT LEG; nletright-
      long;
15788 % \textnrleg (tipx)
15789 \DeclareTextCommand{\textPUnrleg}{PU}{\81\236}% U+019E
15790 %* \textPUnrleg -> \textnrleg (tipx)
15791 % U+01A5 LATIN SMALL LETTER P WITH HOOK; phook; \texthtp (tipa)
15792 \DeclareTextCommand{\texthtp}{PU}{\81\245}% U+01A5
15793 % U+01AB LATIN SMALL LETTER T WITH PALATAL HOOK; tpalatalhook;
15794 % \textlhookt (tipa)
15795 \DeclareTextCommand{\textlhookt}{PU}{\81\253}% U+01AB
15796 % U+01AD LATIN SMALL LETTER T WITH HOOK; thook; \texthtt (tipa)
15797 \DeclareTextCommand{\texthtt}{PU}{\81\255}% U+01AD
15798 % U+01B9 LATIN SMALL LETTER EZH REVERSED/
15799 % LATIN SMALL LETTER REVERSED YOGH; \textrevyogh (tipa)
15800 \DeclareTextCommand{\textrevyogh}{PU}{\81\271}% U+01B9
15801 % U+01BB LATIN LETTER TWO WITH STROKE; twostroke; \textcrtwo (tipa)
15802 \DeclareTextCommand{\textcrtwo}{PU}{\81\273}% U+01BB
15803 % U+01BE LATIN LETTER INVERTED GLOTTAL STOP WITH STROKE;
15804 % glottalinvertedstroke; \textcrinvglotstop (tipa)
15805 \DeclareTextCommand{\textcrinvglotstop}{PU}{\81\276}% U+01BE
15806 % U+01BF LATIN LETTER WYNN; wynn; \textwynn (tipa)
15807 \DeclareTextCommand{\textwynn}{PU}{\81\277}% U+01BF
15808 % U+01C0 LATIN LETTER DENTAL CLICK/LATIN LETTER PIPE; clickden-
      tal;
15809 % \textpipe (tipa)
15810 \DeclareTextCommand{\textpipe}{PU}{\81\300}% U+01C0
15811 %* \textpipe -> \textpipevar (tipx)
15812 % U+01C1 LATIN LETTER LATERAL CLICK/LATIN LETTER
15813 % DOUBLE PIPE; clicklateral; \textdoublepipe (tipa)
15814 \DeclareTextCommand{\textdoublepipe}{PU}{\81\301}% U+01C1
15815 %* \textdoublepipe -> \textdoublepipevar (tipx)

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15816 % U+01C2 LATIN LETTER ALVEOLAR CLICK/LATIN LETTER PIPE DOUBLE BAR;  
 15817 % clickalveolar; \textdoublebarpipe (tipa)  
 15818 \DeclareTextCommand{\textdoublebarpipe}{PU}{\81\302}% U+01C2  
 15819 %\* \textdoublebarpipe -> \textdoublebarpipevar (tipx)  
 15820 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron  
 15821 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315}% U+01CD  
 15822 % U+01CE LATIN SMALL LETTER A WITH CARON; acaron  
 15823 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316}% U+01CE  
 15824 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icaron  
 15825 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317}% U+01CF  
 15826 % U+01D0 LATIN SMALL LETTER I WITH CARON; icaron  
 15827 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 15828 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 15829 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocaron  
 15830 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1  
 15831 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocaron  
 15832 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2  
 15833 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucaron  
 15834 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3  
 15835 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucaron  
 15836 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4  
 15837 % U+01DD LATIN SMALL LETTER TURNED E; eturned; \inve (wasysym)  
 15838 \DeclareTextCommand{\textinve}{PU}{\81\335}%\* U+01DD  
 15839 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke  
 15840 \DeclareTextCommand{\textgslash}{PU}{\81\344}% U+01E4  
 15841 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke  
 15842 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5  
 15843 %\* \textgslash -> \textcrg (tipa)  
 15844 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcaron  
 15845 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6  
 15846 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcaron  
 15847 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7  
 15848 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcaron  
 15849 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8  
 15850 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcaron  
 15851 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9  
 15852 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek  
 15853 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA  
 15854 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek  
 15855 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB  
 15856 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcaron  
 15857 \DeclareTextCompositeCommand{\v}{PU}{\j}{\81\360}% U+01F0  
 15858 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
 15859 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute  
 15860 \DeclareTextCompositeCommand{\'}{PU}{G}{\81\364}% U+01F4  
 15861 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute  
 15862 \DeclareTextCompositeCommand{\'}{PU}{g}{\81\365}% U+01F5  
 15863 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE  
 15864 \DeclareTextCompositeCommand{\`}{PU}{N}{\81\370}% U+01F8  
 15865 % U+01F9 LATIN SMALL LETTER N WITH GRAVE  
 15866 \DeclareTextCompositeCommand{\`}{PU}{n}{\81\371}% U+01F9  
 15867 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute  
 15868 \DeclareTextCompositeCommand{\'}{PU}{\AE}{\81\374}% U+01FC  
 15869 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute  
 15870 \DeclareTextCompositeCommand{\'}{PU}{\ae}{\81\375}% U+01FD  
 15871 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE;

15872 % \*Oslashacute, Ostrokeacut  
 15873 \DeclareTextCompositeCommand{\'}{PU}{\O}{\81\376}% U+01FE  
 15874 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE;  
 15875 % \*oslashacute, ostrokeacute  
 15876 \DeclareTextCompositeCommand{\'}{PU}{\o}{\81\377}% U+01FF  
 15877 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave  
 15878 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200  
 15879 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave  
 15880 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201  
 15881 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave  
 15882 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204  
 15883 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave  
 15884 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205  
 15885 % U+0206 LATIN CAPITAL LETTER E WITH INVERTED BREVE; Einvert-  
 edbreve  
 15886 \DeclareTextCompositeCommand{\textinvbreve}{PU}{E}{\82\006}% U+0206  
 15887 % U+0207 LATIN SMALL LETTER E WITH INVERTED BREVE; einvert-  
 breve  
 15888 \DeclareTextCompositeCommand{\textinvbreve}{PU}{e}{\82\007}% U+0207  
 15889 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; Idblgrave  
 15890 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208  
 15891 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave  
 15892 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
 15893 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
 15894 % U+020A LATIN CAPITAL LETTER I WITH INVERTED BREVE; Iinverted-  
 breve  
 15895 \DeclareTextCompositeCommand{\textinvbreve}{PU}{I}{\82\012}% U+020A  
 15896 % U+020B LATIN SMALL LETTER I WITH INVERTED BREVE; iinverted-  
 breve  
 15897 \DeclareTextCompositeCommand{\textinvbreve}{PU}{i}{\82\013}% U+020B  
 15898 \DeclareTextCompositeCommand{\textinvbreve}{PU}{i}{\82\013}% U+020B  
 15899 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave  
 15900 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C  
 15901 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave  
 15902 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D  
 15903 % U+020E LATIN CAPITAL LETTER O WITH INVERTED BREVE; Oinvert-  
 edbreve  
 15904 \DeclareTextCompositeCommand{\textinvbreve}{PU}{O}{\82\016}% U+020E  
 15905 % U+020F LATIN SMALL LETTER O WITH INVERTED BREVE; oinverted-  
 breve  
 15906 \DeclareTextCompositeCommand{\textinvbreve}{PU}{o}{\82\017}% U+020F  
 15907 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave  
 15908 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210  
 15909 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave  
 15910 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211  
 15911 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave  
 15912 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214  
 15913 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave  
 15914 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215  
 15915 % U+0216 LATIN CAPITAL LETTER U WITH INVERTED BREVE; Uinvert-  
 edbreve  
 15916 \DeclareTextCompositeCommand{\textinvbreve}{PU}{U}{\82\026}% U+0216  
 15917 % U+0217 LATIN SMALL LETTER U WITH INVERTED BREVE; uinverted-  
 breve  
 15918 \DeclareTextCompositeCommand{\textinvbreve}{PU}{u}{\82\027}% U+0217  
 15919 % U+021D LATIN SMALL LETTER YOGH;  
 15920 % \textyogh (tipa), \yogh (wsuipa, phonetic)



15921 \DeclareTextCommand{\textyogh}{PU}{\82\035}%\* U+021D  
 15922 % U+021E LATIN CAPITAL LETTER H WITH CARON  
 15923 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E  
 15924 % U+021F LATIN SMALL LETTER H WITH CARON  
 15925 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F  
 15926 % U+0221 LATIN SMALL LETTER D WITH CURL; \textctd (tipa)  
 15927 \DeclareTextCommand{\textctd}{PU}{\82\041}% U+0221  
 15928 % U+0225 LATIN SMALL LETTER Z WITH HOOK; \textcommatailz (tipa)  
 15929 \DeclareTextCommand{\textcommatailz}{PU}{\82\045}% U+0225  
 15930 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE  
 15931 \DeclareTextCompositeCommand{\.}{PU}{A}{\82\046}% U+0226  
 15932 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE  
 15933 \DeclareTextCompositeCommand{\.}{PU}{a}{\82\047}% U+0227  
 15934 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA  
 15935 \DeclareTextCompositeCommand{\c}{PU}{E}{\82\050}% U+0228  
 15936 % U+0229 LATIN SMALL LETTER E WITH CEDILLA  
 15937 \DeclareTextCompositeCommand{\c}{PU}{e}{\82\051}% U+0229  
 15938 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE  
 15939 \DeclareTextCompositeCommand{\.}{PU}{O}{\82\056}% U+022E  
 15940 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE  
 15941 \DeclareTextCompositeCommand{\.}{PU}{o}{\82\057}% U+022F  
 15942 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON  
 15943 \DeclareTextCompositeCommand{=} {PU}{Y}{\82\062}% U+0232  
 15944 % U+0233 LATIN SMALL LETTER Y WITH MACRON  
 15945 \DeclareTextCompositeCommand{=} {PU}{y}{\82\063}% U+0233  
 15946 % U+0235 LATIN SMALL LETTER N WITH CURL; \textctn (tipa)  
 15947 \DeclareTextCommand{\textctn}{PU}{\82\065}% U+0235  
 15948 % U+0236 LATIN SMALL LETTER T WITH CURL; \textctt (tipa)  
 15949 \DeclareTextCommand{\textctt}{PU}{\82\066}% U+0236  
 15950 % U+0237 LATIN SMALL LETTER DOTLESS J  
 15951 \DeclareTextCommand{\j}{PU}{\82\067}% U+0237  
 15952 % U+0238 LATIN SMALL LETTER DB DIGRAPH; \textdblig (tipx)  
 15953 \DeclareTextCommand{\textPDbli}{PU}{\82\068}% U+0238  
 15954 %\* \textPDbli -> \textdblig (tipx)  
 15955 % U+0239 LATIN SMALL LETTER QP DIGRAPH; \textqplig (tipx)  
 15956 %\* \textPQplig -> \textqplig (tipx)  
 15957 % U+023C LATIN SMALL LETTER C WITH STROKE; \slashc (wsuipa)  
 15958 \DeclareTextCommand{\textslashc}{PU}{\82\074}%\* U+023C  
 15959 %\* \textslashc -> \textcentoldstyle (textcomp)  
 15960 % With bar instead of stroke:  
 15961 %\* \textslashc -> \textbarc (tipa)

## 50.2.6 IPA Extensions: U+0250 to U+02AF

15962 % U+0250 LATIN SMALL LETTER TURNED A; aturned; \textturna (tipa)  
 15963 \DeclareTextCommand{\textturna}{PU}{\82\120}% U+0250  
 15964 %\* \textturna -> \inva (wasysym)  
 15965 % U+0251 LATIN SMALL LETTER ALPHA/LATIN SMALL LETTER  
 15966 % SCRIPT A; ascript; \textscripta (tipa), \scripta (wsuipa)  
 15967 \DeclareTextCommand{\textscripta}{PU}{\82\121}%\* U+0251  
 15968 %\* \textscripta -> \vara (phonetic)  
 15969 % U+0252 LATIN SMALL LETTER TURNED ALPHA; ascriptturned;  
 15970 % \textturnscripta (tipa)  
 15971 \DeclareTextCommand{\textturnscripta}{PU}{\82\122}% U+0252  
 15972 %\* \textturnscripta -> \invscripta (wsuipa)  
 15973 %\* \textturnscripta -> \rotvara (phonetic)  
 15974 % U+0253 LATIN CAPITAL LETTER B WITH HOOK; bhook; \texthtb (tipa)  
 15975 \DeclareTextCommand{\texthtb}{PU}{\82\123}% U+0253

15976 %\* \texthtb -> \hookb (wsuipa)  
15977 %\* \texthtb -> \hausab (phonetic)  
15978 % U+0254 LATIN SMALL LETTER OPEN O; oopen;  
15979 % \textopeno (tipa), \openo (wasysym)  
15980 \DeclareTextCommand{\textopeno}{PU}{\82\124}%\* U+0254  
15981 %\* \textopeno -> \varopeno (phonetic)  
15982 % U+0255 LATIN SMALL LETTER C WITH CURL; ccurl; \textctc (tipa)  
15983 \DeclareTextCommand{\textctc}{PU}{\82\125}% U+0255  
15984 %\* \textctc -> \curlyc (wsuipa)  
15985 % U+0256 LATIN SMALL LETTER D WITH TAIL; dtail; \textrtaild (tipa)  
15986 \DeclareTextCommand{\textrtaild}{PU}{\82\126}%\* U+0256  
15987 %\* \textrtaild -> \taild (wsuipa)  
15988 % U+0257 LATIN SMALL LETTER D WITH HOOK; dhook; \texthtd (tipa)  
15989 \DeclareTextCommand{\texthtd}{PU}{\82\127}% U+0257  
15990 %\* \texthtd -> \hookd (wsuipa)  
15991 %\* \texthtd -> \hausad (phonetic)  
15992 % U+0258 LATIN SMALL LETTER REVERSED E; ereversed;  
15993 % \textreve (tipa), \reve (wsuipa)  
15994 \DeclareTextCommand{\textreve}{PU}{\82\130}%\* U+0258  
15995 % U+0259 LATIN SMALL LETTER SCHWA; schwa;  
15996 % \textschwa (tipa), \schwa (wsuipa, phonetic)  
15997 \DeclareTextCommand{\textschwa}{PU}{\82\131}%\* U+0259  
15998 % U+025A LATIN SMALL LETTER SCHWA WITH HOOK; schwahook;  
15999 % \textrhookschwa (tipa)  
16000 \DeclareTextCommand{\textrhookschwa}{PU}{\82\132}% U+025A  
16001 %\* \textrhookschwa -> \er (wsuipa)  
16002 % U+025B LATIN SMALL LETTER OPEN E/LATIN SMALL LETTER EP-  
SILON; eopen;  
16003 % \niepsilon (wsuipa)  
16004 \DeclareTextCommand{\textniepsilon}{PU}{\82\133}%\* U+025B  
16005 %\* \textniepsilon -> \epsi (phonetic)  
16006 % U+025C LATIN SMALL LETTER REVERSED OPEN E; eopenreversed;  
16007 % \textrepsilon (tipa), \repsilon (wsuipa)  
16008 \DeclareTextCommand{\textrepsilon}{PU}{\82\134}%\* U+025C  
16009 % U+025D LATIN SMALL LETTER REVERSED OPEN E WITH HOOK; eopen-  
reversedhook;  
16010 % \textrhookrepsilon (tipa)  
16011 \DeclareTextCommand{\textrhookrepsilon}{PU}{\82\135}%\* U+025D  
16012 %\* \textrhookrepsilon -> \hookrepsilon (wsuipa)  
16013 % U+025E LATIN SMALL LETTER CLOSED REVERSED OPEN E; eopenre-  
versedclosed;  
16014 % \textcloseriepsilon (tipa)  
16015 \DeclareTextCommand{\textcloseriepsilon}{PU}{\82\136}% U+025E  
16016 %\* \textcloseriepsilon -> \closedrepsilon (wsuipa)  
16017 % U+025F LATIN SMALL LETTER DOTLESS J WITH STROKE; jdot-  
lessstroke;  
16018 % \textbardotlessj (tipa)  
16019 \DeclareTextCommand{\textbardotlessj}{PU}{\82\137}% U+025F  
16020 %\* \textbardotlessj -> \barj (phonetic)  
16021 % U+0260 LATIN SMALL LETTER G WITH HOOK; ghook; \texthtg (tipa)  
16022 \DeclareTextCommand{\texthtg}{PU}{\82\140}% U+0260  
16023 %\* \texthtg -> \hookg (wsuipa)  
16024 % U+0261 LATIN SMALL LETTER SCRIPT G; gscript;  
16025 % \textscriptg (tipa), \scriptg (wsuipa)  
16026 \DeclareTextCommand{\textscriptg}{PU}{\82\141}%\* U+0261  
16027 %\* \textscriptg -> \varg (phonetic)  
16028 % U+0262 LATIN LETTER SMALL CAPITAL G; \textscg (tipa), \scg (wsuipa)

16029 \DeclareTextCommand{\textscg}{PU}{\82\142}%\* U+0262  
16030 % U+0263 LATIN SMALL LETTER GAMMA; gammalatinssmall;  
16031 % \ipagamma (wsuipa), \vod (phonetic)  
16032 \DeclareTextCommand{\textipagamma}{PU}{\82\143}%\* U+0263  
16033 %\* \textipagamma -> \vod (pnonetic)  
16034 % U+0264 LATIN SMALL LETTER RAMS HORN; ramshorn;  
16035 % \babygamma (wsuipa)  
16036 \DeclareTextCommand{\textbabygamma}{PU}{\82\144}%\* U+0264  
16037 % U+0265 LATIN SMALL LETTER TURNED H; hturned; \textturnh (tipa)  
16038 \DeclareTextCommand{\textturnh}{PU}{\82\145}% U+0265  
16039 %\* \textturnh -> \invh (wsuipa)  
16040 %\* \textturnh -> \udesc (phonetic)  
16041 % U+0266 LATIN SMALL LETTER H WITH HOOK; hhook; \texthth (tipa)  
16042 \DeclareTextCommand{\texthth}{PU}{\82\146}% U+0266  
16043 %\* \texthth -> \hookh (wsuipa)  
16044 %\* \texthth -> \voicedh (phonetic)  
16045 % U+0267 LATIN SMALL LETTER HENG WITH HOOK; henghook; \tex-  
ththeng (tipa)  
16046 \DeclareTextCommand{\texththeng}{PU}{\82\147}% U+0267  
16047 %\* \texththeng -> \hookheng (wsuipa)  
16048 % U+0268 LATIN SMALL LETTER I WITH STROKE;  
16049 % \textbari (tipa), \bari (wsuipa)  
16050 \DeclareTextCommand{\textbari}{PU}{\82\150}%\* U+0268  
16051 %\* \textbari -> \ibar (phonetic)  
16052 % U+0269 LATIN SMALL LETTER IOTA; iotalatin; \nniota (wsuipa)  
16053 \DeclareTextCommand{\textnniota}{PU}{\82\151}%\* U+0269  
16054 %\* \textnniota -> \vari (phonetic)  
16055 % U+026A LATIN LETTER SMALL CAPITAL I; \textsci (tipa), \sci (wsuipa)  
16056 \DeclareTextCommand{\textsci}{PU}{\82\152}%\* U+026A  
16057 % U+026B LATIN SMALL LETTER L WITH MIDDLE TILDE; lmiddletilde;  
16058 % \textltilde (tipa)  
16059 \DeclareTextCommand{\textltilde}{PU}{\82\153}% U+026B  
16060 %\* \textltilde -> \tildel (wsuipa)  
16061 % U+026C LATIN SMALL LETTER L WITH BELT; lbelt; \textbeltl (tipa)  
16062 \DeclareTextCommand{\textbeltl}{PU}{\82\154}% U+026C  
16063 %\* \textbeltl -> \latfric (wsuipa)  
16064 % U+026D LATIN SMALL LETTER L WITH RETROFLEX HOOK;  
16065 % \hookretroflex; \textrtaill (tipa)  
16066 \DeclareTextCommand{\textrtaill}{PU}{\82\155}% U+026D  
16067 %\* \textrtaill -> \taill (wsuipa)  
16068 % U+026E LATIN SMALL LETTER LEZH; lezh; \textlyoghlig (tipa)  
16069 \DeclareTextCommand{\textlyoghlig}{PU}{\82\156}% U+026E  
16070 %\* \textlyoghlig -> \lz (wsuipa)  
16071 % U+026F LATIN SMALL LETTER TURNED M; mturned; \textturnm (tipa)  
16072 \DeclareTextCommand{\textturnm}{PU}{\82\157}% U+026F  
16073 %\* \textturnm -> \invm (wsuipa)  
16074 %\* \textturnm -> \rotm (phonetic)  
16075 % U+0270 LATIN SMALL LETTER TURNED M WITH LONG LEG; mlongleg-  
turned;  
16076 % \textturnmrleg (tipa)  
16077 \DeclareTextCommand{\textturnmrleg}{PU}{\82\160}% U+0270  
16078 %\* \textturnmrleg -> \legm (wsuipa)  
16079 % U+0271 LATIN SMALL LETTER M WITH HOOK; mhook; \textltailm (tipa)  
16080 \DeclareTextCommand{\textltailm}{PU}{\82\161}% U+0271  
16081 %\* \textltailm -> \labdentalnas (wsuipa)  
16082 %\* \textltailm -> \emgma (phonetic)

16083 % U+0272 LATIN SMALL LETTER N WITH LEFT HOOK; nhookleft; \textl-  
tailn (tipa)  
16084 \DeclareTextCommand{\textltailn}{PU}{\82\162}% U+0272  
16085 %\* \textltailn -> \nj (wsuipa)  
16086 %\* \textltailn -> \enya (phonetic)  
16087 % U+0273 LATIN SMALL LETTER N WITH RETROFLEX HOOK;  
16088 % nhookretroflex; \textrtailn (tipa)  
16089 \DeclareTextCommand{\textrtailn}{PU}{\82\163}% U+0273  
16090 %\* \textrtailn -> \tailn (wsuipa)  
16091 % U+0274 LATIN LETTER SMALL CAPITAL N; \textscn (tipa), \scn (wsuipa)  
16092 \DeclareTextCommand{\textscn}{PU}{\82\164}% U+0274  
16093 % U+0275 LATIN CAPITAL LETTER O WITH MIDDLE TILDE/  
16094 % LATIN CAPITAL LETTER BARRED O; obarred;  
16095 % \textbaro (tipa), \baro (wsuipa)  
16096 \DeclareTextCommand{\textbaro}{PU}{\82\165}% U+0275  
16097 % U+0276 LATIN LETTER SMALL CAPITAL OE; \textscnoelig (tipa)  
16098 \DeclareTextCommand{\textscnoelig}{PU}{\82\166}% U+0276  
16099 % U+0277 LATIN SMALL LETTER CLOSED OMEGA; omegalatinclosed;  
16100 % \textcloseomega (tipa)  
16101 \DeclareTextCommand{\textcloseomega}{PU}{\82\167}% U+0277  
16102 %\* \textcloseomega -> \closedniomega (wsuipa)  
16103 %\* \textcloseomega -> \varomega (phonetic)  
16104 % U+0278 LATIN SMALL LETTER PHI; philatin; \nippi (wsuipa)  
16105 \DeclareTextCommand{\textnippi}{PU}{\82\170}% U+0278  
16106 % U+0279 LATIN SMALL LETTER TURNED R; rturned; \textturnr (tipa)  
16107 \DeclareTextCommand{\textturnr}{PU}{\82\171}% U+0279  
16108 %\* \textturnr -> \invr (wsuipa)  
16109 %\* \textturnr -> \rotr (phonetic)  
16110 % U+027A LATIN SMALL LETTER TURNED R WITH LONG LEG;  
16111 % rlonglegturned; \textturnrlongleg (tipa)  
16112 \DeclareTextCommand{\textturnrlongleg}{PU}{\82\172}% U+027A  
16113 %\* \textturnrlongleg -> \invleg (wsuipa)  
16114 % U+027B LATIN SMALL LETTER TURNED R WITH HOOK; rhookturned;  
16115 % \textturnrrtail (tipa)  
16116 \DeclareTextCommand{\textturnrrtail}{PU}{\82\173}% U+027B  
16117 %\* \textturnrrtail -> \tailinvr (wsuipa)  
16118 % U+027C LATIN SMALL LETTER R WITH LONG LEG; rlongleg; \textlong-  
leg (tipa)  
16119 \DeclareTextCommand{\textlongleg}{PU}{\82\174}% U+027C  
16120 %\* \textlongleg -> \leg (wsuipa)  
16121 % U+027D LATIN SMALL LETTER R WITH TAIL; rhook; \textrtailr (tipa)  
16122 \DeclareTextCommand{\textrtailr}{PU}{\82\175}% U+027D  
16123 %\* \textrtailr -> \tailr (wsuipa)  
16124 % U+027E LATIN SMALL LETTER R WITH FISHHOOK; rfishhook;  
16125 % \textfishhookr (tipa)  
16126 \DeclareTextCommand{\textfishhookr}{PU}{\82\176}% U+027E  
16127 %\* \textfishhookr -> \flapr (wsuipa)  
16128 %\* \textfishhookr -> \flap (phonetic)  
16129 % U+027F LATIN SMALL LETTER REVERSED R WITH FISHHOOK; rfish-  
hookreversed;  
16130 % \textlhtlongi (tipa)  
16131 \DeclareTextCommand{\textlhtlongi}{PU}{\82\177}% U+027F  
16132 % U+0280 LATIN LETTER SMALL CAPITAL R; \textscr (tipa), \scr (wsuipa)  
16133 \DeclareTextCommand{\textscr}{PU}{\82\200}% U+0280  
16134 % U+0281 LATIN LETTER SMALL CAPITAL INVERTED R; Rsmallinverted;  
16135 % \textinvscr (tipa), \invscr (wsuipa)  
16136 \DeclareTextCommand{\textinvscr}{PU}{\82\201}% U+0281

16137 % U+0282 LATIN SMALL LETTER S WITH HOOK; shook; \texttrails (tipa)  
16138 \DeclareTextCommand{\texttrails}{PU}{\82\202}% U+0282  
16139 %\* \texttrails -> \tails (wsuipa)  
16140 % U+0283 LATIN SMALL LETTER ESH; esh; \textesh (tipa), \esh (wsuipa)  
16141 \DeclareTextCommand{\textesh}{PU}{\82\203}% U+0283  
16142 %\* \textesh -> \textscriptv (t4phonet)  
16143 % U+0284 LATIN SMALL LETTER DOTLESS J WITH STROKE AND HOOK;  
16144 % dotlessjstrokehook; \texthtbardotlessj (tipa)  
16145 \DeclareTextCommand{\texthtbardotlessj}{PU}{\82\204}% U+0284  
16146 % U+0285 LATIN SMALL LETTER SQUAT REVERSED ESH; eshsquatre-  
versed;  
16147 % \textvibyi (tipa)  
16148 \DeclareTextCommand{\textvibyi}{PU}{\82\205}% U+0285  
16149 % U+0286 LATIN SMALL LETTER ESH WITH CURL; eshcurl; \textctesh (tipa)  
16150 \DeclareTextCommand{\textctesh}{PU}{\82\206}% U+0286  
16151 %\* \textctesh -> \curlyesh (wsuipa)  
16152 % U+0287 LATIN SMALL LETTER TURNED T; tturned; \textturnt (tipa)  
16153 \DeclareTextCommand{\textturnt}{PU}{\82\207}% U+0287  
16154 %\* \textturnt -> \clickt (wsuipa)  
16155 % U+0288 LATIN SMALL LETTER T WITH RETROFLEX HOOK; retroflex-  
hook;  
16156 % \texttrtailt (tipa)  
16157 \DeclareTextCommand{\texttrtailt}{PU}{\82\210}% U+0288  
16158 %\* \texttrtailt -> \tailt (wsuipa)  
16159 % U+0289 LATIN SMALL LETTER U BAR; ubar;  
16160 % \textbaru (tipa), \baru (wsuipa)  
16161 \DeclareTextCommand{\textbaru}{PU}{\82\211}% U+0289  
16162 %\* \textbaru -> \ubar (phonetic)  
16163 % U+028A LATIN SMALL LETTER UPSILON; \niupsilon (wsuipa)  
16164 \DeclareTextCommand{\textniupsilon}{PU}{\82\212}% U+028A  
16165 %\* \textniupsilon -> \rotOmega (phonetic)  
16166 % U+028B LATIN SMALL LETTER V WITH HOOK/LATIN SMALL LET-  
TER SCRIPT V;  
16167 % vhook; \textscriptv (tipa), \scriptv (wsuipa)  
16168 \DeclareTextCommand{\textscriptv}{PU}{\82\213}% U+028B  
16169 % U+028C LATIN SMALL LETTER TURNED V; vturned; \textturnv (tipa)  
16170 \DeclareTextCommand{\textturnv}{PU}{\82\214}% U+028C  
16171 %\* \textturnv -> \invv (wsuipa)  
16172 %\* \textturnv -> \pwedge (phonetic)  
16173 % U+028D LATIN SMALL LETTER TURNED W; wturned; \textturnw (tipa)  
16174 \DeclareTextCommand{\textturnw}{PU}{\82\215}% U+028D  
16175 %\* \textturnw -> \invw (wsuipa)  
16176 %\* \textturnw -> \rotw (phonetic)  
16177 % U+028E LATIN SMALL LETTER TURNED Y; yturned; \textturny (tipa)  
16178 \DeclareTextCommand{\textturny}{PU}{\82\216}% U+028E  
16179 %\* \textturny -> \invy (wsuipa)  
16180 %\* \textturny -> \roty (phonetic)  
16181 % U+028F LATIN LETTER SMALL CAPITAL Y; \textscy (tipa), \scy (wsuipa)  
16182 \DeclareTextCommand{\textscy}{PU}{\82\217}% U+028F  
16183 % U+0290 LATIN SMALL LETTER Z WITH RETROFLEX HOOK; zretroflex-  
hook;  
16184 % \texttrtailz (tipa)  
16185 \DeclareTextCommand{\texttrtailz}{PU}{\82\220}% U+0290  
16186 %\* \texttrtailz -> \tailz (wsuipa)  
16187 % U+0291 LATIN SMALL LETTER Z WITH CURL; zcurl; \textctz (tipa)  
16188 \DeclareTextCommand{\textctz}{PU}{\82\221}% U+0291  
16189 %\* \textctz -> \curlyz (wsuipa)

16190 % U+0292 LATIN SMALL LETTER EZH/LATIN SMALL LETTER YOGH; ezh;  
 16191 % \textyogh (tipa), \yogh (wsuipa)  
 16192 \DeclareTextCommand{\textyogh}{PU}{\82\222}%\* U+0292  
 16193 % U+0293 LATIN SMALL LETTER EZH WITH CURL/LATIN SMALL LETTER YOGH CURL;  
 16194 % ezhcurl; \textctyogh (tipa)  
 16195 \DeclareTextCommand{\textctyogh}{PU}{\82\223}% U+0293  
 16196 %\* \textctyogh -> \curlyyogh (wsuipa)  
 16197 % U+0294 LATIN LETTER GLOTTAL STOP; glottalstop;  
 16198 % \textglotstop (tipa), \glotstop (wsuipa)  
 16199 \DeclareTextCommand{\textglotstop}{PU}{\82\224}%\* U+0294  
 16200 %\* \textglotstop -> \ejective (wsuipa)  
 16201 %\* \textglotstop -> \glottal (phonetic)  
 16202 % U+0295 LATIN LETTER PHARYNGEAL VOICED FRICATIVE/  
 16203 % LATIN LETTER REVERSED GLOTTAL STOP; glottalstopreversed;  
 16204 % \textrevglotstop (tipa), \revglotstop (wsuipa)  
 16205 \DeclareTextCommand{\textrevglotstop}{PU}{\82\225}%\* U+0295  
 16206 %\* \textrevglotstop -> \reveject (wsuipa)  
 16207 % U+0296 LATIN LETTER INVERTED GLOTTAL STOP; glottalstopinverted;  
 16208 % \textinvglotstop (tipa), \invglotstop (wsuipa)  
 16209 \DeclareTextCommand{\textinvglotstop}{PU}{\82\226}%\* U+0296  
 16210 % U+0297 LATIN LETTER STRETCHED C; cstretched; \textstretchc (tipa)  
 16211 \DeclareTextCommand{\textstretchc}{PU}{\82\227}% U+0297  
 16212 %\* \textstretchc -> \clickc (wsuipa)  
 16213 %\* \textstretchc -> \textstretchcvar (tipx)  
 16214 % U+0298 LATIN LETTER BILABIAL CLICK; bilabialclick;  
 16215 % \textbullseye (tipa)  
 16216 \DeclareTextCommand{\textbullseye}{PU}{\82\230}% U+0298  
 16217 %\* \textbullseye -> \clickb (wsuipa)  
 16218 %\* \textbullseye -> \textObullseye (tipx)  
 16219 % U+0299 LATIN LETTER SMALL CAPITAL B; \textscb (tipa)  
 16220 \DeclareTextCommand{\textscb}{PU}{\82\231}% U+0299  
 16221 % U+029A LATIN SMALL LETTER CLOSED OPEN E; eopenclosed;  
 16222 % \textclosepsilon (tipa)  
 16223 \DeclareTextCommand{\textclosepsilon}{PU}{\82\232}% U+029A  
 16224 % U+029B LATIN LETTER SMALL CAPITAL G WITH HOOK; Gsmallhook;  
 16225 % \texthtscg (tipa)  
 16226 \DeclareTextCommand{\texthtscg}{PU}{\82\233}% U+029B  
 16227 % U+029C LATIN LETTER SMALL CAPITAL H; \textsch (tipa)  
 16228 \DeclareTextCommand{\textsch}{PU}{\82\234}% U+029C  
 16229 % U+029D LATIN SMALL LETTER J WITH CROSSED-TAIL; jcrossetail; \textcdj (tipa)  
 16230 \DeclareTextCommand{\textctj}{PU}{\82\235}% U+029D  
 16231 %\* \textctj -> \textctjvar (tipx)  
 16232 % U+029E LATIN SMALL LETTER TURNED K; kturned; \textturnk (tipa)  
 16233 \DeclareTextCommand{\textturnk}{PU}{\82\236}% U+029E  
 16234 %\* \textturnk -> \textturnsck (tipx)  
 16235 % U+029F LATIN LETTER SMALL CAPITAL L; \textscL (tipa)  
 16236 \DeclareTextCommand{\textscL}{PU}{\82\237}% U+029F  
 16237 % U+02A0 LATIN SMALL LETTER Q WITH HOOK; qhook; \texthtq (tipa)  
 16238 \DeclareTextCommand{\texthtq}{PU}{\82\240}% U+02A0  
 16239 % U+02A1 LATIN LETTER GLOTTAL STOP WITH STROKE; glottalstopstroke;  
 16240 % \textbarglotstop (tipa)  
 16241 \DeclareTextCommand{\textbarglotstop}{PU}{\82\241}% U+02A1  
 16242 % U+02A2 LATIN LETTER REVERSED GLOTTAL STOP WITH STROKE/

16243 % LATIN LETTER REVERSED GLOTTAL STOP BAR; glottalstopstrokereversed;  
 16244 % \textbarrevglotstop (tipa)  
 16245 \DeclareTextCommand{\textbarrevglotstop}{PU}{\82\242}% U+02A2  
 16246 % U+02A3 LATIN SMALL LETTER DZ DIGRAPH; dzaltone; \textdzlig (tipa)  
 16247 \DeclareTextCommand{\textdzlig}{PU}{\82\243}% U+02A3  
 16248 %\* \textdzlig -> \dz (wsupipa)  
 16249 % U+02A4 LATIN SMALL LETTER DEZH DIGRAPH; dezh; \textdyoghlig (tipa)  
 16250 \DeclareTextCommand{\textdyoghlig}{PU}{\82\244}% U+02A4  
 16251 % U+02A5 LATIN SMALL LETTER DZ DIGRAPH WITH CURL; dzcurl;  
 16252 % \textdctzlig (tipa)  
 16253 \DeclareTextCommand{\textdctzlig}{PU}{\82\245}% U+02A5  
 16254 % U+02A6 LATIN SMALL LETTER TS DIGRAPH; ts; \texttslig (tipa)  
 16255 \DeclareTextCommand{\texttslig}{PU}{\82\246}% U+02A6  
 16256 % U+02A7 LATIN SMALL LETTER TESH DIGRAPH; tesh; \texttshlig (tipa)  
 16257 \DeclareTextCommand{\texttshlig}{PU}{\82\247}% U+02A7  
 16258 %\* \texttshlig -> \tesh (wsuipa)  
 16259 % U+02A8 LATIN SMALL LETTER TC DIGRAPH WITH CURL; tccurl;  
 16260 % \texttctclig (tipa)  
 16261 \DeclareTextCommand{\texttctclig}{PU}{\82\250}% U+02A8  
 16262 % U+02AE LATIN SMALL LETTER TURNED H WITH FISHHOOK;  
 16263 % \textlhtlongy (tipa)  
 16264 \DeclareTextCommand{\textlhtlongy}{PU}{\82\256}% U+02AE  
 16265 % U+02AF LATIN SMALL LETTER TURNED H WITH FISHHOOK AND TAIL;  
 16266 % \textvibyy (tipa)  
 16267 \DeclareTextCommand{\textvibyy}{PU}{\82\257}% U+02AF

### 50.2.7 Spacing Modifier Letters: U+02B0 to U+02FF

16268 % U+02BD MODIFIER LETTER REVERSED COMMA;  
 16269 % commareversedmod, afi64937; \textrevapostrophe (tipa)  
 16270 \DeclareTextCommand{\textrevapostrophe}{PU}{\82\275}% U+02BD  
 16271 % U+02C0 MODIFIER LETTER GLOTTAL STOP; glottalstopmod;  
 16272 % \textraiseglotstop (tipa)  
 16273 \DeclareTextCommand{\textraiseglotstop}{PU}{\82\300}% U+02C0  
 16274 % U+02C2 MODIFIER LETTER LEFT ARROWHEAD; arrowheadleftmod;  
 16275 % \textlptr (tipa)  
 16276 \DeclareTextCommand{\textlptr}{PU}{\82\302}% U+02C2  
 16277 % U+02C3 MODIFIER LETTER RIGHT ARROWHEAD; arrowheadrightmod;  
 16278 % \textrptr (tipa)  
 16279 \DeclareTextCommand{\textrptr}{PU}{\82\303}% U+02C3  
 16280 % U+02C7 CARON; caron  
 16281 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7  
 16282 % U+02C8 MODIFIER LETTER VERTICAL LINE; verticallinemod;  
 16283 % \textprimstress (tipa)  
 16284 \DeclareTextCommand{\textprimstress}{PU}{\82\308}% U+02C8  
 16285 % U+02CC MODIFIER LETTER LOW VERTICAL LINE; verticallinelowmod;  
 16286 % \textsecstress (tipa)  
 16287 \DeclareTextCommand{\textsecstress}{PU}{\82\314}% U+02CC  
 16288 % U+02D0 MODIFIER LETTER TRIANGULAR COLON; colontriangularmod;  
 16289 % \textlengthmark (tipa)  
 16290 \DeclareTextCommand{\textlengthmark}{PU}{\82\320}% U+02D0  
 16291 % U+02D1 MODIFIER LETTER HALF TRIANGULAR COLON; colontriangularhalfmod;  
 16292 % \texthalflength (tipa)  
 16293 \DeclareTextCommand{\texthalflength}{PU}{\82\321}% U+02D1  
 16294 % U+02D8 BREVE; breve

16295 \DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8  
 16296 % U+02D9 DOT ABOVE; dotaccent  
 16297 \DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9  
 16298 % U+02DA RING ABOVE; ring  
 16299 \DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA  
 16300 % U+02DB OGONEK; ogonek  
 16301 \DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB  
 16302 % U+02DC SMALL TILDE; ilde, \*tilde  
 16303 \DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC  
 16304 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
 16305 \DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD  
 16306 \DeclareTextCommand{\textacutedbl}{PU}{\texthungarumlaut}% U+02DD  
 16307 % U+02F3 MODIFIER LETTER LOW RING  
 16308 \DeclareTextCommand{\textringlow}{PU}{\82\363}% U+02F3  
 16309 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT  
 16310 \DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5  
 16311 % U+02F7 MODIFIER LETTER LOW TILDE  
 16312 \DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7  
 16313 % U+02F9 MODIFIER LETTER BEGIN HIGH TONE; \textopencorner (tipa)  
 16314 \DeclareTextCommand{\textopencorner}{PU}{\82\371}% U+02F9  
 16315 % U+02FA MODIFIER LETTER END HIGH TONE; \textcorner (tipa)  
 16316 \DeclareTextCommand{\textcorner}{PU}{\82\372}% U+02FA

### 50.2.8 Combining Diacritical Marks: U+0300 to U+036F

16317 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb  
 16318 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017}% U+030F  
 16319 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
 16320 \DeclareTextCommand{\textnewtie}{PU}{\83\021}% U+0311  
 16321 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcomb  
 16322 \DeclareTextCommand{\textdotbelow}{PU}{\83\043}% U+0323  
 16323 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
 16324 \DeclareTextCommand{\textmacronbelow}{PU}{\83\061}% U+0331  
 16325 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb  
 16326 \DeclareTextCommand{\texttie}{PU}{\83\141}% U+0361

### 50.2.9 Greek and Coptic: U+0370 to U+03FF

16327 % U+0374 GREEK NUMERAL SIGN; numeralsigngreek  
 16328 \DeclareTextCommand{\textnumeralsigngreek}{PU}{\83\164}% U+0374  
 16329 % U+0375 GREEK LOWER NUMERAL SIGN; numeralsignlowergreek  
 16330 \DeclareTextCommand{\textnumeralsignlowergreek}{PU}{\83\165}% U+0375  
 16331 % U+0386 GREEK CAPITAL LETTER ALPHA WITH TONOS; Alphatonos  
 16332 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}% U+0386  
 16333 % U+0388 GREEK CAPITAL LETTER EPSILON WITH TONOS; Epsilontonos  
 16334 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}% U+0388  
 16335 % U+0389 GREEK CAPITAL LETTER ETA WITH TONOS; Etatonos  
 16336 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}% U+0389  
 16337 % U+038A GREEK CAPITAL LETTER IOTA WITH TONOS; Iotatonos  
 16338 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}% U+038A  
 16339 % U+038C GREEK CAPITAL LETTER OMICRON WITH TONOS; Omicrontonos  
 16340 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}% U+038C  
 16341 % U+038E GREEK CAPITAL LETTER UPSILON WITH TONOS; Upsilonontonos  
 16342 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}% U+038E  
 16343 % U+038F GREEK CAPITAL LETTER OMEGA WITH TONOS; Omegatonos  
 16344 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}% U+038F  
 16345 % U+0390 GREEK SMALL LETTER IOTA WITH DIALYTIKA AND TONOS;



16346 %   iotadiesis  
 16347 \DeclareTextCompositeCommand{\'}{PU}{\textIotadiesis}{\83\220}% U+0390  
 16348 % U+0391 GREEK CAPITAL LETTER ALPHA; Alpha  
 16349 \DeclareTextCommand{\textAlpha}{PU}{\83\221}% U+0391  
 16350 % U+0392 GREEK CAPITAL LETTER BETA; Beta  
 16351 \DeclareTextCommand{\textBeta}{PU}{\83\222}% U+0392  
 16352 % U+0393 GREEK CAPITAL LETTER GAMMA; Gamma; \Gamma (LaTeX)  
 16353 \DeclareTextCommand{\textGamma}{PU}{\83\223}%\* U+0393  
 16354 % U+0394 GREEK CAPITAL LETTER DELTA; Deltagreek, \*Delta; \Delta (LaTeX)  
 16355 \DeclareTextCommand{\textDelta}{PU}{\83\224}%\* U+0394  
 16356 % U+0395 GREEK CAPITAL LETTER EPSILON; Epsilon  
 16357 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}% U+0395  
 16358 % U+0396 GREEK CAPITAL LETTER ZETA; Zeta  
 16359 \DeclareTextCommand{\textZeta}{PU}{\83\226}% U+0396  
 16360 % U+0397 GREEK CAPITAL LETTER ETA; Eta  
 16361 \DeclareTextCommand{\textEta}{PU}{\83\227}% U+0397  
 16362 % U+0398 GREEK CAPITAL LETTER THETA; Theta; \Theta (LaTeX)  
 16363 \DeclareTextCommand{\textTheta}{PU}{\83\230}%\* U+0398  
 16364 % U+0399 GREEK CAPITAL LETTER IOTA; Iota  
 16365 \DeclareTextCommand{\textIota}{PU}{\83\231}% U+0399  
 16366 % U+039A GREEK CAPITAL LETTER KAPPA; Kappa  
 16367 \DeclareTextCommand{\textKappa}{PU}{\83\232}% U+039A  
 16368 % U+039B GREEK CAPITAL LETTER LAMDA; Lambda; \Lambda (LaTeX)  
 16369 \DeclareTextCommand{\textLambda}{PU}{\83\233}%\* U+039B  
 16370 % U+039C GREEK CAPITAL LETTER MU; Mu  
 16371 \DeclareTextCommand{\textMu}{PU}{\83\234}% U+039C  
 16372 % U+039D GREEK CAPITAL LETTER NU; Nu  
 16373 \DeclareTextCommand{\textNu}{PU}{\83\235}% U+039D  
 16374 % U+039E GREEK CAPITAL LETTER XI; Xi; \Xi (LaTeX)  
 16375 \DeclareTextCommand{\textXi}{PU}{\83\236}%\* U+039E  
 16376 % U+039F GREEK CAPITAL LETTER OMICRON; Omicron  
 16377 \DeclareTextCommand{\textOmicron}{PU}{\83\237}% U+039F  
 16378 % U+03A0 GREEK CAPITAL LETTER PI; Pi  
 16379 \DeclareTextCommand{\textPi}{PU}{\83\240}%\* U+03A0  
 16380 % U+03A1 GREEK CAPITAL LETTER RHO; Rho  
 16381 \DeclareTextCommand{\textRho}{PU}{\83\241}% U+03A1  
 16382 % U+03A3 GREEK CAPITAL LETTER SIGMA; Sigma; \Sigma (LaTeX)  
 16383 \DeclareTextCommand{\textSigma}{PU}{\83\243}%\* U+03A3  
 16384 % U+03A4 GREEK CAPITAL LETTER TAU; Tau  
 16385 \DeclareTextCommand{\textTau}{PU}{\83\244}% U+03A4  
 16386 % U+03A5 GREEK CAPITAL LETTER UPSILON; Upsilon; \Upsilon (LaTeX)  
 16387 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}%\* U+03A5  
 16388 % U+03A6 GREEK CAPITAL LETTER PHI; Phi; \Phi (LaTeX)  
 16389 \DeclareTextCommand{\textPhi}{PU}{\83\246}%\* U+03A6  
 16390 % U+03A7 GREEK CAPITAL LETTER CHI; Chi  
 16391 \DeclareTextCommand{\textChi}{PU}{\83\247}% U+03A7  
 16392 % U+03A8 GREEK CAPITAL LETTER PSI; Psi; \Psi (LaTeX)  
 16393 \DeclareTextCommand{\textPsi}{PU}{\83\250}%\* U+03A8  
 16394 % U+03A9 GREEK CAPITAL LETTER OMEGA; Omegagreek, \*Omega;  
 16395 %   \Omega (LaTeX)  
 16396 \DeclareTextCommand{\textOmega}{PU}{\83\251}%\* U+03A9  
 16397 % U+03AA GREEK CAPITAL LETTER IOTA WITH DIALYTIKA; Iotadiesis  
 16398 \DeclareTextCommand{\textIotadiesis}{PU}{\83\252}% U+03AA  
 16399 \DeclareTextCompositeCommand{\"}{PU}{\textIota}{\83\252}% U+03AA  
 16400 % U+03AB GREEK CAPITAL LETTER UPSILON WITH DIALYTIKA; Upsilonondieresis

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16401 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}% U+03AB
16402 % U+03AC GREEK SMALL LETTER ALPHA WITH TONOS; alphanos
16403 \DeclareTextCompositeCommand{'}{PU}{\textalpha}{\83\254}%* U+03AC
16404 % U+03AD GREEK SMALL LETTER EPSILON WITH TONOS; epsilon
16405 \DeclareTextCompositeCommand{'}{PU}{\textepsilon}{\83\255}% U+03AD
16406 % U+03AE GREEK SMALL LETTER ETA WITH TONOS; etanot
16407 \DeclareTextCompositeCommand{'}{PU}{\texteta}{\83\256}% U+03AE
16408 % U+03AF GREEK SMALL LETTER IOTA WITH TONOS; iotanot
16409 \DeclareTextCompositeCommand{'}{PU}{\textiota}{\83\257}% U+03AF
16410 % U+03B0 GREEK SMALL LETTER UPSILON WITH DIALYTIKA
16411 % AND TONOS; upsilondieresisto
16412 \DeclareTextCompositeCommand{"}{PU}{\textupsilonacute}{\83\260}% U+03B0
16413 % U+03B1 GREEK SMALL LETTER ALPHA; alpha; \alpha (LaTeX)
16414 \DeclareTextCommand{\textalpha}{PU}{\83\261}%* U+03B1
16415 % U+03B2 GREEK SMALL LETTER BETA; beta; \beta (LaTeX)
16416 \DeclareTextCommand{\textbeta}{PU}{\83\262}%* U+03B2
16417 % U+03B3 GREEK SMALL LETTER GAMMA; gamma; \gamma (LaTeX)
16418 \DeclareTextCommand{\textgamma}{PU}{\83\263}%* U+03B3
16419 % U+03B4 GREEK SMALL LETTER DELTA; delta; \delta (LaTeX)
16420 \DeclareTextCommand{\textdelta}{PU}{\83\264}%* U+03B4
16421 % U+03B5 GREEK SMALL LETTER EPSILON; epsilon; \epsilon (LaTeX)
16422 \DeclareTextCommand{\textepsilon}{PU}{\83\265}%* U+03B5
16423 % U+03B6 GREEK SMALL LETTER ZETA; zeta; \zeta (LaTeX)
16424 \DeclareTextCommand{\textzeta}{PU}{\83\266}%* U+03B6
16425 % U+03B7 GREEK SMALL LETTER ETA; eta; \eta (LaTeX)
16426 \DeclareTextCommand{\texteta}{PU}{\83\267}%* U+03B7
16427 % U+03B8 GREEK SMALL LETTER THETA; theta; \theta (LaTeX)
16428 \DeclareTextCommand{\texttheta}{PU}{\83\270}%* U+03B8
16429 % U+03B9 GREEK SMALL LETTER IOTA; iota; \iota (LaTeX)
16430 \DeclareTextCommand{\textiota}{PU}{\83\271}%* U+03B9
16431 % U+03BA GREEK SMALL LETTER KAPPA; kappa; \kappa (LaTeX)
16432 \DeclareTextCommand{\textkappa}{PU}{\83\272}%* U+03BA
16433 % U+03BB GREEK SMALL LETTER LAMDA; lambda; \lambda (LaTeX)
16434 \DeclareTextCommand{\textlambda}{PU}{\83\273}%* U+03BB
16435 % U+03BC GREEK SMALL LETTER MU; mugreek; *mu; \mu (LaTeX)
16436 \DeclareTextCommand{\textmugreek}{PU}{\83\274}%* U+03BC
16437 % U+03BD GREEK SMALL LETTER NU; nu; \nu (LaTeX)
16438 \DeclareTextCommand{\textnu}{PU}{\83\275}%* U+03BD
16439 % U+03BE GREEK SMALL LETTER XI; xi; \xi (LaTeX)
16440 \DeclareTextCommand{\textxi}{PU}{\83\276}%* U+03BE
16441 % U+03BF GREEK SMALL LETTER OMICRON; omicron
16442 \DeclareTextCommand{\textomicron}{PU}{\83\277}% U+03BF
16443 % U+03C0 GREEK SMALL LETTER PI; pi; \pi (LaTeX)
16444 \DeclareTextCommand{\textpi}{PU}{\83\300}%* U+03C0
16445 % U+03C1 GREEK SMALL LETTER RHO; rho; \rho (LaTeX)
16446 \DeclareTextCommand{\textrho}{PU}{\83\301}%* U+03C1
16447 % U+03C2 GREEK SMALL LETTER FINAL SIGMA; *sigma1, sigmafinal
16448 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}%* U+03C2
16449 % U+03C3 GREEK SMALL LETTER SIGMA; sigma; \sigma (LaTeX)
16450 \DeclareTextCommand{\textsigma}{PU}{\83\303}%* U+03C3
16451 % U+03C4 GREEK SMALL LETTER TAU; tau; \tau (LaTeX)
16452 \DeclareTextCommand{\texttau}{PU}{\83\304}%* U+03C4
16453 % U+03C5 GREEK SMALL LETTER UPSILON; upsilon; \upsilon (LaTeX)
16454 \DeclareTextCommand{\textupsilon}{PU}{\83\305}%* U+03C5
16455 % U+03C6 GREEK SMALL LETTER PHI; phi; \phi (LaTeX)
16456 \DeclareTextCommand{\textphi}{PU}{\83\306}%* U+03C6
16457 % U+03C7 GREEK SMALL LETTER CHI; chi; \chi (LaTeX)

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16458 \DeclareTextCommand{\textchi}{PU}{\83\307}%* U+03C7
16459 % U+03C8 GREEK SMALL LETTER PSI; psi; \psi (LaTeX)
16460 \DeclareTextCommand{\textpsi}{PU}{\83\310}%* U+03C8
16461 % U+03C9 GREEK SMALL LETTER OMEGA; omega; \omega (LaTeX)
16462 \DeclareTextCommand{\textomega}{PU}{\83\311}%* U+03C9
16463 % U+03CA GREEK SMALL LETTER IOTA WITH DIALYTIKA; iotadieresis
16464 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}% U+03CA
16465 % U+03CB GREEK SMALL LETTER UPSILON WITH DIALYTIKA; up-
silondieresis
16466 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}% U+03CB
16467 % U+03CC GREEK SMALL LETTER OMICRON WITH TONOS; omicrontonos
16468 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}% U+03CC
16469 % U+03CD GREEK SMALL LETTER UPSILON WITH TONOS; upsilontonos
16470 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}% U+03CD
16471 \DeclareTextCompositeCommand{'}{PU}{\textupsilon}{\83\315}% U+03CD
16472 % U+03CE GREEK SMALL LETTER OMEGA WITH TONOS; omegatonos
16473 \DeclareTextCompositeCommand{'}{PU}{\textomega}{\83\316}% U+03CE
16474 % U+03DA GREEK LETTER STIGMA; Stigmagreek
16475 \DeclareTextCommand{\textStigmagreek}{PU}{\83\332}% U+03DA
16476 % U+03DB GREEK SMALL LETTER STIGMA
16477 \DeclareTextCommand{\textstigmagreek}{PU}{\83\333}% U+03DB
16478 % U+03DC GREEK LETTER DIGAMMA; Digammagreek
16479 \DeclareTextCommand{\textDigammagreek}{PU}{\83\334}% U+03DC
16480 % U+03DD GREEK SMALL LETTER DIGAMMA
16481 \DeclareTextCommand{\textdigammagreek}{PU}{\83\335}% U+03DD
16482 %* \textdigammagreek -> \digamma (AmS)
16483 % U+03DE GREEK LETTER KOPPA; Koppagreek
16484 \DeclareTextCommand{\textKoppagreek}{PU}{\83\336}% U+03DE
16485 % U+03DF GREEK SMALL LETTER KOPPA
16486 \DeclareTextCommand{\textkoppagreek}{PU}{\83\337}% U+03DF
16487 % U+03E0 GREEK LETTER SAMPI; Sampigreek
16488 \DeclareTextCommand{\textSampigreek}{PU}{\83\340}% U+03E0
16489 % U+03E1 GREEK SMALL LETTER SAMPI
16490 \DeclareTextCommand{\textsampigreek}{PU}{\83\341}% U+03E1
16491 % U+03F6 GREEK REVERSED LUNATE EPSILON SYMBOL;
16492 % \backepsilon (AmS)
16493 \DeclareTextCommand{\textbackepsilon}{PU}{\83\366}% U+03F6

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## 50.2.10 Cyrillic: U+0400 to U+04FF

Thanks to Vladimir Volovich (vvv@vvv.vsu.ru) for the help with the Cyrillic glyph names.

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16494 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE
16495 \DeclareTextCompositeCommand{'}{PU}{\CYRE}{\84\000}% U+0400
16496 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrillic, *afii10023
16497 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401
16498 \DeclareTextCompositeCommand{"}{PU}{\CYRE}{\84\001}% ???
16499 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, *afii10051
16500 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402
16501 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, *afii10052
16502 \DeclareTextCompositeCommand{'}{PU}{\CYRG}{\84\003}% U+0403
16503 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrillic, *afii10053
16504 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404
16505 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzecyrillic, *afii10054
16506 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405
16507 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I;
16508 % Icyrillic, *afii10055
16509 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406

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16510 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrillic, \*afii10056  
16511 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407  
16512 \DeclareTextCompositeCommand{\"}{PU}{\CYRII}{\84\007}% U+0407  
16513 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, \*afii10057  
16514 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408  
16515 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, \*afii10058  
16516 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409  
16517 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, \*afii10059  
16518 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A  
16519 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, \*afii10060  
16520 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B  
16521 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, \*afii10061  
16522 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% U+040C  
16523 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE  
16524 \DeclareTextCompositeCommand{\`}{PU}{\CYRI}{\84\015}% U+040D  
16525 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrillic, \*afii10062  
16526 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E  
16527 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\016}% U+040E  
16528 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, \*afii10145  
16529 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F  
16530 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, \*afii10017  
16531 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410  
16532 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrillic, \*afii10018  
16533 \DeclareTextCommand{\CYRB}{PU}{\84\021}% U+0411  
16534 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, \*afii10019  
16535 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412  
16536 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, \*afii10020  
16537 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413  
16538 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, \*afii10021  
16539 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414  
16540 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, \*afii10022  
16541 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415  
16542 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, \*afii10024  
16543 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416  
16544 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, \*afii10025  
16545 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417  
16546 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrillic, \*afii10026  
16547 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418  
16548 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; Iishortcyrillic, \*afii10027  
16549 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419  
16550 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}% U+0419  
16551 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, \*afii10028  
16552 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A  
16553 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, \*afii10029  
16554 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B  
16555 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, \*afii10030  
16556 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C  
16557 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, \*afii10031  
16558 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D  
16559 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, \*afii10032  
16560 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E  
16561 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, \*afii10033  
16562 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F  
16563 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, \*afii10034  
16564 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420  
16565 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, \*afii10035  
16566 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421

16567 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, \*afii10036  
 16568 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422  
 16569 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, \*afii10037  
 16570 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423  
 16571 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, \*afii10038  
 16572 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424  
 16573 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, \*afii10039  
 16574 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425  
 16575 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, \*afii10040  
 16576 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426  
 16577 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, \*afii10041  
 16578 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427  
 16579 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, \*afii10042  
 16580 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428  
 16581 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, \*afii10043  
 16582 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429  
 16583 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN;  
 16584 % Hardsigncyrillic, \*afii10044  
 16585 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A  
 16586 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, \*afii10045  
 16587 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B  
 16588 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN;  
 16589 % Softsigncyrillic, \*afii10046  
 16590 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C  
 16591 % U+042D CYRILLIC CAPITAL LETTER E; Ereversedcyrillic, \*afii10047  
 16592 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D  
 16593 % U+042E CYRILLIC CAPITAL LETTER YU; IUcyrillic, \*afii10048  
 16594 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E  
 16595 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, \*afii10049  
 16596 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F  
 16597 % U+0430 CYRILLIC SMALL LETTER A; acyrillic, \*afii10065  
 16598 \DeclareTextCommand{\cyra}{PU}{\84\060}% U+0430  
 16599 % U+0431 CYRILLIC SMALL LETTER BE; \*afii10066, becyrillic  
 16600 \DeclareTextCommand{\cyrb}{PU}{\84\061}% U+0431  
 16601 % U+0432 CYRILLIC SMALL LETTER VE; \*afii10067, vecyrillic  
 16602 \DeclareTextCommand{\cyrv}{PU}{\84\062}% U+0432  
 16603 % U+0433 CYRILLIC SMALL LETTER GHE; \*afii10068, gecyrillic  
 16604 \DeclareTextCommand{\cyrg}{PU}{\84\063}% U+0433  
 16605 % U+0434 CYRILLIC SMALL LETTER DE; \*afii10069, decyrillic  
 16606 \DeclareTextCommand{\cyrd}{PU}{\84\064}% U+0434  
 16607 % U+0435 CYRILLIC SMALL LETTER IE; \*afii10070, iecyrillic  
 16608 \DeclareTextCommand{\cyre}{PU}{\84\065}% U+0435  
 16609 % U+0436 CYRILLIC SMALL LETTER ZHE; \*afii10072, zhacyrillic  
 16610 \DeclareTextCommand{\cyrzh}{PU}{\84\066}% U+0436  
 16611 % U+0437 CYRILLIC SMALL LETTER ZE; \*afii10073, zecyrillic  
 16612 \DeclareTextCommand{\cyrz}{PU}{\84\067}% U+0437  
 16613 % U+0438 CYRILLIC SMALL LETTER I; \*afii10074, iicyrillic  
 16614 \DeclareTextCommand{\cyri}{PU}{\84\070}% U+0438  
 16615 % U+0439 CYRILLIC SMALL LETTER SHORT I; \*afii10075, iishortcyrillic  
 16616 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% U+0439  
 16617 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}% U+0439  
 16618 % U+043A CYRILLIC SMALL LETTER KA; \*afii10076, kacyrillic  
 16619 \DeclareTextCommand{\cyrk}{PU}{\84\072}% U+043A  
 16620 % U+043B CYRILLIC SMALL LETTER EL; \*afii10077, elcyrillic  
 16621 \DeclareTextCommand{\cyrl}{PU}{\84\073}% U+043B  
 16622 % U+043C CYRILLIC SMALL LETTER EM; \*afii10078, emcyrillic  
 16623 \DeclareTextCommand{\cyrm}{PU}{\84\074}% U+043C

16624 % U+043D CYRILLIC SMALL LETTER EN; \*afii10079, encyrillic  
 16625 \DeclareTextCommand{\cyrn}{PU}{\84\075}% U+043D  
 16626 % U+043E CYRILLIC SMALL LETTER O; \*afii10080, ocyrillic  
 16627 \DeclareTextCommand{\cyro}{PU}{\84\076}% U+043E  
 16628 % U+043F CYRILLIC SMALL LETTER PE; \*afii10081, pecyrillic  
 16629 \DeclareTextCommand{\cyrp}{PU}{\84\077}% U+043F  
 16630 % U+0440 CYRILLIC SMALL LETTER ER; \*afii10082, ercyrillic  
 16631 \DeclareTextCommand{\cyrr}{PU}{\84\100}% U+0440  
 16632 % U+0441 CYRILLIC SMALL LETTER ES; \*afii10083, escyrillic  
 16633 \DeclareTextCommand{\cyrs}{PU}{\84\101}% U+0441  
 16634 % U+0442 CYRILLIC SMALL LETTER TE; \*afii10084, tecyrillic  
 16635 \DeclareTextCommand{\cyrt}{PU}{\84\102}% U+0442  
 16636 % U+0443 CYRILLIC SMALL LETTER U; \*afii10085, ucyrillic  
 16637 \DeclareTextCommand{\cyru}{PU}{\84\103}% U+0443  
 16638 % U+0444 CYRILLIC SMALL LETTER EF; \*afii10086, efcyrillic  
 16639 \DeclareTextCommand{\cyrf}{PU}{\84\104}% U+0444  
 16640 % U+0445 CYRILLIC SMALL LETTER HA; \*afii10087, khacyrillic  
 16641 \DeclareTextCommand{\cyrh}{PU}{\84\105}% U+0445  
 16642 % U+0446 CYRILLIC SMALL LETTER TSE; \*afii10088, tsecyrillic  
 16643 \DeclareTextCommand{\cyrc}{PU}{\84\106}% U+0446  
 16644 % U+0447 CYRILLIC SMALL LETTER CHE; \*afii10089, checyrillic  
 16645 \DeclareTextCommand{\cyrch}{PU}{\84\107}% U+0447  
 16646 % U+0448 CYRILLIC SMALL LETTER SHA; \*afii10090, shacyrillic  
 16647 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% U+0448  
 16648 % U+0449 CYRILLIC SMALL LETTER SHCHA; \*afii10091, shchacyrillic  
 16649 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% U+0449  
 16650 % U+044A CYRILLIC SMALL LETTER HARD SIGN; \*afii10092, hardsigncyrillic  
 16651 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% U+044A  
 16652 %\* \cyrhrdsn -> \hardsign (tipa)  
 16653 % U+044B CYRILLIC SMALL LETTER YERU; \*afii10093, yericyrillic  
 16654 \DeclareTextCommand{\cyrery}{PU}{\84\113}% U+044B  
 16655 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; \*afii10094, softsigncyrillic  
 16656 \DeclareTextCommand{\cyrsftsn}{PU}{\84\114}% U+044C  
 16657 %\* \cyrsftsn -> \softsign (tipa)  
 16658 % U+044D CYRILLIC SMALL LETTER E; \*afii10095, ereversedcyrillic  
 16659 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% U+044D  
 16660 % U+044E CYRILLIC SMALL LETTER YU; \*afii10096, iucyrillic  
 16661 \DeclareTextCommand{\cyryu}{PU}{\84\116}% U+044E  
 16662 % U+044F CYRILLIC SMALL LETTER YA; \*afii10097, iacyrillic  
 16663 \DeclareTextCommand{\cyrya}{PU}{\84\117}% U+044F  
 16664 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE  
 16665 \DeclareTextCompositeCommand{\'}{PU}{\cyre}{\84\120}% U+0450  
 16666 % U+0451 CYRILLIC SMALL LETTER IO; \*afii10071, iocyrillic  
 16667 \DeclareTextCommand{\cyryo}{PU}{\84\121}% U+0451  
 16668 \DeclareTextCompositeCommand{\"}{PU}{\cyre}{\84\121}% U+0451  
 16669 % U+0452 CYRILLIC SMALL LETTER DJE; \*afii10099, djecyrillic  
 16670 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% U+0452  
 16671 % U+0453 CYRILLIC SMALL LETTER GJE; \*afii10100, gjecyrillic  
 16672 \DeclareTextCompositeCommand{\'}{PU}{\cyrg}{\84\123}% U+0453  
 16673 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; \*afii10101, ecyrillic  
 16674 \DeclareTextCommand{\cyrie}{PU}{\84\124}% U+0454  
 16675 % U+0455 CYRILLIC SMALL LETTER DZE; \*afii10102, dzecyrillic  
 16676 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% U+0455  
 16677 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I;  
 16678 % \*afii10103, icyrillic  
 16679 \DeclareTextCommand{\cyrii}{PU}{\84\126}% U+0456

16680 % U+0457 CYRILLIC SMALL LETTER YI; \*afii10104, yicyrillic  
 16681 \DeclareTextCommand{\cyryi}{PU}{\84\127}% U+0457  
 16682 \DeclareTextCompositeCommand{\"}{PU}{\cyrii}{\84\127}% U+0457  
 16683 % U+0458 CYRILLIC SMALL LETTER JE; \*afii10105, jecyrillic  
 16684 \DeclareTextCommand{\cyrje}{PU}{\84\130}% U+0458  
 16685 % U+0459 CYRILLIC SMALL LETTER LJE; \*afii10106, ljecyrillic  
 16686 \DeclareTextCommand{\cyrkje}{PU}{\84\131}% U+0459  
 16687 % U+045A CYRILLIC SMALL LETTER NJE; \*afii10107, njecyrillic  
 16688 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% U+045A  
 16689 % U+045B CYRILLIC SMALL LETTER TSHE; \*afii10108, tshecyrillic  
 16690 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% U+045B  
 16691 % U+045C CYRILLIC SMALL LETTER KJE; \*afii10109, kjecyrillic  
 16692 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% U+045C  
 16693 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE  
 16694 \DeclareTextCompositeCommand{\`}{PU}{\cyri}{\84\135}% U+045D  
 16695 % U+045E CYRILLIC SMALL LETTER SHORT U; \*afii10110, ushortcyrillic  
 16696 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E  
 16697 \DeclareTextCompositeCommand{\U}{PU}{\curu}{\84\136}% U+045E  
 16698 % U+045F CYRILLIC SMALL LETTER DZHE; \*afii10193, dzhecyrillic  
 16699 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% U+045F  
 16700 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic  
 16701 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460  
 16702 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrillic  
 16703 \DeclareTextCommand{\cyromega}{PU}{\84\141}% U+0461  
 16704 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, \*afii10146  
 16705 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462  
 16706 % U+0463 CYRILLIC SMALL LETTER YAT; \*afii10194, yatcyrillic  
 16707 \DeclareTextCommand{\cyryat}{PU}{\84\143}% U+0463  
 16708 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic  
 16709 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464  
 16710 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrillic  
 16711 \DeclareTextCommand{\cyriote}{PU}{\84\145}% U+0465  
 16712 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslitlecyrillic  
 16713 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466  
 16714 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslitlecyrillic  
 16715 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467  
 16716 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslitlei-  
 otifiedcyrillic  
 16717 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468  
 16718 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslitleioti-  
 fiedcyrillic  
 16719 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469  
 16720 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbigcyrillic  
 16721 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A  
 16722 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbigcyrillic  
 16723 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B  
 16724 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbigiotified-  
 cyrillic  
 16725 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C  
 16726 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbigiotified-  
 cyrillic  
 16727 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D  
 16728 % U+046E CYRILLIC CAPITAL LETTER KSI; Ksicyrillic  
 16729 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% U+046E  
 16730 % U+046F CYRILLIC SMALL LETTER KSI; ksicyrillic  
 16731 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F  
 16732 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psicyrillic

16733 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470  
16734 % U+0471 CYRILLIC SMALL LETTER PSI; psicyrillic  
16735 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471  
16736 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, \*afii10147  
16737 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472  
16738 % U+0473 CYRILLIC SMALL LETTER FITA; \*afii10195, fitacyrillic  
16739 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473  
16740 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, \*afii10148  
16741 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474  
16742 % U+0475 CYRILLIC SMALL LETTER IZHITSA; \*afii10196, izhitsacyrillic  
16743 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475  
16744 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE  
16745 % GRAVE ACCENT; Izhitsadblgravecyrillic  
16746 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% U+0476  
16747 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE  
16748 % GRAVE ACCENT; izhitsadblgravecyrillic  
16749 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477  
16750 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic  
16751 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478  
16752 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic  
16753 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479  
16754 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyrillic  
16755 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A  
16756 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic  
16757 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B  
16758 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatitlocyrillic  
16759 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C  
16760 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlocyrillic  
16761 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D  
16762 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic  
16763 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E  
16764 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic  
16765 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F  
16766 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic  
16767 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480  
16768 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic  
16769 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481  
16770 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic  
16771 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% U+0482  
\84\203: U+0483 COMBINING CYRILLIC TITLO; titlocyrilliccmb  
\84\204: U+0484 COMBINING CYRILLIC PALATALIZATION; palatalizationcyrilliccmb  
\84\205: U+0485 COMBINING CYRILLIC DASIA PNEUMATA; dasiapneumatacyrilliccmb  
\84\206: U+0486 COMBINING CYRILLIC PSILI PNEUMATA; psilipneumatacyrilliccmb  
\84\207: U+0487 COMBINING CYRILLIC POKRYTIE  
\84\210: U+0488 COMBINING CYRILLIC HUNDRED THOUSANDS SIGN  
\84\211: U+0489 COMBINING CYRILLIC MILLIONS SIGN  
16772 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL  
16773 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A  
16774 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL  
16775 \DeclareTextCommand{\cyrishrtdsc}{PU}{\84\213}% U+048B



16776 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN  
 16777 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C  
 16778 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN  
 16779 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D  
 16780 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK  
 16781 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E  
 16782 % U+048F CYRILLIC SMALL LETTER ER WITH TICK  
 16783 \DeclareTextCommand{\cyrrtick}{PU}{\84\217}% U+048F  
 16784 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturn-  
 cyrillic, \*afii10050  
 16785 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490  
 16786 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; \*afii10098, ghe-  
 upturncyrillic  
 16787 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491  
 16788 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestroke-  
 cyrillic  
 16789 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492  
 16790 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic  
 16791 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% U+0493  
 16792 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK;  
 16793 % Ghemiddlehookcyrillic  
 16794 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494  
 16795 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK;  
 16796 % ghemiddlehookcyrillic  
 16797 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495  
 16798 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER;  
 16799 % Zhedescendercyrillic  
 16800 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496  
 16801 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER;  
 16802 % zhedescendercyrillic  
 16803 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% U+0497  
 16804 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescen-  
 dercyrillic  
 16805 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498  
 16806 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498  
 16807 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescender-  
 cyrillic  
 16808 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% U+0499  
 16809 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499  
 16810 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescen-  
 dercyrillic  
 16811 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A  
 16812 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kadescen-  
 dercyrillic  
 16813 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% U+049B  
 16814 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE;  
 16815 % Kavertikalstrokecyrillic  
 16816 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C  
 16817 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE;  
 16818 % kavertikalstrokecyrillic  
 16819 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D  
 16820 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic  
 16821 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E  
 16822 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic  
 16823 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% U+049F  
 16824 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic  
 16825 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0

16826 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic  
 16827 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1  
 16828 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescendercyrillic  
 16829 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2  
 16830 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endescendercyrillic  
 16831 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3  
 16832 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic  
 16833 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4  
 16834 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic  
 16835 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5  
 16836 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemiddlehookcyrillic  
 16837 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6  
 16838 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddlehookcyrillic  
 16839 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7  
 16840 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyrillic  
 16841 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8  
 16842 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic  
 16843 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% U+04A9  
 16844 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescendercyrillic  
 16845 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA  
 16846 \DeclareTextCompositeCommand{\CYRSDSC}{PU}{\CYRS}{\84\252}% U+04AA  
 16847 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescendercyrillic  
 16848 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% U+04AB  
 16849 \DeclareTextCompositeCommand{\k}{PU}{\cyrs}{\84\253}% U+04AB  
 16850 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescendercyrillic  
 16851 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC  
 16852 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescendercyrillic  
 16853 \DeclareTextCommand{\cyrtdsc}{PU}{\84\255}% U+04AD  
 16854 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic  
 16855 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE  
 16856 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; ustraightcyrillic  
 16857 \DeclareTextCommand{\cyry}{PU}{\84\257}% U+04AF  
 16858 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Ustraightstrokecyrillic  
 16859 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0  
 16860 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; ustraightstrokecyrillic  
 16861 \DeclareTextCommand{\cyr yhcrs}{PU}{\84\261}% U+04B1  
 16862 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hadesendercyrillic  
 16863 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% U+04B2  
 16864 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadescendercyrillic  
 16865 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% U+04B3  
 16866 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetsecyrillic  
 16867 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4  
 16868 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetsecyrillic  
 16869 \DeclareTextCommand{\cyr tetse}{PU}{\84\265}% U+04B5

16870 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER;  
 16871 % Chedescendercyrillic  
 16872 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6  
 16873 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescen-  
 dercyrillic  
 16874 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% U+04B7  
 16875 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE;  
 16876 % Cheverticalstrokecyrillic  
 16877 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8  
 16878 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE;  
 16879 % cheverticalstrokecyrillic  
 16880 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9  
 16881 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic  
 16882 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA  
 16883 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic  
 16884 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB  
 16885 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasian-  
 cyrillic  
 16886 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC  
 16887 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyril-  
 lic  
 16888 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% U+04BD  
 16889 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCEN-  
 DER; Chedescenderabkhasiancyrillic  
 16890 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE  
 16891 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE  
 16892 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCEN-  
 DER; chedescenderabkhasiancyrillic  
 16893 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% U+04BF  
 16894 \DeclareTextCompositeCommand{\k}{PU}{\cyrabhch}{\84\277}% U+04BF  
 16895 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic  
 16896 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0  
 16897 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic  
 16898 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1  
 16899 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic  
 16900 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% U+04C2  
 16901 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic  
 16902 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3  
 16903 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic  
 16904 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% U+04C4  
 16905 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL  
 16906 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5  
 16907 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL  
 16908 \DeclareTextCommand{\cyrldsc}{PU}{\84\306}% U+04C6  
 16909 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic  
 16910 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7  
 16911 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic  
 16912 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% U+04C8  
 16913 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakas-  
 siancyrillic  
 16914 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB  
 16915 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassian-  
 cyrillic  
 16916 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% U+04CC  
 16917 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL  
 16918 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD  
 16919 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL

16920 \DeclareTextCommand{\cyrmjsc}{PU}{\84\316}% U+04CE  
 \84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA

16921 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevacyrillic  
 16922 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0  
 16923 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevacyrillic  
 16924 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% U+04D1  
 16925 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyrl-  
 lic  
 16926 \DeclareTextCompositeCommand{\"}{PU}{\CYRA}{\84\322}% U+04D2  
 16927 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresiscyrlilic  
 16928 \DeclareTextCompositeCommand{\"}{PU}{\cyra}{\84\323}% U+04D3  
 16929 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aiecyrillic  
 16930 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4  
 16931 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aiecyrillic  
 16932 \DeclareTextCommand{\cyrae}{PU}{\84\325}% U+04D5  
 16933 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrevacyrillic  
 16934 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6  
 16935 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrevacyrillic  
 16936 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% U+04D7  
 16937 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwacyrillic  
 16938 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8  
 16939 % U+04D9 CYRILLIC SMALL LETTER SCHWA; \*afii10846, schwacyrillic  
 16940 \DeclareTextCommand{\cyrschwa}{PU}{\84\331}% U+04D9  
 16941 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS;  
 16942 % Schwadiesiscyrlilic  
 16943 \DeclareTextCompositeCommand{\"}{PU}{\CYRSCHWA}{\84\332}% U+04DA  
 16944 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS;  
 16945 % schwadiesiscyrlilic  
 16946 \DeclareTextCompositeCommand{\"}{PU}{\cyrschwa}{\84\333}% U+04DB  
 16947 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhedie-  
 resiscyrlilic  
 16948 \DeclareTextCompositeCommand{\"}{PU}{\CYRZH}{\84\334}% U+04DC  
 16949 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedieres-  
 icyrlilic  
 16950 \DeclareTextCompositeCommand{\"}{PU}{\cyrz}{\84\335}% U+04DD  
 16951 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedieres-  
 icyrlilic  
 16952 \DeclareTextCompositeCommand{\"}{PU}{\CYRZ}{\84\336}% U+04DE  
 16953 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedieresicyrl-  
 ilic  
 16954 \DeclareTextCompositeCommand{\"}{PU}{\cyrz}{\84\337}% U+04DF  
 16955 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasian-  
 icyrlilic  
 16956 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0  
 16957 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasiancyrl-  
 ilic  
 16958 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% U+04E1  
 16959 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Imacroncyrlilic  
 16960 \DeclareTextCompositeCommand{\=}{PU}{\CYRI}{\84\342}% U+04E2  
 16961 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacroncyrlilic  
 16962 \DeclareTextCompositeCommand{\=}{PU}{\cyri}{\84\343}% U+04E3  
 16963 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresiscyrlilic  
 16964 \DeclareTextCompositeCommand{\"}{PU}{\CYRI}{\84\344}% U+04E4  
 16965 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresiscyrlilic  
 16966 \DeclareTextCompositeCommand{\"}{PU}{\cyri}{\84\345}% U+04E5  
 16967 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresiscyrl-  
 ilic

16968 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% U+04E6  
16969 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresiscyrillic  
16970 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% U+04E7  
16971 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarredcyrillic  
16972 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8  
16973 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarredcyrillic  
16974 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9  
16975 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERESIS;  
16976 % Obarreddieresiscyrillic  
16977 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% U+04EA  
16978 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS;  
16979 % obarreddieresiscyrillic  
16980 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% U+04EB  
16981 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS  
16982 \DeclareTextCompositeCommand{"}{PU}{\CYREREV}{\84\354}% U+04EC  
16983 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS  
16984 \DeclareTextCompositeCommand{"}{PU}{\cyreref}{\84\355}% U+04ED  
16985 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacroncyrillic  
16986 \DeclareTextCompositeCommand{\=}{PU}{\CYRU}{\84\356}% U+04EE  
16987 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacroncyrillic  
16988 \DeclareTextCompositeCommand{\=}{PU}{\cyru}{\84\357}% U+04EF  
16989 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udieresiscyrillic  
16990 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U+04F0  
16991 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udieresiscyrillic  
16992 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% U+04F1  
16993 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhun-  
garumlautcyrillic  
16994 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U+04F2  
16995 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhun-  
garumlautcyrillic  
16996 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% U+04F3  
16997 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chediere-  
siscyrillic  
16998 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% U+04F4  
16999 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieresiscyrillic  
17000 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% U+04F5  
17001 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER  
17002 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6  
17003 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER  
17004 \DeclareTextCommand{\cyrgdsc}{PU}{\84\367}% U+04F7  
17005 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudiere-  
siscyrillic  
17006 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% U+04F8  
17007 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudiere-  
siscyrillic  
17008 \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  
17009 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK  
17010 \DeclareTextCommand{\CYRHHK}{PU}{\84\374}% U+04FC  
17011 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK  
17012 \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

### 50.2.11 Thai: U+0E00 to U+0E7F

17013 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai  
 17014 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

### 50.2.12 Phonetic Extensions: U+1D00 to U+1D7F

17015 % U+1D00 LATIN LETTER SMALL CAPITAL A; \textscA (tipa)  
 17016 \DeclareTextCommand{\textscA}{PU}{\9035\000}% U+1D00  
 17017 % U+1D05 LATIN LETTER SMALL CAPITAL D; \scd (wsuipa)  
 17018 \DeclareTextCommand{\textscd}{PU}{\9035\005}% U+1D05  
 17019 % U+1D07 LATIN LETTER SMALL CAPITAL E; \textscE (tipa)  
 17020 \DeclareTextCommand{\textscE}{PU}{\9035\007}% U+1D07  
 17021 % U+1D0A LATIN LETTER SMALL CAPITAL J; \textscJ (tipa)  
 17022 \DeclareTextCommand{\textscJ}{PU}{\9035\012}% U+1D0A  
 17023 % U+1D0B LATIN LETTER SMALL CAPITAL K; \textscK (tipx)  
 17024 \DeclareTextCommand{\textPUscK}{PU}{\9035\013}% U+1D0B  
 17025 %\* \textPUscK -> \textscK (tipx)  
 17026 % U+1D0D LATIN LETTER SMALL CAPITAL M; \textscM (tipx)  
 17027 \DeclareTextCommand{\textPUscM}{PU}{\9035\015}% U+1D0D  
 17028 %\* \textPUscM -> \textscM (tipx)  
 17029 % U+1D18 LATIN LETTER SMALL CAPITAL P; \textscP (tipx)  
 17030 \DeclareTextCommand{\textPUscP}{PU}{\9035\030}% U+1D18  
 17031 %\* \textPUscP -> \textscP (tipx)  
 17032 % U+1D19 LATIN LETTER SMALL CAPITAL REVERSED R; \textrevscr (tipx)  
 17033 \DeclareTextCommand{\textPUrevscr}{PU}{\9035\031}% U+1D19  
 17034 %\* \textPUrevscr -> \textrevscr (tipx)  
 17035 % U+1D1C LATIN LETTER SMALL CAPITAL U; \textscU (tipa), \scu (wsuipa)  
 17036 \DeclareTextCommand{\textscU}{PU}{\9035\034}% U+1D1C  
 17037 % U+1D62 LATIN SUBSCRIPT SMALL LETTER I  
 17038 \DeclareTextCommand{\textiinferior}{PU}{\9035\142}% U+1D62  
 17039 % U+1D63 LATIN SUBSCRIPT SMALL LETTER R  
 17040 \DeclareTextCommand{\textrinferior}{PU}{\9035\143}% U+1D63  
 17041 % U+1D64 LATIN SUBSCRIPT SMALL LETTER U  
 17042 \DeclareTextCommand{\textuinferior}{PU}{\9035\144}% U+1D64  
 17043 % U+1D65 LATIN SUBSCRIPT SMALL LETTER V  
 17044 \DeclareTextCommand{\textvinferior}{PU}{\9035\145}% U+1D65  
 17045 % U+1D66 GREEK SUBSCRIPT SMALL LETTER BETA  
 17046 \DeclareTextCommand{\textbetainferior}{PU}{\9035\146}% U+1D66  
 17047 % U+1D67 GREEK SUBSCRIPT SMALL LETTER GAMMA  
 17048 \DeclareTextCommand{\textgammainferior}{PU}{\9035\147}% U+1D67  
 17049 % U+1D68 GREEK SUBSCRIPT SMALL LETTER RHO  
 17050 \DeclareTextCommand{\textrhoinferior}{PU}{\9035\150}% U+1D68  
 17051 % U+1D69 GREEK SUBSCRIPT SMALL LETTER PHI  
 17052 \DeclareTextCommand{\textphiinferior}{PU}{\9035\151}% U+1D69  
 17053 % U+1D6A GREEK SUBSCRIPT SMALL LETTER CHI  
 17054 \DeclareTextCommand{\textchiinferior}{PU}{\9035\152}% U+1D6A  
 17055 % U+1D7B LATIN SMALL CAPITAL LETTER I WITH STROKE;  
 17056 % \barsci (wsuipa)  
 17057 \DeclareTextCommand{\textbarsci}{PU}{\9035\173}% U+1D7B  
 17058 % U+1D7D LATIN SMALL LETTER P WITH STROKE; \barp (wsuipa)  
 17059 \DeclareTextCommand{\textbarp}{PU}{\9035\175}% U+1D7D  
 17060 % U+1D7E LATIN SMALL CAPITAL LETTER U WITH STROKE;  
 17061 % \barscu (wsuipa)  
 17062 \DeclareTextCommand{\textbarscu}{PU}{\9035\176}% U+1D7E

### 50.2.13 Phonetic Extensions Supplement: U+1D80 to U+1DBF

```
17063 % U+1D8F LATIN SMALL LETTER A WITH RETROFLEX HOOK; \tex-
      trhooka (tipx)
17064 \DeclareTextCommand{\textPurhooka}{PU}{\9035\217}% U+1D8F
17065 %* \textPurhooka -> \textrhooka (tipx)
17066 % U+1D91 LATIN SMALL LETTER D WITH HOOK AND TAIL; \texthtr-
      taild (tipa)
17067 \DeclareTextCommand{\texthtrtaild}{PU}{\9035\221}%* U+1D91
17068 % U+1D92 LATIN SMALL LETTER E WITH RETROFLEX HOOK; \tex-
      trhooke (tipx)
17069 \DeclareTextCommand{\textPurhooke}{PU}{\9035\222}% U+1D92
17070 %* \textPurhooke -> \textrhooke (tipx)
17071 % U+1D93 LATIN SMALL LETTER OPEN E WITH RETROFLEX HOOK;
17072 % \textrhookepsilon (tipx)
17073 \DeclareTextCommand{\textPurhookepsilon}{PU}{\9035\223}% U+1D93
17074 %* \textPurhookepsilon -> \textrhookepsilon (tipx)
17075 % U+1D97 LATIN SMALL LETTER OPEN O WITH RETROFLEX HOOK;
17076 % \textrhookopeno (tipx)
17077 \DeclareTextCommand{\textPurhookopeno}{PU}{\9035\227}% U+1D97
17078 %* \textPurhookopeno -> \textrhookopeno (tipx)
```

### 50.2.14 Latin Extended Additional: U+1E00 to U+1EFF

```
17079 % U+1E00 LATIN CAPITAL LETTER A WITH RING BELOW; Aringbelow
17080 \DeclareTextCompositeCommand{\textsubring}{PU}{A}{\9036\000}% U+1E00
17081 % U+1E01 LATIN SMALL LETTER A WITH RING BELOW; aringbelow
17082 \DeclareTextCompositeCommand{\textsubring}{PU}{a}{\9036\001}% U+1E01
17083 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent
17084 \DeclareTextCompositeCommand{.}{PU}{B}{\9036\002}% U+1E02
17085 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent
17086 \DeclareTextCompositeCommand{.}{PU}{b}{\9036\003}% U+1E03
17087 % U+1E04 LATIN CAPITAL LETTER B WITH DOT BELOW; Bdotbelow
17088 \DeclareTextCompositeCommand{\d}{PU}{B}{\9036\004}% U+1E04
17089 % U+1E05 LATIN SMALL LETTER B WITH DOT BELOW; bdotbelow
17090 \DeclareTextCompositeCommand{\d}{PU}{b}{\9036\005}% U+1E05
17091 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow
17092 \DeclareTextCompositeCommand{\b}{PU}{B}{\9036\006}% U+1E06
17093 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow
17094 \DeclareTextCompositeCommand{\b}{PU}{b}{\9036\007}% U+1E07
17095 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent
17096 \DeclareTextCompositeCommand{.}{PU}{D}{\9036\012}% U+1E0A
17097 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent
17098 \DeclareTextCompositeCommand{.}{PU}{d}{\9036\013}% U+1E0B
17099 % U+1E0C LATIN CAPITAL LETTER D WITH DOT BELOW; Ddotbelow
17100 \DeclareTextCompositeCommand{\d}{PU}{D}{\9036\014}% U+1E0C
17101 % U+1E0D LATIN SMALL LETTER D WITH DOT BELOW; ddotbelow
17102 \DeclareTextCompositeCommand{\d}{PU}{d}{\9036\015}% U+1E0D
17103 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow
17104 \DeclareTextCompositeCommand{\b}{PU}{D}{\9036\016}% U+1E0E
17105 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow
17106 \DeclareTextCompositeCommand{\b}{PU}{d}{\9036\017}% U+1E0F
17107 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla
17108 \DeclareTextCompositeCommand{\c}{PU}{D}{\9036\020}% U+1E10
17109 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla
17110 \DeclareTextCompositeCommand{\c}{PU}{d}{\9036\021}% U+1E11
17111 % U+1E12 LATIN CAPITAL LETTER D WITH CIRCUMFLEX BELOW; Dcir-
      cumflexbelow
17112 \DeclareTextCompositeCommand{\textsubcircum}{PU}{D}{\9036\022}% U+1E12
```

17113 % U+1E13 LATIN SMALL LETTER D WITH CIRCUMFLEX BELOW; dcir-  
cumflexbelow  
17114 \DeclareTextCompositeCommand{\textsubcircum}{PU}{d}{\9036\023}% U+1E13  
17115 % U+1E14 LATIN CAPITAL LETTER E WITH MACRON AND GRAVE;  
17116 % Emacrongrave  
17117 \DeclareTextCompositeCommand{\textgravemacron}{PU}{E}{\9036\024}% U+1E14  
17118 % U+1E15 LATIN SMALL LETTER E WITH MACRON AND GRAVE;  
17119 % emacrongrave  
17120 \DeclareTextCompositeCommand{\textgravemacron}{PU}{e}{\9036\025}% U+1E15  
17121 % U+1E16 LATIN CAPITAL LETTER E WITH MACRON AND ACUTE;  
17122 % Emacronacute  
17123 \DeclareTextCompositeCommand{\textacutemacron}{PU}{E}{\9036\026}% U+1E16  
17124 % U+1E17 LATIN SMALL LETTER E WITH MACRON AND ACUTE;  
17125 % emacronacute  
17126 \DeclareTextCompositeCommand{\textacutemacron}{PU}{e}{\9036\027}% U+1E17  
17127 % U+1E18 LATIN CAPITAL LETTER E WITH CIRCUMFLEX BELOW; Ecir-  
cumflexbelow  
17128 \DeclareTextCompositeCommand{\textsubcircum}{PU}{E}{\9036\030}% U+1E18  
17129 % U+1E19 LATIN SMALL LETTER E WITH CIRCUMFLEX BELOW; ecir-  
cumflexbelow  
17130 \DeclareTextCompositeCommand{\textsubcircum}{PU}{e}{\9036\031}% U+1E19  
17131 % U+1E1A LATIN CAPITAL LETTER E WITH TILDE BELOW; Etildebelow  
17132 \DeclareTextCompositeCommand{\textsubtilde}{PU}{E}{\9036\032}% U+1E1A  
17133 % U+1E1B LATIN SMALL LETTER E WITH TILDE BELOW; etildebelow  
17134 \DeclareTextCompositeCommand{\textsubtilde}{PU}{e}{\9036\033}% U+1E1B  
17135 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent  
17136 \DeclareTextCompositeCommand{\.}{PU}{F}{\9036\036}% U+1E1E  
17137 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent  
17138 \DeclareTextCompositeCommand{\.}{PU}{f}{\9036\037}% U+1E1F  
17139 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron  
17140 \DeclareTextCompositeCommand{\=}{PU}{G}{\9036\040}% U+1E20  
17141 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron  
17142 \DeclareTextCompositeCommand{\=}{PU}{g}{\9036\041}% U+1E21  
17143 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent  
17144 \DeclareTextCompositeCommand{\.}{PU}{H}{\9036\042}% U+1E22  
17145 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent  
17146 \DeclareTextCompositeCommand{\.}{PU}{h}{\9036\043}% U+1E23  
17147 % U+1E24 LATIN CAPITAL LETTER H WITH DOT BELOW; Hdotbelow  
17148 \DeclareTextCompositeCommand{\d}{PU}{H}{\9036\044}% U+1E24  
17149 % U+1E25 LATIN SMALL LETTER H WITH DOT BELOW; hdotbelow  
17150 \DeclareTextCompositeCommand{\d}{PU}{h}{\9036\045}% U+1E25  
17151 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis  
17152 \DeclareTextCompositeCommand{\"}{PU}{H}{\9036\046}% U+1E26  
17153 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis  
17154 \DeclareTextCompositeCommand{\"}{PU}{h}{\9036\047}% U+1E27  
17155 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla  
17156 \DeclareTextCompositeCommand{\c}{PU}{H}{\9036\050}% U+1E28  
17157 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla  
17158 \DeclareTextCompositeCommand{\c}{PU}{h}{\9036\051}% U+1E29  
17159 % U+1E2A LATIN CAPITAL LETTER H WITH BREVE BELOW; Hbrevebelow  
17160 \DeclareTextCompositeCommand{\textsubbreve}{PU}{H}{\9036\052}% U+1E2A  
17161 % U+1E2B LATIN SMALL LETTER H WITH BREVE BELOW; hbrevebelow  
17162 \DeclareTextCompositeCommand{\textsubbreve}{PU}{h}{\9036\053}% U+1E2B  
17163 % U+1E2C LATIN CAPITAL LETTER I WITH TILDE BELOW; Itildebelow  
17164 \DeclareTextCompositeCommand{\textsubtilde}{PU}{I}{\9036\054}% U+1E2C  
17165 % U+1E2D LATIN SMALL LETTER I WITH TILDE BELOW; itildebelow  
17166 \DeclareTextCompositeCommand{\textsubtilde}{PU}{i}{\9036\055}% U+1E2D



17167 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute  
17168 \DeclareTextCompositeCommand{\'}{PU}{K}{\9036\060}% U+1E30  
17169 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute  
17170 \DeclareTextCompositeCommand{\'}{PU}{k}{\9036\061}% U+1E31  
17171 % U+1E32 LATIN CAPITAL LETTER K WITH DOT BELOW; Kdotbelow  
17172 \DeclareTextCompositeCommand{\d}{PU}{K}{\9036\062}% U+1E32  
17173 % U+1E33 LATIN SMALL LETTER K WITH DOT BELOW; kdotbelow  
17174 \DeclareTextCompositeCommand{\d}{PU}{k}{\9036\063}% U+1E33  
17175 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow  
17176 \DeclareTextCompositeCommand{\b}{PU}{K}{\9036\064}% U+1E34  
17177 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow  
17178 \DeclareTextCompositeCommand{\b}{PU}{k}{\9036\065}% U+1E35  
17179 % U+1E36 LATIN CAPITAL LETTER L WITH DOT BELOW; Ldotbelow  
17180 \DeclareTextCompositeCommand{\d}{PU}{L}{\9036\066}% U+1E36  
17181 % U+1E37 LATIN SMALL LETTER L WITH DOT BELOW; ldotbelow  
17182 \DeclareTextCompositeCommand{\d}{PU}{l}{\9036\067}% U+1E37  
17183 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow  
17184 \DeclareTextCompositeCommand{\b}{PU}{L}{\9036\072}% U+1E3A  
17185 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow  
17186 \DeclareTextCompositeCommand{\b}{PU}{l}{\9036\073}% U+1E3B  
17187 % U+1E3C LATIN CAPITAL LETTER L WITH CIRCUMFLEX BELOW; Lcir-  
cumflexbelow  
17188 \DeclareTextCompositeCommand{\textsubcircum}{PU}{L}{\9036\074}% U+1E3C  
17189 % U+1E3D LATIN SMALL LETTER L WITH CIRCUMFLEX BELOW; lcir-  
cumflexbelow  
17190 \DeclareTextCompositeCommand{\textsubcircum}{PU}{l}{\9036\075}% U+1E3D  
17191 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute  
17192 \DeclareTextCompositeCommand{\'}{PU}{M}{\9036\076}% U+1E3E  
17193 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute  
17194 \DeclareTextCompositeCommand{\'}{PU}{m}{\9036\077}% U+1E3F  
17195 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent  
17196 \DeclareTextCompositeCommand{\.}{PU}{M}{\9036\100}% U+1E40  
17197 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent  
17198 \DeclareTextCompositeCommand{\.}{PU}{m}{\9036\101}% U+1E41  
17199 % U+1E42 LATIN CAPITAL LETTER M WITH DOT BELOW; Mdotbelow  
17200 \DeclareTextCompositeCommand{\d}{PU}{M}{\9036\102}% U+1E42  
17201 % U+1E43 LATIN SMALL LETTER M WITH DOT BELOW; mdotbelow  
17202 \DeclareTextCompositeCommand{\d}{PU}{m}{\9036\103}% U+1E43  
17203 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent  
17204 \DeclareTextCompositeCommand{\.}{PU}{N}{\9036\104}% U+1E44  
17205 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent  
17206 \DeclareTextCompositeCommand{\.}{PU}{n}{\9036\105}% U+1E45  
17207 % U+1E46 LATIN CAPITAL LETTER N WITH DOT BELOW; Ndotbelow  
17208 \DeclareTextCompositeCommand{\d}{PU}{N}{\9036\106}% U+1E46  
17209 % U+1E47 LATIN SMALL LETTER N WITH DOT BELOW; ndotbelow  
17210 \DeclareTextCompositeCommand{\d}{PU}{n}{\9036\107}% U+1E47  
17211 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow  
17212 \DeclareTextCompositeCommand{\b}{PU}{N}{\9036\110}% U+1E48  
17213 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow  
17214 \DeclareTextCompositeCommand{\b}{PU}{n}{\9036\111}% U+1E49  
17215 % U+1E4A LATIN CAPITAL LETTER N WITH CIRCUMFLEX BELOW; Ncir-  
cumflexbelow  
17216 \DeclareTextCompositeCommand{\textsubcircum}{PU}{N}{\9036\112}% U+1E4A  
17217 % U+1E4B LATIN SMALL LETTER N WITH CIRCUMFLEX BELOW; ncir-  
cumflexbelow  
17218 \DeclareTextCompositeCommand{\textsubcircum}{PU}{n}{\9036\113}% U+1E4B  
17219 % U+1E50 LATIN CAPITAL LETTER O WITH MACRON AND GRAVE;

17220 % Omacrongrave  
17221 \DeclareTextCompositeCommand{\textgravemacron}{PU}{O}{\9036\120}% U+1E50  
17222 % U+1E51 LATIN SMALL LETTER O WITH MACRON AND GRAVE;  
17223 % omacrongrave  
17224 \DeclareTextCompositeCommand{\textgravemacron}{PU}{o}{\9036\121}% U+1E51  
17225 % U+1E52 LATIN CAPITAL LETTER O WITH MACRON AND ACUTE;  
17226 % Omacronacute  
17227 \DeclareTextCompositeCommand{\textacutemacron}{PU}{O}{\9036\122}% U+1E52  
17228 % U+1E53 LATIN SMALL LETTER O WITH MACRON AND ACUTE;  
17229 % omacronacute  
17230 \DeclareTextCompositeCommand{\textacutemacron}{PU}{o}{\9036\123}% U+1E53  
17231 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute  
17232 \DeclareTextCompositeCommand{'}{PU}{P}{\9036\124}% U+1E54  
17233 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute  
17234 \DeclareTextCompositeCommand{'}{PU}{p}{\9036\125}% U+1E55  
17235 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent  
17236 \DeclareTextCompositeCommand{.}{PU}{P}{\9036\126}% U+1E56  
17237 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent  
17238 \DeclareTextCompositeCommand{.}{PU}{p}{\9036\127}% U+1E57  
17239 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent  
17240 \DeclareTextCompositeCommand{.}{PU}{R}{\9036\130}% U+1E58  
17241 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent  
17242 \DeclareTextCompositeCommand{.}{PU}{r}{\9036\131}% U+1E59  
17243 % U+1E5A LATIN CAPITAL LETTER R WITH DOT BELOW; Rdotbelow  
17244 \DeclareTextCompositeCommand{d}{PU}{R}{\9036\132}% U+1E5A  
17245 % U+1E5B LATIN SMALL LETTER R WITH DOT BELOW; rdotbelow  
17246 \DeclareTextCompositeCommand{d}{PU}{r}{\9036\133}% U+1E5B  
17247 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow  
17248 \DeclareTextCompositeCommand{b}{PU}{R}{\9036\136}% U+1E5E  
17249 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow  
17250 \DeclareTextCompositeCommand{b}{PU}{r}{\9036\137}% U+1E5F  
17251 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent  
17252 \DeclareTextCompositeCommand{.}{PU}{S}{\9036\140}% U+1E60  
17253 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent  
17254 \DeclareTextCompositeCommand{.}{PU}{s}{\9036\141}% U+1E61  
17255 % U+1E62 LATIN CAPITAL LETTER S WITH DOT BELOW; Sdotbelow  
17256 \DeclareTextCompositeCommand{d}{PU}{S}{\9036\142}% U+1E62  
17257 % U+1E63 LATIN SMALL LETTER S WITH DOT BELOW; sdotbelow  
17258 \DeclareTextCompositeCommand{d}{PU}{s}{\9036\143}% U+1E63  
17259 % U+1E6A LATIN CAPITAL LETTER T WITH DOT ABOVE; Tdotaccent  
17260 \DeclareTextCompositeCommand{.}{PU}{T}{\9036\152}% U+1E6A  
17261 % U+1E6B LATIN SMALL LETTER T WITH DOT ABOVE; tdotaccent  
17262 \DeclareTextCompositeCommand{.}{PU}{t}{\9036\153}% U+1E6B  
17263 % U+1E6C LATIN CAPITAL LETTER T WITH DOT BELOW; Tdotbelow  
17264 \DeclareTextCompositeCommand{d}{PU}{T}{\9036\154}% U+1E6C  
17265 % U+1E6D LATIN SMALL LETTER T WITH DOT BELOW; tdotbelow  
17266 \DeclareTextCompositeCommand{d}{PU}{t}{\9036\155}% U+1E6D  
17267 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow  
17268 \DeclareTextCompositeCommand{b}{PU}{T}{\9036\156}% U+1E6E  
17269 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow  
17270 \DeclareTextCompositeCommand{b}{PU}{t}{\9036\157}% U+1E6F  
17271 % U+1E70 LATIN CAPITAL LETTER T WITH CIRCUMFLEX BELOW; Tcir-  
cumflexbelow  
17272 \DeclareTextCompositeCommand{\textsubcircum}{PU}{T}{\9036\160}% U+1E70  
17273 % U+1E71 LATIN SMALL LETTER T WITH CIRCUMFLEX BELOW; tcir-  
cumflexbelow  
17274 \DeclareTextCompositeCommand{\textsubcircum}{PU}{t}{\9036\161}% U+1E71

17275 % U+1E72 LATIN CAPITAL LETTER U WITH DIAERESIS BELOW; Udiere-  
sisbelow  
17276 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{U}{\9036\162}% U+1E72  
17277 % U+1E73 LATIN SMALL LETTER U WITH DIAERESIS BELOW; udiere-  
sisbelow  
17278 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{u}{\9036\163}% U+1E73  
17279 % U+1E74 LATIN CAPITAL LETTER U WITH TILDE BELOW; Utildebelow  
17280 \DeclareTextCompositeCommand{\textsubtilde}{PU}{U}{\9036\164}% U+1E74  
17281 % U+1E75 LATIN SMALL LETTER U WITH TILDE BELOW; utildebelow  
17282 \DeclareTextCompositeCommand{\textsubtilde}{PU}{u}{\9036\165}% U+1E75  
17283 % U+1E76 LATIN CAPITAL LETTER U WITH CIRCUMFLEX BELOW; Ucir-  
cumflexbelow  
17284 \DeclareTextCompositeCommand{\textsubcircum}{PU}{U}{\9036\166}% U+1E76  
17285 % U+1E77 LATIN SMALL LETTER U WITH CIRCUMFLEX BELOW; ucir-  
cumflexbelow  
17286 \DeclareTextCompositeCommand{\textsubcircum}{PU}{u}{\9036\167}% U+1E77  
17287 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde  
17288 \DeclareTextCompositeCommand{\~}{PU}{V}{\9036\174}% U+1E7C  
17289 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde  
17290 \DeclareTextCompositeCommand{\~}{PU}{v}{\9036\175}% U+1E7D  
17291 % U+1E7E LATIN CAPITAL LETTER V WITH DOT BELOW; Vdotbelow  
17292 \DeclareTextCompositeCommand{\d}{PU}{V}{\9036\176}% U+1E7E  
17293 % U+1E7F LATIN SMALL LETTER V WITH DOT BELOW; vdotbelow  
17294 \DeclareTextCompositeCommand{\d}{PU}{v}{\9036\177}% U+1E7F  
17295 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave  
17296 \DeclareTextCompositeCommand{\`}{PU}{W}{\9036\200}% U+1E80  
17297 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave  
17298 \DeclareTextCompositeCommand{\`}{PU}{w}{\9036\201}% U+1E81  
17299 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute  
17300 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\202}% U+1E82  
17301 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute  
17302 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\203}% U+1E83  
17303 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis  
17304 \DeclareTextCompositeCommand{\"}{PU}{W}{\9036\204}% U+1E84  
17305 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis  
17306 \DeclareTextCompositeCommand{\"}{PU}{w}{\9036\205}% U+1E85  
17307 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent  
17308 \DeclareTextCompositeCommand{\.}{PU}{W}{\9036\206}% U+1E86  
17309 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent  
17310 \DeclareTextCompositeCommand{\.}{PU}{w}{\9036\207}% U+1E87  
17311 % U+1E88 LATIN CAPITAL LETTER W WITH DOT BELOW; wdotbelow  
17312 \DeclareTextCompositeCommand{\d}{PU}{W}{\9036\210}% U+1E88  
17313 % U+1E89 LATIN SMALL LETTER W WITH DOT BELOW; wdotbelow  
17314 \DeclareTextCompositeCommand{\d}{PU}{w}{\9036\211}% U+1E89  
17315 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent  
17316 \DeclareTextCompositeCommand{\.}{PU}{X}{\9036\212}% U+1E8A  
17317 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent  
17318 \DeclareTextCompositeCommand{\.}{PU}{x}{\9036\213}% U+1E8B  
17319 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis  
17320 \DeclareTextCompositeCommand{\"}{PU}{X}{\9036\214}% U+1E8C  
17321 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis  
17322 \DeclareTextCompositeCommand{\"}{PU}{x}{\9036\215}% U+1E8D  
17323 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent  
17324 \DeclareTextCompositeCommand{\.}{PU}{Y}{\9036\216}% U+1E8E  
17325 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent  
17326 \DeclareTextCompositeCommand{\.}{PU}{y}{\9036\217}% U+1E8F  
17327 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex

17328 \DeclareTextCompositeCommand{\~}{PU}{Z}{\9036\220}% U+1E90  
17329 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex  
17330 \DeclareTextCompositeCommand{\^}{PU}{z}{\9036\221}% U+1E91  
17331 % U+1E92 LATIN CAPITAL LETTER Z WITH DOT BELOW; Zdotbelow  
17332 \DeclareTextCompositeCommand{\d}{PU}{Z}{\9036\222}% U+1E92  
17333 % U+1E93 LATIN SMALL LETTER Z WITH DOT BELOW; zdotbelow  
17334 \DeclareTextCompositeCommand{\d}{PU}{z}{\9036\223}% U+1E93  
17335 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow  
17336 \DeclareTextCompositeCommand{\b}{PU}{Z}{\9036\224}% U+1E94  
17337 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow  
17338 \DeclareTextCompositeCommand{\b}{PU}{z}{\9036\225}% U+1E95  
17339 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow  
17340 \DeclareTextCompositeCommand{\b}{PU}{h}{\9036\226}% U+1E96  
17341 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis  
17342 \DeclareTextCompositeCommand{\"}{PU}{t}{\9036\227}% U+1E97  
17343 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring  
17344 \DeclareTextCompositeCommand{\r}{PU}{w}{\9036\230}% U+1E98  
17345 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring  
17346 \DeclareTextCompositeCommand{\r}{PU}{y}{\9036\231}% U+1E99  
17347 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdo-  
taccent  
17348 \DeclareTextCompositeCommand{\.}{PU}{\textlongs}{\9036\233}% U+1E9B  
17349 % U+1EA0 LATIN CAPITAL LETTER A WITH DOT BELOW; Adotbelow  
17350 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}% U+1EA0  
17351 % U+1EA1 LATIN SMALL LETTER A WITH DOT BELOW; adotbelow  
17352 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}% U+1EA1  
17353 % U+1EB8 LATIN CAPITAL LETTER E WITH DOT BELOW; Edotbelow  
17354 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}% U+1EB8  
17355 % U+1EB9 LATIN SMALL LETTER E WITH DOT BELOW; edotbelow  
17356 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}% U+1EB9  
17357 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde  
17358 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
17359 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde  
17360 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
17361 % U+1ECA LATIN CAPITAL LETTER I WITH DOT BELOW; Idotbelow  
17362 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}% U+1ECA  
17363 % U+1ECB LATIN SMALL LETTER I WITH DOT BELOW; idotbelow  
17364 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}% U+1ECB  
17365 % U+1ECC LATIN CAPITAL LETTER O WITH DOT BELOW; Odotbelow  
17366 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}% U+1ECC  
17367 % U+1ECD LATIN SMALL LETTER O WITH DOT BELOW; odotbelow  
17368 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}% U+1ECD  
17369 % U+1EE4 LATIN CAPITAL LETTER U WITH DOT BELOW; Udotbelow  
17370 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4  
17371 % U+1EE5 LATIN SMALL LETTER U WITH DOT BELOW; udotbelow  
17372 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}% U+1EE5  
17373 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave  
17374 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2  
17375 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave  
17376 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3  
17377 % U+1EF4 LATIN CAPITAL LETTER Y WITH DOT BELOW; Ydotbelow  
17378 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4  
17379 % U+1EF5 LATIN SMALL LETTER Y WITH DOT BELOW; ydotbelow  
17380 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}% U+1EF5  
17381 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde  
17382 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8  
17383 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde

17384 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9

## 50.2.15 General Punctuation: U+2000 to U+206F

17385 % U+200C ZERO WIDTH NON-JOINER; \*afii61664, zerowidthnonjoiner  
17386 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C  
17387 % U+2013 EN DASH; endash  
17388 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013  
17389 % U+2014 EM DASH; emdash  
17390 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014  
17391 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar  
17392 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016  
17393 %\* \textbardbl -> \textdoublevertline (tipa)  
17394 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
17395 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018  
17396 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
17397 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019  
17398 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
17399 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A  
17400 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
17401 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034}% U+201C  
17402 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
17403 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035}% U+201D  
17404 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
17405 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E  
17406 % U+2020 DAGGER; dagger  
17407 \DeclareTextCommand{\textdagger}{PU}{\9040\040}%\* U+2020  
17408 %\* \textdagger -> \dag (LaTeX)  
17409 % U+2021 DOUBLE DAGGER; daggerdbl; \ddagger (LaTeX)  
17410 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021  
17411 %\* \textdaggerdbl -> \ddagger (LaTeX)  
17412 %\* \textddag -> \ddag (LaTeX)  
17413 % U+2022 BULLET; bullet  
17414 \DeclareTextCommand{\textbullet}{PU}{\9040\042}%\* U+2022  
17415 % U+2025 TWO DOT LEADER; \hdotfor (MnSymbol)  
17416 \DeclareTextCommand{\texthdotfor}{PU}{\9040\045}%\* U+2025  
17417 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
17418 \DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026  
17419 %\* \textellipsis -> \mathellipsis  
17420 % U+2030 PER MILLE SIGN; perthousand  
17421 \DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030  
17422 % U+2031 PER TEN THOUSAND SIGN  
17423 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031  
17424 % U+2032 PRIME; minute; \prime (MnSymbol)  
17425 \DeclareTextCommand{\textprime}{PU}{\9040\062}%\* U+2032  
17426 % U+2033 DOUBLE PRIME; \second (mathabx)  
17427 \DeclareTextCommand{\textsecond}{PU}{\9040\063}%\* U+2033  
17428 % U+2034 TRIPLE PRIME; \third (mathabx)  
17429 \DeclareTextCommand{\textthird}{PU}{\9040\064}%\* U+2034  
17430 % U+2035 REVERSED PRIME; \backprime (AmS)  
17431 \DeclareTextCommand{\textbackprime}{PU}{\9040\065}%\* U+2035  
17432 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
inglleft  
17433 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071}% U+2039  
17434 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
inglright  
17435 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072}% U+203A  
17436 % U+203B REFERENCE MARK; referencemark

17437 \DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B  
 17438 % U+203D INTERROBANG  
 17439 \DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D  
 17440 % U+2044 FRACTION SLASH; fraction  
 17441 \DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044  
 17442 % U+2045 LEFT SQUARE BRACKET WITH QUILL  
 17443 \DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045  
 17444 % U+2046 RIGHT SQUARE BRACKET WITH QUILL  
 17445 \DeclareTextCommand{\textrquill}{PU}{\9040\106}% U+2046  
 17446 % U+2052 COMMERCIAL MINUS SIGN  
 17447 \DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052  
 17448 % U+2056 THREE DOT PUNCTUATION; \lefttherefore (MnSymbol)  
 17449 \DeclareTextCommand{\textlefttherefore}{PU}{\9040\126}%\* U+2056  
 17450 % U+2057 QUADRUPLE PRIME; \fourth (mathabx)  
 17451 \DeclareTextCommand{\textfourth}{PU}{\9040\127}%\* U+2057  
 17452 % U+2058 FOUR DOT PUNCTUATION; \diamonddots (MnSymbol)  
 17453 \DeclareTextCommand{\textdiamonddots}{PU}{\9040\130}%\* U+2058

### 50.2.16 Superscripts and Subscripts: U+2070 to U+209F

17454 % U+2070 SUPERSCRIPT ZERO; zerosuperior  
 17455 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}%\* U+2070  
 17456 % U+2071 SUPERSCRIPT LATIN SMALL LETTER I  
 17457 \DeclareTextCommand{\textisuperior}{PU}{\9040\161}%\* U+2071  
 17458 % U+2074 SUPERSCRIPT FOUR; foursuperior  
 17459 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}%\* U+2074  
 17460 % U+2075 SUPERSCRIPT FIVE; fivesuperior  
 17461 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}%\* U+2075  
 17462 % U+2076 SUPERSCRIPT SIX; sixsuperior  
 17463 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}%\* U+2076  
 17464 % U+2077 SUPERSCRIPT SEVEN; sevensuperior  
 17465 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}%\* U+2077  
 17466 % U+2078 SUPERSCRIPT EIGHT; eightsuperior  
 17467 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170}%\* U+2078  
 17468 % U+2079 SUPERSCRIPT NINE; ninesuperior  
 17469 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171}%\* U+2079  
 17470 % U+207A SUPERSCRIPT PLUS SIGN; plussuperior  
 17471 \DeclareTextCommand{\textplussuperior}{PU}{\9040\172}%\* U+207A  
 17472 % U+207B SUPERSCRIPT MINUS  
 17473 \DeclareTextCommand{\textminussuperior}{PU}{\9040\173}%\* U+207B  
 17474 % U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior  
 17475 \DeclareTextCommand{\textequalsuperior}{PU}{\9040\174}%\* U+207C  
 17476 % U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftsuperior  
 17477 \DeclareTextCommand{\textparenleftsuperior}{PU}{\9040\175}%\* U+207D  
 17478 % U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightsuperior  
 17479 \DeclareTextCommand{\textparenrightsuperior}{PU}{\9040\176}%\* U+207E  
 17480 % U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior  
 17481 \DeclareTextCommand{\textnsuperior}{PU}{\9040\177}%\* U+207F  
 17482 % U+2080 SUBSCRIPT ZERO; zeroinferior  
 17483 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}%\* U+2080  
 17484 % U+2081 SUBSCRIPT ONE; oneinferior  
 17485 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201}%\* U+2081  
 17486 % U+2082 SUBSCRIPT TWO; twoinferior  
 17487 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}%\* U+2082  
 17488 % U+2083 SUBSCRIPT THREE; threeinferior  
 17489 \DeclareTextCommand{\textthreeinferior}{PU}{\9040\203}%\* U+2083  
 17490 % U+2084 SUBSCRIPT FOUR; fourinferior  
 17491 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204}%\* U+2084

17492 % U+2085 SUBSCRIPT FIVE; fiveinferior  
 17493 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}%\* U+2085  
 17494 % U+2086 SUBSCRIPT SIX; sixinferior  
 17495 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}%\* U+2086  
 17496 % U+2087 SUBSCRIPT SEVEN; seveninferior  
 17497 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}%\* U+2087  
 17498 % U+2088 SUBSCRIPT EIGHT; eightinferior  
 17499 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}%\* U+2088  
 17500 % U+2089 SUBSCRIPT NINE; nineinferior  
 17501 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}%\* U+2089  
 17502 % U+208A SUBSCRIPT PLUS SIGN  
 17503 \DeclareTextCommand{\textplusinferior}{PU}{\9040\212}%\* U+208A  
 17504 % U+208B SUBSCRIPT MINUS  
 17505 \DeclareTextCommand{\textminusinferior}{PU}{\9040\213}%\* U+208B  
 17506 % U+208C SUBSCRIPT EQUALS SIGN  
 17507 \DeclareTextCommand{\textequalsinferior}{PU}{\9040\214}%\* U+208C  
 17508 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior  
 17509 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}%\* U+208D  
 17510 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior  
 17511 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}%\* U+208E  
 17512 % U+2090 LATIN SUBSCRIPT SMALL LETTER A  
 17513 \DeclareTextCommand{\textainferior}{PU}{\9040\220}%\* U+2090  
 17514 % U+2091 LATIN SUBSCRIPT SMALL LETTER E  
 17515 \DeclareTextCommand{\texteinferior}{PU}{\9040\221}%\* U+2091  
 17516 % U+2092 LATIN SUBSCRIPT SMALL LETTER O  
 17517 \DeclareTextCommand{\textoinferior}{PU}{\9040\222}%\* U+2092  
 17518 % U+2093 LATIN SUBSCRIPT SMALL LETTER X  
 17519 \DeclareTextCommand{\textxinferior}{PU}{\9040\223}%\* U+2093  
 17520 % U+2094 LATIN SUBSCRIPT SMALL LETTER SCHWA  
 17521 \DeclareTextCommand{\textschwainferior}{PU}{\9040\224}%\* U+2094  
 17522 % U+2095 LATIN SUBSCRIPT SMALL LETTER H  
 17523 \DeclareTextCommand{\texthinferior}{PU}{\9040\225}%\* U+2095  
 17524 % U+2096 LATIN SUBSCRIPT SMALL LETTER K  
 17525 \DeclareTextCommand{\textkinferior}{PU}{\9040\226}%\* U+2096  
 17526 % U+2097 LATIN SUBSCRIPT SMALL LETTER L  
 17527 \DeclareTextCommand{\textlinferior}{PU}{\9040\227}%\* U+2097  
 17528 % U+2098 LATIN SUBSCRIPT SMALL LETTER M  
 17529 \DeclareTextCommand{\textminferior}{PU}{\9040\230}%\* U+2098  
 17530 % U+2099 LATIN SUBSCRIPT SMALL LETTER N  
 17531 \DeclareTextCommand{\textninferior}{PU}{\9040\231}%\* U+2099  
 17532 % U+209A LATIN SUBSCRIPT SMALL LETTER P  
 17533 \DeclareTextCommand{\textpinferior}{PU}{\9040\232}%\* U+209A  
 17534 % U+209B LATIN SUBSCRIPT SMALL LETTER S  
 17535 \DeclareTextCommand{\textsinferior}{PU}{\9040\233}%\* U+209B  
 17536 % U+209C LATIN SUBSCRIPT SMALL LETTER T  
 17537 \DeclareTextCommand{\texttinferior}{PU}{\9040\234}%\* U+209C

### 50.2.17 Currency Symbols: U+20A0 to U+20CF

17538 % U+20A1 COLON SIGN; \*colonmonetary, colonsign  
 17539 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1  
 17540 % U+20A4 LIRA SIGN; afii08941, \*lira  
 17541 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4  
 17542 % U+20A6 NAIRA SIGN  
 17543 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6  
 17544 % U+20A7 PESETA SIGN; peseta  
 17545 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7  
 17546 % U+20A9 WON SIGN; won

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17547 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9
17548 % U+20AB DONG SIGN; dong
17549 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB
17550 % U+20AC EURO SIGN; *Euro, euro
17551 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC
17552 % U+20B1 PESO SIGN
17553 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1
17554 % U+20B2 GUARANI SIGN
17555 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

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## 50.2.18 Letterlike Symbols: U+2100 to U+214F

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17556 % U+2103 DEGREE CELSIUS; centigrade
17557 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103
17558 % U+210F PLANCK CONSTANT OVER TWO PI; \hslash (AmS)
17559 \DeclareTextCommand{\texthslash}{PU}{\9041\017}%* U+210F
17560 % U+2111 BLACK-LETTER CAPITAL I (=imaginary part); Ifraktur; \Im (La-
      TeX)
17561 \DeclareTextCommand{\textIm}{PU}{\9041\021}%* U+2111
17562 % U+2113 SCRIPT SMALL L (=ell, liter); afii61289, lsquare; \ell (LaTeX)
17563 \DeclareTextCommand{\textell}{PU}{\9041\023}%* U+2113
17564 % U+2116 NUMERO SIGN; *afii61352, numero
17565 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116
17566 % U+2117 SOUND RECORDING COPYRIGHT
17567 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117
17568 % U+2118 SCRIPT CAPITAL P (=Weierstrass elliptic function);
17569 %   weierstrass; \wp (LaTeX)
17570 \DeclareTextCommand{\textwp}{PU}{\9041\030}%* U+2118
17571 % U+211C BLACK-LETTER CAPITAL R (=real part); Rfraktur; \Re (LaTeX)
17572 \DeclareTextCommand{\textRe}{PU}{\9041\034}%* U+211C
17573 % U+211E PRESCRIPTION TAKE; prescription
17574 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E
17575 % U+2120 SERVICE MARK
17576 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120
17577 % U+2122 TRADE MARK SIGN; trademark
17578 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122
17579 % U+2126 OHM SIGN; Ohm, Omega
17580 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126
17581 % U+2127 INVERTED OHM SIGN
17582 \DeclareTextCommand{\textmho}{PU}{\9041\047}%* U+2127
17583 % U+2129 TURNED GREEK SMALL LETTER IOTA; \riota (phonetic)
17584 \DeclareTextCommand{\textriota}{PU}{\9041\051}%* U+2129
17585 % U+212B ANGSTROM SIGN; angstrom
17586 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B
17587 % U+212E ESTIMATED SYMBOL; estimated
17588 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E
17589 % U+2132 TURNED CAPITAL F; \Finv (AmS)
17590 \DeclareTextCommand{\textFinv}{PU}{\9041\062}%* U+2132
17591 % U+2135 ALEF SYMBOL; aleph; \aleph (LaTeX)
17592 \DeclareTextCommand{\textaleph}{PU}{\9041\065}%* U+2135
17593 % U+2136 BET SYMBOL; \beth (AmS, MnSymbol)
17594 \DeclareTextCommand{\textbeth}{PU}{\9041\066}%* U+2136
17595 % U+2137 GIMEL SYMBOL; \gimel (AmS, MnSymbol)
17596 \DeclareTextCommand{\textgimel}{PU}{\9041\067}%* U+2137
17597 % U+2138 DALET SYMBOL; \daleth (AmS, MnSymbol)
17598 \DeclareTextCommand{\textdaleth}{PU}{\9041\070}%* U+2138
17599 % U+213B FACSIMILE SIGN; \fax (marvosym)
17600 \DeclareTextCommand{\textfax}{PU}{\9041\073}%* U+213B

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17601 % U+2141 TURNED SANS-SERIF CAPITAL G (=game); \Game  
 17602 \DeclareTextCommand{\textGame}{PU}{\9041\101}%\* U+2141  
 17603 % U+214B TURNED AMPERSAND; \invamp (txfonts/pxfonts)  
 17604 \DeclareTextCommand{\textinvamp}{PU}{\9041\113}% U+214B  
 17605 %\* \textinvamp -> \bindnasrepma (stmaryrd)  
 17606 %\* \textinvamp -> \parr (cml)

### 50.2.19 Number Forms: U+2150 to U+218F

17607 % U+2150 VULGAR FRACTION ONE SEVENTH  
 17608 \DeclareTextCommand{\textoneseventh}{PU}{\9041\120}% U+2150  
 17609 % U+2151 VULGAR FRACTION ONE NINTH  
 17610 \DeclareTextCommand{\textoneninth}{PU}{\9041\121}% U+2151  
 17611 % U+2152 VULGAR FRACTION ONE TENTH  
 17612 \DeclareTextCommand{\textonetenth}{PU}{\9041\122}% U+2152  
 17613 % U+2153 VULGAR FRACTION ONE THIRD; onethird  
 17614 \DeclareTextCommand{\textonethird}{PU}{\9041\123}% U+2153  
 17615 % U+2154 VULGAR FRACTION TWO THIRDS; twothirds  
 17616 \DeclareTextCommand{\texttwothirds}{PU}{\9041\124}% U+2154  
 17617 % U+2155 VULGAR FRACTION ONE FIFTH  
 17618 \DeclareTextCommand{\textonefifth}{PU}{\9041\125}% U+2155  
 17619 % U+2156 VULGAR FRACTION TWO FIFTHS  
 17620 \DeclareTextCommand{\texttwofifths}{PU}{\9041\126}% U+2156  
 17621 % U+2157 VULGAR FRACTION THREE FIFTHS  
 17622 \DeclareTextCommand{\textthreefifths}{PU}{\9041\127}% U+2157  
 17623 % U+2158 VULGAR FRACTION FOUR FIFTHS  
 17624 \DeclareTextCommand{\textfourfifths}{PU}{\9041\130}% U+2158  
 17625 % U+2159 VULGAR FRACTION ONE SIXTH  
 17626 \DeclareTextCommand{\textonesixth}{PU}{\9041\131}% U+2159  
 17627 % U+215A VULGAR FRACTION FIVE SIXTHS  
 17628 \DeclareTextCommand{\textfivesixths}{PU}{\9041\132}% U+215A  
 17629 % U+215B VULGAR FRACTION ONE EIGHTH; oneeighth  
 17630 \DeclareTextCommand{\textoneeighth}{PU}{\9041\133}% U+215B  
 17631 % U+215C VULGAR FRACTION THREE EIGHTHS; threeeighths  
 17632 \DeclareTextCommand{\textthreeeighths}{PU}{\9041\134}% U+215C  
 17633 % U+215D VULGAR FRACTION FIVE EIGHTHS; fiveeighths  
 17634 \DeclareTextCommand{\textfiveeighths}{PU}{\9041\135}% U+215D  
 17635 % U+215E VULGAR FRACTION SEVEN EIGHTHS; seveneighths  
 17636 \DeclareTextCommand{\textseveneighths}{PU}{\9041\136}% U+215E  
 17637 % U+2184 LATIN SMALL LETTER REVERSED C  
 17638 \DeclareTextCommand{\textrevc}{PU}{\9041\204}% U+2184  
 17639 % U+2189 VULGAR FRACTION ZERO THIRDS  
 17640 \DeclareTextCommand{\textzerthirds}{PU}{\9041\211}% U+2189

### 50.2.20 Arrows: U+2190 to U+21FF

17641 % U+2190 LEFTWARDS ARROW; arrowleft  
 17642 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}%\* U+2190  
 17643 % U+2191 UPWARDS ARROW; arrowup  
 17644 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}%\* U+2191  
 17645 % U+2192 RIGHTWARDS ARROW; arrowright  
 17646 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}%\* U+2192  
 17647 % U+2193 DOWNWARDS ARROW; arrowdown  
 17648 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}%\* U+2193  
 17649 % U+2194 LEFT RIGHT ARROW; arrowboth; \leftrightarrow (LaTeX)  
 17650 \DeclareTextCommand{\textleftrightarrow}{PU}{\9041\224}%\* U+2194  
 17651 % U+2195 UP DOWN ARROW; arrowupdn; \updownarrow (LaTeX)  
 17652 \DeclareTextCommand{\textupdownarrow}{PU}{\9041\225}%\* U+2195  
 17653 % U+2196 NORTH WEST ARROW; arrowupleft; \nwarrow (LaTeX)

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17654 \DeclareTextCommand{\textnwarrow}{PU}{\9041\226}%* U+2196
17655 % U+2197 NORTH EAST ARROW; arrowupright; \nearrow (LaTeX)
17656 \DeclareTextCommand{\textnearrow}{PU}{\9041\227}%* U+2197
17657 %* \textnearrow -> \textglobrise (tipa)
17658 % U+2198 SOUTH EAST ARROW; arrowdownright; \searrow (LaTeX)
17659 \DeclareTextCommand{\textsearrow}{PU}{\9041\230}%* U+2198
17660 %* \textsearrow -> \textglobfall (tipa)
17661 % U+2199 SOUTH WEST ARROW; arrowdownleft; \swarrow (LaTeX)
17662 \DeclareTextCommand{\textswarrow}{PU}{\9041\231}%* U+2199
17663 % U+219A LEFTWARDS ARROW WITH STROKE; \leftarrow (AmS)
17664 \DeclareTextCommand{\textnleftarrow}{PU}{\9041\232}%* U+219A
17665 % U+219B RIGHTWARDS ARROW WITH STROKE; \rightarrow (AmS)
17666 \DeclareTextCommand{\textnrightarrow}{PU}{\9041\233}%* U+219B
17667 % U+219E LEFTWARDS TWO HEADED ARROW; \twoheadleftarrow (AmS)
17668 \DeclareTextCommand{\texttwoheadleftarrow}{PU}{\9041\236}%* U+219E
17669 % U+219F UPWARDS TWO HEADED ARROW; \twoheaduparrow (MnSymbol)
17670 \DeclareTextCommand{\texttwoheaduparrow}{PU}{\9041\237}%* U+219F
17671 % U+21A0 RIGHTWARDS TWO HEADED ARROW;
17672 % \twoheadrightarrow (AmS)
17673 \DeclareTextCommand{\texttwoheadrightarrow}{PU}{\9041\240}%* U+21A0
17674 % U+21A1 DOWNWARDS TWO HEADED ARROW; \twoheaddownarrow (Mn-
Symbol)
17675 \DeclareTextCommand{\texttwoheaddownarrow}{PU}{\9041\241}%* U+21A1
17676 % U+21A2 LEFTWARDS ARROW WITH TAIL; \leftarrowtail (AmS)
17677 \DeclareTextCommand{\textleftarrowtail}{PU}{\9041\242}%* U+21A2
17678 % U+21A3 RIGHTWARDS ARROW WITH TAIL; \rightarrowtail (AmS)
17679 \DeclareTextCommand{\textrightarrowtail}{PU}{\9041\243}%* U+21A3
17680 % U+21A6 RIGHTWARDS ARROW FROM BAR; \mapsto (LaTeX)
17681 \DeclareTextCommand{\textmapsto}{PU}{\9041\246}%* U+21A6
17682 % U+21A9 LEFTWARDS ARROW WITH HOOK; \hookleftarrow (LaTeX)
17683 \DeclareTextCommand{\texthookleftarrow}{PU}{\9041\251}%* U+21A9
17684 % U+21AA RIGHTWARDS ARROW WITH HOOK; \hookrightarrow (LaTeX)
17685 \DeclareTextCommand{\texthookrightarrow}{PU}{\9041\252}%* U+21AA
17686 % U+21AB LEFTWARDS ARROW WITH LOOP; \looparrowleft (AmS)
17687 \DeclareTextCommand{\textlooparrowleft}{PU}{\9041\253}%* U+21AB
17688 % U+21AC RIGHTWARDS ARROW WITH LOOP; \looparrowright (AmS)
17689 \DeclareTextCommand{\textlooparrowright}{PU}{\9041\254}%* U+21AC
17690 % U+21AE LEFT RIGHT ARROW WITH STROKE; \leftrightarrow (AmS)
17691 \DeclareTextCommand{\textnleftrightarrow}{PU}{\9041\256}%* U+21AE
17692 % U+21AF DOWNWARDS ZIGZAG ARROW; \lightning (stmaryrd)
17693 \DeclareTextCommand{\textlightning}{PU}{\9041\257}%* U+21AF
17694 %* \textlightning -> \Lightning (marvosym)
17695 % U+21B5 DOWNWARDS ARROW WITH CORNER LEFTWARDS;
17696 % \dls (mathabx)
17697 \DeclareTextCommand{\textdls}{PU}{\9041\265}%* U+21B5
17698 % U+21B6 ANTICLOCKWISE TOP SEMICIRCLE ARROW;
17699 % \curvearrowleft (AmS)
17700 \DeclareTextCommand{\textcurvearrowleft}{PU}{\9041\266}%* U+21B6
17701 % U+21B7 CLOCKWISE TOP SEMICIRCLE ARROW; \curvearrowright (AmS)
17702 \DeclareTextCommand{\textcurvearrowright}{PU}{\9041\267}%* U+21B7
17703 % U+21BC LEFTWARDS HARPOON WITH BARB UPWARDS; harpoonleft-
barbup;
17704 % \leftharpoonup (LaTeX)
17705 \DeclareTextCommand{\textleftharpoonup}{PU}{\9041\274}%* U+21BC
17706 % U+21BD LEFTWARDS HARPOON WITH BARB DOWNWARDS;
17707 % \leftharpoondown (LaTeX)
17708 \DeclareTextCommand{\textleftharpoondown}{PU}{\9041\275}%* U+21BD

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17709 % U+21BE UPWARDS HARPOON WITH BARB RIGHTWARDS;
17710 % \upharpoonright (AmS)
17711 \DeclareTextCommand{\textupharpoonright}{PU}{\9041\276}%* U+21BE
17712 % U+21BF UPWARDS HARPOON WITH BARB LEFTWARDS;
17713 % \upharpoonleft (AmS)
17714 \DeclareTextCommand{\textupharpoonleft}{PU}{\9041\277}%* U+21BF
17715 % U+21C0 RIGHTWARDS HARPOON WITH BARB UPWARDS; harpoonright-
    barbup
17716 % \rightharpoonup (LaTeX)
17717 \DeclareTextCommand{\textrightharpoonup}{PU}{\9041\300}%* U+21C0
17718 % U+21C1 RIGHTWARDS HARPOON WITH BARB DOWNWARDS;
17719 % \rightharpoondown (LaTeX)
17720 \DeclareTextCommand{\textrightharpoondown}{PU}{\9041\301}%* U+21C1
17721 % U+21C2 DOWNWARDS HARPOON WITH BARB RIGHTWARDS;
17722 % \downharpoonright (AmS)
17723 \DeclareTextCommand{\textdownharpoonright}{PU}{\9041\302}%* U+21C2
17724 % U+21C3 DOWNWARDS HARPOON WITH BARB LEFTWARDS;
17725 % \downharpoonleft (AmS)
17726 \DeclareTextCommand{\textdownharpoonleft}{PU}{\9041\303}%* U+21C3
17727 % U+21C4 RIGHTWARDS ARROW OVER LEFTWARDS ARROW;
17728 % \rightarrowoverleft; \rightleftarrows (MnSymbol)
17729 \DeclareTextCommand{\textrightleftarrows}{PU}{\9041\304}%* U+21C4
17730 % U+21C5 UPWARDS ARROW LEFTWARDS OF DOWNWARDS ARROW; ar-
    rowupleftofdown;
17731 % \updownarrows (MnSymbol)
17732 \DeclareTextCommand{\textupdownarrows}{PU}{\9041\305}%* U+21C5
17733 % U+21C6 LEFTWARDS ARROW OVER RIGHTWARDS ARROW; arrowleft-
    overright;
17734 % \leftrightarrows (AmS)
17735 \DeclareTextCommand{\textleftrightarrows}{PU}{\9041\306}%* U+21C6
17736 % U+21C7 LEFTWARDS PAIRED ARROWS; \leftleftarrows (AmS)
17737 \DeclareTextCommand{\textleftleftarrows}{PU}{\9041\307}%* U+21C7
17738 % U+21C8 UPWARDS PAIRED ARROWS; \upuparrows (AmS)
17739 \DeclareTextCommand{\textupuparrows}{PU}{\9041\310}%* U+21C8
17740 % U+21C9 RIGHTWARDS PAIRED ARROWS; \rightrightarrows (AmS)
17741 \DeclareTextCommand{\textrightarrows}{PU}{\9041\311}%* U+21C9
17742 % U+21CA DOWNWARDS PAIRED ARROWS; \downdownarrows (AmS)
17743 \DeclareTextCommand{\textdowndownarrows}{PU}{\9041\312}%* U+21CA
17744 % U+21CB LEFTWARDS HARPOON OVER RIGHTWARDS HARPOON;
17745 % \leftrightharpoons (AmS);
17746 \DeclareTextCommand{\textleftrightharpoons}{PU}{\9041\313}%* U+21CB
17747 % U+21CC RIGHTWARDS HARPOON OVER LEFTWARDS HARPOON;
17748 % \rightleftharpoons (LaTeX, AmS)
17749 \DeclareTextCommand{\textrightleftharpoons}{PU}{\9041\314}%* U+21CC
17750 % U+21CD LEFTWARDS DOUBLE ARROW WITH STROKE; arrowleftd-
    blstroke;
17751 % \nLeftarrow (AmS)
17752 \DeclareTextCommand{\textnLeftarrow}{PU}{\9041\315}%* U+21CD
17753 % U+21CE LEFT RIGHT DOUBLE ARROW WITH STROKE; \nLeftrightarrow
    (AmS)
17754 \DeclareTextCommand{\textnLeftrightarrow}{PU}{\9041\316}%* U+21CE
17755 % U+21CF RIGHTWARDS DOUBLE ARROW WITH STROKE; arrowrightd-
    blstroke;
17756 % \nRrightarrow (AmS)
17757 \DeclareTextCommand{\textnRrightarrow}{PU}{\9041\317}%* U+21CF
17758 % U+21D0 LEFTWARDS DOUBLE ARROW; arrowdblleft, arrowleftdbl;
17759 % \Leftarrow (LaTeX)

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17760 \DeclareTextCommand{\textLeftarrow}{PU}{\9041\320}%* U+21D0
17761 % U+21D1 UPWARDS DOUBLE ARROW; \Upward (LaTeX)
17762 \DeclareTextCommand{\textUparrow}{PU}{\9041\321}%* U+21D1
17763 % U+21D2 RIGHTWARDS DOUBLE ARROW; \rightarrow (LaTeX)
17764 % \rightarrow (LaTeX)
17765 \DeclareTextCommand{\textRightarrow}{PU}{\9041\322}%* U+21D2
17766 % U+21D3 DOWNWARDS DOUBLE ARROW; \Downarrow (LaTeX)
17767 \DeclareTextCommand{\textDownarrow}{PU}{\9041\323}%* U+21D3
17768 % U+21D4 LEFT RIGHT DOUBLE ARROW; \leftrightarrow (LaTeX)
17769 % \leftrightarrow (LaTeX)
17770 \DeclareTextCommand{\textLeftrightarrow}{PU}{\9041\324}%* U+21D4
17771 % U+21D5 UP DOWN DOUBLE ARROW; \Updownarrow (LaTeX)
17772 \DeclareTextCommand{\textUpdownarrow}{PU}{\9041\325}%* U+21D5
17773 % U+21D6 NORTH WEST DOUBLE ARROW; \nwarrow (MnSymbol)
17774 \DeclareTextCommand{\textNwarrow}{PU}{\9041\326}%* U+21D6
17775 % U+21D7 NORTH EAST DOUBLE ARROW; \nearrow (MnSymbol)
17776 \DeclareTextCommand{\textNearrow}{PU}{\9041\327}%* U+21D7
17777 % U+21D8 SOUTH EAST DOUBLE ARROW; \searrow (MnSymbol)
17778 \DeclareTextCommand{\textSearrow}{PU}{\9041\330}%* U+21D8
17779 % U+21D9 SOUTH WEST DOUBLE ARROW; \swarrow (MnSymbol)
17780 \DeclareTextCommand{\textSwarrow}{PU}{\9041\331}%* U+21D9
17781 % U+21DA LEFTWARDS TRIPLE ARROW; \leftarrow (AmS)
17782 \DeclareTextCommand{\textLleftarrow}{PU}{\9041\332}%* U+21DA
17783 % U+21DB RIGHTWARDS TRIPLE ARROW; \rightarrow (MnSymbol)
17784 \DeclareTextCommand{\textRrightarrow}{PU}{\9041\333}%* U+21DB
17785 % U+21DC LEFTWARDS SQUIGGLE ARROW; \leftsquigarrow (mathabx)
17786 \DeclareTextCommand{\textleftsquigarrow}{PU}{\9041\334}%* U+21DC
17787 % U+21DD RIGHTWARDS SQUIGGLE ARROW; \rightsquigarrow (mathabx)
17788 \DeclareTextCommand{\textright squigarrow}{PU}{\9041\335}%* U+21DD
17789 % U+21E0 LEFTWARDS DASHED ARROW; \dashleftarrow (AmS)
17790 % \dashleftarrow (AmS)
17791 \DeclareTextCommand{\texdashleftarrow}{PU}{\9041\340}%* U+21E0
17792 %* \texdashleftarrow -> \dashedleftarrow (MnSymbol)
17793 % U+21E1 UPWARDS DASHED ARROW; \dashrightarrow (MnSymbol)
17794 \DeclareTextCommand{\texdashrightarrow}{PU}{\9041\341}%* U+21E1
17795 % U+21E2 RIGHTWARDS DASHED ARROW; \dashrightarrow (AmS)
17796 \DeclareTextCommand{\texdashrightarrow}{PU}{\9041\342}%* U+21E2
17797 %* \texdashrightarrow -> \dashedrightarrow (MnSymbol)
17798 % U+21E3 DOWNWARDS DASHED ARROW; \dashrightarrow (MnSymbol)
17799 \DeclareTextCommand{\texdashrightarrow}{PU}{\9041\343}%* U+21E3
17800 % U+21F5 DOWNWARDS ARROW LEFTWARDS OF UPWARDS ARROW;
17801 % \downuparrows (MnSymbol)
17802 \DeclareTextCommand{\texdownuparrows}{PU}{\9041\365}%* U+21F5

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## 50.2.21 Mathematical Operators: U+2200 to U+22FF

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17803 % U+2200 FOR ALL; forall; \forall (LaTeX)
17804 \DeclareTextCommand{\textforall}{PU}{\9042\000}%* U+2200
17805 % U+2201 COMPLEMENT; \complement (AmS)
17806 \DeclareTextCommand{\textcomplement}{PU}{\9042\001}%* U+2201
17807 % U+2202 PARTIAL DIFFERENTIAL; partialdiff; \partial (LaTeX)
17808 \DeclareTextCommand{\textpartial}{PU}{\9042\002}%* U+2202
17809 % U+2203 THERE EXISTS; existential; \exists (LaTeX)
17810 \DeclareTextCommand{\textexists}{PU}{\9042\003}%* U+2203

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17811 % U+2204 THERE DOES NOT EXIST; \nexists (AmS)
17812 \DeclareTextCommand{\textnexists}{PU}{\9042\004}%* U+2204
17813 % U+2205 EMPTY SET; emptyset; \emptyset (LaTeX), \varnothing (AmS)
17814 \DeclareTextCommand{\textemptyset}{PU}{\9042\005}%* U+2205
17815 %* \textemptyset -> \varnothing (AmS)
17816 % U+2206 INCREMENT; increment, Delta; \triangle (LaTeX)
17817 \DeclareTextCommand{\texttriangle}{PU}{\9042\006}%* U+2206
17818 % U+2207 NABLA; nabla, gradient; \nabla (LaTeX)
17819 \DeclareTextCommand{\textnabla}{PU}{\9042\007}%* U+2207
17820 % U+2208 ELEMENT OF; element; \in (LaTeX)
17821 \DeclareTextCommand{\textin}{PU}{\9042\010}%* U+2208
17822 % U+2209 NOT AN ELEMENT OF; notelement, notelementof; \notin (LaTeX)
17823 \DeclareTextCommand{\textnotin}{PU}{\9042\011}%* U+2209
17824 % U+220A SMALL ELEMENT OF; \smallin (mathdesign)
17825 \DeclareTextCommand{\textsmallin}{PU}{\9042\012}%* U+220A
17826 % U+220B CONTAINS AS MEMBER; suchthat; \ni (LaTeX)
17827 \DeclareTextCommand{\textni}{PU}{\9042\013}%* U+220B
17828 %* \textni -> \owns (mathabx)
17829 % U+220C DOES NOT CONTAIN AS MEMBER; \notowner (mathabx)
17830 \DeclareTextCommand{\textnotowner}{PU}{\9042\014}%* U+220C
17831 % U+220D SMALL CONTAINS AS MEMBER; \smallowns (mathdesign)
17832 \DeclareTextCommand{\textsmallowns}{PU}{\9042\015}%* U+220D
17833 % U+220F N-ARY PRODUCT; \prod (LaTeX)
17834 \DeclareTextCommand{\textprod}{PU}{\9042\017}%* U+220F
17835 % U+2210 N-ARY COPRODUCT; \amalg (LaTeX)
17836 \DeclareTextCommand{\textamalg}{PU}{\9042\020}%* U+2210
17837 % U+2211 N-ARY SUMMATION; summation; \sum (LaTeX)
17838 \DeclareTextCommand{\textsum}{PU}{\9042\021}%* U+2211
17839 % U+2212 MINUS SIGN; minus
17840 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212
17841 % U+2213 MINUS-OR-PLUS SIGN; minusplus; \mp (LaTeX)
17842 \DeclareTextCommand{\textmp}{PU}{\9042\023}%* U+2213
17843 % U+2214 DOT PLUS; \dotplus (AmS)
17844 \DeclareTextCommand{\textdotplus}{PU}{\9042\024}%* U+2214
17845 % U+2216 SET MINUS; \setminus (LaTeX)
17846 \DeclareTextCommand{\textsetminus}{PU}{\9042\026}%* U+2216
17847 % U+2217 ASTERISK OPERATOR; asteriskmath; \ast (LaTeX)
17848 \DeclareTextCommand{\textast}{PU}{\9042\027}%* U+2217
17849 % U+2218 RING OPERATOR; \circ (LaTeX)
17850 \DeclareTextCommand{\textcirc}{PU}{\9042\030}%* U+2218
17851 % U+2219 BULLET OPERATOR; bulletoperator; \bullet (LaTeX)
17852 \DeclareTextCommand{\textbulletoperator}{PU}{\9042\031}% U+2219
17853 % U+221A SQUARE ROOT; radical
17854 \DeclareTextCommand{\textsqrt}{PU}{\9042\032}%* U+221A
17855 % U+221D PROPORTIONAL TO; proportional; \propto (LaTeX)
17856 \DeclareTextCommand{\textpropto}{PU}{\9042\035}%* U+221D
17857 % U+221E INFINITY; infinity; \infty (LaTeX)
17858 \DeclareTextCommand{\textinfty}{PU}{\9042\036}%* U+221E
17859 % U+2220 ANGLE; angle; \angle (LaTeX)
17860 \DeclareTextCommand{\textangle}{PU}{\9042\040}%* U+2220
17861 % U+2221 MEASURED ANGLE; \measuredangle (mathabx, MnSymbol)
17862 \DeclareTextCommand{\textmeasuredangle}{PU}{\9042\041}%* U+2221
17863 % U+2222 SPHERICAL ANGLE; \sphericalangle (AmS)
17864 \DeclareTextCommand{\textsphericalangle}{PU}{\9042\042}%* U+2222
17865 %* \textsphericalangle -> \varangle (wasysym)
17866 %* \textsphericalangle -> \Anglesign (marvosym)
17867 % U+2223 DIVIDES; divides; \mid (LaTeX)

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17868 \DeclareTextCommand{\textmid}{PU}{\9042\043}%* U+2223
17869 % U+2224 DOES NOT DIVIDE; \nmid (AmS)
17870 \DeclareTextCommand{\textnmid}{PU}{\9042\044}%* U+2224
17871 % U+2225 PARALLEL TO; parallel; \parallel (LaTeX)
17872 \DeclareTextCommand{\textparallel}{PU}{\9042\045}%* U+2225
17873 % U+2226 NOT PARALLEL TO; notparallel; \nparallel (AmS)
17874 \DeclareTextCommand{\textnparallel}{PU}{\9042\046}%* U+2226
17875 % U+2227 LOGICAL AND; logicaland; \wedge (LaTeX)
17876 \DeclareTextCommand{\textwedge}{PU}{\9042\047}%* U+2227
17877 % U+2228 LOGICAL OR; logicalor; \vee (LaTeX)
17878 \DeclareTextCommand{\textvee}{PU}{\9042\050}%* U+2228
17879 % U+2229 INTERSECTION; intersection; \cap (LaTeX)
17880 \DeclareTextCommand{\textcap}{PU}{\9042\051}%* U+2229
17881 % U+222A UNION; union; \cup (LaTeX)
17882 \DeclareTextCommand{\textcup}{PU}{\9042\052}%* U+222A
17883 % U+222B INTEGRAL; integral; \int (LaTeX)
17884 \DeclareTextCommand{\textint}{PU}{\9042\053}%* U+222B
17885 % U+222C DOUBLE INTEGRAL; dblintegral; \iint (AmS)
17886 \DeclareTextCommand{\textiint}{PU}{\9042\054}%* U+222C
17887 % U+222D TRIPLE INTEGRAL; \iiint (AmS)
17888 \DeclareTextCommand{\textiiint}{PU}{\9042\055}%* U+222D
17889 % U+222E CONTOUR INTEGRAL; contourintegral; \oint (LaTeX)
17890 \DeclareTextCommand{\textoint}{PU}{\9042\056}%* U+222E
17891 % U+222F SURFACE INTEGRAL; \oiint (wasysym)
17892 \DeclareTextCommand{\textoiint}{PU}{\9042\057}%* U+222F
17893 % U+2232 CLOCKWISE CONTOUR INTEGRAL;
17894 % \ointclockwise (txfonts/pxfonts)
17895 \DeclareTextCommand{\textointclockwise}{PU}{\9042\062}%* U+2232
17896 % U+2233 ANTICLOCKWISE CONTOUR INTEGRAL; \ointctrclockwise (tx-
17897 % fonts/pxfonts)
17897 \DeclareTextCommand{\textointctrclockwise}{PU}{\9042\063}%* U+2233
17898 % U+2234 THEREFORE; therefore; \therefore (AmS)
17899 \DeclareTextCommand{\texttherefore}{PU}{\9042\064}%* U+2234
17900 %* \texttherefore -> uptherefore (MnSymbol)
17901 % U+2235 BECAUSE; because; \because (AmS)
17902 \DeclareTextCommand{\textbecause}{PU}{\9042\065}%* U+2235
17903 %* \textbecause -> \downtherefore (MnSymbol)
17904 % U+2236 RATIO; \dotdot (MnSymbol)
17905 \DeclareTextCommand{\textvdotdot}{PU}{\9042\066}%* U+2236
17906 % U+2237 PROPORTION; \squaredots (MnSymbol)
17907 \DeclareTextCommand{\textsquaredots}{PU}{\9042\067}%* U+2237
17908 % U+2238 DOT MINUS; \dotminus (MnSymbol)
17909 \DeclareTextCommand{\textdotminus}{PU}{\9042\070}%* U+2238
17910 %* \textdotminus -> \textdotdiv (mathabx)
17911 % U+2239 EXCESS; \eqcolon (txfonts/pxfonts)
17912 \DeclareTextCommand{\texteqcolon}{PU}{\9042\071}%* U+2239
17913 % U+223C TILDE OPERATOR; similar; \sim (LaTeX)
17914 \DeclareTextCommand{\textsim}{PU}{\9042\074}%* U+223C
17915 % U+223D REVERSED TILDE; reversedtilde; \backsim (AmS)
17916 \DeclareTextCommand{\textbacksim}{PU}{\9042\075}%* U+223D
17917 % U+2240 WREATH PRODUCT; \wr (LaTeX)
17918 \DeclareTextCommand{\textwr}{PU}{\9042\100}%* U+2240
17919 %* \textwr -> \wreath (MnSymbol)
17920 % U+2241 NOT TILDE; \nsim (AmS)
17921 \DeclareTextCommand{\textnsim}{PU}{\9042\101}%* U+2241
17922 % U+2243 ASYMPTOTICALLY EQUAL TO; asymptoticallyequal; \simeq (La-
17923 % TeX)

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17923 \DeclareTextCommand{\textsimeq}{PU}{\9042\103}%* U+2243
17924 % U+2245 APPROXIMATELY EQUAL TO; approximatelyequal; \cong (LaTeX)
17925 \DeclareTextCommand{\textcong}{PU}{\9042\105}%* U+2245
17926 % U+2247 NEITHER APPROXIMATELY NOR ACTUALLY EQUAL TO;
17927 % \ncong (AmS)
17928 \DeclareTextCommand{\textncong}{PU}{\9042\107}%* U+2247
17929 % U+2248 ALMOST EQUAL TO; approxequal; \approx (LaTeX)
17930 \DeclareTextCommand{\textapprox}{PU}{\9042\110}%* U+2248
17931 % U+224A ALMOST EQUAL OR EQUAL TO; \approxeq (AmS)
17932 \DeclareTextCommand{\textapproxeq}{PU}{\9042\112}%* U+224A
17933 % U+224B TRIPLE TILDE; \triplesim (MnSymbol)
17934 \DeclareTextCommand{\texttriplesim}{PU}{\9042\113}%* U+224B
17935 % U+224C ALL EQUAL TO; allequal; \backcong (MnSymbol)
17936 \DeclareTextCommand{\textbackcong}{PU}{\9042\114}%* U+224C
17937 % U+224D EQUIVALENT TO; \asymp (LaTeX)
17938 \DeclareTextCommand{\textasymp}{PU}{\9042\115}%* U+224D
17939 % U+224E GEOMETRICALLY EQUIVALENT TO; \Bumpeq (AmS)
17940 \DeclareTextCommand{\textBumpeq}{PU}{\9042\116}%* U+224E
17941 % U+224F DIFFERENCE BETWEEN; \bumpeq (AmS)
17942 \DeclareTextCommand{\textbumpeq}{PU}{\9042\117}%* U+224F
17943 % U+2250 APPROACHES THE LIMIT; approaches; \doteq (LaTeX)
17944 \DeclareTextCommand{\textdoteq}{PU}{\9042\120}%* U+2250
17945 % U+2251 GEOMETRICALLY EQUAL TO; geometricallyequal;
17946 % \doteqdot (AmS)
17947 \DeclareTextCommand{\textdoteqdot}{PU}{\9042\121}%* U+2251
17948 %* \textdoteqdot -> \Doteq (MnSymbol)
17949 % U+2252 APPROXIMATELY EQUAL TO OR THE IMAGE OF; approx-
    equalorimage;
17950 % \fallingdotseq (AmS)
17951 \DeclareTextCommand{\textfallingdotseq}{PU}{\9042\122}%* U+2252
17952 % U+2253 IMAGE OF OR APPROXIMATELY EQUAL TO; imageorapproxi-
    matelyequal;
17953 % \risingdotseq (AmS)
17954 \DeclareTextCommand{\textrisingdotseq}{PU}{\9042\123}%* U+2253
17955 % U+2254 COLON EQUALS; \colonequals (colonequals)
17956 \DeclareTextCommand{\textcolonequals}{PU}{\9042\124}%* U+2254
17957 % U+2255 EQUALS COLON; \equalscolon (colonequals)
17958 \DeclareTextCommand{\textequalscolon}{PU}{\9042\125}%* U+2255
17959 % U+2256 RING IN EQUAL TO; \eqcirc (AmS)
17960 \DeclareTextCommand{\texteqcirc}{PU}{\9042\126}%* U+2256
17961 % U+2257 RING EQUAL TO; \circeq (AmS)
17962 \DeclareTextCommand{\textcirceq}{PU}{\9042\127}%* U+2257
17963 % U+2259 ESTIMATES; \hateq (MnSymbol)
17964 \DeclareTextCommand{\texthateq}{PU}{\9042\131}%* U+2259
17965 %* \texthateq -> \corresponds (mathabx)
17966 % U+225C DELTA EQUAL TO; \triangleeq (AmS)
17967 \DeclareTextCommand{\texttriangleeq}{PU}{\9042\134}%* U+225C
17968 % U+2260 NOT EQUAL TO; notequal; \ne (LaTeX), \neq (LaTeX)
17969 \DeclareTextCommand{\textneq}{PU}{\9042\140}%* U+2260
17970 \DeclareTextCommand{\textne}{PU}{\9042\140}%* U+2260
17971 % U+2261 IDENTICAL TO; equivalence; \equiv (LaTeX)
17972 \DeclareTextCommand{\textequiv}{PU}{\9042\141}%* U+2261
17973 % U+2262 NOT IDENTICAL TO; notidentical; \nequiv (txfonts/pxfonts)
17974 \DeclareTextCommand{\textnequiv}{PU}{\9042\142}%* U+2262
17975 % U+2264 LESS-THAN OR EQUAL TO; lessequal; \le (LaTeX), \leq (LaTeX)
17976 \DeclareTextCommand{\textleq}{PU}{\9042\144}%* U+2264
17977 \DeclareTextCommand{\textle}{PU}{\9042\144}%* U+2264

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17978 % U+2265 GREATER-THAN OR EQUAL TO; greaterqual;  
17979 % \ge (LaTeX), \geq (LaTeX)  
17980 \DeclareTextCommand{\textgeq}{PU}{\9042\145}%\* U+2265  
17981 \DeclareTextCommand{\textge}{PU}{\9042\145}%\* U+2265  
17982 % U+2266 LESS-THAN OVER EQUAL TO; lessorequal; \leqq (AmS)  
17983 \DeclareTextCommand{\textleqq}{PU}{\9042\146}%\* U+2266  
17984 % U+2267 GREATER-THAN OVER EQUAL TO; greaterorequal; \geqq (AmS)  
17985 \DeclareTextCommand{\textgeqq}{PU}{\9042\147}%\* U+2267  
17986 % U+2268 LESS-THAN BUT NOT EQUAL TO; \lneqq (AmS)  
17987 \DeclareTextCommand{\textlneqq}{PU}{\9042\150}%\* U+2268  
17988 % U+2269 GREATER-THAN BUT NOT EQUAL TO; \gneqq (AmS)  
17989 \DeclareTextCommand{\textgneqq}{PU}{\9042\151}%\* U+2269  
17990 % U+226A MUCH LESS-THAN; muchless; \ll (LaTeX)  
17991 \DeclareTextCommand{\textll}{PU}{\9042\152}%\* U+226A  
17992 % U+226B MUCH GREATER-THAN; muchgreater; \gg (LaTeX)  
17993 \DeclareTextCommand{\textgg}{PU}{\9042\153}%\* U+226B  
17994 % U+226C BETWEEN; \between (AmS)  
17995 \DeclareTextCommand{\textbetween}{PU}{\9042\154}%\* U+226C  
17996 % U+226E NOT LESS-THAN; notless; \nless (AmS)  
17997 \DeclareTextCommand{\textnless}{PU}{\9042\156}%\* U+226E  
17998 % U+226F NOT GREATER-THAN; notgreater; \ngtr (AmS)  
17999 \DeclareTextCommand{\textngtr}{PU}{\9042\157}%\* U+226F  
18000 % U+2270 NEITHER LESS-THAN NOR EQUAL TO; notlessnorequal;  
18001 % \nleq (AmS)  
18002 \DeclareTextCommand{\textnleq}{PU}{\9042\160}%\* U+2270  
18003 % U+2271 NEITHER GREATER-THAN NOR EQUAL TO; notgreaternorequal;  
18004 % \ngeq (AmS)  
18004 \DeclareTextCommand{\textngeq}{PU}{\9042\161}%\* U+2271  
18005 % U+2272 LESS-THAN OR EQUIVALENT TO; lessorequivalent; \lesssim (AmS)  
18006 \DeclareTextCommand{\textlesssim}{PU}{\9042\162}%\* U+2272  
18007 % U+2273 GREATER-THAN OR EQUIVALENT TO; greaterorequivalent; \gtrsim (AmS)  
18008 \DeclareTextCommand{\textgtrsim}{PU}{\9042\163}%\* U+2273  
18009 % U+2276 LESS-THAN OR GREATER-THAN; lessorgreater; \lessgtr (AmS)  
18010 \DeclareTextCommand{\textlessgtr}{PU}{\9042\166}%\* U+2276  
18011 % U+2277 GREATER-THAN OR LESS-THAN; greaterorless; \gtrless (AmS)  
18012 \DeclareTextCommand{\textgtrless}{PU}{\9042\167}%\* U+2277  
18013 % U+227A PRECEDES; precedes; \prec (LaTeX)  
18014 \DeclareTextCommand{\textprec}{PU}{\9042\172}%\* U+227A  
18015 % U+227B SUCCEEDS; succeeds; \succ (LaTeX)  
18016 \DeclareTextCommand{\textsucc}{PU}{\9042\173}%\* U+227B  
18017 % U+227C PRECEDES OR EQUAL TO; \preccurlyeq (AmS)  
18018 \DeclareTextCommand{\textpreccurlyeq}{PU}{\9042\174}%\* U+227C  
18019 % U+227D SUCCEEDS OR EQUAL TO; \succcurlyeq (AmS)  
18020 \DeclareTextCommand{\textsuccurlyeq}{PU}{\9042\175}%\* U+227D  
18021 % U+227E PRECEDES OR EQUIVALENT TO; \precsim (AmS)  
18022 \DeclareTextCommand{\textprecsim}{PU}{\9042\176}%\* U+227E  
18023 % U+227F SUCCEEDS OR EQUIVALENT TO; \succsim (AmS)  
18024 \DeclareTextCommand{\textsuccsim}{PU}{\9042\177}%\* U+227F  
18025 % U+2280 DOES NOT PRECEDE; notprecedes; \nprec (AmS)  
18026 \DeclareTextCommand{\textnprec}{PU}{\9042\200}%\* U+2280  
18027 % U+2281 DOES NOT SUCCEED; notsucceeds; \nsucc (AmS)  
18028 \DeclareTextCommand{\textnsucc}{PU}{\9042\201}%\* U+2281  
18029 % U+2282 SUBSET OF; propersubset; \subset (LaTeX)  
18030 \DeclareTextCommand{\textsubset}{PU}{\9042\202}%\* U+2282  
18031 % U+2283 SUPERSET OF; propersuperset; \supset (LaTeX)  
18032 \DeclareTextCommand{\textsupset}{PU}{\9042\203}%\* U+2283



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18033 % U+2284 NOT A SUBSET OF; notsubset; \nsubset (mathabx)
18034 \DeclareTextCommand{\textnsubset}{PU}{\9042\204}%* U+2284
18035 % U+2285 NOT A SUPERSET OF; notsuperset; \nsupset (mathabx)
18036 \DeclareTextCommand{\textnsupset}{PU}{\9042\205}%* U+2285
18037 % U+2286 SUBSET OF OR EQUAL TO; reflexsubset; \subseteq (LaTeX)
18038 \DeclareTextCommand{\textsubseteq}{PU}{\9042\206}%* U+2286
18039 % U+2287 SUPERSET OF OR EQUAL TO; reflexsuperset; \supseteq (LaTeX)
18040 \DeclareTextCommand{\textsupseteq}{PU}{\9042\207}%* U+2287
18041 % U+2288 NEITHER A SUBSET OF NOR EQUAL TO; \nsubseteq (AmS)
18042 \DeclareTextCommand{\textnsubseteq}{PU}{\9042\210}%* U+2288
18043 % U+2289 NEITHER A SUPERSET OF NOR EQUAL TO; \nsupseteq (AmS)
18044 \DeclareTextCommand{\textnsupseteq}{PU}{\9042\211}%* U+2289
18045 % U+228A SUBSET OF WITH NOT EQUAL TO; subsetnotequal; \subsetneq (AmS)
18046 \DeclareTextCommand{\textsubsetneq}{PU}{\9042\212}%* U+228A
18047 % U+228B SUPERSET OF WITH NOT EQUAL TO; supersetnotequal; \supsetneq (AmS)
18048 \DeclareTextCommand{\textsupsetneq}{PU}{\9042\213}%* U+228B
18049 % U+228D MULTISSET MULTIPLICATION; \cupdot (MnSymbol)
18050 \DeclareTextCommand{\textcupdot}{PU}{\9042\215}%* U+228D
18051 % U+228E MULTISSET UNION; \cupplus (MnSymbol)
18052 \DeclareTextCommand{\textcupplus}{PU}{\9042\216}%* U+228E
18053 % U+228F SQUARE IMAGE OF; \sqsubset (latexsym, ...)
18054 \DeclareTextCommand{\textsqsubset}{PU}{\9042\217}%* U+228F
18055 % U+2290 SQUARE ORIGINAL OF; \sqsupset (latexsym, ...)
18056 \DeclareTextCommand{\textsqsupset}{PU}{\9042\220}%* U+2290
18057 % U+2291 SQUARE IMAGE OF OR EQUAL TO; \sqsubseteq (LaTeX)
18058 \DeclareTextCommand{\textsqsubseteq}{PU}{\9042\221}%* U+2291
18059 % U+2292 SQUARE ORIGINAL OF OR EQUAL TO; \sqsupseteq (LaTeX)
18060 \DeclareTextCommand{\textsqsupseteq}{PU}{\9042\222}%* U+2292
18061 % U+2293 SQUARE CAP; \sqcap (LaTeX)
18062 \DeclareTextCommand{\textsqcap}{PU}{\9042\223}%* U+2293
18063 % U+2294 SQUARE CUP; \sqcup (LaTeX)
18064 \DeclareTextCommand{\textsqcup}{PU}{\9042\224}%* U+2294
18065 % U+2295 CIRCLED PLUS; circleplus; \oplus (LaTeX)
18066 \DeclareTextCommand{\textoplus}{PU}{\9042\225}%* U+2295
18067 %* \textoplus -> \varoplus (stmaryrd)
18068 % U+2296 CIRCLED MINUS; minuscircle; \ominus (LaTeX)
18069 \DeclareTextCommand{\textominus}{PU}{\9042\226}%* U+2296
18070 %* \textominus -> \varominus (stmaryrd)
18071 % U+2297 CIRCLED TIMES; circlemultiply; \otimes (LaTeX)
18072 \DeclareTextCommand{\textotimes}{PU}{\9042\227}%* U+2297
18073 %* \textotimes -> \varotimes (stmaryrd)
18074 % U+2298 CIRCLED DIVISION SLASH; \oslash (LaTeX)
18075 \DeclareTextCommand{\textoslash}{PU}{\9042\230}%* U+2298
18076 %* \textoslash -> \varoslash (stmaryrd)
18077 % U+2299 CIRCLED DOT OPERATOR; circle(d?)ot; \odot (LaTeX)
18078 \DeclareTextCommand{\textodot}{PU}{\9042\231}%* U+2299
18079 %* \textodot -> \varodot (stmaryrd)
18080 % U+229A CIRCLED RING OPERATOR; \circledcirc (AmS)
18081 \DeclareTextCommand{\textcircledcirc}{PU}{\9042\232}%* U+229A
18082 %* \textcircledcirc -> \ocirc (mathabx)
18083 %* \textcircledcirc -> \varocircle (stmaryrd)
18084 % U+229B CIRCLED ASTERISK OPERATOR; \circledast (AmS)
18085 \DeclareTextCommand{\textcircledast}{PU}{\9042\233}%* U+229B
18086 %* \textcircledast -> \varoast (stmaryrd)
18087 %* \textcircledast -> \oasterisk (mathabx)

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18088 % U+229D CIRCLED DASH; \circleddash (AmS)
18089 \DeclareTextCommand{\textcircleddash}{PU}{\9042\235}%* U+229D
18090 % U+229E SQUARED PLUS; \boxplus (AmS)
18091 \DeclareTextCommand{\textboxplus}{PU}{\9042\236}%* U+229E
18092 % U+229F SQUARED MINUS; \boxminus (AmS)
18093 \DeclareTextCommand{\textboxminus}{PU}{\9042\237}%* U+229F
18094 % U+22A0 SQUARED TIMES; \boxtimes (AmS)
18095 \DeclareTextCommand{\textboxtimes}{PU}{\9042\240}%* U+22A0
18096 % U+22A1 SQUARED DOT OPERATOR; \boxdot (AmS)
18097 \DeclareTextCommand{\textboxdot}{PU}{\9042\241}%* U+22A1
18098 % U+22A2 RIGHT TACK; \vdash (LaTeX)
18099 \DeclareTextCommand{\textvdash}{PU}{\9042\242}%* U+22A2
18100 %* \textvdash -> \rightvdash (MnSymbol)
18101 % U+22A3 LEFT TACK; tackleft; \dashv (LaTeX)
18102 \DeclareTextCommand{\textdashv}{PU}{\9042\243}%* U+22A3
18103 %* \textdashv -> \leftvdash (MnSymbol)
18104 % U+22A4 DOWN TACK (=top); tackdown; \top (LaTeX)
18105 \DeclareTextCommand{\texttop}{PU}{\9042\244}%* U+22A4
18106 %* \texttop -> \downvdash (MnSymbol)
18107 % U+22A5 UP TACK (=base, bottom); \bot (LaTeX)
18108 \DeclareTextCommand{\textbot}{PU}{\9042\245}%* U+22A5
18109 % U+22A8 TRUE; \vDash (AmS)
18110 \DeclareTextCommand{\textvDash}{PU}{\9042\250}%* U+22A8
18111 %* \textvDash -> \models (LaTeX)
18112 %* \textvDash -> \rightmodels (MnSymbol)
18113 \DeclareTextCommand{\textmodels}{PU}{\textvDash}%*
18114 % U+22A9 FORCES; \Vdash (AmS)
18115 \DeclareTextCommand{\textVdash}{PU}{\9042\251}%* U+22A9
18116 %* \textVdash -> \rightVdash (MnSymbol)
18117 % U+22AA TRIPLE VERTICAL BAR RIGHT TURNSTILE; \Vvdash (AmS)
18118 \DeclareTextCommand{\textVvdash}{PU}{\9042\252}%* U+22AA
18119 % U+22AB DOUBLE VERTICAL BAR DOUBLE RIGHT TURNSTILE;
18120 % \VDash (mathabx)
18121 \DeclareTextCommand{\textVDash}{PU}{\9042\253}%* U+22AB
18122 %* \textVDash -> \rightModels (MnSymbol)
18123 % U+22AC DOES NOT PROVE; \nvdash (AmS)
18124 \DeclareTextCommand{\textnvdash}{PU}{\9042\254}%* U+22AC
18125 % U+22AD NOT TRUE; \nvDash (AmS)
18126 \DeclareTextCommand{\textnvDash}{PU}{\9042\255}%* U+22AD
18127 % U+22AF NEGATED DOUBLE VERTICAL BAR DOUBLE RIGHT TURN-
18128 % STILE; \nVDash (AmS)
18128 \DeclareTextCommand{\textnVDash}{PU}{\9042\257}%* U+22AF
18129 % U+22B2 NORMAL SUBGROUP OF; \lhd (latexsym, ...)
18130 \DeclareTextCommand{\textlhd}{PU}{\9042\262}%* U+22B2
18131 %* \textlhd -> \lessclosed (MnSymbol)
18132 %* \textlhd -> \triangleleft (AmS)
18133 %* \textlhd -> \vartriangleleft (AmS)
18134 % U+22B3 CONTAINS AS NORMAL SUBGROUP; \rhd (latexsym, ...)
18135 \DeclareTextCommand{\textrhd}{PU}{\9042\263}%* U+22B3
18136 %* \textrhd -> \gtrclosed (MnSymbol)
18137 %* \textrhd -> \triangleright (AmS)
18138 %* \textrhd -> \vartriangleright (AmS)
18139 % U+22B4 NORMAL SUBGROUP OF OR EQUAL TO; \unlhd (latexsym, ...)
18140 \DeclareTextCommand{\textunlhd}{PU}{\9042\264}%* U+22B4
18141 %* \textunlhd -> \leqclosed (MnSymbol)
18142 % U+22B5 CONTAINS AS NORMAL SUBGROUP OR EQUAL TO; \unrhd (la-
18143 % texsym, ...)

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18143 \DeclareTextCommand{\textunrhd}{PU}{\9042\265}%* U+22B5
18144 %* \textunrhd -> \gtrclosed (MnSymbol)
18145 % U+22B6 ORIGINAL OF; \multimapdotbothA (txfonts/pxfonts)
18146 \DeclareTextCommand{\textmultimapdotbothA}{PU}{\9042\266}%* U+22B6
18147 % U+22B7 IMAGE OF; \multimapdotbothB (txfonts/pxfonts)
18148 \DeclareTextCommand{\textmultimapdotbothB}{PU}{\9042\267}%* U+22B7
18149 % U+22B8 MULTIMAP; \multimap (AmS, txfonts/pxfonts)
18150 \DeclareTextCommand{\textmultimap}{PU}{\9042\270}%* U+22B8
18151 % U+22BB XOR; \veebar (AmS)
18152 \DeclareTextCommand{\textveebar}{PU}{\9042\273}%* U+22BB
18153 % U+22BC NAND; \barwedge (mathabx)
18154 \DeclareTextCommand{\textbarwedge}{PU}{\9042\274}%* U+22BC
18155 % U+22C6 STAR OPERATOR; \star (LaTeX)
18156 \DeclareTextCommand{\textstar}{PU}{\9042\306}%* U+22C6
18157 % U+22C7 DIVISION TIMES; \divideontimes (AmS)
18158 \DeclareTextCommand{\textdivideontimes}{PU}{\9042\307}%* U+22C7
18159 % U+22C8 BOWTIE; \bowtie (LaTeX)
18160 \DeclareTextCommand{\textbowtie}{PU}{\9042\310}%* U+22C8
18161 % U+22C9 LEFT NORMAL FACTOR SEMIDIRECT PRODUCT; \ltimes (AmS)
18162 \DeclareTextCommand{\textltimes}{PU}{\9042\311}%* U+22C9
18163 % U+22CA RIGHT NORMAL FACTOR SEMIDIRECT PRODUCT;
18164 % \rtimes (AmS)
18165 \DeclareTextCommand{\textrtimes}{PU}{\9042\312}%* U+22CA
18166 % U+22CB LEFT SEMIDIRECT PRODUCT; \leftthreetimes (AmS)
18167 \DeclareTextCommand{\textleftthreetimes}{PU}{\9042\313}%* U+22CB
18168 % U+22CC RIGHT SEMIDIRECT PRODUCT; \rightthreetimes (AmS)
18169 \DeclareTextCommand{\textrightthreetimes}{PU}{\9042\314}%* U+22CC
18170 % U+22CD REVERSED TILDE EQUALS; \backsimeq (AmS)
18171 \DeclareTextCommand{\textbacksimeq}{PU}{\9042\315}%* U+22CD
18172 % U+22CE CURLY LOGICAL OR; curlyor; \curlyvee (AmS)
18173 \DeclareTextCommand{\textcurlyvee}{PU}{\9042\316}%* U+22CE
18174 %* \textcurlyvee -> \varcurlyvee (stmaryrd)
18175 % U+22CF CURLY LOGICAL AND; curlyand; \curlywedge (AmS)
18176 \DeclareTextCommand{\textcurlywedge}{PU}{\9042\317}%* U+22CF
18177 %* \textcurlywedge -> \varcurlywedge (stmaryrd)
18178 % U+22D0 DOUBLE SUBSET; \Subset (AmS)
18179 \DeclareTextCommand{\textSubset}{PU}{\9042\320}%* U+22D0
18180 % U+22D1 DOUBLE SUPERSET; \Supset (AmS)
18181 \DeclareTextCommand{\textSupset}{PU}{\9042\321}%* U+22D1
18182 % U+22D2 DOUBLE INTERSECTION; \Cap (AmS)
18183 \DeclareTextCommand{\textCap}{PU}{\9042\322}%* U+22D2
18184 %* \textCap -> \doublecap (mathabx)
18185 % U+22D3 DOUBLE UNION; \Cup (AmS)
18186 \DeclareTextCommand{\textCup}{PU}{\9042\323}%* U+22D3
18187 %* \textCup -> \doublecup (mathabx)
18188 % U+22D4 PITCHFORK; \pitchfork (mathabx)
18189 \DeclareTextCommand{\textpitchfork}{PU}{\9042\324}%* U+22D4
18190 % U+22D6 LESS-THAN WITH DOT; \lessdot (AmS)
18191 \DeclareTextCommand{\textlessdot}{PU}{\9042\326}%* U+22D6
18192 % U+22D7 GREATER-THAN WITH DOT; \gtrdot (AmS)
18193 \DeclareTextCommand{\textgtrdot}{PU}{\9042\327}%* U+22D7
18194 % U+22D8 VERY MUCH LESS-THAN; \lll (AmS)
18195 \DeclareTextCommand{\textlll}{PU}{\9042\330}%* U+22D8
18196 % U+22D9 VERY MUCH GREATER-THAN; \ggg (AmS)
18197 \DeclareTextCommand{\textggg}{PU}{\9042\331}%* U+22D9
18198 % U+22DA LESS-THAN EQUAL TO OR GREATER-THAN; lessequalorgreater;
18199 % \lesseqgtr (AmS)

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18200 \DeclareTextCommand{\textlesseqgtr}{PU}{\9042\332}%* U+22DA
18201 % U+22DB GREATER-THAN EQUAL TO OR LESS-THAN; greaterqualorless;
18202 % \gtreqless (AmS)
18203 \DeclareTextCommand{\textgtreqless}{PU}{\9042\333}%* U+22DB
18204 % U+22DE EQUAL TO OR PRECEDES; \curlyeqprec (MnSymbol)
18205 \DeclareTextCommand{\textcurlyeqprec}{PU}{\9042\336}%* U+22DE
18206 % U+22DF EQUAL TO OR SUCCEEDS; \curlyeqsucc (MnSymbol)
18207 \DeclareTextCommand{\textcurlyeqsucc}{PU}{\9042\337}%* U+22DF
18208 % U+22E0 DOES NOT PRECEDE OR EQUAL; \npreccurlyeq (txfonts/pxfonts)
18209 \DeclareTextCommand{\textnpreccurlyeq}{PU}{\9042\340}%* U+22E0
18210 % U+22E1 DOES NOT SUCCEED OR EQUAL; \nsucccurlyeq (txfonts/pxfonts)
18211 \DeclareTextCommand{\textnsucccurlyeq}{PU}{\9042\341}%* U+22E1
18212 % U+22E2 NOT SQUARE IMAGE OF OR EQUAL TO; \nsqsubseteq (tx-
      fonts/pxfonts)
18213 \DeclareTextCommand{\textnqsubseteq}{PU}{\9042\342}%* U+22E2
18214 % U+22E3 NOT SQUARE ORIGINAL OF OR EQUAL TO; \nsqsupseteq (tx-
      fonts/pxfonts)
18215 \DeclareTextCommand{\textnqsupseteq}{PU}{\9042\343}%* U+22E3
18216 % U+22E4 SQUARE IMAGE OF OR NOT EQUAL TO; \sqsubsetneq (mathabx)
18217 \DeclareTextCommand{\textsqsubsetneq}{PU}{\9042\344}%* U+22E4
18218 %* \textsqsubsetneq -> \varsqsubsetneq (mathabx)
18219 % U+22E5 SQUARE ORIGINAL OF OR NOT EQUAL TO; \sqsupsetneq (math-
      abx)
18220 \DeclareTextCommand{\textsqsupsetneq}{PU}{\9042\345}%* U+22E5
18221 %* \textsqsupsetneq -> \varsqsupsetneq (mathabx)
18222 % U+22E6 LESS-THAN BUT NOT EQUIVALENT TO; \lnsim (AmS)
18223 \DeclareTextCommand{\textlnsim}{PU}{\9042\346}%* U+22E6
18224 % U+22E7 GREATER-THAN BUT NOT EQUIVALENT TO; \gnsim (AmS)
18225 \DeclareTextCommand{\textgnsim}{PU}{\9042\347}%* U+22E7
18226 % U+22E8 PRECEDES BUT NOT EQUIVALENT TO; \precsim (AmS)
18227 \DeclareTextCommand{\textprecsim}{PU}{\9042\350}%* U+22E8
18228 % U+22E9 SUCCEEDS BUT NOT EQUIVALENT TO; \succsim (AmS)
18229 \DeclareTextCommand{\textsuccsim}{PU}{\9042\351}%* U+22E9
18230 % U+22EA NOT NORMAL SUBGROUP OF; \ntriangleleft (AmS)
18231 \DeclareTextCommand{\textntriangleleft}{PU}{\9042\352}%* U+22EA
18232 %* \textntriangleleft -> \nlessclosed (MnSymbol)
18233 % U+22EB DOES NOT CONTAIN AS NORMAL SUBGROUP; \ntriang-
      leright (AmS)
18234 \DeclareTextCommand{\textntriangleright}{PU}{\9042\353}%* U+22EB
18235 %* \textntriangleright -> \ngtrclosed (MnSymbol)
18236 % U+22EC NOT NORMAL SUBGROUP OF OR EQUAL TO;
18237 % \ntrianglelefteq (AmS)
18238 \DeclareTextCommand{\textntrianglelefteq}{PU}{\9042\354}%* U+22EC
18239 % U+22ED DOES NOT CONTAIN AS NORMAL SUBGROUP OR EQUAL;
18240 % \ntrianglerighteq (AmS)
18241 \DeclareTextCommand{\textntrianglerighteq}{PU}{\9042\355}%* U+22ED
18242 %* \textntrianglerighteq -> textngeqclosed
18243 % U+22EE VERTICAL ELLIPSIS; ellipsisvertical; \vdots (LaTeX)
18244 \DeclareTextCommand{\textvdots}{PU}{\9042\356}%* U+22EE
18245 % U+22EF MIDLINE HORIZONTAL ELLIPSIS; \cdots (LaTeX)
18246 \DeclareTextCommand{\textcdots}{PU}{\9042\357}%* U+22EF
18247 % U+22F0 UP RIGHT DIAGONAL ELLIPSIS; \udots (MnSymbol)
18248 \DeclareTextCommand{\textudots}{PU}{\9042\360}%* U+22F0
18249 % U+22F1 DOWN RIGHT DIAGONAL ELLIPSIS; \ddots (LaTeX)
18250 \DeclareTextCommand{\textddots}{PU}{\9042\361}%* U+22F1
18251 % U+22F6 ELEMENT OF WITH OVERBAR; \barin (mathabx)
18252 \DeclareTextCommand{\textbarin}{PU}{\9042\366}%* U+22F6

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## 50.2.22 Miscellaneous Technical: U+2300 to U+23FF

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18253 % U+2300 DIAMETER SIGN; \diameter (mathabx)
18254 \DeclareTextCommand{\textdiameter}{PU}{\9043\000}%* U+2300
18255 % U+2310 REVERSED NOT SIGN; \backneg (MnSymbol)
18256 \DeclareTextCommand{\textbackneg}{PU}{\9043\020}%* U+2310
18257 % U+2319 TURNED NOT SIGN; \invbackneg (MnSymbol)
18258 \DeclareTextCommand{\textinvbackneg}{PU}{\9043\031}%* U+2319
18259 % U+231A WATCH; \clock (wasysym)
18260 \DeclareTextCommand{\textclock}{PU}{\9043\032}%* U+231A
18261 %* \textclock -> \Clocklogo (marvosym)
18262 % U+231C TOP LEFT CORNER; \ulcorner (AmS)
18263 \DeclareTextCommand{\textulcorner}{PU}{\9043\034}%* U+231C
18264 % U+231D TOP RIGHT CORNER; \urcorner (AmS)
18265 \DeclareTextCommand{\texturcorner}{PU}{\9043\035}%* U+231D
18266 % U+231E BOTTOM LEFT CORNER; \llcorner (AmS)
18267 \DeclareTextCommand{\textllcorner}{PU}{\9043\036}%* U+231E
18268 % U+231F BOTTOM RIGHT CORNER; \lrcorner (AmS)
18269 \DeclareTextCommand{\textlrcorner}{PU}{\9043\037}%* U+231F
18270 % U+2322 FROWN; \frown (LaTeX)
18271 \DeclareTextCommand{\textfrown}{PU}{\9043\042}%* U+2322
18272 % U+2323 SMILE; \smile (LaTeX)
18273 \DeclareTextCommand{\textsmile}{PU}{\9043\043}%* U+2323
18274 % U+2328 KEYBOARD; \Keyboard (marvosym)
18275 \DeclareTextCommand{\textKeyboard}{PU}{\9043\050}%* U+2328
18276 % U+2329 LEFT-POINTING ANGLE BRACKET; \angleleft; \langle (LaTeX)
18277 \DeclareTextCommand{\textlangle}{PU}{\9043\051}%* U+2329
18278 % U+232A RIGHT-POINTING ANGLE BRACKET; \angleright; \rangle (LaTeX)
18279 \DeclareTextCommand{\textrightangle}{PU}{\9043\052}%* U+232A
18280 % U+2339 APL FUNCTIONAL SYMBOL QUAD DIVIDE; \APLinv (wasysym)
18281 \DeclareTextCommand{\textAPLinv}{PU}{\9043\071}%* U+2339
18282 % U+233F APL FUNCTIONAL SYMBOL SLASH BAR; \notslash (wasysym)
18283 \DeclareTextCommand{\textnotslash}{PU}{\9043\077}%* U+233F
18284 % U+2340 APL FUNCTIONAL SYMBOL BACKSLASH BAR;
18285 % \notbackslash (wasysym)
18286 \DeclareTextCommand{\textnotbackslash}{PU}{\9043\100}%* U+2340
18287 % U+2341 APL FUNCTIONAL SYMBOL QUAD SLASH; \boxslash (mathabx)
18288 \DeclareTextCommand{\textboxslash}{PU}{\9043\101}%* U+2341
18289 % U+2342 APL FUNCTIONAL SYMBOL QUAD BACKSLASH; \boxback-
    slash (mathabx)
18290 \DeclareTextCommand{\textbackslash}{PU}{\9043\102}%* U+2342
18291 % U+2347 APL FUNCTIONAL SYMBOL QUAD LEFTWARDS ARROW;
18292 % \APLleftarrowbox (wasysym)
18293 \DeclareTextCommand{\textAPLleftarrowbox}{PU}{\9043\107}%* U+2347
18294 % U+2348 APL FUNCTIONAL SYMBOL QUAD RIGHTWARDS ARROW;
18295 % \APLrightarrowbox (wasysym)
18296 \DeclareTextCommand{\textAPLrightarrowbox}{PU}{\9043\110}%* U+2348
18297 % U+2350 APL FUNCTIONAL SYMBOL QUAD UPWARDS ARROW; \APLu-
    parrowbox (wasysym)
18298 \DeclareTextCommand{\textAPLuparrowbox}{PU}{\9043\120}%* U+2350
18299 % U+2357 APL FUNCTIONAL SYMBOL QUAD DOWNWARDS ARROW;
18300 % \APLdownarrowbox (wasysym)
18301 \DeclareTextCommand{\textAPLdownarrowbox}{PU}{\9043\127}%* U+2357
18302 % U+235E APL FUNCTIONAL SYMBOL QUOTE QUAD;
18303 % \APLinput (wasysym)
18304 \DeclareTextCommand{\textAPLinput}{PU}{\9043\136}%* U+235E
18305 % U+2370 APL FUNCTIONAL SYMBOL QUAD QUESTION; \Request (china2e)
18306 \DeclareTextCommand{\textRequest}{PU}{\9043\160}%* U+2370

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### 50.2.23 Control Pictures: U+2400 to U+243F

18307 % U+2422 BLANK SYMBOL  
18308 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422  
18309 % U+2423 OPEN BOX; blank  
18310 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

### 50.2.24 Optical Character Recognition: U+2440 to U+245F

18311 % U+244A OCR DOUBLE BACKSLASH; \bbslash (stmaryrd)  
18312 \DeclareTextCommand{\textbbslash}{PU}{\9044\112}%\* U+244A  
18313 %\* \textbbslash -> \varparallelinv (txfonts/pxfonts)

### 50.2.25 Enclosed Alphanumerics: U+2460 to U+24FF

18314 % U+2460 CIRCLED DIGIT ONE; onecircle  
18315 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460  
18316 % U+2461 CIRCLED DIGIT TWO; twocircle  
18317 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461  
18318 % U+2462 CIRCLED DIGIT THREE; threecircle  
18319 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462  
18320 % U+2463 CIRCLED DIGIT FOUR; fourcircle  
18321 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463  
18322 % U+2464 CIRCLED DIGIT FIVE; fivecircle  
18323 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464  
18324 % U+2465 CIRCLED DIGIT SIX; sixcircle  
18325 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465  
18326 % U+2466 CIRCLED DIGIT SEVEN; sevendcircle  
18327 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466  
18328 % U+2467 CIRCLED DIGIT EIGHT; eightcircle  
18329 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467  
18330 % U+2468 CIRCLED DIGIT NINE; ninecircle  
18331 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468  
18332 % U+2469 CIRCLED NUMBER TEN; tencircle  
18333 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469  
18334 % U+246A CIRCLED NUMBER ELEVEN; elevencircle  
18335 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A  
18336 % U+246B CIRCLED NUMBER TWELVE; twelvecircle  
18337 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B  
18338 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle  
18339 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C  
18340 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle  
18341 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D  
18342 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle  
18343 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E  
18344 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle  
18345 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F  
18346 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle  
18347 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470  
18348 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle  
18349 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471  
18350 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle  
18351 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472  
18352 % U+2473 CIRCLED NUMBER TWENTY; twentycircle  
18353 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473  
18354 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle  
18355 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6  
18356 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle  
18357 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7  
18358 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle

18359 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8  
18360 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle  
18361 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9  
18362 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle  
18363 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA  
18364 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle  
18365 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB  
18366 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle  
18367 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC  
18368 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle  
18369 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD  
18370 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle  
18371 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE  
18372 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle  
18373 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF  
18374 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle  
18375 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0  
18376 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle  
18377 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1  
18378 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle  
18379 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2  
18380 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle  
18381 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3  
18382 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle  
18383 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4  
18384 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle  
18385 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5  
18386 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle  
18387 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6  
18388 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle  
18389 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7  
18390 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle  
18391 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8  
18392 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle  
18393 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9  
18394 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle  
18395 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA  
18396 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle  
18397 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB  
18398 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle  
18399 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC  
18400 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle  
18401 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD  
18402 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle  
18403 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE  
18404 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle  
18405 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF  
18406 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle  
18407 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0  
18408 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle  
18409 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1  
18410 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle  
18411 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2  
18412 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle  
18413 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3  
18414 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle  
18415 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4

18416 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle  
 18417 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5  
 18418 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle  
 18419 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6  
 18420 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle  
 18421 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7  
 18422 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle  
 18423 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8  
 18424 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcircle  
 18425 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9  
 18426 % U+24DA CIRCLED LATIN SMALL LETTER K; kcircle  
 18427 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA  
 18428 % U+24DB CIRCLED LATIN SMALL LETTER L; lcircle  
 18429 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB  
 18430 % U+24DC CIRCLED LATIN SMALL LETTER M; mcircle  
 18431 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC  
 18432 % U+24DD CIRCLED LATIN SMALL LETTER N; ncircle  
 18433 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD  
 18434 % U+24DE CIRCLED LATIN SMALL LETTER O; ocircle  
 18435 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE  
 18436 % U+24DF CIRCLED LATIN SMALL LETTER P; pcircle  
 18437 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF  
 18438 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcircle  
 18439 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0  
 18440 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcircle  
 18441 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1  
 18442 % U+24E2 CIRCLED LATIN SMALL LETTER S; scircle  
 18443 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2  
 18444 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcircle  
 18445 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3  
 18446 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucircle  
 18447 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4  
 18448 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcircle  
 18449 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5  
 18450 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcircle  
 18451 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6  
 18452 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcircle  
 18453 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7  
 18454 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycircle  
 18455 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8  
 18456 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcircle  
 18457 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9  
 18458 % U+24EA CIRCLED DIGIT ZERO  
 18459 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

## 50.2.26 Geometric Shapes: U+25A0 to U+25FF

18460 % U+25B3 WHITE UP-POINTING TRIANGLE; whiteuppointingtriangle;  
 18461 % \bigtriangleup (LaTeX)  
 18462 \DeclareTextCommand{\textbigtriangleup}{PU}{\9045\263}%\* U+25B3  
 18463 % U+25B7 WHITE RIGHT-POINTING TRIANGLE (= z notation range restric-  
 18464 % tion);  
 18464 % whiterightpointingtriangle; \triangleright (LaTeX)  
 18465 \DeclareTextCommand{\texttriangleright}{PU}{\9045\267}%\* U+25B7  
 18466 % U+25BD WHITE DOWN-POINTING TRIANGLE; whitedownpointingtri-  
 18467 % angle;  
 18467 % \bigtriangledown (LaTeX)  
 18468 \DeclareTextCommand{\textbigtriangledown}{PU}{\9045\275}%\* U+25BD



18469 % U+25C1 WHITE RIGHT-POINTING TRIANGLE (= z notation domain restriction);  
 18470 % whiteleftpointingtriangle; \triangleleft (LaTeX)  
 18471 \DeclareTextCommand{\texttriangleleft}{PU}{\9045\301}%\* U+25C1  
 18472 % U+25C7 WHITE DIAMOND; whitediamond; \diamond (LaTeX)  
 18473 \DeclareTextCommand{\textdiamond}{PU}{\9045\307}%\* U+25C7  
 18474 % U+25CA LOZENGE; lozenge; \lozenge (AmS)  
 18475 \DeclareTextCommand{\textlozenge}{PU}{\9045\312}%\* U+25CA  
 18476 % U+25E6 WHITE BULLET; \*openbullet, whitebullet  
 18477 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}%\* U+25E6  
 18478 % U+25EB WHITE SQUARE WITH VERTICAL BISECTING LINE;  
 18479 % \boxbar (stmaryrd)  
 18480 \DeclareTextCommand{\textboxbar}{PU}{\9045\353}%\* U+25EB  
 18481 % U+25EF LARGE CIRCLE; largecircle  
 18482 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}%\* U+25EF  
 18483 %

### 50.2.27 Miscellaneous Symbols: U+2600 to U+26FF

18484 % U+2601 CLOUD; \Cloud (ifsym)  
 18485 \DeclareTextCommand{\textCloud}{PU}{\9046\001}%\* U+2601  
 18486 % U+2605 BLACK STAR; \FiveStar (bbding)  
 18487 \DeclareTextCommand{\textFiveStar}{PU}{\9046\005}%\* U+2605  
 18488 % U+2606 WHITE STAR; \FiveStarOpen (bbding)  
 18489 \DeclareTextCommand{\textFiveStarOpen}{PU}{\9046\006}%\* U+2606  
 18490 % U+260E BLACK TELEPHONE; telephoneblack; \Phone (bbding)  
 18491 \DeclareTextCommand{\textPhone}{PU}{\9046\016}%\* U+260E  
 18492 %\* \textPhone -> \Telefon (marvosym)  
 18493 % U+2611 BALLOT BOX WITH CHECK; \Checkedbox (marvosym)  
 18494 \DeclareTextCommand{\textCheckedbox}{PU}{\9046\021}%\* U+2611  
 18495 % U+2612 BALLOT BOX WITH X; \Crossedbox (marvosym)  
 18496 \DeclareTextCommand{\textCrossedbox}{PU}{\9046\022}%\* U+2612  
 18497 % U+2615 HOT BEVERAGE; \Coffeecup (marvosym)  
 18498 \DeclareTextCommand{\textCoffeecup}{PU}{\9046\025}%\* U+2615  
 18499 % U+261A BLACK LEFT POINTING INDEX; \HandCuffLeft (bbding)  
 18500 \DeclareTextCommand{\textHandCuffLeft}{PU}{\9046\032}%\* U+261A  
 18501 % U+261B BLACK RIGHT POINTING INDEX; \HandCuffRight (bbding)  
 18502 \DeclareTextCommand{\textHandCuffRight}{PU}{\9046\033}%\* U+261B  
 18503 % U+261C WHITE LEFT POINTING INDEX; \HandLeft (bbding)  
 18504 \DeclareTextCommand{\textHandLeft}{PU}{\9046\034}%\* U+261C  
 18505 %\* \textHandLeft -> \rightpointleft (fourier)  
 18506 % U+261E WHITE RIGHT POINTING INDEX; \HandRight (bbding)  
 18507 \DeclareTextCommand{\textHandRight}{PU}{\9046\036}%\* U+261E  
 18508 %\* \textHandRight -> \leftpointright (fourier)  
 18509 %\* \textHandRight -> \PointingHand (marvosym)  
 18510 % U+2622 RADIOACTIVE SIGN; \Radioactivity (marvosym)  
 18511 \DeclareTextCommand{\textRadioactivity}{PU}{\9046\042}%\* U+2622  
 18512 %\* \textRadioactivity -> \Radiation (ifsym)  
 18513 % U+2623 BIOHAZARD SIGN; \Biohazard (marvosym)  
 18514 \DeclareTextCommand{\textBiohazard}{PU}{\9046\043}%\* U+2623  
 18515 % U+2625 ANKH; \Ankh (marvosym)  
 18516 \DeclareTextCommand{\textAnkh}{PU}{\9046\045}%\* U+2625  
 18517 % U+262F YIN YANG; \Yinyang (marvosym)  
 18518 \DeclareTextCommand{\textYinyang}{PU}{\9046\057}%\* U+262F  
 18519 % U+2639 WHITE FROWNING FACE; \frownie (wasysym)  
 18520 \DeclareTextCommand{\textfrownie}{PU}{\9046\071}%\* U+2639  
 18521 %\* \textfrownie -> \Frowny (marvosym)  
 18522 % U+263A WHITE SMILING FACE; \smiley (wasysym)

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18523 \DeclareTextCommand{\textsmiley}{PU}{\9046\072}%* U+263A
18524 %* \textsmiley -> \Smiley (marvosym)
18525 % U+263B BLACK SMILING FACE; \blacksmiley (wasysym)
18526 \DeclareTextCommand{\textblacksmiley}{PU}{\9046\073}%* U+263B
18527 % U+263C WHITE SUN WITH RAYS; \sun (wasysym)
18528 \DeclareTextCommand{\textsun}{PU}{\9046\074}%* U+263C
18529 % U+263D FIRST QUARTER MOON; \leftmoon (wasysym, mathabx)
18530 \DeclareTextCommand{\textleftmoon}{PU}{\9046\075}%* U+263D
18531 % U+263E LAST QUARTER MOON; \rightmoon (wasysym, mathabx)
18532 \DeclareTextCommand{\textrightmoon}{PU}{\9046\076}%* U+263E
18533 % U+263F MERCURY; \mercury (wasysym)
18534 \DeclareTextCommand{\textmercury}{PU}{\9046\077}%* U+263F
18535 %* \textmercury -> \Mercury (marvosym)
18536 % U+2640 FEMALE SIGN; female; \female (wasysym)
18537 \DeclareTextCommand{\textPUfemale}{PU}{\9046\100}% U+2640
18538 %* \textPUfemale -> \textfemale (tipx)
18539 %* \textPUfemale -> \female (wasysym)
18540 %* \textPUfemale -> \venus (wasysym)
18541 %* \textPUfemale -> \Venus (marvosym)
18542 % U+2641 EARTH; \earth (wasysym)
18543 \DeclareTextCommand{\textearth}{PU}{\9046\101}%* U+2641
18544 %* \textearth -> \Earth (marvosym)
18545 % U+2642 MALE SIGN; male, mars; \male (wasysym)
18546 \DeclareTextCommand{\textmale}{PU}{\9046\102}%* U+2642
18547 %* \textmale -> \mars (wasysym)
18548 %* \textmale -> \Mars (marvosym)
18549 % U+2643 JUPITER; \jupiter (wasysym)
18550 \DeclareTextCommand{\textjupiter}{PU}{\9046\103}%* U+2643
18551 %* \textjupiter -> \Jupiter (marvosym)
18552 % U+2644 SATURN; \saturn (wasysym)
18553 \DeclareTextCommand{\textsaturn}{PU}{\9046\104}%* U+2644
18554 %* \textsaturn -> \Saturn (marvosym)
18555 % U+2645 URANUS; \uranus (wasysym)
18556 %* \texturanus -> \Uranus (marvosym)
18557 \DeclareTextCommand{\texturanus}{PU}{\9046\105}%* U+2645
18558 % U+2646 NEPTUNE; \neptune (wasysym)
18559 \DeclareTextCommand{\textneptune}{PU}{\9046\106}%* U+2646
18560 %* \textneptune -> \Neptune (marvosym)
18561 % U+2647 PLUTO; \pluto (wasysym)
18562 \DeclareTextCommand{\textpluto}{PU}{\9046\107}%* U+2647
18563 %* \textpluto -> \Pluto (marvosym)
18564 % U+2648 ARIES; \aries (wasysym)
18565 \DeclareTextCommand{\textaries}{PU}{\9046\110}%* U+2648
18566 %* \textaries -> \Aries (marvosym)
18567 % U+2649 TAURUS; \taurus (wasysym)
18568 \DeclareTextCommand{\texttaurus}{PU}{\9046\111}%* U+2649
18569 %* \texttaurus -> \Taurus (marvosym)
18570 % U+264A GEMINI; \gemini (wasysym)
18571 \DeclareTextCommand{\textgemini}{PU}{\9046\112}%* U+264A
18572 %* \textgemini -> \Gemini (marvosym)
18573 % U+264B CANCER; \cancer (wasysym)
18574 \DeclareTextCommand{\textcancer}{PU}{\9046\113}%* U+264B
18575 %* \textcancer -> \Cancer (marvosym)
18576 % U+264C LEO; \leo (wasysym)
18577 \DeclareTextCommand{\textleo}{PU}{\9046\114}%* U+264C
18578 %* \textleo -> \Leo (marvosym)
18579 % U+264D VIRGO; \virgo (wasysym)

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18580 \DeclareTextCommand{\textvirgo}{PU}{\9046\115}%* U+264D
18581 %* \textvirgo -> \Virgo (marvosym)
18582 % U+264E LIBRA; \libra (wasysym)
18583 \DeclareTextCommand{\textlibra}{PU}{\9046\116}%* U+264E
18584 %* \textlibra -> \Libra (marvosym)
18585 % U+264F SCORPIO; \scorpio (wasysym)
18586 \DeclareTextCommand{\textscorpio}{PU}{\9046\117}%* U+264F
18587 %* \textscorpio -> \Scorpio (marvosym)
18588 % U+2650 SAGITTARIUS; \sagittarius (wasysym)
18589 \DeclareTextCommand{\textsagittarius}{PU}{\9046\120}%* U+2650
18590 %* \textsagittarius -> \Sagittarius (marvosym)
18591 % U+2651 CAPRICORN; \capricorn (wasysym)
18592 \DeclareTextCommand{\textcapricorn}{PU}{\9046\121}%* U+2651
18593 %* \textcapricorn -> \Capricorn (marvosym)
18594 % U+2652 AQUARIUS; \aquarius (wasysym)
18595 \DeclareTextCommand{\textaquarius}{PU}{\9046\122}%* U+2652
18596 %* \textaquarius -> \Aquarius (marvosym)
18597 % U+2653 PISCES; \pisces (wasysym)
18598 \DeclareTextCommand{\textpisces}{PU}{\9046\123}%* U+2653
18599 %* \textpisces -> \Pisces (marvosym)
18600 % U+2660 BLACK SPADE SUIT; spade, spadesuitblack; \spadesuit (LaTeX)
18601 \DeclareTextCommand{\textspadesuitblack}{PU}{\9046\140}% U+2660
18602 %* \textspadesuitblack -> \spadesuit (MnSymbol)
18603 % U+2661 WHITE HEART SUIT; heartsuitwhite; \heartsuit (LaTeX)
18604 \DeclareTextCommand{\textheartsuitwhite}{PU}{\9046\141}% U+2661
18605 %* \textheartsuitwhite -> \heartsuit (MnSymbol)
18606 % U+2662 WHITE DIAMOND SUIT; diamondsuitwhite; \diamondsuit (LaTeX)
18607 \DeclareTextCommand{\textdiamondsuitwhite}{PU}{\9046\142}% U+2662
18608 %* \textdiamondsuitwhite -> \diamondsuit (MnSymbol)
18609 % U+2663 BLACK CLUB SUIT; club, clubsuitblack; \clubsuit (LaTeX)
18610 \DeclareTextCommand{\textclubsuitblack}{PU}{\9046\143}% U+2663
18611 %* \textclubsuitblack -> \clubsuit (MnSymbol)
18612 % U+2664 WHITE SPADE SUIT; spadesuitwhite
18613 \DeclareTextCommand{\textspadesuitwhite}{PU}{\9046\144}% U+2664
18614 % U+2665 BLACK HEART SUIT; heartsuitblack, heart
18615 \DeclareTextCommand{\textheartsuitblack}{PU}{\9046\145}% U+2665
18616 % U+2666 BLACK DIAMOND SUIT; diamond
18617 \DeclareTextCommand{\textdiamondsuitblack}{PU}{\9046\146}% U+2666
18618 % U+2667 WHITE CLUB SUIT; clubsuitwhite
18619 \DeclareTextCommand{\textclubsuitwhite}{PU}{\9046\147}% U+2667
18620 % U+2669 QUARTER NOTE; quarternote; \quarternote (wasysym, arev)
18621 \DeclareTextCommand{\textquarternote}{PU}{\9046\151}%* U+2669
18622 % U+266A EIGHTH NOTE; musicalnote; \textmusicalnote (textcomp)
18623 %* \textmusicalnote -> \eighthnote (wasysym, arev)
18624 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}% U+266A
18625 % U+266B BEAMED EIGHTH NOTES; eighthnotebeamed; \twonotes (wasysym)
18626 \DeclareTextCommand{\texttwonotes}{PU}{\9046\153}%* U+266B
18627 % U+266C BEAMED SIXTEENTH NOTES; beamedsixteenthnotes; \sixteenth-
      note (arev)
18628 \DeclareTextCommand{\textsixteenthnote}{PU}{\9046\154}%* U+266C
18629 % U+266D MUSIC FLAT SIGN; musicflatsign; \flat (LaTeX)
18630 \DeclareTextCommand{\textflat}{PU}{\9046\155}%* U+266D
18631 % U+266E MUSIC NATURAL SIGN; \natural (LaTeX)
18632 \DeclareTextCommand{\textnatural}{PU}{\9046\156}%* U+266E
18633 % U+266F MUSIC SHARP SIGN; musicsharpsign; \sharp (LaTeX)
18634 \DeclareTextCommand{\textsharp}{PU}{\9046\157}%* U+266F
18635 % U+2672 UNIVERSAL RECYCLING SYMBOL; \recycle (recycle)

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18636 \DeclareTextCommand{\textrecycle}{PU}{\9046\162}%\* U+2672  
18637 % U+267F WHEELCHAIR SYMBOL; \Wheelchair (marvosym)  
18638 \DeclareTextCommand{\textWheelchair}{PU}{\9046\177}%\* U+267F  
18639 % U+2691 BLACK FLAG; \Flag (ifsym)  
18640 \DeclareTextCommand{\textFlag}{PU}{\9046\221}%\* U+2691  
18641 %\* \textFlag -> \VarFlag (ifsym)  
18642 % U+2694 CROSSED SWORDS; \dsmilitary (dictsym)  
18643 \DeclareTextCommand{\textdsmilitary}{PU}{\9046\224}%\* U+2694  
18644 %\* \textdsmilitary -> \textxswup (fourier)  
18645 % U+2695 STAFF OF AESCULAPIUS; \dsmedical (dictsym)  
18646 \DeclareTextCommand{\textdsmedical}{PU}{\9046\225}%\* U+2695  
18647 % U+2696 SCALES; \dsjuridical (dictsym)  
18648 \DeclareTextCommand{\textdsjuridical}{PU}{\9046\226}%\* U+2696  
18649 % U+2697 ALEMBIC; \dschemical (dictsym)  
18650 \DeclareTextCommand{\textdschemical}{PU}{\9046\227}%\* U+2697  
18651 % U+2698 FLOWER; \dsbiological (dictsym)  
18652 \DeclareTextCommand{\textdsbiological}{PU}{\9046\230}%\* U+2698  
18653 % U+269A STAFF OF HERMES; \dscommercial (dictsym)  
18654 \DeclareTextCommand{\textdscommercial}{PU}{\9046\232}%\* U+269A  
18655 % U+269D OUTLINED WHITE STAR; \manstar (manfnt)  
18656 \DeclareTextCommand{\textmanstar}{PU}{\9046\235}%\* U+269D  
18657 % U+26A0 WARNING SIGN; \danger (fourier)  
18658 \DeclareTextCommand{\textdanger}{PU}{\9046\240}%\* U+26A0  
18659 % U+26A2 DOUBLED FEMALE SIGN; \FemaleFemale (marvosym)  
18660 \DeclareTextCommand{\textFemaleFemale}{PU}{\9046\242}%\* U+26A2  
18661 % U+26A3 DOUBLED MALE SIGN; \MaleMale (marvosym)  
18662 \DeclareTextCommand{\textMaleMale}{PU}{\9046\243}%\* U+26A3  
18663 % U+26A4 INTERLOCKED FEMALE AND MALE SIGN; \FemaleMale (marvosym)  
18664 \DeclareTextCommand{\textFemaleMale}{PU}{\9046\244}%\* U+26A4  
18665 % U+26A5 MALE AND FEMALE SIGN; \Hermaphrodite (marvosym)  
18666 \DeclareTextCommand{\textHermaphrodite}{PU}{\9046\245}%\* U+26A5  
18667 % U+26AD MARRIAGE SYMBOL  
18668 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD  
18669 % U+26AE DIVORCE SYMBOL  
18670 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE  
18671 % U+26B2 NEUTER; \textuncrfemale (tipx)  
18672 \DeclareTextCommand{\textPUuncrfemale}{PU}{\9046\262}% U+26B2  
18673 %\* \textPUuncrfemale -> \textuncrfemale (tipx)  
18674 % U+26BD SOCCER BALL; \Football (marvosym)  
18675 \DeclareTextCommand{\textSoccerBall}{PU}{\9046\275}% U+26BD  
18676 %\* \textSoccerBall -> \Football (marvosym)  
18677 % U+26C5 SUN BEHIND CLOUD; \SunCloud (ifsym)  
18678 \DeclareTextCommand{\textSunCloud}{PU}{\9046\305}%\* U+26C5  
18679 % U+26C6 RAIN; \Rain (ifsym)  
18680 \DeclareTextCommand{\textRain}{PU}{\9046\306}%\* U+26C6  
18681 % U+26D4 NO ENTRY; \noway (fourier)  
18682 \DeclareTextCommand{\textnoway}{PU}{\9046\324}%\* U+26D4  
18683 % U+26F0 MOUNTAIN; \Mountain (ifsym)  
18684 \DeclareTextCommand{\textMountain}{PU}{\9046\360}%\* U+26F0  
18685 % U+26FA TENT; \Tent (ifsym)  
18686 \DeclareTextCommand{\textTent}{PU}{\9046\372}%\* U+26FA

## 50.2.28 Dingbats: U+2700 to U+27BF

18687 % U+2701 UPPER BLADE SCISSORS; \ScissorRightBrokenBottom (bbding)  
18688 \DeclareTextCommand{\textScissorRightBrokenBottom}{PU}{\9047\001}% U+2701  
18689 %\* \textScissorRightBrokenBottom -> \Cutright (marvosym)

18690 % U+2702 BLACK SCISSORS; \ScissorRight (bding)  
 18691 \DeclareTextCommand{\textScissorRight}{PU}{\9047\002}%\* U+2702  
 18692 %\* \textScissorRight -> \Rightsscissors (marvosym)  
 18693 % U+2703 LOWER BLADE SCISSORS; \ScissorRightBrokenTop (bding)  
 18694 \DeclareTextCommand{\textScissorRightBrokenTop}{PU}{\9047\003}%\* U+2703  
 18695 % U+2704 WHITE SCISSORS; \ScissorHollowRight (bding)  
 18696 \DeclareTextCommand{\textScissorHollowRight}{PU}{\9047\004}%\* U+2704  
 18697 % U+2706 TELEPHONE LOCATION SIGN; \PhoneHandset (bding)  
 18698 \DeclareTextCommand{\textPhoneHandset}{PU}{\9047\006}%\* U+2706  
 18699 % U+2707 TAPE DRIVE; \Tape (bding)  
 18700 \DeclareTextCommand{\textTape}{PU}{\9047\007}%\* U+2707  
 18701 % U+2708 AIRPLANE; \Plane (bding)  
 18702 \DeclareTextCommand{\textPlane}{PU}{\9047\010}%\* U+2708  
 18703 % U+2709 ENVELOPE; \Envelope (bding),  
 18704 \DeclareTextCommand{\textEnvelope}{PU}{\9047\011}%\* U+2709  
 18705 %\* \textEnvelope -> \Letter (marvosym)  
 18706 % U+270C VICTORY HAND; \Peace (bding)  
 18707 \DeclareTextCommand{\textPeace}{PU}{\9047\014}%\* U+270C  
 18708 % U+270D WRITING HAND; \Writinghand (marvosym)  
 18709 \DeclareTextCommand{\textWritinghand}{PU}{\9047\015}%\* U+270D  
 18710 % U+270E LOWER RIGHT PENCIL; \PencilRightDown (bding)  
 18711 \DeclareTextCommand{\textPencilRightDown}{PU}{\9047\016}%\* U+270E  
 18712 % U+270F PENCIL; \PencilRight (bding)  
 18713 \DeclareTextCommand{\textPencilRight}{PU}{\9047\017}%\* U+270F  
 18714 % U+2710 UPPER RIGHT PENCIL; \PencilRightUp (bding)  
 18715 \DeclareTextCommand{\textPencilRightUp}{PU}{\9047\020}%\* U+2710  
 18716 % U+2711 WHITE NIB; \NibRight (bding)  
 18717 \DeclareTextCommand{\textNibRight}{PU}{\9047\021}%\* U+2711  
 18718 % U+2712 BLACK NIB; \NibSolidRight (bding)  
 18719 \DeclareTextCommand{\textNibSolidRight}{PU}{\9047\022}%\* U+2712  
 18720 % U+2713 CHECK MARK; checkmark; \Checkmark (bding)  
 18721 \DeclareTextCommand{\textCheckmark}{PU}{\9047\023}%\* U+2713  
 18722 %\* \textCheckmark -> \checkmark (MnSymbol)  
 18723 % U+2714 HEAVY CHECK MARK; \CheckmarkBold (bding)  
 18724 \DeclareTextCommand{\textCheckmarkBold}{PU}{\9047\024}%\* U+2714  
 18725 % U+2715 MULTIPLICATION X; \XSolid (bding)  
 18726 \DeclareTextCommand{\textXSolid}{PU}{\9047\025}%\* U+2715  
 18727 % U+2716 HEAVY MULTIPLICATION X; \XSolidBold (bding)  
 18728 \DeclareTextCommand{\textXSolidBold}{PU}{\9047\026}%\* U+2716  
 18729 % U+2717 BALLOT X; \XSolidBrush (bding)  
 18730 \DeclareTextCommand{\textXSolidBrush}{PU}{\9047\027}%\* U+2717  
 18731 % U+2719 OUTLINED GREEK CROSS; \CrossOutline (bding)  
 18732 \DeclareTextCommand{\textCrossOutline}{PU}{\9047\031}%\* U+2719  
 18733 % U+271A HEAVY GREEK CROSS; \Plus (bding)  
 18734 \DeclareTextCommand{\textPlus}{PU}{\9047\032}%\* U+271A  
 18735 % U+271B OPEN CENTRE CROSS; \PlusThinCenterOpen (bding)  
 18736 \DeclareTextCommand{\textPlusThinCenterOpen}{PU}{\9047\033}%\* U+271B  
 18737 % U+271C HEAVY OPEN CENTRE CROSS; \PlusCenterOpen (bding)  
 18738 \DeclareTextCommand{\textPlusCenterOpen}{PU}{\9047\034}%\* U+271C  
 18739 % U+271D LATIN CROSS; \Cross (bding)  
 18740 \DeclareTextCommand{\textCross}{PU}{\9047\035}%\* U+271D  
 18741 % U+271E SHADOWED WHITE LATIN CROSS; \CrossOpenShadow (bding)  
 18742 \DeclareTextCommand{\textCrossOpenShadow}{PU}{\9047\036}%\* U+271E  
 18743 % U+271F OUTLINED LATIN CROSS; \CrossOutline (bding)  
 18744 \DeclareTextCommand{\textCrossOutline}{PU}{\9047\037}%\* U+271F  
 18745 % U+2720 MALTESE CROSS; \CrossMaltese (bding)  
 18746 \DeclareTextCommand{\textCrossMaltese}{PU}{\9047\040}%\* U+2720

18747 % U+2721 STAR OF DAVID; \DavidStar (bbling)  
18748 \DeclareTextCommand{\textDavidStar}{PU}{\9047\041}%\* U+2721  
18749 %\* \textDavidStar -> \davidstar (wasysym)  
18750 % U+2722 FOUR TEARDROP-SPOKED ASTERISK; \FourAsterisk (bbling)  
18751 \DeclareTextCommand{\textFourAsterisk}{PU}{\9047\042}%\* U+2722  
18752 % U+2723 FOUR BALLOON-SPOKED ASTERISK; \JackStar (bbling)  
18753 \DeclareTextCommand{\textJackStar}{PU}{\9047\043}%\* U+2723  
18754 % U+2724 HEAVY FOUR BALLOON-SPOKED ASTERISK; \JackStarBold (bbling)  
18755 \DeclareTextCommand{\textJackStarBold}{PU}{\9047\044}%\* U+2724  
18756 % U+2725 FOUR CLUB-SPOKED ASTERISK; \CrossClowerTips (bbling)  
18757 \DeclareTextCommand{\textClowerTips}{PU}{\9047\045}%\* U+2725  
18758 % U+2726 BLACK FOUR POINTED STAR; \FourStar (bbling)  
18759 \DeclareTextCommand{\textFourStar}{PU}{\9047\046}%\* U+2726  
18760 % U+2727 WHITE FOUR POINTED STAR; \FourStarOpen (bbling)  
18761 \DeclareTextCommand{\textFourStarOpen}{PU}{\9047\047}%\* U+2727  
18762 % U+2729 STRESS OUTLINED WHITE STAR; \FiveStarOpen (bbling)  
18763 \DeclareTextCommand{\textFiveStarOpen}{PU}{\9047\051}%\* U+2729  
18764 % U+272A CIRCLED WHITE STAR; \FiveStarOpenCircled (bbling)  
18765 \DeclareTextCommand{\textFiveStarOpenCircled}{PU}{\9047\052}%\* U+272A  
18766 % U+272B OPEN CENTRE BLACK STAR; \FiveStarCenterOpen (bbling)  
18767 \DeclareTextCommand{\textFiveStarCenterOpen}{PU}{\9047\053}%\* U+272B  
18768 % U+272C BLACK CENTRE WHITE STAR; \FiveStarOpenDotted (bbling)  
18769 \DeclareTextCommand{\textFiveStarOpenDotted}{PU}{\9047\054}%\* U+272C  
18770 % U+272D OUTLINED BLACK STAR; \FiveStarOutline (bbling)  
18771 \DeclareTextCommand{\textFiveStarOutline}{PU}{\9047\055}%\* U+272D  
18772 % U+272E HEAVY OUTLINED BLACK STAR; \FiveStarOutlineHeavy (bbling)  
18773 \DeclareTextCommand{\textFiveStarOutlineHeavy}{PU}{\9047\056}%\* U+272E  
18774 % U+272F PINWHEEL STAR; \FiveStarConvex (bbling)  
18775 \DeclareTextCommand{\textFiveStarConvex}{PU}{\9047\057}%\* U+272F  
18776 % U+2730 SHADOWED WHITE STAR; \FiveStarShadow (bbling)  
18777 \DeclareTextCommand{\textFiveStarShadow}{PU}{\9047\060}%\* U+2730  
18778 % U+2731 HEAVY ASTERISK; \AsteriskBold (bbling)  
18779 \DeclareTextCommand{\textAsteriskBold}{PU}{\9047\061}%\* U+2731  
18780 % U+2732 OPEN CENTRE ASTERISK; \AsteriskCenterOpen (bbling)  
18781 \DeclareTextCommand{\textAsteriskCenterOpen}{PU}{\9047\062}%\* U+2732  
18782 % U+2734 EIGHT POINTED BLACK STAR; \EightStar (bbling)  
18783 \DeclareTextCommand{\textEightStar}{PU}{\9047\064}%\* U+2734  
18784 % U+2735 EIGHT POINTED PINWHEEL STAR; \EightStarConvex (bbling)  
18785 \DeclareTextCommand{\textEightStarConvex}{PU}{\9047\065}%\* U+2735  
18786 % U+2736 SIX POINTED BLACK STAR; \SixStar (bbling)  
18787 \DeclareTextCommand{\textSixStar}{PU}{\9047\066}%\* U+2736  
18788 % U+2737 EIGHT POINTED RECTILINEAR BLACK STAR; \EightStar (bbling)  
18789 \DeclareTextCommand{\textEightStar}{PU}{\9047\067}%\* U+2737  
18790 % U+2738 HEAVY EIGHT POINTED RECTILINEAR BLACK STAR; \EightStarBold (bbling)  
18791 \DeclareTextCommand{\textEightStarBold}{PU}{\9047\070}%\* U+2738  
18792 % U+2739 TWELVE POINTED BLACK STAR; \TwelveStar (bbling)  
18793 \DeclareTextCommand{\textTwelveStar}{PU}{\9047\071}%\* U+2739  
18794 % U+273A SIXTEEN POINTED ASTERISK; \SixteenStarLight (bbling)  
18795 \DeclareTextCommand{\textSixteenStarLight}{PU}{\9047\072}%\* U+273A  
18796 % U+273B TEARDROP-SPOKED ASTERISK; \SixFlowerPetalRemoved (bbling)  
18797 \DeclareTextCommand{\textSixFlowerPetalRemoved}{PU}{\9047\073}%\* U+273B  
18798 % U+273C OPEN CENTRE TEARDROP-SPOKED ASTERISK;  
18799 % \SixFlowerOpenCenter (bbling)

18800 \DeclareTextCommand{\textSixFlowerOpenCenter}{PU}{\9047\074}%\* U+273C  
18801 % U+273D HEAVY TEARDROP-SPOKED ASTERISK; \Asterisk (bding)  
18802 \DeclareTextCommand{\textAsterisk}{PU}{\9047\075}%\* U+273D  
18803 % U+273E SIX PETALLED BLACK AND WHITE FLORETTE; \SixFlowerAl-  
ternate (bding)  
18804 \DeclareTextCommand{\textSixFlowerAlternate}{PU}{\9047\076}%\* U+273E  
18805 % U+273F BLACK FLORETTE; \FiveFlowerPetal (bding)  
18806 \DeclareTextCommand{\textFiveFlowerPetal}{PU}{\9047\077}%\* U+273F  
18807 % U+2740 WHITE FLORETTE; \FiveFlowerOpen (bding)  
18808 \DeclareTextCommand{\textFiveFlowerOpen}{PU}{\9047\100}%\* U+2740  
18809 % U+2741 EIGHT PETALLED OUTLINED BLACK FLORETTE; \EightFlow-  
erPetal (bding)  
18810 \DeclareTextCommand{\textEightFlowerPetal}{PU}{\9047\101}%\* U+2741  
18811 % U+2742 CIRCLED OPEN CENTRE EIGHT POINTED STAR; \Sunshi-  
neOpenCircled (bding)  
18812 \DeclareTextCommand{\textSunshineOpenCircled}{PU}{\9047\102}%\* U+2742  
18813 % U+2743 HEAVY TEARDROP-SPOKED PINWHEEL ASTERISK; \SixFlow-  
erAltPetal (bding)  
18814 \DeclareTextCommand{\textSixFlowerAltPetal}{PU}{\9047\103}%\* U+2743  
18815 % U+2744 SNOWFLAKE; \SnowflakeChevron (bding)  
18816 \DeclareTextCommand{\textSnowflakeChevron}{PU}{\9047\104}%\* U+2744  
18817 % U+2745 TIGHT TRIFOLIATE SNOWFLAKE; \Snowflake (bding)  
18818 \DeclareTextCommand{\textSnowflake}{PU}{\9047\105}%\* U+2745  
18819 % U+2746 HEAVY CHEVRON SNOWFLAKE; \SnowflakeChevronBold (bding)  
18820 \DeclareTextCommand{\textSnowflakeChevronBold}{PU}{\9047\106}%\* U+2746  
18821 % U+2747 SPARKLE; \Sparkle (bding)  
18822 \DeclareTextCommand{\textSparkle}{PU}{\9047\107}%\* U+2747  
18823 % U+2748 HEAVY SPARKLE; \SparkleBold (bding)  
18824 \DeclareTextCommand{\textSparkleBold}{PU}{\9047\110}%\* U+2748  
18825 % U+2749 BALLOON-SPOKED ASTERISK; \AsteriskRoundedEnds (bding)  
18826 \DeclareTextCommand{\textAsteriskRoundedEnds}{PU}{\9047\111}%\* U+2749  
18827 % U+274A EIGHT TEARDROP-SPOKED PROPELLER ASTERISK;  
18828 % \EightFlowerPetalRemoved (bding)  
18829 \DeclareTextCommand{\textEightFlowerPetalRemoved}{PU}{\9047\112}%\* U+274A  
18830 % U+274B HEAVY EIGHT TEARDROP-SPOKED PROPELLER ASTERISK;  
18831 % \EightAsterisk (bding)  
18832 \DeclareTextCommand{\textEightAsterisk}{PU}{\9047\113}%\* U+274B  
18833 % U+274D SHADOWED WHITE CIRCLE; \CircleShadow (bding)  
18834 \DeclareTextCommand{\textCircleShadow}{PU}{\9047\115}%\* U+274D  
18835 % U+274F LOWER RIGHT DROP-SHADOWED WHITE SQUARE;  
18836 % \SquareShadowBottomRight (bding)  
18837 \DeclareTextCommand{\textSquareShadowBottomRight}{PU}{\9047\117}%\* U+274F  
18838 % U+2750 UPPER RIGHT DROP-SHADOWED WHITE SQUARE;  
18839 % \SquareShadowTopRight (bding)  
18840 \DeclareTextCommand{\textSquareTopRight}{PU}{\9047\120}%\* U+2750  
18841 % U+2751 LOWER RIGHT SHADOWED WHITE SQUARE;  
18842 % \SquareCastShadowBottomRight (bding)  
18843 \DeclareTextCommand{\textSquareCastShadowBottomRight}{PU}{\9047\121}%\* U+2751  
18844 % U+2752 UPPER RIGHT SHADOWED WHITE SQUARE;  
18845 % \SquareCastShadowTopRight (bding)  
18846 \DeclareTextCommand{\textSquareCastShadowTopRight}{PU}{\9047\122}%\* U+2752  
18847 % U+2756 BLACK DIAMOND MINUS WHITE X; \OrnamentDiamandSolid (b-  
ding)  
18848 \DeclareTextCommand{\textDiamandSolid}{PU}{\9047\126}%\* U+2756  
18849 % U+2758 LIGHT VERTICAL BAR; \RectangleThin (bding)  
18850 \DeclareTextCommand{\textRectangleThin}{PU}{\9047\130}%\* U+2758  
18851 % U+2759 MEDIUM VERTICAL BAR; \Rectangle (bding)

18852 \DeclareTextCommand{\textRectangle}{PU}{\9047\131}%\* U+2759  
 18853 % U+275A HEAVY VERTICAL BAR; \RectangleBold (bbding)  
 18854 \DeclareTextCommand{\textRectangleBold}{PU}{\9047\132}%\* U+275A

### 50.2.29 Miscellaneous Mathematical Symbols-A: U+27C0 to U+27EF

18855 % U+27C2 PERPENDICULAR; perpendicular; \perp (LaTeX)  
 18856 \DeclareTextCommand{\textperp}{PU}{\9047\302}%\* U+27C2  
 18857 % U+27C7 OR WITH DOT INSIDE; \veedot (MnSymbol)  
 18858 \DeclareTextCommand{\textveedot}{PU}{\9047\307}%\* U+27C7  
 18859 % U+27D1 AND WITH DOT; \wedgedot (MnSymbol)  
 18860 \DeclareTextCommand{\textwedgedot}{PU}{\9047\321}%\* U+27D1  
 18861 % U+27DC LEFT MULTIMAP; \leftspoon (MnSymbol)  
 18862 \DeclareTextCommand{\textleftspoon}{PU}{\9047\334}%\* U+27DC  
 18863 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET  
 18864 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}%\* U+27E6  
 18865 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET  
 18866 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}%\* U+27E7

### 50.2.30 Supplemental Arrows-A: U+27F0 to U+27FF

18867 % U+27F2 ANTICLOCKWISE GAPPED CIRCLE ARROW;  
 18868 % \circlearrowleft (AmS)  
 18869 \DeclareTextCommand{\textcirclearrowleft}{PU}{\9047\362}%\* U+27F2  
 18870 % U+27F3 CLOCKWISE GAPPED CIRCLE ARROW; \circlearrowright (AmS)  
 18871 \DeclareTextCommand{\textcirclearrowright}{PU}{\9047\363}%\* U+27F3  
 18872 % U+27F5 LONG LEFTWARDS ARROW; \longleftarrow (AmS)  
 18873 \DeclareTextCommand{\textlongleftarrow}{PU}{\9047\365}%\* U+27F5  
 18874 % U+27F6 LONG RIGHTWARDS ARROW; \longrightarrow (AmS)  
 18875 \DeclareTextCommand{\textlongrightarrow}{PU}{\9047\366}%\* U+27F6  
 18876 % U+27F7 LONG LEFT RIGHT ARROW; \longlefttrightarrow (AmS)  
 18877 \DeclareTextCommand{\textlonglefttrightarrow}{PU}{\9047\367}%\* U+27F7  
 18878 % U+27F8 LONG LEFTWARDS DOUBLE ARROW; \Longleftarrow (AmS)  
 18879 \DeclareTextCommand{\textLongleftarrow}{PU}{\9047\370}%\* U+27F8  
 18880 % U+27F9 LONG RIGHTWARDS DOUBLE ARROW; \longrightarrow (AmS)  
 18881 \DeclareTextCommand{\textLongrightarrow}{PU}{\9047\371}%\* U+27F9  
 18882 % U+27FA LONG LEFT RIGHT DOUBLE ARROW; \Longlefttrightarrow (AmS)  
 18883 \DeclareTextCommand{\textLonglefttrightarrow}{PU}{\9047\372}%\* U+27FA  
 18884 % U+27FC LONG RIGHTWARDS ARROW FROM BAR; \longmapsto (AmS)  
 18885 \DeclareTextCommand{\textlongmapsto}{PU}{\9047\374}%\* U+27FC  
 18886 % U+27FD LONG LEFTWARDS DOUBLE ARROW FROM BAR; \Longmaps-  
 18887 % from (stmaryrd)  
 18887 \DeclareTextCommand{\textLongmapsfrom}{PU}{\9047\375}%\* U+27FD  
 18888 % U+27FE LONG RIGHTWARDS DOUBLE ARROW FROM BAR; \Longmap-  
 18889 % sto (stmaryrd)  
 18889 \DeclareTextCommand{\textLongmapsto}{PU}{\9047\376}%\* U+27FE

### 50.2.31 Supplemental Arrows-B

18890 % U+2921 NORTH WEST AND SOUTH EAST ARROW; \nwsearrow (MnSym-  
 18891 % bol)  
 18891 \DeclareTextCommand{\textnwsearrow}{PU}{\051\041}%\* U+2921  
 18892 % U+2922 NORTH EAST AND SOUTH WEST ARROW; \neswarrow (MnSym-  
 18893 % bol)  
 18893 \DeclareTextCommand{\textneswarrow}{PU}{\051\042}%\* U+2922  
 18894 % U+2923 NORTH WEST ARROW WITH HOOK; \hooknwarrow (MnSymbol)  
 18895 \DeclareTextCommand{\textlhooknwarrow}{PU}{\051\043}%\* U+2923  
 18896 % U+2924 NORTH EAST ARROW WITH HOOK; \hooknearrow (MnSymbol)  
 18897 \DeclareTextCommand{\textrhooknearrow}{PU}{\051\044}%\* U+2924  
 18898 % U+2925 SOUTH EAST ARROW WITH HOOK; \hooksearrow (MnSymbol)



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18899 \DeclareTextCommand{\textlhooksearrow}{PU}{\051\045}%* U+2925
18900 % U+2926 SOUTH WEST ARROW WITH HOOK; \rhookswarrow (MnSymbol)
18901 \DeclareTextCommand{\textrhookswarrow}{PU}{\051\046}%* U+2926
18902 % U+2934 ARROW POINTING RIGHTWARDS THEN CURVING UPWARDS;
18903 % \rcurvearrowne (MnSymbol)
18904 \DeclareTextCommand{\textrcurvearrowne}{PU}{\051\064}%* U+2934
18905 % U+2935 ARROW POINTING RIGHTWARDS THEN CURVING DOWN-
WARDS;
18906 % \lcurvearrowse (MnSymbol)
18907 \DeclareTextCommand{\textlcurvearrowse}{PU}{\051\065}%* U+2935
18908 % U+2936 ARROW POINTING DOWNWARDS THEN CURVING LEFT-
WARDS;
18909 % \lcurvearrowsw (MnSymbol)
18910 \DeclareTextCommand{\textlcurvearrowsw}{PU}{\051\066}%* U+2936
18911 % U+2937 ARROW POINTING DOWNWARDS THEN CURVING RIGHT-
WARDS;
18912 % \rcurvearrowse (MnSymbol)
18913 \DeclareTextCommand{\textrcurvearrowse}{PU}{\051\067}%* U+2937
18914 % U+2938 RIGHT-SIDE ARC CLOCKWISE ARROW; \lcurvearrowdown (Mn-
Symbol)
18915 \DeclareTextCommand{\textlcurvearrowdown}{PU}{\051\070}%* U+2938
18916 % U+2939 LEFT-SIDE ARC ANTICLOCKWISE ARROW;
18917 % \rcurvearrowdown (MnSymbol)
18918 \DeclareTextCommand{\textrcurvearrowdown}{PU}{\051\071}%* U+2939
18919 % U+293A TOP ARC ANTICLOCKWISE ARROW; \rcurvearrowleft (MnSym-
bol)
18920 \DeclareTextCommand{\textrcurvearrowleft}{PU}{\051\072}%* U+293A
18921 % U+293B BOTTOM ARC ANTICLOCKWISE ARROW;
18922 % \rcurvearrowright (MnSymbol)
18923 \DeclareTextCommand{\textrcurvearrowright}{PU}{\051\073}%* U+293B
18924 % U+294A LEFT BARB UP RIGHT BARB DOWN HARPOON; \leftrighthar-
poon (mathabx)
18925 \DeclareTextCommand{\textleftrightharpoon}{PU}{\051\112}%* U+294A
18926 % U+294B LEFT BARB DOWN RIGHT BARB UP HARPOON; \rightlefthar-
poon (mathabx)
18927 \DeclareTextCommand{\textrightleftharpoon}{PU}{\051\113}%* U+294B
18928 % U+294C UP BARB RIGHT DOWN BARB LEFT HARPOON;
18929 % \updownharpoonrightleft (MnSymbol)
18930 \DeclareTextCommand{\textupdownharpoonrightleft}{PU}{\051\114}%* U+294C
18931 % U+294D UP BARB LEFT DOWN BARB RIGHT HARPOON;
18932 % \updownharpoonleftright (MnSymbol)
18933 \DeclareTextCommand{\textupdownharpoonleftright}{PU}{\051\115}%* U+294D
18934 % U+2962 LEFTWARDS HARPOON WITH BARB UP ABOVE LEFTWARDS
18935 % HARPOON WITH BARB DOWN; \leftleftharpoons (mathabx)
18936 \DeclareTextCommand{\textleftleftharpoons}{PU}{\051\142}%* U+2962
18937 % U+2963 UPWARDS HARPOON WITH BARB LEFT BESIDE UPWARDS
18938 % HARPOON WITH BARB RIGHT; \upupharpoons (mathabx)
18939 \DeclareTextCommand{\textupupharpoons}{PU}{\051\143}%* U+2963
18940 % U+2964 RIGHTWARDS HARPOON WITH BARB UP ABOVE RIGHT-
WARDS HARPOON
18941 % WITH BARB DOWN; \rightrightarpoons (mathabx)
18942 \DeclareTextCommand{\textrightarpoons}{PU}{\051\144}%* U+2964
18943 % U+2965 DOWNWARDS HARPOON WITH BARB LEFT BESIDE DOWN-
WARDS HARPOON
18944 % WITH BARB RIGHT; \downdownharpoons (mathabx)
18945 \DeclareTextCommand{\textdowndownharpoons}{PU}{\051\145}%* U+2965
18946 % U+296A LEFTWARDS HARPOON WITH BARB UP ABOVE LONG DASH;

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18947 % \leftbarharpoon (mathabx)  
 18948 \DeclareTextCommand{\textleftbarharpoon}{PU}{\051\152}%\* U+296A  
 18949 % U+296B LEFTWARDS HARPOON WITH BARB DOWN BELOW  
 18950 % LONG DASH; \barleftharpoon (mathabx)  
 18951 \DeclareTextCommand{\textbarleftharpoon}{PU}{\051\153}%\* U+196B  
 18952 % U+296C RIGHTWARDS HARPOON WITH BARB UP ABOVE  
 18953 % LONG DASH; \rightbarharpoon (mathabx)  
 18954 \DeclareTextCommand{\textrightbarharpoon}{PU}{\051\154}%\* U+296C  
 18955 % U+296D RIGHTWARDS HARPOON WITH BARB DOWN BELOW  
 18956 % LONG DASH; \barrightharpoon (mathabx)  
 18957 \DeclareTextCommand{\textbarrightharpoon}{PU}{\051\155}%\* U+296D  
 18958 % U+296E UPWARDS HARPOON WITH BARB LEFT BESIDE DOWN-  
 WARDS HARPOON  
 18959 % WITH BARB RIGHT; \updownharpoons (mathabx)  
 18960 \DeclareTextCommand{\textupdownharpoons}{PU}{\051\156}%\* U+296E  
 18961 % U+296F DOWNWARDS HARPOON WITH BARB LEFT BESIDE UP-  
 WARDS HARPOON  
 18962 % WITH BARB RIGHT; \downupharpoons (mathabx)  
 18963 \DeclareTextCommand{\textdownupharpoons}{PU}{\051\157}%\* U+296F

### 50.2.32 Miscellaneous Mathematical Symbols-B: U+2980 to U+29FF

18964 % U+29B6 CIRCLED VERTICAL BAR; \obar (stmaryrd)  
 18965 \DeclareTextCommand{\textobar}{PU}{\9051\266}%\* U+29B6  
 18966 %\* \textobar -> \textvarobar (stmaryrd)  
 18967 % U+29B8 CIRCLED REVERSE SOLIDUS; \obslash (stmaryrd)  
 18968 \DeclareTextCommand{\textobslash}{PU}{\9051\270}%\* U+29B8  
 18969 %\* \textobslash -> \circledbslash (txfonts/pxfonts)  
 18970 %\* \textobslash -> \obackslash (mathabx)  
 18971 %\* \textobslash -> \varobslash (stmaryrd)  
 18972 % U+29BA CIRCLE DIVIDED BY HORIZONTAL BAR AND TOP HALF  
 18973 % DIVIDED BY VERTICAL BAR; \obot (mathabx)  
 18974 \DeclareTextCommand{\textobot}{PU}{\9051\272}%\* U+29BA  
 18975 %\* \textobot -> \odplus (ulsy)  
 18976 % U+29C0 CIRCLED LESS-THAN; \olessthan (stmaryrd)  
 18977 \DeclareTextCommand{\textolessthan}{PU}{\9051\300}%\* U+29C0  
 18978 %\* \textolessthan -> \varolessthan (stmaryrd)  
 18979 % U+29C1 CIRCLED GREATER-THAN; \ogreaterthan (stmaryrd)  
 18980 \DeclareTextCommand{\textogreaterthan}{PU}{\9051\301}%\* U+29C1  
 18981 %\* \textogreaterthan -> \varogreaterthan (stmaryrd)  
 18982 % U+29C4 SQUARED RISING DIAGONAL SLASH; \boxslash (stmaryrd)  
 18983 \DeclareTextCommand{\textboxslash}{PU}{\9051\304}%\* U+29C4  
 18984 % U+29C5 SQUARED FALLING DIAGONAL SLASH; \boxbslash (stmaryrd)  
 18985 \DeclareTextCommand{\textboxbslash}{PU}{\9051\305}%\* U+29C5  
 18986 % U+29C6 SQUARED ASTERISK; \boxast (stmaryrd)  
 18987 \DeclareTextCommand{\textboxast}{PU}{\9051\306}%\* U+29C6  
 18988 % U+29C7 SQUARED SMALL CIRCLE; \boxcircle (stmaryrd)  
 18989 \DeclareTextCommand{\textboxcircle}{PU}{\9051\307}%\* U+29C7  
 18990 % U+29C8 SQUARED SQUARE; \boxbox (stmaryrd)  
 18991 \DeclareTextCommand{\textboxbox}{PU}{\9051\310}%\* U+29C8  
 18992 % U+29DF DOUBLE-ENDED MULTIMAP; \multimapboth (txfonts/pxfonts)  
 18993 \DeclareTextCommand{\textmultimap}{PU}{\9051\337}%\* U+29DF  
 18994 % U+29E2 SHUFFLE PRODUCT; \shuffle (shuffle)  
 18995 \DeclareTextCommand{\textshuffle}{PU}{\9051\342}%\* U+29E2

### 50.2.33 Supplemental Mathematical Operators: U+2A00 to U+2AFF

18996 % U+2A04 N-ARY UNION OPERATOR WITH PLUS; \uplus (LaTeX)  
 18997 \DeclareTextCommand{\textuplus}{PU}{\9052\004}%\* U+2A04

18998 % U+2A07 TWO LOGICAL AND OPERATOR; \bigdoublewedge (MnSymbol)  
18999 \DeclareTextCommand{\textbigdoublewedge}{PU}{\9052\007}%\* U+2A07  
19000 % U+2A08 TWO LOGICAL OR OPERATOR; \bigdoublevee (MnSymbol)  
19001 \DeclareTextCommand{\textbigdoublevee}{PU}{\9052\010}%\* U+2A08  
19002 % U+2A1D JOIN; \Join (latsym, amsfonts, amssymb, mathabx, txfonts,  
19003 % pxfonts, wasysym)  
19004 \DeclareTextCommand{\textJoin}{PU}{\9052\035}%\* U+2A1D  
19005 % U+2A22 PLUS SIGN WITH SMALL CIRCLE ABOVE; \circplus (mathabx)  
19006 \DeclareTextCommand{\textcircplus}{PU}{\9052\042}%\* U+2A22  
19007 % U+2A2A MINUS SIGN WITH DOT BELOW; \minusdot (MnSymbol)  
19008 \DeclareTextCommand{\textminusdot}{PU}{\9052\052}%\* U+2A2A  
19009 %\* \textminusdot -> \divdot (mathabx)  
19010 % U+2A30 MULTIPLICATION SIGN WITH DOT ABOVE; \dotimes (math-  
19011 abx)  
19011 \DeclareTextCommand{\textdotimes}{PU}{\9052\060}%\* U+2A30  
19012 % U+2A32 SEMIDIRECT PRODUCT WITH BOTTOM CLOSED;  
19013 % \dimes (mathdesign)  
19014 \DeclareTextCommand{\textdimes}{PU}{\9052\062}%\* U+2A32  
19015 % U+2A38 CIRCLED DIVISION SIGN; \odiv (mathabx)  
19016 \DeclareTextCommand{\textodiv}{PU}{\9052\070}%\* U+2A38  
19017 % U+2A3C INTERIOR PRODUCT; \invneg (MnSymbol)  
19018 \DeclareTextCommand{\textinvneg}{PU}{\9052\074}%\* U+2A3C  
19019 % U+2A4E DOUBLE SQUARE INTERSECTION; \sqdoublecap (mathabx)  
19020 \DeclareTextCommand{\textsqdoublecap}{PU}{\9052\116}%\* U+2A4E  
19021 %\* \textsqdoublecap -> \doublesqcap (MnSymbol)  
19022 % U+2A40 INTERSECTION WITH DOT; \capdot (MnSymbol)  
19023 \DeclareTextCommand{\textcapdot}{PU}{\9052\100}%\* U+2A40  
19024 % U+2A4F DOUBLE SQUARE UNION; \sqdoublecup (mathabx)  
19025 \DeclareTextCommand{\textsqdoublecup}{PU}{\9052\117}%\* U+2A4F  
19026 %\* \textsqdoublecup -> \doublesqcup (MnSymbol)  
19027 % U+2A55 TWO INTERSECTING LOGICAL AND; \doublewedge (MnSymbol)  
19028 \DeclareTextCommand{\textdoublewedge}{PU}{\9052\125}%\* U+2A55  
19029 % U+2A56 TWO INTERSECTING LOGICAL OR; \doublevee (MnSymbol)  
19030 \DeclareTextCommand{\textdoublevee}{PU}{\9052\126}%\* U+2A56  
19031 %\* \textdoublevee -> \merge (stmaryrd)  
19032 % U+2A5E LOGICAL AND WITH DOUBLE OVERBAR;  
19033 % \doublebarwedge (AmS)  
19034 \DeclareTextCommand{\textdoublebarwedge}{PU}{\9052\136}%\* U+2A5E  
19035 % U+2A63 LOGICAL OR WITH DOUBLE UNDERBAR;  
19036 % \veedoublebar (mahtabx)  
19037 \DeclareTextCommand{\textveedoublebar}{PU}{\9052\143}%\* U+2A63  
19038 % U+2A66 EQUALS SIGN WITH DOT BELOW; \eqdot (MnSymbol)  
19039 \DeclareTextCommand{\texteqdot}{PU}{\9052\146}%\* U+2A66  
19040 % U+2A74 DOUBLE COLON EQUAL; \coloncolonequals (colonequals)  
19041 \DeclareTextCommand{\textcoloncolonequals}{PU}{\9052\164}%\* U+2A74  
19042 % U+2A7D LESS-THAN OR SLANTED EQUAL TO; \leqslant (AmS)  
19043 \DeclareTextCommand{\textleqslant}{PU}{\9052\175}%\* U+2A7D  
19044 % U+2A7E GREATER-THAN OR SLANTED EQUAL TO; \geqslant (AmS)  
19045 \DeclareTextCommand{\textgeqslant}{PU}{\9052\176}%\* U+2A7E  
19046 % U+2A85 LESS-THAN OR APPROXIMATE; \lessapprox (AmS)  
19047 \DeclareTextCommand{\textlessapprox}{PU}{\9052\205}%\* U+2A85  
19048 % U+2A86 GREATER-THAN OR APPROXIMATE; \gtrapprox (AmS)  
19049 \DeclareTextCommand{\textgtrapprox}{PU}{\9052\206}%\* U+2A86  
19050 % U+2A87 LESS-THAN AND SINGLE-LINE NOT EQUAL TO; \lneq (AmS)  
19051 \DeclareTextCommand{\textlneq}{PU}{\9052\207}%\* U+2A87  
19052 % U+2A88 GREATER-THAN AND SINGLE-LINE NOT EQUAL TO;  
19053 % \gneq (AmS)

```

19054 \DeclareTextCommand{\textgneq}{PU}{\9052\210}%* U+2A88
19055 % U+2A89 LESS-THAN AND NOT APPROXIMATE; \lnapprox (AmS)
19056 \DeclareTextCommand{\textlnapprox}{PU}{\9052\211}%* U+2A89
19057 % U+2A8A GREATER-THAN AND NOT APPROXIMATE; \gnapprox (AmS)
19058 \DeclareTextCommand{\textgnapprox}{PU}{\9052\212}%* U+2A8A
19059 % U+2A8B LESS-THAN ABOVE DOUBLE-LINE EQUAL ABOVE GREATER-THAN;
19060 % \lesseqqgtr (AmS)
19061 \DeclareTextCommand{\textlesseqqgtr}{PU}{\9052\213}%* U+2A8B
19062 % U+2A8C GREATER-THAN ABOVE DOUBLE-LINE EQUAL ABOVE LESS-THAN;
19063 % \gtreqqless (AmS)
19064 \DeclareTextCommand{\textgtreqqless}{PU}{\9052\214}%* U+2A8C
19065 % U+2A95 SLANTED EQUAL TO OR LESS-THAN; \eqslantless (AmS)
19066 \DeclareTextCommand{\texteqslantless}{PU}{\9052\225}%* U+2A95
19067 % U+2A96 SLANTED EQUAL TO OR GREATER-THAN; \eqslantgtr (AmS)
19068 \DeclareTextCommand{\texteqslantgtr}{PU}{\9052\226}%* U+2A96
19069 % U+2AA6 LESS-THAN CLOSED BY CURVE; \leftslice (stmaryrd)
19070 \DeclareTextCommand{\textleftslice}{PU}{\9052\246}%* U+2AA6
19071 % U+2AA7 GREATER-THAN CLOSED BY CURVE; \rightslice (stmaryrd)
19072 \DeclareTextCommand{\textrightangle}{PU}{\9052\247}%* U+2AA7
19073 % U+2AAF PRECEDES ABOVE SINGLE-LINE EQUALS SIGN; \preceq (Mn-
    Symbol)
19074 \DeclareTextCommand{\textpreceq}{PU}{\9052\257}%* U+2AAF
19075 % U+2AB0 SUCCEEDS ABOVE SINGLE-LINE EQUALS SIGN; \succeq (Mn-
    Symbol)
19076 \DeclareTextCommand{\textsucceq}{PU}{\9052\260}%* U+2AB0
19077 % U+2AB1 PRECEDES ABOVE SINGLE-LINE NOT EQUAL TO; \prec-
    neq (mathabx)
19078 \DeclareTextCommand{\textprecneq}{PU}{\9052\261}%* U+2AB1
19079 % U+2AB2 SUCCEEDS ABOVE SINGLE-LINE NOT EQUAL TO; \succ-
    neq (mathabx)
19080 \DeclareTextCommand{\textsuccneq}{PU}{\9052\262}%* U+2AB2
19081 % U+2AB3 PRECEDES ABOVE EQUALS SIGN; \preceqq (txfonts/pxfonts)
19082 \DeclareTextCommand{\textpreceqq}{PU}{\9052\263}%* U+2AB3
19083 % U+2AB4 SUCCEEDS ABOVE EQUALS SIGN; \succeqq (txfonts/pxfonts)
19084 \DeclareTextCommand{\textsucceqq}{PU}{\9052\264}%* U+2AB4
19085 % U+2AB5 PRECEDES ABOVE NOT EQUAL TO; \precneqq (txfonts/pxfonts)
19086 \DeclareTextCommand{\textprecneqq}{PU}{\9052\265}%* U+2AB5
19087 % U+2AB6 SUCCEEDS ABOVE NOT EQUAL TO; \succneqq (txfonts/pxfonts)
19088 \DeclareTextCommand{\textsuccneqq}{PU}{\9052\266}%* U+2AB6
19089 % U+2AB7 PRECEDES ABOVE ALMOST EQUAL TO; \precapprox (AmS)
19090 \DeclareTextCommand{\textprecapprox}{PU}{\9052\267}%* U+2AB7
19091 % U+2AB8 SUCCEEDS ABOVE ALMOST EQUAL TO; \succapprox (AmS)
19092 \DeclareTextCommand{\textsuccapprox}{PU}{\9052\270}%* U+2AB8
19093 % U+2AB9 PRECEDES ABOVE NOT ALMOST EQUAL TO; \precnap-
    prox (AmS)
19094 \DeclareTextCommand{\textprecnapprox}{PU}{\9052\271}%* U+2AB9
19095 % U+2ABA SUCCEEDS ABOVE NOT ALMOST EQUAL TO; \succnap-
    prox (AmS)
19096 \DeclareTextCommand{\textsuccnapprox}{PU}{\9052\272}%* U+2ABA
19097 % U+2AC5 SUBSET OF ABOVE EQUALS SIGN; \subseteqq (AmS)
19098 \DeclareTextCommand{\textsubseteqq}{PU}{\9052\305}%* U+2AC5
19099 % U+2AC6 SUPERSET OF ABOVE EQUALS SIGN; \supseteqq (AmS)
19100 \DeclareTextCommand{\textsupseteqq}{PU}{\9052\306}%* U+2AC6
19101 % U+2AE3 DOUBLE VERTICAL BAR LEFT TURNSTILE
19102 \DeclareTextCommand{\textdashV}{PU}{\9052\343}%* U+2AE3
19103 %* \textdashV -> \leftVdash (MnSymbol)
19104 % U+2AE4 VERTICAL BAR DOUBLE LEFT TURNSTILE; \Dashv (mathabx)

```

```

19105 \DeclareTextCommand{\textDashv}{PU}{\9052\344}%* U+2AE4
19106 %* \textDashv -> \leftmodels (MnSymbol)
19107 % U+2AE5 DOUBLE VERTICAL BAR DOUBLE LEFT TURNSTILE;
19108 % \DashV (mathabx)
19109 \DeclareTextCommand{\textDashV}{PU}{\9052\345}%* U+2AE5
19110 %* \textDashV -> \leftModels (MnSymbol)
19111 % U+2AEA DOUBLE DOWN TACK; \downmodels (MnSymbol)
19112 \DeclareTextCommand{\textupmodels}{PU}{\9052\352}%* U+2AEA
19113 % U+2AEB DOUBLE UP TACK; \upmodels (MnSymbol)
19114 \DeclareTextCommand{\textupmodels}{PU}{\9052\353}%* U+2AEB
19115 % U+2AEF VERTICAL LINE WITH CIRCLE ABOVE; \upspoon (MnSymbol)
19116 \DeclareTextCommand{\textupspoon}{PU}{\9052\357}%* U+2AEF
19117 % U+2AF4 TRIPLE VERTICAL BAR BINARY RELATION;
19118 % \interleave (stmaryrd)
19119 \DeclareTextCommand{\textinterleave}{PU}{\9052\364}%* U+2AF4
19120 % U+2AFD DOUBLE SOLIDUS OPERATOR; \sslash (stmaryrd)
19121 \DeclareTextCommand{\textsslash}{PU}{\9052\375}%* U+2AFD
19122 %* \textsslash -> \varparallel (txfonts\pxfonts)

```

### 50.2.34 Latin Extended-C: U+2C60 to U+2C7F

```

19123 % U+2C7C LATIN SUBSCRIPT SMALL LETTER J
19124 \DeclareTextCommand{\textjinferior}{PU}{\9054\174}%* U+2C7C

```

### 50.2.35 Supplemental Punctuation: U+2E00 to U+2E7F

```

19125 % U+2E13 DOTTED OBELOS; \slashdiv (MnSymbol)
19126 \DeclareTextCommand{\textslashdiv}{PU}{\9056\023}%* U+2E13
19127 % U+2E18 INVERTED INTERROBANG; \textinterrobangdown (textcomp)
19128 \DeclareTextCommand{\textinterrobangdown}{PU}{\9056\030}% U+2E18
19129 % U+2E2D FIVE DOT MARK; \fivedots (MnSymbol)
19130 \DeclareTextCommand{\textfivedots}{PU}{\9056\055}%* U+2E2D

```

### 50.2.36 Modifier Tone Letters: U+A700 to U+A71F

```

19131 % U+A71B MODIFIER LETTER RAISED UP ARROW; \textupstep (tipa)
19132 \DeclareTextCommand{\textupstep}{PU}{\9247\033}% U+A71B
19133 % U+A71C MODIFIER LETTER RAISED DOWN ARROW;
19134 % \textdownstep (tipa)
19135 \DeclareTextCommand{\textdownstep}{PU}{\9247\034}% U+A71C

```

### 50.2.37 Latin Extended-D: U+A720 to U+A7FF

```

19136 % U+A727 LATIN SMALL LETTER HENG; \textheng (tipx)
19137 \DeclareTextCommand{\textPUheng}{PU}{\9247\047}% U+A727
19138 %* \textPUheng -> \textheng (tipx)
19139 % U+A72C LATIN CAPITAL LETTER CUATRILLO; \textlhookfour (tipx)
19140 \DeclareTextCommand{\textPULhookfour}{PU}{\9247\054}% U+A72C
19141 %* \textPULhookfour -> \textlhookfour (tipx)
19142 % U+A730 LATIN LETTER SMALL CAPITAL F; \textscf (tipx)
19143 \DeclareTextCommand{\textPUscf}{PU}{\9247\060}% U+A730
19144 %* \textPUscf -> \textscf (tipx)
19145 % U+A735 LATIN SMALL LETTER AO; \textaoilig (tipx)
19146 \DeclareTextCommand{\textPUaolig}{PU}{\9247\065}% U+A735
19147 %* \textPUaolig -> \textaoilig (tipx)
19148 % U+A74F LATIN SMALL LETTER OO; \oo (wsuipa)
19149 \DeclareTextCommand{\textoo}{PU}{\9247\117}%* U+A74F
19150 % U+A788 MODIFIER LETTER LOW CIRCUMFLEX ACCENT
19151 \DeclareTextCommand{\textcircumlowlow}{PU}{\9247\210}% U+A788

```

### 50.2.38 Alphabetic Presentation Forms: U+FB00 to U+FB4F

19152 % U+FB01 LATIN SMALL LIGATURE FI; fi  
 19153 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01  
 19154 % U+FB02 LATIN SMALL LIGATURE FL; fl  
 19155 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02

### 50.2.39 Musical Symbols: U+1D100 to U+1D1FF

19156 % U+1D13B MUSICAL SYMBOL WHOLE REST; \GaPa (harmony)  
 19157 \DeclareTextCommand{\textGaPa}{PU}{\9330\064\9335\073}%\* U+1D13B  
 19158 % U+1D13C MUSICAL SYMBOL HALF REST; \HaPa (harmony)  
 19159 \DeclareTextCommand{\textHaPa}{PU}{\9330\064\9335\074}%\* U+1D13C  
 19160 % U+1D13D MUSICAL SYMBOL QUARTER REST; \ViPa (harmony)  
 19161 \DeclareTextCommand{\textViPa}{PU}{\9330\064\9335\075}%\* U+1D13D  
 19162 % U+1D13E MUSICAL SYMBOL EIGHTH REST; \AcPa (harmony)  
 19163 \DeclareTextCommand{\textAcPa}{PU}{\9330\064\9335\076}%\* U+1D13E  
 19164 % U+1D13F MUSICAL SYMBOL SIXTEENTH REST; \SePa (harmony)  
 19165 \DeclareTextCommand{\textSePa}{PU}{\9330\064\9335\077}%\* U+1D13F  
 19166 % U+1D140 MUSICAL SYMBOL THIRTY-SECOND REST; \ZwPa (harmony)  
 19167 \DeclareTextCommand{\textZwPa}{PU}{\9330\064\9335\100}%\* U+1D140  
 19168 % U+1D15D MUSICAL SYMBOL WHOLE NOTE; \fullnote (wasysym)  
 19169 \DeclareTextCommand{\textfullnote}{PU}{\9330\064\9335\135}%\* U+1D15D  
 19170 %\* \textfullnote -> \Ganz (harmony)  
 19171 % U+1D15E MUSICAL SYMBOL HALF NOTE; \halfnote (wasysym)  
 19172 \DeclareTextCommand{\texthalfnote}{PU}{\9330\064\9335\136}%\* U+1D15E  
 19173 %\* \texthalfnote -> \Halb (harmony)  
 19174 % U+1D15F MUSICAL SYMBOL QUARTER NOTE; \Vier (harmony)  
 19175 \DeclareTextCommand{\textVier}{PU}{\9330\064\9335\137}%\* U+1D15F  
 19176 % U+1D160 MUSICAL SYMBOL EIGHTH NOTE; \Acht (harmony)  
 19177 \DeclareTextCommand{\textAcht}{PU}{\9330\064\9335\140}%\* U+1D160  
 19178 % U+1D161 MUSICAL SYMBOL SIXTEENTH NOTE; \Sech (harmony)  
 19179 \DeclareTextCommand{\textSech}{PU}{\9330\064\9335\141}%\* U+1D161  
 19180 % U+1D162 MUSICAL SYMBOL THIRTY-SECOND NOTE; \Zwdr (harmony)  
 19181 \DeclareTextCommand{\textZwdr}{PU}{\9330\064\9335\142}%\* U+1D162

### 50.2.40 Miscellaneous Symbols and Pictographs: U+1F300 to U+1F5FF

19182 % U+1F30D EARTH GLOBE EUROPE-AFRICA; \Mundus (marvosym)  
 19183 \DeclareTextCommand{\textMundus}{PU}{\9330\074\9337\015}%\* U+1F30D  
 19184 % U+1F469 WOMAN; \Womanface (marvosym)  
 19185 \DeclareTextCommand{\textWomanface}{PU}{\9330\075\9334\151}%\* U+1F469  
 19186 % U+1F525 FIRE; \Fire (ifsym)  
 19187 \DeclareTextCommand{\textFire}{PU}{\9330\075\9335\045}%\* U+1F525

### 50.2.41 Transport and Map Symbols: U+1F680 to U+1F6FF

19188 % U+1F6B2 BICYCLE; \Bicycle (marvosym)  
 19189 \DeclareTextCommand{\textBicycle}{PU}{\9330\075\9336\262}%\* U+1F6B2  
 19190 % U+1F6B9 MENS SYMBOL; \Gentsroom (marvosym)  
 19191 \DeclareTextCommand{\textGentsroom}{PU}{\9330\075\9336\271}%\* U+1F6B9  
 19192 % U+1F6BA WOMENS SYMBOL; \Ladiesroom (marvosym)  
 19193 \DeclareTextCommand{\textLadiesroom}{PU}{\9330\075\9336\272}%\* U+1F6BA

### 50.2.42 Miscellaneous

19194 \DeclareTextCommand{\SS}{PU}{SS}  
 19195 % \textcopyleft (textcomp)  
 19196 \DeclareTextCommand{\textcopyleft}{PU}{\9041\204\9040\335}% U+2184 U+20DD  
 19197 % \ccnc (ccllicenses)  
 19198 \DeclareTextCommand{\textccnc}{PU}{\80\044\9040\340}%\* U+0024 U+20E0  
 19199 % \ccnd (ccllicenses)  
 19200 \DeclareTextCommand{\textccnd}{PU}{=\9040\335}%\* U+003D U+20DD

```

19201 % \ccsa (ccllicenses)
19202 \DeclareTextCommand{\textccsa}{PU}{\9047\362\9040\335}%* U+27F2 U+20DD
19203 % \CircledA (marvosym)
19204 \DeclareTextCommand{\textCircledA}{PU}{A\9040\335}%* U+0041 U+20DD
19205 % \Info (marvosym, china2e)
19206 \DeclareTextCommand{\textInfo}{PU}{\9330\065\9334\042\940\336}%* U+1D422 U+20DE

```

### 50.2.43 Aliases

Aliases (german.sty)

```

19207 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}
19208 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}
19209 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}
19210 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}
19211 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}
19212 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}
19213 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}
19214 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}

```

Aliases (math names)

```

19215 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}%*
19216 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}%*
19217 \DeclareTextCommand{\textdiv}{PU}{\textdivide}%*
19218 \DeclareTextCommand{\textpm}{PU}{\textplusminus}%*
19219 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}%*
19220 </puenc>

```

## 50.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```

19221 <*puvnenc>
19222 \DeclareTextCommand{\abreve}{PU}{\81\003}% U+0103
19223 \DeclareTextCommand{\acircumflex}{PU}{\80\342}% U+00E2
19224 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}% U+00EA
19225 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}% U+00F4
19226 \DeclareTextCommand{\ohorn}{PU}{\81\241}% U+01A1
19227 \DeclareTextCommand{\uhorn}{PU}{\81\260}% U+01B0
19228 \DeclareTextCommand{\ABREVE}{PU}{\81\002}% U+0102
19229 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}% U+00C2
19230 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}% U+00CA
19231 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}% U+00D4
19232 \DeclareTextCommand{\OHORN}{PU}{\81\240}% U+01A0
19233 \DeclareTextCommand{\UHORN}{PU}{\81\257}% U+01AF
19234 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1
19235 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}% U+1EA1
19236 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}% U+00E0
19237 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}% U+1EA3
19238 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3
19239 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}% U+1EAF
19240 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}% U+1EB7
19241 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}% U+1EB1
19242 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}% U+1EB3
19243 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}% U+1EB5
19244 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}% U+1EA5
19245 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}% U+1EAD
19246 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}% U+1EA7

```

19247 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}% U+1EA9  
 19248 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}% U+1EAB  
 19249 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
 19250 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}% U+1EB9  
 19251 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}% U+00E8  
 19252 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}% U+1EBB  
 19253 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
 19254 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}% U+1EBF  
 19255 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}% U+1EC7  
 19256 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}% U+1EC1  
 19257 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}% U+1EC3  
 19258 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}% U+1EC5  
 19259 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
 19260 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}% U+1ECB  
 19261 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC  
 19262 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}% U+1EC9  
 19263 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
 19264 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
 19265 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}% U+1ECD  
 19266 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}% U+00F2  
 19267 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}% U+1ECF  
 19268 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
 19269 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}% U+1ED1  
 19270 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}% U+1ED9  
 19271 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\323}% U+1ED3  
 19272 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}% U+1ED5  
 19273 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}% U+1ED7  
 19274 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}% U+1EDB  
 19275 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}% U+1EE3  
 19276 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\335}% U+1EDD  
 19277 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}% U+1EDF  
 19278 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}% U+1EE1  
 19279 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
 19280 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}% U+1EE5  
 19281 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}% U+00F9  
 19282 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}% U+1EE7  
 19283 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
 19284 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}% U+1EE9  
 19285 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}% U+1EF1  
 19286 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\353}% U+1EEB  
 19287 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}% U+1EED  
 19288 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}% U+1EEF  
 19289 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
 19290 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}% U+1EF5  
 19291 \DeclareTextCompositeCommand{\'}{PU}{y}{\9036\363}% U+1EF3  
 19292 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}% U+1EF7  
 19293 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9  
 19294 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
 19295 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}% U+1EA0  
 19296 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\300}% U+00C0  
 19297 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}% U+1EA2  
 19298 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
 19299 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}% U+1EAE  
 19300 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}% U+1EB6  
 19301 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\260}% U+1EB0  
 19302 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}% U+1EB2  
 19303 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}% U+1EB4



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19304 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}% U+1EA4
19305 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}% U+1EAC
19306 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\246}% U+1EA6
19307 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}% U+1EA8
19308 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}% U+1EAA
19309 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9
19310 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}% U+1EB8
19311 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\310}% U+00C8
19312 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}% U+1EBA
19313 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC
19314 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\276}% U+1EBE
19315 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}% U+1EC6
19316 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\300}% U+1EC0
19317 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}% U+1EC2
19318 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}% U+1EC4
19319 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD
19320 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}% U+1ECA
19321 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\314}% U+00CC
19322 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}% U+1EC8
19323 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128
19324 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3
19325 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}% U+1ECC
19326 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\322}% U+00D2
19327 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}% U+1ECE
19328 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5
19329 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}% U+1ED0
19330 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}% U+1ED8
19331 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\322}% U+1ED2
19332 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}% U+1ED4
19333 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}% U+1ED6
19334 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\332}% U+1EDA
19335 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}% U+1EE2
19336 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\334}% U+1EDC
19337 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}% U+1EDE
19338 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}% U+1EE0
19339 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA
19340 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4
19341 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331}% U+00D9
19342 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}% U+1EE6
19343 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168
19344 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}% U+1EE8
19345 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}% U+1EF0
19346 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\352}% U+1EEA
19347 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}% U+1EEC
19348 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}% U+1EEE
19349 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD
19350 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4
19351 \DeclareTextCompositeCommand{\'}{PU}{Y}{\9036\362}% U+1EF2
19352 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}% U+1EF6
19353 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8
19354 (/puvnenc)

```

## 50.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```
19355 (*puarenc)
```

19356 % U+0621;afii57409;ARABIC LETTER HAMZA  
 19357 \DeclareTextCommand{\hamza}{PU}{\86\041}% U+0621  
 19358 % U+0622;afii57410;ARABIC LETTER ALEF WITH MADDA ABOVE  
 19359 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% U+0622  
 19360 % U+0623;afii57411;ARABIC LETTER ALEF WITH HAMZA ABOVE  
 19361 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% U+0623  
 19362 % U+0624;afii57412;ARABIC LETTER WAW WITH HAMZA ABOVE  
 19363 \DeclareTextCommand{\wawhamza}{PU}{\86\044} % U+0624  
 19364 % U+0625;afii57413;ARABIC LETTER ALEF WITH HAMZA BELOW  
 19365 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% U+0625  
 19366 % U+0626;afii57414;ARABIC LETTER YEH WITH HAMZA ABOVE  
 19367 \DeclareTextCommand{\yahamza}{PU}{\86\046}% U+0626  
 19368 % U+0627;afii57415;ARABIC LETTER ALEF  
 19369 \DeclareTextCommand{\alef}{PU}{\86\047}% U+0627  
 19370 % U+0628;afii57416;ARABIC LETTER BEH  
 19371 \DeclareTextCommand{\baa}{PU}{\86\050}% U+0628  
 19372 % U+0629;afii57417;ARABIC LETTER TEH MARBUTA  
 19373 \DeclareTextCommand{\T}{PU}{\86\051}% U+0629  
 19374 % U+062A;afii57418;ARABIC LETTER TEH  
 19375 \DeclareTextCommand{\taa}{PU}{\86\052}% U+062A  
 19376 % U+062B;afii57419;ARABIC LETTER THEH  
 19377 \DeclareTextCommand{\thaa}{PU}{\86\053}% U+062B  
 19378 % U+062C;afii57420;ARABIC LETTER JEEM  
 19379 \DeclareTextCommand{\jeem}{PU}{\86\054}% U+062C  
 19380 % U+062D;afii57421;ARABIC LETTER HAH  
 19381 \DeclareTextCommand{\Haa}{PU}{\86\055}% U+062D  
 19382 % U+062E;afii57422;ARABIC LETTER KHAH  
 19383 \DeclareTextCommand{\kha}{PU}{\86\056}% U+062E  
 19384 % U+062F;afii57423;ARABIC LETTER DAL  
 19385 \DeclareTextCommand{\dal}{PU}{\86\057}% U+062F  
 19386 % U+0630;afii57424;ARABIC LETTER THAL  
 19387 \DeclareTextCommand{\dhal}{PU}{\86\060}% U+0630  
 19388 % U+0631;afii57425;ARABIC LETTER REH  
 19389 \DeclareTextCommand{\ra}{PU}{\86\061}% U+0631  
 19390 % U+0632;afii57426;ARABIC LETTER ZAIN  
 19391 \DeclareTextCommand{\zay}{PU}{\86\062}% U+0632  
 19392 % U+0633;afii57427;ARABIC LETTER SEEN  
 19393 \DeclareTextCommand{\seen}{PU}{\86\063}% U+0633  
 19394 % U+0634;afii57428;ARABIC LETTER SHEEN  
 19395 \DeclareTextCommand{\sheen}{PU}{\86\064}% U+0634  
 19396 % U+0635;afii57429;ARABIC LETTER SAD  
 19397 \DeclareTextCommand{\sad}{PU}{\86\065}% U+0635  
 19398 % U+0636;afii57430;ARABIC LETTER DAD  
 19399 \DeclareTextCommand{\dad}{PU}{\86\066}% U+0636  
 19400 % U+0637;afii57431;ARABIC LETTER TAH  
 19401 \DeclareTextCommand{\Ta}{PU}{\86\067}% U+0637  
 19402 % U+0638;afii57432;ARABIC LETTER ZAH  
 19403 \DeclareTextCommand{\za}{PU}{\86\070}% U+0638  
 19404 % U+0639;afii57433;ARABIC LETTER AIN  
 19405 \DeclareTextCommand{\ayn}{PU}{\86\071}% U+0639  
 19406 % U+063A;afii57434;ARABIC LETTER GHAIN  
 19407 \DeclareTextCommand{\ghayn}{PU}{\86\072}% U+063A  
 19408 % U+0640;afii57440;ARABIC TATWEEL  
 19409 \DeclareTextCommand{\tatweel}{PU}{\86\100}% U+0640  
 19410 % U+0641;afii57441;ARABIC LETTER FEH  
 19411 \DeclareTextCommand{\fa}{PU}{\86\101}% U+0641  
 19412 % U+0642;afii57442;ARABIC LETTER QAF

19413 \DeclareTextCommand{\qaf}{PU}{\86\102}% U+0642  
 19414 % U+0643;afii57443;ARABIC LETTER KAF  
 19415 \DeclareTextCommand{\kaf}{PU}{\86\103}% U+0643  
 19416 % U+0644;afii57444;ARABIC LETTER LAM  
 19417 \DeclareTextCommand{\lam}{PU}{\86\104}% U+0644  
 19418 % U+0645;afii57445;ARABIC LETTER MEEM  
 19419 \DeclareTextCommand{\meem}{PU}{\86\105}% U+0645  
 19420 % U+0646;afii57446;ARABIC LETTER NOON  
 19421 \DeclareTextCommand{\nun}{PU}{\86\106}% U+0646  
 19422 % U+0647;afii57470;ARABIC LETTER HEH  
 19423 \DeclareTextCommand{\ha}{PU}{\86\107}% U+0647  
 19424 % U+0648;afii57448;ARABIC LETTER WAW  
 19425 \DeclareTextCommand{\waw}{PU}{\86\110}% U+0648  
 19426 % U+0649;afii57449;ARABIC LETTER ALEF MAKSURA  
 19427 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% U+0649  
 19428 % U+064A;afii57450;ARABIC LETTER YEH  
 19429 \DeclareTextCommand{\ya}{PU}{\86\112}% U+064A  
  
 19430 % U+064B;afii57451;ARABIC FATHATAN  
 19431 \DeclareTextCommand{\nasb}{PU}{\86\113}% U+064B  
 19432 % U+064C;afii57452;ARABIC DAMMATAN  
 19433 \DeclareTextCommand{\raff}{PU}{\86\114}% U+064C  
 19434 % U+064D;afii57453;ARABIC KASRATAN  
 19435 \DeclareTextCommand{\jarr}{PU}{\86\115}% U+064D  
 19436 % U+064E;afii57454;ARABIC FATHA  
 19437 \DeclareTextCommand{\fatha}{PU}{\86\116}% U+064E  
 19438 % U+064F;afii57455;ARABIC DAMMA  
 19439 \DeclareTextCommand{\damma}{PU}{\86\117}% U+064F  
 19440 % U+0650;afii57456;ARABIC KASRA  
 19441 \DeclareTextCommand{\kasra}{PU}{\86\120}% U+0650  
 19442 % U+0651;afii57457;ARABIC SHADDA  
 19443 \DeclareTextCommand{\shadda}{PU}{\86\121}% U+0651  
 19444 % U+0652;afii57458;ARABIC SUKUN  
 19445 \DeclareTextCommand{\sukun}{PU}{\86\122}% U+0652  
  
 Farsi  
 19446 % U+067E ARABIC LETTER PEH; afii57506  
 19447 \DeclareTextCommand{\peh}{PU}{\86\176}% U+067E  
 19448 % U+0686 ARABIC LETTER TCHEH; afii57507  
 19449 \DeclareTextCommand{\tcheh}{PU}{\86\206}% U+0686  
 19450 % U+0698 ARABIC LETTER JEH; afii57508  
 19451 \DeclareTextCommand{\jeh}{PU}{\86\230}% U+0698  
 19452 % U+06A9 ARABIC LETTER KEHEH  
 19453 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% U+06A9  
 19454 % U+06AF ARABIC LETTER GAF; afii57509  
 19455 \DeclareTextCommand{\gaf}{PU}{\86\257}% U+06AF  
 19456 % U+06CC ARABIC LETTER FARSI YEH  
 19457 \DeclareTextCommand{\farsiya}{PU}{\86\314}% U+06CC  
  
 19458 % U+200C ZERO WIDTH NON-JOINER; afii61664  
 19459 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% U+200C  
 19460 % U+200D ZERO WIDTH JOINER; afii301  
 19461 \DeclareTextCommand{\noboundary}{PU}{\9040\015}% U+200D  
  
 19462 (/puarenc)  
 19463 (\*psdextra)  
 19464 \Hy@VersionCheck{psdextra.def}  
 19465 \newcommand\*{\psdmapshortnames}{%  
 19466 \let\copyright\textcopyright

19467 \let\twosuperior\texttwosuperior  
 19468 \let\threesuperior\textthreesuperior  
 19469 \let\onesuperior\textonesuperior  
 19470 \let\Thorn\textThorn  
 19471 \let\thorn\textthorn  
 19472 \let\hbar\texthbar  
 19473 \let\hausaB\texthausaB  
 19474 \let\hausaD\texthausaD  
 19475 \let\hausaK\texthausaK  
 19476 \let\barl\textbarl  
 19477 \let\inve\textinve  
 19478 \let\yogh\textyogh  
 19479 \let\slashc\textslashc  
 19480 \let\scripta\textscripta  
 19481 \let\openo\textopeno  
 19482 \let\rtaild\textrtaild  
 19483 \let\reve\textreve  
 19484 \let\schwa\textschwa  
 19485 \let\niepsilon\textniepsilon  
 19486 \let\reveysilon\textreveysilon  
 19487 \let\rhookreveysilon\texthookreveysilon  
 19488 \let\scriptg\textscriptg  
 19489 \let\scg\textscg  
 19490 \let\ipagamma\textipagamma  
 19491 \let\babygamma\textbabygamma  
 19492 \let\bari\textbari  
 19493 \let\niiota\textniiota  
 19494 \let\sci\textsci  
 19495 \let\scn\textscn  
 19496 \let\baro\textbaro  
 19497 \let\niphi\textniphi  
 19498 \let\longlegr\textlonglegr  
 19499 \let\scr\textscr  
 19500 \let\invscr\textinvscr  
 19501 \let\esh\textesh  
 19502 \let\baru\textbaru  
 19503 \let\niupsilon\textniupsilon  
 19504 \let\scriptv\textscriptv  
 19505 \let\turnv\textturnv  
 19506 \let\turnw\textturnw  
 19507 \let\turny\textturny  
 19508 \let\scy\textscy  
 19509 \let\yogh\textyogh  
 19510 \let\glotstop\textglotstop  
 19511 \let\revglotstop\textrevglotstop  
 19512 \let\invglotstop\textinvglotstop  
 19513 \let\Gamma\textGamma  
 19514 \let\Delta\textDelta  
 19515 \let\Theta\textTheta  
 19516 \let\Lambda\textLambda  
 19517 \let\Xi\textXi  
 19518 \let\Pi\textPi  
 19519 \let\Sigma\textSigma  
 19520 \let\Upsilon\textUpsilon  
 19521 \let\Phi\textPhi  
 19522 \let\Psi\textPsi  
 19523 \let\Omega\textOmega

19524 `\let\alpha\textalpha`  
 19525 `\let\beta\textbeta`  
 19526 `\let\gamma\textgamma`  
 19527 `\let\delta\textdelta`  
 19528 `\let\epsilon\textepsilon`  
 19529 `\let\zeta\textzeta`  
 19530 `\let\eta\texteta`  
 19531 `\let\theta\texttheta`  
 19532 `\let\iota\textiota`  
 19533 `\let\kappa\textkappa`  
 19534 `\let\lambda\textlambda`  
 19535 `\let\mugreek\textmugreek`  
 19536 `\let\nu\textnu`  
 19537 `\let\xi\textxi`  
 19538 `\let\pi\textpi`  
 19539 `\let\rho\textrho`  
 19540 `\let\varsigma\textvarsigma`  
 19541 `\let\sigma\textsigma`  
 19542 `\let\tau\texttau`  
 19543 `\let\upsilon\textupsilon`  
 19544 `\let\phi\textphi`  
 19545 `\let\chi\textchi`  
 19546 `\let\psi\textpsi`  
 19547 `\let\omega\textomega`  
 19548 `\let\scd\textscd`  
 19549 `\let\scu\textscu`  
 19550 `\let\iinferior\textiinferior`  
 19551 `\let\rinferior\textrinferior`  
 19552 `\let\uinferior\textuinferior`  
 19553 `\let\vinferior\textvinferior`  
 19554 `\let\betainferior\textbetainferior`  
 19555 `\let\gammainferior\textgammainferior`  
 19556 `\let\rhoinferior\textrhoinferior`  
 19557 `\let\phiinferior\textphiinferior`  
 19558 `\let\chiinferior\textchiinferior`  
 19559 `\let\barsci\textbarsci`  
 19560 `\let\barp\textbarp`  
 19561 `\let\barscu\textbarscu`  
 19562 `\let\htrtaild\texthtrtaild`  
 19563 `\let\dagger\textdagger`  
 19564 `\let\bullet\textbullet`  
 19565 `\let\hdotfor\texthdotfor`  
 19566 `\let\prime\textprime`  
 19567 `\let\second\textsecond`  
 19568 `\let\third\textthird`  
 19569 `\let\backprime\textbackprime`  
 19570 `\let\lefttherefore\textlefttherefore`  
 19571 `\let\fourth\textfourth`  
 19572 `\let\diamonddots\textdiamonddots`  
 19573 `\let\zerosuperior\textzerosuperior`  
 19574 `\let\isuperior\textisuperior`  
 19575 `\let\foursuperior\textfoursuperior`  
 19576 `\let\fivesuperior\textfivesuperior`  
 19577 `\let\sixsuperior\textsixsuperior`  
 19578 `\let\sevensuperior\textsevensuperior`  
 19579 `\let\eightsuperior\texteightsuperior`  
 19580 `\let\ninesuperior\textninesuperior`

19581 \let\plussuperior\textplussuperior  
 19582 \let\minussuperior\textminussuperior  
 19583 \let\equalsuperior\textequalsuperior  
 19584 \let\parenleftsuperior\textparenleftsuperior  
 19585 \let\parenrightsuperior\textparenrightsuperior  
 19586 \let\nsuperior\textnsuperior  
 19587 \let\zeroinferior\textzeroinferior  
 19588 \let\oneinferior\textoneinferior  
 19589 \let\twoinferior\texttwoinferior  
 19590 \let\threeinferior\textthreeinferior  
 19591 \let\fourinferior\textfourinferior  
 19592 \let\fiveinferior\textfiveinferior  
 19593 \let\sixinferior\textsixinferior  
 19594 \let\seveninferior\textseveninferior  
 19595 \let\eightinferior\texteightinferior  
 19596 \let\nineinferior\textnineinferior  
 19597 \let\plusinferior\textplusinferior  
 19598 \let\minusinferior\textminusinferior  
 19599 \let\equalsinferior\textequalsinferior  
 19600 \let\parenleftinferior\textparenleftinferior  
 19601 \let\parenrightinferior\textparenrightinferior  
 19602 \let\ainferior\textainferior  
 19603 \let\einferior\texteinferior  
 19604 \let\oinferior\textoinferior  
 19605 \let\xinferior\textxinferior  
 19606 \let\schwainferior\textschwainferior  
 19607 \let\hinferior\texthinferior  
 19608 \let\kinferior\textkinferior  
 19609 \let\linferior\textlinferior  
 19610 \let\minferior\textminferior  
 19611 \let\ninferior\textninferior  
 19612 \let\pinferior\textpinferior  
 19613 \let\sinferior\textsinferior  
 19614 \let\tinferior\texttinferior  
 19615 \let\hslash\texthslash  
 19616 \let\Im\textIm  
 19617 \let\ell\textell  
 19618 \let\wp\textwp  
 19619 \let\Re\textRe  
 19620 \let\mho\textmho  
 19621 \let\riota\textriota  
 19622 \let\Finv\textFinv  
 19623 \let\aleph\textaleph  
 19624 \let\beth\textbeth  
 19625 \let\gimel\textgimel  
 19626 \let\daleth\textdaleth  
 19627 \let\xfax\textfax  
 19628 \let\Game\textGame  
 19629 \let\leftarrow\textleftarrow  
 19630 \let\uparrow\textuparrow  
 19631 \let\rightarrow\textrightarrow  
 19632 \let\downarrow\textdownarrow  
 19633 \let\leftrightarrow\textleftrightarrow  
 19634 \let\updownarrow\textupdownarrow  
 19635 \let\rightarrowtail\textrightarrowtail  
 19636 \let\nearrow\textnearrow  
 19637 \let\searrow\textsearrow

19638 `\let\swarrow\textswarrow`  
 19639 `\let\nleftarrow\textnleftarrow`  
 19640 `\let\nrightarrow\textnrightarrow`  
 19641 `\let\twoheadleftarrow\texttwoheadleftarrow`  
 19642 `\let\twoheaduparrow\texttwoheaduparrow`  
 19643 `\let\twoheadrightarrow\texttwoheadrightarrow`  
 19644 `\let\twoheaddownarrow\texttwoheaddownarrow`  
 19645 `\let\leftarrowtail\textleftarrowtail`  
 19646 `\let\rightarrowtail\textrightarrowtail`  
 19647 `\let\mapsto\textmapsto`  
 19648 `\let\hookleftarrow\texthookleftarrow`  
 19649 `\let\hookrightarrow\texthookrightarrow`  
 19650 `\let\looparrowleft\textlooparrowleft`  
 19651 `\let\looparrowright\textlooparrowright`  
 19652 `\let\nlefttrightharpoon\textnlefttrightharpoon`  
 19653 `\let\lightning\textlightning`  
 19654 `\let\dlsh\textdlsh`  
 19655 `\let\curvearrowleft\textcurvearrowleft`  
 19656 `\let\curvearrowright\textcurvearrowright`  
 19657 `\let\leftharpoonup\textleftharpoonup`  
 19658 `\let\leftharpoondown\textleftharpoondown`  
 19659 `\let\upharpoonright\textupharpoonright`  
 19660 `\let\upharpoonleft\textupharpoonleft`  
 19661 `\let\rightharpoonup\text\rightharpoonup`  
 19662 `\let\rightharpoondown\text\rightharpoondown`  
 19663 `\let\downharpoonright\textdownharpoonright`  
 19664 `\let\downharpoonleft\textdownharpoonleft`  
 19665 `\let\rightleftarrows\textrightleftarrows`  
 19666 `\let\updownarrows\textupdownarrows`  
 19667 `\let\leftrightarrows\textleftrightarrows`  
 19668 `\let\leftleftarrows\textleftleftarrows`  
 19669 `\let\upuparrows\textupuparrows`  
 19670 `\let\righttrightarrows\textrighttrightarrows`  
 19671 `\let\downdownarrows\textdowndownarrows`  
 19672 `\let\leftrightharpoons\textleftrightharpoons`  
 19673 `\let\rightleftharpoons\textrightleftharpoons`  
 19674 `\let\nLeftarrow\textnLeftarrow`  
 19675 `\let\nLeftrightarrow\textnLeftrightarrow`  
 19676 `\let\nRrightarrow\textnRrightarrow`  
 19677 `\let\Leftarrow\textLeftarrow`  
 19678 `\let\Uparrow\textUparrow`  
 19679 `\let\Rrightarrow\textRrightarrow`  
 19680 `\let\Downarrow\textDownarrow`  
 19681 `\let\Leftrightarrow\textLeftrightarrow`  
 19682 `\let\Updownarrow\textUpdownarrow`  
 19683 `\let\Nrightarrow\textNrightarrow`  
 19684 `\let\Nearrow\textNearrow`  
 19685 `\let\Swarrow\textSwarrow`  
 19686 `\let\Swarrow\textSwarrow`  
 19687 `\let\Lleftarrow\textLleftarrow`  
 19688 `\let\Rrightarrow\textRrightarrow`  
 19689 `\let\leftsquigarrow\textleftsquigarrow`  
 19690 `\let\rightsquigarrow\textrightsquigarrow`  
 19691 `\let\dashleftarrow\textdashleftarrow`  
 19692 `\let\dasheduparrow\textdasheduparrow`  
 19693 `\let\dashrightarrow\textdashrightarrow`  
 19694 `\let\dasheddownarrow\textdasheddownarrow`

19695  $\backslash\text{let}\backslash\text{downuparrows}\backslash\text{textdownuparrows}$   
 19696  $\backslash\text{let}\backslash\text{forall}\backslash\text{textforall}$   
 19697  $\backslash\text{let}\backslash\text{complement}\backslash\text{textcomplement}$   
 19698  $\backslash\text{let}\backslash\text{partial}\backslash\text{textpartial}$   
 19699  $\backslash\text{let}\backslash\text{exists}\backslash\text{textexists}$   
 19700  $\backslash\text{let}\backslash\text{nexists}\backslash\text{textnexists}$   
 19701  $\backslash\text{let}\backslash\text{emptyset}\backslash\text{textemptyset}$   
 19702  $\backslash\text{let}\backslash\text{triangle}\backslash\text{texttriangle}$   
 19703  $\backslash\text{let}\backslash\text{nabla}\backslash\text{textnabla}$   
 19704  $\backslash\text{let}\backslash\text{in}\backslash\text{textin}$   
 19705  $\backslash\text{let}\backslash\text{notin}\backslash\text{textnotin}$   
 19706  $\backslash\text{let}\backslash\text{smallin}\backslash\text{textsmallin}$   
 19707  $\backslash\text{let}\backslash\text{ni}\backslash\text{textni}$   
 19708  $\backslash\text{let}\backslash\text{notowner}\backslash\text{textnotowner}$   
 19709  $\backslash\text{let}\backslash\text{smallowns}\backslash\text{textsmallowns}$   
 19710  $\backslash\text{let}\backslash\text{prod}\backslash\text{textprod}$   
 19711  $\backslash\text{let}\backslash\text{amalg}\backslash\text{textamalg}$   
 19712  $\backslash\text{let}\backslash\text{sum}\backslash\text{textsum}$   
 19713  $\backslash\text{let}\backslash\text{mp}\backslash\text{textmp}$   
 19714  $\backslash\text{let}\backslash\text{dotplus}\backslash\text{textdotplus}$   
 19715  $\backslash\text{let}\backslash\text{setminus}\backslash\text{textsetminus}$   
 19716  $\backslash\text{let}\backslash\text{ast}\backslash\text{textast}$   
 19717  $\backslash\text{let}\backslash\text{circ}\backslash\text{textcirc}$   
 19718  $\backslash\text{let}\backslash\text{surd}\backslash\text{textsurd}$   
 19719  $\backslash\text{let}\backslash\text{propto}\backslash\text{textpropto}$   
 19720  $\backslash\text{let}\backslash\text{infty}\backslash\text{textinfty}$   
 19721  $\backslash\text{let}\backslash\text{angle}\backslash\text{textangle}$   
 19722  $\backslash\text{let}\backslash\text{measuredangle}\backslash\text{textmeasuredangle}$   
 19723  $\backslash\text{let}\backslash\text{sphericalangle}\backslash\text{textsphericalangle}$   
 19724  $\backslash\text{let}\backslash\text{mid}\backslash\text{textmid}$   
 19725  $\backslash\text{let}\backslash\text{nmid}\backslash\text{textnmid}$   
 19726  $\backslash\text{let}\backslash\text{parallel}\backslash\text{textparallel}$   
 19727  $\backslash\text{let}\backslash\text{nparallel}\backslash\text{textnparallel}$   
 19728  $\backslash\text{let}\backslash\text{wedge}\backslash\text{textwedge}$   
 19729  $\backslash\text{let}\backslash\text{vee}\backslash\text{textvee}$   
 19730  $\backslash\text{let}\backslash\text{cap}\backslash\text{textcap}$   
 19731  $\backslash\text{let}\backslash\text{cup}\backslash\text{textcup}$   
 19732  $\backslash\text{let}\backslash\text{int}\backslash\text{textint}$   
 19733  $\backslash\text{let}\backslash\text{iint}\backslash\text{textiint}$   
 19734  $\backslash\text{let}\backslash\text{iiint}\backslash\text{textiiint}$   
 19735  $\backslash\text{let}\backslash\text{oint}\backslash\text{textoint}$   
 19736  $\backslash\text{let}\backslash\text{oiint}\backslash\text{textoiint}$   
 19737  $\backslash\text{let}\backslash\text{ointclockwise}\backslash\text{textointclockwise}$   
 19738  $\backslash\text{let}\backslash\text{ointctrclockwise}\backslash\text{textointctrclockwise}$   
 19739  $\backslash\text{let}\backslash\text{therefore}\backslash\text{texttherefore}$   
 19740  $\backslash\text{let}\backslash\text{because}\backslash\text{textbecause}$   
 19741  $\backslash\text{let}\backslash\text{vdotdot}\backslash\text{textvdotdot}$   
 19742  $\backslash\text{let}\backslash\text{sqaredots}\backslash\text{textsquaredots}$   
 19743  $\backslash\text{let}\backslash\text{dotminus}\backslash\text{textdotminus}$   
 19744  $\backslash\text{let}\backslash\text{eqcolon}\backslash\text{texteqcolon}$   
 19745  $\backslash\text{let}\backslash\text{sim}\backslash\text{textsimeq}$   
 19746  $\backslash\text{let}\backslash\text{backsim}\backslash\text{textbacksim}$   
 19747  $\backslash\text{let}\backslash\text{wr}\backslash\text{textwr}$   
 19748  $\backslash\text{let}\backslash\text{nsim}\backslash\text{textnsim}$   
 19749  $\backslash\text{let}\backslash\text{simeq}\backslash\text{textsimeq}$   
 19750  $\backslash\text{let}\backslash\text{cong}\backslash\text{textcong}$   
 19751  $\backslash\text{let}\backslash\text{ncong}\backslash\text{textncong}$



19752 \let\approx\textapprox  
 19753 \let\approxeq\textapproxeq  
 19754 \let\triplesim\texttriplesim  
 19755 \let\backcong\textbackcong  
 19756 \let\asympt\textasympt  
 19757 \let\Bumpeq\textBumpeq  
 19758 \let\bumpeq\textbumpeq  
 19759 \let\doteq\textdoteq  
 19760 \let\doteqdot\textdoteqdot  
 19761 \let\fallingdoteq\textfallingdoteq  
 19762 \let\risingdoteq\textrisingdoteq  
 19763 \let\colonequals\textcolonequals  
 19764 \let\equalscolon\textequalscolon  
 19765 \let\eqcirc\texteqcirc  
 19766 \let\circeq\textcirceq  
 19767 \let\hateq\texthateq  
 19768 \let\triangleeq\texttriangleeq  
 19769 \let\neq\textneq  
 19770 \let\ne\textne  
 19771 \let\equiv\textequiv  
 19772 \let\nequiv\textnequiv  
 19773 \let\leq\textleq  
 19774 \let\le\textle  
 19775 \let\geq\textgeq  
 19776 \let\ge\textge  
 19777 \let\leqq\textleqq  
 19778 \let\geqq\textgeqq  
 19779 \let\lneqq\textlneqq  
 19780 \let\gneqq\textgneqq  
 19781 \let\ll\textll  
 19782 \let\gg\textgg  
 19783 \let\between\textbetween  
 19784 \let\nless\textnless  
 19785 \let\ngtr\textngtr  
 19786 \let\nleq\textnleq  
 19787 \let\ngeq\textngeq  
 19788 \let\lesssim\textlesssim  
 19789 \let\gtrsim\textgtrsim  
 19790 \let\lessgtr\textlessgtr  
 19791 \let\gtrless\textgtrless  
 19792 \let\prec\textprec  
 19793 \let\succ\textsucc  
 19794 \let\preccurlyeq\textpreccurlyeq  
 19795 \let\succcurlyeq\textsucccurlyeq  
 19796 \let\precsim\textprecsim  
 19797 \let\succsim\textsuccsim  
 19798 \let\nprec\textnprec  
 19799 \let\nsucc\textnsucc  
 19800 \let\subset\textsubset  
 19801 \let\supset\textsupset  
 19802 \let\subsetset\textsubsetset  
 19803 \let\supsetset\textsupsetset  
 19804 \let\subsepeq\textsubsepeq  
 19805 \let\supseteq\textsupseteq  
 19806 \let\subsetsepeq\textsubsetsepeq  
 19807 \let\supseteq\textsupseteq  
 19808 \let\subsetneq\textsubsetneq

19809  $\backslash\text{let}\backslash\text{supsetneq}\backslash\text{textsuptneq}$   
19810  $\backslash\text{let}\backslash\text{cupdot}\backslash\text{textcupdot}$   
19811  $\backslash\text{let}\backslash\text{cupplus}\backslash\text{textcupplus}$   
19812  $\backslash\text{let}\backslash\text{sqsubset}\backslash\text{textsqssubset}$   
19813  $\backslash\text{let}\backslash\text{sqsupset}\backslash\text{textsqsusupset}$   
19814  $\backslash\text{let}\backslash\text{sqsubsest}\backslash\text{textsqsusubsest}$   
19815  $\backslash\text{let}\backslash\text{sqsupseteq}\backslash\text{textsqsusupseteq}$   
19816  $\backslash\text{let}\backslash\text{sqcap}\backslash\text{textsqqcap}$   
19817  $\backslash\text{let}\backslash\text{sqcup}\backslash\text{textsqqcup}$   
19818  $\backslash\text{let}\backslash\text{oplus}\backslash\text{textoplus}$   
19819  $\backslash\text{let}\backslash\text{ominus}\backslash\text{textominus}$   
19820  $\backslash\text{let}\backslash\text{otimes}\backslash\text{textotimes}$   
19821  $\backslash\text{let}\backslash\text{oslash}\backslash\text{textoslash}$   
19822  $\backslash\text{let}\backslash\text{odot}\backslash\text{textodot}$   
19823  $\backslash\text{let}\backslash\text{circledcirc}\backslash\text{textcircledcirc}$   
19824  $\backslash\text{let}\backslash\text{circledast}\backslash\text{textcircledast}$   
19825  $\backslash\text{let}\backslash\text{circleddash}\backslash\text{textcircleddash}$   
19826  $\backslash\text{let}\backslash\text{boxplus}\backslash\text{textboxplus}$   
19827  $\backslash\text{let}\backslash\text{boxminus}\backslash\text{textboxminus}$   
19828  $\backslash\text{let}\backslash\text{boxtimes}\backslash\text{textboxtimes}$   
19829  $\backslash\text{let}\backslash\text{boxdot}\backslash\text{textboxdot}$   
19830  $\backslash\text{let}\backslash\text{vdash}\backslash\text{textvdash}$   
19831  $\backslash\text{let}\backslash\text{dashv}\backslash\text{textdashv}$   
19832  $\backslash\text{let}\backslash\text{top}\backslash\text{texttop}$   
19833  $\backslash\text{let}\backslash\text{bot}\backslash\text{textbot}$   
19834  $\backslash\text{let}\backslash\text{vDash}\backslash\text{textvDash}$   
19835  $\backslash\text{let}\backslash\text{models}\backslash\text{textmodels}$   
19836  $\backslash\text{let}\backslash\text{Vdash}\backslash\text{textVdash}$   
19837  $\backslash\text{let}\backslash\text{Vvdash}\backslash\text{textVvdash}$   
19838  $\backslash\text{let}\backslash\text{VDash}\backslash\text{textVDash}$   
19839  $\backslash\text{let}\backslash\text{nvdash}\backslash\text{textnvdash}$   
19840  $\backslash\text{let}\backslash\text{nvDash}\backslash\text{textnvDash}$   
19841  $\backslash\text{let}\backslash\text{nVDash}\backslash\text{textnVDash}$   
19842  $\backslash\text{let}\backslash\text{lhs}\backslash\text{textrhs}$   
19843  $\backslash\text{let}\backslash\text{rhd}\backslash\text{textrhd}$   
19844  $\backslash\text{let}\backslash\text{unlhd}\backslash\text{textunlhd}$   
19845  $\backslash\text{let}\backslash\text{unrhd}\backslash\text{textunrhd}$   
19846  $\backslash\text{let}\backslash\text{multimapdotbothA}\backslash\text{textmultimapdotbothA}$   
19847  $\backslash\text{let}\backslash\text{multimapdotbothB}\backslash\text{textmultimapdotbothB}$   
19848  $\backslash\text{let}\backslash\text{multimap}\backslash\text{textmultimap}$   
19849  $\backslash\text{let}\backslash\text{veebar}\backslash\text{textveebar}$   
19850  $\backslash\text{let}\backslash\text{barwedge}\backslash\text{textbarwedge}$   
19851  $\backslash\text{let}\backslash\text{star}\backslash\text{textstar}$   
19852  $\backslash\text{let}\backslash\text{divideontimes}\backslash\text{textdivideontimes}$   
19853  $\backslash\text{let}\backslash\text{bowtie}\backslash\text{textbowtie}$   
19854  $\backslash\text{let}\backslash\text{ltimes}\backslash\text{texltrtimes}$   
19855  $\backslash\text{let}\backslash\text{rtimes}\backslash\text{textrtimes}$   
19856  $\backslash\text{let}\backslash\text{leftthreetimes}\backslash\text{textleftthreetimes}$   
19857  $\backslash\text{let}\backslash\text{rightthreetimes}\backslash\text{textrightthreetimes}$   
19858  $\backslash\text{let}\backslash\text{backsimeq}\backslash\text{textbacksimeq}$   
19859  $\backslash\text{let}\backslash\text{curlyvee}\backslash\text{textcurlyvee}$   
19860  $\backslash\text{let}\backslash\text{curlywedge}\backslash\text{textcurlywedge}$   
19861  $\backslash\text{let}\backslash\text{Subset}\backslash\text{textSubset}$   
19862  $\backslash\text{let}\backslash\text{Supset}\backslash\text{textSupset}$   
19863  $\backslash\text{let}\backslash\text{Cap}\backslash\text{textCap}$   
19864  $\backslash\text{let}\backslash\text{Cup}\backslash\text{textCup}$   
19865  $\backslash\text{let}\backslash\text{pitchfork}\backslash\text{textpitchfork}$

19866 \let\lessdot\textlessdot  
 19867 \let\gtrdot\textgtrdot  
 19868 \let\lll\textlll  
 19869 \let\ggg\textggg  
 19870 \let\lesseqgtr\textlesseqgtr  
 19871 \let\gtreqless\textgtreqless  
 19872 \let\curlyeqprec\textcurlyeqprec  
 19873 \let\curlyeqsucc\textcurlyeqsucc  
 19874 \let\npreccurlyeq\textnpreccurlyeq  
 19875 \let\nsucccurlyeq\textnsucccurlyeq  
 19876 \let\nqsubseteq\textnqsubseteq  
 19877 \let\nqsupseteq\textnqsupseteq  
 19878 \let\sqsubsetneq\textsqsubsetneq  
 19879 \let\sqsupsetneq\textsqsupsetneq  
 19880 \let\lnsim\textlnsim  
 19881 \let\gnsim\textgnsim  
 19882 \let\precnsim\textprecnsim  
 19883 \let\succnsim\textsuccnsim  
 19884 \let\ntriangleleft\textntriangleleft  
 19885 \let\ntriangleright\textntriangleright  
 19886 \let\ntrianglelefteq\textntrianglelefteq  
 19887 \let\ntrianglerighteq\textntrianglerighteq  
 19888 \let\vdots\textvdots  
 19889 \let\cdots\textcdots  
 19890 \let\udots\textudots  
 19891 \let\ddots\textddots  
 19892 \let\barin\textbarin  
 19893 \let\diameter\textdiameter  
 19894 \let\backneg\textbackneg  
 19895 \let\invbackneg\textinvbackneg  
 19896 \let\clock\textclock  
 19897 \let\ulcorner\textulcorner  
 19898 \let\urcorner\texturcorner  
 19899 \let\llcorner\textllcorner  
 19900 \let\lrcorner\textlrcorner  
 19901 \let\frown\textfrown  
 19902 \let\smile\textsmile  
 19903 \let\Keyboard\textKeyboard  
 19904 \let\langle\textlangle  
 19905 \let\rangle\textrangle  
 19906 \let\APLinv\textAPLinv  
 19907 \let\notslash\textnotslash  
 19908 \let\notbackslash\textnotbackslash  
 19909 \let\boxslash\textboxslash  
 19910 \let\backslash\textbackslash  
 19911 \let\APLleftarrowbox\textAPLleftarrowbox  
 19912 \let\APLrightarrowbox\textAPLrightarrowbox  
 19913 \let\APLuparrowbox\textAPLuparrowbox  
 19914 \let\APLdownarrowbox\textAPLdownarrowbox  
 19915 \let\APLinput\textAPLinput  
 19916 \let\Request\textRequest  
 19917 \let\bbslash\textbbslash  
 19918 \let\bigtriangleup\textbigtriangleup  
 19919 \let\triangleright\texttriangleright  
 19920 \let\bigtriangledown\textbigtriangledown  
 19921 \let\triangleleft\texttriangleleft  
 19922 \let\diamond\textdiamond

19923 \let\lozenge\textlozenge  
 19924 \let\openbullet\textopenbullet  
 19925 \let\boxbar\textboxbar  
 19926 \let\bigcircle\textbigcircle  
 19927 \let\Cloud\textCloud  
 19928 \let\FiveStar\textFiveStar  
 19929 \let\FiveStarOpen\textFiveStarOpen  
 19930 \let\Phone\textPhone  
 19931 \let\Checkedbox\textCheckedbox  
 19932 \let\Crossedbox\textCrossedbox  
 19933 \let\Coffeecup\textCoffeecup  
 19934 \let\HandCuffLeft\textHandCuffLeft  
 19935 \let\HandCuffRight\textHandCuffRight  
 19936 \let\HandLeft\textHandLeft  
 19937 \let\HandRight\textHandRight  
 19938 \let\Radioactivity\textRadioactivity  
 19939 \let\Biohazard\textBiohazard  
 19940 \let\Ankh\textAnkh  
 19941 \let\Yinyang\textYinyang  
 19942 \let\frownie\textfrownie  
 19943 \let\smiley\textsmiley  
 19944 \let\blacksmiley\textblacksmiley  
 19945 \let\sun\textsun  
 19946 \let\leftmoon\textleftmoon  
 19947 \let\rightmoon\textrightmoon  
 19948 \let\mercury\textmercury  
 19949 \let\earth\textearth  
 19950 \let\male\textmale  
 19951 \let\jupiter\textjupiter  
 19952 \let\saturn\textsaturn  
 19953 \let\uranus\texturanus  
 19954 \let\neptune\textneptune  
 19955 \let\pluto\textpluto  
 19956 \let\aries\textaries  
 19957 \let\taurus\texttaurus  
 19958 \let\gemini\textgemini  
 19959 \let\cancer\textcancer  
 19960 \let\leo\textleo  
 19961 \let\virgo\textvirgo  
 19962 \let\libra\textlibra  
 19963 \let\scorpio\textscorpio  
 19964 \let\sagittarius\textsagittarius  
 19965 \let\capricorn\textcapricorn  
 19966 \let\aquarius\textaquarius  
 19967 \let\pisces\textpisces  
 19968 \let\quarternote\textquarternote  
 19969 \let\twonotes\texttwonotes  
 19970 \let\sixteenthnote\textsixteenthnote  
 19971 \let\flat\textflat  
 19972 \let\natural\textnatural  
 19973 \let\sharp\textsharp  
 19974 \let\recycle\textrecycle  
 19975 \let\Wheelchair\textWheelchair  
 19976 \let\Flag\textFlag  
 19977 \let\ds\textds  
 19978 \let\dsmedical\textdsmedical  
 19979 \let\dsjuridical\textdsjuridical

19980 \let\dschemical\textdschemical  
 19981 \let\dsbiological\textdsbiological  
 19982 \let\dscommercial\textdscommercial  
 19983 \let\manstar\textmanstar  
 19984 \let\danger\textdanger  
 19985 \let\FemaleFemale\textFemaleFemale  
 19986 \let\MaleMale\textMaleMale  
 19987 \let\FemaleMale\textFemaleMale  
 19988 \let\Hermaphrodite\textHermaphrodite  
 19989 \let\SunCload\textSunCload  
 19990 \let\Rain\textRain  
 19991 \let\noway\textnoway  
 19992 \let\Mountain\textMountain  
 19993 \let\Tent\textTent  
 19994 \let\ScissorRight\textScissorRight  
 19995 \let\ScissorRightBrokenTop\textScissorRightBrokenTop  
 19996 \let\ScissorHollowRight\textScissorHollowRight  
 19997 \let\PhoneHandset\textPhoneHandset  
 19998 \let\Tape\textTape  
 19999 \let\Plane\textPlane  
 20000 \let\Envelope\textEnvelope  
 20001 \let\Peace\textPeace  
 20002 \let\Writinghand\textWritinghand  
 20003 \let\PencilRightDown\textPencilRightDown  
 20004 \let\PencilRight\textPencilRight  
 20005 \let\PencilRightUp\textPencilRightUp  
 20006 \let\NibRight\textNibRight  
 20007 \let\NibSolidRight\textNibSolidRight  
 20008 \let\Checkmark\textCheckmark  
 20009 \let\CheckmarkBold\textCheckmarkBold  
 20010 \let\XSolid\textXSolid  
 20011 \let\XSolidBold\textXSolidBold  
 20012 \let\XSolidBrush\textXSolidBrush  
 20013 \let\CrossOutline\textCrossOutline  
 20014 \let\Plus\textPlus  
 20015 \let\PlusThinCenterOpen\textPlusThinCenterOpen  
 20016 \let\PlusCenterOpen\textPlusCenterOpen  
 20017 \let\Cross\textCross  
 20018 \let\CrossOpenShadow\textCrossOpenShadow  
 20019 \let\CrossOutline\textCrossOutline  
 20020 \let\CrossMaltese\textCrossMaltese  
 20021 \let\DavidStar\textDavidStar  
 20022 \let\FourAsterisk\textFourAsterisk  
 20023 \let\JackStar\textJackStar  
 20024 \let\JackStarBold\textJackStarBold  
 20025 \let\ClowerTips\textClowerTips  
 20026 \let\FourStar\textFourStar  
 20027 \let\FourStarOpen\textFourStarOpen  
 20028 \let\FiveStarOpen\textFiveStarOpen  
 20029 \let\FiveStarOpenCircled\textFiveStarOpenCircled  
 20030 \let\FiveStarCenterOpen\textFiveStarCenterOpen  
 20031 \let\FiveStarOpenDotted\textFiveStarOpenDotted  
 20032 \let\FiveStarOutline\textFiveStarOutline  
 20033 \let\FiveStarOutlineHeavy\textFiveStarOutlineHeavy  
 20034 \let\FiveStarConvex\textFiveStarConvex  
 20035 \let\FiveStarShadow\textFiveStarShadow  
 20036 \let\AsteriskBold\textAsteriskBold

20037 \let\AsteriskCenterOpen\textAsteriskCenterOpen  
 20038 \let\EightStar\textEightStar  
 20039 \let\EightStarConvex\textEightStarConvex  
 20040 \let\SixStar\textSixStar  
 20041 \let\EightStar\textEightStar  
 20042 \let\EightStarBold\textEightStarBold  
 20043 \let\TwelveStar\textTwelveStar  
 20044 \let\SixteenStarLight\textSixteenStarLight  
 20045 \let\SixFlowerPetalRemoved\textSixFlowerPetalRemoved  
 20046 \let\SixFlowerOpenCenter\textSixFlowerOpenCenter  
 20047 \let\Asterisk\textAsterisk  
 20048 \let\SixFlowerAlternate\textSixFlowerAlternate  
 20049 \let\FiveFlowerPetal\textFiveFlowerPetal  
 20050 \let\FiveFlowerOpen\textFiveFlowerOpen  
 20051 \let\EightFlowerPetal\textEightFlowerPetal  
 20052 \let\SunshineOpenCircled\textSunshineOpenCircled  
 20053 \let\SixFlowerAltPetal\textSixFlowerAltPetal  
 20054 \let\SnowflakeChevron\textSnowflakeChevron  
 20055 \let\Snowflake\textSnowflake  
 20056 \let\SnowflakeChevronBold\textSnowflakeChevronBold  
 20057 \let\Sparkle\textSparkle  
 20058 \let\SparkleBold\textSparkleBold  
 20059 \let\AsteriskRoundedEnds\textAsteriskRoundedEnds  
 20060 \let\EightFlowerPetalRemoved\textEightFlowerPetalRemoved  
 20061 \let\EightAsterisk\textEightAsterisk  
 20062 \let\CircleShadow\textCircleShadow  
 20063 \let\SquareShadowBottomRight\textSquareShadowBottomRight  
 20064 \let\SquareTopRight\textSquareTopRight  
 20065 \let\SquareCastShadowBottomRight\textSquareCastShadowBottomRight  
 20066 \let\SquareCastShadowTopRight\textSquareCastShadowTopRight  
 20067 \let\DiamandSolid\textDiamandSolid  
 20068 \let\RectangleThin\textRectangleThin  
 20069 \let\Rectangle\textRectangle  
 20070 \let\RectangleBold\textRectangleBold  
 20071 \let\perp\textperp  
 20072 \let\veedot\textveedot  
 20073 \let\wedgedot\textwedgedot  
 20074 \let\leftspoon\textleftspoon  
 20075 \let\lbrackdbl\textlbrackdbl  
 20076 \let\rbrackdbl\textrbrackdbl  
 20077 \let\circlearrowleft\textcirclearrowleft  
 20078 \let\circlearrowright\textcirclearrowright  
 20079 \let\longleftarrow\textlongleftarrow  
 20080 \let\longrightarrow\textlongrightarrow  
 20081 \let\longleftarrow\textlongleftarrow  
 20082 \let\Longleftarrow\textLongleftarrow  
 20083 \let\Longrightarrow\textLongrightarrow  
 20084 \let\Longleftarrow\textLongleftarrow  
 20085 \let\longmapsto\textlongmapsto  
 20086 \let\Longmapsfrom\textLongmapsfrom  
 20087 \let\Longmapsto\textLongmapsto  
 20088 \let\nwsearrow\textnwsearrow  
 20089 \let\neswarrow\textneswarrow  
 20090 \let\lhooknarrow\textlhooknarrow  
 20091 \let\rhooknarrow\texthooknarrow  
 20092 \let\lhooksearrow\textlhooksearrow  
 20093 \let\rhooksearrow\texthooksearrow

20094 `\let\rcurvearrowne\textrcurvearrowne`  
 20095 `\let\lcurvearrowse\textlcurvearrowse`  
 20096 `\let\lcurvearrowsw\textlcurvearrowsw`  
 20097 `\let\rcurvearrowse\textrcurvearrowse`  
 20098 `\let\lcurvearrowdown\textlcurvearrowdown`  
 20099 `\let\rcurvearrowdown\textrcurvearrowdown`  
 20100 `\let\rcurvearrowleft\textrcurvearrowleft`  
 20101 `\let\rcurvearrowright\textrcurvearrowright`  
 20102 `\let\leftrightharpoon\textleftrightharpoon`  
 20103 `\let\rightleftharpoon\textrightleftharpoon`  
 20104 `\let\updownharpoonrightleft\textupdownharpoonrightleft`  
 20105 `\let\updownharpoonleftright\textupdownharpoonleftright`  
 20106 `\let\leftleftharpoons\textleftleftharpoons`  
 20107 `\let\upupharpoons\textupupharpoons`  
 20108 `\let\righttrightharpoons\textrighttrightharpoons`  
 20109 `\let\downdownharpoons\textdowndownharpoons`  
 20110 `\let\leftbarharpoon\textleftbarharpoon`  
 20111 `\let\barleftharpoon\textbarleftharpoon`  
 20112 `\let\rightbarharpoon\textrightbarharpoon`  
 20113 `\let\barriightharpoon\textbarriightharpoon`  
 20114 `\let\updownharpoons\textupdownharpoons`  
 20115 `\let\downupharpoons\textdownupharpoons`  
 20116 `\let\obar\textobar`  
 20117 `\let\obslash\textobslash`  
 20118 `\let\obot\textobot`  
 20119 `\let\olessthan\textolessthan`  
 20120 `\let\ogreaterthan\textogreaterthan`  
 20121 `\let\boxslash\textboxslash`  
 20122 `\let\boxbslash\textboxbslash`  
 20123 `\let\boxast\textboxast`  
 20124 `\let\boxcircle\textboxcircle`  
 20125 `\let\boxbox\textboxbox`  
 20126 `\let\multimap\textmultimap`  
 20127 `\let\shuffle\textshuffle`  
 20128 `\let\uplus\textuplus`  
 20129 `\let\bigdoublewedge\textbigdoublewedge`  
 20130 `\let\bigdoublevee\textbigdoublevee`  
 20131 `\let\Join\textJoin`  
 20132 `\let\circplus\textcircplus`  
 20133 `\let\minusdot\textminusdot`  
 20134 `\let\dotimes\textdotimes`  
 20135 `\let\dtimes\textdtimes`  
 20136 `\let\odiv\textodiv`  
 20137 `\let\invneg\textinvneg`  
 20138 `\let\squdoublecap\textsqudoublecap`  
 20139 `\let\capdot\textcapdot`  
 20140 `\let\squdoublecup\textsqudoublecup`  
 20141 `\let\doublewedge\textdoublewedge`  
 20142 `\let\doublevee\textdoublevee`  
 20143 `\let\doublebarwedge\textdoublebarwedge`  
 20144 `\let\veedoublebar\textveedoublebar`  
 20145 `\let\eqdot\texteqdot`  
 20146 `\let\coloncolonequals\textcoloncolonequals`  
 20147 `\let\leqslant\textleqslant`  
 20148 `\let\geqslant\textgeqslant`  
 20149 `\let\lessapprox\textlessapprox`  
 20150 `\let\gtrapprox\textgtrapprox`

20151 \let\lneq\textlneq  
 20152 \let\gneq\textgneq  
 20153 \let\lnapprox\textlnapprox  
 20154 \let\gnapprox\textgnapprox  
 20155 \let\lesseqqgtr\textlesseqqgtr  
 20156 \let\gtreqqless\textgtreqqless  
 20157 \let\eqslantless\texteqslantless  
 20158 \let\eqslantgtr\texteqslantgtr  
 20159 \let\leftslice\textleftslice  
 20160 \let\rightslice\textrightslice  
 20161 \let\preceq\textpreceq  
 20162 \let\succeq\textsucceq  
 20163 \let\precneq\textprecneq  
 20164 \let\succneq\textsuccneq  
 20165 \let\preceqq\textpreceqq  
 20166 \let\succeqq\textsucceqq  
 20167 \let\precneqq\textprecneqq  
 20168 \let\succneqq\textsuccneqq  
 20169 \let\precapprox\textprecapprox  
 20170 \let\precnapprox\textprecnapprox  
 20171 \let\succnapprox\textsuccnapprox  
 20172 \let\subseteqq\textsubseteqq  
 20173 \let\supseteqq\textsupseteqq  
 20174 \let\dashV\textdashV  
 20175 \let\Dashv\textDashv  
 20176 \let\DashV\textDashV  
 20177 \let\upmodels\textupmodels  
 20178 \let\upmodels\textupmodels  
 20179 \let\upspoon\textupspoon  
 20180 \let\interleave\textinterleave  
 20181 \let\slash\textslash  
 20182 \let\jinferior\textjinferior  
 20183 \let\slashdiv\textslashdiv  
 20184 \let\fivedots\textfivedots  
 20185 \let\oo\textoo  
 20186 \let\GaPa\textGaPa  
 20187 \let\HaPa\textHaPa  
 20188 \let\ViPa\textViPa  
 20189 \let\AcPa\textAcPa  
 20190 \let\SePa\textSePa  
 20191 \let\ZwPa\textZwPa  
 20192 \let\fullnote\textfullnote  
 20193 \let\halfnote\texthalfnote  
 20194 \let\Vier\textVier  
 20195 \let\Acht\textAcht  
 20196 \let\Sech\textSech  
 20197 \let\Zwdr\textZwdr  
 20198 \let\Mundus\textMundus  
 20199 \let\Womanface\textWomanface  
 20200 \let\Fire\textFire  
 20201 \let\Bicycle\textBicycle  
 20202 \let\Gentsroom\textGentsroom  
 20203 \let\Ladiesroom\textLadiesroom  
 20204 \let\ccnc\textccnc  
 20205 \let\ccsa\textccsa  
 20206 \let\CircledA\textCircledA  
 20207 \let\Info\textInfo



20208 \let\neg\textneg  
 20209 \let\times\texttimes  
 20210 \let\div\textdiv  
 20211 \let\pm\textpm  
 20212 \let\cdot\textcdot  
 20213 }% \psdmapshortnames  
 20214 \newcommand\*{\psdaliasnames}{%  
 20215 \let\epsdice\HyPsd@DieFace  
 20216 \let\fcdice\HyPsd@DieFace  
 20217 \let\MoonPha\HyPsd@MoonPha  
 20218 \let\mathdollar\textdollar  
 20219 \let\binampersand\textampersand  
 20220 \let\with\textampersand  
 20221 \let\mathunderscore\textunderscore  
 20222 \let\textvertline\textbar  
 20223 \let\mathsterling\textsterling  
 20224 \let\pounds\textsterling  
 20225 \let\brokenvert\textbrokenbar  
 20226 \let\mathsection\textsection  
 20227 \let\S\textsection  
 20228 \let\mathparagraph\textparagraph  
 20229 \let\vartimes\textmultiply  
 20230 \let\eth\dh  
 20231 \let\crossd\textcrd  
 20232 \let\textbard\textcrd  
 20233 \let\bard\textcrd  
 20234 \let\textcrh\texthbar  
 20235 \let\crossh\texthbar  
 20236 \let\planck\texthbar  
 20237 \let\eng\ng  
 20238 \let\engma\ng  
 20239 \let\crossb\textcrb  
 20240 \let\textbarb\textcrb  
 20241 \let\barb\textcrb  
 20242 \let\hv\texthvlig  
 20243 \let\hausak\texthtk  
 20244 \let\crossnilambda\textcrlambda  
 20245 \let\barlambda\textcrlambda  
 20246 \let\lambdabar\textcrlambda  
 20247 \let\lambdaslash\textcrlambda  
 20248 \let\textnrleg\textPUnrleg  
 20249 \let\textpipevar\textpipe  
 20250 \let\textdoublepipevar\textdoublepipe  
 20251 \let\textdoublebarpipevar\textdoublebarpipe  
 20252 \let\textcrg\textgslash  
 20253 \let\textdblig\textPUdblig  
 20254 \let\textqplig\textPUqplig  
 20255 \let\textcentoldstyle\textslashc  
 20256 \let\textbarc\textslashc  
 20257 \let\inva\textturna  
 20258 \let\vara\textscripta  
 20259 \let\invscripta\textturnscripta  
 20260 \let\rotvara\textturnscripta  
 20261 \let\hookb\texthtb  
 20262 \let\hausab\texthtb  
 20263 \let\varopeno\textopeno  
 20264 \let\curlyc\textctc

20265 \let\taild\textrtaild  
 20266 \let\hookd\texthtd  
 20267 \let\hausad\texthtd  
 20268 \let\er\textrhooschwa  
 20269 \let\epsi\textniepsilon  
 20270 \let\hookrepsilon\texthookrepsilon  
 20271 \let\closedrepsilon\textcloserepsilon  
 20272 \let\barj\textbardotlessj  
 20273 \let\hookg\texthtg  
 20274 \let\varg\textscriptg  
 20275 \let\vod\textipagamma  
 20276 \let\invh\textturnh  
 20277 \let\udesc\textturnh  
 20278 \let\hookh\textthh  
 20279 \let\voicedh\textthh  
 20280 \let\hookheng\textthheng  
 20281 \let\ibar\textbari  
 20282 \let\vari\textniota  
 20283 \let\tildel\texttilde  
 20284 \let\latfric\textbeltl  
 20285 \let\tail\textrtail  
 20286 \let\lz\textlyoghlig  
 20287 \let\invm\textturnm  
 20288 \let\rotm\textturnm  
 20289 \let\legm\textturnmleg  
 20290 \let\labdentals\textltailm  
 20291 \let\emgma\textltailm  
 20292 \let\nj\textltailn  
 20293 \let\enya\textltailn  
 20294 \let\tailn\textrtailn  
 20295 \let\closedniomega\textcloseomega  
 20296 \let\varomega\textcloseomega  
 20297 \let\invr\textturnr  
 20298 \let\rotr\textturnr  
 20299 \let\invlegr\textturnlonglegr  
 20300 \let\tailinvr\textturnrrtail  
 20301 \let\legr\textlonglegr  
 20302 \let\tailr\textrtailr  
 20303 \let\flapr\textfishhookr  
 20304 \let\flap\textfishhookr  
 20305 \let\tails\textrtails  
 20306 \let\textscriptv\textesh  
 20307 \let\curlyesh\textctesh  
 20308 \let\clickt\textturnt  
 20309 \let\tailt\textrtailt  
 20310 \let\ubar\textbaru  
 20311 \let\rotOmega\textniupsilon  
 20312 \let\invv\textturnv  
 20313 \let\pwedge\textturnv  
 20314 \let\invw\textturnw  
 20315 \let\rotw\textturnw  
 20316 \let\invy\textturny  
 20317 \let\roty\textturny  
 20318 \let\tailz\textrtailz  
 20319 \let\curlyz\textctz  
 20320 \let\curlyyogh\textctyogh  
 20321 \let\ejective\textglotstop

20322 \let\glottal\textglotstop  
 20323 \let\reveject\textrevglotstop  
 20324 \let\clickc\textstretchc  
 20325 \let\textstretchcvar\textstretchc  
 20326 \let\clickb\textbullseye  
 20327 \let\textObullseye\textbullseye  
 20328 \let\textctjvar\textctj  
 20329 \let\textturnsck\textturnk  
 20330 \let\dz\textdzlig  
 20331 \let\tesh\textteshlig  
 20332 \let\digamma\textdigammagreek  
 20333 \let\hardsign\cyrhrdsn  
 20334 \let\softsign\cyrsoftsn  
 20335 \let\textsck\textPUsc  
 20336 \let\textscm\textPUscm  
 20337 \let\textscp\textPUscp  
 20338 \let\textrevscr\textPUrevscr  
 20339 \let\textrhooca\textPURhooka  
 20340 \let\textrhooke\textPURhooka  
 20341 \let\textrhookepsilon\textPURhookepsilon  
 20342 \let\textrhookepsilon\textPURhookepsilon  
 20343 \let\textdoublevertline\textbardbl  
 20344 \let\dag\textdagger  
 20345 \let\ddagger\textdaggerdbl  
 20346 \let\ddag\textddag  
 20347 \let\mathellipsis\textellipsis  
 20348 \let\bindnasrepma\textinvamp  
 20349 \let\parr\textinvamp  
 20350 \let\textglobrise\textnearrow  
 20351 \let\textglobfall\textsearrow  
 20352 \let\Lightning\textlightning  
 20353 \let\dashedleftarrow\textdashleftarrow  
 20354 \let\dashedrightarrow\textdashrightarrow  
 20355 \let\varnothing\textemptyset  
 20356 \let\owns\textni  
 20357 \let\varangle\textsphericalangle  
 20358 \let\Anglesign\textsphericalangle  
 20359 \let\downtherefore\textbecause  
 20360 \let\textdotdiv\textdotminus  
 20361 \let\wreath\textwr  
 20362 \let\Doteq\textdoteqdot  
 20363 \let\corresponds\texthateq  
 20364 \let\varoplus\textoplus  
 20365 \let\varominus\textominus  
 20366 \let\varotimes\textotimes  
 20367 \let\varoslash\textoslash  
 20368 \let\varodot\textodot  
 20369 \let\ocirc\textcircledcirc  
 20370 \let\varocircle\textcircledcirc  
 20371 \let\varoast\textcircledast  
 20372 \let\oasterisk\textcircledast  
 20373 \let\rightvdash\textvdash  
 20374 \let\leftvdash\textdashv  
 20375 \let\downvdash\texttop  
 20376 \let\models\textvDash  
 20377 \let\rightmodels\textvDash  
 20378 \let\rightVdash\textVdash

20379 \let\rightModels\textVDash  
 20380 \let\lessclosed\textlhd  
 20381 \let\triangleleft\textlhd  
 20382 \let\vartriangleleft\textlhd  
 20383 \let\gtrclosed\textrhd  
 20384 \let\triangleright\textrhd  
 20385 \let\vartriangleright\textrhd  
 20386 \let\leqclosed\textunlhd  
 20387 \let\gtrclosed\textunrhd  
 20388 \let\varcurlyvee\textcurlyvee  
 20389 \let\varcurlywedge\textcurlywedge  
 20390 \let\doublecap\textCap  
 20391 \let\doublecup\textCup  
 20392 \let\varsqsubsetneq\textsqssubsetneq  
 20393 \let\varsqsupsetneq\textsqsupsetneq  
 20394 \let\ngtrclosed\textntriangleleft  
 20395 \let\ngtrclosed\textntriangleright  
 20396 \let\Clocklogo\textclock  
 20397 \let\varparallelinv\textbbslash  
 20398 \let\Telefon\textPhone  
 20399 \let\rightpointleft\textHandLeft  
 20400 \let\leftpointright\textHandRight  
 20401 \let\PointingHand\textHandRight  
 20402 \let\Radiation\textRadioactivity  
 20403 \let\Frowny\textfrownie  
 20404 \let\Smiley\textsmiley  
 20405 \let\Mercury\textmercury  
 20406 \let\textfemale\textPUfemale  
 20407 \let\female\textPUfemale  
 20408 \let\venus\textPUfemale  
 20409 \let\Venus\textPUfemale  
 20410 \let\Earth\textearth  
 20411 \let\mars\textmale  
 20412 \let\Mars\textmale  
 20413 \let\Jupiter\textjupiter  
 20414 \let\Saturn\textsaturn  
 20415 \let\Uranus\texturanus  
 20416 \let\Neptune\textneptune  
 20417 \let\Pluto\textpluto  
 20418 \let\Aries\textaries  
 20419 \let\Taurus\texttaurus  
 20420 \let\Gemini\textgemini  
 20421 \let\Cancer\textcancer  
 20422 \let\Leo\textleo  
 20423 \let\Virgo\textvirgo  
 20424 \let\Libra\textlibra  
 20425 \let\Scorpio\textscorpio  
 20426 \let\Sagittarius\textsagittarius  
 20427 \let\Capricorn\textcapricorn  
 20428 \let\Aquarius\textaquarius  
 20429 \let\Pisces\textpisces  
 20430 \let\spadesuit\textspadesuitblack  
 20431 \let\heartsuit\textheartsuitwhite  
 20432 \let\diamondsuit\textdiamondsuitwhite  
 20433 \let\clubsuit\textclubsuitblack  
 20434 \let\eighthnote\textmusicalnote  
 20435 \let\VarFlag\textFlag

```

20436 \let\textxswup\textdsmilitary
20437 \let\textuncrfemale\textPUuncrfemale
20438 \let\Football\textSoccerBall
20439 \let\Cutright\textScissorRightBrokenBottom
20440 \let\Rightsscissors\textScissorRight
20441 \let\Letter\textEnvelope
20442 \let\checkmark\textCheckmark
20443 \let\Davidstar\textDavidStar
20444 \let\textvarobar\textobar
20445 \let\circledbslash\textobslash
20446 \let\obackslash\textobslash
20447 \let\varobslash\textobslash
20448 \let\odplus\textobot
20449 \let\varolessthan\textolessthan
20450 \let\varogreaterthan\textogreaterthan
20451 \let\divdot\textminusdot
20452 \let\doublesqcap\textsqdoublecap
20453 \let\doublesqcup\textsqdoublecup
20454 \let\merge\textdoublevee
20455 \let\leftVdash\textdashV
20456 \let\leftmodels\textDashv
20457 \let\leftModels\textDashV
20458 \let\varparallel\textsslash
20459 \let\textheng\textPUheng
20460 \let\textlhookfour\textPUlhookfour
20461 \let\textscf\textPUscf
20462 \let\textaoilig\textPUaoilig
20463 \let\Ganz\textfullnote
20464 \let\Halb\texthalfnote
20465 }% \psdaliasnames
20466 </psdextra>

```

## 51 End of file hyccheck.tex

```

20467 <*check>
20468 \typeout{}
20469 \begin{document}
20470 \end{document}
20471 </check>

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