

# 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         \csname ver@\HyC@package.sty\endcsname
39       }%
```

```

40 }%
41 }

```

`\checkcommand` The macro `\checkcommand` parses the next tokens as a L<sup>A</sup>T<sub>E</sub>X 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 L<sup>A</sup>T<sub>E</sub>X'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 \RequirePackage{auxhook}[2009/12/14]
264 \def\Hy@Error{\@PackageError{hyperref}}
265 \def\Hy@Warning{\@PackageWarning{hyperref}}
266 \def\Hy@WarningNoLine{\@PackageWarningNoLine{hyperref}}
267 \def\Hy@Info{\@PackageInfo{hyperref}}
268 \def\Hy@InfoNoLine{\@PackageInfoNoLine{hyperref}}
269 \def\Hy@Message#1{%
270   \GenericWarning{%
271     (hyperref)\@spaces\@spaces\@spaces\@spaces
272   }{%
273     Package hyperref Message: #1\ltx@gobble
274   }%
275 }

```

## 4.2 Version check

\Hy@VersionChecked

```

276 \chardef\Hy@VersionChecked=0 %

```

\Hy@VersionCheck

```

277 \def\Hy@VersionCheck#1{%
278   \begingroup
279   \ltx@ifundefined{ver@hyperref.sty}{%
280     \Hy@Error{%
281       This should not happen!\MessageBreak
282       Missing hyperref version%
283     }\@ehd
284   }{%
285     \ltx@ifundefined{ver@#1}{%
286       \Hy@Error{%
287         This should not happen!\MessageBreak
288         Missing version of '#1'%
289       }\@ehd
290     }{%
291       \def\x##1##2##3{%
292         \expandafter\expandafter\expandafter\Hy@@VersionCheck
293         \expandafter\expandafter\expandafter##2%
294         \csname ver@##3\endcsname##1##1\@nil
295       }%
296       \x{ }\y{hyperref.sty}%
297       \x{ }\z{#1}%
298       \ifx\y\z
299         \else
300         \Hy@Error{%
301           Version mismatch!\MessageBreak
302           * \y: hyperref.sty\MessageBreak
303           * \z: #1%
304         }\@ehd
305       \fi
306     }%
307   }%
308   \endgroup
309   \chardef\Hy@VersionChecked=1 %
310 }

```

\Hy@@VersionCheck

```
311 \def\Hy@@VersionCheck #1#2 #3 #4\@nil{%
312   \def#1{#2 #3}%
313 }
```

### 4.3 Checks with regular expressions

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

```
362 \@ifundefined{AfterBeginDocument}{%
363   \def\AfterBeginDocument{\AtBeginDocument}%
364 }{}%
```

`\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.

```
365 \def\Hy@AtBeginDocument{%
366   \ltx@LocalAppendToMacro\Hy@AtBeginDocumentHook
367 }
```

`\Hy@AtEndOfPackage`

```
368 \def\Hy@AtEndOfPackage{%
369   \ltx@LocalAppendToMacro\Hy@AtEndOfPackageHook
370 }
```

`\Hy@AtBeginDocumentHook`

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

`\Hy@AtEndOfPackageHook`

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

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

```
373 \AtEndOfPackage{%
374   \Hy@AtEndOfPackageHook
375   \let\Hy@AtEndOfPackageHook\@undefined
376   \AfterBeginDocument{%
377     \Hy@AtBeginDocumentHook}%
378   \let\Hy@AtBeginDocumentHook\@undefined
379 }%
380 }
```

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

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

## 4.5 Switches

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

```

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

```

Defaults for the switches are now set.

```

433 \Hy@backreffalse
434 \Hy@bookmarksnumberedfalse
435 \Hy@bookmarksopenfalse
436 \Hy@bookmarksstrue
437 \Hy@breaklinksfalse
438 \Hy@pdfcenterwindowfalse
439 \Hy@CJKbookmarksfalse
440 \Hy@destlabelfalse
441 \Hy@pdfescapeformfalse
442 \Hy@hyperfiguresfalse
443 \Hy@pdffitwindowfalse
444 \Hy@hyperfootnotetrue
445 \Hy@hyperindextrue

```



```

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

```

## 5 Common help macros

\Hy@StepCount

```

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

```

\Hy@GlobalStepCount

```

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

```

```

474 \newdimen\@linkdim
475 \let\Hy@driver\ltx@empty
476 \let\MaybeStopEarly\relax
477 \newcount\Hy@linkcounter
478 \newcount\Hy@pagecounter
479 \Hy@linkcounter0
480 \Hy@pagecounter0

```

### 5.1 Macros for recursions

```

481 \let\Hy@ReturnEnd\@empty
482 \long\def\Hy@ReturnAfterFiFiEnd#1\fi#2\Hy@ReturnEnd{\fi\fi#1}
483 \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.

\Hy@safe@activesfalse

```

484 \def\Hy@safe@activetrue{\csname @safe@activetrue\endcsname}
485 \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`

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

```

511 \setlength{\dimen@}{#1}%
512 \setlength{\dimen@}{0.99626401\dimen@}%
513 \edef\x{%
514   \toks@{%
515     \the\toks@
516     \strip@pt\dimen@
517   }%
518 } \x
519 \HyCal@scan#2\@nil
520 }%
521 \else
522 \def\hypercalcbp#1{%
523   \strip@pt\dimexpr 0.99626401\dimexpr(#1)\relax\relax
524 }%
525 \def\hypercalcbpdef{\def}%
526 \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 `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 `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  $\text{\TeX}$ , because the tokens have only catcodes 10 until 12.

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

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

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

```
528 \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  $\text{\TeX}$  escape character indeed prints as a normal backslash. Eventually this line can be removed, because this is standard  $\text{\LaTeX}$  behaviour.

```
529 \escapechar'\%
```

From the view of  $\text{\TeX}$  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.

```
530 \edef\0{\string\0}%
531 \edef\1{\string\1}%
532 \edef\2{\string\2}%
533 \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.

```
534 \ifHy@unicode
535 \edef\8{\string\8}%
536 \edef\9{\string\9}%
```

```

537 \fontencoding{PU}%
538 \HyPsd@UTFviii
539 \def\ifpdfstringunicode##1##2{##1}%
540 \else
541 \fontencoding{PD1}%
542 \def\ifpdfstringunicode##1##2{##2}%
543 \fi
544 \let\utf@viii@undeferr\HyPsd@utf@viii@undeferr
545 \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).

```

546 \@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).

```

547 \let\@inmathwarn\HyPsd@inmathwarn

```

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

```

548 \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.

```

549 \let\{\textbraceleft
550 \let\}\textbraceright
551 \let\\\textbackslash
552 \let\#\textnumbersign
553 \let\$\textdollar
554 \let\%\textpercent
555 \let\&\textampersand
556 % \let\~\textasciitilde
557 \let\_ \textunderscore
558 \let\P\textparagraph
559 \let\ldots\textellipsis
560 \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.

```
561 \def\{\pdfstringdefWarn\}%
562 \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.

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

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

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

```

609 \let\footnotesize\@empty
610 \let\huge\@empty
611 \let\large\@empty
612 \let\normalsize\@empty
613 \let\scriptsize\@empty
614 \let\small\@empty
615 \let\tiny\@empty
616 \let\mathversion\@gobble
617 \let\phantom\@gobble
618 \let\vphantom\@gobble
619 \let\hphantom\@gobble

```

### Package pifont.

```

620 \let\ding\HyPsd@ding
621 \let\Cube\HyPsd@DieFace
622 %* \HyPsd@DieFace -> \epsdice (epsdice)
623 %* \HyPsd@DieFace -> \fcdice (hhcount)

```

### Environments.

```

624 \def\begin#1{\csname#1\endcsname}%
625 \def\end#1{\csname end#1\endcsname}%

```

### Package color.

```

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

```

### Upper- and lowercase.

```

627 \def\MakeUppercase{\MakeUppercaseUnsupportedInPdfStrings}%
628 \def\MakeLowercase{\MakeLowercaseUnsupportedInPdfStrings}%

```

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

```

629 \ifHy@psdextra
630 \ifHy@unicode
631 \csname psdmapshortnames\endcsname
632 \csname psdaliasnames\endcsname
633 \fi
634 \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)).

```

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

```

Disable `\cyr`, used in `russianb.ldf`.  
646 `\let\cyr\relax`  
Redefine `\es@roman`, used in `spanish.ldf`.  
647 `\let\es@roman\@Roman`

**Package `german`.**

648 `\let\glqq\textglqq`  
649 `\let\grqq\textgrqq`  
650 `\let\glq\textglq`  
651 `\let\grq\textgrq`  
652 `\let\flqq\textflqq`  
653 `\let\frqq\textfrqq`  
654 `\let\flq\textflq`  
655 `\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}`  
656 `\let\if@mid@expandable\@firstoftwo`

**AMS classes.**

657 `\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.

658 `\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.

659 `\let\label\@gobble`  
660 `\let\index\@gobble`  
661 `\let\glossary\@gobble`  
662 `\let\href\HyPsd@href`  
663 `\let\@mkboth\@gobbletwo`

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

664 `\let\ref\HyPsd@ref`  
665 `\let\pageref\HyPsd@pageref`  
666 `\let\nameref\HyPsd@nameref`  
667 `\let\autoref\HyPsd@autoref`

**Miscellaneous commands.**

668 `\let\leavevmode\@empty`  
669 `\let\mbox\@empty`

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

670 `\def\halign{\pdfstringdefWarn\halign\@gobble}%`  
671 `\let\ignorespaces\HyPsd@ignorespaces`  
672 `\let\Hy@SectionAnchorHref\@gobble`  
673 `\let\ensuremath\@firstofone`



### Patch for cjk bookmarks.

```
674 \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  $\text{\TeX}$ '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`).

```
675 \Hy@pdfstringtrue
676 \pdfstringdefPreHook
```

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

```
677 \HyPsd@LetUnexpandableSpace\space
678 \HyPsd@LetUnexpandableSpace\ %
679 \HyPsd@LetUnexpandableSpace-%
680 \HyPsd@LetUnexpandableSpace\nobreakspace
```

### Package xspace.

```
681 \ltx@ifundefined{@xspace}{%
682 \let\xspace\HyPsd@ITALCORR
683 }{%
684 \let\xspace\HyPsd@XSPACE
685 }%
686 \let\/\HyPsd@ITALCORR
687 \let\bgroup\/%
688 \let\egroup\/%
```

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

```
689 \let\discretionary\@gobbletwo
```

`\@ifstar` is defined in  $\text{\LaTeX}$  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 expandable 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:

```
690 \def\@ifnextchar{\HyPsd@ifnextchar\@ifnextchar}%
691 \def\kernel@ifnextchar{\HyPsd@ifnextchar\kernel@ifnextchar}%
692 \def\new@ifnextchar{\HyPsd@ifnextchar\new@ifnextchar}%
693 \let\@protected@testopt\HyPsd@protected@testopt
```

Support for package 'args':

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

### 6.2.2 Expansion

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

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

**$\text{\csname}$ :** First the string is expanded within a  $\text{\csname}$  and  $\text{\endcsname}$ . Then the command name is converted to characters with catcode 12 by  $\text{\string}$  and the first escape character removed by  $\text{\@gobble}$ . This method has the great *advantage* that stomach tokens that aren't allowed in PDF strings are detected by  $\text{\TeX}$  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.  $\text{\TeX}$  provides no way to catch the error caused by  $\text{\csname}$  or allows to support the user with a descriptive error message. Therefore the experienced user had to enable this behaviour by an option  **$\text{\exactdef}$**  in previous versions less or equal 6.50.

**$\text{\edef}$**  This version uses this standard form for expansion. It is stronger than  $\text{\LaTeX}$ 's  $\text{\protected@edef}$ . 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  $\text{\LaTeX}$  doesn't work within an  $\text{\edef}$ , 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  $\text{\texorpdfstring}$ ). In the most cases unexpandable commands and tokens (math shift, grouping characters) remains. They don't cause an error like with  $\text{\csname}$ . However a PDF reader isn't  $\text{\TeX}$ , 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  $\text{\xdef}$  the  $\text{\Generic...}$  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,  $\text{\pdfstringdef}$  is slow enough).

```
695 \begingroup
696 \let\GenericError\@gobblefour
697 \let\GenericWarning\@gobbletwo
698 \let\GenericInfo\@gobbletwo
```

**Package french.** This fix only works, if  $\text{\GenericError}$  is disabled.

```
699 \ifx\nofrenchguillemets\@undefined
700 \else
701 \nofrenchguillemets
702 \fi
```

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

```
703 \let\Hy@temp\xdef
```

```

704 \let\def\HyPsd@DefCommand
705 \let\gdef\HyPsd@DefCommand
706 \let\edef\HyPsd@DefCommand
707 \let\xdef\HyPsd@DefCommand
708 \let\futurelet\HyPsd@LetCommand
709 \let\let\HyPsd@LetCommand
710 \Hy@temp#1{#2}%
711 \endgroup

```

### 6.2.3 Postprocessing

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

```

712 \ifx#1\@empty
713 \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 item into account, that makes things a little more complicate:

- $\text{\TeX}$  does not accept a space as an undelimited argument, it cancels space tokens while looking for an undelimited argument. Therefore we must protect the spaces now.
- An argument can be a single token or a group of many tokens. And within curly braces tokens aren't 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.

```

714 \HyPsd@ProtectSpaces#1%
715 \let\HyPsd@String\@empty
716 \expandafter\HyPsd@RemoveBraces\expandafter{#1|}%
717 \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.

```

718 \let\HyPsd@SPACEOPTI\relax
719 {%
720 \let\HyPsd@String\@empty
721 \expandafter\HyPsd@CheckCatcodes#1\HyPsd@End
722 \global\let#1\HyPsd@String
723 }%
724 \expandafter\HyPsd@RemoveMask\expandafter
725 |\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.

```

726 \expandafter
727 \HyPsd@Subst\expandafter{\HyPsd@GLYPHERR}{\relax}#1%
728 \let\HyPsd@String\@empty
729 \expandafter\HyPsd@GlyphProcess#1\relax\@empty
730 \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.

```
731 \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.

```

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

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

```

744 \ifHy@unicode
745 \HyPsd@StringSubst{\)}{\80\051}#1%
746 \HyPsd@Subst){\80\051}#1%
747 \let\HyPsd@empty\relax
748 \expandafter\HyPsd@StringSubst\csname 80\051\endcsname
749 {\HyPsd@empty\80\051}#1%
750 \else
751 \HyPsd@StringSubst{\)}{\051}#1%
752 \HyPsd@Subst){\051}#1%
753 \let\HyPsd@empty\relax
754 \HyPsd@StringSubst{\051}{\HyPsd@empty\string\)}#1%
755 \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`.

```

756 \expandafter\HyPsd@Subst\expandafter{\}/\HyPsd@empty#1%
757 \ltx@ifundefined{@xspace}{%
758 }{%
759 \let\HyPsd@xspace\relax
760 \expandafter\HyPsd@Subst\expandafter
761 {\HyPsd@XSPACE}\HyPsd@xspace#1%
762 \let\HyPsd@xspace\HyPsd@doxspace
763 }%
764 \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.

```

765 \HyPsd@Subst{---}\textemdash#1%
766 \HyPsd@Subst{--}\textendash#1%

```

```

767 %    \HyPsd@Subst{fi}\textfi#1%
768 %    \HyPsd@Subst{fi}\textfi#1%
769 \HyPsd@Subst{!}\textexclamdown#1%
770 \HyPsd@Subst{?}\textquestiondown#1%

```

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

```

771 \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.

```

772 \ifHy@unicode
773 \HyPsd@StringSubst\(\textparenleft#1%
774 \HyPsd@Subst(\textparenleft#1%
775 \else
776 \HyPsd@StringSubst\({\050}#1%
777 \HyPsd@Subst({\050}#1%
778 \HyPsd@StringSubst{\050}{\string\}#1%
779 \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.

```

780 \ifHy@unicode
781 \edef\HyPsd@SPACEOPTI{\80\040}%
782 \else
783 \let\HyPsd@SPACEOPTI\HyPsd@spaceopti
784 \fi
785 \xdef#1{#1\@empty}%
786 \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.

```

787 \endgroup
788 \begingroup
789 \ifHy@unicode
790 \HyPsd@ConvertToUnicode#1%

```

**Try conversion back to `PDFDocEncoding`.**

```

791 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
792 \ltx@ifundefined{StringEncodingConvertTest}{%
793 }{%
794 \EdefUnescapeString\HyPsd@temp#1%
795 \ifxetex
796 \let\HyPsd@UnescapedString\HyPsd@temp
797 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
798 {\utf16be}{\asci-print}{%
799 \EdefEscapeString\HyPsd@temp\HyPsd@temp
800 \global\let#1\HyPsd@temp
801 \HyPsd@EscapeTeX#1%
802 \Hy@unicodedefalse

```

```

803     }{%
804     \HyPsd@ToBigChars#1%
805     }%
806   \else
807     \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
808     {utf16be}{pdfdoc}{%
809     \EdefEscapeString\HyPsd@temp\HyPsd@temp
810     \global\let#1\HyPsd@temp
811     \HyPsd@EscapeTeX#1%
812     \Hy@unicodedefalse
813     }{%}%
814   \fi
815   }%
816 \fi
817 \fi
818 \HyPsd@XeTeXBigCharsfalse

```

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

```

819   \pdfstringdefPostHook#1%
820 \endgroup
821 }

```

`\Hy@pdfstringdef`

```

822 \def\Hy@pdfstringdef#1#2{%
823   \pdfstringdef\Hy@gtemp{#2}%
824   \let#1\Hy@gtemp
825 }

```

## 6.3 Encodings

### 6.3.1 XeTeX

```

826 \edef\Hy@temp{\catcode0=\the\catcode0\relax}
827 \catcode\z@=12 %
828 \ifxetex
829   \expandafter\@firstofone
830 \else
831   \let\HyPsd@XeTeXBigCharstrue\@empty
832   \let\HyPsd@XeTeXBigCharsfalse\@empty
833   \expandafter\@gobble
834 \fi
835 {%
836   \newif\ifHyPsd@XeTeXBigChars
837   \def\HyPsd@XeTeXBigCharsfalse{%
838     \global\let\ifHyPsd@XeTeXBigChars\iffalse
839   }%
840   \def\HyPsd@XeTeXBigCharstrue{%
841     \global\let\ifHyPsd@XeTeXBigChars\iftrue
842   }%
843   \def\HyPsd@ToBigChars#1{%
844     \ifHyPsd@XeTeXBigChars
845       \EdefEscapeHex\HyPsd@UnescapedString{%
846         \expandafter\@gobbletwo\HyPsd@UnescapedString
847       }%
848     \begingroup
849     \toks@{}%

```

```

850 \escapechar=92\relax
851 \let\x\HyPsd@ToBigChar
852 \expandafter\HyPsd@ToBigChar\HyPsd@UnescapedString
853 \relax\relax\relax\relax\relax\relax\relax
854 \edef\x{%
855 \endgroup
856 \gdef\noexpand#1{\the\toks@}%
857 }%
858 \x
859 \fi
860 }%
861 \def\HyPsd@ToBigChar#1#2#3#4{%
862 \ifx\relax#1\relax
863 \let\x\relax
864 \else
865 \count@=#1#2#3#4\relax
866 \let\y\@empty
867 \lccode\z@=\count@
868 \ifnum\count@=40 % (
869 \let\y\@backslashchar
870 \else
871 \ifnum\count@=41 % )
872 \let\y\@backslashchar
873 \else
874 \ifnum\count@=92 % backslash
875 \let\y\@backslashchar
876 \else
877 \ifnum\count@=10 % newline
878 \edef\y##1{\string\n}%
879 \else
880 \ifnum\count@=13 % carriage return
881 \edef\y##1{\string\r}%
882 \fi
883 \fi
884 \fi
885 \fi
886 \fi
887 \lowercase{%
888 \toks@\expandafter{%
889 \the\expandafter\toks@
890 \y
891 ^^@%
892 }%
893 }%
894 \fi
895 \x
896 }%
897 }
898 \Hy@temp

```

### 6.3.2 Workaround for package linguex

```

899 \@ifpackageloaded{linguex}{%
900 \let\HyLinguex@OrgB\b
901 \let\HyLinguex@OrgC\c
902 \let\HyLinguex@OrgD\d
903 \def\HyLinguex@Restore{%
904 \let\b\HyLinguex@OrgB

```



```

905 \let\c\HyLinguex@OrgC
906 \let\d\HyLinguex@OrgD
907 }%
908 \Hy@AtEndOfPackage{%
909 \pdfstringdefDisableCommands{%
910 \ltx@ifundefined{oldb}{\let\b\oldb}%
911 \ltx@ifundefined{oldc}{\let\c\oldc}%
912 \ltx@ifundefined{oldd}{\let\d\oldd}%
913 }%
914 }%
915 }{%
916 \let\HyLinguex@Restore\relax
917 }%

```

### 6.3.3 Catcodes saving and restoring for .def files

\Hy@SaveCatcodeSettings

```

918 \def\Hy@SaveCatcodeSettings#1{%
919 \expandafter\edef\csname Hy@cat@#1\endcsname{%
920 \endlinechar=\the\endlinechar\relax
921 \catcode32 \the\catcode32\relax % (space)
922 \catcode34 \the\catcode34\relax % "
923 \catcode35 \the\catcode35\relax % #
924 \catcode37 \the\catcode37\relax % (percent)
925 \catcode40 \the\catcode40\relax % (
926 \catcode41 \the\catcode41\relax % )
927 \catcode42 \the\catcode42\relax % *
928 \catcode46 \the\catcode46\relax % .
929 \catcode58 \the\catcode58\relax % :
930 \catcode60 \the\catcode60\relax % <
931 \catcode61 \the\catcode61\relax % =
932 \catcode62 \the\catcode62\relax % >
933 \catcode64 \the\catcode64\relax % @
934 \catcode91 \the\catcode91\relax % [
935 \catcode92 \the\catcode92\relax % \
936 \catcode93 \the\catcode93\relax % ]
937 \catcode123 \the\catcode123\relax % {
938 \catcode124 \the\catcode124\relax % |
939 \catcode125 \the\catcode125\relax % }
940 }%
941 \endlinechar=-1 %
942 \catcode32 10 % (space)
943 \catcode34 12 % "
944 \catcode35 6 % #
945 \catcode37 14 % (percent)
946 \catcode40 12 % (
947 \catcode41 12 % )
948 \catcode42 12 % *
949 \catcode46 12 % .
950 \catcode58 12 % :
951 \catcode60 12 % <
952 \catcode61 12 % =
953 \catcode62 12 % >
954 \catcode91 12 % [
955 \catcode92 0 % \
956 \catcode93 12 % ]
957 \catcode123 1 % {
958 \catcode124 12 % |

```

```

959 \catcode125 2 % }
960 \makeatletter
961 }

```

`\Hy@RestoreCatcodeSettings`

```

962 \def\Hy@RestoreCatcodeSettings#1{%
963   \csname Hy@cat@#1\endcsname
964   \expandafter\let\csname Hy@cat@#1\endcsname\relax
965 }

```

### 6.3.4 PD1 encoding

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

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

```

966 \@ifundefined{T@PD1}{%
967   \Hy@SaveCatcodeSettings{pd1}%
968   \input{pd1enc.def}%
969   \Hy@RestoreCatcodeSettings{pd1}%
970   \HyLinguex@Restore
971 }{}
972 \DeclareFontFamily{PD1}{pdf}{}
973 \DeclareFontShape{PD1}{pdf}{m}{n}{ <-> cmr10 }{}
974 \DeclareFontSubstitution{PD1}{pdf}{m}{n}

```

### 6.3.5 PU encoding

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

`\HyPsd@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`.

```

975 \def\HyPsd@LoadUnicode{%
976   \@ifundefined{T@PU}{%
977     \Hy@SaveCatcodeSettings{pu}%
978     \input{puenc.def}%
979     \Hy@RestoreCatcodeSettings{pu}%
980     \HyLinguex@Restore
981   }{}%
982   \DeclareFontFamily{PU}{pdf}{}%
983   \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%
984   \DeclareFontSubstitution{PU}{pdf}{m}{n}%
985   \HyPsd@LoadExtra
986   \let\HyPsd@LoadUnicode\relax
987 }

```

`\HyPsd@LoadExtra`

```

988 \def\HyPsd@LoadExtra{%
989   \ifHy@psdextra
990     \ltx@iffileloaded{puenc.def}{%
991       \Hy@SaveCatcodeSettings{psdextra}%

```

```

992 \input{psdextra.def}%
993 \Hy@RestoreCatcodeSettings{psdextra}%
994 \let\HyPsd@LoadExtra\relax
995 }{}%
996 \fi
997 }

```

## 6.4 Additional user commands

### 6.4.1 `\texorpdfstring`

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

```

998 \def\texorpdfstring{%
999 \ifHy@pdfstring
1000 \expandafter\@secondoftwo
1001 \else
1002 \expandafter\@firstoftwo
1003 \fi
1004 }

```

### 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`.

```

1005 \@ifundefined{pdfstringdefPreHook}{%
1006 \let\pdfstringdefPreHook\@empty
1007 }{}
1008 \@ifundefined{pdfstringdefPostHook}{%
1009 \let\pdfstringdefPostHook\@gobble
1010 }{}

```

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

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

```

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

```

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

```

1011 \def\pdfstringdefDisableCommands{%
1012 \begingroup
1013 \makeatletter
1014 \HyPsd@DisableCommands
1015 }

```

`\HyPsd@DisableCommands`

```
1016 \long\def\HyPsd@DisableCommands#1{%
1017   \ltx@GlobalAppendToMacro\pdfstringdefPreHook{#1}%
1018   \endgroup
1019 }
```

`\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`.

```
1020 \def\pdfstringdefWarn#1{%
1021   \expandafter\noexpand\csname<>-string#1\endcsname
1022 }
```

## 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.

```
1023 \begingroup
1024   \catcode0=12 %
1025   \def\x{\endgroup
1026     \def\HyPsd@ignorespaces{%
1027       \romannumeral\expandafter'\expandafter^^@%
1028       \romannumeral'^^@%
1029     }%
1030   }%
1031   \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`.

```
1032 \def\HyPsd@BabelPatch{%
1033   \let\HyOrg@languageshorthands\languageshorthands
1034   \let\languageshorthands\HyPsd@LanguageShorthands
1035 }
1036 \begingroup\expandafter\expandafter\expandafter\endgroup
1037 \expandafter\ifx\csname pdf@stricmp\endcsname\relax
```

```

1038 \let\HyPsd@langshort@system@empty
1039 \def\HyPsd@LanguageShorthands#1{%
1040   \expandafter\ifx\csname HyPsd@langshort@#1\endcsname
1041     \HyPsd@langshort@system
1042   \expandafter\@gobble
1043   \else
1044     \expandafter\@firstofone
1045   \fi
1046   {%
1047     \HyOrg@languageshorthands{#1}%
1048   }%
1049 }%
1050 \else
1051 \def\HyPsd@LanguageShorthands#1{%
1052   \ifnum\pdf@stricmp{#1}{system}=\z@
1053     \expandafter\@gobble
1054   \else
1055     \expandafter\@firstofone
1056   \fi
1057   {%
1058     \HyOrg@languageshorthands{#1}%
1059   }%
1060 }%
1061 \fi
1062 \def\Hy@temp{%
1063   \@ifpackageloaded{babel}{%
1064     \@ifpackagelater{babel}{2008/03/16}{%
1065       \let\Hy@temp@empty
1066     }{%
1067       \def\HyPsd@BabelPatch{%
1068         \let\HyOrg@languageshorthands\languageshorthands
1069       }%
1070     }%
1071   }{}%
1072 }
1073 \Hy@temp
1074 \expandafter\Hy@AtBeginDocument\expandafter{\Hy@temp}
1075 \newif\ifHy@next

  Nothing to do for english.
1076 \ltx@ifundefined{danish@sh@}{}{}%
1077 \def\HyPsd@babel@danish{%
1078   \declare@shorthand{danish}{"}{}%
1079   \declare@shorthand{danish}{"}~{}%
1080 }%
1081 }
1082 \ltx@ifundefined{dutch@sh@}{}{}%
1083 \def\HyPsd@babel@dutch{%
1084   \declare@shorthand{dutch}{"}{}%
1085   \declare@shorthand{dutch}{"}~{}%
1086 }%
1087 }
1088 \ltx@ifundefined{finnish@sh@}{}{}%
1089 \def\HyPsd@babel@finnish{%
1090   \declare@shorthand{finnish}{"}{}%
1091 }%
1092 }

```

```

1093 \ltx@ifundefined{french@sh@:@sel}{-}{-}%
1094 \def\HyPsd@babel@frenchb{%
1095   \def\guill@spacing{ }%
1096 }%
1097 }
1098 \ltx@ifundefined{german@sh@"@sel}{-}{-}%
1099 \def\HyPsd@babel@german{%
1100   \declare@shorthand{german}{"}{f}{f}%
1101   \declare@shorthand{german}{"}{|}{|}%
1102   \declare@shorthand{german}{"}~}{-}%
1103 }%
1104 }
1105 \ltx@ifundefined{macedonian@sh@"@sel}{-}{-}%
1106 \def\HyPsd@babel@macedonian{%
1107   \declare@shorthand{macedonian}{"}{|}{|}%
1108   \declare@shorthand{macedonian}{"}~}{-}%
1109 }%
1110 }{}
1111 \ltx@ifundefined{ngerman@sh@"@sel}{-}{-}%
1112 \def\HyPsd@babel@ngerman{%
1113   \declare@shorthand{ngerman}{"}{|}{|}%
1114   \declare@shorthand{ngerman}{"}~}{-}%
1115 }%
1116 }
1117 \ltx@ifundefined{portuges@sh@"@sel}{-}{-}%
1118 \def\HyPsd@babel@portuges{%
1119   \declare@shorthand{portuges}{"}{|}{|}%
1120 }%
1121 }
1122 \ltx@ifundefined{russian@sh@"@sel}{-}{-}%
1123 \def\HyPsd@babel@russian{%
1124   \declare@shorthand{russian}{"}{|}{|}%
1125   \declare@shorthand{russian}{"}~}{-}%
1126 }%
1127 }
1128 \ltx@ifundefined{slovene@sh@"@sel}{-}{-}%
1129 \def\HyPsd@babel@slovene{%
1130   \declare@shorthand{slovene}{"}{|}{|}%
1131 }%
1132 }

```

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

```

1133 \ltx@ifundefined{spanish@sh@>@sel}{-}{-}%
1134 \def\HyPsd@babel@spanish{%
1135   \declare@shorthand{spanish}{<<}{\guillemotleft}%
1136   \declare@shorthand{spanish}{>>}{\guillemotright}%
1137   \declare@shorthand{spanish}{"}={}{-}%
1138   \declare@shorthand{spanish}{"}~}{-}%
1139   \declare@shorthand{spanish}{"}!}{\textexclamdown}%
1140   \declare@shorthand{spanish}{"}?}{\textquestiondown}%
1141 }%
1142 }
1143 \ltx@ifundefined{swedish@sh@"@sel}{-}{-}%
1144 \def\HyPsd@babel@swedish{%
1145   \declare@shorthand{swedish}{"}{|}{|}%
1146   \declare@shorthand{swedish}{"}~}{-}%
1147 }%
1148 }

```

```

1149 \ltx@ifundefined{ukrainian@sh@"@sel}{-}{%
1150   \def\HyPsd@babel@ukrainian{%
1151     \declare@shorthand{ukrainian}{~}{-}%
1152     \declare@shorthand{ukrainian}{~}{-}%
1153   }%
1154 }
1155 \ltx@ifundefined{usorbian@sh@"@sel}{-}{%
1156   \def\HyPsd@babel@usorbian{%
1157     \declare@shorthand{usorbian}{~}{-}%
1158     \declare@shorthand{usorbian}{~}{-}%
1159   }%
1160 }

1161 \ltx@ifundefined{greek@sh@\string~@sel}{-}{%
1162   \let\HyPsd@GreekPatch\@empty
1163 }{%
1164   \def\HyPsd@GreekPatch{%
1165     \let\greeknumeral\HyPsd@greeknumeral
1166     \let\Greeknatural\HyPsd@Greeknatural
1167   }%
1168 }
1169 \def\HyPsd@greeknumeral#1{%
1170   \HyPsd@GreekNum\@firsttwo{#1}%
1171 }
1172 \def\HyPsd@Greeknatural#1{%
1173   \HyPsd@GreekNum\@secondtwo{#1}%
1174 }
1175 \def\HyPsd@GreekNum#1#2{%
1176   \ifHy@unicode
1177     \ifnum#2<\@one
1178       \@arabic{#2}%
1179     \else
1180       \ifnum#2<1000000 %
1181         \HyPsd@@GreekNum#1{#2}%
1182       \else
1183         \@arabic{#2}%
1184       \fi
1185     \fi
1186   \else
1187     \@arabic{#2}%
1188   \fi
1189 }
1190 \def\HyPsd@@GreekNum#1#2{%
1191   \ifnum#2<\@m
1192     \ifnum#2<10 %
1193       \expandafter\HyPsd@GreekNumI
1194       \expandafter\@gobble\expandafter#1\number#2%
1195     \else
1196       \ifnum#2<100 %
1197         \expandafter\HyPsd@GreekNumII
1198         \expandafter\@gobble\expandafter#1\number#2%
1199       \else
1200         \expandafter\HyPsd@GreekNumIII
1201         \expandafter\@gobble\expandafter#1\number#2%
1202       \fi
1203     \fi
1204   \ifnum#2>\z@
1205     \textnumeralsigngreek

```

```

1206 \fi
1207 \else
1208 \ifnum#2<\@M
1209 \expandafter\HyPsd@GreekNumIV\expandafter#1\number#2%
1210 \else
1211 \ifnum#2<100000 %
1212 \expandafter\HyPsd@GreekNumV\expandafter#1\number#2%
1213 \else
1214 \expandafter\HyPsd@GreekNumVI\expandafter#1\number#2%
1215 \fi
1216 \fi
1217 \fi
1218 }
1219 \def\HyPsd@GreekNumI#1#2#3{%
1220 #1{%
1221 \ifnum#3>\z@
1222 \textnumeralsignlowergreek
1223 \fi
1224 }%
1225 \expandafter#2%
1226 \ifcase#3 %
1227 {}{}%
1228 \or\textalpha\textAlpha
1229 \or\textbeta\textBeta
1230 \or\textgamma\textGamma
1231 \or\textdelta\textDelta
1232 \or\textepsilon\textEpsilon
1233 \or\textstigmagreek\textStigmagreek
1234 \or\textzeta\textZeta
1235 \or\texteta\textEta
1236 \or\texttheta\textTheta
1237 \else
1238 {}{}%
1239 \fi
1240 }
1241 \def\HyPsd@GreekNumII#1#2#3#4{%
1242 #1{%
1243 \ifnum#3>\z@
1244 \textnumeralsignlowergreek
1245 \fi
1246 }%
1247 \expandafter#2%
1248 \ifcase#3 %
1249 {}{}%
1250 \or\textiota\textIota
1251 \or\textkappa\textKappa
1252 \or\textlambda\textLambda
1253 \or\textmu\textMu
1254 \or\textnu\textNu
1255 \or\textxi\textXi
1256 \or\textomicron\textOmicron
1257 \or\textpi\textPi
1258 \or\textkoppagreek\textKoppagreek
1259 \else
1260 {}{}%
1261 \fi
1262 \HyPsd@GreekNumI#1#2#4%

```



```

1263 }
1264 \def\HyPsd@GreekNumIII#1#2#3#4#5{%
1265   #1{%
1266     \ifnum#3>\z@
1267       \textnumeralsignlowergreek
1268     \fi
1269   }%
1270   \expandafter#2%
1271   \ifcase#3 %
1272     {}{}%
1273   \or\textrho\textRho
1274   \or\textsigma\textSigma
1275   \or\texttau\textTau
1276   \or\textupsilon\textUpsilon
1277   \or\textphi\textPhi
1278   \or\textchi\textChi
1279   \or\textpsi\textPsi
1280   \or\textomega\textOmega
1281   \or\textsampigreek\textSampigreek
1282   \else
1283     {}{}%
1284   \fi
1285   \HyPsd@GreekNumII#1#2#4#5%
1286 }
1287 \def\HyPsd@GreekNumIV#1#2#3#4#5{%
1288   \HyPsd@GreekNumI\@firstofone#1#2%
1289   \HyPsd@@@GreekNum#1{#3#4#5}%
1290 }
1291 \def\HyPsd@GreekNumV#1#2#3#4#5#6{%
1292   \HyPsd@GreekNumII\@firstofone#1#2#3%
1293   \HyPsd@@@GreekNum#1{#4#5#6}%
1294 }
1295 \def\HyPsd@GreekNumVI#1#2#3#4#5#6#7{%
1296   \HyPsd@GreekNumIII\@firstofone#1#2#3#4%
1297   \HyPsd@@@GreekNum#1{#5#6#7}%
1298 }
1299 \def\HyPsd@SpanishPatch{%
1300   \ltx@ifundefined{es@save@dot}{%
1301     }{%
1302       \let\.\es@save@dot
1303     }%
1304 }

```

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

```

1305 \def\HyPsd@RussianPatch{%
1306   \ltx@ifundefined{russian@sh@"@-@}{%
1307     }{%
1308       \@namedef{russian@sh@"@-@}{-}%
1309     }%
1310 }

```

### 6.5.3 CJK patch

```

1311 \RequirePackage{intcalc}[2007/09/27]

```

\HyPsd@CJKhook

```

1312 \def\HyPsd@CJKhook{%
1313   \ltx@ifpackageloaded{CJK}{%
1314     \let\CJK@kern\relax
1315     \let\CJKkern\relax
1316     \let\CJK@CJK\relax
1317     \ifHy@CJKbookmarks
1318       \HyPsd@CJKhook@bookmarks
1319     \fi
1320     \HyPsd@CJKhook@unicode
1321   }{%
1322 }

```

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

```

1323 \begingroup
1324   \catcode"7F=\active
1325   \toks@{%
1326     \let\CJK@ignorespaces\empty
1327     \def\CJK@char#1{\@gobbletwo}%
1328     \let\CJK@charx\@gobblefour
1329     \let\CJK@punctchar\@gobblefour
1330     \def\CJK@punctcharx#1{\@gobblefour}%
1331     \catcode"7F=\active
1332     \def^^7f#1^^7f#2^^7f{%
1333       \string #1\HyPsd@DecimalToOctal{#2}%
1334     }%
1335     % ... ?
1336     \ifHy@unicode
1337       \def\Hy@cjkpu{\80}%
1338     \else
1339       \let\Hy@cjkpu\@empty
1340     \fi
1341     \HyPsd@CJKActiveChars
1342   }%
1343   \count@=127 %
1344   \@whilenum\count@<255 \do{%
1345     \advance\count@ by 1 %
1346     \lccode'\~=\count@
1347     \lowercase{%
1348       \toks@\expandafter{\the\toks@ ~}%
1349     }%
1350   }%
1351   \toks@\expandafter{\the\toks@ !}%
1352   \xdef\HyPsd@CJKhook@bookmarks{%
1353     \the\toks@
1354   }%
1355 \endgroup

```

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

```
1356 \def\HyPsd@CJKActiveChars#1{%
1357   \ifx#1!%
1358     \let\HyPsd@CJKActiveChars\relax
1359   \else
1360     \edef#1{\noexpand\Hy@cjkpu\string#1}%
1361   \fi
1362   \HyPsd@CJKActiveChars
1363 }
```

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

```
1364 \def\HyPsd@DecimalToOctal#1{%
1365   \ifcase #1 %
1366     \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
1367     \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
1368     \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
1369     \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
1370     \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
1371     \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
1372     \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1373     \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
1374     \or @\or A\or B\or C\or D\or E\or F\or G%
1375     \or H\or I\or J\or K\or L\or M\or N\or O%
1376     \or P\or Q\or R\or S\or T\or U\or V\or W%
1377     \or X\or Y\or Z\or \133\or \134\or \135\or \136\or \137%
1378     \or \140\or a\or b\or c\or d\or e\or f\or g%
1379     \or h\or i\or j\or k\or l\or m\or n\or o%
1380     \or p\or q\or r\or s\or t\or u\or v\or w%
1381     \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
1382     \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
1383     \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
1384     \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1385     \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
1386     \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1387     \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1388     \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1389     \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1390     \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1391     \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1392     \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1393     \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1394     \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1395     \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1396     \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1397     \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1398   \fi
1399 }
```

### 6.5.5 CJK unicode

`\HyPsd@CJKhook@unicode`

```
1400 \def\HyPsd@CJKhook@unicode{%
1401   \let\Unicode\HyPsd@CJK@Unicode
1402   \let\CJKnumber\HyPsd@CJKnumber
1403   \let\CJKdigits\HyPsd@CJKdigits
1404 }
```

\HyPsd@CJK@Unicode

```
1405 \def\HyPsd@CJK@Unicode#1#2{%
1406   \ifnum#1<256 %
1407     \HyPsd@DecimalToOctalFirst{#1}%
1408     \HyPsd@DecimalToOctalSecond{#2}%
1409   \else
1410     \933%
1411     \expandafter\expandafter\expandafter\HyPsd@HighA
1412     \intcalcDiv{#1}{4}!%
1413     \933%
1414     \ifcase\intcalcMod{#1}{4} %
1415       4\or 5\or 6\or 7%
1416     \fi
1417     \HyPsd@DecimalToOctalSecond{#2}%
1418   \fi
1419 }

1420 \def\HyPsd@HighA#1!{%
1421   \expandafter\expandafter\expandafter\HyPsd@HighB
1422   \IntCalcDiv#1!64!!%
1423   \expandafter\expandafter\expandafter\HyPsd@HighD
1424   \IntCalcMod#1!64!!%
1425 }

1426 \def\HyPsd@HighB#1!{%
1427   \expandafter\expandafter\expandafter\HyPsd@HighC
1428   \IntCalcDec#1!!%
1429 }

1430 \def\HyPsd@HighC#1!{%
1431   \IntCalcDiv#1!4!%
1432   \@backslashchar
1433   \IntCalcMod#1!4!%
1434 }

1435 \def\HyPsd@HighD#1!{%
1436   \ifcase\IntCalcDiv#1!8! %
1437     0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1438   \fi
1439   \ifcase\IntCalcMod#1!8! %
1440     0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1441   \fi
1442 }

1443 \def\HyPsd@DecimalToOctalFirst#1{%
1444   \9%
1445   \ifcase#1 %
1446     000\or 001\or 002\or 003\or 004\or 005\or 006\or 007%
1447     \or 010\or 011\or 012\or 013\or 014\or 015\or 016\or 017%
1448     \or 020\or 021\or 022\or 023\or 024\or 025\or 026\or 027%
1449     \or 030\or 031\or 032\or 033\or 034\or 035\or 036\or 037%
1450     \or 040\or 041\or 042\or 043\or 044\or 045\or 046\or 047%
1451     \or 050\or 051\or 052\or 053\or 054\or 055\or 056\or 057%
1452     \or 060\or 061\or 062\or 063\or 064\or 065\or 066\or 067%
1453     \or 070\or 071\or 072\or 073\or 074\or 075\or 076\or 077%
1454     \or 100\or 101\or 102\or 103\or 104\or 105\or 106\or 107%
1455     \or 120\or 111\or 112\or 113\or 114\or 115\or 116\or 117%
1456     \or 120\or 121\or 122\or 123\or 124\or 125\or 126\or 127%
1457     \or 130\or 131\or 132\or 133\or 134\or 135\or 136\or 137%
1458     \or 140\or 141\or 142\or 143\or 144\or 145\or 146\or 147%
1459     \or 150\or 151\or 152\or 153\or 154\or 155\or 156\or 157%
1460     \or 160\or 161\or 162\or 163\or 164\or 165\or 166\or 167%
```

```

1461 \or 170\or 171\or 172\or 173\or 174\or 175\or 176\or 177%
1462 \or 200\or 201\or 202\or 203\or 204\or 205\or 206\or 207%
1463 \or 210\or 211\or 212\or 213\or 214\or 215\or 216\or 217%
1464 \or 220\or 221\or 222\or 223\or 224\or 225\or 226\or 227%
1465 \or 230\or 231\or 232\or 233\or 234\or 235\or 236\or 237%
1466 \or 240\or 241\or 242\or 243\or 244\or 245\or 246\or 247%
1467 \or 250\or 251\or 252\or 253\or 254\or 255\or 256\or 257%
1468 \or 260\or 261\or 262\or 263\or 264\or 265\or 266\or 267%
1469 \or 270\or 271\or 272\or 273\or 274\or 275\or 276\or 277%
1470 \or 300\or 301\or 302\or 303\or 304\or 305\or 306\or 307%
1471 \or 310\or 311\or 312\or 313\or 314\or 315\or 316\or 317%
1472 \or 320\or 321\or 322\or 323\or 324\or 325\or 326\or 327%
1473 \or 330\or 331\or 332\or 333\or 334\or 335\or 336\or 337%
1474 \or 340\or 341\or 342\or 343\or 344\or 345\or 346\or 347%
1475 \or 350\or 351\or 352\or 353\or 354\or 355\or 356\or 357%
1476 \or 360\or 361\or 362\or 363\or 364\or 365\or 366\or 367%
1477 \or 370\or 371\or 372\or 373\or 374\or 375\or 376\or 377%
1478 \fi
1479 }
1480 \def\HyPsd@DecimalToOctalSecond#1{%
1481 \ifcase #1 %
1482 \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
1483 \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
1484 \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
1485 \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
1486 \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
1487 \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
1488 \or \060\or \061\or \062\or \063\or \064\or \065\or \066\or \067%
1489 \or \070\or \071\or \072\or \073\or \074\or \075\or \076\or \077%
1490 \or \100\or \101\or \102\or \103\or \104\or \105\or \106\or \107%
1491 \or \110\or \111\or \112\or \113\or \114\or \115\or \116\or \117%
1492 \or \120\or \121\or \122\or \123\or \124\or \125\or \126\or \127%
1493 \or \130\or \131\or \132\or \133\or \134\or \135\or \136\or \137%
1494 \or \140\or \141\or \142\or \143\or \144\or \145\or \146\or \147%
1495 \or \150\or \151\or \152\or \153\or \154\or \155\or \156\or \157%
1496 \or \160\or \161\or \162\or \163\or \164\or \165\or \166\or \167%
1497 \or \170\or \171\or \172\or \173\or \174\or \175\or \176\or \177%
1498 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
1499 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
1500 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1501 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
1502 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1503 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1504 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1505 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1506 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1507 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1508 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1509 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1510 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1511 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1512 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1513 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1514 \fi
1515 }
1516 \def\HyPsd@CJKnumber#1{%
1517 \ifnum#1<\z@

```

```

1518 \CJK@minus
1519 \expandafter\HyPsd@@CJKnumber\expandafter{\number-\number#1}%
1520 \else
1521 \expandafter\HyPsd@@CJKnumber\expandafter{\number#1}%
1522 \fi
1523 }
1524 \def\HyPsd@@CJKnumber#1{%
1525 \ifcase#1 %
1526 \CJK@zero\or\CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1527 \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine\or
1528 \CJK@ten\or\CJK@ten\CJK@one\or\CJK@ten\CJK@two\or
1529 \CJK@ten\CJK@three\or\CJK@ten\CJK@four\or\CJK@ten\CJK@five\or
1530 \CJK@ten\CJK@six\or\CJK@ten\CJK@seven\or\CJK@ten\CJK@eight\or
1531 \CJK@ten\CJK@nine
1532 \else
1533 \ifnum#1<10000 %
1534 \HyPsd@CJKnumberFour#1!\@empty{20}%
1535 \@empty
1536 \else
1537 \ifnum#1<100000000 %
1538 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1539 \IntCalcDiv#1!10000!%
1540 !\{20}%
1541 \CJK@tenthousand
1542 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1543 \IntCalcMod#1!10000!%
1544 !\CJK@zero{10}%
1545 \@empty
1546 \else
1547 \expandafter\HyPsd@CJKnumberLarge
1548 \number\IntCalcDiv#1!100000000!\expandafter!%
1549 \number\IntCalcMod#1!100000000!!%
1550 \fi
1551 \fi
1552 \fi
1553 }
1554 \def\HyPsd@CJKnumberLarge#1!#2!{%
1555 \HyPsd@CJKnumberFour#1!\{20}%
1556 \CJK@hundredmillion
1557 \ifnum#2=\z@
1558 \else
1559 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1560 \IntCalcDiv#2!10000!%
1561 !\CJK@zero{10}%
1562 \CJK@tenthousand
1563 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1564 \IntCalcMod#2!10000!%
1565 !\CJK@zero{10}%
1566 \@empty
1567 \fi
1568 }
1569 \def\HyPsd@CJKnumberFour#1!#2#3{%
1570 \ifnum#1=\z@
1571 \expandafter\@gobble
1572 \else
1573 \ifnum#1<1000 %
1574 #2%

```

```

1575 \HyPsd@CJKnumberThree#1!#{#3}%
1576 \else
1577 \HyPsd@@CJKnumber{\IntCalcDiv#1!1000!}%
1578 \CJK@thousand
1579 \expandafter\expandafter\expandafter\HyPsd@CJKnumberThree
1580 \IntCalcMod#1!1000!%
1581 !\CJK@zero{10}%
1582 \fi
1583 \fi
1584 }
1585 \def\HyPsd@CJKnumberThree#1!#2#3{%
1586 \ifnum#1=\z@
1587 \else
1588 \ifnum#1<100 %
1589 #2%
1590 \HyPsd@CJKnumberTwo#1!#{#3}%
1591 \else
1592 \HyPsd@@CJKnumber{\IntCalcDiv#1!100!}%
1593 \CJK@hundred
1594 \expandafter\expandafter\expandafter\HyPsd@CJKnumberTwo
1595 \IntCalcMod#1!100!%
1596 !\CJK@zero{10}%
1597 \fi
1598 \fi
1599 }
1600 \def\HyPsd@CJKnumberTwo#1!#2#3{%
1601 \ifnum#1=\z@
1602 \else
1603 \ifnum#1<#3 %
1604 #2%
1605 \HyPsd@@CJKnumber{#1}%
1606 \else
1607 \HyPsd@@CJKnumber{\IntCalcDiv#1!10!}%
1608 \CJK@ten
1609 \ifnum\IntCalcMod#1!10!=\z@
1610 \else
1611 \HyPsd@@CJKnumber{\IntCalcMod#1!10!}%
1612 \fi
1613 \fi
1614 \fi
1615 }
1616 \def\HyPsd@CJKdigits#1{%
1617 \ifx*#1\relax
1618 \expandafter\HyPsd@@CJKdigits\expandafter\CJK@zero
1619 \else
1620 \HyPsd@@CJKdigits\CJK@null{#1}%
1621 \fi
1622 }
1623 \def\HyPsd@@CJKdigits#1#2{%
1624 \ifx\#2\%
1625 \else
1626 \HyPsd@@@CJKdigits#1#2\@nil
1627 \fi
1628 }%
1629 \def\HyPsd@@@CJKdigits#1#2#3\@nil{%
1630 \HyPsd@CJKdigit#1{#2}%
1631 \ifx\#3\%

```

```

1632 \expandafter\@gobble
1633 \else
1634 \expandafter\@firstofone
1635 \fi
1636 {%
1637 \HyPsd@@@CJKdigits#1#3\@nil
1638 }%
1639 }
1640 \def\HyPsd@CJKdigit#1#2{%
1641 \ifcase#2 %
1642 #1\or
1643 \CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1644 \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine
1645 \fi
1646 }

```

### 6.5.6 \@inmathwarn-Patch

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

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

1647 \def\HyPsd@inmathwarn#1#2{%
1648   \ifx#2\expandafter
1649     \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
1650       \HyPsd@GLYPHERR
1651       \expandafter\@gobble\string#1%
1652       >%
1653       \expandafter\expandafter\expandafter\HyPsd@EndWithElse
1654       \else
1655       \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
1656       \fi
1657     \else
1658     \expandafter#2%
1659     \fi
1660 }
1661 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
1662 \def\HyPsd@EndWithElse#1\else\else{}

\HyPsd@add@accent

1663 \def\HyPsd@add@accent#1#2{%
1664   \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
1665   #2%
1666 }%

```

### 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`.

```

1667 \def\HyPsd@LetUnexpandableSpace#1{%
1668   \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
1669 }

```

`\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.

```

1670 \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.

```

1671 \edef\HyPsd@XSPACE{\string#\string X}
1672 \edef\HyPsd@ITALCORR{\string#\string I}
1673 \edef\HyPsd@GLYPHERR{\string#\string G}

```

### 6.5.9 \hspace fix

\HyPsd@hspace

```
1674 \def\HyPsd@hspace#1{\HyPsd@@hspace#1*\END}
```

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

```
1675 \def\HyPsd@@hspace#1*#2\END{%
1676   \ifx\#2\%
1677     \HyPsd@hspacetest{#1}%
1678   \else
1679     \expandafter\HyPsd@hspacetest
1680   \fi
1681 }
```

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

```
1682 \def\HyPsd@hspacetest#1{\ifdim#1>\z@\space\fi}
```

### 6.5.10 Fix for AMS classes

```
1683 \ltx@ifundefined{tocsection}{%
1684   \let\HyPsd@AMSclassfix\relax
1685 }{%
1686   \def\HyPsd@AMSclassfix{%
1687     \let\tocpart\HyPsd@tocsection
1688     \let\tocchapter\HyPsd@tocsection
1689     \let\tocappendix\HyPsd@tocsection
1690     \let\tocsection\HyPsd@tocsection
1691     \let\tocsubsection\HyPsd@tocsection
1692     \let\tocsubsubsection\HyPsd@tocsection
1693     \let\tocparagraph\HyPsd@tocsection
1694   }%
1695   \def\HyPsd@tocsection#1#2#3{%
1696     \if @#2@\else\if @#1@\else#1 \fi#2. \fi
1697     #3%
1698   }%
1699 }
```

### 6.5.11 Reference commands

\HyPsd@href

```
1700 \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.

```
1701 \def\HyPsd@ref#1{\HyPsd@@ref#1*\END}%
```

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

```
1702 \def\HyPsd@@ref#1*#2\END{%
1703   \ifx\#2\%
1704     \HyPsd@@@ref{#1}%
1705   \else
1706     \expandafter\HyPsd@@@ref
1707   \fi
1708 }
```

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

```
1709 \def\HyPsd@@@ref#1{%
1710   \expandafter\ifx\csname r@#1\endcsname\relax
1711     ??%
1712   \else
1713     \expandafter\expandafter\expandafter
1714     \@car\csname r@#1\endcsname\@nil
1715   \fi
1716 }
```

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

```
1717 \def\HyPsd@pageref#1{\HyPsd@@pageref#1*\END}
```

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

```
1718 \def\HyPsd@@pageref#1*#2\END{%
1719   \ifx\#2\%
1720     \HyPsd@@@pageref{#1}%
1721   \else
1722     \expandafter\HyPsd@@@pageref
1723   \fi
1724 }
```

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

```
1725 \def\HyPsd@@@pageref#1{%
1726   \expandafter\ifx\csname r@#1\endcsname\relax
1727     ??%
1728   \else
1729     \expandafter\expandafter\expandafter\expandafter
1730     \expandafter\expandafter\expandafter\@car
1731     \expandafter\expandafter\expandafter\@gobble
1732     \csname r@#1\endcsname{}\@nil
1733   \fi
1734 }
```

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

```
1735 \def\HyPsd@nameref#1{\HyPsd@@nameref#1*\END}
```

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

```
1736 \def\HyPsd@@nameref#1*#2\END{%
1737   \ifx\#2\%
1738     \HyPsd@@@nameref{#1}%
1739   \else
1740     \expandafter\HyPsd@@@nameref
1741   \fi
1742 }
```

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

```
1743 \def\HyPsd@@@nameref#1{%
1744   \expandafter\ifx\csname r@#1\endcsname\relax
1745     ??%
1746   \else
1747     \expandafter\expandafter\expandafter\expandafter
1748     \expandafter\expandafter\expandafter\@car
1749     \expandafter\expandafter\expandafter\@gobbletwo
```

```

1750 \csname r@#1\endcsname{}\}\@nil
1751 \fi
1752 }

```

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

```

1753 \def\HyPsd@autoref#1{\HyPsd@@autoref#1*\END}

```

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

```

1754 \def\HyPsd@@autoref#1*#2\END{%
1755 \ifx\#2\%
1756 \HyPsd@@@autoref{#1}%
1757 \else
1758 \expandafter\HyPsd@@@autoref
1759 \fi
1760 }

```

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

```

1761 \def\HyPsd@@@autoref#1{%
1762 \expandafter\ifx\csname r@#1\endcsname\relax
1763 ??%
1764 \else
1765 \expandafter\expandafter\expandafter\HyPsd@autorefname
1766 \csname r@#1\endcsname{}\}\}\@nil
1767 \expandafter\expandafter\expandafter
1768 \@car\csname r@#1\endcsname\@nil
1769 \fi
1770 }

```

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

```

1771 \def\HyPsd@autorefname#1#2#3#4#5\@nil{%
1772 \ifx\#4\%
1773 \else
1774 \HyPsd@@autorefname#4.\@nil
1775 \fi
1776 }

```

`\HyPsd@@autorefname`

```

1777 \def\HyPsd@@autorefname#1.#2\@nil{%
1778 \ltx@ifundefined{#1autorefname}{%
1779 \ltx@ifundefined{#1name}{%
1780 }{%
1781 \csname#1name\endcsname\space
1782 }%
1783 }{%
1784 \csname#1autorefname\endcsname\space
1785 }%
1786 }

```

### 6.5.12 Redefining the defining commands

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

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

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

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

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

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

```

\HyPsd@DefCommand
\HyPsd@LetCommand
1787 \begingroup
1788 \def\x#1#2{%
1789 \endgroup
1790 \let#1\def
1791 \def\HyPsd@DefCommand##1##2###{%
1792 #1%
1793 \expandafter\noexpand
1794 \csname\expandafter\@gobble\string##1\@empty\endcsname
1795 \@gobble
1796 }%
1797 \let#2\let
1798 \def\HyPsd@@LetCommand##1{%
1799 \expandafter\ifx\csname##1\expandafter\endcsname
1800 \csname iftrue\endcsname
1801 \pdfstringdefWarn\let
1802 \expandafter\@gobble
1803 \else
1804 \expandafter\ifx\csname##1\expandafter\endcsname
1805 \csname iffalse\endcsname
1806 \pdfstringdefWarn\let
1807 \expandafter\expandafter\expandafter\@gobble
1808 \else
1809 #2%
1810 \expandafter\noexpand
1811 \csname##1\expandafter\expandafter\expandafter\endcsname
1812 \fi
1813 \fi
1814 }%
1815 }%
1816 \expandafter\x\csname <def>-command\expandafter\endcsname
1817 \csname <let>-command\endcsname

```

```

1818 \def\HyPsd@LetCommand#1{%
1819   \expandafter\expandafter\expandafter\HyPsd@@LetCommand
1820   \expandafter\expandafter\expandafter{%
1821     \expandafter\@gobble\string#1\@empty
1822   }%
1823 }

```

### 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).

```

1824 \def\HyPsd@ifnextchar#1{%
1825   \pdfstringdefWarn#1%
1826   \expandafter\@gobbletwo\@gobble
1827 }

```

### 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`.

```

1828 \def\HyPsd@protected@testopt#1{%
1829   \pdfstringdefWarn#1%
1830   \@gobbletwo
1831 }

```

## 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:

```

1832 \def\HyPsd@Warning#1{%
1833   \begingroup
1834     \let\space\ltx@space
1835     \Hy@Warning{#1}%
1836   \endgroup
1837 }

```

### 6.6.2 Protecting spaces

```

1838 \RequirePackage{etexcmds}[2007/09/09]
1839 \ifetex@unexpanded
1840   \expandafter\@secondoftwo

```

```

1841 \else
1842 \expandafter\@firstoftwo
1843 \fi
1844 {%

```

`\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`.

```

1845 \def\HyPsd@ProtectSpaces#1{%
1846 \iftrue
1847 \expandafter\HyPsd@@ProtectSpacesFi
1848 \expandafter|\expandafter\@empty#1| \HyPsd@End#1%
1849 \fi
1850 }%

```

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

```

1851 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@End#3\fi{%
1852 \fi
1853 \ifx\scrollmode#2\scrollmode
1854 \HyPsd@RemoveMask#1\HyPsd@End#3%
1855 \else
1856 \gdef#3{#1\HyPsd@UnexpandableSpace#2}%
1857 \expandafter\HyPsd@@ProtectSpacesFi#3\HyPsd@End#3%
1858 \fi
1859 }%

```

### 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.

```

1860 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1861 \toks@\expandafter{#1}%
1862 \xdef#2{\the\toks@}%
1863 }%

1864 }{%
1865 \let\HyPsd@fi\fi
1866 \def\HyPsd@ProtectSpaces#1{%
1867 \xdef#1{%
1868 \iftrue
1869 \expandafter\HyPsd@@ProtectSpacesFi
1870 \expandafter|\expandafter\@empty#1| %
1871 \HyPsd@fi
1872 }%
1873 \expandafter\HyPsd@RemoveMask#1\HyPsd@End#1%
1874 }%
1875 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@fi{%
1876 \fi
1877 \etex@unexpanded{#1}%
1878 \ifx\scrollmode#2\scrollmode
1879 \else
1880 \HyPsd@@ProtectSpacesFi\HyPsd@UnexpandableSpace#2%
1881 \HyPsd@fi

```

```

1882 }%
1883 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1884   \xdef#2{\etex@unexpanded\expandafter{#1}}%
1885 }%
1886 }

```

### 6.6.3 Remove grouping braces

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

```

1887 \def\HyPsd@RemoveBraces#1{%
1888   \ifx\scrollmode#1\scrollmode
1889   \else
1890     \HyPsd@@RemoveBracesFi#1\HyPsd@End{#1}%
1891   \fi
1892 }

```

`\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`.

```

1893 \def\HyPsd@@RemoveBracesFi#1#2\HyPsd@End#3\fi{%
1894   \fi
1895   \def\Hy@temp@A{#1#2}%
1896   \def\Hy@temp@B{#3}%
1897   \ifx\Hy@temp@A\Hy@temp@B
1898     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1899       \HyPsd@String#1%
1900     }%
1901     \ifx\scrollmode#2\scrollmode
1902     \else
1903       \Hy@ReturnAfterFiFiEnd{%
1904         \HyPsd@RemoveBraces{#2}%
1905       }%
1906     \fi
1907   \else
1908     \def\Hy@temp@A{#1}%
1909     \HyPsd@AppendItalcrr\HyPsd@String
1910     \ifx\Hy@temp@A\@empty
1911       \Hy@ReturnAfterElseFiFiEnd{%
1912         \HyPsd@RemoveBraces{#2}%
1913       }%
1914     \else
1915       \HyPsd@ProtectSpaces\Hy@temp@A
1916       \HyPsd@AppendItalcrr\Hy@temp@A
1917       \Hy@ReturnAfterFiFiEnd{%
1918         \expandafter\HyPsd@RemoveBraces\expandafter
1919         {\Hy@temp@A#2}%
1920       }%
1921     \fi

```



```

1922 \fi
1923 \Hy@ReturnEnd
1924 }

```

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

```

1925 \def\HyPsd@AppendItalcorr#1{%
1926 \expandafter\HyPsd@@AppendItalcorr\expandafter{\/}#1%
1927 }
1928 \def\HyPsd@@AppendItalcorr#1#2{%
1929 \expandafter\def\expandafter#2\expandafter{#2#1}%
1930 }

```

#### 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`).

For the comparison with active characters, `~` cannot be used because it has the meaning of a blank space here. And active characters need to be checked, if they have been defined using `\protected`.

```

1931 \catcode'\Q=\active
1932 \let Q\ltx@empty
1933 \def\HyPsd@CheckCatcodes#1#2\HyPsd@End{%
1934 \global\let\HyPsd@Rest\relax
1935 \ifcat\relax\noexpand#1\relax
1936 \ifx#1\protect
1937 \else
1938 \ifx#1\penalty
1939 \setbox\z@=\hbox{%
1940 \afterassignment\HyPsd@AfterCountRemove
1941 \count@=#2\HyPsd@End
1942 }%
1943 \else
1944 \ifx#1\kern
1945 \setbox\z@=\hbox{%
1946 \afterassignment\HyPsd@AfterDimenRemove
1947 \dimen@=#2\HyPsd@End
1948 }%
1949 \else
1950 \ifx#1\hskip
1951 \setbox\z@=\hbox{%
1952 \afterassignment\HyPsd@AfterSkipRemove
1953 \skip@=#2\HyPsd@End
1954 }%
1955 \else
1956 \HyPsd@CatcodeWarning{#1}%
1957 \fi

```

```

1958     \fi
1959     \fi
1960     \fi
1961 \else
1962   \ifcat\noexpand#1\noexpandQ% active character
1963     \expandafter\expandafter\expandafter\def
1964       \expandafter\expandafter\expandafter\HyPsd@String
1965       \expandafter\expandafter\expandafter{%
1966         \expandafter\HyPsd@String\string#1%
1967       }%
1968 \else
1969   \ifcat#1A% letter
1970     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1971       \HyPsd@String#1%
1972     }%
1973 \else
1974   \ifcat#1 % SPACE
1975     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1976       \HyPsd@String\HyPsd@SPACEOPTI
1977     }%
1978 \else
1979   \ifcat$#1%
1980     \HyPsd@CatcodeWarning{math shift}%
1981 \else
1982   \ifcat&#1%
1983     \HyPsd@CatcodeWarning{alignment tab}%
1984 \else
1985   \ifcat^#1%
1986     \HyPsd@CatcodeWarning{superscript}%
1987 \else
1988   \ifcat_#1%
1989     \HyPsd@CatcodeWarning{subscript}%
1990 \else
1991   \expandafter\def\expandafter\HyPsd@String\expandafter{%
1992     \HyPsd@String#1%
1993   }%
1994   \fi
1995   \fi
1996   \fi
1997   \fi
1998   \fi
1999   \fi
2000   \fi
2001 \fi
2002 \ifx\HyPsd@Rest\relax
2003   \ifx\scrollmode#2\scrollmode
2004     \else
2005       \Hy@ReturnAfterFiFiEnd{%
2006         \HyPsd@CheckCatcodes#2\HyPsd@end
2007       }%
2008     \fi
2009   \else
2010     \ifx\HyPsd@Rest\@empty
2011       \else
2012         \Hy@ReturnAfterFiFiEnd{%
2013           \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@end
2014         }%

```

```

2015 \fi
2016 \fi
2017 \Hy@ReturnEnd
2018 }
2019 \catcode'\Q=11 %

```

### Remove counts, dimens, skips.

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

```

2020 \def\HyPsd@AfterCountRemove#1\HyPsd@end{%
2021 \gdef\HyPsd@Rest{#1}%
2022 }

```

`\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.

```

2023 \def\HyPsd@AfterDimenRemove#1\HyPsd@end{%
2024 \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@>1ex %
2025 \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
2026 \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
2027 \else
2028 \ifdim\dimen@=\z@
2029 \else
2030 \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
2031 \fi
2032 \gdef\HyPsd@Rest{#1}%
2033 \fi
2034 }

```

`\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).

```

2035 \def\HyPsd@AfterSkipRemove#1\HyPsd@end{%
2036 \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@>1ex %
2037 \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
2038 \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
2039 \else
2040 \ifdim\skip@=\z@
2041 \else
2042 \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
2043 \fi
2044 \gdef\HyPsd@Rest{#1}%
2045 \fi
2046 }

```

### Catcode warnings.

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

```

2047 \def\HyPsd@CatcodeWarning#1{%
2048 \HyPsd@Warning{%
2049 Token not allowed in a PDF string (%
2050 \ifHy@unicode
2051 Unicode%
2052 \else
2053 PDFDocEncoding%
2054 \fi

```

```

2055 ):%
2056 \MessageBreak removing '\HyPsd@RemoveCmdPrefix#1'%
2057 }%
2058 }
2059 \beginngroup
2060 \catcode'\|=0 %
2061 \catcode'\|=12 %
2062 \gdef\HyPsd@RemoveCmdPrefix#1{%
2063   \expandafter\HyPsd@@RemoveCmdPrefix
2064   \string#1|@empty\<>-|@empty|@empty
2065 }%
2066 \gdef\HyPsd@@RemoveCmdPrefix#1\<>-#2|@empty#3|@empty{#1#2}%
2067 \endgroup

```

\HyPsd@RemoveSpaceWarning

```

2068 \def\HyPsd@RemoveSpaceWarning#1{%
2069   \HyPsd@Warning{%
2070     Token not allowed in a PDF string (%
2071     \ifHy@unicode
2072       Unicode%
2073     \else
2074       PDFDocEncoding%
2075     \fi
2076   ):%
2077   \MessageBreak #1\MessageBreak
2078   removed%
2079 }%
2080 }

```

\HyPsd@ReplaceSpaceWarning

```

2081 \def\HyPsd@ReplaceSpaceWarning#1{%
2082   \HyPsd@Warning{%
2083     Token not allowed in a PDF string (%
2084     \ifHy@unicode
2085       Unicode%
2086     \else
2087       PDFDocEncoding%
2088     \fi
2089   ):%
2090   \MessageBreak #1\MessageBreak
2091   replaced by space%
2092 }%
2093 }

```

### 6.6.5 Check for wrong glyphs

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

```

2094 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
2095   \expandafter\def\expandafter\HyPsd@String\expandafter{%
2096     \HyPsd@String#1%
2097   }%
2098   \ifx\|#2\|
2099   \else
2100     \ltx@ReturnAfterFi{%
2101       \HyPsd@GlyphProcessWarning#2\@empty
2102     }%

```

```

2103 \fi
2104 }
2105 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
2106 \HyPsd@@GlyphProcessWarning#1++>%
2107 \HyPsd@GlyphProcess#2\@empty
2108 }
2109 \def\HyPsd@@GlyphProcessWarning#1+#2+#3>{%
2110 \ifx\#2\%
2111 \HyPsd@Warning{%
2112 Glyph not defined in %
2113 P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
2114 removing '@backslashchar#1'%
2115 }%
2116 \else
2117 \HyPsd@Warning{%
2118 Composite letter '@backslashchar#1+#2'\MessageBreak
2119 not defined in P\ifHy@unicode U\else D1\fi\space encoding,%
2120 \MessageBreak
2121 removing '@backslashchar#1'%
2122 }%
2123 \fi
2124 }

```

### 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`.

```

2125 \def\HyPsd@spaceopti#1{ % first space
2126 \ifx\HyPsd@spaceopti#1%
2127 \040%
2128 \else
2129 #1%
2130 \fi
2131 }%

```

### 6.6.6 Replacing tokens

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

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

```

2132 \def\HyPsd@Subst#1#2#3{%
2133 \def\HyPsd@@ReplaceFi##1#1##2\END\fi{%
2134 \fi
2135 ##1%
2136 \ifx\scrollmode##2\scrollmode
2137 \else
2138 #2%
2139 \HyPsd@@@ReplaceFi##2\END
2140 \fi
2141 }%
2142 \xdef#3{%

```

```

2143 \iftrue
2144 \expandafter\HyPsd@@ReplaceFi#3#1\END
2145 \fi
2146 }%
2147 }

```

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

```

2148 \def\HyPsd@StringSubst#1{%
2149 \expandafter\HyPsd@Subst\expandafter{\string#1}%
2150 }

```

`\HyPsd@EscapeTeX`

```

2151 \begingroup
2152 \lccode'\!='\%%
2153 \lccode'\|='\%%
2154 \lccode'\(='\{%
2155 \lccode'\)='\}%
2156 \lccode'0=\ltx@zero
2157 \lccode'1=\ltx@zero
2158 \lccode'3=\ltx@zero
2159 \lccode'4=\ltx@zero
2160 \lccode'5=\ltx@zero
2161 \lccode'7=\ltx@zero
2162 \lowercase{\endgroup
2163 \def\HyPsd@EscapeTeX#1{%
2164 \HyPsd@Subst!{|045}#1%
2165 \HyPsd@Subst({|173}#1%
2166 \HyPsd@Subst){|175}#1%
2167 }%
2168 }

```

### 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.

```

2169 \def\HyPsd@doxspace#1{%
2170 \ifx#1\relax\else
2171 \ifx#1.\else
2172 \ifx#1:\else
2173 \ifx#1,\else
2174 \ifx#1;\else
2175 \ifx#1!\else
2176 \ifx#1?\else
2177 \ifx#1/\else
2178 \ifx#1-\else
2179 \ifx#1'\else
2180 \HyPsd@SPACEOPTI
2181 \fi
2182 \fi
2183 \fi
2184 \fi
2185 \fi
2186 \fi
2187 \fi

```

```

2188 \fi
2189 \fi
2190 \fi
2191 #1%
2192 }%

```

### 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.

```

2193 \beginingroup
2194 \catcode'\|=0 %
2195 \catcode'\|=12 %

```

\HyPsd@ConvertToUnicode

```

2196 |gdef|HyPsd@ConvertToUnicode#1{%
2197 |xdef#1{%
2198 |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
2199 }%
2200 |ifx#1|@empty
2201 |else
2202 |xdef#1{%
2203 \376\377%
2204 #1%
2205 }%
2206 |fi
2207 }%

```

\HyPsd@DoConvert

```

2208 |gdef|HyPsd@DoConvert#1{%
2209 |ifx#1|@empty
2210 |else
2211 |ltx@ReturnAfterFi{%
2212 |ifx#1\%%
2213 \%%
2214 |expandafter|HyPsd@DoEscape
2215 |else
2216 |HyPsd@Char{#1}%
2217 |expandafter|HyPsd@DoConvert
2218 |fi
2219 }%
2220 |fi
2221 }%

```

\HyPsd@DoEscape

```

2222 |gdef|HyPsd@DoEscape#1{%
2223 |ifx#19%
2224 |expandafter|HyPsd@GetTwoBytes
2225 |else
2226 |ltx@ReturnAfterFi{%
2227 |ifx#18%
2228 00%
2229 |expandafter|HyPsd@GetTwoBytes
2230 |else
2231 #1%
2232 |expandafter|HyPsd@GetOneByte

```

```

2233     |fi
2234   }%
2235   |fi
2236 }%

```

`\HyPsd@GetTwoBytes`

```

2237 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
2238   #1\#2#3#4%
2239   |HyPsd@DoConvert
2240 }%

```

`\HyPsd@GetOneByte`

```

2241 |gdef|HyPsd@GetOneByte#1#2{%
2242   #1#2%
2243   |HyPsd@DoConvert
2244 }%
2245 |endgroup

```

`\HyPsd@@GetNextTwoTokens` T<sub>E</sub>X does only allow nine parameters, so we need another macro to get more arguments.

```

2246 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
2247   \xdef#4{#4#1#2}%
2248   \HyPsd@@ConvertToUnicode#3\END#4%
2249 }

```

`\HyPsd@Char`

```

2250 \begingroup
2251   \catcode0=9 %
2252   \catcode'\^=7 %
2253   \catcode'\^^=12 %
2254   \def\x{^^^0000}%
2255 \expandafter\endgroup
2256 \ifx\x\@empty
2257   \def\HyPsd@Char#1{%
2258     \ifnum'#1<128 %
2259       \@backslashchar 000#1%
2260     \else
2261       \ifnum'#1<65536 %
2262         \expandafter\HyPsd@CharTwoByte\number'#1!%
2263       \else
2264         \expandafter\expandafter\expandafter\HyPsd@CharSurrogate
2265         \intcalcSub{'#1}{65536}!%
2266       \fi
2267     \fi
2268   }%
2269   \def\HyPsd@CharTwoByte#1!{%
2270     \expandafter\expandafter\expandafter\HyPsd@CharOctByte
2271     \IntCalcDiv#1!256!!%
2272     \expandafter\expandafter\expandafter\HyPsd@CharOctByte
2273     \IntCalcMod#1!256!!%
2274   }%
2275   \def\HyPsd@CharOctByte#1!{%
2276     \@backslashchar
2277     \IntCalcDiv#1!64!%
2278     \intcalcDiv{\IntCalcMod#1!64!}{8}%
2279     \IntCalcMod#1!8!%
2280   }%

```



```

2281 \def\HyPsd@CharSurrogate#1!{%
2282   \@backslashchar 33%
2283   \IntCalcDiv#1!262144!%
2284   \expandafter\expandafter\expandafter\HyPsd@CharOctByte
2285   \intcalcDiv{\IntCalcMod#1!262144!}{1024}!%
2286   \@backslashchar 33%
2287   \expandafter\expandafter\expandafter\IntCalcAdd
2288   \intcalcDiv{\IntCalcMod#1!1024!}{256}!4!%
2289   \expandafter\expandafter\expandafter\HyPsd@CharOctByte
2290   \IntCalcMod#1!256!!%
2291 }%
2292 \else
2293 \def\HyPsd@Char#1{%
2294   \@backslashchar 000#1%
2295 }%
2296 \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

2297 \begingroup\expandafter\expandafter\expandafter\endgroup
2298 \expandafter\ifx\csname numexpr\endcsname\relax
2299   \let\HyPsd@UTFviii\relax
2300 \else
2301   \begingroup
2302     \lccode'\~='^^f4\relax
2303     \lowercase{\endgroup
2304       \def\HyPsd@UTFviii{%
2305         \let\UTFviii@two@octets\HyPsd@UTFviii@two
2306         \let\UTFviii@three@octets\HyPsd@UTFviii@three
2307         \let\UTFviii@four@octets\HyPsd@UTFviii@four
2308         \ifx~\HyPsd@UTFviii@ccxliv@undef
2309           \let~\HyPsd@UTFviii@ccxliv@def
2310         \fi
2311         \let\unichar\HyPsd@unichar
2312       }%
2313     }%
2314     \def\HyPsd@UTFviii@ccxliv@undef{\@inpenc@undefined@{utf8}}%
2315     \edef\HyPsd@UTFviii@ccxliv@def{%
2316       \noexpand\UTFviii@four@octets\string ^^f4%
2317     }%

```

The two octet form of UTF-8 110aaabb (A) and 10ccdd (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.

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

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

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

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

$$(5)$$

```

2318 \def\HyPsd@UTFviii@two#1#2{%
2319 \expandafter\HyPsd@UTFviii@@two
2320 \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|
2321 \number'#1\expandafter|
2322 \number\dimexpr.125\dimexpr'#2sp\expandafter\relax\expandafter|
2323 \number'#2 \@nil
2324 }%
2325 \def\HyPsd@UTFviii@@two#1|#2|#3|#4\@nil{%
2326 \expandafter\8%
2327 \number\numexpr #1-48\expandafter\relax
2328 \csname\number\numexpr #2-4*#1\relax\expandafter\endcsname
2329 \number\numexpr #3-8*%
2330 \number\dimexpr.125\dimexpr'#3sp\relax\relax\expandafter\relax
2331 \number\numexpr #4-8*#3\relax
2332 }%
```

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

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

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

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

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

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

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

$$(12)$$

```

2333 \def\HyPsd@UTFviii@three#1#2#3{%
2334 \expandafter\HyPsd@UTFviii@@three
2335 \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|
2336 \number'#1\expandafter|
2337 \number\ifnum\numexpr'#2-128\relax <32 0\else 1\fi\expandafter|
2338 \number\dimexpr.25\dimexpr'#2sp\expandafter\relax\expandafter|
2339 \number'#2\expandafter|
2340 \number\dimexpr.125\dimexpr'#3sp\expandafter\relax\expandafter|
2341 \number'#3 \@nil
2342 }%
2343 \def\HyPsd@UTFviii@@three#1|#2|#3|#4|#5|#6|#7\@nil{%
2344 \expandafter\9%
2345 \number\numexpr #1-56\expandafter\relax
2346 \number\numexpr 2*(#2-4*#1)+#3\expandafter\relax
2347 \number\numexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax
2348 \csname\number\numexpr #5-4*#4\relax\expandafter\endcsname
2349 \number\numexpr #6-16\expandafter\relax
2350 \number\numexpr #7-8*#6\relax
2351 }%
```

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

```

2352 \def\HyPsd@UTFviii@four#1#2{%
2353   \expandafter\HyPsd@@UTFviii@four\number
2354   \numexpr-1+('#1-240)*4+\dimexpr.0625\dimexpr'#2sp-128sp%
2355   \expandafter|\number
2356   \numexpr'#2-16*\dimexpr.0625\dimexpr'#2sp| %
2357 }%
2358 \def\HyPsd@@UTFviii@four#1|#2|#3{%
2359   \933\number\dimexpr.25\dimexpr#1sp\relax\relax
2360   \csname\number\numexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
2361   \ifodd#2 %
2362     \number\numexpr(#2-1)/2\relax
2363   \else
2364     \number\numexpr#2/2\relax
2365   \fi
2366   \number\numexpr\ifodd#2 4+\fi
2367   \dimexpr.0625\dimexpr'#3sp-128sp\relax\relax\relax
2368   \933%
2369   \expandafter\HyPsd@@@UTFviii@four\number
2370   \numexpr'#3-16*\dimexpr.0625\dimexpr'#3sp| %
2371 }%
2372 \def\HyPsd@@@UTFviii@four#1|#2{%
2373   \number\numexpr4+\dimexpr.25\dimexpr#1sp\relax\relax\relax
2374   \csname\number\numexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
2375   \number\dimexpr.125\dimexpr'#2sp-128sp\relax\relax
2376   \number\numexpr'#2-8*\dimexpr.125\dimexpr'#2sp\relax\relax\relax
2377 }%

```

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

```

2378 \def\HyPsd@unichar#1{%
2379   \ifHy@unicode
2380     \ifnum#1>"10FFFF %
2381       \HyPsd@UnicodeReplacementCharacter % illegal
2382     \else
2383       \ifnum#1>"FFFF %

```

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

```

2384   \expandafter\HyPsd@unichar\expandafter{%
2385     \number\numexpr 55296+%
2386     \dimexpr.0009765625\dimexpr\number#1sp-\p@
2387     \relax\relax\relax
2388   }%

```

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

```

2389   \expandafter\HyPsd@unichar\expandafter{%
2390     \number\numexpr#1-9216%
2391     -1024*\dimexpr.0009765625\dimexpr\number#1sp-\p@
2392     \relax\relax\relax
2393   }%
2394   \else
2395     \ifnum#1>"7FFF %
2396     \9%
2397     \expandafter\HyPsd@unichar@first@byte\expandafter{%
2398       \number
2399       \dimexpr.00390625\dimexpr\number#1sp\relax\relax
2400     }%

```

```

2401     \else
2402     \8%
2403     \number\dimexpr.00390625\dimexpr\number#1sp\relax\relax
2404     \fi
2405     \expandafter\HyPsd@unichar@second@byte\expandafter{%
2406     \number
2407     \numexpr#1-256*\number
2408     \dimexpr.00390625\dimexpr\number#1sp\relax\relax\relax
2409     }%
2410     \fi
2411     \fi
2412     \else
2413     .% unsupported (Unicode -> PDF Doc Encoding)
2414     \fi
2415 }%
2416 \def\HyPsd@UnicodeReplacementCharacter{\9377\375}%
2417 \def\HyPsd@unichar@first@byte#1{%
2418     \number\dimexpr.015625\dimexpr#1sp\relax\relax
2419     \expandafter\HyPsd@unichar@octtwo\expandafter{%
2420     \number
2421     \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2422     \relax\relax\relax
2423     }%
2424 }%
2425 \def\HyPsd@unichar@second@byte#1{%
2426     \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
2427     \expandafter\HyPsd@unichar@octtwo\expandafter{%
2428     \number
2429     \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2430     \relax\relax\relax
2431     }%
2432 }%
2433 \def\HyPsd@unichar@octtwo#1{%
2434     \number\dimexpr.125\dimexpr#1sp\relax\relax
2435     \number\dimexpr#1-8*\number\dimexpr.125\dimexpr#1sp%
2436     \relax\relax\relax
2437 }%
2438 \fi

```

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

```

2439 \def\HyPsd@utf@viii@undeferr#1#2#3#4#5#6{%
2440     \ifx\@gobble#1%
2441     \else
2442     [Please insert \textbackslash PrerenderUnicode%
2443     \textbraceleft#1\textbraceright\space
2444     into preamble]%
2445     \fi
2446 }%

```

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

\HyPsd@DieFace Die faces are provided by

Package	Macro
ifsym	\Cube
epsdice	\epsdice
hhcount	\fcdice

`\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`.

```

2447 \def\HyPsd@DieFace#1{%
2448   \ifHy@unicode
2449     \ifnum#1<1 %
2450       \HyPsd@UnicodeReplacementCharacter
2451     \else
2452       \ifnum#1>6 %
2453         \9046\205%
2454         \expandafter\expandafter\expandafter
2455         \HyPsd@DieFaceLarge\intcalcSub{#1}{6}!%
2456       \else
2457         \9046\20\intcalcDec{#1}%
2458       \fi
2459     \fi
2460   \else
2461     .% Die faces are not part of PDFDocEncoding
2462   \fi
2463 }

```

`\HyPsd@DieFaceLarge`

```

2464 \def\HyPsd@DieFaceLarge#1!{%
2465   \ifnum#1>6 %
2466     \expandafter\ltx@firstoftwo
2467   \else
2468     \expandafter\ltx@secondoftwo
2469   \fi
2470   {%
2471     \9046\205%
2472     \expandafter\expandafter\expandafter
2473     \HyPsd@DieFaceLarge\IntCalcSub#1!6!!%
2474   }{%
2475     \9046\20\IntCalcDec#1!%
2476   }%
2477 }

```

### 6.6.11 Support for moon phases of package china2e

```

2478 \def\HyPsd@MoonPha#1{%
2479   \ifcase\intcalcNum{#1} %
2480     \HyPsd@UnicodeReplacementCharacter
2481   \or % 1
2482   % U+1F31A NEW MOON WITH FACE; \MoonPha{1} (china2e)
2483   \9330\074\9337\032%
2484   \or % 2
2485   \HyPsd@UnicodeReplacementCharacter
2486   \or % 3
2487   % U+1F31D FULL MOON WITH FACE; \MoonPha{3} (china2e)
2488   \9330\074\9337\035%
2489   \or % 4
2490   % U+1F31C LAST QUARTER MOON WITH FACE; \MoonPha{4} (china2e)
2491   \9330\074\9337\034%
2492   \else
2493     \HyPsd@UnicodeReplacementCharacter
2494   \fi
2495 }

```

2496 %\* \HyPsd@MoonPha -> \MoonPha

### 6.6.12 Support for package pifont

\HyPsd@ding

```
2497 \def\HyPsd@ding#1{%
2498   \ifHy@unicode
2499     \ifnum#1<32 %
2500       \HyPsd@UnicodeReplacementCharacter
2501     \else
2502       \ifnum#1>254 %
2503         \HyPsd@UnicodeReplacementCharacter
2504       \else
2505         \ifnum#1<127 %
2506           \expandafter\expandafter\expandafter
2507             \HyPsd@@ding\intcalcNum{#1}!%
2508         \else
2509           \ifnum#1>160 %
2510             \expandafter\expandafter\expandafter
2511               \HyPsd@@ding\intcalcNum{#1}!%
2512           \else
2513             \HyPsd@UnicodeReplacementCharacter
2514           \fi
2515         \fi
2516       \fi
2517     \fi
2518   \else
2519     .% Dingbats are not part of PDFDocEncoding
2520   \fi
2521 }
```

\HyPsd@@ding

```
2522 \def\HyPsd@@ding#1!{%
2523   \ltx@ifundefined{HyPsd@ding@#1}{%
2524     \ifnum#1<127 %
2525       \9047%
2526       \HyPsd@DecimalToOctalSecond{\IntCalcSub#1!32!}%
2527     \else
2528       \ifnum#1<168 %
2529         \9047\14\IntCalcSub#1!160!%
2530       \else
2531         \ifnum#1>181 %
2532           \9047\HyPsd@DecimalToOctalSecond{\IntCalcSub#1!64!}%
2533         \else
2534           % 172..181 -> U+2460..U+2469
2535           \9044\HyPsd@DecimalToOctalSecond{\IntCalcSub#1!76!}%
2536         \fi
2537       \fi
2538     \fi
2539   }{%
2540     \csname HyPsd@ding@#1\endcsname
2541   }%
2542 }

2543 \@namedef{HyPsd@ding@32}{\space}
2544 % U+260E BLACK TELEPHONE
2545 \@namedef{HyPsd@ding@37}{\9046\016}% U+260E
2546 % U+261B BLACK RIGHT POINTING INDEX
```

```

2547 \@namedef{HyPsd@ding@42}{\9046\033}% U+261B
2548 % U+261E WHITE RIGHT POINTING INDEX
2549 \@namedef{HyPsd@ding@43}{\9046\036}% U+261E
2550 % U+2605 BLACK STAR
2551 \@namedef{HyPsd@ding@72}{\9046\005}% U+2605
2552 % U+25CF BLACK CIRCLE
2553 \@namedef{HyPsd@ding@108}{\9045\317}% U+25CF
2554 % U+25A0 BLACK SQUARE
2555 \@namedef{HyPsd@ding@110}{\9045\240}% U+25A0
2556 % U+25B2 BLACK UP-POINTING TRIANGLE
2557 \@namedef{HyPsd@ding@115}{\9045\262}% U+25B2
2558 % U+25BC BLACK DOWN-POINTING TRIANGLE
2559 \@namedef{HyPsd@ding@116}{\9045\274}% U+25BC
2560 % U+25C6 BLACK DIAMOND
2561 \@namedef{HyPsd@ding@117}{\9045\306}% U+25C6
2562 % U+25D7 RIGHT HALF BLACK CIRCLE
2563 \@namedef{HyPsd@ding@119}{\9045\327}% U+25D7
2564 \@namedef{HyPsd@ding@168}{\textclubsuitblack}%
2565 \@namedef{HyPsd@ding@169}{\textdiamondsuitblack}%
2566 \@namedef{HyPsd@ding@170}{\textheartsuitblack}%
2567 \@namedef{HyPsd@ding@171}{\textspadesuitblack}%
2568 \@namedef{HyPsd@ding@213}{\textrightarrow}%
2569 \@namedef{HyPsd@ding@214}{\textleftarrow}%
2570 \@namedef{HyPsd@ding@215}{\textupdownarrow}%
2571 \@namedef{HyPsd@ding@240}{\HyPsd@UnicodeReplacementCharacter}

```

## 7 Support of other packages

### 7.1 Class memoir

```

2572 \@ifclassloaded{memoir}{%
2573   \Hy@AtEndOfPackage{\RequirePackage{memhfixc}}%
2574 }{}

```

### 7.2 Package subfigure

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

```

2575 \@ifpackageloaded{subfigure}{%
2576   \ltx@ifundefined{sub@label}{%
2577     \Hy@hypertexnamesfalse
2578   }{%
2579     \renewcommand*{\sub@label}[1]{%
2580       \@bsphack
2581       \subfig@oldlabel{#1}%
2582       \if@filesw
2583         \begingroup
2584         \edef\@currentlabstr{%
2585           \expandafter\strip@prefix\meaning\@currentlabelname
2586         }%
2587         \protected@write\@auxout{}{%
2588           \string\newlabel{sub@#1}{%
2589             {\@nameuse{@@thesub}\@capytype}}%
2590             {\thepage}%
2591           {%
2592             \expandafter\strip@period\@currentlabstr
2593             \relax.\relax\@@@%
2594           }%

```

```

2595         {\@currentHref}%
2596     }%
2597 }%
2598 }%
2599 \endgroup
2600 \fi
2601 \@esphack
2602 }%
2603 \@ifpackagelater{subfigure}{2002/03/26}{\%
2604     \providecommand*\@toclevel@subfigure{1}%
2605     \providecommand*\@toclevel@subtable{1}%
2606 }%
2607 }%
2608 }{}

```

### 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:

```

2609 \ltx@ifundefined{XR@addURL}{%
2610 }{}%

```

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.

```

2611 \def\xr@addURL#1{\xr@dURL#1{}{}{}\\}%
2612 \def\xr@dURL#1#2#3#4#5\\{%
2613     {#1}{#2}%
2614     \if!#4!%
2615     \else
2616         {#3}{#4}{\xr@URL}%
2617     \fi
2618 }%
2619 }

2620 \def\Hy@true{true}
2621 \def\Hy@false{false}

```

Providing dummy definitions.

```

2622 \let\literalps@out\@gobble
2623 \newcommand\pdfbookmark[3]{}
2624 \def\Acrobatmenu#1#2{\leavevmode#2}
2625 \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



```

2626 \let\HyperRaiseLinkHook\@empty
2627 \def\HyperRaiseLinkDefault{\baselineskip}
\HyperRaiseLinkHook allows the user to reassign \HyperRaiseLinkLength.

```

```

2628 \newcount\Hy@SavedSpaceFactor
2629 \def\Hy@SaveSpaceFactor{%
2630   \global\Hy@SavedSpaceFactor=\ifhmode\spacefactor\else\z@\fi
2631 }
2632 \def\Hy@RestoreSpaceFactor{%
2633   \relax
2634   \ifhmode
2635     \ifnum\Hy@SavedSpaceFactor>\z@
2636       \spacefactor=\Hy@SavedSpaceFactor
2637     \fi
2638   \fi
2639 }
2640 \def\Hy@SaveSavedSpaceFactor{%
2641   \edef\Hy@RestoreSavedSpaceFactor{%
2642     \global\Hy@SavedSpaceFactor=\the\Hy@SavedSpaceFactor\relax
2643   }%
2644 }
2645 \def\Hy@raisedlink#1{%
2646   \ifvmode
2647     #1%
2648   \else
2649     \Hy@SaveSpaceFactor
2650     \penalty\@M
2651     \smash{%
2652       \begingroup
2653         \let\HyperRaiseLinkLength\@tempdima
2654         \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
2655         \HyperRaiseLinkHook
2656       \expandafter\endgroup
2657       \expandafter\raise\the\HyperRaiseLinkLength\hbox{%
2658         \Hy@RestoreSpaceFactor
2659         #1%
2660         \Hy@SaveSpaceFactor
2661       }%
2662     }%
2663   \Hy@RestoreSpaceFactor
2664   \fi
2665 }

```

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

```

2666 \def\Hy@SaveLastskip{%
2667   \let\Hy@RestoreLastskip\relax
2668   \ifvmode
2669     \ifdim\lastskip=\z@
2670       \let\Hy@RestoreLastskip\nobreak
2671     \else
2672       \begingroup
2673         \skip@=-\lastskip
2674       \edef\x{%
2675         \endgroup
2676         \def\noexpand\Hy@RestoreLastskip{%
2677           \noexpand\ifvmode
2678             \noexpand\nobreak
2679             \vskip\the\skip@

```

```

2680         \vskip\the\lastskip\relax
2681         \noexpand\fi
2682     }%
2683 }%
2684 \x
2685 \fi
2686 \else
2687 \ifhmode
2688 \ifdim\lastskip=\z@
2689 \let\Hy@RestoreLastskip\nobreak
2690 \else
2691 \begingroup
2692 \skip@=-\lastskip
2693 \edef\x{%
2694 \endgroup
2695 \def\noexpand\Hy@RestoreLastskip{%
2696 \noexpand\ifhmode
2697 \noexpand\nobreak
2698 \hskip\the\skip@
2699 \hskip\the\lastskip\relax
2700 \noexpand\fi
2701 }%
2702 }%
2703 \x
2704 \fi
2705 \fi
2706 \fi
2707 }%

```

## 9 Options

```

2708 \SetupKeyvalOptions{%
2709 family=Hyp,%
2710 prefix=HyOpt%
2711 }

```

### 9.1 Help macros

`\IfHyperBooleanExists`

```

2712 \def\IfHyperBooleanExists#1{%
2713 \ltx@ifundefined{Hy@#1false}\ltx@secondoftwo{%
2714 \ltx@ifundefined{KV@Hyp@#1@default}\ltx@secondoftwo\ltx@firstoftwo
2715 }%
2716 }

2717 \@namedef{KV@Hyp@stoppearly@default}{\}

```

`\IfHyperBoolean`

```

2718 \def\IfHyperBoolean#1{%
2719 \IfHyperBooleanExists{#1}{%
2720 \csname ifHy@#1\endcsname
2721 \expandafter\ltx@firstoftwo
2722 \else
2723 \expandafter\ltx@secondoftwo
2724 \fi
2725 }\ltx@secondoftwo
2726 }

```

\Hy@boolkey

```

2727 \def\Hy@boolkey#1#2{%
2728   \edef\Hy@tempa{#2}%
2729   \lowercase\expandafter{%
2730     \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
2731   }%
2732   \ifx\Hy@tempa\@empty
2733     \let\Hy@tempa\Hy@true
2734   \fi
2735   \ifx\Hy@tempa\Hy@true
2736   \else
2737     \ifx\Hy@tempa\Hy@false
2738     \else
2739       \let\Hy@tempa\relax
2740     \fi
2741   \fi
2742   \ifx\Hy@tempa\relax
2743     \Hy@WarnOptionValue{#2}{#1}{‘true’ or ‘false’}%
2744   \else
2745     \Hy@Info{Option ‘#1’ set ‘\Hy@tempa’}%
2746     \csname Hy@#1\Hy@tempa\endcsname
2747   \fi
2748 }
```

\Hy@WarnOptionValue

```

2749 \def\Hy@WarnOptionValue#1#2#3{%
2750   \Hy@Warning{%
2751     Unexpected value ‘#1’\MessageBreak
2752     of option ‘#2’ instead of\MessageBreak
2753     #3%
2754   }%
2755 }
```

\Hy@DisableOption

```

2756 \def\Hy@DisableOption#1{%
2757   \ltx@ifundefined{KV@Hyp@#1@default}{%
2758     \define@key{Hyp}{#1}%
2759   }{%
2760     \define@key{Hyp}{#1}[]%
2761   }%
2762   {\Hy@WarnOptionDisabled{#1}}%
2763 }
```

\Hy@WarnOptionDisabled

```

2764 \def\Hy@WarnOptionDisabled#1{%
2765   \Hy@Warning{%
2766     Option ‘#1’ has already been used,\MessageBreak
2767     setting the option has no effect%
2768   }%
2769 }
```

\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.

```

2770 \def\Hy@CheckOptionValue#1#2#3{%
2771   \begingroup
2772   \edef\x{#1}%
```

```

2773 \@onelevel@sanitize\x
2774 \let\y=y%
2775 \def\do##1##2{%
2776   \def\z{##1}%
2777   \@onelevel@sanitize\z
2778   \ifx\x\z
2779     \let\y=n%
2780     \let\do\@gobbletwo
2781   \fi
2782 }%
2783 #3%
2784 \ifx\y y%
2785   \def\do##1##2{%
2786     * '##1'%
2787     \ifx\\##2\\\else\space(##2)\fi
2788     \MessageBreak
2789   }%
2790 \Hy@Warning{%
2791   Values of option '#2':\MessageBreak
2792   #3%
2793   * An empty value disables the option.\MessageBreak
2794   Unknown value '\x'%
2795 }%
2796 \fi
2797 \endgroup
2798 }

```

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

```

2799 \def\Hy@DefNameKey#1{%
2800   \expandafter\Hy@@DefNameKey\csname @#1\endcsname{#1}%
2801 }

```

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

```

2802 \def\Hy@@DefNameKey#1#2#3{%
2803   \define@key{Hyp}{#2}{%
2804     \edef#1{##1}%
2805     \ifx#1\@empty
2806     \else
2807       \Hy@CheckOptionValue{##1}{#2}{#3}%
2808     \fi
2809   }%
2810   \let#1\@empty
2811 }

```

\Hy@UseNameKey

```

2812 \def\Hy@UseNameKey#1#2{%
2813   \ifx#2\@empty
2814   \else
2815     /#1/#2%
2816   \fi
2817 }

```

## 9.2 Defining the options

```

2818 \define@key{Hyp}{implicit}[true]{%
2819   \Hy@boolkey{implicit}{#1}%
2820 }
2821 \define@key{Hyp}{draft}[true]{%
2822   \Hy@boolkey{draft}{#1}%
2823 }
2824 \define@key{Hyp}{final}[true]{%
2825   \Hy@boolkey{final}{#1}%
2826 }
2827 \let\KV@Hyp@nolinks\KV@Hyp@draft

2828 \def\Hy@ObsoletePaperOption#1{%
2829   \Hy@WarningNoLine{%
2830     Option ‘#1’ is no longer used%
2831   }%
2832   \define@key{Hyp}{#1}[true]{}%
2833 }
2834 \def\Hy@temp#1{%
2835   \define@key{Hyp}{#1}[true]{%
2836     \Hy@ObsoletePaperOption{#1}%
2837   }%
2838 }
2839 \Hy@temp{a4paper}
2840 \Hy@temp{a5paper}
2841 \Hy@temp{b5paper}
2842 \Hy@temp{letterpaper}
2843 \Hy@temp{legalpaper}
2844 \Hy@temp{executivepaper}

2845 \define@key{Hyp}{setpagesize}[true]{%
2846   \Hy@boolkey{setpagesize}{#1}%
2847 }
2848 \define@key{Hyp}{debug}[true]{%
2849   \Hy@boolkey{debug}{#1}%
2850 }
2851 \define@key{Hyp}{linktocpage}[true]{%
2852   \Hy@boolkey{linktocpage}{#1}%
2853   \ifHy@linktocpage
2854     \let\Hy@linktoc\Hy@linktoc@page
2855   \else
2856     \let\Hy@linktoc\Hy@linktoc@section
2857   \fi
2858 }
2859 \chardef\Hy@linktoc@none=0 %
2860 \chardef\Hy@linktoc@section=1 %
2861 \chardef\Hy@linktoc@page=2 %
2862 \chardef\Hy@linktoc@all=3 %
2863 \ifHy@linktocpage
2864   \let\Hy@linktoc\Hy@linktoc@page
2865 \else
2866   \let\Hy@linktoc\Hy@linktoc@section
2867 \fi
2868 \define@key{Hyp}{linktoc}{%
2869   \@ifundefined{Hy@linktoc@#1}{%
2870     \Hy@Warning{%
2871       Unexpected value ‘#1’ of\MessageBreak
2872       option ‘linktoc’ instead of ‘none’,\MessageBreak

```

```

2873     'section', 'page' or 'all'%
2874 }%
2875 }{%
2876   \expandafter\let\expandafter\Hy@linktoc
2877   \csname Hy@linktoc@#1\endcsname
2878 }%
2879 }
2880 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
2881 \let\XR@ext\relax
2882 \define@key{Hyp}{verbose}[true]{%
2883   \Hy@boolkey{verbose}{#1}%
2884 }
2885 \define@key{Hyp}{typexml}[true]{%
2886   \Hy@boolkey{typexml}{#1}%
2887 }

```

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.

```

2888 \define@key{Hyp}{raiselinks}[true]{%
2889   \Hy@boolkey{raiselinks}{#1}%
2890 }

```

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

```

2891 \def\Hy@setbreaklinks#1{%
2892   \csname breaklinks#1\endcsname
2893 }
2894 \def\Hy@breaklinks@unsupported{%
2895   \ifx\Hy@setbreaklinks@gobble
2896     \ifHy@breaklinks
2897       \Hy@WarningNoLine{%
2898         You have enabled option 'breaklinks'.\MessageBreak
2899         But driver '\Hy@driver.def' does not support this.\MessageBreak
2900         Expect trouble with the link areas of broken links%
2901       }%
2902     \fi
2903     \fi
2904 }
2905 \define@key{Hyp}{breaklinks}[true]{%
2906   \Hy@boolkey{breaklinks}{#1}%
2907   \let\Hy@setbreaklinks@gobble
2908 }
2909 \define@key{Hyp}{localanchorname}[true]{%
2910   \Hy@boolkey{localanchorname}{#1}%
2911 }

```

Determines whether an automatic anchor is put on each page

```

2912 \define@key{Hyp}{pageanchor}[true]{%
2913   \Hy@boolkey{pageanchor}{#1}%
2914 }

```

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.

```

2915 \define@key{Hyp}{plainpages}[true]{%
2916   \Hy@boolkey{plainpages}{#1}%
2917 }

```

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

```
2918 \define@key{Hyp}{naturalnames}[true]{%
2919   \Hy@boolkey{naturalnames}{#1}%
2920 }
```

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

```
2921 \define@key{Hyp}{hypertextnames}[true]{%
2922   \Hy@boolkey{hypertextnames}{#1}%
2923 }
```

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

```
2924 \define@key{Hyp}{nesting}[true]{%
2925   \Hy@boolkey{nesting}{#1}%
2926 }
```

```
2927 \define@key{Hyp}{destlabel}[true]{%
2928   \Hy@boolkey{destlabel}{#1}%
2929 }
```

```
2930 \define@key{Hyp}{unicode}[true]{%
2931   \Hy@boolkey{unicode}{#1}%
2932   \ifHy@unicode
2933     \def\HyPsd@pdfencoding{unicode}%
2934     \HyPsd@LoadUnicode
2935   \else
2936     \def\HyPsd@pdfencoding{pdfdoc}%
2937   \fi
2938 }
```

```
2939 \Hy@AtBeginDocument{%
2940   \ifx\HyPsd@LoadUnicode\relax
2941   \else
2942     \def\HyPsd@LoadUnicode{%
2943       \Hy@Error{%
2944         Unicode support for bookmarks is not available.\MessageBreak
2945         Activate unicode support by using one of the options\MessageBreak
2946         'unicode', 'pdfencoding=unicode', 'pdfencoding=auto'\MessageBreak
2947         in the preamble%
2948       }\@ehc
2949       \global\let\HyPsd@LoadUnicode\relax
2950       \global\Hy@unicodetrue
2951       \global\let\Hy@unicodetrue\Hy@unicodetrue
2952     }%
2953   \fi
2954 }
```

```
2955 \define@key{Hyp}{pdfencoding}{%
2956   \edef\HyPsd@temp{#1}%
2957   \ifx\HyPsd@temp\HyPsd@pdfencoding@pdfdoc
2958     \let\HyPsd@pdfencoding\HyPsd@temp
2959     \Hy@unicodetrue
2960   \else
2961     \ifcase\ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
2962       \z@
2963     \else
2964       \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
2965         \z@
2966       \else
```

```

2967         \@ne
2968     \fi
2969 \fi
2970 \let\HyPsd@pdfencoding\HyPsd@temp
2971 \hypersetup{unicode}%
2972 \ifHy@unicode
2973     \def\HyPsd@pdfencoding{#1}%
2974     \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
2975         \HyPsd@LoadStringEnc
2976     \fi
2977 \else
2978     \Hy@Warning{Cannot switch to unicode bookmarks}%
2979     \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
2980 \fi
2981 \else
2982     \@onelevel@sanitize\HyPsd@temp
2983     \Hy@Warning{%
2984         Values of option 'pdfencoding':\MessageBreak
2985         'pdfdoc', 'unicode', 'auto'.\MessageBreak
2986         Ignoring unknown value '\HyPsd@temp'%
2987     }%
2988 \fi
2989 \fi
2990 }
2991 \def\HyPsd@pdfencoding@auto{auto}
2992 \def\HyPsd@pdfencoding@pdfdoc{pdfdoc}
2993 \def\HyPsd@pdfencoding@unicode{unicode}
2994 \let\HyPsd@pdfencoding\Hy@pdfencoding@pdfdoc
2995 \def\HyPsd@LoadStringEnc{%
2996     \RequirePackage{stringenc}[2009/12/15]%
2997     \let\HyPsd@LoadStringEnc\relax
2998 }
2999 \Hy@AtBeginDocument{%
3000     \@ifpackageloaded{stringenc}{%
3001         \let\HyPsd@LoadStringEnc\relax
3002     }{%
3003         \def\HyPsd@LoadStringEnc{%
3004             \Hy@WarningNoLine{%
3005                 Missing package 'stringenc'. Use 'pdfencoding=auto'\MessageBreak
3006                 in the preamble or load the package there%
3007             }%
3008         }%
3009     }%
3010 }
3011 \define@key{Hyp}{psdextra}[true]{%
3012     \Hy@boolkey{psdextra}{#1}%
3013     \HyPsd@LoadExtra
3014 }
3015 \def\hypersetup{\kvsetkeys{Hyp}}
3016 \newif\ifHy@setpdfversion
3017 \define@key{Hyp}{pdfversion}{%
3018     \@ifundefined{Hy@pdfversion@#1}{%
3019         \PackageWarning{hyperref}{%
3020             Unsupported PDF version '#1'.\MessageBreak
3021             Valid values: 1.2 until 1.9%
3022         }%

```



```

3023 }{%
3024   \Hy@setpdfversiontrue
3025   \edef\Hy@pdfversion{\@nameuse{Hy@pdfversion@#1}}%
3026 }%
3027 }
3028 \@namedef{Hy@pdfversion@1.2}{2}%
3029 \@namedef{Hy@pdfversion@1.3}{3}%
3030 \@namedef{Hy@pdfversion@1.4}{4}%
3031 \@namedef{Hy@pdfversion@1.5}{5}%
3032 \@namedef{Hy@pdfversion@1.6}{6}%
3033 \@namedef{Hy@pdfversion@1.7}{7}%
3034 \@namedef{Hy@pdfversion@1.8}{8}%
3035 \@namedef{Hy@pdfversion@1.9}{9}%
3036 \def\Hy@pdfversion{2}

```

## 10 Options for different drivers

```

3037 \newif\ifHy@DviMode
3038 \let\Hy@DviErrMsg\ltx@empty
3039 \ifpdf
3040   \def\Hy@DviErrMsg{pdfTeX or LuaTeX is running in PDF mode}%
3041 \else
3042   \ifxetex
3043     \def\Hy@DviErrMsg{XeTeX is running}%
3044   \else
3045     \ifvtex
3046       \ifvtexdvi
3047         \Hy@DviModetrue
3048       \else
3049         \def\Hy@DviErrMsg{VTeX is running, but not in DVI mode}%
3050       \fi
3051     \else
3052       \Hy@DviModetrue
3053     \fi
3054   \fi
3055 \fi
3056 \def\HyOpt@CheckDvi#1{%
3057   \ifHy@DviMode
3058     \expandafter\ltx@firstofone
3059   \else
3060     \Hy@Error{%
3061       Wrong DVI mode driver option ‘#1’,\MessageBreak
3062       because \Hy@DviErrMsg
3063     }\@ehc
3064     \expandafter\ltx@gobble
3065   \fi
3066 }
3067 \DeclareVoidOption{tex4ht}{%
3068   \Hy@texhttrue
3069   \kvsetkeys{Hyp}{colorlinks=true}%
3070   \def\BeforeTeXIVht{\RequirePackage{color}}%
3071   \def\Hy@driver{htex4ht}%
3072   \def\MaybeStopEarly{%
3073     \Hy@Message{Stopped early}%
3074     \Hy@AtBeginDocument{%
3075       \PDF@FinishDoc
3076       \gdef\PDF@FinishDoc{}}%

```

```

3077 }%
3078 \endinput
3079 }%
3080 }
3081 \DeclareVoidOption{pdftex}{%
3082   \ifpdf
3083     \def\Hy@driver{hpdftex}%
3084   \else
3085     \Hy@Error{%
3086       Wrong driver option 'pdftex',\MessageBreak
3087       because pdfTeX in PDF mode is not detected%
3088     }\@ehc
3089   \fi
3090 }
3091 \DeclareVoidOption{nativepdf}{%
3092   \HyOpt@CheckDvi{nativepdf}{%
3093     \def\Hy@driver{hdvips}%
3094   }%
3095 }
3096 \DeclareVoidOption{dvipdfm}{%
3097   \HyOpt@CheckDvi{dvipdfm}{%
3098     \def\Hy@driver{hdvipdfm}%
3099   }%
3100 }
3101 \DeclareVoidOption{dvipdfmx}{%
3102   \HyOpt@CheckDvi{dvipdfmx}{%
3103     \def\Hy@driver{hdvipdfm}%
3104   }%
3105 }
3106 \define@key{Hyp}{dvipdfmx-outline-open}[true]{%
3107   \expandafter\ifx\csname if#1\expandafter\endcsname
3108     \csname iftrue\endcsname
3109   \chardef\SpecialDvipdfmxOutlineOpen\@ne
3110   \else
3111     \chardef\SpecialDvipdfmxOutlineOpen\z@
3112   \fi
3113 }
3114 \DeclareVoidOption{xetex}{%
3115   \ifxetex
3116     \def\Hy@driver{hxetex}%
3117   \else
3118     \Hy@Error{%
3119       Wrong driver option 'xetex',\MessageBreak
3120       because XeTeX is not detected%
3121     }\@ehc
3122   \fi
3123 }
3124 \DeclareVoidOption{pdfmark}{%
3125   \HyOpt@CheckDvi{pdfmark}{%
3126     \def\Hy@driver{hdvips}%
3127   }%
3128 }
3129 \DeclareVoidOption{dvips}{%
3130   \HyOpt@CheckDvi{dvips}{%
3131     \def\Hy@driver{hdvips}%
3132   }%
3133 }

```

```

3134 \DeclareVoidOption{hypertex}{%
3135   \HyOpt@CheckDvi{hypertex}{%
3136     \def\Hy@driver{hypertex}%
3137   }%
3138 }
3139 \let\Hy@MaybeStopNow\relax
3140 \DeclareVoidOption{vtex}{%
3141   \ifvtex
3142     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
3143     \def\Hy@driver{hvtex}%
3144   \else
3145     \ifnum\OpMode=10\relax
3146       \def\Hy@driver{hvtexhtm}%
3147       \def\MaybeStopEarly{%
3148         \Hy@Message{Stopped early}%
3149         \Hy@AtBeginDocument{%
3150           \PDF@FinishDoc
3151           \gdef\PDF@FinishDoc{}%
3152         }%
3153       \endinput
3154     }%
3155   \else
3156     \Hy@Error{%
3157       Wrong driver option 'vtex',\MessageBreak
3158       because of wrong OpMode (\the\OpMode)%
3159     }\@ehc
3160   \fi
3161 \fi
3162 \else
3163   \Hy@Error{%
3164     Wrong driver option 'vtex',\MessageBreak
3165     because VTeX is not running%
3166   }\@ehc
3167 \fi
3168 }
3169 \DeclareVoidOption{vtexpdfmark}{%
3170   \ifvtex
3171     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
3172     \def\Hy@driver{hvtexmrk}%
3173   \else
3174     \Hy@Error{%
3175       Wrong driver option 'vtexpdfmark',\MessageBreak
3176       because of wrong OpMode (\the\OpMode)%
3177     }\@ehc
3178   \fi
3179 \else
3180   \Hy@Error{%
3181     Wrong driver option 'vtexpdfmark',\MessageBreak
3182     because VTeX is not running%
3183   }\@ehc
3184 \fi
3185 }
3186 \DeclareVoidOption{dviwindo}{%
3187   \HyOpt@CheckDvi{dviwindo}{%
3188     \def\Hy@driver{hdviwind}%
3189     \kvsetkeys{Hyp}{colorlinks}%
3190     \PassOptionsToPackage{dviwindo}{color}%

```

```

3191 }%
3192 }
3193 \DeclareVoidOption{dvipsone}{%
3194   \HyOpt@CheckDvi{dvipsone}{%
3195     \def\Hy@driver{hdvipson}%
3196   }%
3197 }
3198 \DeclareVoidOption{textures}{%
3199   \HyOpt@CheckDvi{textures}{%
3200     \def\Hy@driver{htexture}%
3201   }%
3202 }
3203 \DeclareVoidOption{latex2html}{%
3204   \HyOpt@CheckDvi{latex2html}{%
3205     \Hy@AtBeginDocument{\@@@latextohtmlX}%
3206   }%
3207 }

```

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

```

3208 \DeclareVoidOption{ps2pdf}{%
3209   \HyOpt@CheckDvi{ps2pdf}{%
3210     \def\Hy@driver{hdvips}%
3211   }%
3212 }
3213 \let\HyOpt@DriverFallback\ltx@empty
3214 \define@key{Hyp}{driverfallback}{%
3215   \ifHy@DviMode
3216     \def\HyOpt@DriverFallback{#1}%
3217     \Hy@Match\HyOpt@DriverFallback{%
3218       ~(|dvipdfm|dvipdfmx|dvips|dvipsone|dviwindo|hypertex|ps2pdf|
3219       latex2html|tex4ht)$%
3220     }{}%
3221     \let\HyOpt@DriverFallback\ltx@empty
3222   }%
3223 \fi
3224 }

```

## 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.

```

3225 \define@key{Hyp}{hyperfigures}[true]{%
3226   \Hy@boolkey{hyperfigures}{#1}%
3227 }

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

3228 \define@key{Hyp}{hyperfootnotes}[true]{%
3229   \Hy@boolkey{hyperfootnotes}{#1}%
3230 }

```

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

```

3231 \def\back@none{none}
3232 \def\back@section{section}
3233 \def\back@page{page}
3234 \def\back@slide{slide}
3235 \define@key{Hyp}{backref}[section]{%
3236   \lowercase{\def\Hy@tempa{#1}}%
3237   \ifx\Hy@tempa\@empty

```

```

3238 \let\Hy@tempa\back@section
3239 \fi
3240 \ifx\Hy@tempa\Hy@false
3241 \let\Hy@tempa\back@none
3242 \fi
3243 \ifx\Hy@tempa\back@slide
3244 \let\Hy@tempa\back@section
3245 \fi
3246 \ifx\Hy@tempa\back@page
3247 \PassOptionsToPackage{hyperpageref}{backref}%
3248 \Hy@backreftrue
3249 \else
3250 \ifx\Hy@tempa\back@section
3251 \PassOptionsToPackage{hyperref}{backref}%
3252 \Hy@backreftrue
3253 \else
3254 \ifx\Hy@tempa\back@none
3255 \Hy@backreffalse
3256 \else
3257 \Hy@WarnOptionValue{#1}{backref}{%
3258 'section', 'slide', 'page', 'none',\MessageBreak
3259 or 'false'}%
3260 \fi
3261 \fi
3262 \fi
3263 }
3264 \define@key{Hyp}{pagebackref}[true]{%
3265 \edef\Hy@tempa{#1}%
3266 \lowercase\expandafter{%
3267 \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
3268 }%
3269 \ifx\Hy@tempa\@empty
3270 \let\Hy@tempa\Hy@true
3271 \fi
3272 \ifx\Hy@tempa\Hy@true
3273 \PassOptionsToPackage{hyperpageref}{backref}%
3274 \Hy@backreftrue
3275 \else
3276 \ifx\Hy@tempa\Hy@false
3277 \Hy@backreffalse
3278 \else
3279 \Hy@WarnOptionValue{#1}{pagebackref}{'true' or 'false'}%
3280 \fi
3281 \fi
3282 }

```

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

```

3283 \define@key{Hyp}{hyperindex}[true]{%
3284 \Hy@boolkey{hyperindex}{#1}%
3285 }

```

Configuration of encap char.

```

3286 \define@key{Hyp}{encap}[\\]{%
3287 \def\HyInd@EncapChar{#1}%
3288 }

```

## 12 Language options

The `\autoref` feature depends on the language.

```
3289 \def\HyLang@afrikaans{%
3290   \def\equationautorefname{Vergelyking}%
3291   \def\footnoteautorefname{Voetnota}%
3292   \def\itemautorefname{Item}%
3293   \def\figureautorefname{Figuur}%
3294   \def\tableautorefname{Tabel}%
3295   \def\partautorefname{Deel}%
3296   \def\appendixautorefname{Bylae}%
3297   \def\chapterautorefname{Hoofstuk}%
3298   \def\sectionautorefname{Afdeling}%
3299   \def\subsectionautorefname{Subafdeling}%
3300   \def\subsubsectionautorefname{Subsubafdeling}%
3301   \def\paragraphautorefname{Paragraaf}%
3302   \def\subparagraphautorefname{Subparagraaf}%
3303   \def\FancyVerbLineautorefname{Lyn}%
3304   \def\theoremautorefname{Teorema}%
3305   \def\pageautorefname{Bladsy}%
3306 }
3307 \def\HyLang@english{%
3308   \def\equationautorefname{Equation}%
3309   \def\footnoteautorefname{footnote}%
3310   \def\itemautorefname{item}%
3311   \def\figureautorefname{Figure}%
3312   \def\tableautorefname{Table}%
3313   \def\partautorefname{Part}%
3314   \def\appendixautorefname{Appendix}%
3315   \def\chapterautorefname{chapter}%
3316   \def\sectionautorefname{section}%
3317   \def\subsectionautorefname{subsection}%
3318   \def\subsubsectionautorefname{subsubsection}%
3319   \def\paragraphautorefname{paragraph}%
3320   \def\subparagraphautorefname{subparagraph}%
3321   \def\FancyVerbLineautorefname{line}%
3322   \def\theoremautorefname{Theorem}%
3323   \def\pageautorefname{page}%
3324 }
3325 \def\HyLang@french{%
3326   \def\equationautorefname{'Equation}%
3327   \def\footnoteautorefname{note}%
3328   \def\itemautorefname{item}%
3329   \def\figureautorefname{Figure}%
3330   \def\tableautorefname{Tableau}%
3331   \def\partautorefname{Partie}%
3332   \def\appendixautorefname{Appendice}%
3333   \def\chapterautorefname{chapitre}%
3334   \def\sectionautorefname{section}%
3335   \def\subsectionautorefname{sous-section}%
3336   \def\subsubsectionautorefname{sous-sous-section}%
3337   \def\paragraphautorefname{paragraphe}%
3338   \def\subparagraphautorefname{sous-paragraphe}%
3339   \def\FancyVerbLineautorefname{ligne}%
3340   \def\theoremautorefname{Th'eor'eme}%
3341   \def\pageautorefname{page}%
3342 }
```

```

3343 \def\HyLang@german{%
3344   \def\equationautorefname{Gleichung}%
3345   \def\footnoteautorefname{Fu\ss note}%
3346   \def\itemautorefname{Punkt}%
3347   \def\figureautorefname{Abbildung}%
3348   \def\tableautorefname{Tabelle}%
3349   \def\partautorefname{Teil}%
3350   \def\appendixautorefname{Anhang}%
3351   \def\chapterautorefname{Kapitel}%
3352   \def\sectionautorefname{Abschnitt}%
3353   \def\subsectionautorefname{Unterabschnitt}%
3354   \def\subsubsectionautorefname{Unterunterabschnitt}%
3355   \def\paragraphautorefname{Absatz}%
3356   \def\subparagraphautorefname{Unterabsatz}%
3357   \def\FancyVerbLineautorefname{Zeile}%
3358   \def\theoremautorefname{Theorem}%
3359   \def\pageautorefname{Seite}%
3360 }
3361 \def\HyLang@italian{%
3362   \def\equationautorefname{Equazione}%
3363   \def\footnoteautorefname{nota}%
3364   \def\itemautorefname{punto}%
3365   \def\figureautorefname{Figura}%
3366   \def\tableautorefname{Tabella}%
3367   \def\partautorefname{Parte}%
3368   \def\appendixautorefname{Appendice}%
3369   \def\chapterautorefname{Capitolo}%
3370   \def\sectionautorefname{sezione}%
3371   \def\subsectionautorefname{sottosezione}%
3372   \def\subsubsectionautorefname{sottosottosezione}%
3373   \def\paragraphautorefname{paragrafo}%
3374   \def\subparagraphautorefname{sottoparagrafo}%
3375   \def\FancyVerbLineautorefname{linea}%
3376   \def\theoremautorefname{Teorema}%
3377   \def\pageautorefname{Pag.\@}%
3378 }
3379 \def\HyLang@magyar{%
3380   \def\equationautorefname{Egyenlet}%
3381   \def\footnoteautorefname{l'abjegyzet}%
3382   \def\itemautorefname{Elem}%
3383   \def\figureautorefname{'Abra}%
3384   \def\tableautorefname{T'abl'azat}%
3385   \def\partautorefname{R'esz}%
3386   \def\appendixautorefname{F'uggel'ek}%
3387   \def\chapterautorefname{fejezet}%
3388   \def\sectionautorefname{szakasz}%
3389   \def\subsectionautorefname{alszakasz}%
3390   \def\subsubsectionautorefname{alalszakasz}%
3391   \def\paragraphautorefname{bekezd'es}%
3392   \def\subparagraphautorefname{albekezd'es}%
3393   \def\FancyVerbLineautorefname{sor}%
3394   \def\theoremautorefname{T'etel}%
3395   \def\pageautorefname{oldal}%
3396 }
3397 \def\HyLang@portuges{%
3398   \def\equationautorefname{Equa\c c\~ao}%
3399   \def\footnoteautorefname{Nota de rodap'e}%

```

```

3400 \def\itemautorefname{Item}%
3401 \def\figureautorefname{Figura}%
3402 \def\tableautorefname{Tabela}%
3403 \def\partautorefname{Parte}%
3404 \def\appendixautorefname{Ap\~endice}%
3405 \def\chapterautorefname{Cap\itulo}%
3406 \def\sectionautorefname{Se\c c\~ao}%
3407 \def\subsectionautorefname{Subse\c c\~ao}%
3408 \def\subsubsectionautorefname{Subsubse\c c\~ao}%
3409 \def\paragraphautorefname{par\agrafo}%
3410 \def\subparagraphautorefname{subpar\agrafo}%
3411 \def\FancyVerbLineautorefname{linha}%
3412 \def\theoremautorefname{Teorema}%
3413 \def\pageautorefname{P\agina}%
3414 }

```

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`.

```

3415 \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`?

```

3416 \def\equationautorefname{\cyr\cyrv\cyrry\cyrr.}%

```

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`.

```

3417 % \def\equationautorefname{%
3418 %   \cyr\cyrv\cyrry\cyrr\cyra\cyrzh\cyre\cyrn\cyri\cyre
3419 % }%

```

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

```

3420 \def\footnoteautorefname{%
3421   \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr.\ \cyrp\cyrr\cyri\cyrm.%
3422 }%

```

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

```

3423 % \def\footnoteautorefname{%
3424 %   \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr\cyro\cyrch\cyrn\cyro\cyre\ %
3425 %   \cyrp\cyrr\cyri\cyrm\cyre\cyrch\cyra\cyrn\cyri\cyre
3426 % }%

```

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

```

3427 % \def\Nomfootnoteautorefname{\cyr\cyrs\cyrn\cyro\cyrs\cyrk\cyra}%
3428 % \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.

```
3429 \def\itemautorefname{\cyr\cyrp.}%
3430 % \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.

```
3431 \def\figureautorefname{\cyr\cyrr\cyri\cyrs.}%
3432 \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.

```
3433 \def\partautorefname{\cyr\cyrch.}%
3434 \def\chapterautorefname{\cyr\cyrg\cyrl.}%
3435 \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.

```
3436 \def\appendixautorefname{\cyr\cyrp\cyrr\cyri\cyrl.}%
3437 % \def\appendixautorefname{%
3438 % \cyr\cyrp\cyrr\cyri\cyrl\cyro\cyrrh\cyre\cyrn\cyri\cyre
3439 % }%
```

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.

```
3440 \def\subsectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
3441 \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.

```
3442 \def\paragraphautorefname{\cyr\cyrp.}%
3443 \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.

```
3444 % \def\paragraphautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyrt}%
3445 % \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.

```
3446 \def\FancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr.}%
```

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

```
3447 % \def\NomFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyra}%
3448 % \def\AccFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyru}%
```

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

```
3449 % \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 ...

```
3450 \def\theoremautorefname{\cyr\cyrt\cyre\cyro\cyrr.}%
```

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

```
3451 % \def\Nomtheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyra}%
```

```
3452 % \def\Acctheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyru}%
```

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

```
3453 \def\pageautorefname{\cyr\cyr.}%
```

```
3454 }
```

```
3455 \def\HyLang@spanish{%
```

```
3456 \def\equationautorefname{Ecuaci'on}%
```

```
3457 \def\footnoteautorefname{Nota a pie de p'agina}%
```

```
3458 \def\itemautorefname{Elemento}%
```

```
3459 \def\figureautorefname{Figura}%
```

```
3460 \def\tableautorefname{Tabla}%
```

```
3461 \def\partautorefname{Parte}%
```

```
3462 \def\appendixautorefname{Ap'endice}%
```

```
3463 \def\chapterautorefname{Cap'itulo}%
```

```
3464 \def\sectionautorefname{Secci'on}%
```

```
3465 \def\subsectionautorefname{Subsecci'on}%
```

```
3466 \def\subsubsectionautorefname{Subsubsecci'on}%
```

```
3467 \def\paragraphautorefname{P'arrafo}%
```

```
3468 \def\subparagraphautorefname{Subp'arrafo}%
```

```
3469 \def\FancyVerbLineautorefname{L'inea}%
```

```
3470 \def\theoremautorefname{Teorema}%
```

```
3471 \def\pageautorefname{P'agina}%
```

```
3472 }
```

```
3473 \def\HyLang@vietnamese{%
```

```
3474 \def\equationautorefname{Ph\uhorn{ }ohorn{ }ng tr'inh}%
```

```
3475 \def\footnoteautorefname{Ch'u th'ich}%
```

```
3476 \def\itemautorefname{m\du{c}}%
```

```
3477 \def\figureautorefname{H'inh}%
```

```
3478 \def\tableautorefname{B\h{a}ng}%
```

```
3479 \def\partautorefname{Ph'\acircumflex{n}}%
```

```
3480 \def\appendixautorefname{Ph\du{ }l\du{c}}%
```

```
3481 \def\chapterautorefname{ch\uhorn{ }ohorn{ }ng}%
```

```
3482 \def\sectionautorefname{m\du{c}}%
```

```
3483 \def\subsectionautorefname{m\du{c}}%
```

```
3484 \def\subsubsectionautorefname{m\du{c}}%
```

```
3485 \def\paragraphautorefname{\dj{ }o\da{n}}%
```

```
3486 \def\subparagraphautorefname{\dj{ }o\da{n}}%
```

```
3487 \def\FancyVerbLineautorefname{d'ong}%
```

```
3488 \def\theoremautorefname{\DJ{ }d{inh l'y}}%
```

```
3489 \def\pageautorefname{Trang}%
```

```
3490 }
```

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

```
3491 \def\HyLang@addto#1#2{%
```

```
3492 #2%
```

```
3493 \@temptokena{#2}%
```

```
3494 \ifx#1\relax
```

```
3495 \let#1\@empty
```

```
3496 \fi
```

```
3497 \ifx#1\@undefined
```

```

3498 \edef#1{\the\@temptokena}%
3499 \else
3500 \toks@\expandafter{#1}%
3501 \edef#1{\the\toks@\the\@temptokena}%
3502 \fi
3503 \@temptokena{}\toks@\@temptokena
3504 }

3505 \def\HyLang@DeclareLang#1#2#3{%
3506 \ifpackagewith{babel}{#1}{%
3507 \expandafter\HyLang@addto
3508 \csname extras#1\expandafter\endcsname
3509 \csname HyLang@#2\endcsname
3510 \begingroup
3511 \edef\x{\endgroup
3512 #3%
3513 }%
3514 \x
3515 \@namedef{HyLang@#1@done}{}%
3516 }{}%
3517 \begingroup
3518 \edef\x##1##2{%
3519 \noexpand\ifx##2\relax
3520 \errmessage{No definitions for language #2' found!}%
3521 \noexpand\fi
3522 \endgroup
3523 \noexpand\define@key{Hyp}{#1}[]{%
3524 \noexpand\ifundefined{HyLang@#1@done}{%
3525 \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
3526 #3%
3527 \noexpand\@namedef{HyLang@#1@done}{}%
3528 }{}%
3529 }%
3530 }%
3531 \expandafter\x\csname extras#1\expandafter\endcsname
3532 \csname HyLang@#2\endcsname
3533 }

3534 \HyLang@DeclareLang{english}{english}{}
3535 \HyLang@DeclareLang{UKenglish}{english}{}
3536 \HyLang@DeclareLang{british}{english}{}
3537 \HyLang@DeclareLang{USenglish}{english}{}
3538 \HyLang@DeclareLang{american}{english}{}
3539 \HyLang@DeclareLang{german}{german}{}
3540 \HyLang@DeclareLang{austrian}{german}{}
3541 \HyLang@DeclareLang{ngerman}{german}{}
3542 \HyLang@DeclareLang{naustrian}{german}{}
3543 \HyLang@DeclareLang{russian}{russian}{\noexpand\hypersetup{unicode}}
3544 \HyLang@DeclareLang{brazil}{portuges}{}
3545 \HyLang@DeclareLang{brazilian}{portuges}{}
3546 \HyLang@DeclareLang{portuguese}{portuges}{}
3547 \HyLang@DeclareLang{spanish}{spanish}{}
3548 \HyLang@DeclareLang{afrikaans}{afrikaans}{}
3549 \HyLang@DeclareLang{french}{french}{}
3550 \HyLang@DeclareLang{frenchb}{french}{}
3551 \HyLang@DeclareLang{francais}{french}{}
3552 \HyLang@DeclareLang{acadian}{french}{}
3553 \HyLang@DeclareLang{canadien}{french}{}
3554 \HyLang@DeclareLang{italian}{italian}{}

```

```

3555 \HyLang@DeclareLang{magyar}{magyar}{}
3556 \HyLang@DeclareLang{hungarian}{magyar}{}

```

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

```

3557 \DeclareVoidOption{vietnamese}{%
3558   \HyLang@addto\extrasvietnamese\HyLang@vietnamese
3559   \Hy@AtEndOfPackage{%
3560     \ifundefined{T@PU}{}%
3561     \input{puvnenc.def}%
3562   }%
3563 }%
3564 }
3565 \DeclareVoidOption{vietnam}{%
3566   \HyLang@addto\extravietnam\HyLang@vietnamese
3567   \Hy@AtEndOfPackage{%
3568     \ifundefined{T@PU}{}%
3569     \input{puvnenc.def}%
3570   }%
3571 }%
3572 }

```

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

```

3573 \DeclareVoidOption{arabic}{%
3574   \Hy@AtEndOfPackage{%
3575     \ifundefined{T@PU}{}%
3576     \input{puarenc.def}%
3577   }%
3578 }%
3579 }

```

## 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.

```

3580 \define@key{Hyp}{colorlinks}[true]{%
3581   \Hy@boolkey{colorlinks}{#1}%
3582 }
3583 \DeclareVoidOption{hidelinks}{%
3584   \Hy@colorlinksfalse
3585   \Hy@ocgcolorlinksfalse
3586   \Hy@frenchlinksfalse
3587   \def\Hy@colorlink##1{\begingroup}%
3588   \def\Hy@endcolorlink{\endgroup}%
3589   \def\@pdfborder{0 0 0}%
3590   \let\@pdfborderstyle\ltx@empty
3591 }
3592 \define@key{Hyp}{ocgcolorlinks}[true]{%
3593   \Hy@boolkey{ocgcolorlinks}{#1}%
3594 }
3595 \Hy@AtBeginDocument{%
3596   \begingroup
3597   \ifundefined{OBJ@OCG@view}{%
3598     \ifHy@ocgcolorlinks
3599     \Hy@Warning{%
3600       Driver does not support ‘ocgcolorlinks’,\MessageBreak
3601       using ‘colorlinks’ instead%
3602     }%
3603     \fi

```

```

3604   }{}%
3605   \endgroup
3606 }
3607 \define@key{Hyp}{frenchlinks}[true]{%
3608   \Hy@boolkey{frenchlinks}{#1}%
3609 }

```

## 14 Bookmarking

```

3610 \begingroup\expandafter\expandafter\expandafter\endgroup
3611 \expandafter\ifx\csname chapter\endcsname\relax
3612   \def\toclevel@part{0}%
3613 \else
3614   \def\toclevel@part{-1}%
3615 \fi
3616 \def\toclevel@chapter{0}
3617 \def\toclevel@section{1}
3618 \def\toclevel@subsection{2}
3619 \def\toclevel@subsubsection{3}
3620 \def\toclevel@paragraph{4}
3621 \def\toclevel@subparagraph{5}
3622 \def\toclevel@figure{0}
3623 \def\toclevel@table{0}
3624 \@ifpackageloaded{listings}{%
3625   \providecommand*\theHlstlisting{\thelstlisting}%
3626   \providecommand*\toclevel@lstlisting{0}%
3627 }{}
3628 \@ifpackageloaded{listing}{%
3629   \providecommand*\theHlisting{\thelisting}%
3630   \providecommand*\toclevel@listing{0}%
3631 }{}
3632 \define@key{Hyp}{bookmarks}[true]{%
3633   \Hy@boolkey{bookmarks}{#1}%
3634 }
3635 \define@key{Hyp}{bookmarksopen}[true]{%
3636   \Hy@boolkey{bookmarksopen}{#1}%
3637 }

```

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.

```

3638 \let\Hy@bookmarksdepth\c@tocdepth
3639 \define@key{Hyp}{bookmarksdepth}[]{}%
3640 \begingroup
3641   \edef\x{#1}%
3642   \ifx\x\empty
3643     \global\let\Hy@bookmarksdepth\c@tocdepth
3644   \else
3645     \@ifundefined{toclevel@\x}{%

```

```

3646 \@onelevel@sanitize\x
3647 \edef\y{\expandafter\@car\x\@nil}%
3648 \ifcase 0\expandafter\ifx\y-1\fi
3649 \expandafter\ifnum\expandafter'\y>47 %
3650 \expandafter\ifnum\expandafter'\y<58 1\fi\fi\relax
3651 \Hy@Warning{Unknown document division name (\x)}%
3652 \else
3653 \setbox\z@=\hbox{%
3654 \count@=\x
3655 \xdef\Hy@bookmarksdepth{\the\count@}%
3656 }%
3657 \fi
3658 }{%
3659 \setbox\z@=\hbox{%
3660 \count@=\csname toclevel@\x\endcsname
3661 \xdef\Hy@bookmarksdepth{\the\count@}%
3662 }%
3663 }%
3664 \fi
3665 \endgroup
3666 }

```

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

```

3667 \define@key{Hyp}{bookmarksopenlevel}{%
3668 \def\@bookmarksopenlevel{#1}%
3669 }
3670 \def\@bookmarksopenlevel{\maxdimen}
3671 % ‘bookmarkstype’ to specify which ‘toc’ file to mimic
3672 \define@key{Hyp}{bookmarkstype}{%
3673 \def\Hy@bookmarkstype{#1}%
3674 }
3675 \def\Hy@bookmarkstype{toc}

```

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

```

3676 \define@key{Hyp}{bookmarksnumbered}[true]{%
3677 \Hy@boolkey{bookmarksnumbered}{#1}%
3678 }

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

3679 \define@key{Hyp}{CJKbookmarks}[true]{%
3680 \Hy@boolkey{CJKbookmarks}{#1}%
3681 }

3682 \def\Hy@temp#1{%
3683 \expandafter\Hy@@temp\csname @#1color\endcsname{#1}%
3684 }
3685 \def\Hy@@temp#1#2#3{%
3686 \define@key{Hyp}{#2color}{%
3687 \HyColor@HyperrefColor{##1}#1%
3688 }%
3689 \def##1{#3}%
3690 }
3691 \Hy@temp{link}{red}
3692 \Hy@temp{anchor}{black}
3693 \Hy@temp{cite}{green}
3694 \Hy@temp{file}{cyan}
3695 \Hy@temp{url}{magenta}
3696 \Hy@temp{menu}{red}

```

```

3697 \Hy@temp{run}{\@filecolor}
3698 \define@key{Hyp}{pagecolor}{%
3699   \Hy@WarningPageColor
3700 }
3701 \def\Hy@WarningPageColor{%
3702   \Hy@WarningNoLine{Option 'pagecolor' is not available anymore}%
3703   \global\let\Hy@WarningPageColor\relax
3704 }
3705 \define@key{Hyp}{allcolors}{%
3706   \HyColor@HyperrefColor{#1}\@linkcolor
3707   \HyColor@HyperrefColor{#1}\@anchorcolor
3708   \HyColor@HyperrefColor{#1}\@citecolor
3709   \HyColor@HyperrefColor{#1}\@filecolor
3710   \HyColor@HyperrefColor{#1}\@urlcolor
3711   \HyColor@HyperrefColor{#1}\@menucolor
3712   \HyColor@HyperrefColor{#1}\@runcolor
3713 }

3714 \def\hyperbaseurl#1{\def\@baseurl{#1}}
3715 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
3716 \let\@baseurl\@empty
3717 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
3718 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
3719 \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.

```

3720 \let\@pdfpagetransition\relax
3721 \define@key{Hyp}{pdfpagetransition}{%
3722   \def\@pdfpagetransition{#1}%
3723 }

```

`\@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.

```

3724 \let\@pdfpageduration\relax
3725 \define@key{Hyp}{pdfpageduration}{%
3726   \def\@pdfpageduration{#1}%
3727   \Hy@Match\@pdfpageduration{%
3728     ^(|[0-9]+\.[0-9]*|[0-9]*\.[0-9]+)$%
3729   }{%
3730     \Hy@Warning{%
3731       Invalid value '\@pdfpageduration'\MessageBreak
3732       of option 'pdfpageduration'\MessageBreak
3733       is replaced by an empty value%
3734     }%
3735     \let\@pdfpageduration\ltx@empty
3736   }%
3737 }

```

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.

```

3738 \newif\ifHy@useHidKey
3739 \Hy@useHidKeyfalse
3740 \define@key{Hyp}{pdfpagehidden}[true]{%
3741   \Hy@boolkey{pdfpagehidden}{#1}%
3742   \ifHy@pdfpagehidden
3743     \global\Hy@useHidKeytrue
3744   \fi
3745 }

```

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).

```

3746 \def\Hy@ColorList{cite,file,link,menu,run,url}
3747 \@for\Hy@temp:=\Hy@ColorList\do{%
3748   \edef\Hy@temp{%
3749     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
3750       \noexpand\HyColor@HyperrefBorderColor
3751       {##1}%
3752       \expandafter\noexpand\csname @\Hy@temp bordercolor\endcsname
3753       {hyperref}%
3754       {\Hy@temp bordercolor}%
3755     }%
3756   }%
3757   \Hy@temp
3758 }
3759 \define@key{Hyp}{pagebordercolor}{%
3760   \Hy@WarningPageBorderColor
3761 }
3762 \def\Hy@WarningPageBorderColor{%
3763   \Hy@WarningNoLine{Option 'pagebordercolor' is not available anymore}%
3764   \global\let\Hy@WarningPageBorderColor\relax
3765 }
3766 \define@key{Hyp}{allbordercolors}{%
3767   \def\Hy@temp##1##2{%
3768     \HyColor@HyperrefBorderColor{#1}##1{hyperref}{##2bordercolor}%
3769   }%
3770   \Hy@temp\@citebordercolor{cite}%
3771   \Hy@temp\@filebordercolor{file}%
3772   \Hy@temp\@linkbordercolor{link}%
3773   \Hy@temp\@menubordercolor{menu}%
3774   \Hy@temp\@runbordercolor{run}%
3775   \Hy@temp\@urlbordercolor{url}%
3776 }
3777 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{#1}}
3778 \Hy@DefNameKey{pdfhighlight}{%
3779   \do{/I}{Invert}%
3780   \do{/N}{None}%
3781   \do{/O}{Outline}%
3782   \do{/P}{Push}%
3783 }
3784 \define@key{Hyp}{pdfborder}{%
3785   \let\Hy@temp\@pdfborder

```



```

3786 \def\@pdfborder{#1}%
3787 \Hy@Match\@pdfborder{%
3788   ~\HyPat@NonNegativeReal/ %
3789   \HyPat@NonNegativeReal/ %
3790   \HyPat@NonNegativeReal/%
3791   ( ?\[ \HyPat@NonNegativeReal/( \HyPat@NonNegativeReal/)*])?${}%
3792 }{}{%
3793   \Hy@Warning{%
3794     Invalid value '\@pdfborder'\MessageBreak
3795     for option 'pdfborder'\MessageBreak
3796     Option setting is ignored%
3797   }%
3798   \let\@pdfborder\Hy@temp
3799 }%
3800 }
3801 \define@key{Hyp}{pdfborderstyle}{%
3802   \let\Hy@temp\@pdfborderstyle
3803   \def\@pdfborderstyle{#1}%
3804   \Hy@Match\@pdfborderstyle{%
3805     ~%
3806     ( */Type */Border%
3807       | */W +\HyPat@NonNegativeReal/%
3808       | */S */[SDBIU]%
3809       | */D *[ ( \HyPat@NonNegativeReal/( \HyPat@NonNegativeReal/)? )? ]%
3810     )* *$%
3811   }{}{%
3812     \Hy@Warning{%
3813       Invalid value '\@pdfborderstyle'\MessageBreak
3814       for option 'pdfborderstyle'\MessageBreak
3815       Option setting is ignored%
3816     }%
3817     \let\@pdfborderstyle\Hy@temp
3818   }%
3819 }
3820 \def\Hy@setpdfborder{%
3821   \ifx\@pdfborder\@empty
3822   \else
3823     /Border[\@pdfborder]%
3824   \fi
3825   \ifx\@pdfborderstyle\@empty
3826   \else
3827     /BS<<\@pdfborderstyle>>%
3828   \fi
3829 }
3830 \Hy@DefNameKey{pdfpagemode}{%
3831   \do{UseNone}{}%
3832   \do{UseOutlines}{}%
3833   \do{UseThumbs}{}%
3834   \do{FullScreen}{}%
3835   \do{UseOC}{PDF 1.5}%
3836   \do{UseAttachments}{PDF 1.6}%
3837 }
3838 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
3839   \do{UseNone}{}%
3840   \do{UseOutlines}{}%
3841   \do{UseThumbs}{}%
3842   \do{FullScreen}{}%

```

```

3843 \do{UseOC}{PDF 1.5}%
3844 \do{UseAttachments}{PDF 1.6}%
3845 }
3846 \Hy@DefNameKey{pdfdirection}{%
3847 \do{L2R}{Left to right}%
3848 \do{R2L}{Right to left}%
3849 }
3850 \Hy@DefNameKey{pdfviewarea}{%
3851 \do{MediaBox}{}%
3852 \do{CropBox}{}%
3853 \do{BleedBox}{}%
3854 \do{TrimBox}{}%
3855 \do{ArtBox}{}%
3856 }
3857 \Hy@DefNameKey{pdfviewclip}{%
3858 \do{MediaBox}{}%
3859 \do{CropBox}{}%
3860 \do{BleedBox}{}%
3861 \do{TrimBox}{}%
3862 \do{ArtBox}{}%
3863 }
3864 \Hy@DefNameKey{pdfprintarea}{%
3865 \do{MediaBox}{}%
3866 \do{CropBox}{}%
3867 \do{BleedBox}{}%
3868 \do{TrimBox}{}%
3869 \do{ArtBox}{}%
3870 }
3871 \Hy@DefNameKey{pdfprintclip}{%
3872 \do{MediaBox}{}%
3873 \do{CropBox}{}%
3874 \do{BleedBox}{}%
3875 \do{TrimBox}{}%
3876 \do{ArtBox}{}%
3877 }
3878 \Hy@DefNameKey{pdfprintscaling}{%
3879 \do{AppDefault}{}%
3880 \do{None}{}%
3881 }
3882 \Hy@DefNameKey{pdfduplex}{%
3883 \do{Simplex}{}%
3884 \do{DuplexFlipShortEdge}{}%
3885 \do{DuplexFlipLongEdge}{}%
3886 }
3887 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
3888 \do{true}{}%
3889 \do{false}{}%
3890 }
3891 \define@key{Hyp}{pdfprintpagerange}{%
3892 \def\@pdfprintpagerange{#1}%
3893 }
3894 \Hy@DefNameKey{pdfnumcopies}{%
3895 \do{2}{two copies}%
3896 \do{3}{three copies}%
3897 \do{4}{four copies}%
3898 \do{5}{five copies}%
3899 }

```

```

3900 \define@key{Hyp}{pdfusetitle}[true]{%
3901   \Hy@boolkey{pdfusetitle}{#1}%
3902 }
3903 \def\HyXeTeX@CheckUnicode{%
3904   \ifxetex
3905     \ifHy@unicode
3906     \else
3907       \Hy@WarningNoLine{%
3908         XeTeX driver only supports unicode.\MessageBreak
3909         Enabling option 'unicode'%
3910       }%
3911       \kvsetkeys{Hyp}{unicode}%
3912     \fi
3913   \else
3914     \let\HyXeTeX@CheckUnicode\relax
3915   \fi
3916 }
3917 \def\HyPsd@PrerenderUnicode#1{%
3918   \begingroup
3919     \expandafter\ifx\csname PrerenderUnicode\endcsname\relax
3920     \else
3921       \sbox0{%
3922         \let\GenericInfo\@gobbletwo
3923         \let\GenericWarning\@gobbletwo
3924         \let\GenericError\@gobblefour
3925         \PrerenderUnicode{#1}%
3926       }%
3927     \fi
3928   \endgroup
3929 }
3930 \define@key{Hyp}{pdftitle}{%
3931   \HyXeTeX@CheckUnicode
3932   \HyPsd@XeTeXBigCharstrue
3933   \HyPsd@PrerenderUnicode{#1}%
3934   \pdfstringdef\@pdftitle{#1}%
3935 }
3936 \define@key{Hyp}{pdfauthor}{%
3937   \HyXeTeX@CheckUnicode
3938   \HyPsd@XeTeXBigCharstrue
3939   \HyPsd@PrerenderUnicode{#1}%
3940   \pdfstringdef\@pdfauthor{#1}%
3941 }
3942 \define@key{Hyp}{pdfproducer}{%
3943   \HyXeTeX@CheckUnicode
3944   \HyPsd@XeTeXBigCharstrue
3945   \HyPsd@PrerenderUnicode{#1}%
3946   \pdfstringdef\@pdfproducer{#1}%
3947   \ifxetex
3948     \Hy@Warning{%
3949       pdfproducer: %
3950       xdvipdfmx will use its own setting\MessageBreak
3951       instead of the value given%
3952     }%
3953   \else
3954     \def\Hy@temp{hdvipdfm}%
3955     \ifx\Hy@driver\Hy@temp
3956       \Hy@Warning{%

```

```

3957     pdfproducer: %
3958     dvipdfm(x) will use its own setting\MessageBreak
3959     instead of the value given%
3960 }%
3961 \fi
3962 \fi
3963 }
3964 \define@key{Hyp}{pdfcreator}{%
3965   \HyXeTeX@CheckUnicode
3966   \HyPsd@XeTeXBigCharstrue
3967   \HyPsd@PrerenderUnicode{#1}%
3968   \pdfstringdef\@pdfcreator{#1}%
3969 }
3970 \define@key{Hyp}{pdfcreationdate}{%
3971   \beginingroup
3972   \Hy@unicodetrue
3973   \pdfstringdef\@pdfcreationdate{#1}%
3974   \endgroup
3975 }
3976 \define@key{Hyp}{pdfmoddate}{%
3977   \beginingroup
3978   \Hy@unicodetrue
3979   \pdfstringdef\@pdfmoddate{#1}%
3980   \endgroup
3981 }
3982 \define@key{Hyp}{pdfsubject}{%
3983   \HyXeTeX@CheckUnicode
3984   \HyPsd@XeTeXBigCharstrue
3985   \HyPsd@PrerenderUnicode{#1}%
3986   \pdfstringdef\@pdfsubject{#1}%
3987 }
3988 \define@key{Hyp}{pdfkeywords}{%
3989   \HyXeTeX@CheckUnicode
3990   \HyPsd@XeTeXBigCharstrue
3991   \HyPsd@PrerenderUnicode{#1}%
3992   \pdfstringdef\@pdfkeywords{#1}%
3993 }
3994 \define@key{Hyp}{pdftrapped}{%
3995   \lowercase{\edef\Hy@temp{#1}}%
3996   \ifx\Hy@temp\HyInfo@trapped@true
3997     \def\@pdftrapped{True}%
3998   \else
3999     \ifx\Hy@temp\HyInfo@trapped@false
4000       \def\@pdftrapped{False}%
4001     \else
4002       \ifx\Hy@temp\HyInfo@trapped@unknown
4003         \def\@pdftrapped{Unknown}%
4004       \else
4005         \ifx\Hy@temp\@empty
4006           \else
4007             \Hy@Warning{%
4008               Unsupported value ‘#1’\MessageBreak
4009               for option ‘pdftrapped’%
4010             }%
4011           \fi
4012         \def\@pdftrapped{}%
4013       \fi

```

```

4014 \fi
4015 \fi
4016 }
4017 \def\HyInfo@trapped@true{true}
4018 \def\HyInfo@trapped@false{false}
4019 \def\HyInfo@trapped@unknown{unknown}
4020 \def\HyInfo@TrappedUnsupported{%
4021 \ifx\@pdftrapped\@empty
4022 \else
4023 \Hy@WarningNoLine{'pdftrapped' is not supported by this driver}%
4024 \gdef\HyInfo@TrappedUnsupported{}%
4025 \fi
4026 }
4027 \define@key{Hyp}{pdfinfo}{%
4028 \kvsetkeys{pdfinfo}{#1}%
4029 }
4030 \def\Hy@temp#1{%
4031 \lowercase{\Hy@temp@A{#1}}{#1}%
4032 }
4033 \def\Hy@temp@A#1#2{%
4034 \define@key{pdfinfo}{#2}{%
4035 \hypersetup{pdf#1={##1}}}%
4036 }%
4037 }
4038 \Hy@temp{Title}
4039 \Hy@temp{Author}
4040 \Hy@temp{Keywords}
4041 \Hy@temp{Subject}
4042 \Hy@temp{Creator}
4043 \Hy@temp{Producer}
4044 \Hy@temp{CreationDate}
4045 \Hy@temp{ModDate}
4046 \Hy@temp{Trapped}
4047 \newif\ifHyInfo@AddonUnsupported
4048 \kv@set@family@handler{pdfinfo}{%
4049 \HyInfo@AddonHandler{#1}{#2}%
4050 }
4051 \let\HyInfo@do\relax
4052 \def\HyInfo@AddonHandler#1#2{%
4053 \ifx\kv@value\relax
4054 \Hy@Warning{%
4055 Option 'pdfinfo': ignoring key '\kv@key' without value%
4056 }%
4057 \else
4058 \EdefEscapeName\HyInfo@KeyEscaped{\kv@key}%
4059 \EdefUnescapeName\HyInfo@Key{\HyInfo@KeyEscaped}%
4060 \expandafter\ifx\csname KV@pdfinfo@\HyInfo@Key\endcsname\relax
4061 \ifHyInfo@AddonUnsupported
4062 \Hy@Warning{%
4063 This driver does not support additional\MessageBreak
4064 information entries, therefore\MessageBreak
4065 '\kv@key' is ignored%
4066 }%
4067 \else
4068 \define@key{pdfinfo}{\HyInfo@Key}{%
4069 \HyXeTeX@CheckUnicode
4070 \HyPsd@XeTeXBigChartrue

```

```

4071 \HyPsd@PrerenderUnicode{##1}%
4072 \pdfstringdef\HyInfo@Value{##1}%
4073 \expandafter\let\csname HyInfo@Value@\HyInfo@Key\endcsname
4074 \HyInfo@Value
4075 }%
4076 \edef\HyInfo@AddonList{%
4077 \HyInfo@AddonList
4078 \HyInfo@do{\HyInfo@Key}%
4079 }%
4080 \kv@parse@normalized{%
4081 \HyInfo@Key={#2}%
4082 }{%
4083 \kv@processor@default{pdfinfo}%
4084 }%
4085 \fi
4086 \else
4087 \kv@parse@normalized{%
4088 \HyInfo@Key={#2}%
4089 }{%
4090 \kv@processor@default{pdfinfo}%
4091 }%
4092 \fi
4093 \fi
4094 }
4095 \def\HyInfo@GenerateAddons{%
4096 \ifHyInfo@AddonUnsupported
4097 \def\HyInfo@Addons{}%
4098 \else
4099 \begingroup
4100 \toks@{}%
4101 \def\HyInfo@do##1{%
4102 \EdefEscapeName\HyInfo@Key{##1}%
4103 \edef\x{%
4104 \toks@{%
4105 \the\toks@
4106 /\HyInfo@Key(\csname HyInfo@Value@##1\endcsname)%
4107 }%
4108 }%
4109 \x
4110 }%
4111 \HyInfo@AddonList
4112 \edef\x{\endgroup
4113 \def\noexpand\HyInfo@Addons{\the\toks@}%
4114 }%
4115 \x
4116 \fi
4117 }
4118 \let\HyInfo@AddonList\ltx@empty
4119 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \}
4120 \define@key{Hyp}{pdfinkmargin}{\setpdfinkmargin{#1}}
4121 \let\setpdfinkmargin\@gobble
4122 \def\calculate@pdfview#1 #2\{%
4123 \def\@pdfview{#1}%
4124 \ifx\#2\%
4125 \def\@pdfviewparams{-32768}%
4126 \else
4127 \def\@pdfviewparams{#2}%

```

```

4128 \fi
4129 }
4130 \begingroup\expandafter\expandafter\expandafter\endgroup
4131 \expandafter\ifx\csname numexpr\endcsname\relax
4132 \def\Hy@number#1{%
4133 \expandafter\@firstofone\expandafter{\number#1}%
4134 }%
4135 \else
4136 \def\Hy@number#1{%
4137 \the\numexpr#1\relax
4138 }%
4139 \fi
4140 \define@key{Hyp}{pdfstartpage}{%
4141 \ifx\#1\%
4142 \let\@pdfstartpage\ltx@empty
4143 \else
4144 \edef\@pdfstartpage{\Hy@number{#1}}%
4145 \fi
4146 }%
4147 \define@key{Hyp}{pdfstartview}{%
4148 \ifx\#1\%
4149 \let\@pdfstartview\ltx@empty
4150 \else
4151 \hypercalcbpdef\@pdfstartview{/#1}%
4152 \fi
4153 }
4154 \def\HyPat@NonNegativeReal/{%
4155 \ *([0-9]+\.[0-9]*|[0-9]*\.[0-9]+) *%
4156 }
4157 \define@key{Hyp}{pdfremotestartview}{%
4158 \ifx\#1\%
4159 \def\@pdfremotestartview{/Fit}%
4160 \else
4161 \hypercalcbpdef\@pdfremotestartview{#1}%
4162 \edef\@pdfremotestartview{\@pdfremotestartview}%
4163 \Hy@Match\@pdfremotestartview{%
4164 ^{XYZ -?(null|\HyPat@NonNegativeReal/) %
4165 -(null|\HyPat@NonNegativeReal/) %
4166 (null|\HyPat@NonNegativeReal/)|%
4167 Fit(|B| %
4168 (H|V|BH|BV) (null|\HyPat@NonNegativeReal/)|%
4169 R \HyPat@NonNegativeReal/ \HyPat@NonNegativeReal/ %
4170 \HyPat@NonNegativeReal/ \HyPat@NonNegativeReal/%
4171 )}$%
4172 }{}{%
4173 \Hy@Warning{%
4174 Invalid value '\@pdfremotestartview'\MessageBreak
4175 of 'pdfremotestartview'\MessageBreak
4176 is replaced by 'Fit'%
4177 }%
4178 \let\@pdfremotestartview\@empty
4179 }%
4180 \ifx\@pdfremotestartview\@empty
4181 \def\@pdfremotestartview{/Fit}%
4182 \else
4183 \edef\@pdfremotestartview{\@pdfremotestartview}%
4184 \fi

```

```

4185 \fi
4186 }
4187 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
4188 \define@key{Hyp}{pdftoolbar}[true]{%
4189 \Hy@boolkey{pdftoolbar}{#1}%
4190 }
4191 \define@key{Hyp}{pdfmenubar}[true]{%
4192 \Hy@boolkey{pdfmenubar}{#1}%
4193 }
4194 \define@key{Hyp}{pdfwindowui}[true]{%
4195 \Hy@boolkey{pdfwindowui}{#1}%
4196 }
4197 \define@key{Hyp}{pdffitwindow}[true]{%
4198 \Hy@boolkey{pdffitwindow}{#1}%
4199 }
4200 \define@key{Hyp}{pdfcenterwindow}[true]{%
4201 \Hy@boolkey{pdfcenterwindow}{#1}%
4202 }
4203 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
4204 \Hy@boolkey{pdfdisplaydoctitle}{#1}%
4205 }
4206 \define@key{Hyp}{pdfa}[true]{%
4207 \Hy@boolkey{pdfa}{#1}%
4208 }
4209 \define@key{Hyp}{pdfnewwindow}[true]{%
4210 \def\Hy@temp{#1}%
4211 \ifx\Hy@temp\@empty
4212 \Hy@pdfnewwindowsetfalse
4213 \else
4214 \Hy@pdfnewwindowsettrue
4215 \Hy@boolkey{pdfnewwindow}{#1}%
4216 \fi
4217 }
4218 \def\Hy@SetNewWindow{%
4219 \ifHy@pdfnewwindowset
4220 /NewWindow %
4221 \ifHy@pdfnewwindow true\else false\fi
4222 \fi
4223 }
4224 \Hy@DefNameKey{pdfpagelayout}{%
4225 \do{SinglePage}{}%
4226 \do{OneColumn}{}%
4227 \do{TwoColumnLeft}{}%
4228 \do{TwoColumnRight}{}%
4229 \do{TwoPageLeft}{PDF 1.5}%
4230 \do{TwoPageRight}{PDF 1.5}%
4231 }
4232 \define@key{Hyp}{pdflang}{%
4233 \def\@pdflang{#1}%
4234 }
4235 \define@key{Hyp}{pdfpagelabels}[true]{%
4236 \Hy@boolkey{pdfpagelabels}{#1}%
4237 }
4238 \define@key{Hyp}{pdfescapeform}[true]{%
4239 \Hy@boolkey{pdfescapeform}{#1}%
4240 }

```

Default values:



```

4241 \def\@linkbordercolor{1 0 0}
4242 \def\@urlbordercolor{0 1 1}
4243 \def\@menubordercolor{1 0 0}
4244 \def\@filebordercolor{0 .5 .5}
4245 \def\@runbordercolor{0 .7 .7}
4246 \def\@citebordercolor{0 1 0}
4247 \def\@pdfhighlight{/I}
4248 \let\@pdftitle\ltx@empty
4249 \let\@pdfauthor\ltx@empty
4250 \let\@pdfproducer\relax
4251 \def\@pdfcreator{LaTeX with hyperref package}
4252 \let\@pdfcreationdate\ltx@empty
4253 \let\@pdfmoddate\ltx@empty
4254 \let\@pdfsubject\ltx@empty
4255 \let\@pdfkeywords\ltx@empty
4256 \let\@pdftrapped\ltx@empty
4257 \let\@pdfpagescrop\ltx@empty
4258 \def\@pdfstartview{/Fit}
4259 \def\@pdfremotestartview{/Fit}
4260 \def\@pdfstartpage{1}
4261 \let\@pdfprintpagerange\ltx@empty
4262 \let\@pdflang\ltx@empty
4263 \let\PDF@SetupDoc\@empty
4264 \let\PDF@FinishDoc\@empty
4265 \let\phantomsection\@empty
4266 \let\special@paper\@empty
4267 \def\HyperDestNameFilter#1{#1}
4268 \Hy@AtBeginDocument{%
4269   \begingroup
4270     \edef\x{\@ifundefined{stockheight}\paperheight\stockheight}%
4271     \dimen@=\x\relax
4272     \ifdim\dimen@>\z@
4273       \else
4274         \dimen@=11in\relax
4275         \Hy@WarningNoLine{%
4276           Height of page (\expandafter\string\x) %
4277           is invalid (\the\x),\MessageBreak
4278           using 11in%
4279         }%
4280       \fi
4281       \dimen@=0.99626401\dimen@
4282       \xdef\Hy@pageheight{\strip@pt\dimen@}%
4283     \endgroup
4284 }
4285 \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.

```

4286 \let\hyper@normalise\ExecuteOptions
4287 \let\ExecuteOptions\hypersetup
4288 \Hy@RestoreCatcodes
4289 \InputIfFileExists{hyperref.cfg}{-}{-}
4290 \Hy@SetCatcodes
4291 \let\ExecuteOptions\hyper@normalise
4292 \ifx\Hy@MaybeStopNow\relax
4293 \else
4294   \Hy@stoppeardearlytrue

```

```

4295 \expandafter\Hy@MaybeStopNow
4296 \fi
4297 \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.

```

4298 \SetupKeyvalOptions{family=Hyp}
4299 \DeclareLocalOptions{%
4300   a4paper,a5paper,b5paper,letterpaper,legalpaper,executivepaper%
4301 }

```

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

```

4302 \@ifpackageloaded{tex4ht}{%
4303   \@ifpackagewith{hyperref}{tex4ht}{%}{%
4304     \PassOptionsToPackage{tex4ht}{hyperref}%
4305   }%
4306 }{}

4307 \let\ReadBookmarks\relax
4308 \ProcessKeyvalOptions{Hyp}

```

After processing options.

## 15.1 Package `xspace` support

```

4309 \def\Hy@xspace@end{}
4310 \ltx@ifundefined{xspaceaddexceptions}{%
4311   \Hy@AtBeginDocument{%
4312     \ltx@ifundefined{xspaceaddexceptions}{%
4313       }{%
4314         \def\Hy@xspace@end{%
4315           \ltx@gobble{end for xspace}%
4316         }%
4317         \xspaceaddexceptions{%
4318           \Hy@xspace@end,\hyper@linkend,\hyper@anchorend
4319         }%
4320       }%
4321     }%
4322   }{}%
4323   \def\Hy@xspace@end{%
4324     \ltx@gobble{end for xspace}%
4325   }%
4326   \xspaceaddexceptions{\Hy@xspace@end,\hyper@linkend,\hyper@anchorend}%
4327 }

```

## 15.2 Option `draft`

```

4328 \Hy@AtBeginDocument{%
4329   \ifHy@draft
4330     \let\hyper@@anchor\@gobble
4331     \gdef\hyper@link#1#2#3{#3\Hy@xspace@end}%
4332     \def\hyper@anchorstart#1#2{#2\Hy@xspace@end}%
4333     \def\hyper@anchorend{\Hy@xspace@end}%
4334     \let\hyper@linkstart\@gobbletwo
4335     \def\hyper@linkend{\Hy@xspace@end}%
4336     \def\hyper@linkurl#1#2{#1\Hy@xspace@end}%
4337     \def\hyper@linkfile#1#2#3{#1\Hy@xspace@end}%
4338     \def\hyper@link@{#1#2#3#4{#4\Hy@xspace@end}%
4339     \def\Acrobatmenu#1#2{\leavevmode#2\Hy@xspace@end}%

```

```

4340 \let\PDF@SetupDoc\@empty
4341 \let\PDF@FinishDoc\@empty
4342 \let\@fifthoffive\@secondoftwo
4343 \let\@secondoffive\@secondoftwo
4344 \let\ReadBookmarks\relax
4345 \let\WriteBookmarks\relax
4346 \Hy@WarningNoLine{Draft mode on}%
4347 \fi
4348 \Hy@DisableOption{draft}%
4349 \Hy@DisableOption{nolinks}%
4350 \Hy@DisableOption{final}%
4351 }

```

### 15.3 PDF/A

```

4352 \Hy@DisableOption{pdfa}

4353 \ifHy@pdfa
4354 \kvsetkeys{Hyp}{pdfversion=1.4}%
4355 \Hy@DisableOption{pdfversion}%
4356 \def\Hy@Acrobatmenu#1#2{%
4357 \leavevmode
4358 \beginngroup
4359 \edef\x{#1}%
4360 \@onelevel@sanitize\x
4361 \ifx\x\Hy@NextPage
4362 \let\y=Y%
4363 \else
4364 \ifx\x\Hy@PrevPage
4365 \let\y=Y%
4366 \else
4367 \ifx\x\Hy@FirstPage
4368 \let\y=Y%
4369 \else
4370 \ifx\x\Hy@LastPage
4371 \let\y=Y%
4372 \else
4373 \let\y=N%
4374 \fi
4375 \fi
4376 \fi
4377 \fi
4378 \expandafter\endgroup
4379 \ifx\y Y%
4380 \else
4381 \Hy@Error{%
4382 PDF/A: Named action ‘#1’ is not permitted%
4383 }\@ehc
4384 {#2}%
4385 \expandafter\@gobble
4386 \fi
4387 }%
4388 \def\Hy@temp#1{%
4389 \expandafter\def\csname Hy@#1\endcsname{#1}%
4390 \expandafter\@onelevel@sanitize\csname Hy@#1\endcsname
4391 }%
4392 \Hy@temp{NextPage}%
4393 \Hy@temp{PrevPage}%
4394 \Hy@temp{FirstPage}%

```

```

4395 \Hy@temp{LastPage}%
4396 \else
4397 \def\Hy@Acrobatmenu#1#2{\leavevmode}%
4398 \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.

```

4399 \Hy@nextfalse
4400 \ltx@ifundefined{spanish@sh@}{\Hy@nexttrue}{\Hy@nexttrue}
4401 \ltx@ifundefined{galician@sh@}{\Hy@nexttrue}{\Hy@nexttrue}
4402 \ltx@ifundefined{estonian@sh@}{\Hy@nexttrue}{\Hy@nexttrue}
4403 \ifHy@next
4404 \let\texttilde\~%
4405 \fi

4406 \def\Hy@wrapper@babel#1#2{%
4407 \begingroup
4408 \Hy@safe@activetrue
4409 \set@display@protect
4410 \edef\x{#2}%
4411 \@onelevel@sanitize\x
4412 \toks@{#1}%
4413 \edef\x{\endgroup\the\toks@{\x}}%
4414 \x
4415 }
4416 \def\Hy@WrapperDef#1{%
4417 \begingroup
4418 \escapechar=\m@ne
4419 \xdef\Hy@gtemp{%
4420 \expandafter\noexpand\csname HyWrap@string#1\endcsname
4421 }%
4422 \endgroup
4423 \edef#1{%
4424 \noexpand\Hy@wrapper@babel
4425 \expandafter\noexpand\Hy@gtemp
4426 }%
4427 \expandafter\def\Hy@gtemp
4428 }

4429 \ifHy@hyperfigures
4430 \Hy@Info{Hyper figures ON}%
4431 \else
4432 \Hy@Info{Hyper figures OFF}%
4433 \fi
4434 \ifHy@nesting
4435 \Hy@Info{Link nesting ON}%
4436 \else
4437 \Hy@Info{Link nesting OFF}%
4438 \fi
4439 \ifHy@hyperindex
4440 \Hy@Info{Hyper index ON}%
4441 \else
4442 \Hy@Info{Hyper index OFF}%
4443 \fi
4444 \ifHy@plainpages
4445 \Hy@Info{Plain pages ON}%

```

```

4446 \else
4447   \Hy@Info{Plain pages OFF}%
4448 \fi
4449 \ifHy@backref
4450   \Hy@Info{Backreferencing ON}%
4451 \else
4452   \Hy@Info{Backreferencing OFF}%
4453 \fi
4454 \ifHy@typexml
4455   \Hy@AtEndOfPackage{%
4456     \RequirePackage{color}%
4457     \RequirePackage{nameref}[2012/07/28]%
4458   }%
4459 \fi
4460 \Hy@DisableOption{typexml}
4461 \ifHy@implicit
4462   \Hy@InfoNoLine{Implicit mode ON; LaTeX internals redefined}%
4463 \else
4464   \Hy@InfoNoLine{Implicit mode OFF; no redefinition of LaTeX internals}%
4465   \def\MaybeStopEarly{%
4466     \Hy@Message{Stopped early}%
4467     \Hy@AtBeginDocument{%
4468       \PDF@FinishDoc
4469       \gdef\PDF@FinishDoc{}}%
4470   }%
4471   \endinput
4472 }%
4473 \Hy@AtBeginDocument{%
4474   \let\autoref\ref
4475   \let\autopageref\pageref
4476   \ifx\@pdfpagemode\@empty
4477     \gdef\@pdfpagemode{UseNone}%
4478   \fi
4479   \global\Hy@backreffalse
4480 }%
4481 \Hy@AtEndOfPackage{%
4482   \global\let\ReadBookmarks\relax
4483   \global\let\WriteBookmarks\relax
4484 }%
4485 \fi
4486 \Hy@DisableOption{implicit}

```

#### 15.4.1 Driver loading

```

4487 \Hy@AtEndOfPackage{%
4488   \@ifpackageloaded{tex4ht}{%
4489     \def\Hy@driver{htex4ht}%
4490     \Hy@texhttrue
4491   }{}%

```

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.

```

4492   \ifx\Hy@driver\@empty
4493   \else
4494     \def\Hy@temp{hpdftex}%
4495     \ifpdf
4496       \ifx\Hy@driver\Hy@temp
4497       \else

```

```

4498     \Hy@WarningNoLine{%
4499         Wrong driver '\Hy@driver.def';\MessageBreak
4500         pdfTeX is running in PDF mode.\MessageBreak
4501         Forcing driver '\Hy@temp.def"%
4502     }%
4503     \let\Hy@driver\Hy@temp
4504 \fi
4505 \else
4506     \ifx\Hy@driver\Hy@temp
4507         \Hy@WarningNoLine{%
4508             Wrong driver '\Hy@driver.def';\MessageBreak
4509             pdfTeX is not running in PDF mode.\MessageBreak
4510             Using default driver%
4511         }%
4512         \let\Hy@driver\@empty
4513     \fi
4514 \fi
4515 \fi
4516 \ifHy@texht
4517 \else
4518     \ifx\Hy@driver\@empty
4519     \else
4520         \def\Hy@temp{hxtex}%
4521         \ifxetex
4522             \ifx\Hy@driver\Hy@temp
4523             \else
4524                 \Hy@WarningNoLine{%
4525                     Wrong driver '\Hy@driver.def';\MessageBreak
4526                     XeTeX is running.\MessageBreak
4527                     Forcing driver '\Hy@temp.def' for XeTeX%
4528                 }%
4529                 \let\Hy@driver\Hy@temp
4530             \fi
4531         \fi
4532     \fi
4533 \fi
4534 \ifx\Hy@driver\@empty
4535 \else
4536     \def\Hy@temp{hvtexhtm}%
4537     \ifvtexhtml
4538         \ifx\Hy@driver\Hy@temp
4539         \else
4540             \Hy@WarningNoLine{%
4541                 Wrong driver '\Hy@driver.def';\MessageBreak
4542                 VTeX is running in HTML mode.\MessageBreak
4543                 Forcing driver '\Hy@temp.def"%
4544             }%
4545             \let\Hy@driver\Hy@temp
4546         \fi
4547     \else
4548         \ifx\Hy@driver\Hy@temp
4549             \Hy@WarningNoLine{%
4550                 Wrong driver '\Hy@driver.def';\MessageBreak
4551                 VTeX is not running in HTML mode.\MessageBreak
4552                 Using default driver%
4553             }%
4554             \let\Hy@driver\@empty

```

```

4555 \fi
4556 \fi
4557 \fi

```

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

```

4558 \def\HyOpt@DriverType{%
4559 \ifx\Hy@driver\@empty
4560 \def\HyOpt@DriverType{ (autodetected)}%
4561 \providecommand*\Hy@defaultdriver{\hypertex}%
4562 \ifpdf
4563 \def\Hy@driver{hpdfTeX}%
4564 \else
4565 \ifxetex
4566 \def\Hy@driver{hxetex}%
4567 \else
4568 \ifvtexhtml
4569 \def\Hy@driver{hvtexhtm}%
4570 \def\MaybeStopEarly{%
4571 \Hy@Message{Stopped early}%
4572 \Hy@AtBeginDocument{%
4573 \PDF@FinishDoc
4574 \gdef\PDF@FinishDoc{}}%
4575 }%
4576 \endinput
4577 }%
4578 \else
4579 \ifvtexpdf
4580 \def\Hy@driver{hvtex}%
4581 \else
4582 \ifvtexps
4583 \def\Hy@driver{hvtex}%
4584 \else
4585 \ifx\HyOpt@DriverFallback\ltx@empty
4586 \let\Hy@driver\Hy@defaultdriver
4587 \def\HyOpt@DriverType{ (default)}%
4588 \else
4589 \begingroup
4590 \toks@{\expandafter{\HyOpt@DriverFallback}}%
4591 \edef\x{\endgroup
4592 \noexpand\kvsetkeys{Hyp}{\the\toks@}}%
4593 }%
4594 \x
4595 \ifx\Hy@driver\ltx@empty
4596 \let\Hy@driver\Hy@defaultdriver
4597 \def\HyOpt@DriverType{ (default)}%
4598 \else
4599 \def\HyOpt@DriverType{ (fallback)}%
4600 \fi
4601 \fi
4602 \fi
4603 \fi
4604 \fi
4605 \fi
4606 \fi
4607 \ifx\Hy@driver\Hy@defaultdriver
4608 \def\Hy@temp{hdvwind}%
4609 \ifx\Hy@temp\Hy@driver
4610 \kvsetkeys{Hyp}{colorlinks}%

```

```

4611     \PassOptionsToPackage{dviwindo}{color}%
4612     \fi
4613   \fi
4614 \fi
4615 \Hy@Message{Driver\HyOpt@DriverType: \Hy@driver}%
4616 \chardef\Hy@VersionChecked=0 %
4617 \input{\Hy@driver.def}%
4618 \ifcase\Hy@VersionChecked
4619   \Hy@VersionCheck{\Hy@driver.def}%
4620 \fi
4621 \let\@unprocessedoptions\relax
4622 \Hy@RestoreCatcodes
4623 \Hy@DisableOption{tex4ht}%
4624 \Hy@DisableOption{pdftex}%
4625 \Hy@DisableOption{nativepdf}%
4626 \Hy@DisableOption{dvipdfm}%
4627 \Hy@DisableOption{dvipdfmx}%
4628 \Hy@DisableOption{dvipdfmx-outline-open}%
4629 \Hy@DisableOption{pdfmark}%
4630 \Hy@DisableOption{dvips}%
4631 \Hy@DisableOption{hypertex}%
4632 \Hy@DisableOption{vtex}%
4633 \Hy@DisableOption{vtexpdfmark}%
4634 \Hy@DisableOption{dviwindo}%
4635 \Hy@DisableOption{dvipsone}%
4636 \Hy@DisableOption{textures}%
4637 \Hy@DisableOption{latex2html}%
4638 \Hy@DisableOption{ps2pdf}%
4639 \Hy@DisableOption{xetex}%
4640 \Hy@DisableOption{pdfversion}%
4641 }

```

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.

```

4642 \newif\ifHy@DvipdfmxOutlineOpen
4643 \ifxetex
4644   \ifdim\number\XeTeXversion\XeTeXrevision in<0.9995in %
4645     \else
4646       \chardef\SpecialDvipdfmxOutlineOpen\@ne
4647       \Hy@DvipdfmxOutlineOpenttrue
4648     \fi
4649 \fi
4650 \begingroup\expandafter\expandafter\expandafter\endgroup
4651 \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax
4652 \else
4653   \ifnum\SpecialDvipdfmxOutlineOpen>\z@
4654     \Hy@DvipdfmxOutlineOpenttrue
4655   \fi
4656 \fi

```

#### 15.4.2 Bookmarks

```

4657 \def\WriteBookmarks{0}
4658 \def\@bookmarkopenstatus#1{%
4659   \ifHy@bookmarksopen

```

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



```

4660 \ifnum#1<\expandafter\@firstofone\expandafter
4661      {\number\@bookmarksopenlevel} % explicit space
4662 \else
4663   -%
4664 \fi
4665 \else
4666   -%
4667 \fi
4668 }
4669 \ifHy@bookmarks
4670 \Hy@Info{Bookmarks ON}%
4671 \ifx\@pdfpagemode\@empty
4672 \def\@pdfpagemode{UseOutlines}%
4673 \fi
4674 \else
4675 \let\@bookmarkopenstatus\ltx@gobble
4676 \Hy@Info{Bookmarks OFF}%
4677 \Hy@AtEndOfPackage{%
4678   \global\let\ReadBookmarks\relax
4679   \global\let\WriteBookmarks\relax
4680 }%
4681 \ifx\@pdfpagemode\@empty
4682 \def\@pdfpagemode{UseNone}%
4683 \fi
4684 \fi
4685 \Hy@DisableOption{bookmarks}

Add wrapper for setting standard catcodes (babel's shorthands).
4686 \def\Hy@CatcodeWrapper#1{%
4687 \let\Hy@endWrap\ltx@empty
4688 \def\TMP@EnsureCode##1##2{%
4689   \edef\Hy@endWrap{%
4690     \Hy@endWrap
4691     \catcode##1 \the\catcode##1\relax
4692   }%
4693   \catcode##1 ##2\relax
4694 }%
4695 \TMP@EnsureCode{10}{12}% ^^J
4696 \TMP@EnsureCode{33}{12}% !
4697 \TMP@EnsureCode{34}{12}% "
4698 \TMP@EnsureCode{36}{3}% $ (math)
4699 \TMP@EnsureCode{38}{4}% & (alignment)
4700 \TMP@EnsureCode{39}{12}% '
4701 \TMP@EnsureCode{40}{12}% (
4702 \TMP@EnsureCode{41}{12}% )
4703 \TMP@EnsureCode{42}{12}% *
4704 \TMP@EnsureCode{43}{12}% +
4705 \TMP@EnsureCode{44}{12}% ,
4706 \TMP@EnsureCode{45}{12}% -
4707 \TMP@EnsureCode{46}{12}% .
4708 \TMP@EnsureCode{47}{12}% /
4709 \TMP@EnsureCode{58}{12}% :
4710 \TMP@EnsureCode{59}{12}% ;
4711 \TMP@EnsureCode{60}{12}% <
4712 \TMP@EnsureCode{61}{12}% =
4713 \TMP@EnsureCode{62}{12}% >
4714 \TMP@EnsureCode{63}{12}% ?
4715 \TMP@EnsureCode{91}{12}% [

```

```

4716 \TMP@EnsureCode{93}{12}% ]
4717 \TMP@EnsureCode{94}{7}% ^ (superscript)
4718 \TMP@EnsureCode{95}{8}% _ (subscript)
4719 \TMP@EnsureCode{96}{12}% ‘
4720 \TMP@EnsureCode{124}{12}% |
4721 \TMP@EnsureCode{126}{13}% ~ (active)
4722 #1\relax
4723 \Hy@EndWrap
4724 }

```

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

```

4725 \Hy@AtBeginDocument{%
4726   \ifHy@ocgcolorlinks
4727     \kvsetkeys{Hyp}{colorlinks}%
4728     \ifHy@pdfa
4729       \Hy@Warning{%
4730         PDF/A: Optional Content Groups are prohibited,\MessageBreak
4731         using ‘colorlinks’ instead of ‘ocgcolorlinks’%
4732       }%
4733       \Hy@ocgcolorlinksfalse
4734     \fi
4735   \fi
4736   \ifHy@ocgcolorlinks
4737   \else
4738     \Hy@DisableOption{ocgcolorlinks}%
4739   \fi
4740   \ifHy@colorlinks
4741     \def\@pdfborder{0 0 0}%
4742     \let\@pdfborderstyle\@empty
4743     \ifHy@typexml
4744     \else
4745       \Hy@CatcodeWrapper{%
4746         \RequirePackage{color}%
4747       }%
4748     \fi
4749     \def\Hy@colorlink#1{%
4750       \begingroup
4751       \HyColor@UseColor#1%
4752     }%
4753     \def\Hy@endcolorlink{\endgroup}%
4754     \Hy@Info{Link coloring ON}%
4755   \else
4756     \ifHy@frenchlinks
4757       \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
4758       \def\Hy@endcolorlink{\endgroup}%
4759       \Hy@Info{French linking ON}%
4760     \else

```

for grouping consistency:

```

4761     \def\Hy@colorlink#1{\begingroup}%
4762     \def\Hy@endcolorlink{\endgroup}%
4763     \Hy@Info{Link coloring OFF}%
4764   \fi
4765 \fi
4766 \Hy@DisableOption{colorlinks}%
4767 \Hy@DisableOption{frenchlinks}%
4768 \ifHy@texht
4769   \long\def\@firstoffive#1#2#3#4#5{#1}%

```

```

4770 \long\def\@secondoffive#1#2#3#4#5{#2}%
4771 \long\def\@thirdoffive#1#2#3#4#5{#3}%
4772 \long\def\@fourthoffive#1#2#3#4#5{#4}%
4773 \long\def\@fifthoffive#1#2#3#4#5{#5}%
4774 \providecommand*\@safe@activetrue{}%
4775 \providecommand*\@safe@activesfalse{}%
4776 \def\T@ref#1{%
4777   \Hy@safe@activetrue
4778   \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
4779   \Hy@safe@activesfalse
4780 }%
4781 \def\T@pageref#1{%
4782   \Hy@safe@activetrue
4783   \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
4784   \Hy@safe@activesfalse
4785 }%
4786 \else
4787   \ifHy@typexml
4788   \else
4789     \Hy@CatcodeWrapper{%
4790       \RequirePackage{nameref}[2012/07/28]%
4791     }%
4792   \fi
4793 \fi
4794 \DeclareRobustCommand\ref{%
4795   \@ifstar\@crefstar\T@ref
4796 }%
4797 \DeclareRobustCommand\pageref{%
4798   \@ifstar\@pagerefstar\T@pageref
4799 }%
4800 % \@ifclassloaded{memoir}{%
4801 %   \ltx@ifundefined{@mem@titlerefno link}\ltx@secondoftwo{%
4802 %     \ltx@ifundefined{@mem@titleref}\ltx@secondoftwo\ltx@firstoftwo
4803 %   }%
4804 % } \ltx@secondoftwo
4805 % {%
4806 %   \DeclareRobustCommand*\@nameref{%
4807 %     \@ifstar\@mem@titlerefno link\@mem@titleref
4808 %   }%
4809 % }{%
4810   \DeclareRobustCommand*\@nameref{%
4811     \@ifstar\@namerefstar\T@nameref
4812   }%
4813 % }%
4814 }
4815 \Hy@AtBeginDocument{%
4816   \ifHy@texht
4817   \else
4818     \Hy@CatcodeWrapper\ReadBookmarks
4819   \fi
4820 }
4821 \ifHy@backref
4822   \RequirePackage{backref}%
4823 \else
4824   \let\Hy@backout\@gobble
4825 \fi
4826 \Hy@DisableOption{backref}

```

```
4827 \Hy@DisableOption{pagebackref}
```

```
4828 \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`.

```
4829 \begingroup
4830 \endlinechar=-1 %
4831 \catcode'\^^A=14 %
4832 \catcode'\^^M\active
4833 \catcode'\%\active
4834 \catcode'\#\active
4835 \catcode'\_\active
4836 \catcode'\$\active
4837 \catcode'\&\active
4838 \gdef\hyper@normalise{^^A
4839   \begingroup
4840   \catcode'\^^M\active
4841   \def^^M{ }^^A
4842   \catcode'\%\active
4843   \let%\@percentchar
4844   \let%\@percentchar
4845   \catcode'\#\active
4846   \def#{\hyper@hash}^^A
4847   \def\#{\hyper@hash}^^A
4848   \@makeother\&^^A
4849   \edef&{\string&}^^A
4850   \edef\&{\string&}^^A
4851   \edef\textunderscore{\string_}^^A
4852   \let_\textunderscore
4853   \catcode'\_\active
4854   \let_\textunderscore
4855   \let~\hyper@tilde
4856   \let~\hyper@tilde
4857   \let\textasciitilde\hyper@tilde
4858   \let\\\@backslashchar
4859   \edef${\string$}^^A
4860   \Hy@safe@activetrue
4861   \hyper@n@rmalise
4862 }^^A
4863 \catcode'\#=6 ^^A
4864 \gdef\Hy@ActiveCarriageReturn{^^M}^^A
4865 \gdef\hyper@n@rmalise#1#2{^^A
4866   \def\Hy@tempa{#2}^^A
4867   \ifx\Hy@tempa\Hy@ActiveCarriageReturn
4868     \ltx@ReturnAfterElseFi{^^A
4869       \hyper@@normalise{#1}^^A
4870     }^^A
4871   \else
4872     \ltx@ReturnAfterFi{^^A
```

```

4873     \hyper@@normalise{#1}{#2}^^A
4874   }^^A
4875   \fi
4876 }^^A
4877 \gdef\hyper@@normalise#1#2{^^A
4878   \edef\Hy@tempa{^^A
4879     \endgroup
4880     \noexpand#1{\Hy@RemovePercentCr#2%^^M\@nil}^^A
4881   }^^A
4882   \Hy@tempa
4883 }^^A
4884 \gdef\Hy@RemovePercentCr#1%^^M#2\@nil{^^A
4885   #1^^A
4886   \ifx\limits#2\limits
4887   \else
4888     \ltx@ReturnAfterFi{^^A
4889       \Hy@RemovePercentCr #2\@nil
4890     }^^A
4891   \fi
4892 }^^A
4893 \endgroup
4894 \providecommand*\hyper@chars{%
4895   \let\#\hyper@hash
4896   \let\%\@percentchar
4897   \Hy@safe@activetrue
4898 }

4899 \def\hyperlink#1#2{%
4900   \hyper@@@link{}{#1}{#2}%
4901 }

4902 \def\Hy@VerboseLinkStart#1#2{%
4903   \ifHy@verbose
4904     \begingroup
4905     \Hy@safe@activetrue
4906     \xdef\Hy@VerboseGlobalTemp{(#1) '#2'}%
4907     \Hy@Info{Reference \Hy@VerboseGlobalTemp}%
4908     \xdef\Hy@VerboseGlobalTemp{%
4909       \Hy@VerboseGlobalTemp, %
4910       line \the\inputlineno
4911     }%
4912   \endgroup
4913   \let\Hy@VerboseLinkInfo\Hy@VerboseGlobalTemp
4914   \@onelevel@sanitize\Hy@VerboseLinkInfo
4915   \fi
4916 }

4917 \def\Hy@VerboseLinkInfo{<VerboseLinkInfo>}
4918 \def\Hy@VerboseLinkStop{%
4919   \ifHy@verbose
4920     \begingroup
4921     \edef\x{\endgroup
4922       \write\m@ne{%
4923         Package 'hyperref' Info: %
4924         End of reference \Hy@VerboseLinkInfo.%
4925       }%
4926     }%
4927   \x
4928   \fi

```

```

4929 }
4930 \def\Hy@VerboseAnchor#1{%
4931   \ifHy@verbose
4932     \begingroup
4933       \Hy@safe@activetrue
4934       \Hy@Info{Anchor '\HyperDestNameFilter{#1}'}%
4935     \endgroup
4936   \fi
4937 }
4938 \def\Hy@AllowHyphens{%
4939   \relax
4940   \ifhmode
4941     \penalty\@M
4942     \hskip\z@skip
4943   \fi
4944 }
4945 \DeclareRobustCommand*{\href}[1][]{%
4946   \begingroup
4947     \setkeys{href}{#1}%
4948     \@ifnextchar\bgroup\Hy@href{\hyper@normalise\href@}%
4949 }
4950 \def\Hy@href#1{%
4951   \hyper@normalise\href@
4952 }
4953 \begingroup
4954   \catcode'\$=6 %
4955   \catcode'\#=12 %
4956   \gdef\href@#1{\expandafter\href@split$1##\}%
4957   \gdef\href@split$1##$2##$3\\$4{%
4958     \hyper@@link{$1}{$2}{$3}{$4}%
4959   \endgroup
4960 }%
4961 \endgroup

```

Option 'page'.

```

4962 \define@key{href}{page}{%
4963   \def\Hy@href@page{#1}%
4964 }
4965 \let\Hy@href@page\@empty
4966 \newcount\c@Hy@tempcnt
4967 \def\theHy@tempcnt{\the\c@Hy@tempcnt}
4968 \def\Hy@MakeRemoteAction{%
4969   \ifx\Hy@href@page\@empty
4970     \def\Hy@href@page{0}%
4971   \else
4972     \setcounter{Hy@tempcnt}{\Hy@href@page}%
4973     \ifnum\c@Hy@tempcnt<\@ne
4974       \Hy@Warning{%
4975         Invalid page number (\theHy@tempcnt)\MessageBreak
4976         for remote PDF file.\MessageBreak
4977         Using page 1%
4978       }%
4979     \def\Hy@href@page{0}%
4980   \else
4981     \global\advance\c@Hy@tempcnt\m@ne
4982     \edef\Hy@href@page{\theHy@tempcnt}%
4983   \fi

```

```
4984 \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.

```
4985 \ifx\Hy@href@nextactionraw\@empty
4986 \else
4987 \Hy@pdfnewwindowsettrue
4988 \Hy@pdfnewwindowtrue
4989 \fi
4990 }
```

Option ‘pdfremotestartview’.

```
4991 \define@key{href}{pdfremotestartview}{%
4992 \setkeys{Hyp}{pdfremotestartview={#1}}}%
4993 }
```

Option ‘pdfnewwindow’.

```
4994 \let\KV@href@pdfnewwindow\KV@Hyp@pdfnewwindow
4995 \let\KV@href@pdfnewwindow@default\KV@Hyp@pdfnewwindow@default
```

Option ‘ismap’.

```
4996 \newif\ifHy@href@ismap
4997 \define@key{href}{ismap}[true]{%
4998 \ltx@ifundefined{Hy@href@ismap#1}{%
4999 \Hy@Error{%
5000 Invalid value (#1) for key ‘ismap’.\MessageBreak
5001 Permitted values are ‘true’ or ‘false’.\MessageBreak
5002 Ignoring ‘ismap’%
5003 } \@ehc
5004 }{%
5005 \csname Hy@href@ismap#1\endcsname
5006 }%
5007 }
```

Option ‘nextactionraw’.

```
5008 \let\Hy@href@nextactionraw\@empty
5009 \define@key{href}{nextactionraw}{%
5010 \edef\Hy@href@nextactionraw{#1}%
5011 \ifx\Hy@href@nextactionraw\@empty
5012 \else
5013 \Hy@Match\Hy@href@nextactionraw{%
5014 ~(\HyPat@ObjRef/|<<.*[/].+>>|%
5015 \[( ?\HyPat@ObjRef/|<<.*[/].+>>)+ ?)]$%
5016 }{}{%
5017 \Hy@Warning{Invalid value for ‘nextactionraw’:\MessageBreak
5018 \Hy@href@nextactionraw\MessageBreak
5019 The action is discarded%
5020 }%
5021 }%
5022 \ifx\Hy@href@nextactionraw\@empty
5023 \else
5024 \edef\Hy@href@nextactionraw{/Next \Hy@href@nextactionraw}%
5025 \fi
5026 \fi
5027 }
5028 \def\HyPat@ObjRef/{.+}
```

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

```
5029 \RequirePackage{url}
5030 \let\HyOrg@url\url
```

```

5031 \def\Hurl{\begingroup \Url}
5032 \DeclareRobustCommand*\nolinkurl{\hyper@normalise\nolinkurl@}
5033 \def\nolinkurl@#1{\Hurl{#1}}
5034 \DeclareRobustCommand*\url{\hyper@normalise\url@}
5035 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}

5036 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
5037 \providecommand\hyper@image[2]{#2}

5038 \def\hypertarget#1#2{%
5039   \ifHy@nesting
5040     \hyper@@anchor{#1}{#2}%
5041   \else
5042     \hyper@@anchor{#1}{\relax}#2%
5043   \fi
5044 }

```

`\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.

```

5045 \DeclareRobustCommand*\hyperref{%
5046   \@ifnextchar{\Hy@babelnormalise\label@hyperref}\@hyperref
5047 }
5048 \def\Hy@babelnormalise#1[#2]{%
5049   \begingroup
5050   \Hy@safe@activestrue
5051   \edef\Hy@tempa{%
5052     \endgroup
5053     \noexpand#1[#2]}%
5054  }%
5055   \Hy@tempa
5056 }
5057 \def\@hyperref{\hyper@normalise\@hyperref}
5058 \def\@hyperref#1#2#3{%
5059   \edef\ref@one{\ifx\\#2\\ \else#2.\fi#3}%
5060   \expandafter\tryhyper@link\ref@one\{#1}%
5061 }
5062 \def\tryhyper@link#1\\#2{%
5063   \hyper@@link{#2}{#1}%
5064 }

5065 \def\hyperdef{\@ifnextchar{\label@hyperdef}\@hyperdef}
5066 \def\@hyperdef#1#2#3{%, category, name, text
5067   \ifx\\#1\\%
5068     \def\Hy@AnchorName{#2}%
5069   \else
5070     \def\Hy@AnchorName{#1.#2}%
5071   \fi
5072   \ifHy@nesting
5073     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#3}%
5074   \else
5075     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#3%
5076   \fi
5077 }

```



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.

```

5078 \def\label@hyperref[#1]{%
5079   \expandafter\label@@hyperref\csname r@#1\endcsname{#1}%
5080 }%
5081 \def\label@@hyperref#1#2#3{%
5082   \ifx#1\relax
5083     \protect\G@refundefinedtrue
5084     \@latex@warning{%
5085       Hyper reference ‘#2’ on page \thepage \space undefined%
5086     }%
5087     \begingroup
5088       #3%
5089     \endgroup
5090   \else
5091     \hyper@@link{\expandafter\@fifthoffive#1}%
5092     {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
5093   \fi
5094 }
5095 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
5096                               % anchor text
5097   \@bsphack
5098   \ifx\#2\%
5099     \def\Hy@AnchorName{#3}%
5100   \else
5101     \def\Hy@AnchorName{#2.#3}%
5102   \fi
5103   \if@filesw
5104     \protected@write\@auxout{}{%
5105       \string\newlabel{#1}{#3}{#4}{\Hy@AnchorName}{#3}%
5106     }%
5107   \fi
5108   \@esphack
5109   \ifHy@nesting
5110     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#4}%
5111   \else
5112     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#4%
5113   \fi
5114 }

```

## 16.1 Link box support for XeTeX

```

5115 \newdimen\XeTeXLinkMargin
5116 \setlength{\XeTeXLinkMargin}{2pt}
5117 \ifxetex
5118   \font\XeTeXLink@font=pzdr at 1sp\relax
5119   \newcommand*\XeTeXLink@space{%
5120     \begingroup
5121       \XeTeXLink@font
5122       \@xxxii
5123     \endgroup
5124   }%
5125   \newcommand{\XeTeXLinkBox}[1]{%
5126     \begingroup
5127       \leavevmode
5128       \sbox\z@{#1}%
5129     \begingroup

```

```

5130     \dimen@=\dp\z@
5131     \advance\dimen@\XeTeXLinkMargin
5132     \setbox\tw@=\llap{%
5133         \hb@xt@\XeTeXLinkMargin{%
5134             \lower\dimen@\hbox{\XeTeXLink@space}%
5135             \hss
5136         }%
5137     }%
5138     \dp\tw@=\dp\z@
5139     \ht\tw@=\ht\z@
5140     \copy\tw@
5141 \endgroup
5142 \copy\z@
5143 \dimen@=\ht\z@
5144 \advance\dimen@\XeTeXLinkMargin
5145 \setbox\tw@=\rlap{%
5146     \hb@xt@\XeTeXLinkMargin{%
5147         \hss
5148         \raise\dimen@\hbox{\XeTeXLink@space}%
5149     }%
5150 }%
5151 \dp\tw@=\dp\z@
5152 \ht\tw@=\ht\z@
5153 \copy\tw@
5154 \endgroup
5155 }%
5156 \else
5157 \newcommand*\XeTeXLinkBox}[1]{%
5158 \begingroup
5159 \leavevmode
5160 \sbox\z@{#1}%
5161 \copy\z@
5162 \endgroup
5163 }%
5164 \fi

```

## 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.

```

5165 \def\hyper@link{\let\Hy@reserved@a\relax
5166 \@ifnextchar{\hyper@link@}{\hyper@link@[link]}}%
5167 }
5168 \def\hyper@link@[#1]#2#3#4{%
5169 \begingroup
5170 \protected@edef\Hy@tempa{#2}%
5171 \Hy@safe@activetrue
5172 \edef\x{#3}%
5173 \ifx\Hy@tempa\@empty
5174 \toks0{\hyper@link{#1}}%
5175 \else
5176 \toks0{\expandafter\hyper@readexternallink#2\\{#1}}%
5177 \fi
5178 \toks2{%
5179 \Hy@safe@activesfalse

```

```

5180    #4%
5181  }%
5182  \edef\Hy@tempa{\the\toks2}%
5183  \edef\x{\endgroup
5184    \ifx\Hy@tempa\@empty
5185      \noexpand\Hy@Warning{Suppressing empty link}%
5186    \else
5187      \the\toks0 {\x}{\the\toks2}%%
5188    \fi
5189  }%
5190  \x
5191 }

```

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.

```

5192 \def\hyper@readexternallink#1\#2#3#4{%
5193   \begingroup
5194     \let\\\relax
5195   \expandafter\endgroup
5196   \expandafter\@hyper@\@readexternallink#1\#{2}\#{3}\#{4}%
5197 }
5198 \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.

```

5199 \@hyper@readexternallink#{2}\#{3}\#{4}\#1::\#{1}%
5200 }

```

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

```

5201 \def\@pdftempwordfile{file}%
5202 \def\@pdftempwordrun{run}%
5203 \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:`

```

5204   \ifx\\#6\\%
5205     \@hyper@linkfile file:#7\\#{3}\#{2}\#{7}%
5206   \else
5207     \ifx\\#4\\%
5208       \@hyper@linkfile file:#7\\#{3}\#{2}\#{7}%
5209     \else

```

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

```

5210      \def\@pdftempa{#4}%
5211      \ifx\@pdftempa\@pdftempwordfile
5212      \@hyper@linkfile#7\{#3}{#2}{#7}%
5213      \else

```

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

```

5214      \ifx\@pdftempa\@pdftempwordrun
5215      \ifHy@pdfa
5216      \Hy@Error{%
5217      PDF/A: Launch action is prohibited%
5218      }\@ehc
5219      \begingroup
5220      \leavevmode
5221      #2%
5222      \endgroup
5223      \else
5224      \@hyper@launch#7\{#3}{#2}%
5225      \fi
5226      \else

```

otherwise its a URL

```

5227      \hyper@linkurl{#3}{#7\ifx\#2\else\hyper@hash#2\fi}%
5228      \fi
5229      \fi
5230      \fi
5231      \fi
5232 }

```

By default, turn run: into file:

```

5233 \def\@hyper@launch run:#1\#2#3{% filename, anchor text, linkname
5234 \hyper@linkurl{#2}{%
5235 \Hy@linkfileprefix
5236 #1%
5237 \ifx\#3\%
5238 \else
5239 \hyper@hash
5240 #3%
5241 \fi
5242 }%
5243 }

```

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

```

5244 \def\@hyper@linkfile file:#1\#2#3#4{%
5245 %file url,link string, name, original uri
5246 \filename@parse{#1}%
5247 \ifx\filename@ext\relax
5248 \edef\filename@ext{\XR@ext}%
5249 \fi
5250 \def\use@file{\filename@area\filename@base.\filename@ext}%
5251 \Hy@IfStringEndsWith\filename@ext\XR@ext{%
5252 \hyper@linkfile{#2}{\use@file}{#3}%
5253 }{%
5254 \ifx\@baseurl\empty
5255 \hyper@linkurl{#2}{%
5256 #4\ifx\#3\else\hyper@hash#3\fi
5257 }%
5258 \else

```

```

5259 \hyper@linkurl{#2}{\use@file@ifx\\#3\\else\hyper@hash#3\fi}%
5260 \fi
5261 }%
5262 }

5263 \def\Hy@ifStringEndsWith#1#2{%
5264 \begingroup
5265 \edef\x{#1}%
5266 \@onelevel@sanitize\x
5267 \edef\x{.\x$}%
5268 \edef\y{#2}%
5269 \@onelevel@sanitize\y
5270 \edef\y{.\y$}%
5271 \expandafter\def\expandafter\z\expandafter##\expandafter1\y##2\@nil{%
5272 \endgroup
5273 \ifx\relax##2\relax
5274 \expandafter\ltx@secondoftwo
5275 \else
5276 \expandafter\ltx@firstoftwo
5277 \fi
5278 }%
5279 \expandafter\expandafter\expandafter\z\expandafter\x\y\@nil
5280 }

5281 \def\Hy@StringLocalhost{localhost}
5282 \@onelevel@sanitize\Hy@StringLocalhost
5283 \def\Hy@CleanupFile#1{%
5284 \edef#1{#1}%
5285 \expandafter\Hy@@CleanupFile#1\hbox{//\hbox\@nil{#1}%
5286 }
5287 \def\Hy@@CleanupFile#1//#2/#3\hbox#4\@nil#5{%
5288 \begingroup
5289 \toks@{\endgroup}%
5290 \def\x{#1}%
5291 \ifx\x@empty
5292 \def\x{#2}%
5293 \ifx\x@empty
5294 \toks@{\endgroup\def#5{/#3}}%
5295 \else
5296 \@onelevel@sanitize\x
5297 \ifx\x\Hy@StringLocalhost
5298 \toks@{\endgroup\def#5{/#3}}%
5299 \fi
5300 \fi
5301 \fi
5302 \the\toks@
5303 }

```

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.

```

5304 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
5305 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
5306 \ifx\\#1\\%

```

```

5307   #2\Hy@Warning{Ignoring empty anchor}%
5308 \else
5309   \def\anchor@spot{#2#3}%
5310   \let\put@me@back\@empty
5311   \ifx\relax#2\relax
5312   \else
5313     \ifHy@nesting
5314     \else
5315       \ifcat a\noexpand#2\relax
5316       \else
5317         \ifcat 0\noexpand#2 \relax
5318         \else
5319           \typeout{Anchor start is not alphanumeric %
5320             on input line\the\inputlineno%
5321           }%
5322           \let\anchor@spot\@empty
5323           \def\put@me@back{#2#3}%
5324         \fi
5325       \fi
5326     \fi
5327   \fi
5328   \ifHy@activeanchor
5329   \anchor@spot
5330   \else
5331     \hyper@anchor{#1}%
5332   \fi
5333   \expandafter\put@me@back
5334 \fi
5335 \let\anchor@spot\@empty
5336 }
5337 \let\anchor@spot\ltx@empty

```

## 18 Option ‘destlabel’

```

5338 \ifHy@destlabel

\hyper@newdestlabel

5339 \def\hyper@newdestlabel#1#2{%
5340   \begingroup
5341     \Hy@safe@activetrue
5342     \edef\x{\endgroup
5343       \noexpand\@newl@bel{HyDL}{#1}{#2}%
5344     }%
5345   \x
5346 }%

\hyper@destlabel@hook

5347 \providecommand*\hyper@destlabel@hook{}%

\Hy@DestRename

5348 \newcommand*\Hy@DestRename[2]{%
5349   \ltx@ifundefined{HyDL!#1}{%
5350     \begingroup
5351       \Hy@safe@activetrue
5352       \edef\dest@name{#1}%
5353       \edef\label@name{#2}%
5354       \hyper@destlabel@hook

```

```

5355 \Hy@IsNotEmpty{dest@name}{%
5356 \Hy@IsNotEmpty{label@name}{%
5357 \global\expandafter
5358 \let\csname HyDL!#1\endcsname\ltx@empty
5359 \if@files
5360 \protected@write\@auxout{}{%
5361 \string\hyper@newdestlabel
5362 {#1}%
5363 {\label@name}%
5364 }%
5365 \fi
5366 }%
5367 }%
5368 \endgroup
5369 }{}%
5370 }%

```

\HyperDestRename

```

5371 \newcommand*{\HyperDestRename}[2]{%
5372 \AtBeginDocument{%
5373 \Hy@DestRename{#1}{#2}%
5374 }%
5375 }%
5376 \AtBeginDocument{%
5377 \let\HyperDestRename\Hy@DestRename
5378 }%

```

\Hy@IsNotEmpty

```

5379 \def\Hy@IsNotEmpty#1{%
5380 \ltx@ifundefined{#1}\ltx@gobble{%
5381 \expandafter\ifx\csname#1\endcsname\ltx@empty
5382 \expandafter\ltx@gobble
5383 \else
5384 \expandafter\ltx@firstofone
5385 \fi
5386 }%
5387 }%

5388 \ltx@GlobalAppendToMacro\label@hook{%
5389 \HyperDestRename\@currentHref\label@name
5390 }%

```

\HyperDestLabelReplace

```

5391 \def\HyperDestLabelReplace#1{%
5392 \ltx@ifundefined{HyDL@#1}{%
5393 #1%
5394 }{%
5395 \csname HyDL@#1\endcsname
5396 }%
5397 }%

```

\HyperDestNameFilter

```

5398 \let\HyperDestNameFilter\HyperDestLabelReplace
5399 \else

```

\hyper@newdestlabel

```

5400 \let\hyper@newdestlabel\ltx@gobbletwo

```

`\HyperDestLabelReplace`

```
5401 \let\HyperDestLabelReplace\ltx@firstofone
```

`\HyperDestRename`

```
@gobbletwo
```

```
5402 \fi
```

```
5403 \Hy@DisableOption{destlabel}
```

Provide a dummy default definition of `\hyper@newdestlabel` inside the .aux files.

```
5404 \AddLineBeginAux{%
```

```
5405 \string\providecommand\string\hyper@newdestlabel[2]{}%
```

```
5406 }
```

## 19 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.

```
5407 \let\htmladdimg\hyperimage
```

```
5408 \def\htmladdnormallink#1#2{\href{#2}{#1}}
```

```
5409 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
```

```
5410 \def\htmlref#1#2{% anchor text, label
```

```
5411 \label@hyperref{#2}{#1}%
```

```
5412 }
```

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.

```
5413 \def\@@latextohtmlX{%
```

```
5414 \let\hhyperref\hyperref
```

```
5415 \def\hyperref##1##2##3##4{% anchor text for HTML
```

```
5416 % text to print before label in print
```

```
5417 % label
```

```
5418 % post-label text in print
```

```
5419 ##2\ref{##4}##3%
```

```
5420 }%
```

```
5421 }
```

## 20 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.



## 20.1 Field flags

The field flags are organized in a bit set.

```
5422 \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

```
5423 \def\HyField@NewFlag#1#2{%
5424   \lowercase{\HyField@NewOption{#2}}%
5425   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5426 }
```

\HyField@NewFlagOnly

```
5427 \def\HyField@NewFlagOnly#1#2{%
5428   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5429 }
```

\HyField@NewOption #1: option name

```
5430 \def\HyField@NewOption#1{%
5431   \expandafter\newif\csname ifFld@#1\endcsname
5432   \define@key{Field}{#1}[true]{%
5433     \lowercase{\Field@boolkey{##1}}{#1}%
5434   }%
5435 }
```

\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

```
5436 \def\HyField@NewBitsetFlag#1#2#3#4{%
5437   \begingroup
5438     \count@=#4\relax
5439     \advance\count@\m@ne
5440     \def\x##1{%
5441       \endgroup
5442       \expandafter\def\csname HyField@#3@#1\endcsname{##1}%
5443       \expandafter\ifx\csname HyField@#3@##1\endcsname\relax
5444         \expandafter\edef\csname HyField@#3@##1\endcsname{%
5445           (\number#4) #2%
5446         }%
5447       \else
5448         \expandafter\edef\csname HyField@#3@##1\endcsname{%
5449           \csname HyField@#3@##1\endcsname
5450           /#2%
5451         }%
5452       \fi
5453     }%
5454     \expandafter\x\expandafter{\the\count@}%
5455 }
```

```

\HyField@UseFlag The bit set is HyField@#1
5456 \def\HyField@UseFlag#1#2{%
5457 \lowercase{\HyField@@UseFlag{#2}}{#1}%
5458 }

\HyField@@UseFlag
5459 \def\HyField@@UseFlag#1#2{%
5460 \bitsetSetValue{HyField@#2}{%
5461 \csname HyField@#2@#1\endcsname
5462 }{%
5463 \csname ifFld@#1\endcsname 1\else 0\fi
5464 }%
5465 }

\HyField@SetFlag The bit set is HyField@#1
5466 \def\HyField@SetFlag#1#2{%
5467 \lowercase{\HyField@@SetFlag{#2}}{#1}%
5468 }

\HyField@@SetFlag
5469 \def\HyField@@SetFlag#1#2{%
5470 \bitsetSetValue{HyField@#2}{%
5471 \csname HyField@#2@#1\endcsname
5472 }{1}%
5473 }

\HyField@PrintFlags
5474 \def\HyField@PrintFlags#1#2{%
5475 \ifHy@verbose
5476 \begingroup
5477 \let\Hy@temp\@empty
5478 \let\MessageBreak\relax
5479 \expandafter\@for\expandafter\x\expandafter:\expandafter=%
5480 \bitsetGetSetBitList{HyField@#1}\do{%
5481 \edef\Hy@temp{%
5482 \Hy@temp
5483 \csname HyField@#1@\x\endcsname\MessageBreak
5484 }%
5485 }%
5486 \edef\x{\endgroup
5487 \noexpand\Hy@Info{%
5488 Field flags: %
5489 \expandafter\ifx\@car#1\@nil S\else/\fi
5490 #1 %
5491 \bitsetGetDec{HyField@#1} %
5492 (0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
5493 \Hy@temp
5494 for #2%
5495 }%
5496 }\x
5497 \fi
5498 }

```

### 20.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```

5499 \HyField@NewFlag{Ff}{ReadOnly}{1}
5500 \HyField@NewFlag{Ff}{Required}{2}
5501 \HyField@NewFlag{Ff}{NoExport}{3}

```

“Table 8.75 Field flags specific to button fields”

```

5502 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
5503 \HyField@NewFlag{Ff}{Radio}{16}
5504 \HyField@NewFlag{Ff}{Pushbutton}{17}
5505 \HyField@NewFlag{Ff}{RadiosInUnison}{26}

```

“Table 8.77 Field flags specific to text fields”

```

5506 \HyField@NewFlag{Ff}{Multiline}{13}
5507 \HyField@NewFlag{Ff}{Password}{14}
5508 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
5509 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5510 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4
5511 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4
5512 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5

```

“Table 8.79 field flags specific to choice fields”

```

5513 \HyField@NewFlag{Ff}{Combo}{18}
5514 \HyField@NewFlag{Ff}{Edit}{19}
5515 \HyField@NewFlag{Ff}{Sort}{20}
5516 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4
5517 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5518 \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.

```

5519 \newif\iffld@popdown
5520 \define@key{Field}{popdown}[true]{%
5521   \lowercase{\Field@boolkey{#1}}{popdown}%
5522 }

```

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.

```

5523 \HyField@NewFlag{F}{Invisible}{1}
5524 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2
5525 \HyField@NewFlag{F}{Print}{3}% PDF 1.2
5526 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2
5527 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3
5528 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3
5529 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4
5530 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5
5531 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7

5532 \ifHy@pdfa
5533   \def\HyField@PDFAFldWarning#1#2{%
5534     \Hy@Warning{%
5535       PDF/A: Annotation flag ‘#1’ must\MessageBreak
5536       be set to ‘#2’%
5537     }%
5538   }%
5539   \Fld@invisiblefalse
5540   \def\Fld@invisibletrue{%

```

```

5541 \HyField@PDFAFIagWarning{invisible}{false}%
5542 }%
5543 \Fld@hiddenfalse
5544 \def\Fld@hiddenttrue{%
5545 \HyField@PDFAFIagWarning{hidden}{false}%
5546 }%
5547 \Fld@printrtrue
5548 \def\Fld@printrfalse{%
5549 \HyField@PDFAFIagWarning{printr}{true}%
5550 }%
5551 \Fld@nozoomtrue
5552 \def\Fld@nozoomfalse{%
5553 \HyField@PDFAFIagWarning{nozoom}{true}%
5554 }%
5555 \Fld@norotatetrue
5556 \def\Fld@norotatefalse{%
5557 \HyField@PDFAFIagWarning{norotate}{true}%
5558 }%
5559 \Fld@noviewfalse
5560 \def\Fld@noviewtrue{%
5561 \HyField@PDFAFIagWarning{noview}{false}%
5562 }%
5563 \fi

```

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

```

5564 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
5565 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
5566 \HyField@NewFlag{Submit}{GetMethod}{4}
5567 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
5568 \HyField@NewFlagOnly{Submit}{XFDF}{6}
5569 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}
5570 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
5571 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}
5572 \HyField@NewFlag{Submit}{CanonicalFormat}{10}
5573 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
5574 \HyField@NewFlag{Submit}{ExclFKey}{12}
5575 \HyField@NewFlag{Submit}{EmbedForm}{14}

5576 \define@key{Field}{export}{%
5577 \lowercase{\def\Hy@temp{#1}}%
5578 \@ifundefined{Fld@export@}\Hy@temp}{%
5579 \@onelevel@sanitize\Hy@temp
5580 \Hy@Error{%
5581 Unknown export format '\Hy@temp'.\MessageBreak
5582 Known formats are 'FDF', 'HTML', 'XFDF', and 'PDF'%
5583 }\@ehc
5584 }{%
5585 \let\Fld@export\Hy@temp
5586 }%
5587 }

5588 \def\Fld@export{fdf}
5589 \@namedef{Fld@export@fdf}{0}%
5590 \@namedef{Fld@export@html}{1}%
5591 \@namedef{Fld@export@xfdf}{2}%
5592 \@namedef{Fld@export@pdf}{3}%

```

### 20.1.2 Set submit flags

\HyField@FlagsSubmit

```
5593 \def\HyField@FlagsSubmit{%
5594   \bitsetReset{HyField@Submit}%
5595   \ifcase\@nameuse{Fld@export@\Fld@export} %
5596     % FDF
5597     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5598     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5599     \HyField@UseFlag{Submit}{IncludeAppendSaves}%
5600     \HyField@UseFlag{Submit}{IncludeAnnotations}%
5601     \HyField@UseFlag{Submit}{CanonicalFormat}%
5602     \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
5603     \HyField@UseFlag{Submit}{ExclFKey}%
5604     \HyField@UseFlag{Submit}{EmbedForm}%
5605   \or % HTML
5606     \HyField@SetFlag{Submit}{ExportFormat}%
5607     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5608     \HyField@UseFlag{Submit}{GetMethod}%
5609     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5610     \HyField@UseFlag{Submit}{CanonicalFormat}%
5611   \or % XFDF
5612     \HyField@SetFlag{Submit}{XFDF}%
5613     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5614     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5615     \HyField@UseFlag{Submit}{CanonicalFormat}%
5616   \or % PDF
5617     \HyField@SetFlag{Submit}{SubmitPDF}%
5618     \HyField@UseFlag{Submit}{GetMethod}%
5619   \fi
5620   \HyField@PrintFlags{Submit}{submit button field}%
5621   \bitsetIsEmpty{HyField@Submit}{%
5622     \let\Fld@submitflags\ltx@empty
5623   }{%
5624     \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}%
5625   }%
5626 }
```

### 20.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```
5627 \def\HyField@FlagsAnnot#1{%
5628   \bitsetReset{HyField@F}%
5629   \HyField@UseFlag{F}{Invisible}%
5630   \HyField@UseFlag{F}{Hidden}%
5631   \HyField@UseFlag{F}{Print}%
5632   \HyField@UseFlag{F}{NoZoom}%
5633   \HyField@UseFlag{F}{NoRotate}%
5634   \HyField@UseFlag{F}{NoView}%
5635   \HyField@UseFlag{F}{Locked}%
5636   \HyField@UseFlag{F}{ToggleNoView}%
5637   \HyField@UseFlag{F}{LockedContents}%
5638   \HyField@PrintFlags{F}{#1}%
5639   \bitsetIsEmpty{HyField@F}{%
5640     \let\Fld@annotflags\ltx@empty
5641   }{%
5642     \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}%
5643   }%
5644 }
```

```

5643 }%
5644 }

```

#### 20.1.4 Pushbutton field

\HyField@FlagsPushButton

```

5645 \def\HyField@FlagsPushButton{%
5646 \HyField@FlagsAnnot{push button field}%
5647 \bitsetReset{HyField@Ff}%
5648 \HyField@UseFlag{Ff}{ReadOnly}%
5649 \HyField@UseFlag{Ff}{Required}%
5650 \HyField@UseFlag{Ff}{NoExport}%
5651 \HyField@SetFlag{Ff}{PushButton}%
5652 \HyField@PrintFlags{Ff}{push button field}%
5653 \bitsetIsEmpty{HyField@Ff}{%
5654 \let\Fld@flags\ltx@empty
5655 }{%
5656 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5657 }%
5658 }

```

#### 20.1.5 Check box field

\HyField@FlagsCheckBox

```

5659 \def\HyField@FlagsCheckBox{%
5660 \HyField@FlagsAnnot{check box field}%
5661 \bitsetReset{HyField@Ff}%
5662 \HyField@UseFlag{Ff}{ReadOnly}%
5663 \HyField@UseFlag{Ff}{Required}%
5664 \HyField@UseFlag{Ff}{NoExport}%
5665 \HyField@PrintFlags{Ff}{check box field}%
5666 \bitsetIsEmpty{HyField@Ff}{%
5667 \let\Fld@flags\ltx@empty
5668 }{%
5669 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5670 }%
5671 }

```

#### 20.1.6 Radio button field

\HyField@FlagsRadioButton

```

5672 \def\HyField@FlagsRadioButton{%
5673 \HyField@FlagsAnnot{radio button field}%
5674 \bitsetReset{HyField@Ff}%
5675 \HyField@UseFlag{Ff}{ReadOnly}%
5676 \HyField@UseFlag{Ff}{Required}%
5677 \HyField@UseFlag{Ff}{NoExport}%
5678 \HyField@UseFlag{Ff}{NoToggleToOff}%
5679 \HyField@SetFlag{Ff}{Radio}%
5680 \HyField@UseFlag{Ff}{RadiosInUnison}%
5681 \HyField@PrintFlags{Ff}{radio button field}%
5682 \bitsetIsEmpty{HyField@Ff}{%
5683 \let\Fld@flags\ltx@empty
5684 }{%
5685 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5686 }%
5687 }

```

### 20.1.7 Text fields

\HyField@FlagsText

```
5688 \def\HyField@FlagsText{%
5689   \HyField@FlagsAnnot{text field}%
5690   \bitsetReset{HyField@Ff}%
5691   \HyField@UseFlag{Ff}{ReadOnly}%
5692   \HyField@UseFlag{Ff}{Required}%
5693   \HyField@UseFlag{Ff}{NoExport}%
5694   \HyField@UseFlag{Ff}{Multiline}%
5695   \HyField@UseFlag{Ff}{Password}%
5696   \HyField@UseFlag{Ff}{FileSelect}%
5697   \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5698   \HyField@UseFlag{Ff}{DoNotScroll}%
5699   \ifFld@comb
5700     \ifcase0\ifFld@multiline
5701       \else\ifFld@password
5702       \else\ifFld@fileselect
5703       \else 1\fi\fi\fi\relax
5704     \Hy@Error{%
5705       Field option ‘comb’ cannot used together with\MessageBreak
5706       ‘multiline’, ‘password’, or ‘fileselect’%
5707     }\@ehc
5708   \else
5709     \HyField@UseFlag{Ff}{Comb}%
5710   \fi
5711 \fi
5712 \HyField@UseFlag{Ff}{RichText}%
5713 \HyField@PrintFlags{Ff}{text field}%
5714 \bitsetIsEmpty{HyField@Ff}{%
5715   \let\Fld@flags\ltx@empty
5716 }{%
5717   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5718 }%
5719 }
```

### 20.1.8 Choice fields

\HyField@FlagsChoice

```
5720 \def\HyField@FlagsChoice{%
5721   \HyField@FlagsAnnot{choice field}%
5722   \bitsetReset{HyField@Ff}%
5723   \HyField@UseFlag{Ff}{ReadOnly}%
5724   \HyField@UseFlag{Ff}{Required}%
5725   \HyField@UseFlag{Ff}{NoExport}%
5726   \HyField@UseFlag{Ff}{Combo}%
5727   \ifFld@combo
5728     \HyField@UseFlag{Ff}{Edit}%
5729   \fi
5730   \HyField@UseFlag{Ff}{Sort}%
5731   \HyField@UseFlag{Ff}{MultiSelect}%
5732   \ifFld@combo
5733     \ifFld@edit
5734       \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5735     \fi
5736   \fi
5737   \HyField@UseFlag{Ff}{CommitOnSelChange}%

```

```

5738 \HyField@PrintFlags{Ff}{choice field}%
5739 \bitsetIsEmpty{HyField@Ff}{%
5740   \let\Fld@flags\ltx@empty
5741 }{%
5742   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5743 }%
5744 }

```

## 20.2 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`.

```

5745 \def\HyField@PDFChoices#1{%
5746   \begingroup
5747   \global\let\Fld@choices\ltx@empty
5748   \let\HyTmp@optlist\ltx@empty
5749   \let\HyTmp@optitem\relax
5750   \count@=0 %
5751   \kv@parse{#1}{%
5752     \Hy@pdfstringdef\kv@key\kv@key
5753     \ifx\kv@value\relax
5754       \ifnum\Hy@pdfversion<3 % implementation note 122, PDF spec 1.7
5755         \xdef\Fld@choices{\Fld@choices(\kv@key)(\kv@key)}%
5756       \else
5757         \xdef\Fld@choices{\Fld@choices(\kv@key)}%
5758       \fi
5759     \else
5760       \Hy@pdfstringdef\kv@value\kv@value
5761       \xdef\Fld@choices{\Fld@choices(\kv@value)(\kv@key)}%
5762     \fi
5763     \edef\HyTmp@optlist{%
5764       \HyTmp@optlist
5765       \HyTmp@optitem{\the\count@}{\kv@key}0%
5766     }%
5767     \advance\count@ by 1 %
5768     \@gobbletwo
5769   }%
5770   \xdef\Fld@choices{/Opt[\Fld@choices]}%
5771   \ifFld@multiselect
5772     \HyField@@PDFChoices{DV}\Fld@default
5773     \HyField@@PDFChoices{V}\Fld@value
5774   \else
5775     \ifx\Fld@default\relax
5776     \else
5777       \pdfstringdef\Hy@gtemp\Fld@default
5778       \xdef\Fld@choices{\Fld@choices/DV(\Hy@gtemp)}%
5779     \fi
5780     \ifx\Fld@value\relax
5781     \else
5782       \pdfstringdef\Hy@gtemp\Fld@value
5783       \xdef\Fld@choices{\Fld@choices/V(\Hy@gtemp)}%
5784     \fi
5785   \fi
5786 \endgroup
5787 }

```



\HyField@@PDFChoices

```
5788 \def\HyField@@PDFChoices#1#2{%
5789   \ifx#2\relax
5790   \else
5791     \count@=0 %
5792     \def\HyTmp@optitem##1##2##3{%
5793       \def\HyTmp@key{##2}%
5794       \ifx\HyTmp@key\Hy@gtemp
5795         \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5796           \HyTmp@optlist
5797           \HyTmp@optitem{##1}{##2}1%
5798         }%
5799         \let\HyTmp@found=Y%
5800       \else
5801         \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5802           \HyTmp@optlist
5803           \HyTmp@optitem{##1}{##2}##3%
5804         }%
5805       \fi
5806     }%
5807     \expandafter\comma@parse\expandafter{#2}{%
5808       \pdfstringdef\Hy@gtemp\comma@entry
5809       \let\HyTmp@found=N %
5810       \expandafter\let\expandafter\HyTmp@optlist\expandafter\@empty
5811       \HyTmp@optlist
5812       \ifx\HyTmp@found Y%
5813         \advance\count@ by 1 %
5814       \else
5815         \@onelevel@sanitize\comma@entry
5816         \PackageWarning{hyperref}{%
5817           \string\ChoiceBox: Ignoring value ‘\comma@entry’,%
5818           \MessageBreak
5819           it cannot be found in the choices%
5820         }%
5821       \fi
5822       \@gobble
5823     }%
5824     \def\HyTmp@optitem##1##2##3{%
5825       \ifnum##3=1 %
5826         (##2)%
5827       \fi
5828     }%
5829     \ifcase\count@
5830     \or
5831       \xdef\Fld@choices{\Fld@choices/#1\HyTmp@optlist}%
5832     \else
5833       \xdef\Fld@choices{\Fld@choices/#1[\HyTmp@optlist]}%
5834     \ifx#1V%
5835       \def\HyTmp@optitem##1##2##3{%
5836         \ifnum##3=1 %
5837           \@firstofone{ ##1}%
5838         \fi
5839       }%
5840       \edef\HyTmp@optlist{\HyTmp@optlist}%
5841       \xdef\Fld@choices{%
5842         \Fld@choices
5843         /I[\expandafter\@firstofone\HyTmp@optlist]%

```

```

5844     }%
5845     \fi
5846     \fi
5847     \fi
5848 }

```

## 20.3 Forms

\HyField@SetKeys

```

5849 \def\HyField@SetKeys{%
5850   \kvsetkeys{Field}%
5851 }

5852 \newif\ifFld@checked
5853 \newif\ifFld@disabled
5854 \Fld@checkedfalse
5855 \Fld@disabledfalse
5856 \newcount\Fld@menulength
5857 \newdimen\Fld@Width
5858 \newdimen\Fld@charsize
5859 \Fld@charsize=10\p@
5860 \def\Fld@maxlen{0}
5861 \def\Fld@align{0}
5862 \def\Fld@color{0 0 0 rg}
5863 \def\Fld@bcolor{1 1 1}
5864 \def\Fld@bordercolor{1 0 0}
5865 \def\Fld@bordersep{1\p@}
5866 \def\Fld@borderwidth{1}
5867 \def\Fld@borderstyle{S}
5868 \def\Fld@cbsymbol{4}
5869 \def\Fld@radiosymbol{H}
5870 \def\Fld@rotation{0}
5871 \def\Form{\@ifnextchar[{\@Form}{\@Form[]}}
5872 \def\endForm{\@endForm}
5873 \newif\ifForm@html
5874 \Form@htmlfalse
5875 \def\Form@boolkey#1#2{%
5876   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5877 }
5878 \define@key{Form}{action}{%
5879   \hyper@normalise\Hy@DefFormAction{#1}%
5880 }
5881 \def\Hy@DefFormAction{\def\Form@action}
5882 \def\enc@html{html}
5883 \define@key{Form}{encoding}{%
5884   \def\Hy@tempa{#1}%
5885   \ifx\Hy@tempa\enc@html
5886     \Form@htmltrue
5887     \def\Fld@export{html}%
5888   \else
5889     \Hy@Warning{%
5890       Form 'encoding' key with \MessageBreak
5891       unknown value '#1'%
5892     }%
5893     \Form@htmlfalse
5894   \fi
5895 }

```

```

5896 \define@key{Form}{method}{%
5897   \lowercase{\def\Hy@temp{#1}}%
5898   \@ifundefined{Form@method@\Hy@temp}{%
5899     \@onelevel@sanitize\Hy@temp
5900     \Hy@Error{%
5901       Unknown method '\Hy@temp'.\MessageBreak
5902       Known values are 'post' and 'get'%
5903     }\@ehc
5904   }{%
5905     \let\Form@method\Hy@temp
5906     \ifcase\@nameuse{Form@method@\Hy@temp} %
5907       \Fld@getmethodfalse
5908     \else
5909       \Fld@getmethodtrue
5910     \fi
5911   }%
5912 }
5913 \def\Form@method{}
5914 \@namedef{Form@method@post}{0}
5915 \@namedef{Form@method@get}{1}

5916 \newif\ifHyField@NeedAppearances
5917 \def\HyField@NeedAppearancesfalse{%
5918   \global\let\ifHyField@NeedAppearances\iffalse
5919 }
5920 \def\HyField@NeedAppearancetrue{%
5921   \global\let\ifHyField@NeedAppearances\iftrue
5922 }
5923 \HyField@NeedAppearancetrue
5924 \define@key{Form}{NeedAppearances}[true]{%
5925   \edef\Hy@tempa{#1}%
5926   \ifx\Hy@tempa\Hy@true
5927     \HyField@NeedAppearancetrue
5928   \else
5929     \ifx\Hy@tempa\Hy@false
5930       \HyField@NeedAppearancesfalse
5931     \else
5932       \Hy@Error{%
5933         Unexpected value '\Hy@tempa'.\MessageBreak
5934         of option 'NeedAppearances' instead of\MessageBreak
5935         'true' or 'false'%
5936       }\@ehc
5937     \fi
5938   \fi
5939 }
5940 \def\Field@boolkey#1#2{%
5941   \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5942 }
5943 \ifHy@texht
5944   \newtoks\Field@toks
5945   \Field@toks={ }%
5946   \def\Field@addtoks#1#2{%
5947     \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}%
5948     \@processme
5949   }%
5950 \else
5951   \def\Hy@WarnHTMLFieldOption#1{%
5952     \Hy@Warning{%

```

```

5953     HTML field option '#1'\MessageBreak
5954     is ignored%
5955 }%
5956 }%
5957 \fi
5958 \def\Fld@checkequals#1=#2=#3\{%
5959   \def\@currDisplay{#1}%
5960   \ifx\#2\%
5961     \def\@currValue{#1}%
5962   \else
5963     \def\@currValue{#2}%
5964   \fi
5965 }
5966 \define@key{Field}{loc}{%
5967   \def\Fld@loc{#1}%
5968 }
5969 \define@key{Field}{checked}[true]{%
5970   \lowercase{\Field@boolkey{#1}}{checked}%
5971 }
5972 \define@key{Field}{disabled}[true]{%
5973   \lowercase{\Field@boolkey{#1}}{disabled}%
5974 }
5975 \ifHy@texht
5976   \define@key{Field}{accesskey}{%
5977     \Field@addtoks{accesskey}{#1}%
5978   }%
5979   \define@key{Field}{tabkey}{%
5980     \Field@addtoks{tabkey}{#1}%
5981   }%
5982 \else
5983   \define@key{Field}{accesskey}{%
5984     \Hy@WarnHTMLFieldOption{accesskey}%
5985   }%
5986   \define@key{Field}{tabkey}{%
5987     \Hy@WarnHTMLFieldOption{tabkey}%
5988   }%
5989 \fi
5990 \define@key{Field}{name}{%
5991   \def\Fld@name{#1}%
5992 }
5993 \let\Fld@altname\relax
5994 \define@key{Field}{altname}{%
5995   \def\Fld@altname{#1}%
5996 }
5997 \let\Fld@mappingname\relax
5998 \define@key{Field}{mappingname}{%
5999   \def\Fld@mappingname{#1}%
6000 }
6001 \define@key{Field}{width}{%
6002   \def\Fld@width{#1}%
6003   \Field@Width#1\setbox0=\hbox{m}%
6004 }
6005 \define@key{Field}{maxlen}{%
6006   \def\Fld@maxlen{#1}%
6007 }
6008 \define@key{Field}{menulength}{%
6009   \Fld@menulength=#1\relax

```

```

6010 }
6011 \define@key{Field}{height}{%
6012   \def\Fld@height{#1}%
6013 }
6014 \define@key{Field}{charsize}{%
6015   \setlength{\Fld@charsize}{#1}%
6016 }
6017 \define@key{Field}{borderwidth}{%
6018   \Hy@defaultbp\Fld@borderwidth{#1}%
6019 }
6020 \def\Hy@defaultbp#1#2{%
6021   \begingroup
6022     \afterassignment\Hy@defaultbpAux
6023     \dimen@=#2bp\relax{#1}{#2}%
6024 }
6025 \begingroup\expandafter\expandafter\expandafter\endgroup
6026 \expandafter\ifx\csname dimexpr\endcsname\relax
6027   \def\Hy@defaultbpAux#1\relax#2#3{%
6028     \ifx!#1!%
6029       \endgroup
6030       \def#2{#3}%
6031     \else
6032       \dimen@=.99626\dimen@
6033       \edef\x{\endgroup
6034         \def\noexpand#2{%
6035           \strip@pt\dimen@
6036         }%
6037       }\x
6038     \fi
6039   }%
6040 \else
6041   \def\Hy@defaultbpAux#1\relax#2#3{%
6042     \ifx!#1!%
6043       \endgroup
6044       \def#2{#3}%
6045     \else
6046       \edef\x{\endgroup
6047         \def\noexpand#2{%
6048           \strip@pt\dimexpr\dimen@*800/803\relax
6049         }%
6050       }\x
6051     \fi
6052   }%
6053 \fi
6054 \define@key{Field}{borderstyle}{%
6055   \let\Hy@temp\Fld@borderstyle
6056   \def\Fld@borderstyle{#1}%
6057   \Hy@Match\Fld@borderstyle{%
6058     ~[SDBIU]$%
6059   }{}{%
6060     \Hy@Warning{%
6061       Invalid value '@pdfborderstyle'\MessageBreak
6062       for option 'pdfborderstyle'. Valid values:\MessageBreak
6063       \space\space S (Solid), D (Dashed), B (Beveled),\MessageBreak
6064       \space\space I (Inset), U (Underline)\MessageBreak
6065       Option setting is ignored%
6066     }%

```

```

6067 \let\Fld@borderstyle\Hy@temp
6068 }%
6069 }
6070 \define@key{Field}{bordersep}{%
6071 \def\Fld@bordersep{#1}%
6072 }
6073 \define@key{Field}{default}{%
6074 \def\Fld@default{#1}%
6075 }
6076 \define@key{Field}{align}{%
6077 \def\Fld@align{#1}%
6078 }
6079 \define@key{Field}{value}{%
6080 \def\Fld@value{#1}%
6081 }
6082 \define@key{Field}{checkboxsymbol}{%
6083 \Fld@DingDef\Fld@cbsymbol{#1}%
6084 }
6085 \define@key{Field}{radiosymbol}{%
6086 \Fld@DingDef\Fld@radiosymbol{#1}%
6087 }
6088 \def\Fld@DingDef#1#2{%
6089 \let\Fld@temp\ltx@empty
6090 \Fld@@@DingDef#2\ding{ }\@nil
6091 \let#1\Fld@temp
6092 }
6093 \def\Fld@@@DingDef#1\ding#2#3\@nil{%
6094 \expandafter\def\expandafter\Fld@temp\expandafter{%
6095 \Fld@temp
6096 #1%
6097 }%
6098 \ifx\\#3\\%
6099 \expandafter\@gobble
6100 \else
6101 \begingroup
6102 \lccode'0=#2\relax
6103 \lowercase{\endgroup
6104 \expandafter\def\expandafter\Fld@temp\expandafter{%
6105 \Fld@temp
6106 0%
6107 }%
6108 }%
6109 \expandafter\@firstofone
6110 \fi
6111 {%
6112 \Fld@@@DingDef#3\@nil
6113 }%
6114 }

6115 \define@key{Field}{rotation}{%
6116 \def\Fld@rotation{#1}%
6117 }

6118 \define@key{Field}{backgroundcolor}{%
6119 \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
6120 }
6121 \define@key{Field}{bordercolor}{%
6122 \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
6123 }

```

```

6124 \define@key{Field}{color}{%
6125   \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
6126 }

6127 \let\Fld@onclick@code\ltx@empty
6128 \let\Fld@format@code\ltx@empty
6129 \let\Fld@validate@code\ltx@empty
6130 \let\Fld@calculate@code\ltx@empty
6131 \let\Fld@keystroke@code\ltx@empty
6132 \let\Fld@onfocus@code\ltx@empty
6133 \let\Fld@onblur@code\ltx@empty
6134 \let\Fld@onmousedown@code\ltx@empty
6135 \let\Fld@onmouseup@code\ltx@empty
6136 \let\Fld@onenter@code\ltx@empty
6137 \let\Fld@onexit@code\ltx@empty
6138 \def\Hy@temp#1{%
6139   \expandafter\Hy@@temp\csname Fld@#1@code\endcsname{#1}%
6140 }
6141 \def\Hy@@temp#1#2{%
6142   \ifHy@pdfa
6143     \define@key{Field}{#2}{%
6144       \Hy@Error{%
6145         PDF/A: Additional action ‘#2’ is prohibited%
6146       }\@ehc
6147     }%
6148   \else
6149     \define@key{Field}{#2}{%
6150       \def#1{##1}%
6151     }%
6152   \fi
6153 }
6154 \Hy@temp{keystroke}
6155 \Hy@temp{format}
6156 \Hy@temp{validate}
6157 \Hy@temp{calculate}
6158 \Hy@temp{onfocus}
6159 \Hy@temp{onblur}
6160 \Hy@temp{onenter}
6161 \Hy@temp{onexit}
6162 \ifHy@texht
6163   \def\Hy@temp#1{%
6164     \define@key{Field}{#1}{%
6165       \Fld@addtoks{#1}{##1}%
6166     }%
6167   }%
6168 \else
6169   \def\Hy@temp#1{%
6170     \define@key{Field}{#1}{%
6171       \Hy@WarnHTMLFieldOption{#1}%
6172     }%
6173   }%
6174 \fi
6175 \Hy@temp{ondblclick}
6176 \Hy@temp{onmousedown}
6177 \Hy@temp{onmouseup}
6178 \Hy@temp{onmouseover}
6179 \Hy@temp{onmousemove}
6180 \Hy@temp{onmouseout}

```

```

6181 \Hy@temp{onkeydown}
6182 \Hy@temp{onkeyup}
6183 \Hy@temp{onselect}
6184 \Hy@temp{onchange}
6185 \Hy@temp{onkeypress}
6186 \ifHy@texht
6187   \define@key{Field}{onclick}{%
6188     \Field@addtoks{onclick}{#1}%
6189   }%
6190 \else
6191   \ifHy@pdfa
6192     \define@key{Field}{onclick}{%
6193       \Hy@Error{%
6194         PDF/A: Action 'onclick' is prohibited%
6195       }\@ehc
6196     }%
6197   \else
6198     \define@key{Field}{onclick}{%
6199       \def\Fld@onclick@code{#1}%
6200     }%
6201   \fi
6202 \fi

6203 \DeclareRobustCommand\TextField{%
6204   \@ifnextchar[{\@TextField}{\@TextField[]}%
6205 }
6206 \DeclareRobustCommand\ChoiceMenu{%
6207   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
6208 }
6209 \DeclareRobustCommand\CheckBox{%
6210   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
6211 }
6212 \DeclareRobustCommand\PushButton{%
6213   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
6214 }
6215 \DeclareRobustCommand\Gauge{%
6216   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
6217 }
6218 \DeclareRobustCommand\Submit{%
6219   \@ifnextchar[{\@Submit}{\@Submit[]}%
6220 }
6221 \DeclareRobustCommand\Reset{%
6222   \@ifnextchar[{\@Reset}{\@Reset[]}%
6223 }
6224 \def\LayoutTextField#1#2{% label, field
6225   #1 #2%
6226 }
6227 \def\LayoutChoiceField#1#2{% label, field
6228   #1 #2%
6229 }
6230 \def\LayoutCheckField#1#2{% label, field
6231   #1 #2%
6232 }
6233 \def\LayoutPushButtonField#1{% button
6234   #1%
6235 }
6236 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6237 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}

```



```

6238 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6239 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6240 \def\MakeButtonField#1{%
6241   \sbox0{%
6242     \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
6243   }%
6244   \@tempdima\ht0 %
6245   \advance\@tempdima by \Fld@borderwidth bp %
6246   \advance\@tempdima by \Fld@borderwidth bp %
6247   \ht0\@tempdima
6248   \@tempdima\dp0 %
6249   \advance\@tempdima by \Fld@borderwidth bp %
6250   \advance\@tempdima by \Fld@borderwidth bp %
6251   \dp0\@tempdima
6252   \box0\relax
6253 }
6254 \def\DefaultHeightofSubmit{14pt}
6255 \def\DefaultWidthofSubmit{2cm}
6256 \def\DefaultHeightofReset{14pt}
6257 \def\DefaultWidthofReset{2cm}
6258 \def\DefaultHeightofCheckBox{\baselineskip}
6259 \def\DefaultWidthofCheckBox{\baselineskip}
6260 \def\DefaultHeightofChoiceMenu{\baselineskip}
6261 \def\DefaultWidthofChoiceMenu{\baselineskip}
6262 \def\DefaultHeightofText{\baselineskip}
6263 \def\DefaultHeightofTextMultiline{4\baselineskip}
6264 \def\DefaultWidthofText{3cm}
6265 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
6266 \def\DefaultOptionsofReset{print,name=Reset,noexport}
6267 \def\DefaultOptionsofPushButton{print}
6268 \def\DefaultOptionsofCheckBox{print}
6269 \def\DefaultOptionsofText{print}

```

Default options for the types of \ChoiceMenu.

```

6270 \def\DefaultOptionsofListBox{print}
6271 \def\DefaultOptionsofComboBox{print,edit,sort}
6272 \def\DefaultOptionsofPopdownBox{print}
6273 \def\DefaultOptionsofRadio{print,notoggletooff}

```

## 21 Setup

```

6274 \ifHy@hyperfigures
6275   \Hy@Info{Hyper figures ON}%
6276 \else
6277   \Hy@Info{Hyper figures OFF}%
6278 \fi
6279 \ifHy@nesting
6280   \Hy@Info{Link nesting ON}%
6281 \else
6282   \Hy@Info{Link nesting OFF}%
6283 \fi
6284 \ifHy@hyperindex
6285   \Hy@Info{Hyper index ON}%
6286 \else
6287   \Hy@Info{Hyper index OFF}%
6288 \fi
6289 \ifHy@backref

```

```

6290 \Hy@Info{backreferencing ON}%
6291 \else
6292 \Hy@Info{backreferencing OFF}%
6293 \fi
6294 \ifHy@colorlinks
6295 \Hy@Info{Link coloring ON}%
6296 \else
6297 \Hy@Info{Link coloring OFF}%
6298 \fi
6299 \ifHy@ocgcolorlinks
6300 \Hy@Info{Link coloring with OCG ON}%
6301 \else
6302 \Hy@Info{Link coloring with OCG OFF}%
6303 \fi
6304 \ifHy@pdfa
6305 \Hy@Info{PDF/A mode ON}%
6306 \else
6307 \Hy@Info{PDF/A mode OFF}%
6308 \fi

```

## 22 Low-level utility macros

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

```

6309 \edef\hyper@hash{\string#}
6310 \edef\hyper@tilde{\string~}
6311 \edef\hyper@quote{\string"}

```

Support `\label` before `\begin{document}`.

```

6312 \def\@currentHref{Doc-Start}
6313 \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.

```

6314 \Hy@AtBeginDocument{%
6315 \Hy@pdfstringtrue
6316 \PDF@SetupDoc
6317 \let\PDF@SetupDoc\@empty
6318 \Hy@DisableOption{pdfpagescrop}%
6319 \Hy@DisableOption{pdfpagemode}%
6320 \Hy@DisableOption{pdfnonfullscreenpagemode}%
6321 \Hy@DisableOption{pdfdirection}%
6322 \Hy@DisableOption{pdfviewarea}%
6323 \Hy@DisableOption{pdfviewclip}%
6324 \Hy@DisableOption{pdfprintarea}%
6325 \Hy@DisableOption{pdfprintclip}%
6326 \Hy@DisableOption{pdfprintscaling}%
6327 \Hy@DisableOption{pdfduplex}%
6328 \Hy@DisableOption{pdfpicktraybypdfsize}%
6329 \Hy@DisableOption{pdfprintpagerange}%
6330 \Hy@DisableOption{pdfnumcopies}%
6331 \Hy@DisableOption{pdfstartview}%
6332 \Hy@DisableOption{pdfstartpage}%
6333 \Hy@DisableOption{pdftoolbar}%
6334 \Hy@DisableOption{pdfmenubar}%
6335 \Hy@DisableOption{pdfwindowui}%
6336 \Hy@DisableOption{pdffitwindow}%
6337 \Hy@DisableOption{pdfcenterwindow}%

```

```

6338 \Hy@DisableOption{pdfdisplaydoctitle}%
6339 \Hy@DisableOption{pdfpagelayout}%
6340 \Hy@DisableOption{pdflang}%
6341 \Hy@DisableOption{baseurl}%
6342 \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
6343 \Hy@pdfstringfalse
6344 }

Ignore star from referencing macros:
6345 \LetLtxMacro\NoHy@OrgRef\ref
6346 \DeclareRobustCommand*{\ref}{%
6347 \ifstar\NoHy@OrgRef\NoHy@OrgRef
6348 }
6349 \LetLtxMacro\NoHy@OrgPageRef\pageref
6350 \DeclareRobustCommand*{\pageref}{%
6351 \ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
6352 }

```

## 23 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.

```

6353 \def\NoHyper{%
6354 \def\hyper@link@[##1]##2##3##4{##4\Hy@xspace@end}%
6355 \def\hyper@@anchor##1##2{##2\Hy@xspace@end}%
6356 \global\let\hyper@livelink\hyper@link
6357 \gdef\hyper@link##1##2##3{##3\Hy@xspace@end}%
6358 \let\hyper@anchor\ltx@gobble
6359 \let\hyper@anchorstart\ltx@gobble
6360 \def\hyper@anchorend{\Hy@xspace@end}%
6361 \let\hyper@linkstart\ltx@gobbletwo
6362 \def\hyper@linkend{\Hy@xspace@end}%
6363 \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%
6364 \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
6365 \let\Hy@backout\@gobble
6366 }
6367 \def\stop@hyper{%
6368 \def\hyper@link@[##1]##2##3##4{##4\Hy@xspace@end}%
6369 \let\Hy@backout\@gobble
6370 \let\hyper@@anchor\ltx@gobble
6371 \def\hyper@link##1##2##3{##3\Hy@xspace@end}%
6372 \let\hyper@anchor\ltx@gobble
6373 \let\hyper@anchorstart\ltx@gobble
6374 \def\hyper@anchorend{\Hy@xspace@end}%
6375 \let\hyper@linkstart\ltx@gobbletwo
6376 \def\hyper@linkend{\Hy@xspace@end}%
6377 \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%
6378 \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
6379 }
6380 \def\endNoHyper{%
6381 \global\let\hyper@link\hyper@livelink
6382 }
6383 \end{package}

```

## 24 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:

```
6384 \*nohyperref
6385 \RequirePackage{letltxmacro}[2008/06/13]
6386 \let\hyper@@anchor\@gobble
6387 \def\hyper@link#1#2#3{#3}%
6388 \let\hyper@anchorstart\@gobble
6389 \let\hyper@anchorend\@empty
6390 \let\hyper@linkstart\@gobbletwo
6391 \let\hyper@linkend\@empty
6392 \def\hyper@linkurl#1#2{#1}%
6393 \def\hyper@linkfile#1#2#3{#1}%
6394 \def\hyper@link@{#1}#2#3{#1}%
6395 \let\PDF@SetupDoc\@empty
6396 \let\PDF@FinishDoc\@empty
6397 \def\nohyperpage#1{#1}
```

Some top-level commands:

```
6398 \def\Acrobatmenu#1#2{\leavevmode#2}
6399 \let\pdfstringdefDisableCommands\@gobbletwo
6400 \let\texorpdfstring\@firstoftwo
6401 \let\pdfbookmark\@undefined
6402 \newcommand\pdfbookmark[3]{}
6403 \let\phantomsection\@empty
6404 \let\hypersetup\@gobble
6405 \let\hyperbaseurl\@gobble
6406 \newcommand*{\href}[3]{}
6407 \let\hyperdef\@gobbletwo
6408 \let\hyperlink\@gobble
6409 \let\hypertarget\@gobble
6410 \def\hyperref{%
6411   \@ifnextchar{\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
6412 }
6413 \long\def\@gobbleopt[#1]{}
6414 \let\hyperpage\@empty
```

Ignore star from referencing macros:

```
6415 \LetLtxMacro\NoHy@OrgRef\ref
6416 \DeclareRobustCommand*\ref{%
6417   \@ifstar\NoHy@OrgRef\NoHy@OrgRef
6418 }
6419 \LetLtxMacro\NoHy@OrgPageRef\pageref
6420 \DeclareRobustCommand*\pageref{%
6421   \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
6422 }
6423 \nohyperref
```

## 25 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}`

```
6424 \*package}
6425 \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.

```
6426 \if@filesw
6427 \ifHy@typexml
6428 \immediate\closeout\@mainaux
6429 \immediate\openout\@mainaux\jobname.aux\relax
6430 \immediate\write\@auxout{<relaxxml>\relax}%
6431 \fi
6432 \immediate\write\@auxout{%
6433 \string\providecommand\string\HyperFirstAtBeginDocument{%
6434 \string\AtBeginDocument}^^J%
6435 \string\HyperFirstAtBeginDocument{%
6436 \string\ifx\string\hyper@anchor\string\@undefined^^J%
6437 \string\global\string\let\string\oldcontentsline\string\contentsline^^J%
6438 \string\gdef\string\contentsline%
6439 \string#1\string#2\string#3\string#4{%
6440 \string\oldcontentsline%
6441 {\string#1}{\string#2}{\string#3}}^^J%
6442 \string\global\string\let\string\oldnewlabel\string\newlabel^^J%
6443 \string\gdef\string\newlabel\string#1\string#2{%
6444 \string\newlabelxx{\string#1}\string#2}^^J%
6445 \string\gdef\string\newlabelxx%
6446 \string#1\string#2\string#3\string#4\string#5\string#6{%
6447 \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.

```
6448 \string\AtEndDocument{%
6449 \string\ifx\string\hyper@anchor\string\@undefined^^J%
6450 \string\let\string\contentsline\string\oldcontentsline^^J%
6451 \string\let\string\newlabel\string\oldnewlabel^^J%
6452 \string\fi%
6453 }^^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.

```
6454 \string\fi%
6455 }^^J%
6456 \string\global\string\let\string\hyper@last\relax^^J%
6457 \string\gdef\string\HyperFirstAtBeginDocument\string#1{\string#1}%
6458 }%
6459 \fi
6460 \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.

```
6461 \ifx\hyper@last\@undefined
6462 \def\@starttoc#1{%
6463 \begingroup
6464 \makeatletter
```

```

6465 \IfFileExists{\jobname.#1}{%
6466 \Hy@WarningNoLine{%
6467 old #1 file detected, not used; run LaTeX again%
6468 }%
6469 }{}%
6470 \if@filesw
6471 \expandafter\newwrite\csname tf@#1\endcsname
6472 \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
6473 \fi
6474 \@nobreakfalse
6475 \endgroup
6476 }%
6477 \def\newlabel#1#2{\@newl@bel r{#1}{#2}{-}{-}{-}}%
6478 \fi
6479 }

```

## 26 Title strings

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

```

6480 \ifHy@pdfusetitle
6481 \let\HyOrg@title\title
6482 \let\HyOrg@author\author
6483 \def\title{\@ifnextchar{\Hy@scanopttitle}{\Hy@scantitle}}%
6484 \def\Hy@scanopttitle[#1]{%
6485 \gdef\Hy@title{#1}%
6486 \HyOrg@title{#1}%
6487 }%
6488 \def\Hy@scantitle#1{%
6489 \gdef\Hy@title{#1}%
6490 \HyOrg@title{#1}%
6491 }%
6492 \def\author{\@ifnextchar{\Hy@scanoptauthor}{\Hy@scanauthor}}%
6493 \def\Hy@scanoptauthor[#1]{%
6494 \gdef\Hy@author{#1}%
6495 \HyOrg@author{#1}%
6496 }%
6497 \def\Hy@scanauthor#1{%
6498 \gdef\Hy@author{#1}%
6499 \HyOrg@author{#1}%
6500 }%

```

The case, that `or` 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.

```

6501 \begingroup
6502 \def\process@me#1\@nil#2{%
6503 \expandafter\let\expandafter\x\csname @#2\endcsname
6504 \edef\y{\expandafter\strip@prefix\meaning\x}%
6505 \def\c##1##2\@nil{%
6506 \ifx\\##1\\%
6507 \else
6508 \expandafter\gdef\csname Hy@#2\expandafter\endcsname
6509 \expandafter{\x}%
6510 \fi
6511 }%

```

```

6512 \expandafter\c\y\relax#1\@nil
6513 }%
6514 \expandafter\process@me\string\@latex@\@nil{title}%
6515 \expandafter\process@me\string\@latex@\@nil{author}%
6516 \endgroup
6517 \fi
6518 \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.

```

6519 \def\Hy@UseMaketitleString#1{%
6520 \ltx@ifundefined{Hy@#1}{}%
6521 \begingroup
6522 \let\Hy@saved@hook\pdfstringdefPreHook
6523 \pdfstringdefDisableCommands{%
6524 \expandafter\let\expandafter\\\csname Hy@newline@#1\endcsname
6525 \let\newline\\%
6526 }%
6527 \expandafter\ifx\csname @pdf#1\endcsname\@empty
6528 \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
6529 \csname Hy@#1\endcsname\@empty
6530 }%
6531 \fi
6532 \global\let\pdfstringdefPreHook\Hy@saved@hook
6533 \endgroup
6534 }%
6535 }
6536 \def\Hy@newline@title#1{ #1}
6537 \def\Hy@newline@author#1{, #1}
6538 \def\Hy@UseMaketitleInfos{%
6539 \Hy@UseMaketitleString{title}%
6540 \Hy@UseMaketitleString{author}%
6541 }

```

## 27 Page numbers

This stuff is done by Heiko Oberdiek.

## 28 Every page

```

6542 \RequirePackage{atbegshi}[2007/09/09]
6543 \let\Hy@EveryPageHook\ltx@empty
6544 \let\Hy@EveryPageBoxHook\ltx@empty
6545 \let\Hy@FirstPageHook\ltx@empty
6546 \AtBeginShipout{%
6547 \Hy@EveryPageHook
6548 \ifx\Hy@EveryPageBoxHook\ltx@empty
6549 \else

```

```

6550 \setbox\AtBeginShipoutBox=\vbox{%
6551 \offinterlineskip
6552 \Hy@EveryPageBoxHook
6553 \box\AtBeginShipoutBox
6554 }%
6555 \fi
6556 }
6557 \ltx@iffileloaded{hpdf.tex}{%
6558 \AtBeginShipout{%
6559 \Hy@FirstPageHook
6560 \global\let\Hy@FirstPageHook\ltx@empty
6561 }%
6562 }{%
6563 \AtBeginShipoutFirst{%
6564 \Hy@FirstPageHook
6565 }%
6566 }
6567 \g@addto@macro\Hy@FirstPageHook{%
6568 \PDF@FinishDoc
6569 \global\let\PDF@FinishDoc\ltx@empty
6570 }

```

## 28.1 PDF /PageLabels

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

```

6571 \ifHy@pdfpagelabels
6572 \begingroup\expandafter\expandafter\expandafter\endgroup
6573 \expandafter\ifx\csname thepage\endcsname\relax
6574 \Hy@pdfpagelabelsfalse
6575 \Hy@WarningNoLine{%
6576 Option 'pdfpagelabels' is turned off\MessageBreak
6577 because \string\thepage\space is undefined%
6578 }%
6579 \csname fi\endcsname
6580 \csname iffalse\expandafter\endcsname
6581 \fi

```

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

```

6582 \def\thispdfpagelabel#1{%
6583 \gdef\HyPL@thisLabel{#1}%
6584 }%
6585 \global\let\HyPL@thisLabel\relax

```

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

```

6586 \let\HyPL@Labels\ltx@empty

```

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

```

6587 \newcount\Hy@abspage
6588 \Hy@abspage=0 %

```

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

```

6589 \def\HyPL@LastType{init}%
6590 \def\HyPL@LastNumber{0}%
6591 \let\HyPL@LastPrefix\ltx@empty

```



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

```

6592 \def\HyPL@arabic{D}%
6593 \def\HyPL@Roman{R}%
6594 \def\HyPL@roman{r}%
6595 \def\HyPL@Alph{A}%
6596 \def\HyPL@alph{a}%

6597 \let\HyPL@SlidesSetPage\ltx@empty
6598 \ltx@ifclassloaded{slides}{%
6599   \def\HyPL@SlidesSetPage{%
6600     \advance\c@page\ltx@one
6601     \ifnum\value{page}>\ltx@one
6602       \protected@edef\HyPL@SlidesOptionalPage{%
6603         \Hy@SlidesFormatOptionalPage{thepage}%
6604       }%
6605     \else
6606       \let\HyPL@SlidesOptionalPage\ltx@empty
6607     \fi
6608     \advance\c@page-\ltx@one
6609     \def\HyPL@page{%
6610       \csname the\Hy@SlidesPage\endcsname
6611       \HyPL@SlidesOptionalPage
6612     }%
6613   }%
6614 }{}%
```

`\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.

```

6615 \def\HyPL@EveryPage{%
6616   \begingroup
6617   \ifx\HyPL@thisLabel\relax
6618     \let\HyPL@page\thepage
6619     \HyPL@SlidesSetPage
6620   \else
6621     \let\HyPL@page\HyPL@thisLabel
6622     \global\let\HyPL@thisLabel\relax
6623   \fi
6624   \let\HyPL@Type\relax
6625   \ifnum\c@page>0 %
6626     \ifx\HyPL@SlidesSetPage\ltx@empty
6627       \expandafter\HyPL@CheckThePage\HyPL@page\@nil
6628     \fi
6629   \fi
6630   \let\Hy@temp Y%
6631   \ifx\HyPL@Type\HyPL@LastType
6632   \else
6633     \let\Hy@temp N%
6634   \fi
6635   \ifx\HyPL@Type\relax
6636     \pdfstringdef\HyPL@Prefix{\HyPL@page}%
6637   \else
6638     \pdfstringdef\HyPL@Prefix\HyPL@Prefix
6639   \fi
6640   \ifx\HyPL@Prefix\HyPL@LastPrefix
6641   \else
6642     \let\Hy@temp N%
6643   \fi
6644   \if Y\Hy@temp
```

```

6645 \advance\c@page by -1 %
6646 \ifnum\HyPL@LastNumber=\the\c@page\relax
6647 \else
6648 \let\Hy@temp N%
6649 \fi
6650 \Hy@StepCount\c@page
6651 \fi
6652 \if N\Hy@temp
6653 \ifx\HyPL@Type\relax
6654 \HyPL@StorePageLabel{/P(\HyPL@Prefix)}%
6655 \else
6656 \HyPL@StorePageLabel{%
6657 \ifx\HyPL@Prefix\@empty
6658 \else
6659 /P(\HyPL@Prefix)%
6660 \fi
6661 /S/\csname HyPL\HyPL@Type\endcsname
6662 \ifnum\the\c@page=1 %
6663 \else
6664 \space/St \the\c@page
6665 \fi
6666 }%
6667 \fi
6668 \fi
6669 \xdef\HyPL@LastNumber{\the\c@page}%
6670 \global\let\HyPL@LastType\HyPL@Type
6671 \global\let\HyPL@LastPrefix\HyPL@Prefix
6672 \endgroup
6673 \Hy@GlobalStepCount\Hy@abspage
6674 }%

```

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

```

6675 \def\HyPL@CheckThePage#1\@nil{%
6676 \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
6677 }%

```

`\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 implemenation 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`.

```

6678 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
6679 \def\Hy@tempa{#4}%
6680 \def\Hy@tempb{\csname\endcsname\c@page}%
6681 \ifx\Hy@tempa\Hy@tempb
6682 \expandafter\ifx\csname HyPL#3\endcsname\relax
6683 \else
6684 \def\HyPL@Type{#3}%
6685 \def\HyPL@Prefix{#2}%
6686 \fi
6687 \else
6688 \begingroup
6689 \let\Hy@next\endgroup
6690 \let\HyPL@found\@undefined
6691 \def\arabic{\HyPL@Format{arabic}}%
6692 \def\Roman{\HyPL@Format{Roman}}%
6693 \def\roman{\HyPL@Format{roman}}%

```

```

6694 \def\Alph{\HyPL@Format{Alph}}%
6695 \def\alph{\HyPL@Format{alph}}%
6696 \protected@edef\Hy@temp{#1}%
6697 \ifx\HyPL@found\relax
6698 \toks@ \expandafter{\Hy@temp}%
6699 \edef\Hy@next{\endgroup
6700 \noexpand\HyPL@@@CheckThePage\the\toks@
6701 \noexpand\HyPL@found\relax\noexpand\@nil
6702 }%
6703 \fi
6704 \Hy@next
6705 \fi
6706 }%

```

`\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`.

```

6707 \def\HyPL@Format#1#2{%
6708 \ifx\HyPL@found\@undefined
6709 \expandafter\ifx\csname c@#2\endcsname\c@page
6710 \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
6711 \else
6712 \expandafter\noexpand\csname#1\endcsname{#2}%
6713 \fi
6714 \else
6715 \expandafter\noexpand\csname#1\endcsname{#2}%
6716 \fi
6717 }%

```

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

```

6718 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
6719 \def\Hy@tempa{#3}%
6720 \def\Hy@tempb{\HyPL@found\relax}%
6721 \ifx\Hy@tempa\Hy@tempb
6722 \def\HyPL@Type{#2}%
6723 \def\HyPL@Prefix{#1}%
6724 \fi
6725 }%

```

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

```

6726 \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`.

```

6727 \def\HyPL@Useless{0<</S/D>>}%
6728 \@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.

```

6729 \def\HyPL@SetPageLabels{%
6730 \@onelevel@sanitize\HyPL@Labels
6731 \ifx\HyPL@Labels\@empty
6732 \else
6733 \ifx\HyPL@Labels\HyPL@Useless

```

```

6734 \else
6735 \Hy@PutCatalog{/PageLabels<</Nums[\HyPL@Labels]>>>}%
6736 \fi
6737 \fi
6738 }%

6739 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
6740 \fi

Option ‘pdfpagelabels’ has been used and is now disabled.
6741 \Hy@DisableOption{pdfpagelabels}
6742 \end{package}

```

### 28.1.1 pdfTeX and VTeX

Because of pdfTeX’s `\pdfcatalog` command the `/PageLabels` entry can set at end of document in the first run.

```

\Hy@PutCatalog
6743 \ifpdf
6744 \pdf@ifdraftmode{%
6745 \let\Hy@PutCatalog\ltx@gobble
6746 }{%
6747 \let\Hy@PutCatalog\pdfcatalog
6748 }
6749 \end{ifpdf}

```

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.

```

6750 \ifvtx
6751 \providecommand*\XR@ext{pdf}
6752 \edef\Hy@VTeXversion{%
6753 \ifx\VTeXversion\@undefined
6754 \z@
6755 \else
6756 \ifx\VTeXversion\relax
6757 \z@
6758 \else
6759 \VTeXversion
6760 \fi
6761 \fi
6762 }
6763 \begin{group}
6764 \ifnum\Hy@VTeXversion<660 %
6765 \gdef\Hy@PutCatalog#1{%
6766 \Hy@WarningNoLine{%
6767 VTeX 6.59g or above required for pdfpagelabels%
6768 }%
6769 }%
6770 \else
6771 \gdef\Hy@PutCatalog#1{%
6772 \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
6773 }%
6774 \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%

```

```

6775 \ifx\#2\%
6776 \else
6777 \immediate\special{!pdfpagelabels #2}%
6778 \fi
6779 }%
6780 \fi
6781 \endgroup
6782 </vtex>

6783 <*pdftex | vtex>

```

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

```

6784 \ifHy@pdfpagelabels
6785 \def\HyPL@StorePageLabel#1{%
6786 \toks@ \expandafter{\HyPL@Labels}%
6787 \xdef\HyPL@Labels{%
6788 \the\toks@
6789 \the\Hy@abspage<<#1>>%
6790 }%
6791 }%

```

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.

```

6792 \RequirePackage{atveryend}[2009/12/07]%
6793 \AtVeryEndDocument{%
6794 \HyPL@SetPageLabels
6795 }%

6796 \fi
6797 </pdftex | vtex>

```

### 28.1.2 xetex

```

6798 <*xetex>
6799 \HyPsd@LoadUnicode
6800 \Hy@unicodetrue
6801 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
6802 \else
6803 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
6804 \fi
6805 \HyPsd@LoadStringEnc
6806 \define@key{Hyp}{unicode}[true]{%
6807 \Hy@boolkey{unicode}{#1}%
6808 \ifHy@unicode
6809 \else
6810 \Hy@Warning{%
6811 XeTeX driver only supports 'unicode=true'. Ignoring\MessageBreak
6812 option setting 'unicode=false'%
6813 }%
6814 \Hy@unicodetrue
6815 \fi
6816 }
6817 \define@key{Hyp}{pdfencoding}{%
6818 \edef\HyPsd@temp{#1}%
6819 \ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
6820 \let\HyPsd@pdfencoding\HyPsd@temp
6821 \else

```

```

6822 \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
6823 \let\HyPsd@pdfencoding\HyPsd@temp
6824 \else
6825 \Hy@Warning{%
6826 XeTeX driver only supports\MessageBreak
6827 'pdfencoding=unicode|auto'. Ignoring option\MessageBreak
6828 setting 'pdfencoding=\HyPsd@temp'%
6829 }%
6830 \fi
6831 \fi
6832 }
6833 \let\HyXeTeX@CheckUnicode\relax
6834 \</xetex>

```

### 28.1.3 pdfmarkbase, dvipdfm, xetex

```

6835 \<*pdfmarkbase>
6836 \begingroup
6837 \@ifundefined{headerps@out}{\}%
6838 \toks@\expandafter{\Hy@FirstPageHook}%
6839 \xdef\Hy@FirstPageHook{%
6840 \noexpand\headerps@out{%
6841 systemdict /pdfmark known%
6842 {%
6843 userdict /?pdfmark systemdict /exec get put%
6844 }{%
6845 userdict /?pdfmark systemdict /pop get put %
6846 userdict /pdfmark systemdict /cleartomark get put%
6847 }%
6848 ifelse%
6849 }%
6850 \the\toks@
6851 }%
6852 }%
6853 \endgroup
6854 \</pdfmarkbase>

\Hy@PutCatalog
6855 \<dvipdfm | xetex>\def\Hy@PutCatalog#1{\@pdfm@mark{docview << #1 >>}}
6856 \<*pdfmarkbase>
6857 \def\Hy@PutCatalog#1{%
6858 \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} << #1 >>}}%
6859 }
6860 \</pdfmarkbase>

6861 \<*pdfmarkbase | dvipdfm | xetex>
6862 \ifHy@pdfpagelabels

```

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

```

6863 \def\HyPL@StorePageLabel#1{%
6864 \if@filesw
6865 \begingroup
6866 \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
6867 \immediate\write\@mainaux{%
6868 \string\HyPL@Entry{\Hy@tempa}%
6869 }%
6870 \endgroup
6871 \fi
6872 }%

```

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.

```

6873 \Hy@AtBeginDocument{%
6874   \if@filesw
6875     \immediate\write\@mainaux{%
6876       \string\providecommand\string*\string\HyPL@Entry[1]{}%
6877     }%
6878   \fi
6879   \ifx\HyPL@Labels\@empty
6880     \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
6881   \else
6882     \HyPL@SetPageLabels
6883   \fi
6884   \let\HyPL@Entry\@gobble
6885 }%
```

`\HyPL@Entry`

```

6886 \def\HyPL@Entry#1{%
6887   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
6888     \HyPL@Labels
6889     #1%
6890   }%
6891 }%

6892 \fi
6893 </pdfmarkbase | dvipdfm | xetex>

6894 <*package>

6895 \ifx\MaybeStopEarly\relax
6896 \else
6897   \Hy@stoppedearlytrue
6898   \expandafter\MaybeStopEarly
6899 \fi
6900 \Hy@stoppedearlyfalse
```

## 29 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

```

6901 \def\Hy@CounterExists#1{%
6902   \begingroup\expandafter\expandafter\expandafter\endgroup
6903   \expandafter\ifx\csname c@#1\endcsname\relax
6904     \expandafter\@gobble
6905   \else
6906     \begingroup\expandafter\expandafter\expandafter\endgroup
6907     \expandafter\ifx\csname the#1\endcsname\relax
6908       \expandafter\expandafter\expandafter\@gobble
6909     \else
6910       \expandafter\expandafter\expandafter\@firstofone
6911     \fi
6912   \fi
6913 }
6914 \Hy@CounterExists{section}{%
6915   \providecommand\theHequation{\theHsection.\arabic{equation}}}%
6916 }
6917 \Hy@CounterExists{part}{%
6918   \providecommand\theHpart{\arabic{part}}}%
6919 }
6920 \ltx@ifundefined{thechapter}{%
6921   \providecommand\theHsection   {\arabic{section}}}%
6922   \providecommand\theHfigure    {\arabic{figure}}}%
6923   \providecommand\theHtable     {\arabic{table}}}%
6924 }{%
6925   \providecommand\theHchapter   {\arabic{chapter}}}%
6926   \providecommand\theHfigure    {\theHchapter.\arabic{figure}}}%
6927   \providecommand\theHtable     {\theHchapter.\arabic{table}}}%
6928   \providecommand\theHsection   {\theHchapter.\arabic{section}}}%
6929 }
6930 \providecommand\theHsubsection  {\theHsection.\arabic{subsection}}
6931 \providecommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
6932 \providecommand\theHparagraph   {\theHsubsubsection.\arabic{paragraph}}
6933 \providecommand\theHsubparagraph{\theHparagraph.\arabic{subparagraph}}
6934 \providecommand\theHtheorem     {\theHsection.\arabic{theorem}}
6935 \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.

6936 \let\H@item\item
6937 \newcounter{Item}
6938 \def\theHItem{\arabic{Item}}
6939 \def\item{%
6940   \@hyper@itemfalse
6941   \if@nmbrlist\@hyper@itemtrue\fi
6942   \H@item
6943 }

6944 \providecommand\theHenumi      {\theHItem}
6945 \providecommand\theHenumii     {\theHItem}
6946 \providecommand\theHenumiii    {\theHItem}
6947 \providecommand\theHenumiv     {\theHItem}
6948 \providecommand\theHHfootnote  {\arabic{Hfootnote}}
6949 \providecommand\theHmpfootnote {\arabic{mpfootnote}}
6950 \@ifundefined{theHHmpfootnote}{%
6951   \let\theHHmpfootnote\theHHfootnote
6952 }{}

```



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.

```
6953 \let\H@refstepcounter\refstepcounter
6954 \edef\name@of@eq{equation}%
6955 \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.

```
6956 \newif\if@hyper@item
6957 \newif\if@skiphyperref
6958 \@hyper@itemfalse
6959 \@skiphyperreffalse
6960 \def\refstepcounter#1{%
6961   \ifHy@pdfstring
6962   \else
6963     \H@refstepcounter{#1}%
6964     \edef\This@name{#1}%
6965     \ifx\This@name\name@of@slide
6966     \else
6967       \if@skiphyperref
6968       \else
6969         \if@hyper@item
6970         \stepcounter{Item}%
6971         \hyper@refstepcounter{Item}%
6972         \@hyper@itemfalse
6973       \else
6974         \hyper@refstepcounter{#1}%
6975     \fi
6976   \fi
6977 \fi
6978 \fi
6979 }
6980 \let\Hy@saved@refstepcounter\refstepcounter
```

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

```
6981 \@ifpackageloaded{amsmath}{-}{\newif\ifmeasuring@\measuring@false}
```

`\hyper@refstepcounter`

```
6982 \def\hyper@refstepcounter#1{%
6983   \edef\This@name{#1}%
6984   \ifx\This@name\name@of@eq
6985     \@ifundefined{theHequation}{%
6986       \make@stripped@name{\theequation}%
6987       \let\theHequation\newname
6988     }{}%
6989   \fi
6990   \HyCnt@ProvideTheHCounter{#1}%
6991   \hyper@makecurrent{#1}%
6992   \ifmeasuring@
6993   \else
6994     \Hy@raisedlink{%
6995       \hyper@anchorstart{\@currentHref}\hyper@anchorend
6996     }%
```

```

6997 \fi
6998 }

```

`\Hy@ProvideTheHCounter` `\theH<counter>` is not set for counters that are defined before ‘hyperref’ is loaded. In `\cl@ckpt`, the clear counter list of the artificial counter `@ckpt`, L<sup>A</sup>T<sub>E</sub>X remembers the defined counters (needed for `\include`). We check the clear counter lists, whether our counter is present. If we found it, then we add the parent counter value to `\theH<counter>`. The `\@elt` list is used in sanitized form for the comparison, because the list might contain other stuff than `\@elts`. Also it simplifies the implementation, because L<sup>A</sup>T<sub>E</sub>X’, substring search `\in@` can be used.

```

6999 \def\HyCnt@ProvideTheHCounter#1{%
7000   \@ifundefined{theH#1}{%
7001     \expandafter\def\csname theH#1\endcsname{%
7002       \def\Hy@temp{\@elt{#1}}%
7003       \ltx@onelevel@sanitize\Hy@temp
7004       \let\HyOrg@elt\@elt
7005       \edef\@elt{%
7006         \noexpand\HyCnt@LookForParentCounter
7007         \expandafter\noexpand\csname theH#1\endcsname
7008       }%
7009       \cl@ckpt
7010       \let\@elt\HyOrg@elt
7011       \expandafter
7012       \ltx@LocalAppendToMacro\csname theH#1\expandafter\endcsname
7013       \expandafter{%
7014         \expandafter\@arabic\csname c@#1\endcsname
7015       }%
7016     }{%
7017   }

```

`\Hy@LookForParentCounter`

```

7018 \def\HyCnt@LookForParentCounter#1#2{%
7019   \expandafter\let\expandafter\Hy@temp@A\csname cl@#2\endcsname
7020   \ltx@ifundefined{cl@#2}{%
7021   }{%
7022     \ltx@onelevel@sanitize\Hy@temp@A
7023     \edef\Hy@temp@A{%
7024       \noexpand\in@{\Hy@temp}{\Hy@temp@A}%
7025     }\Hy@temp@A
7026     \ifin@
7027     \ltx@ifundefined{theH#2}{%
7028       \expandafter\ltx@LocalAppendToMacro\expandafter#1%
7029       \expandafter{%
7030         \expandafter\@arabic\csname c@#2\endcsname.%
7031       }%
7032     }{%
7033       \expandafter\ltx@LocalAppendToMacro\expandafter#1%
7034       \expandafter{%
7035         \csname theH#2\endcsname.%
7036       }%
7037     }%
7038   \fi
7039 }%
7040 }

```

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.

```

7041 \begingroup\expandafter\expandafter\expandafter\endgroup
7042 \expandafter\ifx\csname chapter\endcsname\relax
7043   \def\Hy@chapterstring{section}%
7044 \else
7045   \def\Hy@chapterstring{chapter}%
7046 \fi
7047 \def\Hy@appendixstring{appendix}
7048 \def\Hy@chapapp{\Hy@chapterstring}
7049 \ltx@ifundefined{appendix}{%
7050 }{%
7051   \let\HyOrg@appendix\appendix
7052   \def\Hy@AlphNoErr#1{%
7053     \ifnum\value{#1}>26 %
7054       Alph\number\value{#1}%
7055     \else
7056       \ifnum\value{#1}<1 %
7057         Alph\number\value{#1}%
7058       \else
7059         \Alph{#1}%
7060       \fi
7061     \fi
7062   }%
7063   \def\appendix{%
7064     \ltx@ifundefined{chapter}{%
7065       \gdef\theHsection{\Hy@AlphNoErr{section}}%
7066     }{%
7067       \gdef\theHchapter{\Hy@AlphNoErr{chapter}}%
7068     }%
7069     \xdef\Hy@chapapp{\Hy@appendixstring}%
7070     \HyOrg@appendix
7071   }%
7072 }
```

\Hy@Test@alph

```

7073 \def\Hy@Test@alph#1{%
7074   \ifcase#1\or
7075     a\or b\or c\or d\or e\or f\or g\or h\or i\or j\or
7076     k\or l\or m\or n\or o\or p\or q\or r\or s\or t\or
7077     u\or v\or w\or x\or y\or z%
7078   \else
7079     \@ctrerr
7080   \fi
7081 }
```

\Hy@Test@Alph

```

7082 \def\Hy@Test@Alph#1{%
7083   \ifcase#1\or
7084     A\or B\or C\or D\or E\or F\or G\or H\or I\or J\or
7085     K\or L\or M\or N\or O\or P\or Q\or R\or S\or T\or
7086     U\or V\or W\or X\or Y\or Z%
7087   \else
7088     \@ctrerr
7089   \fi
```

7090 }

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

```
7091 \def\hyper@makecurrent#1{%
7092   \begingroup
7093   \Hy@safe@activetrue
7094   \edef\Hy@param{#1}%
7095   \ifx\Hy@param\Hy@chapterstring
7096     \let\Hy@param\Hy@chapapp
7097   \fi
7098   \ifHy@hypertextnames
7099     \let\@number\@firstofone
7100     \def\@fnsymbol##1{fnsymbol\number##1}%
7101     \def\@arabic##1{\number##1}%
7102     \ifx\@alph\Hy@Test@alph
7103       \else
7104         \def\@alph{alph\number}%
7105       \fi
7106     \ifx\@Alph\Hy@Test@Alph
7107       \else
7108         \def\@Alph{Alph\number}%
7109       \fi
7110     \ifHy@naturalnames
7111       \let\textlatin\@firstofone
7112       \xdef\HyperGlobalCurrentHref{\csname the#1\endcsname}%
7113     \else
7114       \xdef\HyperGlobalCurrentHref{%
7115         \csname
7116           the%
7117           \expandafter\ifx\csname theH#1\endcsname\relax\else H\fi
7118           #1%
7119         \endcsname
7120       }%
7121     \fi
7122     \xdef\HyperGlobalCurrentHref{%
7123       \Hy@param.\expandafter\strip@prefix\meaning\HyperGlobalCurrentHref
7124     }%
7125   \else
7126     \Hy@GlobalStepCount\Hy@linkcounter
7127     \xdef\HyperGlobalCurrentHref{\Hy@param.\the\Hy@linkcounter}%
7128   \fi
7129 \endgroup
7130 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
7131 \ifHy@localanchorname
7132   \let\@currentHref\HyperLocalCurrentHref
7133 \else
7134   \global\let\@currentHref\HyperGlobalCurrentHref
7135 \fi
7136 }
```

\Hy@MakeCurrentHref

```
7137 \def\Hy@MakeCurrentHref#1{%
7138   \edef\HyperLocalCurrentHref{#1}%
7139   \@onelevel@sanitize\HyperLocalCurrentHref
7140   \global\let\HyperGlobalCurrentHref\HyperLocalCurrentHref
7141   \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
}
```

```

7142 \ifHy@localanchorname
7143   \let\@currentHref\HyperLocalCurrentHref
7144 \else
7145   \global\let\@currentHref\HyperGlobalCurrentHref
7146 \fi
7147 }

```

\Hy@MakeCurrentHrefAuto

```

7148 \def\Hy@MakeCurrentHrefAuto#1{%
7149   \Hy@GlobalStepCount\Hy@linkcounter
7150   \Hy@MakeCurrentHref{#1.\the\Hy@linkcounter}%
7151 }

```

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

```

7152 \def\@currentHlabel{\@currentHref}

7153 \ifpackageloaded{fancyvrb}{%
7154   \@ifpackagelater{fancyvrb}{1998/05/20}{-}{-%
7155     \def\FV@StepLineNo{%
7156       \FV@SetLineNo
7157       \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
7158       \FV@StepLineNo
7159     }%
7160   }%
7161 }{}

```

## 30 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. 39). The link will not work if option pageanchor is set to false.

\lastpage@putlabel

```

7162 \Hy@AtBeginDocument{%
7163   \@ifclassloaded{revtex4}{-%
7164     \@namedef{ver@lastpage.sty}{1994/06/25}%
7165   }{}%
7166   \@ifpackageloaded{lastpage}{-%
7167     \ifHy@pageanchor
7168     \else
7169       \Hy@WarningNoLine{%
7170         The \string\pageref{LastPage} link doesn't work\MessageBreak
7171         with disabled option 'pageanchor'%
7172       }%
7173     \fi
7174     \def\lastpage@putlabel{%
7175       \addtocounter{page}{-1}%
7176       \if@filesw
7177         \begingroup
7178         \let\@number\@firstofone
7179         \ifHy@pageanchor
7180           \ifHy@hypertexnames

```

```

7181         \ifHy@plainpages
7182         \def\Hy@temp{\arabic{page}}}%
7183     \else
7184         \Hy@unicodedefalse
7185         \pdfstringdef\Hy@temp{\thepage}%
7186     \fi
7187 \else
7188     \def\Hy@temp{\the\Hy@pagecounter}%
7189 \fi
7190 \fi
7191 \immediate\write\@auxout{%
7192     \string\newlabel
7193     {LastPage}{\thepage}}}%
7194     \ifHy@pageanchor page.\Hy@temp\fi}}}%
7195 }%
7196 \endgroup
7197 \fi
7198 \addtocounter{page}{1}%
7199 }%
7200 \@ifclassloaded{revtex4}{%
7201     \begingroup
7202     \toks@{\expandafter\lastpage@putlabel}%
7203     \edef\x{\endgroup
7204         \def\noexpand\lastpage@putlabel{%
7205             \noexpand\stepcounter{page}%
7206             \the\toks@
7207             \noexpand\addtocounter{page}\noexpand\m@ne
7208         }%
7209     }%
7210     \x
7211 }{}%
7212 }{}%
7213 }
7214 \</package>
7215 \< *check>
7216 \checkpackage{lastpage}[1994/06/25]
7217 \checkcommand\def\lastpage@putlabel{%
7218     \addtocounter{page}{-1}%
7219     \immediate\write\@auxout{%
7220         \string\newlabel{LastPage}{\thepage}}}%
7221 }%
7222 \addtocounter{page}{1}%
7223 }
7224 \</check>
7225 \< *package>

```

## 31 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.

```

7226 \def\hypergetref#1{\getrefbykeydefault{#1}{}}{}
7227 \def\hypergetpageref#1{\getrefbykeydefault{#1}{page}{0}}

```

## 32 Package titlesec and titletoc support

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

Package titlesec support:

```
7228 \@ifpackageloaded{titlesec}{%
7229   \def\ttl@Hy@steplink#1{%
7230     \Hy@MakeCurrentHrefAuto{#1*}%
7231     \edef\ttl@Hy@saveanchor{%
7232       \noexpand\Hy@raisedlink{%
7233         \noexpand\hyper@anchorstart{\@currentHref}%
7234         \noexpand\hyper@anchorend
7235       \def\noexpand\ttl@Hy@SavedCurrentHref{\@currentHref}%
7236       \noexpand\ttl@Hy@PatchSaveWrite
7237     }%
7238   }%
7239 }%
7240 \def\ttl@Hy@PatchSaveWrite{%
7241   \begingroup
7242   \toks@{\expandafter\ttl@savewrite}%
7243   \edef\x{\endgroup
7244     \def\noexpand\ttl@savewrite{%
7245       \let\noexpand\@currentHref
7246       \noexpand\ttl@Hy@SavedCurrentHref
7247       \the\toks@
7248     }%
7249   }%
7250   \x
7251 }%
7252 \def\ttl@Hy@refstepcounter#1{%
7253   \let\ttl@b\Hy@raisedlink
7254   \def\Hy@raisedlink##1{%
7255     \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
7256   }%
7257   \refstepcounter{#1}%
7258   \let\Hy@raisedlink\ttl@b
7259 }%
7260 }
```

Package titletoc support:

```
7261 \@ifpackageloaded{titletoc}{%
7262   \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
7263 }
```

## 33 Package varioref support

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

```
7264 \def\Hy@varioref@undefined{??}{??}{-}{-}{-}
7265 \@ifpackageloaded{varioref}{%
7266   \def\vref@pagenum#1#2{%
7267     \@ifundefined{r@#2}{%
7268       \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
7269     }{}%
7270     \edef#1{\getpagerefnumber{#2}}%
7271   }%
7272 }
```

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

```

7273 \def\Hy@varioref@refstepcounter#1{%
7274   \stepcounter{#1}%
7275   \protected@edef\@currentlabel{%
7276     \csname p@#1\expandafter\endcsname\csname the#1\endcsname
7277   }%
7278 }
7279 \AtBeginDocument{%
7280   \ifx\refstepcounter\Hy@varioref@refstepcounter
7281     \let\H@refstepcounter\refstepcounter
7282     \let\refstepcounter\Hy@saved@refstepcounter
7283   \fi
7284 }
```

## 34 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

```

7285 \@ifpackageloaded{longtable}{%
7286   \begingroup
7287   \def\y{\LT@array}%
7288   \@ifundefined{scr@LT@array}{%
7289     \@ifundefined{adl@LT@array}{\def\y{\adl@LT@array}}{%
7290     }\def\y{\scr@LT@array}}%
7291   \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
7292     \expandafter\endgroup
7293     \expandafter\def\y[##1]##2{%
7294       \H@refstepcounter{#1}%
7295       \hyper@makecurrent{table}%
7296       \let\Hy@LT@currentHref\@currentHref
7297       #2\@sharp###4%
7298     }%
7299   }%
7300   \expandafter\expandafter\expandafter\x\y[{#1}]{#2}\@nil
```

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

```

7301 \begingroup
7302 \def\x#1\ifvoid\LT@foot#2\fi#3\@nil{%
7303   \endgroup
7304   \def\LT@start{%
7305     #1%
7306     \ifvoid\LT@foot#2\fi
7307     \let\@currentHref\Hy@LT@currentHref
7308     \Hy@raisedlink{%
7309       \hyper@anchorstart{\@currentHref}\hyper@anchorend
7310     }%
7311     #3%
7312   }%
7313 }%
7314 \expandafter\x\LT@start\@nil
7315 }
```



## 35 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 42). 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.

```

7316 \let\new@refstepcounter\refstepcounter
7317 \let\H@equation\equation
7318 \let\H@endequation\endequation

7319 \@ifpackageloaded{amsmath}{%
7320   \long\def\Hy@temp{%
7321     \incr@eqnum
7322     \mathdisplay@push
7323     \st@rredfalse \global\@eqnswtrue
7324     \mathdisplay{equation}%
7325   }%
7326   \ifx\Hy@temp\equation
7327     \expandafter\ifx\csname if@fleqn\expandafter\endcsname
7328       \csname iftrue\endcsname
7329   \else
7330     \long\def\equation{%
7331       \mathdisplay@push
7332       \st@rredfalse \global\@eqnswtrue
7333       \mathdisplay{equation}%
7334       \incr@eqnum
7335     }%
7336   \fi
7337 \fi
7338 }{%
7339 \def\equation{%
7340   \let\refstepcounter\H@refstepcounter
7341   \H@equation
7342   \@ifundefined{theHequation}{%
7343     \make@stripped@name{\theequation}%
7344     \let\theHequation\newname
7345   }{%
7346     \hyper@makecurrent{equation}%

```

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

```

7347   \mathopen{%
7348     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
7349   }%
7350   \let\refstepcounter\new@refstepcounter
7351 }%
7352 \def\endequation{%
7353   \ifx\Hy@raisedlink\ltx@empty
7354     \hyper@anchorend
7355   \else
7356     \mathclose{\Hy@raisedlink{\hyper@anchorend}}%
7357   \fi
7358   \H@endequation
7359 }%
7360 }

```

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.

```

7361 \newif\if@eqnstar
7362 \@eqnstarfalse
7363 \let\H@eqnarray\eqnarray
7364 \let\H@endeqnarray\endeqnarray
7365 \def\eqnarray{%
7366   \let\Hy@reserved@a\relax
7367   \def\@currentHref{%
7368     \H@eqnarray
7369     \if@eqnstar
7370     \else
7371       \ifx\@currentHref\%
7372       \else
7373         \ifundefined{theHequation}{%
7374           \make@stripped@name{\theequation}%
7375           \let\theHequation\newname
7376         }{%
7377           \hyper@makecurrent{equation}%
7378           \mathopen{%
7379             \Hy@raisedlink{%
7380               \hyper@anchorstart{\@currentHref}\hyper@anchorend
7381             }%
7382           }%
7383         \fi
7384       \fi
7385     }
7386   \def\endeqnarray{%
7387     \H@endeqnarray
7388   }

```

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.

```

7389 \@namedef{eqnarray*}{%
7390   \def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
7391 }
7392 \@namedef{endeqnarray*}{%
7393   \nonumber\endeqnarray\@eqnstarfalse
7394 }

```

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

```

7395 \ltx@ifundefined{subeqnarray}{-}{%
7396   \let\H@subeqnarray\subeqnarray
7397   \let\H@endsubeqnarray\endsubeqnarray
7398   \def\subeqnarray{%
7399     \let\Hy@reserved@a\relax
7400     \H@subeqnarray
7401     \@ifundefined{theHequation}{%
7402       \make@stripped@name{\theequation}%
7403       \let\theHequation\newname
7404     }{%
7405       \hyper@makecurrent{equation}%
7406       \hyper@anchorstart{\@currentHref}\hyper@anchorend
7407     }%
7408   \def\endsubeqnarray{%

```

```

7409 \H@endsubeqnarray
7410 }%
7411 \providecommand\theHsubequation{\theHequation\alph{subequation}}}%
7412 }

```

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

```

7413 \def\make@stripped@name#1{%
7414 \begingroup
7415 \escapechar\m@ne
7416 \global\let\newname\@empty
7417 \protected@edef\Hy@tempa{#1}%
7418 \edef\@tempb{%
7419 \noexpand\@tfor\noexpand\Hy@tempa:=%
7420 \expandafter\strip@prefix\meaning\Hy@tempa
7421 }%
7422 \@tempb\do{%
7423 \if{\Hy@tempa\else
7424 \if}\Hy@tempa\else
7425 \xdef\newname{\newname\Hy@tempa}%
7426 \fi
7427 \fi
7428 }%
7429 \endgroup
7430 }

```

Support for amsmath's subequations:

```

7431 \begingroup\expandafter\expandafter\expandafter\endgroup
7432 \expandafter\ifx\csname subequations\endcsname\relax
7433 \else
7434 \let\HyOrg@subequations\subequations
7435 \def\subequations{%
7436 \stepcounter{equation}%
7437 \protected@edef\theHparentequation{%
7438 \ifundefined{theHequation}\theequation\theHequation
7439 }%
7440 \addtocounter{equation}{-1}%
7441 \HyOrg@subequations
7442 \def\theHequation{\theHparentequation\alph{equation}}}%
7443 \ignorespaces
7444 }%
7445 \fi

```

Support for package `amsthm` (Daniel Müllner):

```

7446 \@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

7447 \def\Hy@temp#1#2#3{%
7448 \ifhmode\unskip\unskip\par\fi
7449 \normalfont
7450 \trivlist
7451 \let\thmheadnl\relax
7452 \let\thm@swap\@gobble
7453 \let\thm@indent\indent % indent
7454 \thm@headfont{\scshape}% heading font small caps

```

```

7455 \thm@notefont{\fontseries\mddefault\upshape}%
7456 \thm@headpunct{.}% add period after heading
7457 \thm@headsep 5\p@ plus\p@ minus\p@\relax
7458 \thm@space@setup
7459 #1% style overrides
7460 \@topsep \thm@preskip % used by thm head
7461 \@topsepadd \thm@postskip % used by \@endparenv
7462 \def\@tempa{#2}\ifx\@empty\@tempa
7463 \def\@tempa{\@oparg{\@begintheorem{#3}{}}}%
7464 \else
7465 \refstepcounter{#2}%
7466 \def\@tempa{%
7467 \@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}}%
7468 }%
7469 \fi
7470 \@tempa
7471 }%
7472 \ifx\Hy@temp\@thm
7473 \def\@thm#1#2#3{%
7474 \ifhmode
7475 \unskip\unskip\par
7476 \fi
7477 \normalfont
7478 \trivlist
7479 \let\thmheadnl\relax
7480 \let\thm@swap\@gobble
7481 \let\thm@indent\indent % indent
7482 \thm@headfont{\scshape}% heading font small caps
7483 \thm@notefont{\fontseries\mddefault\upshape}%
7484 \thm@headpunct{.}% add period after heading
7485 \thm@headsep 5\p@ plus\p@ minus\p@\relax
7486 \thm@space@setup
7487 #1% style overrides
7488 \@topsep \thm@preskip % used by thm head
7489 \@topsepadd \thm@postskip % used by \@endparenv
7490 \def\dth@counter{#2}%
7491 \ifx\@empty\dth@counter
7492 \def\@tempa{%
7493 \@oparg{\@begintheorem{#3}{}}}%
7494 }%
7495 \else
7496 \H@refstepcounter{#2}%
7497 \hyper@makecurrent{#2}%
7498 \let\Hy@dth@currentHref\@currentHref
7499 \def\@tempa{%
7500 \@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}}%
7501 }%
7502 \fi
7503 \@tempa
7504 }%
7505 \else
7506 \def\@thm#1#2#3{%
7507 \ifhmode
7508 \unskip\unskip\par
7509 \fi
7510 \normalfont
7511 \trivlist

```

```

7512 \let\thmheadnl\relax
7513 \let\thm@swap\@gobble
7514 \thm@notefont{\fontseries\mddefault\upshape}%
7515 \thm@headpunct{.}% add period after heading
7516 \thm@headsep 5\p@ plus\p@ minus\p@\relax
7517 \thm@space@setup
7518 #1% style overrides
7519 \@topsep \thm@preskip % used by thm head
7520 \@topsepadd \thm@postskip % used by \@endparenv
7521 \def\dth@counter{#2}%
7522 \ifx\@empty\dth@counter
7523 \def\@tempa{%
7524 \@oparg{\@begintheorem{#3}{}}{}%
7525 }%
7526 \else
7527 \H@refstepcounter{#2}%
7528 \hyper@makecurrent{#2}%
7529 \let\Hy@dth@currentHref\@currentHref
7530 \def\@tempa{%
7531 \@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}{}%
7532 }%
7533 \fi
7534 \@tempa
7535 }%
7536 \fi
7537 \dth@everypar={%
7538 \@minipagefalse
7539 \global\@newlistfalse
7540 \@noparitemfalse
7541 \if@inlabel
7542 \global\@inlabelfalse
7543 \begingroup
7544 \setbox\z@\lastbox
7545 \ifvoid\z@
7546 \kern-\itemindent
7547 \fi
7548 \endgroup
7549 \ifx\@empty\dth@counter
7550 \else
7551 \Hy@raisedlink{%
7552 \hyper@anchorstart{%
7553 \ltx@ifundefined{Hy@dth@currentHref}%
7554 \@currentHref\Hy@dth@currentHref
7555 }\hyper@anchorend
7556 }%
7557 \fi
7558 \unhbox\@labels
7559 \fi
7560 \if@nobreak
7561 \@nobreakfalse \clubpenalty\@M
7562 \else
7563 \clubpenalty\@clubpenalty \everypar{}%
7564 \fi
7565 }%
7566 }{}

```

## 36 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.

```

7567 \ifHy@hyperfootnotes
7568   \newcounter{Hfootnote}%
7569   \let\H@@@footnotetext\@footnotetext
7570   \let\H@@@footnotemark\@footnotemark
7571   \def\@xfootnotenext[#1]{%
7572     \begingroup
7573       \csname c@\@mpfn\endcsname #1\relax
7574       \unrestored@protected@xdef\@thefnmark{\thempfn}%
7575     \endgroup
7576     \ifx\@footnotetext\@mpfootnotetext
7577       \expandafter\H@@@mpfootnotetext
7578     \else
7579       \expandafter\H@@@footnotetext
7580     \fi
7581   }%
7582   \def\@xfootnotemark[#1]{%
7583     \begingroup
7584       \c@footnote #1\relax
7585       \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7586     \endgroup
7587     \H@@@footnotemark
7588   }%
7589   \let\H@@@mpfootnotetext\@mpfootnotetext
7590   \long\def\@mpfootnotetext#1{%
7591     \H@@@mpfootnotetext{%
7592       \ifHy@nesting
7593         \expandafter\ltx@firstoftwo
7594       \else
7595         \expandafter\ltx@secondoftwo
7596       \fi
7597     }%
7598     \expandafter\hyper@@@anchor\expandafter{%
7599       \Hy@footnote@currentHref
7600     }{#1}%
7601   }{%
7602     \Hy@raisedlink{%
7603       \expandafter\hyper@@@anchor\expandafter{%
7604         \Hy@footnote@currentHref
7605       }{\relax}%
7606     }#1%
7607   }%
7608   }%
7609 }%
7610 \long\def\@footnotetext#1{%
7611   \H@@@footnotetext{%
7612     \ifHy@nesting
7613       \expandafter\ltx@firstoftwo
7614     \else
7615       \expandafter\ltx@secondoftwo
7616     \fi

```

```

7617  {%
7618    \expandafter\hyper@@anchor\expandafter{%
7619      \Hy@footnote@currentHref
7620    }{#1}%
7621  }{%
7622    \Hy@raisedlink{%
7623      \expandafter\hyper@@anchor\expandafter{%
7624        \Hy@footnote@currentHref
7625      }\relax}%
7626    }%
7627    \let\@currentHref\Hy@footnote@currentHref
7628    \let\@currentlabelname\@empty
7629    #1%
7630  }%
7631 }%
7632 }%

```

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.

```

7633 \def\@footnotemark{%
7634   \leavevmode
7635   \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7636   \stepcounter{Hfootnote}%
7637   \global\let\Hy@saved@currentHref\@currentHref
7638   \hyper@makecurrent{Hfootnote}%
7639   \global\let\Hy@footnote@currentHref\@currentHref
7640   \global\let\@currentHref\Hy@saved@currentHref
7641   \hyper@linkstart{link}{\Hy@footnote@currentHref}%
7642   \@makefnmark
7643   \hyper@linkend
7644   \ifhmode\spacefactor\@x@sf\fi
7645   \relax
7646 }%

```

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

```

7647 \@ifpackageloaded{tabularx}{%
7648   \let\HyOrg@TX@endtabularx\TX@endtabularx
7649   \def\Hy@tabularx@hook{%
7650     \let\@footnotetext\H@@footnotetext
7651     \let\@footnotemark\H@@footnotemark
7652     \let\@mpfootnotetext\H@@mpfootnotetext
7653   }%
7654   \begingroup
7655     \toks@\expandafter{\TX@endtabularx}%
7656     \xdef\Hy@gtemp{%
7657       \noexpand\Hy@tabularx@hook
7658       \the\toks@
7659     }%
7660   \endgroup
7661   \let\TX@endtabularx\Hy@gtemp
7662 }{}%

```

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

```

7663 \ifpackageloaded{longtable}{%
7664   \CheckCommand*{\LT@p@ftntext}[1]{%
7665     \edef\@tempa{%
7666       \the\LT@p@ftn
7667       \noexpand\footnotetext[\the\c@footnote]%
7668     }%
7669     \global\LT@p@ftn\expandafter{\@tempa{#1}}%
7670   }%
7671   \long\def\LT@p@ftntext#1{%
7672     \edef\@tempa{%
7673       \the\LT@p@ftn
7674       \begingroup
7675         \noexpand\c@footnote=\the\c@footnote\relax
7676         \noexpand\protected@xdef\noexpand\@thefnmark{%
7677           \noexpand\thempfn
7678         }%
7679         \noexpand\Hy@LT@footnotetext{%
7680           \Hy@footnote@currentHref
7681         }%
7682       }%
7683       \global\LT@p@ftn\expandafter{%
7684         \@tempa{#1}%
7685       \endgroup
7686     }%
7687   }%
7688   \long\def\Hy@LT@footnotetext#1#2{%
7689     \H@@@footnotetext{%
7690       \ifHy@nesting
7691         \hyper@@@anchor{#1}{#2}%
7692       \else
7693         \Hy@raisedlink{%
7694           \hyper@@@anchor{#1}{\relax}%
7695         }%
7696         \def\@currentHref{#1}%
7697         \let\@currentlabelname\@empty
7698         #2%
7699       \fi
7700     }%
7701   }%
7702 }{}%
```

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

```

7703 \ifpackageloaded{fancyvrb}{%
7704   \def\V@@@footnotetext{%
7705     \insert\footins\bgroup
7706     \csname reset@font\endcsname
7707     \footnotesize
7708     \interlinepenalty\interfootnotelinepenalty
7709     \splittopskip\footnotesep
7710     \splitmaxdepth\dp\strutbox
7711     \floatingpenalty \@MM
7712     \hsize\columnwidth
7713     \@parboxrestore
7714     \edef\@currentlabel{\csname p@footnote\endcsname\@thefnmark}%
7715     \@makefnmark{}%
7716     \rule{\z@}{\footnotesep}%

```



```

7717 \bgroup
7718 \aftergroup\V@@@footnotetext
7719 \Hy@raisedlink{%
7720   \expandafter\hyper@@anchor\expandafter{%
7721     \Hy@footnote@currentHref
7722   }\relax}%
7723 }%
7724 \let\@currentHref\Hy@footnote@currentHref
7725 \let\@currentlabelname\@empty
7726 \ignorespaces
7727 }%
7728 }{}%

```

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

```

7729 \def\Hy@temp#1{%
7730   \begingroup
7731     \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7732   \endgroup
7733   \@footnotemark
7734 }%
7735 \ifx\Hy@temp\footref
7736   \def\footref#1{%
7737     \begingroup
7738       \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7739     \endgroup
7740     \H@@@footnotemark
7741   }%
7742 \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.

```

7743 \let\HyOrg@maketitle\maketitle
7744 \def\maketitle{%
7745   \let\Hy@saved@footnotemark\@footnotemark
7746   \let\Hy@saved@footnotetext\@footnotetext
7747   \let\@footnotemark\H@@@footnotemark
7748   \let\@footnotetext\H@@@footnotetext
7749   \@ifnextchar[\Hy@maketitle@optarg{% ]
7750     \HyOrg@maketitle
7751     \Hy@maketitle@end
7752   }%
7753 }%
7754 \def\Hy@maketitle@optarg[#1]{%
7755   \HyOrg@maketitle[{#1}]%
7756   \Hy@maketitle@end
7757 }%
7758 \def\Hy@maketitle@end{%
7759   \ifx\@footnotemark\H@@@footnotemark
7760     \let\@footnotemark\Hy@saved@footnotemark
7761   \fi
7762   \ifx\@footnotetext\H@@@footnotetext
7763     \let\@footnotetext\Hy@saved@footnotetext
7764   \fi
7765 }%

```

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

```

7766 \def\realfootnote{%
7767   \ifnextchar[\@xfootnote{%
7768     \stepcounter{\@mpfn}%
7769     \protected@xdef\@thefnmark{\thempfn}%
7770     \H@@footnotemark\H@@footnotetext
7771   }%
7772 }%

7773 \fi
7774 \Hy@DisableOption{hyperfootnotes}

7775 </package>
7776 <*check>
7777 \checklatex
7778 \checkcommand\def\@xfootnotenext[#1]{%
7779   \begingroup
7780   \csname c@\@mpfn\endcsname #1\relax
7781   \unrestored@protected@xdef\@thefnmark{\thempfn}%
7782 \endgroup
7783 \@footnotetext
7784 }
7785 \checkcommand\def\@xfootnotemark[#1]{%
7786   \begingroup
7787   \c@footnote #1\relax
7788   \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7789 \endgroup
7790 \@footnotemark
7791 }
7792 \checkcommand\def\@footnotemark{%
7793   \leavevmode
7794   \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7795   \@makefnmark
7796   \ifhmode\spacefactor\@x@sf\fi
7797   \relax
7798 }
7799 </check>
7800 <*package>

```

## 37 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.

```

7801 \def\caption{%
7802   \ifx\@cuptype\@undefined
7803     \@latex@error{\noexpand\caption outside float}\@ehd
7804     \expandafter\@gobble
7805   \else
7806     \H@refstepcounter\@cuptype
7807     \let\Hy@tempa\@caption
7808     \@ifundefined{float@caption}{%
7809       }{%
7810         \expandafter\ifx\csname @float@c@\@cuptype\endcsname
7811           \float@caption
7812         \let\Hy@tempa\Hy@float@caption
7813       }
7814     }%
7815     \expandafter\@firstofone

```

```

7816 \fi
7817 {\@dblarg{\Hy@tempa\@captype}}%
7818 }
7819 \long\def\@caption#1[#2]#3{%
7820 \expandafter\ifx\csname if@capstart\expandafter\endcsname
7821 \csname iftrue\endcsname
7822 \global\let\@currentHref\hc@currentHref
7823 \else
7824 \hyper@makecurrent{\@captype}%
7825 \fi
7826 \@ifundefined{NR@gettitle}{%
7827 \def\@currentlabelname{#2}%
7828 }{%
7829 \NR@gettitle{#2}%
7830 }%
7831 \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
7832 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7833 }%
7834 \begingroup
7835 \@parboxrestore
7836 \if@minipage
7837 \setminipage
7838 \fi
7839 \normalsize
7840 \expandafter\ifx\csname if@capstart\expandafter\endcsname
7841 \csname iftrue\endcsname
7842 \global\@capstartfalse
7843 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
7844 \else
7845 \@makecaption{\csname fnum@#1\endcsname}{%
7846 \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

7847 \ifHy@nesting
7848 \expandafter\hyper@@@anchor\expandafter{\@currentHref}{#3}%
7849 \else
7850 \Hy@raisedlink{%
7851 \expandafter\hyper@@@anchor\expandafter{%
7852 \@currentHref
7853 }\relax}%
7854 }%
7855 #3%
7856 \fi
7857 }%
7858 \fi
7859 \par
7860 \endgroup
7861 }

```

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’.

```

7862 \let\Hy@float@caption\@caption
7863 \newcommand{\HyNew@float@makebox}[1]{%
7864 \HyOrg@float@makebox{%
7865 #1\relax

```

```

7866 \ifx\Hy@float@currentHref\@undefined
7867 \else
7868 \expandafter\hyper@anchor\expandafter{%
7869 \Hy@float@currentHref
7870 }{\relax}%
7871 \global\let\Hy@float@currentHref\@undefined
7872 \fi
7873 }%
7874 }%
7875 \@ifpackageloaded{float}{%
7876 \def\Hy@float@caption{%
7877 \ifx\Hy@float@currentHref\@undefined
7878 \hyper@makecurrent{\@capttype}%
7879 \global\let\Hy@float@currentHref\@currentHref
7880 \else
7881 \let\@currentHref\Hy@float@currentHref
7882 \fi
7883 \float@caption
7884 }%
7885 \let\HyOrg@float@makebox\float@makebox
7886 \let\float@makebox\HyNew@float@makebox
7887 }{}

7888 \endpackage
7889 \ifcheck
7890 \checklatex[1999/06/01 - 2000/06/01]
7891 \checkcommand\def\caption{%
7892 \ifx\@capttype\@undefined
7893 \@latex@error{\noexpand\caption outside float}\@ehd
7894 \expandafter\@gobble
7895 \else
7896 \refstepcounter\@capttype
7897 \expandafter\@firstofone
7898 \fi
7899 {\@dblarg{\@caption\@capttype}}%
7900 }
7901 \checkcommand\long\def\@caption#1[#2]#3{%
7902 \par
7903 \addcontentsline{\csname ext@#1\endcsname}{#1}{%
7904 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7905 }%
7906 \begingroup
7907 \@parboxrestore
7908 \if@minipage
7909 \setminipage
7910 \fi
7911 \normalsize
7912 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
7913 \endgroup
7914 }
7915 \endcheck
7916 \ifcheck

```

## 38 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 `\babcite`; 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.

```

7917 \def\hyper@natlinkstart#1{%
7918   \Hy@backout{#1}%
7919   \hyper@linkstart{cite}{cite.#1}%
7920   \def\hyper@nat@current{#1}%
7921 }
7922 \def\hyper@natlinkend{%
7923   \hyper@linkend
7924 }
7925 \def\hyper@natlinkbreak#1#2{%
7926   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
7927 }
7928 \def\hyper@natanchorstart#1{%
7929   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
7930 }
7931 \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.

```

7932 \ltx@ifundefined{NAT@parse}{%
7933   \providecommand*\@extra@binfo{}%
7934   \providecommand*\@extra@b@citeb{}%
7935   \def\babcite#1#2{%
7936     \@newl@bel{b}{#1\@extra@binfo}{%
7937       \hyper@link{cite}{cite.#1\@extra@b@citeb}{#2}%
7938     }%
7939   }%
7940   \gdef\@extra@binfo{}%

```

Package *babel* redefines `\babcite` with macro `\bbl@cite@choice`. It needs to be overwritten to avoid the warning “Label(s) may have changed.”.

```

7941 \let\Hy@babcite\babcite
7942 \begingroup
7943   \@ifundefined{bbl@cite@choice}{}{%
7944     \g@addto@macro\bbl@cite@choice{%
7945       \let\babcite\Hy@babcite
7946     }%
7947   }%
7948 \endgroup

```

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

```

7949 \providecommand*\@BIBLABEL{\@biblabel}%
7950 \def\@bibitem[#1]#2{%
7951   \@skiphyperrreftrue
7952   \H@item[%
7953     \ifx\Hy@raisedlink\@empty
7954       \hyper@anchorstart{cite.#2\@extra@b@citeb}%
7955       \@BIBLABEL{#1}%
7956     \hyper@anchorend
7957   \else
7958     \Hy@raisedlink{%

```

```

7959     \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
7960     }%
7961     \@BIBLABEL{#1}%
7962     \fi
7963     \hfill
7964     ]%
7965     \@skiphyperreffalse
7966     \if@filesw
7967         \begingroup
7968             \let\protect\noexpand
7969             \immediate\write\@auxout{%
7970                 \string\bibcite{#2}{#1}%
7971             }%
7972         \endgroup
7973     \fi
7974     \ignorespaces
7975 }%

```

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

```

7976 \def\@bibitem#1{%
7977     \@skiphyperrefftrue\H@item\@skiphyperreffalse
7978     \Hy@raisedlink{%
7979         \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
7980     }%
7981     \if@filesw
7982         \begingroup
7983             \let\protect\noexpand
7984             \immediate\write\@auxout{%
7985                 \string\bibcite{#1}{\the\value{\@listctr}}%
7986             }%
7987         \endgroup
7988     \fi
7989     \ignorespaces
7990 }%
7991 }{}

7992 \</package>
7993 \< *check>
7994 \checklatex
7995 \checkcommand\def\@lbibitem[#1]#2{%
7996     \item[\@biblabel{#1}\hfill]%
7997     \if@filesw
7998         {%
7999             \let\protect\noexpand
8000             \immediate\write\@auxout{%
8001                 \string\bibcite{#2}{#1}%
8002             }%
8003         }%
8004     \fi
8005     \ignorespaces
8006 }
8007 \checkcommand\def\@bibitem#1{%
8008     \item
8009     \if@filesw
8010         \immediate\write\@auxout{%
8011             \string\bibcite{#1}{\the\value{\@listctr}}%
8012         }%

```

```

8013 \fi
8014 \ignorespaces
8015 }
8016 </check>
8017 <*package>

```

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

```

8018 \@ifclassloaded{revtex}{%
8019 \Hy@Info{*** compatibility with revtex **** }%
8020 \def\revtex@checking#1#2{%
8021 \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
8022 \expandafter\def\csname b@#1\endcsname{#2}%
8023 \@SetMaxRnhefLabel{#1}%
8024 \expandafter\let\csname b@#1\endcsname\T@temp
8025 }%

```

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

```

8026 \@ifundefined{CITE}{\def\CITE{\@cite}}{}%
8027 \providecommand*\@extra@b@citeb{}%
8028 \def\CITEX[#1]#2{%
8029 \let\@citea\@empty
8030 \leavevmode
8031 \unskip
8032 $\{ %
8033 \scriptstyle
8034 \@CITE{%
8035 \@for\@citeb:=#2\do{%
8036 \@citea
8037 \def\@citea{,\penalty\@m\ }%
8038 \edef\@citeb{\expandafter\@firstofone\@citeb}%
8039 \if@filesw
8040 \immediate\write\@auxout{\string\citation{\@citeb}}%
8041 \fi
8042 \@ifundefined{b@\@citeb\extra@b@citeb}{%
8043 \mbox{\reset@font\bfseries ?}%
8044 \G@refundefinedtrue
8045 \@latex@warning{%
8046 Citation ‘\@citeb’ on page \thepage \space undefined%
8047 }%
8048 }%
8049 {\csname b@\@citeb\@extra@b@citeb\endcsname}%
8050 }%
8051 }%
8052 }{#1}%
8053 }$%
8054 }%

```

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

```

8055 \def\@citex[#1]#2{%
8056 \let\@citea\@empty
8057 \@cite{%
8058 \@for\@citeb:=#2\do{%
8059 \@citea
8060 \def\@citea{,\penalty\@m\ }%

```

```

8061 \edef\@citeb{\expandafter\@firstofone\@citeb}%
8062 \if@filesw
8063 \immediate\write\@auxout{\string\citation{\@citeb}}}%
8064 \fi
8065 \ifundefined{b@\@citeb\@extra@b@citeb}{%
8066 \mbox{\reset@font\bfseries ?}%
8067 \G@refundefinedtrue
8068 \@latex@warning{%
8069 Citation '\@citeb' on page \thepage \space undefined%
8070 }%
8071 }{%
8072 \hbox{\csname b@\@citeb\@extra@b@citeb\endcsname}%
8073 }%
8074 }%
8075 }{#1}%
8076 }%
8077 }{}

```

## 38.1 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.

```

8078 \@ifpackageloaded{harvard}{%
8079 \Hy@AtBeginDocument{%
8080 \Hy@Info{*** compatibility with harvard **** }%
8081 \Hy@raiselinksfalse
8082 \def\harvardcite#1#2#3#4{%
8083 \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{}{cite.#1}{#2}}%
8084 \global\@namedef{HAR@an@#1}{\hyper@link[cite]{}{cite.#1}{#3}}%
8085 \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{}{cite.#1}{#4}}%
8086 \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
8087 }%
8088 \def\HAR@citetoaux#1{%
8089 \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
8090 \ifHy@backref
8091 \ifx\@empty\@currentlabel
8092 \else
8093 \@bsphack
8094 \if@filesw
8095 \protected@write\@auxout{}{%
8096 \string\@writefile{brf}{%
8097 \string\backcite{#1}{%
8098 {\thepage}{\@currentlabel}{\@currentHref}%
8099 }%
8100 }%
8101 }%
8102 \fi
8103 \@esphack
8104 \fi
8105 \fi
8106 }%

```



```

8107 \def\harvarditem{%
8108   \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}}%
8109 }%
8110 \def\@harvarditem[#1]#2#3#4#5\par{%
8111   \item[]%
8112   \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
8113   \if@filesw
8114     \begingroup
8115       \def\protect##1{\string ##1\space}%
8116       \ifthenelse{\equal{#1}{\null}}{%
8117         {\def\next{{#4}{#2}{#2}{#3}}}%
8118         {\def\next{{#4}{#2}{#1}{#3}}}%
8119       \immediate\write\@auxout{\string\harvardcite\codeof\next}%
8120     \endgroup
8121   \fi
8122   \protect\hspace*{-\labelwidth}%
8123   \protect\hspace*{-\labelsep}%
8124   \ignorespaces
8125   #5%
8126   \ifHy@backref
8127     \newblock
8128     \backref{\csname br@#4\endcsname}%
8129   \fi
8130   \par
8131 }%

```

\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:

```

8132 \long\def\HAR@checkcitations#1#2#3#4{%
8133   \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%
8134   \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
8135     \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#3}}%
8136     \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
8137       \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#4}}%
8138       \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
8139         \else
8140           \@tempswatrue
8141         \fi
8142       \else
8143         \@tempswatrue
8144       \fi
8145     \else
8146       \@tempswatrue
8147     \fi
8148   }%
8149 }%

8150 }{}

```

## 38.2 Package chicago

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

```

8151 \@ifpackageloaded{chicago}{%

```

\citeN

```

8152 \def\citeN{%

```

```

8153 \def\@citeseppen{-1000}%
8154 \def\@cite##1##2{##1}%
8155 \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
8156 \@citedata@opt
8157 }%

\shortciteN
8158 \def\shortciteN{%
8159 \def\@citeseppen{-1000}%
8160 \def\@cite##1##2{##1}%
8161 \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
8162 \@citedata@opt
8163 }%

\@citedata@opt
8164 \def\@citedata@opt{%
8165 \let\@cite@opt\@empty
8166 \@ifnextchar [{%
8167 \@tempswatrue
8168 \@citedatax@opt
8169 }{%
8170 \@tempswafalse
8171 \@citedatax[]%
8172 }%
8173 }%

\@citedatax@opt
8174 \def\@citedatax@opt[#1]{%
8175 \def\@cite@opt{, #1}%
8176 \@citedatax[{#1}]%
8177 }%

8178 }{}

```

## 39 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.

```

8179 \ltx@ifclassloaded{slides}{%
8180 \def\Hy@SlidesFormatOptionalPage#1{(#1)}%
8181 \def\Hy@PageAnchorSlidesPlain{%
8182 \advance\c@page\ltx@one
8183 \edef\Hy@TempPageAnchor{%
8184 \noexpand\hyper@@anchor{%
8185 page.\the\c@slide.\the\c@overlay.\the\c@note%
8186 \ifnum\c@page=\ltx@one
8187 \else
8188 .\the\c@page
8189 \fi
8190 }%
8191 }%
8192 \advance\c@page-\ltx@one

```

```

8193 }%
8194 \def\Hy@PageAnchorSlide{%
8195   \advance\c@page\ltx@one
8196   \ifnum\c@page>\ltx@one
8197     \ltx@ifundefined{theHpage}{%
8198       \protected@edef\Hy@TheSlideOptionalPage{%
8199         \Hy@SlidesFormatOptionalPage{thepage}%
8200       }%
8201     }{%
8202       \protected@edef\Hy@TheSlideOptionalPage{%
8203         \Hy@SlidesFormatOptionalPage{theHpage}%
8204       }%
8205     }%
8206   \else
8207     \def\Hy@TheSlideOptionalPage{}%
8208   \fi
8209   \advance\c@page-\ltx@one
8210   \pdfstringdef\@the@H@page{%
8211     \csname
8212       the%
8213       \ltx@ifundefined{theH\Hy@SlidesPage}{H}%
8214       \Hy@SlidesPage
8215     \endcsname
8216     \Hy@TheSlideOptionalPage
8217   }%
8218   \ltx@gobblethree
8219 }%
8220 \def\Hy@SlidesPage{slide}%
8221 \g@addto@macro\slide{%
8222   \def\Hy@SlidesPage{slide}%
8223 }%
8224 \g@addto@macro\overlay{%
8225   \def\Hy@SlidesPage{overlay}%
8226 }%
8227 \g@addto@macro\note{%
8228   \def\Hy@SlidesPage{note}%
8229 }%
8230 }{%
8231   \def\Hy@PageAnchorSlidesPlain{}%
8232   \def\Hy@PageAnchorSlide{}%
8233 }
8234 \def\Hy@EveryPageAnchor{%
8235   \Hy@DistillerDestFix
8236   \ifHy@pageanchor
8237     \ifHy@hypertextnames
8238       \ifHy@plainpages
8239         \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
8240         \Hy@PageAnchorSlidesPlain
8241       \else
8242         \begingroup
8243           \let\@number\@firstofone
8244           \Hy@unicodedefalse
8245           \Hy@PageAnchorSlide
8246           \pdfstringdef\@the@H@page{\thepage}%
8247         \endgroup
8248         \EdefUnescapeString\@the@H@page{\@the@H@page}%
8249         \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%

```

```

8250 \fi
8251 \else
8252 \Hy@GlobalStepCount\Hy@pagecounter
8253 \def\Hy@TempPageAnchor{%
8254 \hyper@@anchor{page.\the\Hy@pagecounter}%
8255 }%
8256 \fi
8257 \vbox to 0pt{%
8258 \kern\voffset
8259 \kern\topmargin
8260 \kern-1bp\relax
8261 \hbox to 0pt{%
8262 \kern\hoffset
8263 \kern\ifodd\value{page}%
8264 \oddsidemargin
8265 \else
8266 \evensidemargin
8267 \fi
8268 \kern-1bp\relax
8269 \Hy@TempPageAnchor\relax
8270 \hss
8271 }%
8272 \vss
8273 }%
8274 \fi
8275 }
8276 \g@addto@macro\Hy@EveryPageBoxHook{%
8277 \Hy@EveryPageAnchor
8278 }

```

## 40 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.

```

8279 \def\addcontentsline#1#2#3{% toc extension, type, tag
8280 \begingroup
8281 \let\label\@gobble
8282 \ifx\@currentHref\@empty
8283 \Hy@Warning{%
8284 No destination for bookmark of \string\addcontentsline,%
8285 \MessageBreak destination is added%
8286 }%
8287 \phantomsection
8288 \fi
8289 \expandafter\ifx\csname toplevel@#2\endcsname\relax
8290 \begingroup
8291 \def\Hy@tempa{#1}%
8292 \ifx\Hy@tempa\Hy@bookmarkstype
8293 \Hy@WarningNoLine{%
8294 bookmark level for unknown #2 defaults to 0%
8295 }%
8296 \else
8297 \Hy@Info{bookmark level for unknown #2 defaults to 0}%
8298 \fi
8299 \endgroup

```

```

8300 \expandafter\gdef\csname toplevel@#2\endcsname{0}%
8301 \fi
8302 \edef\Hy@toplevel{\csname toplevel@#2\endcsname}%
8303 \Hy@writebookmark{\csname the#2\endcsname}%
8304 {#3}%
8305 {\@currentHref}%
8306 {\Hy@toplevel}%
8307 {#1}%
8308 \ifHy@verbose
8309 \begingroup
8310 \def\Hy@tempa{#3}%
8311 \@onelevel@sanitize\Hy@tempa
8312 \let\temp@online\on@line
8313 \let\on@line\@empty
8314 \Hy@Info{%
8315 bookmark\temp@online:\MessageBreak
8316 thecounter {\csname the#2\endcsname}\MessageBreak
8317 text {\Hy@tempa}\MessageBreak
8318 reference {\@currentHref}\MessageBreak
8319 toplevel {\Hy@toplevel}\MessageBreak
8320 type {#1}%
8321 }%
8322 \endgroup
8323 \fi
8324 \addtocontents{#1}{%
8325 \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
8326 }%
8327 \endgroup
8328 }
8329 \def\contentsline#1#2#3#4{%
8330 \begingroup
8331 \Hy@safe@activetrue
8332 \edef\x{\endgroup
8333 \def\noexpand\Hy@tocdestname{#4}%
8334 }\x
8335 \ifx\Hy@tocdestname\ltx@empty
8336 \csname l@#1\endcsname{#2}{#3}%
8337 \else
8338 \ifcase\Hy@linktoc % none
8339 \csname l@#1\endcsname{#2}{#3}%
8340 \or % section
8341 \csname l@#1\endcsname{%
8342 \hyper@linkstart{link}{\Hy@tocdestname}{#2}\hyper@linkend
8343 }{#3}%
8344 \or % page
8345 \csname l@#1\endcsname{{#2}}{%
8346 \hyper@linkstart{link}{\Hy@tocdestname}{#3}\hyper@linkend
8347 }%
8348 \else % all
8349 \csname l@#1\endcsname{%
8350 \hyper@linkstart{link}{\Hy@tocdestname}{#2}\hyper@linkend
8351 }{%
8352 \hyper@linkstart{link}{\Hy@tocdestname}{#3}\hyper@linkend
8353 }%
8354 \fi
8355 \fi
8356 }

```

```

8357 </package>
8358 <*check>
8359 \checklatex
8360 \checkcommand\def\addcontentsline#1#2#3{%
8361   \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}}%
8362 }
8363 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
8364 </check>
8365 <*package>

```

## 41 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.

```

8366 \let\H@definecounter\@definecounter
8367 \def\@definecounter#1{%
8368   \H@definecounter{#1}%
8369   \expandafter\gdef\csname theH#1\endcsname{\arabic{#1}}%
8370 }

```

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.

```

8371 \let\H@newctr\@newctr
8372 \def\@newctr#1[#2]{%
8373   \H@newctr#1[#2]%
8374   \expandafter\gdef\csname theH#1\endcsname{%
8375     \csname the\@ifundefined{theH#2}{H}{H}#2\endcsname.\arabic{#1}%
8376   }%
8377 }

```

## 42 AMS $\LaTeX$ compatibility

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

Version 6.77p uses a patch by Ross Moore.

```

8378 \@ifpackageloaded{amsmath}{%
8379   \def\Hy@make@anchor{%
8380     \Hy@MakeCurrentHrefAuto{AMS}%
8381     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
8382   }%
8383   \def\Hy@make@df@tag@@#1{%
8384     \gdef\df@tag{%
8385       \maketag@@@{\Hy@make@anchor#1}%
8386       \def\@currentlabel{#1}%
8387     }%
8388   }%
8389   \def\Hy@make@df@tag@@@#1{%
8390     \gdef\df@tag{%
8391       \tagform@{\Hy@make@anchor#1}%
8392       \toks@{\xp{p@equation{#1}}}%
8393       \edef\@currentlabel{the\toks@}%
8394     }%

```

```

8395 }%
8396 \let\HyOrg@make@df@tag@@\make@df@tag@@
8397 \let\HyOrg@make@df@tag@@@\make@df@tag@@@
8398 \let\make@df@tag@@\Hy@make@df@tag@@
8399 \let\make@df@tag@@@\Hy@make@df@tag@@@
8400 }{}

```

Only play with `\seteqlebal` if we are using pdf<sub>tex</sub>. Other drivers cause problems; requested by Michael Downes (AMS).

```

8401 \@ifpackagewith{hyperref}{pdftex}{%
8402   \let\H@seteqlabel\@seteqlabel
8403   \def\@seteqlabel#1{%
8404     \H@seteqlabel{#1}%
8405     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
8406     \Hy@raisedlink{%
8407       \hyper@anchorstart{\@currentHref}\hyper@anchorend
8408     }%
8409   }%
8410 }{}

```

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}}}

```

## 42.1 `\@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.

```

8411 \let\HyOrg@addtoreset\@addtoreset
8412 \def\@addtoreset#1#2{%
8413   \HyOrg@addtoreset{#1}{#2}%
8414   \expandafter\xdef\csname theH#1\endcsname{%
8415     \expandafter\noexpand
8416     \csname the\@ifundefined{theH#2}{}H#2\endcsname
8417     .\noexpand\the\noexpand\value{#1}%
8418   }%
8419 }

```

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

```

8420 \</package>
8421 \<{*check>
8422 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
8423 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
8424   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
8425     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
8426       \@addtoreset{#2}{#3}%
8427       \@xp\xdef\csname the#2\endcsname{%
8428         \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8429       }%

```

```

8430 }%
8431 }%
8432 }%
8433 \</check>
8434 \<*package>
8435 \<ifpackageloaded{amsmath}{%
8436 \<ifpackagelater{amsmath}{1999/12/14}{%
8437 \<renewcommand*{\numberwithin}[3][\arabic]{%
8438 \<ifundefined{c@#2}{\<@nocounterr{#2}}{%
8439 \<ifundefined{c@#3}{\<@nocnterr{#3}}{%
8440 \HyOrg@addtoreset{#2}{#3}%
8441 \<@xp\xdef\csname the#2\endcsname{%
8442 \<@xp\@nx\csname the#3\endcsname.\@nx#1{#2}%
8443 }%
8444 \<@xp\xdef\csname theH#2\endcsname{%
8445 \<@xp\@nx
8446 \csname the\<ifundefined{theH#3}{H#3\endcsname
8447 .\@nx#1{#2}%
8448 }%
8449 }%
8450 }%
8451 }%
8452 }{%
8453 \Hy@WarningNoLine{%
8454 \string\<numberwithin\space of package 'amsmath' %
8455 only fixed\MessageBreak
8456 for version 2000/06/06 v2.12 or newer%
8457 }%
8458 }%
8459 }{}

```

## 43 Included figures

Simply intercept the low level graphics package macro.

```

8460 \ifHy@hyperfigures
8461 \let\Hy@Gin@setfile\Gin@setfile
8462 \def\Gin@setfile#1#2#3{%
8463 \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
8464 }%
8465 \fi
8466 \Hy@DisableOption{hyperfigures}

```

## 44 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.

```

8467 \ifHy@hyperindex

```



```

8468 \def\HyInd@ParenLeft{({}%
8469 \def\HyInd@ParenRight{)}}%
8470 \def\hyperindexformat#1#2{%
8471   \let\HyOrg@hyperpage\hyperpage
8472   \let\hyperpage\@firstofone
8473   #1{\HyOrg@hyperpage{#2}}%
8474   \let\hyperpage\HyOrg@hyperpage
8475 }%
8476 \Hy@nextfalse
8477 \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
8478 \@ifpackageloaded{index}{\Hy@nexttrue}{}%
8479 \@ifpackageloaded{amsmidx}{\Hy@nexttrue}{}%
8480 \begingroup
8481 \lccode'\|=\expandafter'\HyInd@EncapChar\relax
8482 \lccode'\|/'=\|\\relax
8483 \lowercase{\endgroup
8484 \ifHy@next
8485   \let\HyInd@org@wrindex\@wrindex
8486   \def\@wrindex#1#2{\HyInd@@wrindex{#1}#2||\\}%
8487   \def\HyInd@@wrindex#1#2|#3|#4\\{%
8488     \ifx\\#3\\%
8489       \HyInd@org@wrindex{#1}{#2|hyperpage}%
8490     \else
8491       \HyInd@@@wrindex{#1}{#2}#3\\%
8492     \fi
8493   }%
8494   \def\HyInd@@@wrindex#1#2#3#4\\{%
8495     \def\Hy@temp@A{#3}%
8496     \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8497       \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8498       \relax
8499       \HyInd@org@wrindex{#1}{%
8500         #2|hyperindexformat{/#3#4}%
8501       }%
8502     \else
8503       \ifx\\#4\\%
8504         \ifx\Hy@temp@A\HyInd@ParenRight
8505           \HyInd@org@wrindex{#1}{#2|#3}%
8506         \else
8507           \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
8508         \fi
8509       \else
8510         \HyInd@org@wrindex{#1}{%
8511           #2|#3hyperindexformat{/#4}%
8512         }%
8513       \fi
8514     \fi
8515   }%
8516   \else
8517     \def\@wrindex#1{\@wrindex#1||\\}%
8518     \def\@wrindex#1|#2|#3\\{%
8519       \if@filesw
8520         \ifx\\#2\\%
8521           \protected@write\@indexfile{}{%
8522             \string\indexentry{#1|hyperpage}{\thepage}%
8523           }%
8524         \else

```

```

8525     \HyInd@@@wrindex{#1}#2\\%
8526     \fi
8527 \fi
8528 \endgroup
8529 \@esphack
8530 }%
8531 \def\HyInd@@@wrindex#1#2#3\\{%
8532 \def\Hy@temp@A{#2}%
8533 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8534     \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8535     \relax
8536     \protected@write\@indexfile{}{%
8537         \string\indexentry{%
8538             #1|hyperindexformat{/#2#3}%
8539         }\thepage}%
8540     }%
8541 \else
8542     \ifx\\#3\\%
8543         \ifx\Hy@temp@A\HyInd@ParenRight
8544             \protected@write\@indexfile{}{%
8545                 \string\indexentry{#1|#2}\thepage}%
8546             }%
8547         \else
8548             \protected@write\@indexfile{}{%
8549                 \string\indexentry{#1|#2hyperpage}\thepage}%
8550             }%
8551         \fi
8552     \else
8553         \protected@write\@indexfile{}{%
8554             \string\indexentry{%
8555                 #1|#2hyperindexformat{/#3}%
8556             }\thepage}%
8557         }%
8558     \fi
8559 \fi
8560 }%
8561 \fi
8562 }%
8563 \fi
8564 \Hy@DisableOption{hyperindex}
8565 \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.

```
8566 \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.

```

8567 \def\hyperpage#1{%
8568     \HyInd@hyperpage#1\nohyperpage{}\@nil
8569 }
8570 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{%
8571     \HyInd@@@hyperpage{#1}%
8572     #2%
8573     \def\Hy@temp{#3}%
8574     \ifx\Hy@temp\@empty
8575     \else

```

```

8576 \ltx@ReturnAfterFi{%
8577 \HyInd@hyperpage#3\@nil
8578 }%
8579 \fi
8580 }
8581 \def\HyInd@@hyperpage#1{\@hyperpage#1----\}
8582 \def\@hyperpage#1--#2--#3\{%
8583 \ifx\#2\%
8584 \@commahyperpage{#1}%
8585 \else
8586 \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
8587 \fi
8588 }
8589 \def\@commahyperpage#1{\@commahyperpage#1, \}
8590 \def\@commahyperpage#1, #2,#3\{%
8591 \ifx\#2\%
8592 \HyInd@pagelink{#1}%
8593 \else
8594 \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
8595 \fi
8596 }

```

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

```

8597 \def\HyInd@pagelink#1{%
8598 \begingroup
8599 \toks@={}%
8600 \HyInd@removespaces#1 \@nil
8601 \endgroup
8602 }
8603 \def\HyInd@removespaces#1 #2\@nil{%
8604 \toks@=\expandafter{\the\toks@#1}%
8605 \ifx\#2\%
8606 \edef\x{\the\toks@}%
8607 \ifx\x\@empty
8608 \else
8609 \hyperlink{page.\the\toks@}{\the\toks@}%
8610 \fi
8611 \else
8612 \ltx@ReturnAfterFi{%
8613 \HyInd@removespaces#2\@nil
8614 }%
8615 \fi
8616 }

```

## 45 Compatibility with foiltex

```

8617 \@ifclassloaded{foils}{%
8618 \providecommand*\ext@table{lot}%
8619 \providecommand*\ext@figure{lof}%
8620 }{}

```

## 46 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)).

```

8621 \@ifclassloaded{seminar}{%
8622 \Hy@seminarslidestrue
8623 \providecommand\theHslide{\arabic{slide}}%
8624 }{%
8625 \Hy@seminarslidesfalse
8626 }
8627 \@ifpackageloaded{slidesec}{%
8628 \providecommand\theHslidesection {\arabic{slidesection}}%
8629 \providecommand\theHslidesubsection{%
8630 \theHslidesection.\arabic{slidesubsection}}%
8631 }%
8632 \def\slide@heading[#1]#2{%
8633 \H@refstepcounter{slidesection}%
8634 \@addtoreset{slidesubsection}{slidesection}%
8635 \addtocontents{los}{%
8636 \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
8637 {\@SCTR}{\slideheading.\theslidesection}}%
8638 }%
8639 \def\Hy@tempa{#2}%
8640 \ifx\Hy@tempa\@empty
8641 \else
8642 {%
8643 \edef\@currentlabel{%
8644 \csname p@slidesection\endcsname\theslidesection
8645 }%
8646 \makeslideheading{#2}%
8647 }%
8648 \fi
8649 \gdef\theslideheading{#1}%
8650 \gdef\theslidesubheading{}%
8651 \ifHy@bookmarksnumbered
8652 \def\Hy@slidetitle{\theslidesection\space #1}%
8653 \else
8654 \def\Hy@slidetitle{#1}%
8655 \fi
8656 \ifHy@hypertextnames
8657 \ifHy@naturalnames
8658 \hyper@@@anchor{slideheading.\theslidesection}{\relax}%
8659 \Hy@writebookmark
8660 {\theslidesection}%
8661 {\Hy@slidetitle}%
8662 {slideheading.\theslidesection}%
8663 {1}%
8664 {toc}%
8665 \else
8666 \hyper@@@anchor{slideheading.\theHslidesection}{\relax}%
8667 \Hy@writebookmark
8668 {\theslidesection}%
8669 {\Hy@slidetitle}%
8670 {slideheading.\theHslidesection}%
8671 {1}%
8672 {toc}%
8673 \fi
8674 \else
8675 \Hy@GlobalStepCount\Hy@linkcounter
8676 \hyper@@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
8677 \Hy@writebookmark

```

```

8678     {\theslidesubsection}%
8679     {\Hy@slidetitle}%
8680     {slideheading.\the\Hy@linkcounter}%
8681     {1}%
8682     {toc}%
8683   \fi
8684 }%
8685 \def\slide@subheading[#1]#2{%
8686   \H@refstepcounter{slidesubsection}%
8687   \addtocontents{los}{%
8688     \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
8689     {\@SCTR}{slideheading.\theslidesubsection}%
8690   }%
8691   \def\Hy@tempa{#2}%
8692   \ifx\Hy@tempa\@empty
8693   \else
8694     {%
8695       \edef\@currentlabel{%
8696         \csname p@slidesubsection\endcsname\theslidesubsection
8697       }%
8698       \makeslidesubheading{#2}%
8699     }%
8700   \fi
8701   \gdef\theslidesubheading{#1}%
8702   \ifHy@bookmarksnumbered
8703     \def\Hy@slidetitle{\theslidesubsection\space #1}%
8704   \else
8705     \def\Hy@slidetitle{#1}%
8706   \fi
8707   \ifHy@hypertextnames
8708     \ifHy@naturalnames
8709       \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
8710       \Hy@writebookmark
8711         {\theslidesubsection}%
8712         {\Hy@slidetitle}%
8713         {slideheading.\theslidesubsection}%
8714         {2}%
8715         {toc}%
8716     \else
8717       \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
8718       \Hy@writebookmark
8719         {\theslidesubsection}%
8720         {\Hy@slidetitle}%
8721         {slideheading.\theHslidesubsection}%
8722         {2}%
8723         {toc}%
8724     \fi
8725   \else
8726     \Hy@GlobalStepCount\Hy@linkcounter
8727     \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
8728     \Hy@writebookmark
8729       {\theslidesubsection}%
8730       {\Hy@slidetitle}%
8731       {slideheading.\the\Hy@linkcounter}%
8732       {1}%
8733       {toc}%
8734   \fi

```

```

8735 }%
8736 \providecommand*{\listslidenamename}{List of Slides}%
8737 \def\listofslides{%
8738   \section*{%
8739     \listslidenamename
8740     \@mkboth{%
8741       \expandafter\MakeUppercase\listslidenamename
8742     }{%
8743       \expandafter\MakeUppercase\listslidenamename
8744     }%
8745   }%
8746   \def\l@slide##1##2##3##4{%
8747     \slide@undottedcline{%
8748       \slidenumberline{##3}{\hyperlink{##4}{##2}}}%
8749     }}%
8750 }%
8751 \let\l@subslide\l@slide
8752 \@startlos
8753 }%
8754 \def\slide@contents{%
8755   \def\l@slide##1##2##3##4{%
8756     \slide@ccline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
8757   }%
8758   \let\l@subslide\@gobblefour
8759   \@startlos
8760 }%
8761 \def\Slide@contents{%
8762   \def\l@slide##1##2##3##4{%
8763     \ifcase\lslide@flag
8764       \message{##1 ** \the\c@slide@section}%
8765       \ifnum##1>\c@slide@section
8766         \def\lslide@flag{1}%
8767       {%
8768         \large
8769         \slide@ccline{%
8770           \slidenumberline{$\rightarrow\bullet$}%
8771           {\hyperlink{##4}{##2}}}%
8772         }{##3}%
8773       }%
8774     \else
8775       {%
8776         \large
8777         \slide@ccline{%
8778           \slidenumberline{$\surd\bullet$}%
8779           {\hyperlink{##4}{##2}}}%
8780         }{##3}%
8781       }%
8782     \fi
8783   \or
8784     \def\lslide@flag{2}%
8785     {%
8786       \large
8787       \slide@ccline{%
8788         \slidenumberline{$\bullet$}%
8789         {\hyperlink{##4}{##2}}}%
8790       }{##3}%
8791     }%

```

```

8792 \or
8793 {%
8794 \large
8795 \slide@cline{%
8796 \slidenumberline{$\bullet$}%
8797 {\hyperlink{###4}{##2}}%
8798 }{##3}%
8799 }%
8800 \fi
8801 }%
8802 \def\l@subslide##1##2##3##4{%
8803 \ifnum\lslide@flag=1 %
8804 \@undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}{}}%
8805 \fi
8806 }%
8807 \def\lslide@flag{0}%
8808 \@startlos
8809 }%
8810 }{}

```

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.)

```

8811 \ifHy@texht
8812 \expandafter\endinput
8813 \fi
8814 \let\real@setref\@setref
8815 \def\@setref#1#2#3{% csnname, extract group, refname
8816 \ifx#1\relax
8817 \protect\G@refundefinedtrue
8818 \nfss@text{\reset@font\bfseries ??}%
8819 \@latex@warning{%
8820 Reference ‘#3’ on page \thepage \space undefined%
8821 }%
8822 \else
8823 \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
8824 \fi
8825 }

```

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

```

8826 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
8827 \begingroup
8828 \toks0={\hyper@link{#5}{#4}}%
8829 \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
8830 \edef\x{\endgroup
8831 \the\toks0 \the\toks1 }%
8832 }%
8833 \x
8834 }
8835 \def\@pagesetref#1#2#3{% csnname, extract macro, ref
8836 \ifx#1\relax
8837 \protect\G@refundefinedtrue
8838 \nfss@text{\reset@font\bfseries ??}%
8839 \@latex@warning{%
8840 Reference ‘#3’ on page \thepage \space undefined%
8841 }%
8842 \else

```

```

8843 \protect\hyper@@link
8844 {\expandafter\@fifthoffive#1}%
8845 {page.\expandafter\@secondoffive#1}%
8846 {\expandafter\@secondoffive#1}%
8847 \fi
8848 }

8849 </package>
8850 <*check>
8851 \checklatex
8852 \checkcommand\def\@setref#1#2#3{%
8853 \ifx#1\relax
8854 \protect\G@refundefinedtrue
8855 \nfss@text{\reset@font\bfseries ??}%
8856 \@latex@warning{%
8857 Reference ‘#3’ on page \thepage\space undefined%
8858 }%
8859 \else
8860 \expandafter#2#1\null
8861 \fi
8862 }
8863 </check>
8864 <*package>

```

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

```

8865 \def\HyRef@StarSetRef#1{%
8866 \begingroup
8867 \Hy@safe@activestru
8868 \edef\x{#1}%
8869 \@onelevel@sanitize\x
8870 \edef\x{\endgroup
8871 \noexpand\HyRef@@StarSetRef
8872 \expandafter\noexpand\csname r@\x\endcsname{\x}%
8873 }%
8874 \x
8875 }
8876 \def\HyRef@@StarSetRef#1#2#3{%
8877 \ifx#1\@undefined
8878 \let#1\relax
8879 \fi
8880 \real@setref#1#3{#2}%
8881 }
8882 \def\@refstar#1{%
8883 \HyRef@StarSetRef{#1}\@firstoffive
8884 }
8885 \def\@pagerefstar#1{%
8886 \HyRef@StarSetRef{#1}\@secondoffive
8887 }
8888 \def\@namerefstar#1{%
8889 \HyRef@StarSetRef{#1}\@thirdoffive
8890 }
8891 \Hy@AtBeginDocument{%
8892 \@ifpackageloaded{varioref}{%
8893 \def\@Refstar#1{%
8894 \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
8895 }%
8896 \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%

```



```

8897 \MakeUppercase#1%
8898 }%
8899 \DeclareRobustCommand*{\Ref}{%
8900 \ifstar\@Refstar\HyRef@Ref
8901 }%
8902 \def\HyRef@Ref#1{%
8903 \hyperref[{#1}]{\Ref*{#1}}%
8904 }%
8905 \def\Vr@f#1{%
8906 \leavevmode\unskip\vref@space
8907 \hyperref[{#1}]{%
8908 \Ref*{#1}%
8909 \let\vref@space\nobreakspace
8910 \@vpageref[\unskip]{#1}%
8911 }%
8912 }%
8913 \def\vr@f#1{%
8914 \leavevmode\unskip\vref@space
8915 \begingroup
8916 \let\T@pageref\@pagerefstar
8917 \hyperref[{#1}]{%
8918 \ref*{#1}%
8919 \vpageref[\unskip]{#1}%
8920 }%
8921 \endgroup
8922 }%
8923 }{}%
8924 }
8925 \DeclareRobustCommand*{\autopageref}{%
8926 \ifstar{%
8927 \HyRef@autopagerefname\pageref*%
8928 }\HyRef@autopageref
8929 }
8930 \def\HyRef@autopageref#1{%
8931 \hyperref[{#1}]{\HyRef@autopagerefname\pageref*{#1}}%
8932 }
8933 \def\HyRef@autopagerefname{%
8934 \ltx@ifundefined{pageautorefname}{%
8935 \ltx@ifundefined{pagename}{%
8936 \Hy@Warning{No autoref name for 'page'}%
8937 }{%
8938 \pagename\nobreakspace
8939 }%
8940 }{%
8941 \pageautorefname\nobreakspace
8942 }%
8943 }

```

\leavevmode is added to make package wrapfigure happy, if \autoref starts a paragraph.

```

8944 \DeclareRobustCommand*{\autoref}{%
8945 \leavevmode
8946 \ifstar{\HyRef@autoref@gobbletwo}{\HyRef@autoref\hyper@{link}}%
8947 }
8948 \def\HyRef@autoref#1#2{%
8949 \begingroup
8950 \Hy@safe@activetrue
8951 \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%

```

```

8952 \endgroup
8953 }
8954 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
8955 \HyRef@ShowKeysRef{#2}%
8956 \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
8957 \edef\HyRef@thisref{%
8958 \expandafter\@fourthoffive#1\@empty\@empty\@empty
8959 }%
8960 \expandafter\HyRef@testreftype\HyRef@thisref.\.%
8961 \Hy@safe@activesfalse
8962 #3{%
8963 \expandafter\@fifthoffive#1\@empty\@empty\@empty
8964 }{%
8965 \expandafter\@fourthoffive#1\@empty\@empty\@empty
8966 }{%
8967 \HyRef@currentHtag
8968 \expandafter\@firstoffive#1\@empty\@empty\@empty
8969 \null
8970 }%
8971 \else
8972 \protect\G@refundefinedtrue
8973 \nfss@text{\reset@font\bfseries ??}%
8974 \@latex@warning{%
8975 Reference ‘#2’ on page \thepage\space undefined%
8976 }%
8977 \fi
8978 }
8979 \def\HyRef@testreftype#1.#2\{\{%
8980 \ltx@ifundefined{#1autorefname}\{%
8981 \ltx@ifundefined{#1name}\{%
8982 \HyRef@StripStar#1\*\@nil{#1}%
8983 \ltx@ifundefined{\HyRef@name autorefname}\{%
8984 \ltx@ifundefined{\HyRef@name name}\{%
8985 \def\HyRef@currentHtag{%
8986 \Hy@Warning{No autoref name for ‘#1’}%
8987 }{%
8988 \edef\HyRef@currentHtag{%
8989 \expandafter\noexpand\csname\HyRef@name name\endcsname
8990 \noexpand~%
8991 }%
8992 }%
8993 }{%
8994 \edef\HyRef@currentHtag{%
8995 \expandafter\noexpand
8996 \csname\HyRef@name autorefname\endcsname
8997 \noexpand~%
8998 }%
8999 }%
9000 }{%
9001 \edef\HyRef@currentHtag{%
9002 \expandafter\noexpand\csname#1name\endcsname
9003 \noexpand~%
9004 }%
9005 }%
9006 }{%
9007 \edef\HyRef@currentHtag{%
9008 \expandafter\noexpand\csname#1autorefname\endcsname

```

```

9009 \noexpand-%
9010 }%
9011 }%
9012 }
9013 \def\HyRef@StripStar#1*\#2\@nil#3{%
9014 \def\HyRef@name{#2}%
9015 \ifx\HyRef@name\HyRef@CaseStar
9016 \def\HyRef@name{#1}%
9017 \else
9018 \def\HyRef@name{#3}%
9019 \fi
9020 }
9021 \def\HyRef@CaseStar{*\\}
9022 \def\HyRef@currentHtag{}

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

9023 \let\HyRef@ShowKeysRef\@gobble
9024 \def\HyRef@ShowKeysInit{%
9025 \begingroup\expandafter\expandafter\expandafter\endgroup
9026 \expandafter\ifx\csname SK@@label\endcsname\relax
9027 \else
9028 \ifx\SK@ref\@empty
9029 \else
9030 \def\HyRef@ShowKeysRef{%
9031 \SK@\SK@@ref
9032 }%
9033 \fi
9034 \fi
9035 }
9036 \@ifpackageloaded{showkeys}{%
9037 \HyRef@ShowKeysInit
9038 }{%
9039 \Hy@AtBeginDocument{%
9040 \@ifpackageloaded{showkeys}{%
9041 \HyRef@ShowKeysInit
9042 }{}%
9043 }%
9044 }

```

Defaults for the names that \autoref uses.

```

9045 \providecommand*\AMSautorefname{\equationautorefname}
9046 \providecommand*\Hfootnoteautorefname{\footnoteautorefname}
9047 \providecommand*\Itemautorefname{\itemautorefname}
9048 \providecommand*\itemautorefname{item}
9049 \providecommand*\equationautorefname{Equation}
9050 \providecommand*\footnoteautorefname{footnote}
9051 \providecommand*\itemautorefname{item}
9052 \providecommand*\figureautorefname{Figure}
9053 \providecommand*\tableautorefname{Table}
9054 \providecommand*\partautorefname{Part}
9055 \providecommand*\appendixautorefname{Appendix}
9056 \providecommand*\chapterautorefname{chapter}
9057 \providecommand*\sectionautorefname{section}
9058 \providecommand*\subsectionautorefname{subsection}
9059 \providecommand*\subsubsectionautorefname{subsubsection}
9060 \providecommand*\paragraphautorefname{paragraph}

```

```

9061 \providecommand*\subparagraphautorefname{subparagraph}
9062 \providecommand*\FancyVerbLineautorefname{line}
9063 \providecommand*\theoremautorefname{Theorem}
9064 \providecommand*\pageautorefname{page}
9065 \end{package}

```

## 47 Configuration files

### 47.1 PS/PDF strings

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

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

```

9066 <*pdfTEX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>
9067 \begingroup\expandafter\expandafter\expandafter\endgroup
9068 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
9069 \begingroup
9070 \catcode'\=0 %
9071 \@makeother\%
9072 |@firstofone{|endgroup
9073 |def|Hy@pstringdef#1#2{%
9074 |begingroup
9075 |edef~{|string~}%
9076 |xdef|Hy@gtemp{#2}%
9077 |endgroup
9078 |let#1|Hy@gtemp
9079 |@onelevel@sanitize#1%
9080 |edef#1{|expandafter|Hy@ExchangeBackslash#1|@nil}%
9081 |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1|@nil}%
9082 |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1|@nil}%
9083 }%
9084 |def|Hy@ExchangeBackslash#1#2|@nil{%
9085 #1%
9086 |ifx|\#2|\%%
9087 |else
9088 \\\%
9089 |ltx@ReturnAfterFi{%
9090 |Hy@ExchangeBackslash#2|@nil
9091 }%
9092 |fi
9093 }%
9094 }%
9095 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
9096 #1%
9097 \ifx\#2\%%
9098 \else
9099 \@backslashchar(%
9100 \ltx@ReturnAfterFi{%
9101 \Hy@ExchangeLeftParenthesis#2\@nil
9102 }%
9103 \fi
9104 }%

```

```

9105 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
9106   #1%
9107   \ifx\|#2\|%
9108     \else
9109       \@backslashchar)%
9110       \ltx@ReturnAfterFi{%
9111         \Hy@ExchangeRightParenthesis#2\@nil
9112       }%
9113     \fi
9114   }%
9115 \else
9116   \def\Hy@pstringdef#1#2{%
9117     \begingroup
9118     \edef~{\string~}%
9119     \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
9120   \endgroup
9121   \let#1\Hy@gtemp
9122   }%
9123 \fi
9124 </pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>

```

## 47.2 pdfTeX

```

9125 <*pdfTeX>
9126 \providecommand*\XR@ext}{pdf}
9127 \Hy@setbreaklinks{true}
9128 \def\HyPat@ObjRef{%
9129   [0-9]*[1-9][0-9]* 0 R%
9130 }

```

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`

```

9131 \let\Hy@pdfminorversion\relax
9132 \begingroup\expandafter\expandafter\expandafter\endgroup
9133 \expandafter\ifx\csname pdfminorversion\endcsname\relax
9134   \begingroup\expandafter\expandafter\expandafter\endgroup
9135   \expandafter\ifx\csname pdfoptionpdfminorversion\endcsname\relax
9136     \else
9137       \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
9138     \fi
9139   \else
9140     \def\Hy@pdfminorversion{\pdfminorversion}%
9141   \fi
9142   \@ifundefined{Hy@pdfminorversion}{%
9143     \PackageInfo{hyperref}{%
9144       PDF version is not set, because pdfTeX is too old (<1.10a)%
9145     }%
9146   }{%
9147     \ifHy@ocgcolorlinks
9148       \ifnum\Hy@pdfminorversion<5 %
9149         \kvsetkeys{Hyp}{pdfversion=1.5}%
9150       \fi

```

```

9151 \fi
9152 \ifHy@setpdfversion
9153 \ifnum\Hy@pdfversion<5 %
9154 \ltx@ifundefined{pdfobjcompresslevel}{%
9155 }{%
9156 \ifHy@verbose
9157 \Hy@InfoNoLine{%
9158 PDF object streams are disabled, because they are%
9159 \MessageBreak
9160 not supported in requested PDF version %
9161 1.\Hy@pdfversion
9162 }%
9163 \fi
9164 \pdfobjcompresslevel=\ltx@zero
9165 }%
9166 \fi
9167 \ifnum\Hy@pdfminorversion=\Hy@pdfversion\relax
9168 \else
9169 \let\Hy@temp\ltx@empty
9170 \def\Hy@temp@A#1#2{%
9171 \ifnum#1>\ltx@zero
9172 \edef\Hy@temp{%
9173 \Hy@temp
9174 \space\space
9175 \the#1\space #2%
9176 \ifnum#1=\ltx@one\else s\fi
9177 \MessageBreak
9178 }%
9179 \fi
9180 }%
9181 \Hy@temp@A\pdflastobj{PDF object}%
9182 \Hy@temp@A\pdflastxform{formXObject}%
9183 \Hy@temp@A\pdflastximage{imageXObject}%
9184 \Hy@temp@A\pdflastannot{annotation}%
9185 \ltx@ifundefined{pdflastlink}{%
9186 }{%
9187 \Hy@temp@A\pdflastlink{link}%
9188 }%
9189 \ifx\Hy@temp\ltx@empty
9190 \Hy@pdfminorversion=\Hy@pdfversion\relax
9191 \else
9192 \let\Hy@temp@A\ltx@empty
9193 \ifnum\Hy@pdfversion=4 %
9194 \IfFileExists{pdf14.sty}{%
9195 \def\Hy@temp@A{%
9196 \MessageBreak
9197 Or \string\RequirePackage{pdf14} can be used%
9198 \MessageBreak
9199 before \string\documentclass\space as shortcut%
9200 }%
9201 }{}%
9202 \fi
9203 \Hy@WarningNoLine{%
9204 The PDF version number could not be set,\MessageBreak
9205 because some PDF objects are already written:%
9206 \MessageBreak
9207 \Hy@temp

```

```

9208         The version should be set as early as possible:%
9209         \MessageBreak
9210         \space\space
9211         \expandafter\string\Hy@pdfminorversion=\Hy@pdfversion
9212         \string\relax
9213         \ifnum\Hy@pdfversion<5 %
9214         \ltx@ifundefined{pdfobjcompresslevel}{%
9215         }{%
9216         \MessageBreak
9217         \space\space
9218         \string\pdfobjcompresslevel=0\string\relax
9219         }%
9220         \fi
9221         \Hy@temp@A
9222     }%
9223 \fi
9224 \fi
9225 \PackageInfo{hyperref}{%
9226 \expandafter\string\Hy@pdfminorversion
9227 :=\number\Hy@pdfversion\space
9228 }%
9229 \fi
9230 \edef\Hy@pdfversion{\number\Hy@pdfminorversion}%
9231 }
9232 \Hy@DisableOption{pdfversion}%
9233 \ifHy@ocgcolorlinks
9234 \pdf@ifdraftmode{}{%
9235 \immediate\pdfobj{%
9236 <<%
9237 /Type/OCG%
9238 /Name(View)%
9239 /Usage<<%
9240 /Print<<%
9241 /PrintState/OFF%
9242 >>%
9243 /View<<%
9244 /ViewState/ON%
9245 >>%
9246 >>%
9247 >>%
9248 }%
9249 \edef\OBJ@OCG@view{\the\pdflastobj\space 0 R}%
9250 \immediate\pdfobj{%
9251 <<%
9252 /Type/OCG%
9253 /Name(Print)%
9254 /Usage<<%
9255 /Print<<%
9256 /PrintState/ON%
9257 >>%
9258 /View<<%
9259 /ViewState/OFF%
9260 >>%
9261 >>%
9262 >>%
9263 }%
9264 \edef\OBJ@OCG@print{\the\pdflastobj\space 0 R}%

```

```

9265 \immediate\pdfobj{%
9266 [%
9267 \OBJ@OCG@view\space\OBJ@OCG@print
9268 ]%
9269 }%
9270 \edef\OBJ@OCGs{\the\pdfastobj\space 0 R}%
9271 \pdfcatalog{%
9272 /OCProperties<<%
9273 /OCGs \OBJ@OCGs
9274 /D<<%
9275 /OFF[\OBJ@OCG@print]%
9276 /AS[%
9277 <<%
9278 /Event/View%
9279 /OCGs \OBJ@OCGs
9280 /Category[/View]%
9281 >>%
9282 <<%
9283 /Event/Print%
9284 /OCGs \OBJ@OCGs
9285 /Category[/Print]%
9286 >>%
9287 <<%
9288 /Event/Export%
9289 /OCGs \OBJ@OCGs
9290 /Category[/Print]%
9291 >>%
9292 ]%
9293 >>%
9294 >>%
9295 }%
9296 \begingroup
9297 \edef\x{\endgroup
9298 \pdfpageresources{%
9299 /Properties<<%
9300 /OCView \OBJ@OCG@view
9301 /OCPrint \OBJ@OCG@print
9302 >>%
9303 }%
9304 }%
9305 \x
9306 }%
9307 \Hy@AtBeginDocument{%
9308 \def\Hy@colorlink#1{%
9309 \begingroup
9310 \ifHy@ocgcolorlinks
9311 \def\Hy@ocgcolor{#1}%
9312 \setbox0=\hbox\bgroup\color@begingroup
9313 \else
9314 \HyColor@UseColor#1%
9315 \fi
9316 }%
9317 \def\Hy@endcolorlink{%
9318 \ifHy@ocgcolorlinks
9319 \color@endgroup\egroup
9320 \mbox{%
9321 \pdfliteral page{/OC/OCPrint BDC}%

```



```

9322      \rlap{\copy0}%
9323      \pdfliteral page{EMC/OC/OCView BDC}%
9324      \begingroup
9325        \expandafter\HyColor@UseColor\Hy@ocgcolor
9326        \box0 %
9327      \endgroup
9328      \pdfliteral page{EMC}%
9329    }%
9330  \fi
9331  \endgroup
9332 }%
9333 }%
9334 \else
9335   \Hy@DisableOption{ocgcolorlinks}%
9336 \fi

```

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

```

9337 \def\setpdfinkmargin#1{\pdfinkmargin#1}
9338 \ifx\pdfstartlink\@undefined% less than version 14
9339   \let\pdfstartlink\pdfannotlink
9340   \let\pdfinkmargin\@tempdima
9341   \let\pdfxform\pdfform
9342   \let\pdfastxform\pdfastform
9343   \let\pdfrefxform\pdfrefform
9344 \else
9345   \pdfinkmargin1pt %
9346 \fi

```

First set up the default linking

```

9347 \providecommand*\@pdfview{XYZ}

```

First define the anchors:

```

9348 \Hy@WrapperDef\new@pdfink#1{%
9349   \ifhmode
9350     \@savsf\spacefactor
9351   \fi
9352   \Hy@SaveLastskip
9353   \Hy@VerboseAnchor{#1}%
9354   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9355   \Hy@DestName\Hy@pstringDest\@pdfview
9356   \Hy@RestoreLastskip
9357   \ifhmode
9358     \spacefactor\@savsf
9359   \fi
9360 }
9361 \let\pdf@endanchor\@empty

```

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

```

9362 \def\Hy@DestName#1#2{%
9363   \pdfdest name{#1}#2\relax
9364 }

```

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.

```

9365 \providecommand*\@pdfborder{0 0 1}

```

```

9366 \providecommand*\@pdfborderstyle{}
9367 \def\Hy@undefinedname{UNDEFINED}
9368 \def\find@pdfink#1#2{%
9369   \leavevmode
9370   \protected@edef\Hy@testname{#2}%
9371   \ifx\Hy@testname\@empty
9372     \Hy@Warning{%
9373       Empty destination name,\MessageBreak
9374       using '\Hy@undefinedname'%
9375     }%
9376     \let\Hy@testname\Hy@undefinedname
9377   \else
9378     \Hy@pstringdef\Hy@testname{%
9379       \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
9380     }%
9381   \fi
9382   \Hy@StartlinkName{%
9383     \ifHy@pdfa /F 4\fi
9384     \Hy@setpdfborder
9385     \ifx\@pdfhighlight\@empty
9386       \else
9387         /H\@pdfhighlight
9388       \fi
9389       \ifx\CurrentBorderColor\relax
9390       \else
9391         /C[\CurrentBorderColor]%
9392       \fi
9393     }\Hy@testname
9394     \expandafter\Hy@colorlink\csname @#1color\endcsname
9395   }
9396 \def\Hy@StartlinkName#1#2{%
9397   \pdfstartlink attr{#1}goto name{#2}\relax
9398 }
9399 \def\close@pdfink{%
9400   \Hy@endcolorlink
9401   \Hy@VerboseLinkStop
9402   \pdfendlink
9403 }
9404 \def\hyper@anchor#1{%
9405   \new@pdfink{#1}\anchor@spot\pdf@endanchor
9406 }
9407 \def\hyper@anchorstart#1{%
9408   \new@pdfink{#1}%
9409   \Hy@activeanchortrue
9410 }
9411 \def\hyper@anchorend{%
9412   \pdf@endanchor
9413   \Hy@activeanchorfalse
9414 }
9415 \def\hyper@linkstart#1#2{%
9416   \Hy@VerboseLinkStart{#1}{#2}%
9417   \ltx@ifundefined{@#1bordercolor}{%
9418     \let\CurrentBorderColor\relax
9419   }{%
9420     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
9421   }%
9422   \find@pdfink{#1}{#2}%

```

```

9423 }
9424 \def\hyper@linkend{\close@pdfink}
9425 \def\hyper@link#1#2#3{%
9426   \Hy@VerboseLinkStart{#1}{#2}%
9427   \ltx@ifundefined{@#1bordercolor}{%
9428     \let\CurrentBorderColor\relax
9429   }{%
9430     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
9431   }%
9432   \find@pdfink{#1}{#2}#3\Hy@xspace@end
9433   \close@pdfink
9434 }
9435 \let\CurrentBorderColor\@linkbordercolor
9436 \def\hyper@linkurl#1#2{%
9437   \begingroup
9438     \Hy@pstringdef\Hy@pstringURI{#2}%
9439     \hyper@chars
9440     \leavevmode
9441     \pdfstartlink
9442     attr{%
9443       \Hy@setpdfborder
9444       \ifx\@pdfhighlight\@empty
9445         \else
9446           /H\@pdfhighlight
9447         \fi
9448       \ifx\@urlbordercolor\relax
9449         \else
9450           /C[\@urlbordercolor]%
9451         \fi
9452     }%
9453     user{%
9454       /Subtype/Link%
9455       \ifHy@pdfa /F 4\fi
9456       /A<<%
9457       /Type/Action%
9458       /S/URI%
9459       /URI(\Hy@pstringURI)%
9460       \ifHy@href@cismap
9461         /IsMap true%
9462       \fi
9463       \Hy@href@nextactionraw
9464     >>%
9465     }%
9466     \relax
9467     \Hy@colorlink\@urlcolor#1\Hy@xspace@end
9468     \close@pdfink
9469   \endgroup
9470 }
9471 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
9472   \begingroup
9473     \def\Hy@pstringF{#2}%
9474     \Hy@CleanupFile\Hy@pstringF
9475     \Hy@pstringdef\Hy@pstringF\Hy@pstringF
9476     \Hy@pstringdef\Hy@pstringD{#3}%
9477     \Hy@MakeRemoteAction
9478     \leavevmode
9479     \pdfstartlink

```

```

9480 attr{%
9481   \Hy@setpdfborder
9482   \ifx\@pdfhighlight\@empty
9483   \else
9484     /H\@pdfhighlight
9485   \fi
9486   \ifx\@filebordercolor\relax
9487   \else
9488     /C[\@filebordercolor]%
9489   \fi
9490 }%
9491 user {%
9492   /Subtype/Link%
9493   \ifHy@pdfa /F 4\fi
9494   /A<<%
9495   /F(\Hy@pstringF)%
9496   /S/GoToR%
9497   \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}

```

```

9498   \ifx\#3\%
9499     /D[\Hy@href@page\@pdfremotestartview]%
9500   \else
9501     /D(\Hy@pstringD)%
9502   \fi
9503   \Hy@href@nextactionraw
9504   >>%
9505 }%
9506 \relax
9507 \Hy@colorlink\@filecolor#1\Hy@xspace@end
9508 \close@pdflink
9509 \endgroup
9510 }
9511 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
9512   \begingroup
9513   \Hy@pstringdef\Hy@pstringF{#1}%
9514   \Hy@pstringdef\Hy@pstringP{#3}%
9515   \leavevmode
9516   \pdfstartlink
9517   attr{%
9518     \Hy@setpdfborder
9519     \ifx\@pdfhighlight\@empty
9520     \else
9521       /H\@pdfhighlight
9522     \fi
9523     \ifx\@runbordercolor\relax
9524     \else

```

```

9525      /C[\@runbordercolor]%
9526      \fi
9527    }%
9528    user {%
9529      /Subtype/Link%
9530      \ifHy@pdfa /F 4\fi
9531      /A<<%
9532      /F(\Hy@pstringF)%
9533      /S/Launch%
9534      \Hy@SetNewWindow
9535      \ifx\#3\%
9536      \else
9537      /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
9538      \fi
9539      \Hy@href@nextactionraw
9540    >>%
9541  }%
9542  \relax
9543  \Hy@colorlink\@runcolor#2\Hy@xspace@end
9544  \close@pdflink
9545 \endgroup
9546 }

```

\@pdfproducer

```

9547 \ifx\@pdfproducer\relax
9548 \begingroup\expandafter\expandafter\expandafter\endgroup
9549 \expandafter\ifx\csname luatexversion\endcsname\relax
9550 \def\@pdfproducer{pdfTeX}%
9551 \ifx\eTeXversion\@undefined
9552 \else
9553 \ifx\eTeXversion\relax
9554 \else
9555 \ifnum\eTeXversion>0 %
9556 \def\@pdfproducer{pdfTeX}%
9557 \fi
9558 \fi
9559 \fi
9560 \ifx\pdfTeXversion\@undefined
9561 \else
9562 \ifnum\pdfTeXversion<100 %
9563 \edef\@pdfproducer{%
9564 \@pdfproducer
9565 \the\pdfTeXversion.\pdfTeXrevision
9566 }%
9567 \else
9568 \ifnum\pdfTeXversion<130 %
9569 \edef\@pdfproducer{%
9570 \@pdfproducer-
9571 \expandafter\car\the\pdfTeXversion\@empty\@nil.%
9572 \expandafter\cdr\the\pdfTeXversion\@empty\@nil
9573 \pdfTeXrevision
9574 }%
9575 \else
9576 \ifnum\pdfTeXversion<140 %
9577 \else
9578 \def\@pdfproducer{pdfTeX}%
9579 \fi

```

```

9580     \edef\@pdfproducer{%
9581       \@pdfproducer-%
9582       \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
9583       \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
9584       \pdfTeXrevision
9585     }%
9586   \fi
9587 \fi
9588 \fi
9589 \else
9590   \begingroup
9591     \count@=\luatexversion
9592     \divide\count@ by 100 %
9593     \edef\x{\the\count@}%
9594     \count@=-\x\relax
9595     \multiply\count@ by 100 %
9596     \advance\count@ by \luatexversion
9597     \edef\x{\endgroup
9598       \def\noexpand\@pdfproducer{%
9599         LuaTeX-\x.\the\count@.\luatexrevision
9600       }%
9601     }%
9602   \x
9603 \fi
9604 \fi

```

\PDF@SetupDox

```

9605 \def\PDF@SetupDoc{%
9606   \ifx\@pdfpagescrop\@empty
9607   \else
9608     \edef\process@me{%
9609       \pdfpagesattr={%
9610         /CropBox[\@pdfpagescrop]%
9611         \expandafter\ifx\expandafter\\\the\pdfpagesattr\\%
9612         \else
9613           ^^J\the\pdfpagesattr
9614         \fi
9615       }%
9616     }%
9617     \process@me
9618   \fi
9619   \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9620   \pdfcatalog{%
9621     /PageMode/\@pdfpagemode
9622     \ifx\@baseurl\@empty
9623     \else
9624       /URI<</Base(\Hy@pstringB)>>%
9625     \fi
9626   }%
9627   \ifx\@pdfstartpage\@empty
9628   \else
9629     \ifx\@pdfstartview\@empty
9630     \else
9631       openaction goto page\@pdfstartpage{\@pdfstartview}%
9632     \fi
9633   \fi
9634   \edef\Hy@temp{%
9635     \ifHy@pdftoolbar\else /HideToolbar true\fi

```

```

9636 \ifHy@pdfmenubar\else /HideMenubar true\fi
9637 \ifHy@pdfwindowui\else /HideWindowUI true\fi
9638 \ifHy@pdffitwindow /FitWindow true\fi
9639 \ifHy@pdfcenterwindow /CenterWindow true\fi
9640 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9641 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9642 \Hy@UseNameKey{Direction}\@pdfdirection
9643 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9644 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9645 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9646 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9647 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9648 \Hy@UseNameKey{Duplex}\@pdfduplex
9649 \ifx\@pdfpicktraybypdfsize\@empty
9650 \else
9651 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9652 \fi
9653 \ifx\@pdfprintpagerange\@empty
9654 \else
9655 /PrintPageRange[\@pdfprintpagerange]%
9656 \fi
9657 \ifx\@pdfnumcopies\@empty
9658 \else
9659 /NumCopies \@pdfnumcopies
9660 \fi
9661 }%
9662 \pdfcatalog{%
9663 \ifx\Hy@temp\@empty
9664 \else
9665 /ViewerPreferences<<\Hy@temp>>%
9666 \fi
9667 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9668 \ifx\@pdflang\@empty
9669 \else
9670 /Lang(\@pdflang)%
9671 \fi
9672 }%
9673 }

```

\PDF@FinishDoc

```

9674 \def\PDF@FinishDoc{%
9675 \pdf@ifdraftmode{ }{%
9676 \Hy@UseMaketitleInfos
9677 \HyInfo@GenerateAddons
9678 \pdfinfo{%
9679 /Author(\@pdfauthor)%
9680 /Title(\@pdftitle)%
9681 /Subject(\@pdfsubject)%
9682 /Creator(\@pdfcreator)%
9683 \ifx\@pdfcreationdate\@empty
9684 \else
9685 /CreationDate(\@pdfcreationdate)%
9686 \fi
9687 \ifx\@pdfmoddate\@empty
9688 \else
9689 /ModDate(\@pdfmoddate)%
9690 \fi
9691 \ifx\@pdfproducer\relax

```

```

9692 \else
9693 /Producer(\@pdfproducer)%
9694 \fi
9695 /Keywords(\@pdfkeywords)%
9696 \ifx\@pdftrapped\@empty
9697 \else
9698 /Trapped/\@pdftrapped
9699 \fi
9700 \HyInfo@Addons
9701 }%
9702 }%
9703 \Hy@DisableOption{pdfauthor}%
9704 \Hy@DisableOption{pdftitle}%
9705 \Hy@DisableOption{pdfsubject}%
9706 \Hy@DisableOption{pdfcreator}%
9707 \Hy@DisableOption{pdfcreationdate}%
9708 \Hy@DisableOption{pdfmoddate}%
9709 \Hy@DisableOption{pdfproducer}%
9710 \Hy@DisableOption{pdfkeywords}%
9711 \Hy@DisableOption{pdftrapped}%
9712 \Hy@DisableOption{pdfinfo}%
9713 }

```

`\hyper@pagetransition` `\@pdfpagetransition` is initialized with `\relax`. So it indicates, if option `pdfpage-`  
`transition` is used. First previous `/Trans` entries are removed. If a new `/Trans`  
key exists, it is appended to `\pdfpageattr`.

```

9714 \def\hyper@pagetransition{%
9715 \ifx\@pdfpagetransition\relax
9716 \else
9717 \expandafter\Hy@RemoveTransPageAttr
9718 \the\pdfpageattr^^J/Trans{}>>\END
9719 \ifx\@pdfpagetransition\@empty
9720 \else
9721 \edef\@processme{%
9722 \global\pdfpageattr{%
9723 \the\pdfpageattr
9724 ^^J/Trans << /S /\@pdfpagetransition\space >>%
9725 }%
9726 }%
9727 \@processme
9728 \fi
9729 \fi
9730 }

```

`\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.

```

9731 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
9732 \ifx\#2\%
9733 \global\pdfpageattr{#1}%
9734 \else
9735 \Hy@RemoveTransPageAttr#1#4\END
9736 \fi
9737 }

```



`\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`.

```

9738 \def\hyper@pageduration{%
9739   \ifx\@pdfpageduration\relax
9740   \else
9741     \expandafter
9742     \Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
9743   \ifx\@pdfpageduration\@empty
9744   \else
9745     \edef\@processme{%
9746       \global\pdfpageattr{%
9747         \the\pdfpageattr
9748         ^^J/Dur \@pdfpageduration\space
9749       }%
9750     }%
9751     \@processme
9752   \fi
9753 \fi
9754 }
```

`\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.

```

9755 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
9756   \ifx\#2\%
9757     \global\pdfpageattr{#1}%
9758   \else
9759     \Hy@RemoveDurPageAttr#1#4\END
9760   \fi
9761 }
```

`\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).

```

9762 \def\hyper@pagehidden{%
9763   \ifHy@useHidKey
9764   \expandafter
9765   \Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END
9766   \ifHy@pdfpagehidden
9767   \edef\@processme{%
9768     \global\pdfpageattr{%
9769       \the\pdfpageattr
9770       ^^J/Hid true % SPACE
9771     }%
9772   }%
9773   \@processme
9774 \fi
9775 \fi
9776 }
```

`\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.

```

9777 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
9778   \ifx\#2\%
9779     \global\pdfpageattr{#1}%
9780   \else
9781     \Hy@RemoveHidPageAttr#1#4\END
9782   \fi
9783 }

9784 \pdf@ifdraftmode{}{%
9785   \g@addto@macro\Hy@EveryPageHook{%
9786     \hyper@pagetransition
9787     \hyper@pageduration
9788     \hyper@pagehidden
9789   }%
9790 }

```

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

```

9791 \pdfifx{pdf}
9792 \ifx\pdfifx\pdfifx
9793 \Hy@AtBeginDocument{%
9794   \ifHy@setpagesize
9795     \expandafter\@firstofone
9796   \else
9797     \expandafter\@gobble
9798   \fi
9799 }%
9800 \ifclassloaded{seminar}{%
9801 \pdfifx{pdf}
9802   \setlength{\pdfhorigin}{1truein}%
9803   \setlength{\pdfvorigin}{1truein}%
9804 \pdfifx{pdf}
9805   \ifportrait
9806     \ifdim\paperwidth=\z@
9807     \else
9808       \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
9809     \fi
9810     \ifdim\paperheight=\z@
9811     \else
9812       \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
9813     \fi
9814   \else
9815     \ifdim\paperheight=\z@
9816     \else
9817       \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
9818     \fi
9819     \ifdim\paperwidth=\z@
9820     \else
9821       \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
9822     \fi
9823   \fi
9824 }{%
9825   \ltx@ifundefined{stockwidth}{%
9826     \ifdim\paperwidth>\z@
9827       \setlength{\pdfpagewidth}{\paperwidth}%
9828     \fi
9829     \ifdim\paperheight>\z@
9830       \setlength{\pdfpageheight}{\paperheight}%

```

```

9831     \fi
9832   }{%
9833     \ifdim\stockwidth>\z@
9834       \setlength{\pdfpagewidth}{\stockwidth}%
9835     \fi
9836     \ifdim\stockheight>\z@
9837       \setlength{\pdfpageheight}{\stockheight}%
9838     \fi
9839   }%
9840 }%
9841 }%
9842 \Hy@DisableOption{setpagesize}%
9843 }
9844 </pdfTeX | xetex>
9845 (*pdfTeX)
9846 \def\Acrobatmenu#1#2{%
9847   \Hy@Acrobatmenu{#1}{#2}{%
9848     \leavevmode
9849     \EdefEscapeName\Hy@temp@menu{#1}%
9850     \pdfstartlink
9851       attr{%
9852         \Hy@setpdfborder
9853         \ifx\@pdfhighlight\@empty
9854           \else
9855             /H\@pdfhighlight
9856           \fi
9857         \ifx\@menubordercolor\relax
9858           \else
9859             /C[\@menubordercolor]%
9860           \fi
9861         }%
9862       user{%
9863         /Subtype/Link%
9864         \ifHy@pdfa /F 4\fi
9865         /A<<%
9866         /S/Named%
9867         /N/\Hy@temp@menu
9868         \Hy@href@nextactionraw
9869         >>%
9870       }%
9871     \relax
9872     \Hy@colorlink\@menucolor#2%
9873     \close@pdflink
9874   }%
9875 }

```

#### 47.2.1 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.

```

9876 \def\Hy@FixNotFirstPage{%
9877   \gdef\Hy@FixNotFirstPage{%
9878     \setbox\AtBeginShipoutBox=\hbox{%
9879       \copy\AtBeginShipoutBox
9880     }%
9881   }%
9882 }
9883 \ltx@ifpackagelater{atbegshi}{2011/10/05}{}%
9884 }{%
9885   \AtBeginShipout{\Hy@FixNotFirstPage}%
9886 }
9887 \pdfTeX

```

### 47.3 hypertex

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

**href:** html:<a href = "href\_string">

**name:** html:<a name = "name\_string">

**end:** html:</a>

**image:** html:<img src = "href\_string">

**base\_name:** html:<base href = "href\_string">

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

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

```

9888 \*hypertex
9889 \providecommand*\XR@ext{}{dvi}
9890 \let\PDF@FinishDoc\ltx@empty
9891 \def\PDF@SetupDoc{%
9892   \ifx\@baseurl\@empty
9893   \else
9894     \special{html:<base href="\@baseurl">}}%
9895 \fi

```

```

9896 }
9897 \Hy@WrapperDef\hyper@anchor#1{%
9898   \Hy@SaveLastskip
9899   \Hy@VerboseAnchor{#1}%
9900   \begingroup
9901     \let\protect=\string
9902     \hyper@chars
9903     \special{html:<a name=%
9904       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9905   \endgroup
9906   \Hy@activeanchortrue
9907   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9908   \special{html:</a>}%
9909   \Hy@activeanchorfalse
9910   \Hy@RestoreLastskip
9911 }
9912 \Hy@WrapperDef\hyper@anchorstart#1{%
9913   \Hy@SaveLastskip
9914   \Hy@VerboseAnchor{#1}%
9915   \begingroup
9916     \hyper@chars
9917     \special{html:<a name=%
9918       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9919   \endgroup
9920   \Hy@activeanchortrue
9921 }
9922 \def\hyper@anchorend{%
9923   \special{html:</a>}%
9924   \Hy@activeanchorfalse
9925   \Hy@RestoreLastskip
9926 }
9927 \def\@urlltype{url}
9928 \def\hyper@linkstart#1#2{%
9929   \Hy@VerboseLinkStart{#1}{#2}%
9930   \expandafter\Hy@colorlink\csname @#1color\endcsname
9931   \def\Hy@tempa{#1}%
9932   \ifx\Hy@tempa\@urlltype
9933     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9934   \else
9935     \begingroup
9936       \hyper@chars
9937       \special{html:<a href=%
9938         \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
9939     \endgroup
9940   \fi
9941 }
9942 \def\hyper@linkend{%
9943   \special{html:</a>}%
9944   \Hy@endcolorlink
9945 }
9946 \def\hyper@linkfile#1#2#3{%
9947   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
9948 }
9949 \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.

```

9950 \leavevmode
9951 \ifHy@raiselinks
9952   \Hy@SaveSpaceFactor
9953   \Hy@SaveSavedSpaceFactor
9954   \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9955   \Hy@RestoreSavedSpaceFactor
9956   \@linkdim\dp\@tempboxa
9957   \lower\@linkdim\hbox{%
9958     \hyper@chars
9959     \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
9960   }%
9961   \Hy@colorlink\@urlcolor
9962   \Hy@RestoreSpaceFactor
9963   #1%
9964   \Hy@SaveSpaceFactor
9965   \@linkdim\ht\@tempboxa

```

Because of the interaction with the dvihps processor, we have to subtract a little from the height. This is not clean, or checked. Check with Mark Doyle about what gives here. It may not be needed with the new dvips (Jan 1997).

```

9966   \advance\@linkdim by -6.5\p@
9967   \raise\@linkdim\hbox{\special{html:</a>}}%
9968   \Hy@endcolorlink
9969   \Hy@RestoreSpaceFactor
9970 \else
9971   \begingroup
9972     \hyper@chars
9973     \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
9974     \Hy@colorlink\@urlcolor#1\Hy@xspace@end
9975     \special{html:</a>}}%
9976     \Hy@endcolorlink
9977   \endgroup
9978 \fi
9979 }

```

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

```

9980 \def\hyper@link#1#2#3{%
9981   \Hy@VerboseLinkStart{#1}{#2}%
9982   \hyper@linkurl{#3}{\# \Hy@DestNameFilter{#2}}%
9983 }

9984 \def\hyper@image#1#2{%
9985   \begingroup
9986     \hyper@chars
9987     \special{html:<img src=\hyper@quote#1\hyper@quote>}}%
9988   \endgroup
9989 }
9990 </hypertex>
9991 <*dviwindo>

```

## 47.4 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 hypertext cfg. For dviwindo, L<sup>A</sup>T<sub>E</sub>X must specify the size of the active area for links. For some hooks this information is available but for some, the start and end of the link are specified separately in which case a fixed size area of 10000000sp wide by \baselineskip high is used.

```

9992 \providecommand*\XR@ext}{dvi}
9993 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
9994 \Hy@WrapperDef\hyper@anchor#1{%
9995   \Hy@SaveLastskip
9996   \Hy@VerboseAnchor{#1}%
9997   \begingroup
9998     \let\protect=\string
9999     \special{mark: #1}%
10000 \endgroup
10001 \Hy@activeanchortrue
10002 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
10003 \Hy@activeanchorfalse
10004 \Hy@RestoreLastskip
10005 }
10006 \Hy@WrapperDef\hyper@anchorstart#1{%
10007   \Hy@SaveLastskip
10008   \Hy@VerboseAnchor{#1}%
10009   \special{mark: #1}%
10010   \Hy@activeanchortrue
10011 }
10012 \def\hyper@anchorend{%
10013   \Hy@activeanchorfalse
10014   \Hy@RestoreLastskip
10015 }
10016 \def\hyper@linkstart#1#2{%
10017   \Hy@VerboseLinkStart{#1}{#2}%
10018   \expandafter\Hy@colorlink\csname @#1color\endcsname
10019   \special{button: %
10020     10000000 %
10021     \number\baselineskip\space
10022     #2%
10023   }%
10024 }
10025 \def\hyper@linkend{%
10026   \Hy@endcolorlink
10027 }
10028 \def\hyper@link#1#2#3{%
10029   \Hy@VerboseLinkStart{#1}{#2}%
10030   \leavevmode
10031   \ifHy@raiselinks
10032     \Hy@SaveSpaceFactor
10033     \Hy@SaveSavedSpaceFactor
10034     \sbox\@tempboxa{\Hy@RestoreSpaceFactor#3}%
10035     \Hy@RestoreSavedSpaceFactor
10036     \@linkdim\dp\@tempboxa
10037     \lower\@linkdim\hbox{%
10038       \special{button: %
10039         \number\wd\@tempboxa\space
10040         \number\ht\@tempboxa\space
10041         #2%
10042       }%
10043     \expandafter\Hy@colorlink\csname @#1color\endcsname

```

```

10044 \Hy@RestoreSpaceFactor
10045 #3\Hy@xspace@end
10046 \Hy@SaveSpaceFactor
10047 \Hy@endcolorlink
10048 }%
10049 \@linkdim\ht\@tempboxa
10050 \advance\@linkdim by -6.5\p@
10051 \raise\@linkdim\hbox{}%
10052 \Hy@RestoreSpaceFactor
10053 \else
10054 \special{button: %
10055 \number\wd\@tempboxa\space
10056 \number\ht\@tempboxa\space
10057 #2%
10058 }%
10059 \expandafter\Hy@colorlink\csname @#1color\endcsname
10060 #3\Hy@xspace@end
10061 \Hy@endcolorlink
10062 \fi
10063 }
10064 \def\hyper@linkurl#1#2{%
10065 \begingroup
10066 \hyper@chars
10067 \leavevmode
10068 \ifHy@raiselinks
10069 \Hy@SaveSpaceFactor
10070 \Hy@SaveSavedSpaceFactor
10071 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
10072 \Hy@RestoreSavedSpaceFactor
10073 \@linkdim\dp\@tempboxa
10074 \lower\@linkdim\hbox{%
10075 \special{button: %
10076 \number\wd\@tempboxa\space
10077 \number\ht\@tempboxa\space
10078 launch: \wwwbrowser\space
10079 #2%
10080 }%
10081 \Hy@colorlink\@urlcolor
10082 \Hy@RestoreSpaceFactor
10083 #1\Hy@xspace@end
10084 \Hy@SaveSpaceFactor
10085 \Hy@endcolorlink
10086 }%
10087 \@linkdim\ht\@tempboxa
10088 \advance\@linkdim by -6.5\p@
10089 \raise\@linkdim\hbox{}%
10090 \Hy@RestoreSpaceFactor
10091 \else
10092 \special{button: %
10093 \number\wd\@tempboxa\space
10094 \number\ht\@tempboxa\space
10095 launch: \wwwbrowser\space
10096 #2%
10097 }%
10098 \Hy@colorlink\@urlcolor
10099 #1\Hy@xspace@end
10100 \Hy@endcolorlink

```



```

10101 \fi
10102 \endgroup
10103 }
10104 \def\hyper@linkfile#1#2#3{%
10105 \begingroup
10106 \hyper@chars
10107 \leavevmode
10108 \ifHy@raiselinks
10109 \Hy@SaveSpaceFactor
10110 \Hy@SaveSavedSpaceFactor
10111 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
10112 \Hy@RestoreSavedSpaceFactor
10113 \@linkdim\dp\@tempboxa
10114 \lower\@linkdim\hbox{%
10115 \special{button: %
10116 \number\wd\@tempboxa\space
10117 \number\ht\@tempboxa\space
10118 #3,%
10119 file: #2%
10120 }%
10121 \Hy@colorlink\@filecolor
10122 \Hy@RestoreSpaceFactor
10123 #1\Hy@xspace@end
10124 \Hy@SaveSpaceFactor
10125 \Hy@endcolorlink
10126 }%
10127 \@linkdim\ht\@tempboxa
10128 \advance\@linkdim by -6.5\p@
10129 \raise\@linkdim\hbox{}%
10130 \Hy@RestoreSpaceFactor
10131 \else
10132 \special{button: %
10133 \number\wd\@tempboxa\space
10134 \number\ht\@tempboxa\space
10135 #3,%
10136 file: #2%
10137 }%
10138 \Hy@colorlink\@filecolor
10139 #1\Hy@xspace@end
10140 \Hy@endcolorlink
10141 \fi
10142 \endgroup
10143 }
10144 \ifx\@pdfproducer\relax
10145 \def\@pdfproducer{dviwindo + Distiller}%
10146 \fi
10147 \HyInfo@AddonUnsupportedtrue
10148 \def\PDF@FinishDoc{%
10149 \Hy@UseMaketitleInfos
10150 \HyInfo@TrappedUnsupported
10151 \special{PDF: Keywords \@pdfkeywords}%
10152 \special{PDF: Title \@pdftitle}%
10153 \special{PDF: Creator \@pdfcreator}%
10154 \ifx\@pdfcreationdate\@empty
10155 \else
10156 \special{PDF: CreationDate \@pdfcreationdate}%
10157 \fi

```

```

10158 \ifx\@pdfmoddate\@empty
10159 \else
10160 \special{PDF: ModDate \@pdfmoddate}%
10161 \fi
10162 \special{PDF: Author \@pdfauthor}%
10163 \ifx\@pdfproducer\relax
10164 \else
10165 \special{PDF: Producer \@pdfproducer}%
10166 \fi
10167 \special{PDF: Subject \@pdfsubject}%
10168 \Hy@DisableOption{pdfauthor}%
10169 \Hy@DisableOption{pdftitle}%
10170 \Hy@DisableOption{pdfsubject}%
10171 \Hy@DisableOption{pdfcreator}%
10172 \Hy@DisableOption{pdfcreationdate}%
10173 \Hy@DisableOption{pdfmoddate}%
10174 \Hy@DisableOption{pdfproducer}%
10175 \Hy@DisableOption{pdfkeywords}%
10176 \Hy@DisableOption{pdftrapped}%
10177 \Hy@DisableOption{pdfinfo}%
10178 }
10179 \def\PDF@SetupDoc{%
10180 \ifx\@baseurl\@empty
10181 \else
10182 \special{PDF: Base \@baseurl}%
10183 \fi
10184 \ifx\@pdfpagescrop\@empty\else
10185 \special{PDF: BBox \@pdfpagescrop}%
10186 \fi
10187 \def\Hy@temp{}%
10188 \ifx\@pdfstartpage\@empty
10189 \else
10190 \ifx\@pdfstartview\@empty
10191 \else
10192 \edef\Hy@temp{%
10193 ,Page=\@pdfstartpage
10194 ,View=\@pdfstartview
10195 }%
10196 \fi
10197 \fi
10198 \edef\Hy@temp{%
10199 \noexpand\pdfmark{%
10200 pdfmark=/DOCVIEW,%
10201 PageMode=/\@pdfpagemode
10202 \Hy@temp
10203 }%
10204 }%
10205 \Hy@temp
10206 \ifx\@pdfpagescrop\@empty
10207 \else
10208 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
10209 \fi
10210 \edef\Hy@temp{%
10211 \ifHy@pdftoolbar\else /HideToolbar true\fi
10212 \ifHy@pdfmenubar\else /HideMenubar true\fi
10213 \ifHy@pdfwindowui\else /HideWindowUI true\fi
10214 \ifHy@pdfwindow /FitWindow true\fi

```

```

10215 \ifHy@pdfcenterwindow /CenterWindow true\fi
10216 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10217 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10218 \Hy@UseNameKey{Direction}\@pdfdirection
10219 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10220 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10221 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10222 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10223 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10224 \Hy@UseNameKey{Duplex}\@pdfduplex
10225 \ifx\@pdfpicktraybypdfsize\@empty
10226 \else
10227 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10228 \fi
10229 \ifx\@pdfprintpagerange\@empty
10230 \else
10231 /PrintPageRange[\@pdfprintpagerange]%
10232 \fi
10233 \ifx\@pdfnumcopies\@empty
10234 \else
10235 /NumCopies \@pdfnumcopies
10236 \fi
10237 }%
10238 \pdfmark{pdfmark=/PUT,%
10239 Raw={%
10240 \string{Catalog}\string}<<%
10241 \ifx\Hy@temp\@empty
10242 \else
10243 /ViewerPreferences<<\Hy@temp>>%
10244 \fi
10245 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10246 \ifx\@pdflang\@empty
10247 \else
10248 /Lang(\@pdflang)%
10249 \fi
10250 >>%
10251 }%
10252 }%
10253 }
10254 </dviwindo>
10255 <*dvipdfm | xetex>

```

## 47.5 dvipdfm/xetex dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

10256 \providecommand*\XR@ext}{pdf}
10257 \Hy@setbreaklinks{true}
10258 \def\HyPat@ObjRef{%
10259   @[^ ]+}%
10260 }
10261 \newsavebox{\pdfm@box}
10262 \def\@pdfm@mark#1{\special{pdf:#1}}
10263 \Hy@WrapperDef\@pdfm@dest#1{%
10264   \Hy@SaveLastskip
10265   \Hy@VerboseAnchor{#1}%
10266   \begingroup
10267   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%

```

```

10268 \def\x{XYZ}%
10269 \ifx\x\@pdfview
10270 \def\x{XYZ @xpos @ypos null}%
10271 \else
10272 \def\x{FitH}%
10273 \ifx\x\@pdfview
10274 \def\x{FitH @ypos}%
10275 \else
10276 \def\x{FitBH}%
10277 \ifx\x\@pdfview
10278 \def\x{FitBH @ypos}%
10279 \else
10280 \def\x{FitV}%
10281 \ifx\x\@pdfview
10282 \def\x{FitV @xpos}%
10283 \else
10284 \def\x{FitBV}%
10285 \ifx\x\@pdfview
10286 \def\x{FitBV @xpos}%
10287 \else
10288 \def\x{Fit}%
10289 \ifx\x\@pdfview
10290 \let\x\@pdfview
10291 \else
10292 \def\x{FitB}%
10293 \ifx\x\@pdfview
10294 \let\x\@pdfview
10295 \else
10296 \def\x{FitR}%
10297 \ifx\x\@pdfview
10298 \Hy@Warning{'pdfview=FitR' is not supported}%
10299 \def\x{XYZ @xpos @ypos null}%
10300 \else
10301 \@onelevel@sanitize\@pdfview
10302 \Hy@Warning{%
10303   Unknown value '\@pdfview' for pdfview%
10304 }%
10305 \def\x{XYZ @xpos @ypos null}%
10306 \fi
10307 \fi
10308 \fi
10309 \fi
10310 \fi
10311 \fi
10312 \fi
10313 \fi
10314 \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
10315 \endgroup
10316 \Hy@RestoreLastskip
10317 }
10318 \providecommand*\@pdfview{XYZ}
10319 \providecommand*\@pdfborder{0 0 1}
10320 \providecommand*\@pdfborderstyle{}
10321 \def\hyper@anchor#1{%
10322 \@pdfm@dest{#1}%
10323 }
10324 \def\hyper@anchorstart#1{%

```

```

10325 \Hy@activeanchortrue
10326 \@pdfm@dest{#1}%
10327 }
10328 \def\hyper@anchorend{%
10329 \Hy@activeanchorfalse
10330 }

10331 \newcounter{Hy@AnnotLevel}

10332 \ifHy@ocgcolorlinks
10333 \def\OBJ@OCG@view{@OCG@view}%
10334 \@pdfm@mark{%
10335   obj \OBJ@OCG@view <<%
10336     /Type/OCG%
10337     /Name(View)%
10338     /Usage<<%
10339     /Print<<%
10340     /PrintState/OFF%
10341     >>%
10342     /View<<%
10343     /ViewState/ON%
10344     >>%
10345     >>%
10346     >>%
10347 }%
10348 \@pdfm@mark{close \OBJ@OCG@view}%
10349 \def\OBJ@OCG@print{@OCG@print}%
10350 \@pdfm@mark{%
10351   obj \OBJ@OCG@print <<%
10352     /Type/OCG%
10353     /Name(Print)%
10354     /Usage<<%
10355     /Print<<%
10356     /PrintState/ON%
10357     >>%
10358     /View<<%
10359     /ViewState/OFF%
10360     >>%
10361     >>%
10362     >>%
10363 }%
10364 \@pdfm@mark{close \OBJ@OCG@print}%
10365 \def\OBJ@OCGs{@OCGs}%
10366 \@pdfm@mark{%
10367   obj \OBJ@OCGs [%
10368     \OBJ@OCG@view\space\OBJ@OCG@print
10369   ]%
10370 }%
10371 \@pdfm@mark{close \OBJ@OCGs}%
10372 \@pdfm@mark{%
10373   put @catalog <<%
10374     /OCProperties<<%
10375     /OCGs \OBJ@OCGs
10376     /D<<%
10377     /OFF[\OBJ@OCG@print]%
10378     /AS[%
10379       <<%
10380         /Event/View%
10381         /OCGs \OBJ@OCGs

```

```

10382         /Category[/View]%
10383     >>%
10384     <<%
10385         /Event/Print%
10386         /OCGs \OBJ@OCGs
10387         /Category[/Print]%
10388     >>%
10389     <<%
10390         /Event/Export%
10391         /OCGs \OBJ@OCGs
10392         /Category[/Print]%
10393     >>%
10394     ]%
10395     >>%
10396     >>%
10397     >>%
10398 }%
10399 \AtBeginShipout{%
10400     \setbox\AtBeginShipoutBox=\hbox{%
10401         \copy\AtBeginShipoutBox
10402         \@pdfm@mark{%
10403             put @resources <<%
10404                 /Properties<<%
10405                 /OCView \OBJ@OCG@view
10406                 /OCPrint \OBJ@OCG@print
10407             >>%
10408             >>%
10409         }%
10410     }%
10411 }%
10412 \Hy@AtBeginDocument{%
10413     \def\Hy@colorlink#1{%
10414         \begingroup
10415         \ifHy@ocgcolorlinks
10416             \def\Hy@ocgcolor{#1}%
10417             \setbox0=\hbox\bgroup\color@begingroup
10418         \else
10419             \HyColor@UseColor#1%
10420         \fi
10421     }%
10422     \def\Hy@endcolorlink{%
10423         \ifHy@ocgcolorlinks
10424             \color@endgroup\egroup
10425             \mbox{%
10426                 \@pdfm@mark{content /OC/OCPrint BDC}%
10427                 \rlap{\copy0}%
10428                 \@pdfm@mark{content EMC/OC/OCView BDC}%
10429             \begingroup
10430                 \expandafter\HyColor@UseColor\Hy@ocgcolor
10431                 \box0 %
10432             \endgroup
10433             \@pdfm@mark{content EMC}%
10434         }%
10435     \fi
10436     \endgroup
10437 }%
10438 }%

```

```

10439 \else
10440   \Hy@DisableOption{ocgcolorlinks}%
10441 \fi

10442 \def\Hy@BeginAnnot#1{%
10443   \stepcounter{Hy@AnnotLevel}%
10444   \ifnum\value{Hy@AnnotLevel}=\@ne
10445     #1%
10446   \fi
10447 }
10448 \def\Hy@endAnnot{%
10449   \ifnum\value{Hy@AnnotLevel}=\@ne
10450     \Hy@endcolorlink
10451     \@pdfm@mark{eann}%
10452   \fi
10453   \addtocounter{Hy@AnnotLevel}\m@ne
10454 }

10455 \def\Hy@undefinedname{UNDEFINED}
10456 \def\hyper@linkstart#1#2{%
10457   \Hy@VerboseLinkStart{#1}{#2}%
10458   \leavevmode
10459   \Hy@BeginAnnot{%
10460     \protected@edef\Hy@testname{#2}%
10461     \ifx\Hy@testname\@empty
10462       \Hy@Warning{%
10463         Empty destination name,\MessageBreak
10464         using '\Hy@undefinedname'%
10465       }%
10466       \let\Hy@testname\Hy@undefinedname
10467     \else
10468       \Hy@pstringdef\Hy@testname{%
10469         \expandafter\HyperDestNameFilter\expandafter{%
10470           \Hy@testname
10471         }%
10472       }%
10473     \fi
10474     \@pdfm@mark{%
10475       bann<<%
10476       /Type/Annot%
10477       /Subtype/Link%
10478       \ifHy@pdfa /F 4\fi
10479       \Hy@setpdfborder
10480       \expandafter\ifx\csname @#1bordercolor\endcsname\relax
10481       \else
10482         /C[\csname @#1bordercolor\endcsname]%
10483       \fi
10484       /A<<%
10485       /S/GoTo%
10486       /D(\Hy@testname)%
10487       \Hy@href@nextactionraw
10488       >>%
10489     >>%
10490   }%
10491   \expandafter\Hy@colorlink\csname @#1color\endcsname
10492 }%
10493 }
10494 \def\hyper@linkend{\Hy@endAnnot}%
10495 \def\hyper@link#1#2#3{%

```

```

10496 \hyper@linkstart{#1}{#2}#3\Hy@xspace@end\hyper@linkend
10497 }
10498 \def\hyper@linkfile#1#2#3{%
10499 \leavevmode
10500 \Hy@BeginAnnot{%
10501 \def\Hy@pstringF{#2}%
10502 \Hy@CleanupFile\Hy@pstringF
10503 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
10504 \Hy@pstringdef\Hy@pstringD{#3}%
10505 \Hy@MakeRemoteAction
10506 \@pdfm@mark{%
10507 bann<<%
10508 /Type/Annot%
10509 /Subtype/Link%
10510 \ifHy@pdfa /F 4\fi
10511 \Hy@setpdfborder
10512 \ifx\@filebordercolor\relax
10513 \else
10514 /C[\@filebordercolor]%
10515 \fi
10516 /A<<%
10517 /S/GoToR%
10518 /F(\Hy@pstringF)%
10519 /D%
10520 \ifx\#3\%
10521 [\Hy@href@page\@pdfremotestartview]%
10522 \else
10523 (\Hy@pstringD)%
10524 \fi
10525 \Hy@SetNewWindow
10526 \Hy@href@nextactionraw
10527 >>%
10528 >>%
10529 }%
10530 \Hy@colorlink\@filecolor
10531 }%
10532 #1\Hy@xspace@end
10533 \Hy@EndAnnot
10534 }
10535 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
10536 \leavevmode
10537 \Hy@BeginAnnot{%
10538 \Hy@pstringdef\Hy@pstringF{#1}%
10539 \Hy@pstringdef\Hy@pstringP{#3}%
10540 \@pdfm@mark{%
10541 bann<<%
10542 /Type/Annot%
10543 /Subtype/Link%
10544 \ifHy@pdfa /F 4\fi
10545 \Hy@setpdfborder
10546 \ifx\@runbordercolor\relax
10547 \else
10548 /C[\@runbordercolor]%
10549 \fi
10550 /A<<%
10551 /F(\Hy@pstringF)%
10552 /S/Launch%

```



```

10553     \Hy@SetNewWindow
10554     \ifx\|#3\|
10555     \else
10556         /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
10557     \fi
10558     \Hy@href@nextactionraw
10559     >>%
10560     >>%
10561     }%
10562     \Hy@colorlink\@runcolor
10563     }%
10564     #2\Hy@xspace@end
10565     \Hy@EndAnnot
10566 }
10567 \def\hyper@linkurl#1#2{%
10568     \leavevmode
10569     \Hy@BeginAnnot{%
10570         \Hy@pstringdef\Hy@pstringURI{#2}%
10571         \@pdfm@mark{%
10572             bann<<%
10573             /Type/Annot%
10574             /Subtype/Link%
10575             \ifHy@pdfa /F 4\fi
10576             \Hy@setpdfborder
10577             \ifx\@urlbordercolor\relax
10578             \else
10579                 /C[\@urlbordercolor]%
10580             \fi
10581             /A<<%
10582             /S/URI%
10583             /URI(\Hy@pstringURI)%
10584             \ifHy@href@ismap
10585                 /IsMap true%
10586             \fi
10587             \Hy@href@nextactionraw
10588             >>%
10589             >>%
10590             }%
10591             \Hy@colorlink\@urlcolor
10592             }%
10593             #1\Hy@xspace@end
10594             \Hy@EndAnnot
10595         }
10596     \def\Acrobatmenu#1#2{%
10597         \Hy@Acrobatmenu{#1}{#2}{%
10598             \Hy@BeginAnnot{%
10599                 \EdefEscapeName\Hy@temp@menu{#1}%
10600                 \@pdfm@mark{%
10601                     bann<<%
10602                     /Type/Annot%
10603                     /Subtype/Link%
10604                     \ifHy@pdfa /F 4\fi
10605                     \Hy@setpdfborder
10606                     \ifx\@menubordercolor\relax
10607                     \else
10608                         /C[\@menubordercolor]%
10609                     \fi

```

```

10610      /A<<%
10611      /S/Named%
10612      /N/\Hy@temp@menu
10613      \Hy@href@nextactionraw
10614      >>%
10615      >>%
10616      }%
10617      \Hy@colorlink\@menucolor
10618      }%
10619      #2\Hy@xspace@end
10620      \Hy@endAnnot
10621      }%
10622      }
10623      \ifx\@pdfproducer\relax
10624      \def\@pdfproducer{dvipdfm}%

```

Detect Xe<sub>T</sub><sub>E</sub>X. However, but xdvipdfmx will overwrite it in the final PDF file.

```

10625      \begingroup\expandafter\expandafter\expandafter\endgroup
10626      \expandafter\ifx\csname XeTeXversion\endcsname\relax
10627      \else
10628      \edef\@pdfproducer{XeTeX \the\XeTeXversion\XeTeXrevision}%
10629      \fi
10630      \fi
10631      \def\PDF@FinishDoc{%
10632      \Hy@UseMaketitleInfos
10633      \HyInfo@GenerateAddons
10634      \@pdfm@mark{%
10635      docinfo<<%
10636      /Title(\@pdftitle)%
10637      /Subject(\@pdfsubject)%
10638      /Creator(\@pdfcreator)%
10639      \ifx\@pdfcreationdate\@empty
10640      \else
10641      /CreationDate(\@pdfcreationdate)%
10642      \fi
10643      \ifx\@pdfmoddate\@empty
10644      \else
10645      /ModDate(\@pdfmoddate)%
10646      \fi
10647      /Author(\@pdfauthor)%
10648      \ifx\@pdfproducer\relax
10649      \else
10650      /Producer(\@pdfproducer)%
10651      \fi
10652      /Keywords(\@pdfkeywords)%
10653      \ifx\@pdftrapped\@empty
10654      \else
10655      /Trapped/\@pdftrapped
10656      \fi
10657      \HyInfo@Addons
10658      >>%
10659      }%
10660      \Hy@DisableOption{pdfauthor}%
10661      \Hy@DisableOption{pdftitle}%
10662      \Hy@DisableOption{pdfsubject}%
10663      \Hy@DisableOption{pdfcreator}%
10664      \Hy@DisableOption{pdfcreationdate}%
10665      \Hy@DisableOption{pdfmoddate}%

```

```

10666 \Hy@DisableOption{pdfproducer}%
10667 \Hy@DisableOption{pdfkeywords}%
10668 \Hy@DisableOption{pdftrapped}%
10669 \Hy@DisableOption{pdfinfo}%
10670 }

10671 \def\PDF@SetupDoc{%
10672   \edef\Hy@temp{%
10673     \ifHy@pdftoolbar\else /HideToolbar true\fi
10674     \ifHy@pdfmenubar\else /HideMenubar true\fi
10675     \ifHy@pdfwindowui\else /HideWindowUI true\fi
10676     \ifHy@pdfwindow /FitWindow true\fi
10677     \ifHy@pdfcenterwindow /CenterWindow true\fi
10678     \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10679     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10680     \Hy@UseNameKey{Direction}\@pdfdirection
10681     \Hy@UseNameKey{ViewArea}\@pdfviewarea
10682     \Hy@UseNameKey{ViewClip}\@pdfviewclip
10683     \Hy@UseNameKey{PrintArea}\@pdfprintarea
10684     \Hy@UseNameKey{PrintClip}\@pdfprintclip
10685     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10686     \Hy@UseNameKey{Duplex}\@pdfduplex
10687     \ifx\@pdfpicktraybypdfsize\@empty
10688       \else
10689         /PickTrayByPDFSize \@pdfpicktraybypdfsize
10690       \fi
10691     \ifx\@pdfprintpagerange\@empty
10692       \else
10693         /PrintPageRange[\@pdfprintpagerange]%
10694       \fi
10695     \ifx\@pdfnumcopies\@empty
10696       \else
10697         /NumCopies \@pdfnumcopies
10698       \fi
10699   }%
10700   \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10701   \@pdfm@mark{%
10702     docview<<%
10703     \ifx\@pdfstartpage\@empty
10704       \else
10705         \ifx\@pdfstartview\@empty
10706           \else
10707             /OpenAction[@page\@pdfstartpage\@pdfstartview]%
10708           \fi
10709         \fi
10710         \ifx\@baseurl\@empty
10711           \else
10712             /URI<</Base(\Hy@pstringB)>>%
10713           \fi
10714         /PageMode/\@pdfpagemode
10715         \ifx\Hy@temp\@empty
10716           \else
10717             /ViewerPreferences<<\Hy@temp>>%
10718           \fi
10719         \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10720         \ifx\@pdflang\@empty
10721           \else
10722             /Lang(\@pdflang)%

```

```

10723 \fi
10724 >>%
10725 }%
10726 \ifx\@pdfpagescrop\@empty
10727 \else
10728 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}}%
10729 \fi
10730 }
10731 </dvipdfm | xetex>
10732 < *dvipdfm | xetex>

```

#### \hyper@pagetransition

```

10733 \def\hyper@pagetransition{%
10734 \ifx\@pdfpagetransition\relax
10735 \else
10736 \ifx\@pdfpagetransition\@empty
10737 \else
10738 \special{pdf:put @thispage %
10739 <</Trans<</S/\@pdfpagetransition>>>>%
10740 }%
10741 \fi
10742 \fi
10743 }

```

#### \hyper@pageduration

```

10744 \def\hyper@pageduration{%
10745 \ifx\@pdfpageduration\relax
10746 \else
10747 \ifx\@pdfpageduration\@empty
10748 \else
10749 \special{pdf:put @thispage %
10750 <</Dur \@pdfpageduration>>%
10751 }%
10752 \fi
10753 \fi
10754 }

```

#### \hyper@pagehidden

```

10755 \def\hyper@pagehidden{%
10756 \ifHy@useHidKey
10757 \special{pdf:put @thispage %
10758 <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
10759 }%
10760 \fi
10761 }

10762 \g@addto@macro\Hy@EveryPageBoxHook{%
10763 \hyper@pagetransition
10764 \hyper@pageduration
10765 \hyper@pagehidden
10766 }

10767 </dvipdfm | xetex>

```

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

```

10768 < *dvipdfm>
10769 \AtBeginShipoutFirst{%

```

```

10770 \ifHy@setpagesize
10771 \begingroup
10772 \ifundefined{stockwidth}{%
10773 \ifdim\paperwidth>\z@
10774 \ifdim\paperheight>\z@
10775 \special{papersize=\the\paperwidth,\the\paperheight}%
10776 \fi
10777 \fi
10778 }{%
10779 \ifdim\stockwidth>\z@
10780 \ifdim\stockheight>\z@
10781 \special{papersize=\the\stockwidth,\the\stockheight}%
10782 \fi
10783 \fi
10784 }%
10785 \endgroup
10786 \fi
10787 \Hy@DisableOption{setpagesize}%
10788 }
10789 </dvipdfm>

```

## 47.6 VTeX typesetting system

Provided by MicroPress, May 1998. They require VTeX version 6.02 or newer; see <http://www.micropress-inc.com/> for details.

```

10790 <*vtexhtml>
10791 \providecommand*{\XR@ext}{.htm}
10792 \RequirePackage{vtexhtml}
10793 \newif\if@Localurl
10794 \let\PDF@FinishDoc\ltx@empty
10795 \def\PDF@SetupDoc{%
10796 \ifx\@baseurl\@empty
10797 \else
10798 \special{!direct <base href="\@baseurl">}%
10799 \fi
10800 }
10801 \def\@urltype{url}
10802 \def\hyper@link#1#2#3{%
10803 \Hy@VerboseLinkStart{#1}{#2}%
10804 \leavevmode
10805 \special{!direct <a href=%
10806 \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
10807 #3\Hy@xspace@end
10808 \special{!direct </a>}%
10809 }
10810 \def\hyper@linkurl#1#2{%
10811 \begingroup
10812 \hyper@chars
10813 \leavevmode
10814 \MathBSuppress=1\relax
10815 \special{!direct <a href=%
10816 \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}%
10817 #1\Hy@xspace@end
10818 \MathBSuppress=0\relax
10819 \special{!direct </a>}%
10820 \endgroup
10821 }

```

```

10822 \def\hyper@linkfile#1#2#3{%
10823   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
10824 }
10825 \def\hyper@linkstart#1#2{%
10826   \Hy@VerboseLinkStart{#1}{#2}%
10827   \def\Hy@tempa{#1}\ifx\Hy@tempa\@urlltype
10828     \@Localurltrue
10829     \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
10830   \else
10831     \@Localurlfalse
10832     \begingroup
10833     \hyper@chars
10834     \special{!aref \HyperDestNameFilter{#2}}%
10835     \endgroup
10836   \fi
10837 }
10838 \def\hyper@linkend{%
10839   \if@Localurl
10840     \special{!endaref}%
10841   \else
10842     \special{!direct </a>}%
10843   \fi
10844 }
10845 \Hy@WrapperDef\hyper@anchorstart#1{%
10846   \Hy@SaveLastskip
10847   \Hy@VerboseAnchor{#1}%
10848   \begingroup
10849     \hyper@chars
10850     \special{!aname #1}%
10851     \special{!direct <a name=%
10852       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10853   \endgroup
10854   \Hy@activeanchortrue
10855 }
10856 \def\hyper@anchorend{%
10857   \special{!direct </a>}%
10858   \Hy@activeanchorfalse
10859   \Hy@RestoreLastskip
10860 }
10861 \Hy@WrapperDef\hyper@anchor#1{%
10862   \Hy@SaveLastskip
10863   \Hy@VerboseAnchor{#1}%
10864   \begingroup
10865     \let\protect=\string
10866     \hyper@chars
10867     \leavevmode
10868     \special{!aname #1}%
10869     \special{!direct <a name=%
10870       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10871   \endgroup
10872   \Hy@activeanchortrue
10873   \bgroup\anchor@spot\egroup
10874   \special{!direct </a>}%
10875   \Hy@activeanchorfalse
10876   \Hy@RestoreLastskip
10877 }
10878 \def\@Form[#1]{%

```

```

10879 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10880 }
10881 \let\@endForm\ltx@empty
10882 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10883 \Hy@Message{Sorry, TeXpider does not yet support FORM gauges}%
10884 }
10885 \def\@TextField[#1]#2{% parameters, label
10886 \Hy@Message{Sorry, TeXpider does not yet support FORM text fields}%
10887 }
10888 \def\@CheckBox[#1]#2{% parameters, label
10889 \Hy@Message{Sorry, TeXpider does not yet support FORM checkboxes}%
10890 }
10891 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10892 \Hy@Message{Sorry, TeXpider does not yet support FORM choice menus}%
10893 }
10894 \def\@PushButton[#1]#2{% parameters, label
10895 \Hy@Message{Sorry, TeXpider does not yet support FORM pushbuttons}%
10896 }
10897 \def\@Reset[#1]#2{%
10898 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10899 }
10900 \def\@Submit[#1]#2{%
10901 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10902 }
10903 </vtexhtml>
10904 <*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.

```

10905 \ifx\mediaheight\@undefined
10906 \else
10907 \ifx\mediaheight\relax
10908 \else
10909 \ifHy@setpagesize
10910 \providecommand*\VTeXInitMediaSize{%
10911 \ltx@ifundefined{stockwidth}{%
10912 \ifdim\paperheight>0pt %
10913 \setlength\mediaheight\paperheight
10914 \fi
10915 \ifdim\paperheight>0pt %
10916 \setlength\mediawidth\paperwidth
10917 \fi
10918 }{%
10919 \ifdim\stockheight>0pt %
10920 \setlength\mediaheight\stockheight
10921 \fi
10922 \ifdim\stockwidth>0pt %
10923 \setlength\mediawidth\stockwidth
10924 \fi
10925 }%
10926 }%
10927 \Hy@AtBeginDocument{\VTeXInitMediaSize}%
10928 \fi
10929 \Hy@DisableOption{setpagesize}%
10930 \fi
10931 \fi

```

Older versions of VTeX require xyz in lower case.

```

10932 \providecommand*\@pdfview{xyz}
10933 \providecommand*\@pdfborder{0 0 1}
10934 \providecommand*\@pdfborderstyle{}
10935 \let\CurrentBorderColor\@linkbordercolor
10936 \Hy@WrapperDef\hyper@anchor#1{%
10937   \Hy@SaveLastskip
10938   \Hy@VerboseAnchor{#1}%
10939   \begingroup
10940     \let\protect=\string
10941     \hyper@chars
10942     \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10943   \endgroup
10944   \Hy@activeanchortrue
10945   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
10946   \Hy@activeanchorfalse
10947   \Hy@RestoreLastskip
10948 }
10949 \Hy@WrapperDef\hyper@anchorstart#1{%
10950   \Hy@SaveLastskip
10951   \Hy@VerboseAnchor{#1}%
10952   \begingroup
10953     \hyper@chars
10954     \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10955   \endgroup
10956   \Hy@activeanchortrue
10957 }
10958 \def\hyper@anchorend{%
10959   \Hy@activeanchorfalse
10960   \Hy@RestoreLastskip
10961 }
10962 \def\@urltype{url}
10963 \def\Hy@undefinedname{UNDEFINED}
10964 \def\hyper@linkstart#1#2{%
10965   \Hy@VerboseLinkStart{#1}{#2}%
10966   \Hy@pstringdef\Hy@pstringURI{#2}%
10967   \expandafter\Hy@colorlink\csname @#1color\endcsname
10968   \ltx@ifundefined{#1bordercolor}{%
10969     \let\CurrentBorderColor\relax
10970   }{%
10971     \edef\CurrentBorderColor{%
10972       \csname @#1bordercolor\endcsname
10973     }%
10974   }%
10975   \def\Hy@tempa{#1}%
10976   \ifx\Hy@tempa\@urltype
10977     \special{!%
10978       aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10979       \ifHy@href@ismap
10980         /IsMap true%
10981       \fi
10982       \Hy@href@nextactionraw
10983       >,%
10984       a=<%
10985       \ifHy@pdfa /F 4\fi
10986       \Hy@setpdfborder
10987       \ifx\CurrentBorderColor\relax

```



```

10988     \else
10989         /C [\CurrentBorderColor]%
10990     \fi
10991     >%
10992 }%
10993 \else
10994     \protected@edef\Hy@testname{#2}%
10995     \ifx\Hy@testname\@empty
10996         \Hy@Warning{%
10997             Empty destination name,\MessageBreak
10998             using '\Hy@undefinedname'%
10999         }%
11000     \let\Hy@testname\Hy@undefinedname
11001 \fi
11002 \special{!%
11003     aref \expandafter\HyperDestNameFilter
11004         \expandafter{\Hy@testname};%
11005     a=<%
11006         \ifHy@pdfa /F 4\fi
11007         \Hy@setpdfborder
11008         \ifx\CurrentBorderColor\relax
11009             \else
11010                 /C [\CurrentBorderColor]%
11011             \fi
11012         >%
11013     }%
11014 \fi
11015 }
11016 \def\hyper@linkend{%
11017     \special{!endaref}%
11018     \Hy@endcolorlink
11019 }
11020 \def\hyper@linkfile#1#2#3{%
11021     \leavevmode
11022     \def\Hy@pstringF{#2}%
11023     \Hy@CleanupFile\Hy@pstringF
11024     \special{!%
11025         aref <%
11026             \ifnum\Hy@VTeXversion>753 \ifHy@pdfnewwindow n\fi\fi
11027             f=\Hy@pstringF>#3;%
11028             a=<%
11029                 \ifHy@pdfa /F 4\fi
11030                 \Hy@setpdfborder
11031                 \ifx\@filebordercolor\relax
11032                     \else
11033                         /C [\@filebordercolor]%
11034                     \fi
11035                 >%
11036             }%
11037             \Hy@colorlink\@filecolor
11038             #1\Hy@xspace@end
11039             \Hy@endcolorlink
11040             \special{!endaref}%
11041         }
11042     \def\hyper@linkurl#1#2{%
11043         \begingroup
11044         \Hy@pstringdef\Hy@pstringURI{#2}%

```

```

11045 \hyper@chars
11046 \leavevmode
11047 \special{!%
11048   aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
11049     \ifHy@href@ismap
11050       /IsMap true%
11051     \fi
11052     \Hy@href@nextactionraw
11053   >,%
11054   a=<%
11055     \ifHy@pdfa /F 4\fi
11056     \Hy@setpdfborder
11057     \ifx\@urlbordercolor\relax
11058     \else
11059       /C [\@urlbordercolor]%
11060     \fi
11061   >%
11062 }%
11063 \Hy@colorlink\@urlcolor
11064 #1\Hy@xspace@end
11065 \Hy@endcolorlink
11066 \special{!endaref}%
11067 \endgroup
11068 }
11069 \def\hyper@link#1#2#3{%
11070 \Hy@VerboseLinkStart{#1}{#2}%
11071 \ltx@ifundefined{@#1bordercolor}{%
11072   \let\CurrentBorderColor\relax
11073 }{%
11074   \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
11075 }%
11076 \leavevmode
11077 \protected@edef\Hy@testname{#2}%
11078 \ifx\Hy@testname\@empty
11079   \Hy@Warning{%
11080     Empty destination name,\MessageBreak
11081     using '\Hy@undefinedname'%
11082   }%
11083   \let\Hy@testname\Hy@undefinedname
11084 \fi
11085 \special{!%
11086   aref \expandafter\HyperDestNameFilter
11087     \expandafter{\Hy@testname};%
11088   a=<%
11089     \ifHy@pdfa /F 4\fi
11090     \Hy@setpdfborder
11091     \ifx\CurrentBorderColor\relax
11092     \else
11093       /C [\CurrentBorderColor]%
11094     \fi
11095   >%
11096 }%
11097 \expandafter
11098 \Hy@colorlink\csname @#1color\endcsname
11099 #3\Hy@xspace@end
11100 \Hy@endcolorlink
11101 \special{!endaref}%

```

```

11102 }
11103 \def\hyper@image#1#2{%
11104   \hyper@linkurl{#2}{#1}%
11105 }
11106 \def\@hyper@launch run:#1\#2#3{%
11107   \Hy@pstringdef\Hy@pstringF{#1}%
11108   \Hy@pstringdef\Hy@pstringP{#3}%
11109   \leavevmode
11110   \special{!aref %
11111     <u=%
11112       /Type/Action%
11113       /S/Launch%
11114       /F(\Hy@pstringF)%
11115       \Hy@SetNewWindow
11116       \ifx\#3\%
11117         \else
11118           /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>%
11119         \fi
11120       \Hy@href@nextactionraw
11121     >,%
11122     a=<%
11123       \ifHy@pdfa /F 4\fi
11124       \Hy@setpdfborder
11125       \ifx\@runbordercolor\relax
11126         \else
11127           /C[\@runbordercolor]%
11128         \fi
11129     >%
11130   }%
11131   \Hy@colorlink\@runcolor
11132   #2\Hy@xspace@end
11133   \Hy@endcolorlink
11134   \special{!endaref}%
11135 }
11136 \def\Acrobatmenu#1#2{%
11137   \EdefEscapeName\Hy@temp@menu{#1}%
11138   \Hy@Acrobatmenu{#1}{#2}{%
11139     \special{!%
11140       aref <u=/S /Named /N /\Hy@temp@menu>;%
11141       a=<%
11142         \ifHy@pdfa /F 4\fi
11143         \Hy@setpdfborder
11144         \ifx\@menubordercolor\relax
11145         \else
11146           /C[\@menubordercolor]%
11147         \fi
11148       >%
11149     }%
11150     \Hy@colorlink\@menucolor
11151     #2\Hy@xspace@end
11152     \Hy@endcolorlink
11153     \special{!endaref}%
11154   }%
11155 }

```

The following code (transition effects) is made by Alex Kostin.  
The code below makes sense for V<sub>T</sub>E<sub>X</sub> 7.02 or later.

Please never use `\@ifundefined{VTeXversion}{..}{..}` globally.

```
11156 \ifnum\Hy@VTeXversion<702 %
11157 \else
11158   \def\hyper@pagetransition{%
11159     \ifx\@pdfpagetransition\relax
11160     \else
11161       \ifx\@pdfpagetransition\@empty
```

Standard incantation.

1. Does an old entry have to be deleted? 2. If 1=yes, how to delete?

```
11162   \else
11163     \hvtex@parse@trans\@pdfpagetransition
11164   \fi
11165 \fi
11166 }%
```

I have to write an “honest” parser to convert raw PDF code into VTeX `\special`. (AVK)

Syntax of VTeX `\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:

```
11167 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
11168 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
11169 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
11170 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
11171 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
11172 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
11173 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%
```

Optional parameters:

```
11174 \def\hvtex@par@dimension{/Dm}%
11175 \def\hvtex@par@direction{/Di}%
11176 \def\hvtex@par@duration{/D}%
11177 \def\hvtex@par@motion{/M}%
```

Tokenizer:

```
11178 \def\hvtex@gettoken{%
11179   \expandafter\hvtex@gettoken@\hvtex@buffer\@nil
11180 }%
```

Notice that tokens in the input buffer must be space delimited.

```
11181 \def\hvtex@gettoken@#1 #2\@nil{%
11182   \edef\hvtex@token{#1}%
```

```

11183 \edef\hvtex@buffer{#2}%
11184 }%
11185 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

11186 \let\hvtex@trans@code\@empty
11187 \let\hvtex@param@dimension\@empty
11188 \let\hvtex@param@direction\@empty
11189 \let\hvtex@param@duration\@empty
11190 \let\hvtex@param@motion\@empty
11191 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

11192 \hvtex@gettoken
11193 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

11194 \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

11195 \else
11196 \hvtex@gettoken
11197 \fi
11198 \fi
11199 \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```

11200 \hvtex@trans@params
11201 }%

```

Reentrant macro to parse optional parameters.

```

11202 \def\hvtex@trans@params{%
11203 \ifx\hvtex@buffer\@empty
11204 \else
11205 \hvtex@gettoken
11206 \let\hvtex@trans@par\hvtex@token
11207 \ifx\hvtex@buffer\@empty
11208 \else
11209 \hvtex@gettoken
11210 \ifx\hvtex@trans@par\hvtex@par@duration

```

/D is the effect duration in seconds. V<sub>T</sub><sub>E</sub>X special takes it in milliseconds.

```

11211 \let\hvtex@param@duration\hvtex@token
11212 \else \ifx\hvtex@trans@par\hvtex@par@motion

```

/M can be either /I or /O

```

11213 \expandafter\edef\expandafter\hvtex@param@motion
11214 \expandafter{\expandafter\@gobble\hvtex@token}%
11215 \else \ifx\hvtex@trans@par\hvtex@par@dimension

```

/Dm can be either /H or /V

```

11216 \expandafter\edef\expandafter\hvtex@param@dimension
11217 \expandafter{\expandafter\@gobble\hvtex@token}%
11218 \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).

```

11219 \let\hvtex@param@direction\hvtex@token
11220 \fi\fi\fi\fi
11221 \fi
11222 \fi

```

```

11223 \ifx\hvtex@buffer\@empty
11224 \let\next\hvtex@produce@trans
11225 \else
11226 \let\next\hvtex@trans@params
11227 \fi
11228 \next
11229 }%

```

Merge <transition\_effect> and issue the special when possible. Too lazy to validate optional parameters.

```

11230 \def\hvtex@produce@trans{%
11231 \let\vtex@trans@special\@empty
11232 \if S\hvtex@trans@code
11233 \edef\vtex@trans@special{\hvtex@trans@code
11234 \hvtex@param@dimension\hvtex@param@motion}%
11235 \else\if B\hvtex@trans@code
11236 \edef\vtex@trans@special{%
11237 \hvtex@trans@code\hvtex@param@dimension
11238 }%
11239 \else\if X\hvtex@trans@code
11240 \edef\vtex@trans@special{%
11241 \hvtex@trans@code\hvtex@param@motion
11242 }%
11243 \else\if W\hvtex@trans@code
11244 \edef\vtex@trans@special{%
11245 \hvtex@trans@code\hvtex@param@direction
11246 }%
11247 \else\if D\hvtex@trans@code
11248 \let\vtex@trans@special\hvtex@trans@code
11249 \else\if R\hvtex@trans@code
11250 \let\vtex@trans@special\hvtex@trans@code
11251 \else\if G\hvtex@trans@code
11252 \edef\vtex@trans@special{%
11253 \hvtex@trans@code\hvtex@param@direction
11254 }%
11255 \fi\fi\fi\fi\fi\fi
11256 \ifx\vtex@trans@special\@empty
11257 \else
11258 \ifx\hvtex@param@duration\@empty
11259 \else
11260 \setlength{\dimen@}{\hvtex@param@duration\p@}%

```

I'm not guilty of possible overflow.

```

11261 \multiply\dimen@\@m
11262 \edef\vtex@trans@special{%
11263 \vtex@trans@special,\strip@pt\dimen@
11264 }%
11265 \fi

```

And all the mess is just for this.

```

11266 \special{!trans \vtex@trans@special}%
11267 \fi
11268 }%

11269 \def\hyper@pageduration{%
11270 \ifx\@pdfpageduration\relax
11271 \else
11272 \ifx\@pdfpageduration\@empty
11273 \special{!duration-}%

```

```

11274 \else
11275 \special{!duration \@pdfpageduration}%
11276 \fi
11277 \fi
11278 }%
11279 \def\hyper@pagehidden{%
11280 \ifHy@useHidKey
11281 \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
11282 \fi
11283 }%
11284 \g@addto@macro\Hy@EveryPageBoxHook{%
11285 \hyper@pagetransition
11286 \hyper@pageduration
11287 \hyper@pagehidden
11288 }%
11289 \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

```

11290 \ifx\@pdfproducer\relax
11291 \def\@pdfproducer{VTeX}%
11292 \ifnum\Hy@VTeXversion>\z@
11293 \count@\VTeXversion
11294 \divide\count@ 100 %
11295 \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
11296 \multiply\count@ -100 %
11297 \advance\count@\VTeXversion
11298 \edef\@pdfproducer{%
11299 \@pdfproducer
11300 .\ifnum\count@<10 0\fi\the\count@
11301 \ifx\VTeXOS\@undefined\else
11302 \ifnum\VTeXOS>0 %
11303 \ifnum\VTeXOS<6 %
11304 \space%
11305 \ifcase\VTeXOS
11306 \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
11307 \fi
11308 )%
11309 \fi
11310 \fi
11311 \fi
11312 ,\space
11313 \ifnum\OpMode=\@ne PDF\else PS\fi
11314 \space backend%
11315 \ifx\gexmode\@undefined\else
11316 \ifnum\gexmode>\z@\space with GeX\fi
11317 \fi
11318 }%
11319 \fi

```

11320 \fi

Current !pdfinfo key syntax:

Key	Field	Type
a	Author	String
b	CropBox	String
c	Creator	String
k	Keywords	String
l	PageLayout	PS
p	PageMode	PS
r	Producer	String
s	Subject	String
t	Title	String
u	URI	PS
v	ViewPreferences	PS

Note: PS objects that are dicts are in <<...>> (yuck; no choice).

```

11321 \def\PDF@SetupDoc{%
11322   \ifx\@pdfpagescrop\@empty
11323   \else
11324     \special{!pdfinfo b=<\@pdfpagescrop>}%
11325   \fi
11326   \ifx\@pdfstartpage\@empty
11327   \else
11328     \ifx\@pdfstartview\@empty
11329     \else
11330       \special{!onopen Page\@pdfstartpage}%
11331     \fi
11332   \fi
11333   \special{!pdfinfo p=</\@pdfpagemode>}%
11334   \ifx\@baseurl\@empty
11335   \else
11336     \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
11337   \fi
11338   \special{!pdfinfo v=<<<%
11339     \ifHy@pdftoolbar\else /HideToolbar true\fi
11340     \ifHy@pdfmenubar\else /HideMenubar true\fi
11341     \ifHy@pdfwindowui\else /HideWindowUI true\fi
11342     \ifHy@pdffitwindow /FitWindow true\fi
11343     \ifHy@pdfcenterwindow /CenterWindow true\fi
11344     \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
11345     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
11346     \Hy@UseNameKey{Direction}\@pdfdirection
11347     \Hy@UseNameKey{ViewArea}\@pdfviewarea
11348     \Hy@UseNameKey{ViewClip}\@pdfviewclip
11349     \Hy@UseNameKey{PrintArea}\@pdfprintarea
11350     \Hy@UseNameKey{PrintClip}\@pdfprintclip
11351     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
11352     \Hy@UseNameKey{Duplex}\@pdfduplex
11353     \ifx\@pdfpicktraybypdfsize\@empty
11354     \else
11355       /PickTrayByPDFSize \@pdfpicktraybypdfsize
11356     \fi
11357     \ifx\@pdfprintpagerange\@empty
11358     \else
11359       /PrintPageRange[\@pdfprintpagerange]%
11360     \fi
11361     \ifx\@pdfnumcopies\@empty

```



```

11362 \else
11363 /NumCopies \@pdfnumcopies
11364 \fi
11365 >>>}%
11366 \ifx\@pdfpagelayout\@empty
11367 \else
11368 \special{!pdffinfo l=</\@pdfpagelayout\space>}%
11369 \fi
11370 }%
11371 \HyInfo@AddonUnsupportedtrue
11372 \define@key{Hyp}{pdfcreationdate}{%
11373 \Hy@Warning{%
11374 VTeX does not support pdfcreationdate.\MessageBreak
11375 Therefore its setting is ignored%
11376 }%
11377 }
11378 \define@key{Hyp}{pdfmoddate}{%
11379 \Hy@Warning{%
11380 VTeX does not support pdfmoddate.\MessageBreak
11381 Therefore its setting is ignored%
11382 }%
11383 }
11384 \def\PDF@FinishDoc{%
11385 \Hy@UseMaketitleInfos
11386 \HyInfo@TrappedUnsupported
11387 \special{!pdffinfo a=<\@pdfauthor>}%
11388 \special{!pdffinfo t=<\@pdftitle>}%
11389 \special{!pdffinfo s=<\@pdfsubject>}%
11390 \special{!pdffinfo c=<\@pdfcreator>}%
11391 \ifx\@pdfproducer\relax
11392 \else
11393 \special{!pdffinfo r=<\@pdfproducer>}%
11394 \fi
11395 \special{!pdffinfo k=<\@pdfkeywords>}%
11396 \Hy@DisableOption{pdfauthor}%
11397 \Hy@DisableOption{pdftitle}%
11398 \Hy@DisableOption{pdfsubject}%
11399 \Hy@DisableOption{pdfcreator}%
11400 \Hy@DisableOption{pdfcreationdate}%
11401 \Hy@DisableOption{pdfmoddate}%
11402 \Hy@DisableOption{pdfproducer}%
11403 \Hy@DisableOption{pdfkeywords}%
11404 \Hy@DisableOption{pdftrapped}%
11405 \Hy@DisableOption{pdffinfo}%
11406 }
11407 \</vtx>

```

## 47.7 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.

```

11408 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
11409 <package>\providecommand*{\Hy@DistillerDestFix}{%
11410 <*pdfmark | dviwindo>
11411 \def\Hy@DistillerDestFix{%
11412 \begingroup
11413 \let\x\literalps@out

```

The fix has to be passed unchanged through GeX, if VTeX in PostScript mode with GeX is used.

```

11414 \ifnum \@ifundefined{OpMode}{0}{%
11415 \ifundefined{gexmode}{0}{%
11416 \ifnum\gexmode>0 \OpMode\else 0\fi
11417 }>1 %
11418 \def\x##1{%
11419 \immediate\special{!=##1}%
11420 }%
11421 \fi
11422 \x{%
11423 /product where{%
11424 pop %
11425 product(Distiller)search{%
11426 pop pop pop %
11427 version(.)search{%
11428 exch pop exch pop%
11429 (3011)eq{%
11430 gsave %
11431 newpath 0 0 moveto closepath clip%
11432 /Courier findfont 10 scalefont setfont %
11433 72 72 moveto(.)show %
11434 grestore%
11435 }if%
11436 }{pop}ifelse%
11437 }{pop}ifelse%
11438 }if%
11439 }%
11440 \endgroup
11441 }
11442 </pdfmark | dviwindo>

```

## 47.8 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

```

```

11443 ⟨*pdfmark⟩
11444 \Hy@breaklinks@unsupported
11445 \def\HyPat@ObjRef{%
11446   \[~{}]+\}%
11447 }
11448 \Hy@WrapperDef\hyper@anchor#1{%
11449   \Hy@SaveLastskip
11450   \Hy@VerboseAnchor{#1}%
11451   \begingroup
11452     \pdfmark[\anchor@spot]{%
11453       pdfmark=/DEST,%
11454       linktype=anchor,%
11455       View=/\@pdfview \@pdfviewparams,%
11456       DestAnchor={#1}%
11457     }%
11458   \endgroup
11459   \Hy@RestoreLastskip
11460 }
11461 \ltx@ifundefined{hyper@anchorstart}{\endinput}
11462 \Hy@WrapperDef\hyper@anchorstart#1{%
11463   \Hy@SaveLastskip
11464   \Hy@VerboseAnchor{#1}%
11465   \literalps@out{H.S}%
11466   \Hy@AllowHyphens
11467   \xdef\hyper@currentanchor{#1}%
11468   \Hy@activeanchortrue
11469 }
11470 \def\hyper@anchorend{%
11471   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
11472   \pdfmark{%
11473     pdfmark=/DEST,%
11474     linktype=anchor,%
11475     View=/\@pdfview \@pdfviewparams,%
11476     DestAnchor=\hyper@currentanchor,%
11477   }%
11478   \Hy@activeanchorfalse
11479   \Hy@RestoreLastskip
11480 }
11481 \def\hyper@linkstart#1#2{%
11482   \Hy@VerboseLinkStart{#1}{#2}%
11483   \ifHy@breaklinks
11484   \else
11485     \leavevmode
11486     \ifmmode
11487       \def\Hy@LinkMath{$}%
11488     \else
11489       \let\Hy@LinkMath\ltx@empty
11490     \fi
11491     \Hy@SaveSpaceFactor
11492     \hbox\bgroup
11493     \Hy@RestoreSpaceFactor
11494     \Hy@LinkMath
11495   \fi
11496   \expandafter\Hy@colorlink\csname @#1color\endcsname
11497   \literalps@out{H.S}%
11498   \Hy@AllowHyphens
11499   \xdef\hyper@currentanchor{#2}%

```

```

11500 \gdef\hyper@currentlinktype{#1}%
11501 }
11502 \def\hyper@linkend{%
11503 \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
11504 \ltx@ifundefined{@\hyper@currentlinktype bordercolor}{%
11505 \let\Hy@tempcolor\relax
11506 }{%
11507 \edef\Hy@tempcolor{%
11508 \csname @\hyper@currentlinktype bordercolor\endcsname
11509 }%
11510 }%
11511 \pdfmark{%
11512 pdfmark=/ANN,%
11513 linktype=link,%
11514 Subtype=/Link,%
11515 PDFAFlags=4,%
11516 Dest=\hyper@currentanchor,%
11517 AcroHighlight=\@pdfhighlight,%
11518 Border=\@pdfborder,%
11519 BorderStyle=\@pdfborderstyle,%
11520 Color=\Hy@tempcolor,%
11521 Raw=H.B%
11522 }%
11523 \Hy@endcolorlink
11524 \ifHy@breaklinks
11525 \else
11526 \Hy@LinkMath
11527 \Hy@SaveSpaceFactor
11528 \egroup
11529 \Hy@RestoreSpaceFactor
11530 \fi
11531 }

```

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.

```

11532 \begingroup
11533 \catcode'P=12 %
11534 \catcode'T=12 %
11535 \lowercase{\endgroup
11536 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
11537 }
11538 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

`\hyper@pagetransition`

```

11539 \def\hyper@pagetransition{%
11540 \ifx\@pdfpagetransition\relax
11541 \else
11542 \ifx\@pdfpagetransition\@empty
11543 % 1. Does an old entry have to be deleted?
11544 % 2. If 1=yes, how to delete?
11545 \else
11546 \pdfmark{%
11547 pdfmark=/PUT,%
11548 Raw={%
11549 \string{ThisPage\string}%
11550 <</Trans << /S /\@pdfpagetransition\space >> >>%

```

```

11551     }%
11552     }%
11553   \fi
11554 \fi
11555 }

```

\hyper@pageduration

```

11556 \def\hyper@pageduration{%
11557   \ifx\@pdfpageduration\relax
11558   \else
11559     \ifx\@pdfpageduration\@empty
11560       % 1. Does an old entry have to be deleted?
11561       % 2. If 1=yes, how to delete?
11562     \else
11563       \pdfmark{%
11564         pdfmark=/PUT,%
11565         Raw={%
11566           \string{ThisPage\string}%
11567           <</Dur \@pdfpageduration>>%
11568         }%
11569       }%
11570     \fi
11571   \fi
11572 }

```

\hyper@pagehidden

```

11573 \def\hyper@pagehidden{%
11574   \ifHy@useHidKey
11575     \pdfmark{%
11576       pdfmark=/PUT,%
11577       Raw={%
11578         \string{ThisPage\string}%
11579         <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
11580       }%
11581     }%
11582   \fi
11583 }

11584 \g@addto@macro\Hy@EveryPageBoxHook{%
11585   \hyper@pagetransition
11586   \hyper@pageduration
11587   \hyper@pagehidden
11588 }

11589 \def\hyper@image#1#2{%
11590   \hyper@linkurl{#2}{#1}%
11591 }
11592 \def\Hy@undefinedname{UNDEFINED}
11593 \def\hyper@link#1#2#3{%
11594   \Hy@VerboseLinkStart{#1}{#2}%
11595   \ltx@ifundefined{@#1bordercolor}{%
11596     \let\Hy@tempcolor\relax
11597   }{%
11598     \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
11599   }%
11600   \begingroup
11601     \protected@edef\Hy@testname{#2}%
11602     \ifx\Hy@testname\@empty

```

```

11603 \Hy@Warning{%
11604     Empty destination name,\MessageBreak
11605     using '\Hy@undefinedname'%
11606 }%
11607 \let\Hy@testname\Hy@undefinedname
11608 \fi
11609 \pdfmark[#{3}]{%
11610     Color=\Hy@tempcolor,%
11611     linktype={#1},%
11612     AcroHighlight=\@pdfhighlight,%
11613     Border=\@pdfborder,%
11614     BorderStyle=\@pdfborderstyle,%
11615     pdfmark=/ANN,%
11616     Subtype=/Link,%
11617     PDFAFlags=4,%
11618     Dest=\Hy@testname
11619 }%
11620 \endgroup
11621 }
11622 \newtoks\pdf@docset
11623 \def\PDF@FinishDoc{%
11624     \Hy@UseMaketitleInfos
11625     \HyInfo@GenerateAddons
11626     \let\Hy@temp\@empty
11627     \ifx\@pdfcreationdate\@empty
11628     \else
11629         \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
11630     \fi
11631     \ifx\@pdfmoddate\@empty
11632     \else
11633         \expandafter\def\expandafter\Hy@temp\expandafter{%
11634             \Hy@temp
11635             ModDate=\@pdfmoddate,%
11636         }%
11637     \fi
11638     \ifx\@pdfproducer\relax
11639     \else
11640         \expandafter\def\expandafter\Hy@temp\expandafter{%
11641             \Hy@temp
11642             Producer=\@pdfproducer,%
11643         }%
11644     \fi
11645     \expandafter
11646     \pdfmark\expandafter{%
11647         \Hy@temp
11648         pdfmark=/DOCINFO,%
11649         Title=\@pdftitle,%
11650         Subject=\@pdfsubject,%
11651         Creator=\@pdfcreator,%
11652         Author=\@pdfauthor,%
11653         Keywords=\@pdfkeywords,%
11654         Trapped=\@pdftrapped
11655     }%
11656     \ifx\HyInfo@Addons\@empty
11657     \else
11658         \pdfmark{%
11659             pdfmark=/DOCINFO,%

```

```

11660     Raw={\HyInfo@Addons}%
11661   }%
11662 \fi
11663 \Hy@DisableOption{pdfauthor}%
11664 \Hy@DisableOption{pdftitle}%
11665 \Hy@DisableOption{pdfsubject}%
11666 \Hy@DisableOption{pdfcreator}%
11667 \Hy@DisableOption{pdfcreationdate}%
11668 \Hy@DisableOption{pdfmoddate}%
11669 \Hy@DisableOption{pdfproducer}%
11670 \Hy@DisableOption{pdfkeywords}%
11671 \Hy@DisableOption{pdftrapped}%
11672 \Hy@DisableOption{pdfinfo}%
11673 }
11674 \def\PDF@SetupDoc{%
11675   \def\Hy@temp{}%
11676   \ifx\@pdfstartpage\@empty
11677   \else
11678     \ifx\@pdfstartview\@empty
11679     \else
11680       \edef\Hy@temp{%
11681         ,Page=\@pdfstartpage
11682         ,View=\@pdfstartview
11683       }%
11684     \fi
11685   \fi
11686   \edef\Hy@temp{%
11687     \noexpand\pdfmark{%
11688       pdfmark=/DOCVIEW,%
11689       PageMode=/\@pdfpagemode
11690     }\Hy@temp
11691   }%
11692 }%
11693 \Hy@temp
11694 \ifx\@pdfpagescrop\@empty
11695 \else
11696   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
11697 \fi
11698 \edef\Hy@temp{%
11699   \ifHy@pdftoolbar\else /HideToolbar true\fi
11700   \ifHy@pdfmenubar\else /HideMenubar true\fi
11701   \ifHy@pdfwindowui\else /HideWindowUI true\fi
11702   \ifHy@pdfwindow /FitWindow true\fi
11703   \ifHy@pdfcenterwindow /CenterWindow true\fi
11704   \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
11705   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
11706   \Hy@UseNameKey{Direction}\@pdfdirection
11707   \Hy@UseNameKey{ViewArea}\@pdfviewarea
11708   \Hy@UseNameKey{ViewClip}\@pdfviewclip
11709   \Hy@UseNameKey{PrintArea}\@pdfprintarea
11710   \Hy@UseNameKey{PrintClip}\@pdfprintclip
11711   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
11712   \Hy@UseNameKey{Duplex}\@pdfduplex
11713   \ifx\@pdfpicktraybypdfsize\@empty
11714   \else
11715     /PickTrayByPDFSize \@pdfpicktraybypdfsize
11716   \fi

```

```

11717 \ifx\@pdfprintpagerange\@empty
11718 \else
11719 /PrintPageRange[\@pdfprintpagerange]%
11720 \fi
11721 \ifx\@pdfnumcopies\@empty
11722 \else
11723 /NumCopies \@pdfnumcopies
11724 \fi
11725 }%
11726 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
11727 \pdfmark{%
11728 pdfmark=/PUT,%
11729 Raw={%
11730 \string{Catalog\string}<<%
11731 \ifx\Hy@temp\@empty
11732 \else
11733 /ViewerPreferences<<\Hy@temp>>%
11734 \fi
11735 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
11736 \ifx\@pdflang\@empty
11737 \else
11738 /Lang(\@pdflang)%
11739 \fi
11740 \ifx\@baseurl\@empty
11741 \else
11742 /URI<</Base(\Hy@pstringB)>>%
11743 \fi
11744 >>%
11745 }%
11746 }%
11747 }
11748 </pdfmark>
11749 (*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.

```

11750 \newif\ifHy@pdfmarkerror
11751 \def\pdfmark{\@ifnextchar{\pdfmark@}{\pdfmark@[]}}
11752 \def\pdfmark@[#1]#2{%
11753 \Hy@pdfmarkerrorfalse
11754 \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
11755 \@processme
11756 \let\pdf@type\relax
11757 \kvsetkeys{PDF}{#2}%
11758 \ifHy@pdfmarkerror
11759 \else
11760 \ifx\pdf@type\relax
11761 \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
11762 \ifx\#1\%
11763 \else
11764 \pdf@rect{#1}%
11765 \fi
11766 \else

```



```

11767 \ifx\#1\%
11768 \literalps@out{%
11769 [\the\pdf@toks\space\pdf@type\space pdfmark%
11770 }%
11771 \else
11772 \ltx@ifundefined{@\pdf@linktype color}{%
11773 \Hy@colorlink\@linkcolor
11774 }{%
11775 \expandafter\Hy@colorlink
11776 \csname @\pdf@linktype color\endcsname
11777 }%
11778 \pdf@rect{#1}%
11779 \literalps@out{%
11780 [\the\pdf@toks\space\pdf@type\space pdfmark%
11781 }%
11782 \Hy@endcolorlink
11783 \fi
11784 \fi
11785 \fi
11786 }

```

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}

```

```

11787 \newsavebox{\pdf@box}
11788 \providecommand*{\Hy@setouterhbox}{\sbox}
11789 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
11790 \def\Hy@DEST{/DEST}
11791 \def\pdf@rect#1{%
11792 \begingroup
11793 \chardef\x=1 %
11794 \def\Hy@temp{#1}%
11795 \ifx\Hy@temp\ltx@empty
11796 \chardef\x=0 %
11797 \else
11798 \def\y{\anchor@spot}%
11799 \ifx\Hy@temp\y
11800 \def\y{\relax}%
11801 \ifx\anchor@spot\y
11802 \chardef\x=0 %
11803 \fi
11804 \fi
11805 \fi
11806 \expandafter\endgroup
11807 \ifcase\x
11808 \literalps@out{H.S}%
11809 \literalps@out{H.R}%
11810 \else

```

```

11811 \leavevmode
11812 \Hy@SaveSpaceFactor
11813 \ifmmode
11814   \def\Hy@LinkMath{$}%
11815 \else
11816   \let\Hy@LinkMath\ltx@empty
11817 \fi
11818 \ifHy@breaklinks
11819   \Hy@setouterhbox\pdf@box{%
11820     \Hy@RestoreSpaceFactor
11821     \Hy@LinkMath
11822     \Hy@AllowHyphens#1\Hy@xspace@end
11823     \Hy@LinkMath
11824     \Hy@SaveSpaceFactor
11825   }%
11826 \else
11827   \sbox\pdf@box{%
11828     \Hy@RestoreSpaceFactor
11829     \Hy@LinkMath
11830     #1\Hy@xspace@end
11831     \Hy@LinkMath
11832     \Hy@SaveSpaceFactor
11833   }%
11834 \fi
11835 \dimen@ \ht\pdf@box
11836 \ifdim\dp\pdf@box=\z@
11837   \literalps@out{H.S}%
11838 \else
11839   \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
11840 \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...).

```

11841 \ifHy@breaklinks
11842   \ifhmode
11843     \Hy@breaklinksunhbox\pdf@box
11844   \else
11845     \box\pdf@box
11846   \fi
11847 \else
11848   \expandafter\box\pdf@box
11849 \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

11850 \ifdim\dimen@=\z@
11851   \literalps@out{H.R}%
11852 \else
11853   \raise\dimen@\hbox{\literalps@out{H.R}}%
11854 \fi
11855 \Hy@RestoreSpaceFactor
11856 \fi
11857 \ifx\pdf@type\Hy@DEST
11858 \else
11859   \pdf@addtoksx{H.B}%

```

```

11860 \fi
11861 }

```

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.

```

11862 \newtoks\pdf@toks
11863 \newtoks\pdf@defaulttoks
11864 \pdf@defaulttoks={}%
11865 \def\pdf@addtoks#1#2{%
11866   \edef\@processme{\pdf@toks{\the\pdf@toks/#2 #1}}%
11867   \@processme
11868 }
11869 \def\pdf@addtoksx#1{%
11870   \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
11871   \@processme
11872 }
11873 \def\PDFdefaults#1{%
11874   \pdf@defaulttoks={#1}%
11875 }

```

This is the list of allowed keys. See the Acrobat manual for an explanation.

```

11876 % what is the type of pdfmark?
11877 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
11878 % what is the link type?
11879 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
11880 \def\pdf@linktype{link}
11881 % parameter is a stream of PDF
11882 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
11883 % parameter is a name
11884 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
11885 % parameter is a array
11886 \define@key{PDF}{Border}{%
11887   \edef\Hy@temp{#1}%
11888   \ifx\Hy@temp\@empty
11889     \else
11890       \pdf@addtoks{[<#1>\Hy@BorderArrayPatch]{Border}% hash-ok
11891     \fi
11892 }
11893 \let\Hy@BorderArrayPatch\@empty
11894 % parameter is a dictionary
11895 \define@key{PDF}{BorderStyle}{%
11896   \edef\Hy@temp{#1}%
11897   \ifx\Hy@temp\@empty
11898     \else
11899       \pdf@addtoks{<<#1>>{BS}%
11900     \fi
11901 }
11902 % parameter is a array
11903 \define@key{PDF}{Color}{%
11904   \ifx\relax#1\relax
11905     \else
11906       \pdf@addtoks{[<#1>]{Color}% hash-ok
11907     \fi
11908 }
11909 % parameter is a string
11910 \define@key{PDF}{Contents}{\pdf@addtoks{(#1){Contents}}
11911 % parameter is a integer

```

```

11912 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
11913 % parameter is a array
11914 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
11915 % parameter is a string
11916 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
11917 % parameter is a string or file
11918 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
11919 % parameter is a destination
11920 \define@key{PDF}{Dest}{%
11921   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11922   \ifx\Hy@pstringDest\@empty
11923     \Hy@pdfmarkerrortrue
11924     \Hy@Warning{Destination with empty name ignored}%
11925   \else
11926     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11927   \fi
11928 }
11929 \define@key{PDF}{DestAnchor}{%
11930   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11931   \ifx\Hy@pstringDest\@empty
11932     \Hy@pdfmarkerrortrue
11933     \Hy@Warning{Destination with empty name ignored}%
11934   \else
11935     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11936   \fi
11937 }
11938 % parameter is a string
11939 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
11940 % parameter is a string
11941 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
11942 % parameter is a int
11943 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
11944 \define@key{PDF}{PDFAFlags}{%
11945   \ifHy@pdfa
11946     \pdf@addtoks{#1}{F}%
11947   \fi
11948 }
11949 % parameter is a name
11950 \define@key{PDF}{AcroHighlight}{%
11951   \begingroup
11952     \edef\x{#1}%
11953     \expandafter\endgroup\ifx\x\@empty
11954     \else
11955       \pdf@addtoks{#1}{H}%
11956     \fi
11957 }
11958 % parameter is a string
11959 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
11960 % parameter is a string
11961 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
11962 % parameter is a string
11963 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11964 % parameter is a string
11965 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
11966 % parameter is a Boolean
11967 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
11968 % parameter is a integer or name

```

```

11969 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
11970 % parameter is a name
11971 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
11972 % parameter is a string
11973 \define@key{PDF}{Params}{\pdf@addtoks{#1}{Params}}
11974 % parameter is a array
11975 \define@key{PDF}{Rect}{\pdf@addtoks{#1}{Rect}}% hash-ok
11976 % parameter is a integer
11977 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
11978 % parameter is a name
11979 \define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
11980 % parameter is a string
11981 \define@key{PDF}{Title}{\pdf@addtoks{#1}{Title}}
11982 % parameter is a string
11983 \define@key{PDF}{Unix}{\pdf@addtoks{#1}{Unix}}
11984 % parameter is a string
11985 \define@key{PDF}{UnixFile}{\pdf@addtoks{#1}{UnixFile}}
11986 % parameter is an array
11987 \define@key{PDF}{View}{\pdf@addtoks{#1}{View}}% hash-ok
11988 % parameter is a string
11989 \define@key{PDF}{WinFile}{\pdf@addtoks{#1}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

11990 \define@key{PDF}{Author}{\pdf@addtoks{#1}{Author}}
11991 \define@key{PDF}{Creator}{\pdf@addtoks{#1}{Creator}}
11992 \define@key{PDF}{CreationDate}{\pdf@addtoks{#1}{CreationDate}}
11993 \define@key{PDF}{ModDate}{\pdf@addtoks{#1}{ModDate}}
11994 \define@key{PDF}{Producer}{\pdf@addtoks{#1}{Producer}}
11995 \define@key{PDF}{Subject}{\pdf@addtoks{#1}{Subject}}
11996 \define@key{PDF}{Keywords}{\pdf@addtoks{#1}{Keywords}}
11997 \define@key{PDF}{ModDate}{\pdf@addtoks{#1}{ModDate}}
11998 \define@key{PDF}{Base}{\pdf@addtoks{#1}{Base}}
11999 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}
12000 \define@key{PDF}{Trapped}{%
12001   \edef\Hy@temp{#1}%
12002   \ifx\Hy@temp\@empty
12003   \else
12004     \pdf@addtoks{/#1}{Trapped}%
12005   \fi
12006 }
12007
12008 </pdfmarkbase>
12009 <*pdfmark>
12010 \def\Acrobatmenu#1#2{%
12011   \EdefEscapeName\Hy@temp@menu{#1}%
12012   \Hy@Acrobatmenu{#1}{#2}{%
12013     \pdfmark{#2}{%
12014       linktype=menu,%
12015       pdfmark=/ANN,%
12016       AcroHighlight=\@pdfhighlight,%
12017       Border=\@pdfborder,%
12018       BorderStyle=\@pdfborderstyle,%
12019       Color=\@menubordercolor,%
12020       Action={<</Subtype/Named/N/\Hy@temp@menu>>},%
12021       Subtype=/Link,%
12022       PDFANFlags=4%
12023     }%
12024   }%

```

12025 }

And now for some useful examples:

```
12026 \def\PDFNextPage{\@ifnextchar{\PDFNextPage@}{\PDFNextPage@[]}}
12027 \def\PDFNextPage@[#1]#2{%
12028   \pdfmark[{#2}]{%
12029     #1,%
12030     Border=\@pdfborder,%
12031     BorderStyle=\@pdfborderstyle,%
12032     Color=.2 .1 .5,%
12033     pdfmark=/ANN,%
12034     Subtype=/Link,%
12035     PDFAFlags=4,%
12036     Page=/Next%
12037   }%
12038 }
12039 \def\PDFPreviousPage{%
12040   \@ifnextchar{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
12041 }
12042 \def\PDFPreviousPage@[#1]#2{%
12043   \pdfmark[{#2}]{%
12044     #1,%
12045     Border=\@pdfborder,%
12046     BorderStyle=\@pdfborderstyle,%
12047     Color=.4 .4 .1,%
12048     pdfmark=/ANN,%
12049     Subtype=/Link,%
12050     PDFAFlags=4,%
12051     Page=/Prev%
12052   }%
12053 }
12054 \def\PDFOpen#1{%
12055   \pdfmark{#1,pdfmark=/DOCVIEW}%
12056 }
```

This will only work if you use Distiller 2.1 or higher.

```
12057 \def\hyper@linkurl#1#2{%
12058   \begingroup
12059   \Hy@pstringdef\Hy@pstringURI{#2}%
12060   \hyper@chars
12061   \leavevmode
12062   \pdfmark[{#1}]{%
12063     pdfmark=/ANN,%
12064     linktype=url,%
12065     AcroHighlight=\@pdfhighlight,%
12066     Border=\@pdfborder,%
12067     BorderStyle=\@pdfborderstyle,%
12068     Color=\@urlbordercolor,%
12069     Action={<<%
12070       /Subtype/URI%
12071       /URI(\Hy@pstringURI)%
12072       \ifHy@href@ismap
12073         /IsMap true%
12074       \fi
12075     >>},%
12076     Subtype=/Link,%
12077     PDFAFlags=4%
12078   }%
}
```

```

12079 \endgroup
12080 }
12081 \def\hyper@linkfile#1#2#3{%
12082 \begingroup
12083 \def\Hy@pstringF{#2}%
12084 \Hy@CleanupFile\Hy@pstringF
12085 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
12086 \Hy@pstringdef\Hy@pstringD{#3}%
12087 \Hy@MakeRemoteAction
12088 \leavevmode
12089 \pdfmark[{#1}]{%
12090 pdfmark=/ANN,%
12091 Subtype=/Link,%
12092 PDFAMFlags=4,%
12093 AcroHighlight=\@pdfhighlight,%
12094 Border=\@pdfborder,%
12095 BorderStyle=\@pdfborderstyle,%
12096 linktype=file,%
12097 Color=\@filebordercolor,%
12098 Action={%
12099 <<%
12100 /S/GoToR%
12101 \Hy@SetNewWindow
12102 /F(\Hy@pstringF)%
12103 /D%
12104 \ifx\#3\%
12105 [\Hy@href@page\@pdfremotestartview]%
12106 \else
12107 (\Hy@pstringD)cvn%
12108 \fi
12109 \Hy@href@nextactionraw
12110 >>%
12111 }%
12112 }%
12113 \endgroup
12114 }
12115 \def\@hyper@launch run:#1\#2#3{%
12116 \begingroup
12117 \Hy@pstringdef\Hy@pstringF{#1}%
12118 \Hy@pstringdef\Hy@pstringP{#3}%
12119 \leavevmode
12120 \pdfmark[{#2}]{%
12121 pdfmark=/ANN,%
12122 Subtype=/Link,%
12123 PDFAMFlags=4,%
12124 AcroHighlight=\@pdfhighlight,%
12125 Border=\@pdfborder,%
12126 BorderStyle=\@pdfborderstyle,%
12127 linktype=run,%
12128 Color=\@runbordercolor,%
12129 Action={%
12130 <<%
12131 /S/Launch%
12132 \Hy@SetNewWindow
12133 /F(\Hy@pstringF)%
12134 \ifx\#3\%
12135 \else

```

```

12136      /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
12137      \fi
12138      \Hy@href@nextactionraw
12139      >>%
12140      }%
12141      }%
12142      \endgroup
12143      }
12144      </pdfmark>

```

Unfortunately, some parts of the `pdfmark` PostScript code depend on vagaries of the dvi driver. We isolate here all the problems.

## 47.9 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.

```

12145 <*dvips>
12146 \providecommand*\XR@ext\{pdf}
12147 \let\Hy@raisedlink\ltx@empty
12148 \def\literals@out#1{\special{ps:SDict begin #1 end}}%
12149 \def\headerps@out#1{\special{! #1}}%
12150 \input{pdfmark.def}%
12151 \ifx\@pdfproducer\relax
12152   \def\@pdfproducer{dvips + Distiller}%
12153 \fi
12154 \providecommand*\@pdfborder{0 0 1}
12155 \providecommand*\@pdfborderstyle{}
12156 \providecommand*\@pdfview{XYZ}
12157 \providecommand*\@pdfviewparams{ H.V}
12158 \def\Hy@BorderArrayPatch{BorderArrayPatch}
12159 \g@addto@macro\Hy@FirstPageHook{%
12160   \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.

```

12161 /DvipsToPDF{72.27 mul Resolution div} def%
12162 /PDFToDvips{72.27 div Resolution mul} def%
12163 /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.

```

12164 /BorderArrayPatch{%

```



```

12165    [exch{%
12166        dup dup type/integertype eq exch type/realttype eq or%
12167        {BPToDvips}if%
12168    }forall]%
12169    }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.

```

12170    /HyperBorder {1 PDFToDvips} def%
12171    /H.V {pdf@hoff pdf@voff null} def%
12172    /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

```

12173    /H.S {%
12174        currentpoint %
12175        HyperBorder add /pdf@lly exch def %
12176        dup DvipsToPDF 72 add /pdf@hoff exch def %
12177        HyperBorder sub /pdf@llx exch def%
12178    } def%

```

The calculation of upper left  $y$  is done without raising the point in  $\text{\TeX}$ , by simply adding on the current `\baselineskip` to the current  $y$ . This is usually too much, so we remove a notional 2 points.

We have to see what the current baselineskip is, and convert it to the dvips coordinate system.

Argument: baselineskip in pt. The  $x$  and  $y$  coordinates of the current point, minus the baselineskip

```

12179    /H.L {%
12180        2 sub dup%
12181        /HyperBasePt exch def %
12182        PDFToDvips /HyperBaseDvips exch def %
12183        currentpoint %
12184        HyperBaseDvips sub /pdf@ury exch def%
12185        /pdf@urx exch def%
12186    } def%
12187    /H.A {%
12188        H.L %
12189        % |pdf@voff| = the distance from the top of the page to a point
12190        % |\baselineskip| above the current point in PDF coordinates
12191        currentpoint exch pop %
12192        vsize 72 sub exch DvipsToPDF %
12193        HyperBasePt sub % baseline skip
12194        sub /pdf@voff exch def%
12195    } def%
12196    /H.R {%
12197        currentpoint %
12198        HyperBorder sub /pdf@ury exch def %
12199        HyperBorder add /pdf@urx exch def %
12200        % |pdf@voff| = the distance from the top of the page to the current point, in
12201        % PDF coordinates
12202        currentpoint exch pop vsize 72 sub %
12203        exch DvipsToPDF sub /pdf@voff exch def%
12204    } def%
12205    }%
12206    }
12207    \AtBeginShipoutFirst{%
12208        \ifHy@setpagesize

```

```

12209 \begingroup
12210 \ifundefined{stockwidth}{%
12211 \ifdim\paperwidth>\z@
12212 \ifdim\paperheight>\z@
12213 \special{papersize=\the\paperwidth,\the\paperheight}%
12214 \fi
12215 \fi
12216 }{%
12217 \ifdim\stockwidth>\z@
12218 \ifdim\stockheight>\z@
12219 \special{papersize=\the\stockwidth,\the\stockheight}%
12220 \fi
12221 \fi
12222 }%
12223 \endgroup
12224 \fi
12225 \Hy@DisableOption{setpagesize}%
12226 }
12227 </dvips>

```

## 47.10 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.

```

12228 <*vtexpdfmark>
12229 \providecommand*\XR@ext{pdf}
12230 \let\Hy@raisedlink\ltx@empty
12231 \def\literalps@out#1{\special{pS:#1}}%
12232 \def\headerps@out#1{\immediate\special{pS:#1}}%
12233 \input{pdfmark.def}%
12234 \ifx\@pdfproducer\relax
12235 \ifnum\OpMode=\One
12236 \def\@pdfproducer{VTeX}%
12237 \else
12238 \def\@pdfproducer{VTeX + Distiller}%
12239 \fi
12240 \fi
12241 \providecommand*\@pdfborder{0 0 1}
12242 \providecommand*\@pdfborderstyle{}
12243 \providecommand*\@pdfview{XYZ}
12244 \providecommand*\@pdfviewparams{ H.V}
12245 \g@addto@macro\Hy@FirstPageHook{%
12246 \headerps@out{%
12247 /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.

```

12248 /HyperBorder {1} def%
12249 /H.V {pdf@hoff pdf@voff null} def%
12250 /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:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

12251 /H.S {%
12252   currentpoint %
12253   HyperBorder sub%
12254   /pdf@lly exch def %
12255   dup 72 add /pdf@hoff exch def %
12256   HyperBorder sub%
12257   /pdf@llx exch def%
12258 } def%

```

The  $x$  and  $y$  coordinates of the current point, minus the `\baselineskip`:  $\text{pdf@ury} = Y_c + \text{HyperBasePt} + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

12259 /H.L {%
12260   2 sub%
12261   /HyperBasePt exch def %
12262   currentpoint %
12263   HyperBasePt add HyperBorder add%
12264   /pdf@ury exch def %
12265   HyperBorder add%
12266   /pdf@urx exch def%
12267 } def%
12268 /H.A {%
12269   H.L %
12270   currentpoint exch pop %
12271   vsize 72 sub exch %
12272   HyperBasePt add add%
12273   /pdf@voff exch def%
12274 } def%

```

$\text{pdf@ury} = Y_c + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

12275 /H.R {%
12276   currentpoint %
12277   HyperBorder add%
12278   /pdf@ury exch def %
12279   HyperBorder add%
12280   /pdf@urx exch def %
12281   currentpoint exch pop vsize 72 sub add%
12282   /pdf@voff exch def%
12283 } def%
12284 }%
12285 }
12286 </vtxpdfmark>

```

## 47.11 Textures

```

12287 <*textures>
12288 \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.

```

12289 \begingroup
12290 \obeylines %
12291 \gdef\Hy@ps@CR{\noexpand

```

```

12292 }%
12293 \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`.

```

12294 \def\literalps@out#1{%
12295   \special{postscript 0 0 transform}%
12296   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
12297 }%
12298 %

```

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.

```

12299 \def\headerps@out#1{%
12300   \special{%
12301     prepostscript TeXdict begin\Hy@ps@CR
12302       #1\Hy@ps@CR
12303     end%
12304   }%
12305 }%
12306 %

```

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.

```

12307 \g@addto@macro\Hy@FirstPageHook{%
12308   \headerps@out{%
12309     /betterpdfmark {%
12310       systemdict begin %
12311         dup /BP eq%
12312         {cleartomark gsave nulldevice []}%
12313         {dup /EP eq%
12314           {cleartomark cleartomark grestore}%
12315           {cleartomark}%
12316         }ifelse%
12317       }ifelse %
12318     end%
12319   }def\Hy@ps@CR
12320   ___pdfmark___ not{/pdfmark /betterpdfmark load def}if%
12321 }% end of \headerps@out
12322 }% end of \AtBeginShipoutFirst
12323 %
12324 \input{pdfmark.def}%
12325 %
12326 \ifx\@pdfproducer\relax
12327   \def\@pdfproducer{Textures + Distiller}%
12328 \fi

```

```

12329 \providecommand*\@pdfborder{0 0 1}
12330 \providecommand*\@pdfborderstyle{}
12331 \providecommand*\@pdfview{XYZ}
12332 \providecommand*\@pdfviewparams{ H.V}
12333 %

```

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  $\text{\TeX}$ .

```

12334 \Hy@AtBeginDocument{%
12335   \headerps@out{%

```

Textures lives in normal points, I think. So conversion from one coordinate system to another involves doing nothing.

```

12336   /vsize {\Hy@pageheight} def%
12337   /DvipsToPDF {} def%
12338   /PDFToDvips {} def%
12339   /BPToDvips {} def%
12340   /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
12341   /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
12342   /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
12343   /H.S {%
12344     currentpoint %
12345     HyperBorder add /pdf@lly exch def %
12346     dup DvipsToPDF 72 add /pdf@hoff exch def %
12347     HyperBorder sub /pdf@llx exch def%
12348   } def\Hy@ps@CR
12349   /H.L {%
12350     2 sub %
12351     PDFToDvips /HyperBase exch def %
12352     currentpoint %
12353     HyperBase sub /pdf@ury exch def%
12354     /pdf@urx exch def%
12355   } def\Hy@ps@CR
12356   /H.A {%
12357     H.L %
12358     currentpoint exch pop %
12359     vsize 72 sub exch DvipsToPDF %
12360     HyperBase sub % baseline skip
12361     sub /pdf@voff exch def%
12362   } def\Hy@ps@CR
12363   /H.R {%
12364     currentpoint %
12365     HyperBorder sub /pdf@ury exch def %
12366     HyperBorder add /pdf@urx exch def %
12367     currentpoint exch pop vsize 72 sub %
12368     exch DvipsToPDF sub /pdf@voff exch def%
12369   } def\Hy@ps@CR
12370 }%
12371 }

12372 \Hy@AtBeginDocument{%
12373   \ifHy@colorlinks
12374     \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
12375   \fi
12376 }

```

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.

```

12377 \expandafter\let\expandafter\keepPDF@SetupDoc
12378 \csname PDF@SetupDoc\endcsname
12379 \def\PDF@SetupDoc{%
12380 \ifx\@baseurl\@empty
12381 \else
12382 \special{html:<base href="\@baseurl">}%
12383 \fi
12384 \keepPDF@SetupDoc
12385 }
12386 \Hy@WrapperDef\hyper@anchor#1{%
12387 \Hy@SaveLastskip
12388 \Hy@VerboseAnchor{#1}%
12389 \begingroup
12390 \let\protect=\string
12391 \special{html:<a name=%
12392 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12393 \endgroup
12394 \Hy@activeanchortrue
12395 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
12396 \special{html:</a>}%
12397 \Hy@activeanchorfalse
12398 \Hy@RestoreLastskip
12399 }
12400 \Hy@WrapperDef\hyper@anchorstart#1{%
12401 \Hy@SaveLastskip
12402 \Hy@VerboseAnchor{#1}%
12403 \begingroup
12404 \hyper@chars
12405 \special{html:<a name=%
12406 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12407 \endgroup
12408 \Hy@activeanchortrue
12409 }
12410 \def\hyper@anchorend{%
12411 \special{html:</a>}%
12412 \Hy@activeanchorfalse
12413 \Hy@RestoreLastskip
12414 }
12415 \def\@urltype{url}
12416 \def\hyper@linkstart#1#2{%
12417 \Hy@VerboseLinkStart{#1}{#2}%
12418 \expandafter\Hy@colorlink\csname @#1color\endcsname
12419 \def\Hy@tempa{#1}%
12420 \ifx\Hy@tempa\@urltype
12421 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
12422 \else
12423 \begingroup
12424 \hyper@chars
12425 \special{%
12426 html:<a href=%
12427 \hyper@quote\# \HyperDestNameFilter{#2}\hyper@quote>%
12428 }%
12429 \endgroup
12430 \fi

```

```

12431 }
12432 \def\hyper@linkend{%
12433   \special{html:</a>}%
12434   \Hy@endcolorlink
12435 }
12436 \def\hyper@linkfile#1#2#3{%
12437   \hyper@linkurl{#1}{%
12438     \Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi
12439   }%
12440 }
12441 \def\hyper@linkurl#1#2{%
12442   \leavevmode
12443   \ifHy@raiselinks
12444     \Hy@SaveSpaceFactor
12445     \Hy@SaveSavedSpaceFactor
12446     \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
12447     \Hy@RestoreSavedSpaceFactor
12448     \@linkdim\dp\@tempboxa
12449     \lower\@linkdim\hbox{%
12450       \hyper@chars
12451       \special{html:<a href=\hyper@quote#2\hyper@quote>}%
12452     }%
12453     \Hy@colorlink\@urlcolor
12454     \Hy@RestoreSpaceFactor
12455     #1\Hy@xspace@end
12456     \Hy@SaveSpaceFactor
12457     \@linkdim\ht\@tempboxa
12458     \advance\@linkdim by -6.5\p@
12459     \raise\@linkdim\hbox{\special{html:</a>}}%
12460     \Hy@endcolorlink
12461     \Hy@RestoreSpaceFactor
12462   \else
12463     \begingroup
12464     \hyper@chars
12465     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
12466     \Hy@colorlink\@urlcolor#1\Hy@xspace@end
12467     \special{html:</a>}%
12468     \Hy@endcolorlink
12469   \endgroup
12470   \fi
12471 }

```

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

```

12472 \def\hyper@link#1#2#3{%
12473   \Hy@VerboseLinkStart{#1}{#2}%
12474   \hyper@linkurl{#3}{\# \Hy@HyperDestNameFilter{#2}}%
12475 }
12476 \def\hyper@image#1#2{%
12477   \begingroup
12478   \hyper@chars
12479   \special{html:<img src=\hyper@quote#1\hyper@quote>}%
12480   \endgroup
12481 }
12482 </textures>

```

## 47.12 dvipsone

```

12483 % \subsection{dvipsone driver}

```

```

12484 % Over-ride the default setup macro in pdftmark driver to use Y\&Y
12485 % |\special| commands.
12486 (*dvipsone)
12487 \providecommand*{\XR@ext}{pdf}
12488 \let\Hy@raisedlink\ltx@empty
12489 \providecommand*\@pdfborder{0 0 1}
12490 \providecommand*\@pdfborderstyle{}
12491 \def\literalps@out#1{\special{ps:#1}}%
12492 \def\headerps@out#1{\special{headertext=#1}}%
12493 \input{pdftmark.def}%
12494 \ifx\@pdfproducer\relax
12495   \def\@pdfproducer{dvipsone + Distiller}%
12496 \fi
12497 \HyInfo@AddonUnsupportedtrue
12498 \def\PDF@FinishDoc{%
12499   \Hy@UseMaketitleInfos
12500   \HyInfo@TrappedUnsupported
12501   \special{PDF: Keywords \@pdfkeywords}%
12502   \special{PDF: Title \@pdftitle}%
12503   \special{PDF: Creator \@pdfcreator}%
12504   \ifx\@pdfcreationdate\@empty
12505   \else
12506     \special{PDF: CreationDate \@pdfcreationdate}%
12507   \fi
12508   \ifx\@pdfmoddate\@empty
12509   \else
12510     \special{PDF: ModDate \@pdfmoddate}%
12511   \fi
12512   \special{PDF: Author \@pdfauthor}%
12513   \ifx\@pdfproducer\relax
12514   \else
12515     \special{PDF: Producer \@pdfproducer}%
12516   \fi
12517   \special{PDF: Subject \@pdfsubject}%
12518   \Hy@DisableOption{pdfauthor}%
12519   \Hy@DisableOption{pdftitle}%
12520   \Hy@DisableOption{pdfsubject}%
12521   \Hy@DisableOption{pdfcreator}%
12522   \Hy@DisableOption{pdfcreationdate}%
12523   \Hy@DisableOption{pdfmoddate}%
12524   \Hy@DisableOption{pdfproducer}%
12525   \Hy@DisableOption{pdfkeywords}%
12526   \Hy@DisableOption{pdftrapped}%
12527   \Hy@DisableOption{pdfinfo}%
12528 }
12529 \def\PDF@SetupDoc{%
12530   \def\Hy@temp{}%
12531   \ifx\@pdfstartpage\@empty
12532   \else
12533     \ifx\@pdfstartview\@empty
12534     \else
12535       \edef\Hy@temp{%
12536         ,Page=\@pdfstartpage
12537         ,View=\@pdfstartview
12538       }%
12539     \fi
12540   \fi

```



```

12541 \edef\Hy@temp{%
12542   \noexpand\pdfmark{%
12543     pdfmark=/DOCVIEW,%
12544     PageMode=/\@pdfpagemode
12545     \Hy@temp
12546   }%
12547 }%
12548 \Hy@temp
12549 \ifx\@pdfpagescrop\@empty
12550 \else
12551   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
12552 \fi
12553 \edef\Hy@temp{%
12554   \ifHy@pdftoolbar\else /HideToolbar true\fi
12555   \ifHy@pdfmenubar\else /HideMenubar true\fi
12556   \ifHy@pdfwindowui\else /HideWindowUI true\fi
12557   \ifHy@pdfwindow /FitWindow true\fi
12558   \ifHy@pdfcenterwindow /CenterWindow true\fi
12559   \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
12560   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
12561   \Hy@UseNameKey{Direction}\@pdfdirection
12562   \Hy@UseNameKey{ViewArea}\@pdfviewarea
12563   \Hy@UseNameKey{ViewClip}\@pdfviewclip
12564   \Hy@UseNameKey{PrintArea}\@pdfprintarea
12565   \Hy@UseNameKey{PrintClip}\@pdfprintclip
12566   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
12567   \Hy@UseNameKey{Duplex}\@pdfduplex
12568   \ifx\@pdfpicktraybypdfsize\@empty
12569   \else
12570     /PickTrayByPDFSize \@pdfpicktraybypdfsize
12571   \fi
12572   \ifx\@pdfprintpagerange\@empty
12573   \else
12574     /PrintPageRange[\@pdfprintpagerange]%
12575   \fi
12576   \ifx\@pdfnumcopies\@empty
12577   \else
12578     /NumCopies \@pdfnumcopies
12579   \fi
12580 }%
12581 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
12582 \pdfmark{%
12583   pdfmark=/PUT,%
12584   Raw={%
12585     \string{Catalog\string}<<%
12586     \ifx\Hy@temp\@empty
12587     \else
12588       /ViewerPreferences<<\Hy@temp>>%
12589     \fi
12590     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
12591     \ifx\@pdflang\@empty
12592     \else
12593       /Lang(\@pdflang)%
12594     \fi
12595     \ifx\@baseurl\@empty
12596     \else
12597       /URI<</Base(\Hy@pstringB)>>%

```

```

12598     \fi
12599     >>%
12600   }%
12601 }%
12602 }
12603 \providecommand*\@pdfview{XYZ}
12604 \providecommand*\@pdfviewparams{ %
12605   gsave revscl currentpoint grestore %
12606   72 add exch pop null exch null%
12607 }
12608 \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  $\TeX$ .

```

12609 \g@addto@macro\Hy@FirstPageHook{%
12610   \headerps@out{%

```

dvipsone lives in scaled points; does this mean 65536 or 65781?

```

12611   /DvipsToPDF { 65781 div } def%
12612   /PDFToDvips { 65781 mul } def%
12613   /BPToDvips{65781 mul}def%
12614   /HyperBorder { 1 PDFToDvips } def%
12615   /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.

```

12616   /BorderArrayPatch{%
12617     [exch{%
12618       dup dup type/integertype eq exch type/realtype eq or%
12619       {BPToDvips}if%
12620     }forall]%
12621   }def%
12622   /H.S {%
12623     currentpoint %
12624     HyperBorder add /pdf@lly exch def %
12625     dup DvipsToPDF 72 add /pdf@hoff exch def %
12626     HyperBorder sub /pdf@llx exch def%
12627   } def%
12628   /H.L {%
12629     2 sub %
12630     PDFToDvips /HyperBase exch def %
12631     currentpoint %
12632     HyperBase sub /pdf@ury exch def%
12633     /pdf@urx exch def%
12634   } def%
12635   /H.A {%
12636     H.L %
12637     currentpoint exch pop %
12638     HyperBase sub % baseline skip
12639     DvipsToPDF /pdf@voff exch def%
12640   } def%
12641   /H.R {%
12642     currentpoint %
12643     HyperBorder sub /pdf@ury exch def %
12644     HyperBorder add /pdf@urx exch def %

```

```

12645     currentpoint exch pop DvipsToPDF /pdf@voff exch def%
12646   } def%
12647 }%
12648 }
12649 </dvipsone>

```

### 47.13 TeX4ht

```

12650 (*tex4ht)
12651 \providecommand*\XR@ext}{html}
12652 \let\Hy@raisedlink\ltx@empty
12653 \@ifpackageloaded{tex4ht}{%
12654   \Hy@InfoNoLine{tex4ht is already loaded}%
12655 }{%
12656   \RequirePackage[hTeX4ht]{tex4ht}%
12657 }
12658 \hyperlinkfileprefix{}
12659 \let\PDF@FinishDoc\ltx@empty
12660 \def\PDF@SetupDoc{%
12661   \ifx\@baseurl\@empty
12662   \else
12663     \special{t4ht=<base href="\@baseurl">}%
12664   \fi
12665 }
12666 \Hy@WrapperDef\hyper@anchor#1{%
12667   \Hy@SaveLastskip
12668   \Hy@VerboseAnchor{#1}%
12669   \begingroup
12670     \let\protect=\string
12671     \special{t4ht=<a name=%
12672       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12673   \endgroup
12674   \Hy@activeanchortrue
12675   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
12676   \special{t4ht=</a>}%
12677   \Hy@activeanchorfalse
12678   \Hy@RestoreLastskip
12679 }
12680 \Hy@WrapperDef\hyper@anchorstart#1{%
12681   \Hy@SaveLastskip
12682   \Hy@VerboseAnchor{#1}%
12683   \begingroup
12684     \hyper@chars\special{t4ht=<a name=%
12685       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12686   \endgroup
12687   \Hy@activeanchortrue
12688 }
12689 \def\hyper@anchorend{%
12690   \special{t4ht=</a>}%
12691   \Hy@activeanchorfalse
12692   \Hy@RestoreLastskip
12693 }
12694 \def\@urltype{url}
12695 \def\hyper@linkstart#1#2{%
12696   \Hy@VerboseLinkStart{#1}{#2}%
12697   \expandafter\Hy@colorlink\csname @#1color\endcsname
12698   \def\Hy@tempa{#1}%
12699   \ifx\Hy@tempa\@urltype

```

```

12700 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12701 \else
12702 \begingroup
12703 \hyper@chars
12704 \special{t4ht=<a href=%
12705 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
12706 \endgroup
12707 \fi
12708 }
12709 \def\hyper@linkend{%
12710 \special{t4ht=</a>}%
12711 \Hy@endcolorlink
12712 }
12713 \def\hyper@linkfile#1#2#3{%
12714 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\###3\fi}%
12715 }
12716 \def\hyper@linkurl#1#2{%
12717 \leavevmode
12718 \ifHy@raiselinks
12719 \Hy@SaveSpaceFactor
12720 \Hy@SaveSavedSpaceFactor
12721 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
12722 \Hy@RestoreSavedSpaceFactor
12723 \@linkdim\dp\@tempboxa
12724 \lower\@linkdim\hbox{%
12725 \begingroup
12726 \hyper@chars
12727 \special{%
12728 t4ht=<a href=\hyper@quote#2\hyper@quote>%
12729 }%
12730 \endgroup
12731 }%
12732 \Hy@colorlink\@urlcolor
12733 \Hy@RestoreSpaceFactor
12734 #1\Hy@xspace@end
12735 \Hy@SaveSpaceFactor
12736 \Hy@endcolorlink
12737 \@linkdim\ht\@tempboxa
12738 \advance\@linkdim by -6.5\p@
12739 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
12740 \Hy@RestoreSpaceFactor
12741 \else
12742 \begingroup
12743 \hyper@chars
12744 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12745 \Hy@colorlink\@urlcolor
12746 #1\Hy@xspace@end
12747 \Hy@endcolorlink
12748 \special{t4ht=</a>}%
12749 \endgroup
12750 \fi
12751 }

Poor implementation of \hyper@link without considering #1.
12752 \def\hyper@link#1#2#3{%
12753 \Hy@VerboseLinkStart{#1}{#2}%
12754 \hyper@linkurl{#3}{\#\HyperDestNameFilter{#2}}%
12755 }

```

```

12756 \def\hyper@image#1#2{%
12757   \begingroup
12758     \hyper@chars
12759     \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
12760   \endgroup
12761 }
12762 \let\autoref\ref
12763 \ifx \rEfLiNK \UnDef
12764   \def\rEfLiNK #1#2{#2}%
12765 \fi
12766 \let\backref\ltx@gobble

```

Fix for tex4ht.

```

12767 \AtBeginDocument{%
12768   \expandafter
12769   \let\expandafter\Hy@OrgMakeLabel\csname Make:Label\endcsname
12770   \expandafter\def\csname Make:Label\endcsname#1#2{%
12771     \ifhmode
12772       \Hy@SaveSpaceFactor
12773     \else
12774       \global\Hy@SavedSpaceFactor=1000 %
12775     \fi
12776     \Hy@OrgMakeLabel{#1}{%
12777       \Hy@RestoreSpaceFactor
12778       #2\Hy@xspace@end%
12779     \Hy@SaveSpaceFactor
12780   }%
12781   \Hy@RestoreSpaceFactor
12782 }%
12783 }
12784 </tex4ht>
12785 <*tex4htcfg>
12786 \IfFileExists{jobname.cfg}{\endinput}{}
12787 \Preamble{html}
12788   \begin{document}%
12789 \EndPreamble
12790 \def\TeX{TeX}
12791 \def\OMEGA{Omega}
12792 \def\LaTeX{LaTeX}
12793 \def\LaTeXe{\LaTeX2e}
12794 \def\eTeX{e-TeX}
12795 \def\MF{Metafont}
12796 \def\MP{MetaPost}
12797 </tex4htcfg>

```

## 48 Driver-specific form support

### 48.1 pdfmarks

```

12798 <*pdfmark>
12799 \long\def\@Form[#1]{%
12800 \g@addto@macro\Hy@FirstPageHook{%
12801   \headerps@out{%
12802     [%
12803     /_objdef{pdfDocEncoding}%
12804     /type/dict%
12805     /OBJ pdfmark%
12806     [%

```

12807 {pdfDocEncoding}%  
12808 <<%  
12809 /Type/Encoding%  
12810 /Differences[%  
12811 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%  
12812 /tilde %  
12813 39/quotesingle %  
12814 96/grave %  
12815 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%  
12816 /fraction/guilsinglleft/guilsinglright/minus/perthousand%  
12817 /quotedblbase/quotedblleft/quotedblright/quoteleft%  
12818 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%  
12819 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %  
12820 164/currency %  
12821 166/brokenbar %  
12822 168/dieresis/copyright/ordfeminine %  
12823 172/logicalnot/.notdef/registered/macron/degree/plusminus%  
12824 /twosuperior/threesuperior/acute/mu %  
12825 183/periodcentered/cedilla/onesuperior/ordmasculine %  
12826 188/onequarter/onehalf/threequarters %  
12827 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%  
12828 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%  
12829 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%  
12830 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%  
12831 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%  
12832 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%  
12833 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%  
12834 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%  
12835 /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%  
12836 /ucircumflex/udieresis/yacute/thorn/ydieresis%  
12837 ]%  
12838 >>%  
12839 /PUT pdfmark%  
12840 [%  
12841 /\_objdef{ZaDb}%  
12842 /type/dict%  
12843 /OBJ pdfmark%  
12844 [%  
12845 {ZaDb}%  
12846 <<%  
12847 /Type/Font%  
12848 /Subtype/Type1%  
12849 /Name/ZaDb%  
12850 /BaseFont/ZapfDingbats%  
12851 >>%  
12852 /PUT pdfmark%  
12853 [%  
12854 /\_objdef{Helv}%  
12855 /type/dict%  
12856 /OBJ pdfmark%  
12857 [%  
12858 {Helv}%  
12859 <<%  
12860 /Type/Font%  
12861 /Subtype/Type1%  
12862 /Name/Helv%  
12863 /BaseFont/Helvetica%

```

12864   /Encoding{pdfDocEncoding}%
12865   >>%
12866 /PUT pdfmark%
12867 [%
12868   /_objdef{aform}%
12869   /type/dict%
12870 /OBJ pdfmark%
12871 [%
12872   /_objdef{afields}%
12873   /type/array%
12874 /OBJ pdfmark%
12875 {%
12876 [%
12877   /BBox[0 0 100 100]%
12878   /_objdef{Check}%
12879 /BP pdfmark %
12880 1 0 0 setrgbcolor%
12881 /ZapfDingbats 80 selectfont %
12882 20 20 moveto%
12883 (4)show%
12884 [/EP pdfmark%
12885 [%
12886   /BBox[0 0 100 100]%
12887   /_objdef{Cross}%
12888 /BP pdfmark %
12889 1 0 0 setrgbcolor%
12890 /ZapfDingbats 80 selectfont %
12891 20 20 moveto%
12892 (8)show%
12893 [/EP pdfmark%
12894 [%
12895   /BBox[0 0 250 100]%
12896   /_objdef{Submit}%
12897 /BP pdfmark %
12898 0.6 setgray %
12899 0 0 250 100 rectfill %
12900 1 setgray %
12901 2 2 moveto %
12902 2 98 lineto %
12903 248 98 lineto %
12904 246 96 lineto %
12905 4 96 lineto %
12906 4 4 lineto %
12907 fill %
12908 0.34 setgray %
12909 248 98 moveto %
12910 248 2 lineto %
12911 2 2 lineto %
12912 4 4 lineto %
12913 246 4 lineto %
12914 246 96 lineto %
12915 fill%
12916 /Helvetica 76 selectfont %
12917 0 setgray %
12918 8 22.5 moveto%
12919 (Submit)show%
12920 [/EP pdfmark%

```

```

12921 [%
12922   /BBox[0 0 250 100]%
12923   /_objdef{SubmitP}%
12924   /BP pdfmark %
12925   0.6 setgray %
12926   0 0 250 100 rectfill %
12927   0.34 setgray %
12928   2 2 moveto %
12929   2 98 lineto %
12930   248 98 lineto %
12931   246 96 lineto %
12932   4 96 lineto %
12933   4 4 lineto %
12934   fill %
12935   1 setgray %
12936   248 98 moveto %
12937   248 2 lineto %
12938   2 2 lineto %
12939   4 4 lineto %
12940   246 4 lineto %
12941   246 96 lineto %
12942   fill%
12943   /Helvetica 76 selectfont %
12944   0 setgray %
12945   10 20.5 moveto%
12946   (Submit)show%
12947   [/EP pdfmark%
12948 } ?pdfmark%
12949 [%
12950   {aform}%
12951   <<%
12952     /Fields{afields}%
12953     /DR<<%
12954       /Font<<%
12955         /ZaDb{ZaDb}%
12956         /Helv{Helv}%
12957       >>%
12958     >>%
12959     /DA(/Helv 10 Tf 0 g)%
12960     /CO{corder}%
12961     \ifHy@pdfa
12962     \else
12963       \ifHyField@NeedAppearances
12964         /NeedAppearances true%
12965       \fi
12966     \fi
12967   >>%
12968 /PUT pdfmark%
12969 [%
12970   {Catalog}%
12971   <<%
12972     /AcroForm{aform}%
12973   >>%
12974 /PUT pdfmark%
12975 [%
12976   /_objdef{corder}%
12977   /type/array%

```



```

12978 /OBJ pdfmark% dps
12979 }}%
12980 \kvsetkeys{Form}{#1}%
12981 }
12982 \let\@endForm\ltx@empty
12983 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12984 \Hy@Message{Sorry, pdfmark drivers do not support FORM gauges}%
12985 }
12986 \def\@TextField[#1]#2{% parameters, label
12987 \def\Fld@name{#2}%
12988 \let\Fld@default\ltx@empty
12989 \let\Fld@value\@empty
12990 \def\Fld@width{\DefaultWidthofText}%
12991 \def\Fld@height{%
12992 \ifFld@multiline
12993 \DefaultHeightofTextMultiline
12994 \else
12995 \DefaultHeightofText
12996 \fi
12997 }%
12998 \begingroup
12999 \expandafter\HyField@SetKeys\expandafter{%
13000 \DefaultOptionsofText,#1%
13001 }%
13002 \HyField@FlagsText
13003 \ifFld@hidden\def\Fld@width{1sp}\fi
13004 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13005 \LayoutTextField{#2}{%
13006 \leavevmode
13007 \Hy@escapeform\PDFForm@Text
13008 \pdfmark{\MakeTextField{\Fld@width}{\Fld@height}}{%
13009 pdfmark=/ANN,Raw={\PDFForm@Text}%
13010 }%
13011 }%
13012 \endgroup
13013 }
13014 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13015 \def\Fld@name{#2}%
13016 \let\Fld@default\relax
13017 \let\Fld@value\relax
13018 \def\Fld@width{\DefaultWidthofChoiceMenu}%
13019 \def\Fld@height{\DefaultHeightofChoiceMenu}%
13020 \begingroup
13021 \Fld@menulength=0 %
13022 \@tempdima\z@
13023 \@for\@curropt:=#3\do{%
13024 \expandafter\Fld@checkequals\@curropt==\%
13025 \Hy@StepCount\Fld@menulength
13026 \settowidth{\@tempdimb}{\@currDisplay}%
13027 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13028 }%
13029 \advance\@tempdima by 15\p@
13030 \begingroup
13031 \HyField@SetKeys{#1}%
13032 \edef\x{\endgroup
13033 \noexpand\expandafter
13034 \noexpand\HyField@SetKeys

```

```

13035 \noexpand\expandafter{%
13036 \expandafter\noexpand\csname DefaultOptionsof%
13037 \ifFld@radio
13038 Radio%
13039 \else
13040 \ifFld@combo
13041 \ifFld@popdown
13042 PopdownBox%
13043 \else
13044 ComboBox%
13045 \fi
13046 \else
13047 ListBox%
13048 \fi
13049 \fi
13050 \endcsname
13051 }%
13052 }\x
13053 \HyField@SetKeys{#1}%
13054 \ifFld@hidden\def\Fld@width{1sp}\fi
13055 \ifx\Fld@value\relax
13056 \let\Fld@value\Fld@default
13057 \fi
13058 \LayoutChoiceField{#2}{%
13059 \ifFld@radio
13060 \HyField@FlagsRadioButton
13061 \@@Radio{#3}%
13062 \else
13063 \begingroup
13064 \HyField@FlagsChoice
13065 \ifdim\Fld@width<\@tempdima
13066 \ifdim\@tempdima<1cm\@tempdima1cm\fi
13067 \edef\Fld@width{\the\@tempdima}%
13068 \fi
13069 \ifFld@combo
13070 \else
13071 \@tempdima=\the\Fld@menulength\Fld@charsize
13072 \advance\@tempdima by \Fld@borderwidth bp %
13073 \advance\@tempdima by \Fld@borderwidth bp %
13074 \edef\Fld@height{\the\@tempdima}%
13075 \fi
13076 \@@ListBox{#3}%
13077 \endgroup
13078 \fi
13079 }%
13080 \endgroup
13081 }
13082 \def\@@Radio#1{%
13083 \Fld@listcount=0 %
13084 \EdefEscapeName\Fld@default{\Fld@default}%
13085 \@for\@curropt:=#1\do{%
13086 \expandafter\Fld@checkequals\@curropt==\%
13087 \EdefEscapeName\@currValue{\@currValue}%
13088 \Hy@StepCount\Fld@listcount
13089 \@currDisplay\space
13090 \Hy@escapeform\PDFForm@Radio
13091 \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%

```

```

13092 pdfmark=/ANN,%
13093 Raw={%
13094 \PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>%
13095 }%
13096 } % deliberate space between radio buttons
13097 }%
13098 }
13099 \newcount\Fld@listcount
13100 \def\@@ListBox#1{%
13101 \HyField@PDFChoices{#1}%
13102 \Hy@escapeform\PDFForm@List
13103 \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
13104 pdfmark=/ANN,Raw={\PDFForm@List}%
13105 }%
13106 }
13107 \def\@PushButton[#1]#2{% parameters, label
13108 \def\Fld@name{#2}%
13109 \begingroup
13110 \expandafter\HyField@SetKeys\expandafter{%
13111 \DefaultOptionsofPushButton,#1%
13112 }%
13113 \ifHy@pdfa
13114 \Hy@Error{%
13115 PDF/A: Push button with JavaScript is prohibited%
13116 }@ehc
13117 \LayoutPushButtonField{%
13118 \leavevmode
13119 \MakeButtonField{#2}%
13120 }%
13121 \else
13122 \HyField@FlagsPushButton
13123 \ifFld@hidden\def\Fld@width{1sp}\fi
13124 \LayoutPushButtonField{%
13125 \leavevmode
13126 \Hy@escapeform\PDFForm@Push
13127 \pdfmark[\MakeButtonField{#2}]{%
13128 pdfmark=/ANN,Raw={\PDFForm@Push}%
13129 }%
13130 }%
13131 \fi
13132 \endgroup
13133 }
13134 \def\@Submit[#1]#2{%
13135 \def\Fld@width{\DefaultWidthofSubmit}%
13136 \def\Fld@height{\DefaultHeightofSubmit}%
13137 \begingroup
13138 \expandafter\HyField@SetKeys\expandafter{%
13139 \DefaultOptionsofSubmit,#1%
13140 }%
13141 \HyField@FlagsPushButton
13142 \HyField@FlagsSubmit
13143 \ifFld@hidden\def\Fld@width{1sp}\fi
13144 \Hy@escapeform\PDFForm@Submit
13145 \pdfmark[\MakeButtonField{#2}]{%
13146 pdfmark=/ANN,%
13147 Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
13148 }%

```

```

13149 \endgroup
13150 }
13151 \def\@Reset[#1]#2{%
13152 \def\Fld@width{\DefaultWidthofReset}%
13153 \def\Fld@height{\DefaultHeightofReset}%
13154 \begingroup
13155 \expandafter\HyField@SetKeys\expandafter{%
13156 \DefaultOptionsofReset,#1%
13157 }%
13158 \leavevmode
13159 \ifHy@pdfa
13160 \Hy@Error{%
13161 PDF/A: Reset action is prohibited%
13162 }\@ehc
13163 \MakeButtonField{#2}%
13164 \else
13165 \HyField@FlagsPushButton
13166 \ifFld@hidden\def\Fld@width{1sp}\fi
13167 \Hy@escapeform\PDFForm@Reset
13168 \pdfmark[\MakeButtonField{#2}]{%
13169 pdfmark=/ANN,Raw={\PDFForm@Reset}%
13170 }%
13171 \fi
13172 \endgroup
13173 }%
13174 \def\@CheckBox[#1]#2{% parameters, label
13175 \def\Fld@name{#2}%
13176 \def\Fld@default{0}%
13177 \begingroup
13178 \def\Fld@width{\DefaultWidthofCheckBox}%
13179 \def\Fld@height{\DefaultHeightofCheckBox}%
13180 \expandafter\HyField@SetKeys\expandafter{%
13181 \DefaultOptionsofCheckBox,#1%
13182 }%
13183 \HyField@FlagsCheckBox
13184 \ifFld@hidden\def\Fld@width{1sp}\fi
13185 \LayoutCheckField{#2}{%
13186 \leavevmode
13187 \Hy@escapeform\PDFForm@Check
13188 \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
13189 pdfmark=/ANN,Raw={\PDFForm@Check}%
13190 }%
13191 }%
13192 \endgroup
13193 }
13194 \pdfmark

```

## 48.2 HyperTeX

```

13195 \hypertex
13196 \def\@Form[#1]{%
13197 \Hy@Message{Sorry, HyperTeX does not support FORMs}%
13198 }
13199 \let\@endForm\ltx@empty
13200 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
13201 \Hy@Message{Sorry, HyperTeX does not support FORM gauges}%
13202 }
13203 \def\@TextField[#1]#2{% parameters, label

```

```

13204 \Hy@Message{Sorry, HyperTeX does not support FORM text fields}%
13205 }
13206 \def\@CheckBox[#1]#2{% parameters, label
13207 \Hy@Message{Sorry, HyperTeX does not support FORM checkboxes}%
13208 }
13209 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13210 \Hy@Message{Sorry, HyperTeX does not support FORM choice menus}%
13211 }
13212 \def\@PushButton[#1]#2{% parameters, label
13213 \Hy@Message{Sorry, HyperTeX does not support FORM pushbuttons}%
13214 }
13215 \def\@Reset[#1]#2{%
13216 \Hy@Message{Sorry, HyperTeX does not support FORMs}%
13217 }
13218 \def\@Submit[#1]#2{%
13219 \Hy@Message{Sorry, HyperTeX does not support FORMs}%
13220 }
13221 \</hypertex>

```

### 48.3 TeX4ht

```

13222 \<tex4ht>
13223 \def\@Form[#1]{%
13224 \kvsetkeys{Form}{#1}%
13225 \HCode{<form action="\Form@action" method="\Form@method">}%
13226 }
13227 \def\@endForm{\HCode{</form>}}
13228 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
13229 \Hy@Message{Sorry, TeX4ht does not support gauges}%
13230 }
13231 \def\@TextField[#1]#2{% parameters, label
13232 \let\Hy@reserved@a\@empty
13233 \def\Fld@name{#2}%
13234 \let\Fld@default\ltx@empty
13235 \bgroup
13236 \Field@toks={ }%
13237 \kvsetkeys{Field}{#1}%
13238 \HCode{<label for="\Fld@name">#2</label>}%
13239 \ifFld@password
13240 \@@PasswordField
13241 \else
13242 \@@TextField
13243 \fi
13244 \egroup
13245 }
13246 \def\@@PasswordField{%
13247 \HCode{%
13248 <input type="password" %
13249 id="\Fld@name" %
13250 name="\Fld@name" %
13251 \ifFld@hidden type="hidden" \fi
13252 value="\Fld@default" %
13253 \the\Field@toks
13254 >%
13255 }%
13256 }
13257 \def\@@TextField{%
13258 \ifFld@multiline

```

```

13259 \HCode{<textarea %
13260 \ifFld@readonly readonly \fi
13261 id="\Fld@name" %
13262 name="\Fld@name" %
13263 \ifFld@hidden type="hidden" \fi
13264 \the\Field@toks>%
13265 }%
13266 \Fld@default
13267 \HCode{</textarea>}%
13268 \else
13269 \HCode{<input type="textbox" %
13270 \ifFld@readonly readonly \fi
13271 id="\Fld@name" %
13272 name="\Fld@name" %
13273 \ifFld@hidden type="hidden" \fi
13274 value="\Fld@default" %
13275 \the\Field@toks>%
13276 }%
13277 \fi
13278 }
13279 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13280 \def\Fld@name{#2}%
13281 \let\Fld@default\ltx@empty
13282 \let\Hy@reserved@a\relax
13283 \begingroup
13284 \expandafter\Fld@findlength#3\\%
13285 \Field@toks={ }%
13286 \kvsetkeys{Field}{#1}%
13287 #2%
13288 \ifFld@radio
13289 \expandafter\@@Radio#3\\%
13290 \else
13291 \expandafter\@@Menu#3\\%
13292 \fi
13293 \endgroup
13294 }
13295 \def\Fld@findlength#1\\{%
13296 \Fld@menulength=0 %
13297 \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
13298 }
13299 \def\@@Menu#1\\{%
13300 \HCode{<select size="\the\Fld@menulength" %
13301 name="\Fld@name" %
13302 \the\Field@toks>%
13303 }%
13304 \@for\@curropt:=#1\do{%
13305 \expandafter\Fld@checkequals\@curropt==\\%
13306 \HCode{<option %
13307 \ifx\@curropt\Fld@default selected \fi
13308 value="\@currValue">\@currDisplay</option>%
13309 }%
13310 }%
13311 \HCode{</select>}%
13312 }
13313 \def\@@Radio#1\\{%
13314 \@for\@curropt:=#1\do{%
13315 \expandafter\Fld@checkequals\@curropt==\\%

```

```

13316 \HCode{<input type="radio" %
13317 \ifx\@curropt\Fld@default checked \fi
13318 name="\Fld@name" %
13319 value="\@currValue" %
13320 \the\Fld@toks>%
13321 }%
13322 \@currDisplay
13323 }%
13324 }
13325 \def\@PushButton[#1]#2{% parameters, label
13326 \def\Fld@name{#2}%
13327 \bgroup
13328 \Fld@toks={ }%
13329 \kvsetkeys{Field}{#1}%
13330 \HCode{<input type="button" %
13331 name="\Fld@name" %
13332 value="#2" %
13333 \the\Fld@toks>%
13334 }%
13335 \HCode{</button>}%
13336 \egroup
13337 }
13338 \def\@Submit[#1]#2{%
13339 \HCode{<button type="submit">#2</button>}%
13340 }
13341 \def\@Reset[#1]#2{%
13342 \HCode{<button type="reset">#2</button>}%
13343 }
13344 \def\@CheckBox[#1]#2{% parameters, label
13345 \let\Hy@reserved@a\@empty
13346 \def\Fld@name{#2}%
13347 \def\Fld@default{0}%
13348 \bgroup
13349 \Fld@toks={ }%
13350 \kvsetkeys{Field}{#1}%
13351 \HCode{<input type="checkbox" %
13352 \ifFld@checked checked \fi
13353 \ifFld@disabled disabled \fi
13354 \ifFld@readonly readonly \fi
13355 name="\Fld@name" %
13356 \ifFld@hidden type="hidden" \fi
13357 value="\Fld@default" %
13358 \the\Fld@toks>%
13359 #2%
13360 }%
13361 \egroup
13362 }
13363 </tex4ht>

```

## 48.4 pdfTeX

```

13364 (*pdfTeX)
13365 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
13366 \Hy@Message{Sorry, pdfTeX does not support FORM gauges}%
13367 }
13368 \def\MakeFieldObject#1#2{\sbox0{#1}%
13369 \immediate\pdfxform0 %
13370 \expandafter\edef\csname #2Object\endcsname{%

```

```

13371 \the\pdflastxform\space 0 R%
13372 }%
13373 % \hbox to Opt{\hskip-\maxdimen{\pdfrefxform \the\pdflastxform}}}%
13374 }%
13375 \let\HyField@afields\ltx@empty
13376 \begingroup\expandafter\expandafter\expandafter\endgroup
13377 \expandafter\ifx\csname pdflastlink\endcsname\relax
13378 \let\HyField@AddToFields\relax
13379 \PackageInfo{hyperref}{%
13380 You need pdfTeX 1.40.0 for setting the /Fields entry.%
13381 \MessageBreak
13382 Adobe Reader/Acrobat accepts an empty /Field array,%
13383 \MessageBreak
13384 but other PDF viewers might complain%
13385 }%
13386 \else
13387 \let\HyField@AuxAddToFields\ltx@gobble
13388 \def\HyField@AfterAuxOpen{\Hy@AtBeginDocument}%
13389 \Hy@AtBeginDocument{%
13390 \if@filesw
13391 \immediate\write\@mainaux{%
13392 \string\providecommand\string\HyField@AuxAddToFields[1]{}%
13393 }%
13394 \fi
13395 \let\HyField@AfterAuxOpen\@firstofone
13396 \def\HyField@AuxAddToFields#1{%
13397 \xdef\HyField@afields{%
13398 \ifx\HyField@afields\@empty
13399 \else
13400 \HyField@afields
13401 \space
13402 \fi
13403 #1 0 R%
13404 }%
13405 }%
13406 }%
13407 \def\HyField@AddToFields{%
13408 \expandafter\HyField@@AddToFields\expandafter{%
13409 \the\pdflastlink
13410 }%
13411 }%
13412 \def\HyField@@AddToFields#1{%
13413 \HyField@AfterAuxOpen{%
13414 \if@filesw
13415 \write\@mainaux{%
13416 \string\HyField@AuxAddToFields{#1}%
13417 }%
13418 \fi
13419 }%
13420 }%
13421 \fi
13422 \def\@Form[#1]{%
13423 \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13424 \kvsetkeys{Form}{#1}%
13425 \pdf@ifdraftmode{}%
13426 \Hy@FormObjects
13427 \ifnum\pdfTeXversion>13 %

```



```

13428 \pdfrefobj\OBJ@pdfdocencoding
13429 \pdfrefobj\OBJ@ZaDb
13430 \pdfrefobj\OBJ@Helv
13431 \fi
13432 \AtVeryEndDocument{%
13433 \immediate\pdfobj{%
13434 <<%
13435 /Fields[\HyField@afields]%
13436 /DR<<%
13437 /Font<<%
13438 /ZaDb \OBJ@ZaDb\space 0 R%
13439 /Helv \OBJ@Helv\space 0 R%
13440 >>%
13441 >>%
13442 /DA(/Helv 10 Tf 0 g)%
13443 \ifHy@pdfa
13444 \else
13445 \ifHyField@NeedAppearances
13446 /NeedAppearances true%
13447 \fi
13448 \fi
13449 >>%
13450 }%
13451 \edef\OBJ@acroform{\the\pdfastobj}%
13452 \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
13453 }%
13454 }%
13455 \MakeFieldObject{%
Same as \ding{123} of package pifont.
13456 \begingroup
13457 \fontfamily{pzd}%
13458 \fontencoding{U}%
13459 \fontseries{m}%
13460 \fontshape{n}%
13461 \selectfont
13462 \char123 %
13463 \endgroup
13464 }{Ding}%
13465 \MakeFieldObject{%
13466 \fbox{\textcolor{yellow}{\textsf{Submit}}}%
13467 }{Submit}%
13468 \MakeFieldObject{%
13469 \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
13470 }{SubmitP}%
13471 }
13472 \let\@endForm\ltx@empty
13473 \def\@TextField[#1]#2{% parameters, label
13474 \def\Fld@name{#2}%
13475 \let\Fld@default\ltx@empty
13476 \let\Fld@value\@empty
13477 \def\Fld@width{\DefaultWidthofText}%
13478 \def\Fld@height{%
13479 \ifFld@multiline
13480 \DefaultHeightofTextMultiline
13481 \else
13482 \DefaultHeightofText
13483 \fi

```

```

13484 }%
13485 \begingroup
13486 \expandafter\HyField@SetKeys\expandafter{%
13487 \DefaultOptionsofText,#1%
13488 }%
13489 \PDFForm@Name
13490 \HyField@FlagsText
13491 \ifFld@hidden\def\Fld@width{1sp}\fi
13492 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13493 \LayoutTextField{#2}{%
13494 \leavevmode
13495 \Hy@escapeform\PDFForm@Text
13496 \pdfstartlink user {\PDFForm@Text}\relax
13497 \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
13498 \HyField@AddToFields
13499 }%
13500 \endgroup
13501 }
13502 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13503 \def\Fld@name{#2}%
13504 \let\Fld@default\relax
13505 \let\Fld@value\relax
13506 \def\Fld@width{\DefaultWidthofChoiceMenu}%
13507 \def\Fld@height{\DefaultHeightofChoiceMenu}%
13508 \begingroup
13509 \Fld@menulength=0 %
13510 \@tempdima\z@
13511 \@for\@curropt:=#3\do{%
13512 \expandafter\Fld@checkequals\@curropt==\%
13513 \Hy@StepCount\Fld@menulength
13514 \settowidth{\@tempdimb}{\@currDisplay}%
13515 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13516 }%
13517 \advance\@tempdima by 15\p@
13518 \begingroup
13519 \HyField@SetKeys{#1}%
13520 \edef\x{\endgroup
13521 \noexpand\expandafter
13522 \noexpand\HyField@SetKeys
13523 \noexpand\expandafter{%
13524 \expandafter\noexpand\csname DefaultOptionsof%
13525 \ifFld@radio
13526 Radio%
13527 \else
13528 \ifFld@combo
13529 \ifFld@popdown
13530 PopdownBox%
13531 \else
13532 ComboBox%
13533 \fi
13534 \else
13535 ListBox%
13536 \fi
13537 \fi
13538 \endcsname
13539 }%
13540 }\x

```

```

13541 \HyField@SetKeys{#1}%
13542 \PDFForm@Name
13543 \ifFld@hidden\def\Fld@width{1sp}\fi
13544 \ifx\Fld@value\relax
13545 \let\Fld@value\Fld@default
13546 \fi
13547 \LayoutChoiceField{#2}{%
13548 \ifFld@radio
13549 \HyField@FlagsRadioButton
13550 \@@Radio{#3}%
13551 \else
13552 \begingroup
13553 \HyField@FlagsChoice
13554 \ifdim\Fld@width<\@tempdima
13555 \ifdim\@tempdima<1cm\@tempdima1cm\fi
13556 \edef\Fld@width{\the\@tempdima}%
13557 \fi
13558 \ifFld@combo
13559 \else
13560 \@tempdima=\the\Fld@menulength\Fld@charsize
13561 \advance\@tempdima by \Fld@borderwidth bp %
13562 \advance\@tempdima by \Fld@borderwidth bp %
13563 \edef\Fld@height{\the\@tempdima}%
13564 \fi
13565 \@@ListBox{#3}%
13566 \endgroup
13567 \fi
13568 }%
13569 \endgroup
13570 }
13571 \def\@@Radio#1{%
13572 \Fld@listcount=0 %
13573 \EdefEscapeName\Fld@default{\Fld@default}%
13574 \@for\@curropt:=#1\do{%
13575 \expandafter\Fld@checkequals\@curropt==\%
13576 \EdefEscapeName\@currValue{\@currValue}%
13577 \Hy@StepCount\Fld@listcount
13578 \@currDisplay\space
13579 \leavevmode
13580 \Hy@escapeform\PDFForm@Radio
13581 \pdfstartlink user {%
13582 \PDFForm@Radio
13583 /AP<<%
13584 /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.

```

13585 /\@currValue\space \DingObject
13586 >>%
13587 >>%
13588 }%
13589 \relax
13590 \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
13591 \ifnum\Fld@listcount=1 %
13592 \HyField@AddToFields
13593 \fi
13594 \space % deliberate space between radio buttons

```

```

13595 }%
13596 }
13597 \newcount\Fld@listcount
13598 \def\@@ListBox#1{%
13599   \HyField@PDFChoices{#1}%
13600   \leavevmode
13601   \Hy@escapeform\PDFForm@List
13602   \pdfstartlink user {\PDFForm@List}\relax
13603   \MakeChoiceField{\Fld@width}{\Fld@height}%
13604   \pdfendlink
13605   \HyField@AddToFields
13606 }
13607 \def\@PushButton[#1]#2{% parameters, label
13608   \def\Fld@name{#2}%
13609   \begingroup
13610     \expandafter\HyField@SetKeys\expandafter{%
13611       \DefaultOptionsofPushButton,#1%
13612     }%
13613     \PDFForm@Name
13614     \ifHy@pdfa
13615       \Hy@Error{%
13616         PDF/A: Push button with JavaScript is prohibited%
13617       }\@ehc
13618       \LayoutPushButtonField{%
13619         \leavevmode
13620         \MakeButtonField{#2}%
13621       }%
13622     \else
13623       \HyField@FlagsPushButton
13624       \ifFld@hidden\def\Fld@width{1sp}\fi
13625       \LayoutPushButtonField{%
13626         \leavevmode
13627         \Hy@escapeform\PDFForm@Push
13628         \pdfstartlink user {\PDFForm@Push}\relax
13629         \MakeButtonField{#2}%
13630         \pdfendlink
13631         \HyField@AddToFields
13632       }%
13633     \fi
13634   \endgroup
13635 }
13636 \def\@Submit[#1]#2{%
13637   \def\Fld@width{\DefaultWidthofSubmit}%
13638   \def\Fld@height{\DefaultHeightofSubmit}%
13639   \begingroup
13640     \expandafter\HyField@SetKeys\expandafter{%
13641       \DefaultOptionsofSubmit,#1%
13642     }%
13643     \HyField@FlagsPushButton
13644     \HyField@FlagsSubmit
13645     \ifFld@hidden\def\Fld@width{1sp}\fi
13646     \leavevmode
13647     \Hy@escapeform\PDFForm@Submit
13648     \pdfstartlink user {%
13649       \PDFForm@Submit
13650       /AP<</N \SubmitObject/D \SubmitPObject>>%
13651     }%

```

```

13652 \relax
13653 \MakeButtonField{#2}%
13654 \pdfendlink
13655 \HyField@AddToFields
13656 \endgroup
13657 }
13658 \def\@Reset[#1]#2{%
13659 \def\Fld@width{\DefaultWidthofReset}%
13660 \def\Fld@height{\DefaultHeightofReset}%
13661 \begingroup
13662 \expandafter\HyField@SetKeys\expandafter{%
13663 \DefaultOptionsofReset,#1%
13664 }%
13665 \leavevmode
13666 \ifHy@pdfa
13667 \Hy@Error{%
13668 PDF/A: Reset action is prohibited%
13669 }\@ehc
13670 \MakeButtonField{#2}%
13671 \else
13672 \HyField@FlagsPushButton
13673 \ifFld@hidden\def\Fld@width{1sp}\fi
13674 \Hy@escapeform\PDFForm@Reset
13675 \pdfstartlink user {\PDFForm@Reset}\relax
13676 \MakeButtonField{#2}%
13677 \pdfendlink
13678 \HyField@AddToFields
13679 \fi
13680 \endgroup
13681 }
13682 \def\@CheckBox[#1]#2{% parameters, label
13683 \def\Fld@name{#2}%
13684 \def\Fld@default{0}%
13685 \begingroup
13686 \def\Fld@width{\DefaultWidthofCheckBox}%
13687 \def\Fld@height{\DefaultHeightofCheckBox}%
13688 \expandafter\HyField@SetKeys\expandafter{%
13689 \DefaultOptionsofCheckBox,#1%
13690 }%
13691 \PDFForm@Name
13692 \HyField@FlagsCheckBox
13693 \ifFld@hidden\def\Fld@width{1sp}\fi
13694 \LayoutCheckField{#2}{%
13695 \leavevmode
13696 \Hy@escapeform\PDFForm@Check
13697 \pdfstartlink user {\PDFForm@Check}\relax
13698 \MakeCheckField{\Fld@width}{\Fld@height}%
13699 \pdfendlink
13700 \HyField@AddToFields
13701 }%
13702 \endgroup
13703 }
13704 \def\Hy@FormObjects{%
13705 \pdfobj {%
13706 <<%
13707 /Type/Encoding%
13708 /Differences[%

```

```

13709 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
13710 /ring/tilde %
13711 39/quotesingle %
13712 96/grave %
13713 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13714 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
13715 /quotedblbase/quotedblleft/quotedblright/quoteleft%
13716 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
13717 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13718 164/currency %
13719 166/brokenbar %
13720 168/dieresis/copyright/ordfeminine %
13721 172/logicalnot/.notdef/registered/macron/degree/plusminus%
13722 /twosuperior/threesuperior/acute/mu %
13723 183/periodcentered/cedilla/onesuperior/ordmasculine %
13724 188/onequarter/onehalf/threequarters %
13725 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13726 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
13727 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
13728 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
13729 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
13730 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
13731 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
13732 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
13733 /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
13734 /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
13735 }%
13736 >>%
13737 }%
13738 \xdef\OBJ@pdfdocencoding{\the\pdfastobj}%
13739 \pdfobj{%
13740 <<%
13741 /Type/Font%
13742 /Subtype/Type1%
13743 /Name/ZaDb%
13744 /BaseFont/ZapfDingbats%
13745 >>%
13746 }%
13747 \xdef\OBJ@ZaDb{\the\pdfastobj}%
13748 \pdfobj{%
13749 <<%
13750 /Type/Font%
13751 /Subtype/Type1%
13752 /Name/Helv%
13753 /BaseFont/Helvetica%
13754 /Encoding \OBJ@pdfdocencoding\space 0 R%
13755 >>%
13756 }%
13757 \xdef\OBJ@Helv{\the\pdfastobj}%
13758 \global\let\Hy@FormObjects\relax
13759 }
13760 (/pdfTeX)

```

## 48.5 dvipdfm, xetex

D. P. Story adapted the pdf $\TeX$  forms part for dvipdfm, of which version 0.12.7b or higher is required because of a bug.

```
13761 {*dvipdfm | xetex}
```

\@Gauge

```
13762 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
13763   \Hy@Message{Sorry, dvipdfm/XeTeX does not support FORM gauges}%
13764 }
```

\@Form

```
13765 \def\@Form[#1]{%
13766   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13767   \kvsetkeys{Form}{#1}%
13768   \Hy@FormObjects
13769   \@pdfm@mark{obj @afields []}%
13770   \@pdfm@mark{obj @corder []}%
13771   \@pdfm@mark{%
13772     obj @aform <<%
13773       /Fields @afields%
13774       /DR<<%
13775       /Font<<%
13776       /ZaDb @OBJZaDb%
13777       /Helv @OBJHelv%
13778       >>%
13779       >>%
13780       /DA(/Helv 10 Tf 0 g)%
13781       /CO @corder%
13782       \ifHy@pdfa
13783       \else
13784         \ifHyField@NeedAppearances
13785         /NeedAppearances true%
13786         \fi
13787       \fi
13788       >>%
13789     }%
13790   \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
13791 }
```

\@endForm

```
13792 \let\@endForm\ltx@empty
```

\dvipdfm@setdim \dvipdfm@setdim sets dimensions for ann using \pdfm@box.

```
13793 \def\dvipdfm@setdim{%
13794   height \the\ht\pdfm@box\space
13795   width \the\wd\pdfm@box\space
13796   depth \the\dp\pdfm@box\space
13797 }
```

\HyField@AnnotCount

```
13798 \newcount\HyField@AnnotCount
13799 \HyField@AnnotCount=\z@
```

\HyField@AdvanceAnnotCount

```
13800 \def\HyField@AdvanceAnnotCount{%
13801   \global\advance\HyField@AnnotCount\@ne
13802 }
```

\HyField@TheAnnotCount

```
13803 \def\HyField@TheAnnotCount{%
13804   \the\HyField@AnnotCount
13805 }
```

## \@TextField

```

13806 \def\@TextField[#1]#2{% parameters, label
13807   \def\Fld@name{#2}%
13808   \let\Fld@default\ltx@empty
13809   \let\Fld@value\@empty
13810   \def\Fld@width{\DefaultWidthofText}%
13811   \def\Fld@height{%
13812     \ifFld@multiline
13813       \DefaultHeightofTextMultiline
13814     \else
13815       \DefaultHeightofText
13816     \fi
13817   }%
13818   \begingroup
13819     \expandafter\HyField@SetKeys\expandafter{%
13820       \DefaultOptionsofText,#1%
13821     }%
13822     \PDFForm@Name
13823     \HyField@FlagsText
13824     \ifFld@hidden\def\Fld@width{1sp}\fi
13825     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13826     \setbox\pdfm@box=\hbox{%
13827       \MakeTextField{\Fld@width}{\Fld@height}%
13828     }%
13829     \HyField@AdvanceAnnotCount
13830     \LayoutTextField{#2}{%
13831       \leavevmode
13832       \Hy@escapeform\PDFForm@Text
13833       \@pdfm@mark{%
13834         ann @text\HyField@TheAnnotCount\space
13835         \dvipdfm@setdim << \PDFForm@Text >>%
13836       }%
13837     }%
13838     \unhbox\pdfm@box
13839     \@pdfm@mark{put @afields @text\HyField@TheAnnotCount}%
13840     % record in @afields array
13841   \endgroup
13842 }

```

## \@ChoiceMenu

```

13843 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13844   \def\Fld@name{#2}%
13845   \let\Fld@default\relax
13846   \let\Fld@value\relax
13847   \def\Fld@width{\DefaultWidthofChoiceMenu}%
13848   \def\Fld@height{\DefaultHeightofChoiceMenu}%
13849   \begingroup
13850     \Fld@menulength=0 %
13851     \@tempdima\z@
13852     \@for\@curropt:=#3\do{%
13853       \expandafter\Fld@checkequals\@curropt==\\%
13854       \Hy@StepCount\Fld@menulength
13855       \settowidth{\@tempdimb}{\@currDisplay}%
13856       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13857     }%
13858     \advance\@tempdima by 15\p@
13859   \begingroup

```



```

13860 \HyField@SetKeys{#1}%
13861 \edef\x{\endgroup
13862 \noexpand\expandafter
13863 \noexpand\HyField@SetKeys
13864 \noexpand\expandafter{%
13865 \expandafter\noexpand\csname DefaultOptionsof%
13866 \ifFld@radio
13867 Radio%
13868 \else
13869 \ifFld@combo
13870 \ifFld@popdown
13871 PopdownBox%
13872 \else
13873 ComboBox%
13874 \fi
13875 \else
13876 ListBox%
13877 \fi
13878 \fi
13879 \endcsname
13880 }%
13881 }\x
13882 \HyField@SetKeys{#1}%
13883 \PDFForm@Name
13884 \ifFld@hidden\def\Fld@width{1sp}\fi
13885 \ifx\Fld@value\relax
13886 \let\Fld@value\Fld@default
13887 \fi
13888 \LayoutChoiceField{#2}{%
13889 \ifFld@radio
13890 \HyField@FlagsRadioButton
13891 \@@Radio{#3}%
13892 \else
13893 \begingroup
13894 \HyField@FlagsChoice
13895 \ifdim\Fld@width<\@tempdima
13896 \ifdim\@tempdima<1cm\@tempdima1cm\fi
13897 \edef\Fld@width{\the\@tempdima}%
13898 \fi
13899 \ifFld@combo
13900 \else
13901 \@tempdima=\the\Fld@menulength\Fld@charsize
13902 \advance\@tempdima by \Fld@borderwidth bp %
13903 \advance\@tempdima by \Fld@borderwidth bp %
13904 \edef\Fld@height{\the\@tempdima}%
13905 \fi
13906 \@@ListBox{#3}%
13907 \endgroup
13908 \fi
13909 }%
13910 \endgroup
13911 }

```

\@@Radio

```

13912 \def\@@Radio#1{%
13913 \Fld@listcount=0 %
13914 \EdefEscapeName\Fld@default{\Fld@default}%
13915 \setbox\pdfm@box=\hbox{%

```

```

13916 \MakeRadioField{\Fld@width}{\Fld@height}%
13917 }%
13918 \@for\@curropt:=#1\do{%
13919 \expandafter\Fld@checkequals\@curropt==\\%
13920 \EdefEscapeName\@currValue{\@currValue}%
13921 \Hy@StepCount\Fld@listcount
13922 \@currDisplay\space
13923 \leavevmode
13924 \Hy@escapeform\PDFForm@Radio
13925 \ifnum\Fld@listcount=1 %
13926 \HyField@AdvanceAnnotCount
13927 \fi
13928 \@pdfm@mark{%
13929 ann %
13930 \ifnum\Fld@listcount=1 %
13931 @radio\HyField@TheAnnotCount%
13932 \space
13933 \fi
13934 \dvipdfm@setdim
13935 <<%
13936 \PDFForm@Radio
13937 /AP<</N<</\@currValue /null>>>>%
13938 >>%
13939 }%
13940 \unhcopy\pdfm@box\space% deliberate space between radio buttons
13941 \ifnum\Fld@listcount=1 %
13942 \@pdfm@mark{%
13943 put @afields @radio\HyField@TheAnnotCount
13944 }%
13945 \fi
13946 }%
13947 }

```

\Fld@listcount

```

13948 \newcount\Fld@listcount

```

\@@ListBox

```

13949 \def\@@ListBox#1{%
13950 \HyField@PDFChoices{#1}%
13951 \setbox\pdfm@box=\hbox{%
13952 \MakeChoiceField{\Fld@width}{\Fld@height}%
13953 }%
13954 \leavevmode
13955 \Hy@escapeform\PDFForm@List
13956 \HyField@AdvanceAnnotCount
13957 \@pdfm@mark{%
13958 ann @list\HyField@TheAnnotCount\space
13959 \dvipdfm@setdim
13960 <<\PDFForm@List>>%
13961 }%
13962 \unhbox\pdfm@box
13963 \@pdfm@mark{put @afields @list\HyField@TheAnnotCount}%
13964 }

```

\@PushButton

```

13965 \def\@PushButton[#1]#2{% parameters, label
13966 \def\Fld@name{#2}%

```

```

13967 \begingroup
13968 \expandafter\HyField@SetKeys\expandafter{%
13969 \DefaultOptionsofPushButton,#1%
13970 }%
13971 \PDFForm@Name
13972 \ifHy@pdfa
13973 \Hy@Error{%
13974 PDF/A: Push button with JavaScript is prohibited%
13975 } \@ehc
13976 \LayoutPushButtonField{%
13977 \leavevmode
13978 \MakeButtonField{#2}%
13979 }%
13980 \else
13981 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13982 \HyField@FlagsPushButton
13983 \ifFld@hidden\def\Fld@width{1sp}\fi
13984 \HyField@AdvanceAnnotCount
13985 \LayoutPushButtonField{%
13986 \leavevmode
13987 \Hy@escapeform\PDFForm@Push
13988 \@pdfm@mark{%
13989 ann @push\HyField@TheAnnotCount\space
13990 \dvi pdfm@setdim
13991 <<\PDFForm@Push>>%
13992 }%
13993 }%
13994 \unhbox\pdfm@box
13995 \@pdfm@mark{put @afields @push\HyField@TheAnnotCount}%
13996 \fi
13997 \endgroup
13998 }

```

\@Submit

```

13999 \def\@Submit[#1]#2{%
14000 \def\Fld@width{\DefaultWidthofSubmit}%
14001 \def\Fld@height{\DefaultHeightofSubmit}%
14002 \begingroup
14003 \expandafter\HyField@SetKeys\expandafter{%
14004 \DefaultOptionsofSubmit,#1%
14005 }%
14006 \HyField@FlagsPushButton
14007 \HyField@FlagsSubmit
14008 \ifFld@hidden\def\Fld@width{1sp}\fi
14009 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
14010 \leavevmode
14011 \Hy@escapeform\PDFForm@Submit
14012 \HyField@AdvanceAnnotCount
14013 \@pdfm@mark{%
14014 ann @submit\HyField@TheAnnotCount\space
14015 \dvi pdfm@setdim
14016 <<\PDFForm@Submit>>%
14017 }%
14018 \unhbox\pdfm@box%
14019 \@pdfm@mark{put @afields @submit\HyField@TheAnnotCount}%
14020 \endgroup
14021 }

```

## `\@Reset`

```
14022 \def\@Reset[#1]#2{%
14023   \def\Fld@width{\DefaultWidthofReset}%
14024   \def\Fld@height{\DefaultHeightofReset}%
14025   \begingroup
14026     \expandafter\HyField@SetKeys\expandafter{%
14027       \DefaultOptionsofReset,#1%
14028     }%
14029     \leavevmode
14030     \ifHy@pdfa
14031       \Hy@Error{%
14032         PDF/A: Reset action is prohibited%
14033       }\@ehc
14034       \MakeButtonField{#2}%
14035     \else
14036       \HyField@FlagsPushButton
14037       \ifFld@hidden\def\Fld@width{1sp}\fi
14038       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
14039       \Hy@escapeform\PDFForm@Reset
14040       \HyField@AdvanceAnnotCount
14041       \@pdfm@mark{%
14042         ann @reset\HyField@TheAnnotCount\space
14043         \dvipdfm@setdim
14044         <<\PDFForm@Reset>>%
14045       }%
14046       \unhbox\pdfm@box
14047       \@pdfm@mark{put @afields @reset\HyField@TheAnnotCount}%
14048     \fi
14049   \endgroup
14050 }
```

## `\@CheckBox`

```
14051 \def\@CheckBox[#1]#2{% parameters, label
14052   \def\Fld@name{#2}%
14053   \def\Fld@default{0}%
14054   \begingroup
14055     \def\Fld@width{\DefaultWidthofCheckBox}%
14056     \def\Fld@height{\DefaultHeightofCheckBox}%
14057     \expandafter\HyField@SetKeys\expandafter{%
14058       \DefaultOptionsofCheckBox,#1%
14059     }%
14060     \PDFForm@Name
14061     \HyField@FlagsCheckBox
14062     \ifFld@hidden\def\Fld@width{1sp}\fi
14063     \setbox\pdfm@box=\hbox{%
14064       \MakeCheckField{\Fld@width}{\Fld@height}%
14065     }%
14066     \HyField@AdvanceAnnotCount
14067     \LayoutCheckField{#2}{%
14068       \leavevmode
14069       \Hy@escapeform\PDFForm@Check
14070       \@pdfm@mark{%
14071         ann @check\HyField@TheAnnotCount\space
14072         \dvipdfm@setdim
14073         <<\PDFForm@Check>>%
14074       }%
14075       \unhbox\pdfm@box
```

```

14076 \pdfmark{put @afields @check\HyField@TheAnnotCount}%
14077 }%
14078 \endgroup
14079 }

14080 \def\Hy@FormObjects{%
14081 \pdfmark{obj @OBJpdfdocencoding%
14082 <<%
14083 /Type/Encoding%
14084 /Differences[%
14085 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
14086 39/quotesingle %
14087 96/grave %
14088 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
14089 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
14090 /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
14091 /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
14092 /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
14093 164/currency %
14094 166/brokenbar %
14095 168/dieresis/copyright/ordfeminine %
14096 172/logicalnot/.notdef/registered/macron/degree/plusminus%
14097 /twosuperior/threesuperior/acute/mu %
14098 183/periodcentered/cedilla/onesuperior/ordmasculine %
14099 188/onequarter/onehalf/threequarters %
14100 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
14101 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
14102 /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
14103 /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
14104 /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
14105 /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
14106 /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
14107 /eth/ntilde/ograve/oacute/ocircumflex/otilde/odieresis%
14108 /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
14109 /thorn/ydieresis%
14110 ]%
14111 >>%
14112 }%
14113 \pdfmark{obj @OBJZaDb%
14114 <<%
14115 /Type/Font%
14116 /Subtype/Type1%
14117 /Name/ZaDb%
14118 /BaseFont/ZapfDingbats%
14119 >>%
14120 }%
14121 \pdfmark{obj @OBJHelv%
14122 <<%
14123 /Type/Font%
14124 /Subtype/Type1%
14125 /Name/Helv%
14126 /BaseFont/Helvetica%
14127 /Encoding @OBJpdfdocencoding%
14128 >>%
14129 }%
14130 \global\let\Hy@FormObjects\relax
14131 }
14132 </dvipdfm|xetex>

```

## 48.6 Common forms part

14133  $\langle$ \*pdfform $\rangle$

\Hy@escapestring

```
14134 \begingroup\expandafter\expandafter\expandafter\endgroup
14135 \expandafter\ifx\csname pdfescapestring\endcsname\relax
14136 \let\Hy@escapestring\@firstofone
14137 \def\Hy@escapeform#1{%
14138   \ifHy@pdfescapeform
14139     \def\Hy@escapestring##1{%
14140       \noexpand\Hy@escapestring{\noexpand##1}%
14141     }%
14142   \edef\Hy@temp{#1}%
14143   \expandafter\Hy@@@escapeform\Hy@temp\Hy@escapestring{}\@nil
14144   \def\Hy@escapestring##1{%
14145     \@ifundefined{Hy@esc@\string##1}{%
14146       ##1%
14147       \ThisShouldNotHappen
14148     }{%
14149       \csname Hy@esc@\string##1\endcsname
14150     }%
14151   }%
14152   \else
14153     \let\Hy@escapestring\@firstofone
14154   \fi
14155 }%
14156 \def\Hy@@@escapeform#1\Hy@escapestring#2#3\@nil{%
14157   \ifx\#3\%
14158     \else
14159       \expandafter
14160       \Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
14161       \ltx@ReturnAfterFi{%
14162         \Hy@@@escapeform#3\@nil
14163       }%
14164     \fi
14165   }%
14166   \else
14167     \def\Hy@escapeform#1{%
14168       \ifHy@pdfescapeform
14169         \let\Hy@escapestring\pdfescapestring
14170       \else
14171         \let\Hy@escapestring\@firstofone
14172       \fi
14173     }%
14174     \Hy@escapeform{}%
14175   \fi
```

\PDFForm@Name

```
14176 \def\PDFForm@Name{%
14177   \PDFForm@@Name\Fld@name
14178   \ifx\Fld@altname\relax
14179   \else
14180     \PDFForm@@Name\Fld@altname
14181   \fi
14182   \ifx\Fld@mappingname\relax
14183   \else
14184     \PDFForm@@Name\Fld@mappingname
```

```

14185 \fi
14186 }

```

\PDFForm@@Name

```

14187 \def\PDFForm@@Name#1{%
14188 \begingroup
14189 \ifnum\Hy@pdfversion<5 % implementation note 117, PDF spec 1.7
14190 \ifHy@unicode
14191 \Hy@unicodetrue
14192 \fi
14193 \fi
14194 \HyPsd@XeTeXBigCharstrue
14195 \pdfstringdef\Hy@gtemp#1%
14196 \endgroup
14197 \let#1\Hy@gtemp
14198 }

```

\Fld@additionalactions

```

14199 \def\Fld@@additionalactions{%
K input (keystroke) format
14200 \ifx\Fld@keystroke@code\@empty
14201 \else
14202 /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
14203 \fi
F display format
14204 \ifx\Fld@format@code\@empty
14205 \else
14206 /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
14207 \fi
V validation
14208 \ifx\Fld@validate@code\@empty
14209 \else
14210 /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
14211 \fi
C calculation
14212 \ifx\Fld@calculate@code\@empty
14213 \else
14214 /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
14215 \fi
Fo receiving the input focus
14216 \ifx\Fld@onfocus@code\@empty
14217 \else
14218 /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
14219 \fi
Bl losing the input focus (blurred)
14220 \ifx\Fld@onblur@code\@empty
14221 \else
14222 /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
14223 \fi
D pressing the mouse button (down)
14224 \ifx\Fld@onmousedown@code\@empty
14225 \else
14226 /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
14227 \fi

```

U releasing the mouse button (up)

```
14228 \ifx\Fld@onmouseup@code\@empty
14229 \else
14230 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
14231 \fi
```

E cursor enters the annotation's active area.

```
14232 \ifx\Fld@onenter@code\@empty
14233 \else
14234 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
14235 \fi
```

X cursor exits the annotation's active area.

```
14236 \ifx\Fld@onexit@code\@empty
14237 \else
14238 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
14239 \fi
14240 }
14241 \def\Fld@additionalactions{%
14242 \if-\Fld@@additionalactions-%
14243 \else
14244 \ifHy@pdfa
14245 \else
14246 /AA<<\Fld@@additionalactions>>%
14247 \fi
14248 \fi
14249 }
```

\Fld@annotnames

```
14250 \def\Fld@annotnames{%
14251 /T(\Fld@name)%
14252 \ifx\Fld@altname\relax
14253 \else
14254 /TU(\Fld@altname)%
14255 \fi
14256 \ifx\Fld@mappingname\relax
14257 \else
14258 /TM(\Fld@mappingname)%
14259 \fi
14260 }
```

\PDFForm@Check

```
14261 \def\PDFForm@Check{%
14262 /Subtype/Widget%
14263 \Fld@annotflags
14264 \Fld@annotnames
14265 /FT/Btn%
14266 \Fld@flags
14267 /Q \Fld@align
14268 /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
14269 /MK<<%
14270 \ifnum\Fld@rotation=z@
14271 \else
14272 /R \Fld@rotation
14273 \fi
14274 \ifx\Fld@bordercolor\relax
14275 \else
14276 /BC[\Fld@bordercolor]%

```



```

14277 \fi
14278 \ifx\Fld@bcolor\relax
14279 \else
14280 /BG[\Fld@bcolor]%
14281 \fi
14282 /CA(\Hy@escapestring{\Fld@cbsymbol})%
14283 >>%
14284 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
14285 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14286 /H/P%
14287 \ifFld@checked /V/Yes\else /V/Off\fi
14288 \Fld@additionalactions
14289 }

```

#### \PDFForm@Push

```

14290 \ifHy@pdfa
14291 \else
14292 \def\PDFForm@Push{%
14293 /Subtype/Widget%
14294 \Fld@annotflags
14295 \Fld@annotnames
14296 /FT/Btn%
14297 \Fld@flags
14298 /H/P%
14299 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14300 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14301 \ifx\Fld@bordercolor\relax\else 1\fi
14302 \space
14303 \else
14304 /MK<<%
14305 \ifnum\Fld@rotation=\z@
14306 \else
14307 /R \Fld@rotation
14308 \fi
14309 \ifx\Fld@bordercolor\relax
14310 \else
14311 /BC[\Fld@bordercolor]%
14312 \fi
14313 >>%
14314 \fi
14315 /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick@code})>>%
14316 \Fld@additionalactions
14317 }%
14318 \fi

```

#### \PDFForm@List

```

14319 \def\PDFForm@List{%
14320 /Subtype/Widget%
14321 \Fld@annotflags
14322 \Fld@annotnames
14323 /FT/Ch%
14324 \Fld@flags
14325 /Q \Fld@align
14326 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14327 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14328 \ifx\Fld@bordercolor\relax\else 1\fi
14329 \ifx\Fld@bcolor\relax \else 1\fi

```

```

14330         \space
14331     \else
14332         /MK<<%
14333         \ifnum\Fld@rotation=\z@
14334         \else
14335             /R \Fld@rotation
14336         \fi
14337         \ifx\Fld@bordercolor\relax
14338         \else
14339             /BC[\Fld@bordercolor]%
14340         \fi
14341         \ifx\Fld@bcolor\relax
14342         \else
14343             /BG[\Fld@bcolor]%
14344         \fi
14345     >>%
14346 \fi
14347 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
14348     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14349 \Fld@choices
14350 \Fld@additionalactions
14351 }

```

\PDFForm@Radio

```

14352 \def\PDFForm@Radio{%
14353     /Subtype/Widget%
14354     \Fld@annotflags
14355     \Fld@annotnames
14356     /FT/Btn%
14357     \Fld@flags
14358     /H/P%
14359     /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14360     /MK<<%
14361         \ifnum\Fld@rotation=\z@
14362         \else
14363             /R \Fld@rotation
14364         \fi
14365         \ifx\Fld@bordercolor\relax
14366         \else
14367             /BC[\Fld@bordercolor]%
14368         \fi
14369         \ifx\Fld@bcolor\relax
14370         \else
14371             /BG[\Fld@bcolor]%
14372         \fi
14373         /CA(\Fld@radiosymbol)%
14374     >>%
14375     /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
14376         \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14377     \ifx\@currValue\Fld@default
14378         /V/\Fld@default
14379         /DV/\Fld@default
14380     \else
14381         /V/Off%
14382         /DV/Off%
14383     \fi
14384     \Fld@additionalactions
14385 }

```

## \PDFForm@Text

```
14386 \def\PDFForm@Text{%
14387 /Subtype/Widget%
14388 \Fld@annotflags
14389 \Fld@annotnames
14390 /FT/Tx%
14391 \Fld@flags
14392 /Q \Fld@align
14393 /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
14394 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14395     \ifx\Fld@bordercolor\relax\else 1\fi
14396     \ifx\Fld@bcolor\relax \else 1\fi
14397     \space
14398 \else
14399 /MK<<%
14400     \ifnum\Fld@rotation=\z@
14401     \else
14402     /R \Fld@rotation
14403     \fi
14404     \ifx\Fld@bordercolor\relax
14405     \else
14406     /BC[\Fld@bordercolor]%
14407     \fi
14408     \ifx\Fld@bcolor\relax
14409     \else
14410     /BG[\Fld@bcolor]%
14411     \fi
14412 >>%
14413 \fi
14414 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
14415     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14416 /DV(\Hy@escapestring{\Fld@default})%
14417 /V(\Hy@escapestring{\Fld@value})%
14418 \Fld@additionalactions
14419 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
14420 }
```

## \PDFForm@Submit

```
14421 \def\PDFForm@Submit{%
14422 /Subtype/Widget%
14423 \Fld@annotflags
14424 \Fld@annotnames
14425 /FT/Btn%
14426 \Fld@flags
14427 /H/P%
14428 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14429 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14430     \ifx\Fld@bordercolor\relax\else 1\fi
14431     \space
14432 \else
14433 /MK<<%
14434     \ifnum\Fld@rotation=\z@
14435     \else
14436     /R \Fld@rotation
14437     \fi
14438     \ifx\Fld@bordercolor\relax
14439     \else
```

```

14440      /BC[\Fld@bordercolor]%
14441      \fi
14442    >>%
14443  \fi
14444  /A<<%
14445    /S/SubmitForm%
14446    /F<<%
14447      /FS/URL%
14448      /F(\Hy@escapestring{\Form@action})%
14449    >>%
14450    \Fld@submitflags
14451  >>%
14452  \Fld@additionalactions
14453 }

```

\PDFForm@Reset

```

14454 \ifHy@pdfa
14455 \else
14456   \def\PDFForm@Reset{%
14457     /Subtype/Widget%
14458     \Fld@annotflags
14459     \Fld@annotnames
14460     /FT/Btn%
14461     \Fld@flags
14462     /H/P%
14463     /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
14464     \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14465       \ifx\Fld@bordercolor\relax\else 1\fi
14466       \space
14467     \else
14468       /MK<<%
14469       \ifnum\Fld@rotation=\z@
14470       \else
14471         /R \Fld@rotation
14472       \fi
14473       \ifx\Fld@bordercolor\relax
14474       \else
14475         /BC[\Fld@bordercolor]%
14476       \fi
14477     %   /CA (Clear)
14478     %   /AC (Done)
14479     >>%
14480   \fi
14481   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14482   /A<</S/ResetForm>>%
14483   \Fld@additionalactions
14484 }%
14485 \fi

14486 </pdfform>
14487 <*package>

```

## 49 Bookmarks in the PDF file

This was originally developed by Yannis Haralambous (it was the separate `repere.sty`); it needed the `repere` or `makebook.pl` post-processor to work properly. Now redundant, as it is done entirely in L<sup>A</sup>T<sub>E</sub>X macros.

To write out the current section title, and its rationalized number, we have to intercept the `\@sect` command, which is rather dangerous. But how else to see the information we need? We do the *same* for `\@ssect`, giving anchors to unnumbered sections. This allows things like bibliographies to get bookmarks when used with a manual `\addcontentsline`

```
14488 \def\phantomsection{%
14489   \Hy@MakeCurrentHrefAuto{section*}%
14490   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
14491 }
14492 \</package>
```

## 49.1 Bookmarks

```
14493 <*outlines>
```

This section was written by Heiko Oberdiek; the code replaces an earlier version by David Carlisle.

The first part of bookmark code is in section 6. Further documentation is available as paper and slides of the talk, that Heiko Oberdiek has given at the EuroTeX'99 meeting in Heidelberg. See `paper.pdf` and `slides.pdf` in the `doc` directory of `hyperref`.

When using the right-to-left typesetting based on  $\varepsilon$ -TeX, the order of the `\BOOKMARK` commands written to the `\@outlinefile` could appear wrong, because of mis-feature of  $\varepsilon$ -TeX's implementation (that it processes the shipped out lines left-to-right, instead of the order in which they appear in the document). The wrong order will appear when the file contains two bookmarks on the same line typeset right-to-left.

To work around this problem, the `bookmark@seq@number` counter is used to write the bookmark's sequential number into a comment in the `\@outlinefile`, which could be used to post-process it to achieve the proper ordering of `\BOOKMARK` commands in that file.

```
14494 \def\Hy@writebookmark#1#2#3#4#5{%
14495   % section number, text, label, level, file
14496   \ifx\WriteBookmarks\relax%
14497   \else
14498     \ifnum#4>\Hy@bookmarksdepth\relax
14499     \else
14500       \@writetorep{#1}{#2}{#3}{#4}{#5}%
14501     \fi
14502   \fi
14503 }
14504 \def\Hy@currentbookmarklevel{0}
14505 \def\Hy@numberline#1{#1 }
14506 \def\@writetorep#1#2#3#4#5{%
14507   \begingroup
14508     \edef\Hy@tempa{#5}%
14509     \ifx\Hy@tempa\Hy@bookmarkstype
14510       \edef\Hy@level{#4}%
14511       \ifx\Hy@levelcheck Y%
14512         \@tempcnta\Hy@level\relax
14513         \advance\@tempcnta by -1 %
14514         \ifnum\Hy@currentbookmarklevel<\@tempcnta
14515           \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
14516           \advance\@tempcnta by 1 %
14517         \Hy@Warning{%
14518           Difference (\the\@tempcnta) between bookmark levels is %
```

```

14519         greater \MessageBreak than one, level fixed%
14520     }%
14521     \@tempcnta\Hy@currentbookmarklevel
14522     \advance\@tempcnta by 1 %
14523     \edef\Hy@level{\the\@tempcnta}%
14524     \fi
14525     \else
14526     \global\let\Hy@levelcheck Y%
14527     \fi
14528     \global\let\Hy@currentbookmarklevel\Hy@level
14529     \@tempcnta\Hy@level\relax
14530     \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
14531     \advance\@tempcnta by -1 %
14532     \edef\Hy@tempa{#3}%
14533     \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
14534     \ifx\Hy@tempa\Hy@tempb
14535     \Hy@Warning{%
14536         The anchor of a bookmark and its parent's must not%
14537         \MessageBreak be the same. Added a new anchor%
14538     }%
14539     \phantomsection
14540     \fi
14541     \ifHy@bookmarksnumbered
14542     \let\numberline\Hy@numberline
14543     \let\booknumberline\Hy@numberline
14544     \let\partnumberline\Hy@numberline
14545     \let\chapternumberline\Hy@numberline
14546     \else
14547     \let\numberline\@gobble
14548     \let\booknumberline\@gobble
14549     \let\partnumberline\@gobble
14550     \let\chapternumberline\@gobble
14551     \fi
14552     \HyPsd@XeTeXBigCharstrue
14553     \pdfstringdef\Hy@tempa{#2}%
14554     \HyPsd@SanitizeForOutFile\Hy@tempa
14555     \if@filesw
14556     \stepcounter{bookmark@seq@number}%
14557     \@ifundefined{@outlinefile}{%
14558     }{%
14559     \protected@write\@outlinefile{}{%
14560     \protect\BOOKMARK
14561     [\Hy@level][\@bookmarkopenstatus{\Hy@level}]{#3}%
14562     {\Hy@tempa}{\Hy@tempb}%
14563     \@percentchar\space\thebookmark@seq@number
14564     }%
14565     }%
14566     \fi
14567     \fi
14568     \endgroup
14569 }
14570 \newcounter{bookmark@seq@number}

14571 \begingroup
14572 \lccode'('= '{%
14573 \lccode'='='}%
14574 \lccode'1=\z@
14575 \lccode'2=\z@

```

```

14576 \lccode'3=\z@
14577 \lccode'5=\z@
14578 \lccode'7=\z@
14579 \lccode'\#=\z@
14580 \lccode'\'=\z@
14581 \lccode'\{=\z@
14582 \lccode'\}=\z@
14583 \lowercase{%
14584 \endgroup
14585 \def\HyPsd@SanitizeForOutFile#1{%
14586   \@onelevel@sanitize\Hy@tempa
14587   \escapechar'\%
14588   \edef\Hy@tempa{%
14589     \expandafter\HyPsd@SanitizeOut@BraceLeft\Hy@tempa\@nil
14590   }%
14591   \edef\Hy@tempa{%
14592     \expandafter\HyPsd@SanitizeOut@BraceRight\Hy@tempa\@nil
14593   }%
14594 }%
14595 \def\HyPsd@SanitizeOut@BraceLeft#1(#2\@nil{%
14596   #1%
14597   \ifx\#2\%
14598     \expandafter\ltx@gobble
14599   \else
14600     \expandafter\ltx@firstofone
14601   \fi
14602   {%
14603     \string\173%
14604     \HyPsd@SanitizeOut@BraceLeft#2\@nil
14605   }%
14606 }%
14607 \def\HyPsd@SanitizeOut@BraceRight#1)#2\@nil{%
14608   #1%
14609   \ifx\#2\%
14610     \expandafter\ltx@gobble
14611   \else
14612     \expandafter\ltx@firstofone
14613   \fi
14614   {%
14615     \string\175%
14616     \HyPsd@SanitizeOut@BraceRight#2\@nil
14617   }%
14618 }%
14619 }

```

In the call of \BOOKMARK the braces around #4 are omitted, because it is not likely, that the level number contains ].

```

14620 \newcommand{\currentpdfbookmark}{%
14621   \pdfbookmark[\Hy@currentbookmarklevel]%
14622 }
14623 \newcommand{\subpdfbookmark}{%
14624   \@tempcnta\Hy@currentbookmarklevel
14625   \Hy@StepCount\@tempcnta
14626   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
14627 }
14628 \newcommand{\belowpdfbookmark}[2]{%
14629   \@tempcnta\Hy@currentbookmarklevel
14630   \Hy@StepCount\@tempcnta

```

```

14631 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
14632 \advance\@tempcnta by -1 %
14633 \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
14634 }

```

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.

```

14635 \renewcommand\pdfbookmark[3][0]{%
14636 \Hy@writebookmark{#2}{#3.#1}{#1}{toc}%
14637 \hyper@anchorstart{#3.#1}\hyper@anchorend
14638 }
14639 \def\BOOKMARK{%
14640 \ifnextchar{\@BOOKMARK}{\@BOOKMARK[1][-]}%
14641 }
14642 \def\@BOOKMARK[#1]{%
14643 \ifnextchar{\@BOOKMARK[{#1}]}{\@BOOKMARK[{#1}][-]}%
14644 }

```

The macros for calculating structure of outlines are derived from those by Petr Olsak used in the `texinfo` macros.

#### 49.1.1 Rerun warning

`\Hy@OutlineRerunCheck`

```

14645 \RequirePackage{rerunfilecheck}[2009/12/10]
14646 \def\Hy@OutlineRerunCheck{%
14647 \RerunFileCheck{\jobname.out}{%
14648 \immediate\closeout\@outlinefile
14649 }{%
14650 Rerun to get outlines right\MessageBreak
14651 or use package 'bookmark'%
14652 }%
14653 }

```

#### 49.1.2 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 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.

```

14654 <*vtex>
14655 \newcount\@serial@counter\@serial@counter=1\relax

```

`\hv@pdf@char` Plain octal codes doesn't work with versions below 6.50. So for early versions hex numbers have to be used. It would be possible to program this instead of the large `\ifcase`, but I'm too lazy to sort that out now.

```

14656 \begingroup
14657 \catcode'\=12 %
14658 \ifnum\Hy@VTeXversion<650 %
14659 \catcode'\=12 %
14660 \gdef\hv@pdf@char#1#2#3{%
14661 \char
14662 \ifcase'#1#2#3 %
14663 "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
14664 \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
14665 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%

```



```

14666 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
14667 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
14668 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
14669 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
14670 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
14671 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
14672 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
14673 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
14674 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
14675 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
14676 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
14677 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
14678 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
14679 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
14680 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
14681 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
14682 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
14683 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
14684 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
14685 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
14686 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
14687 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
14688 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
14689 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
14690 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
14691 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
14692 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
14693 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
14694 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
14695 \fi
14696 }%
14697 \else
14698 \gdef\hv@pdf@char{\char'}%
14699 \fi
14700 \endgroup

```

\@@BOOKMARK

```

14701 \def\@@BOOKMARK[#1][#2]#3#4#5{%
14702 \expandafter\edef\csname @count@#3\endcsname{%
14703 \the\@serial@counter
14704 }%
14705 \edef\@mycount{\the\@serial@counter}%
14706 \Hy@StepCount\@serial@counter
14707 \edef\@parcount{%
14708 \expandafter\ifx\csname @count@#5\endcsname\relax
14709 0%
14710 \else
14711 \csname @count@#5\endcsname
14712 \fi
14713 }%
14714 \immediate\special{%
14715 !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
14716 s=\ifx#2-c\else o\fi,t=#4%
14717 }%
14718 }%

```

\ReadBookmarks

```

14719 \def\ReadBookmarks{%
14720   \begingroup
14721   \def\0{\hv@pdf@char 0}%
14722   \def\1{\hv@pdf@char 1}%
14723   \def\2{\hv@pdf@char 2}%
14724   \def\3{\hv@pdf@char 3}%
14725   \def\({}%
14726   \def\)}%
14727   \def\do##1{%
14728     \ifnum\catcode'##1=\active
14729     \@makeother##1%
14730   \else
14731     \ifnum\catcode'##1=6 %
14732     \@makeother##1%
14733   \fi
14734   \fi
14735 }%
14736 \dospecials
14737 \Hy@safe@activetrue
14738 \InputIfFileExists{jobname.out}{-}{-}%
14739 \endgroup
14740 \ifx\WriteBookmarks\relax
14741 \else
14742   \if@filesw
14743     \newwrite\@outlinefile
14744     \Hy@OutlineRerunCheck
14745     \immediate\openout\@outlinefile=jobname.out\relax
14746     \ifHy@typexml
14747       \immediate\write\@outlinefile{<relaxxml>\relax}%
14748     \fi
14749   \fi
14750 \fi
14751 }

14752 </vtex>
14753 (*!vtex)
14754 \def\ReadBookmarks{%
14755   \pdf@ifdraftmode{-}{-}%
14756   \begingroup
14757   \def\do##1{%
14758     \ifnum\catcode'##1=\active
14759     \@makeother##1%
14760   \else
14761     \ifnum\catcode'##1=6 %
14762     \@makeother##1%
14763   \fi
14764   \fi
14765 }%
14766 \dospecials
14767 \Hy@safe@activetrue
14768 \escapechar='\'%
14769 \def\@@BOOKMARK[##1][##2]##3##4##5{%
14770   \calc@bm@number{##5}%
14771 }%
14772 \InputIfFileExists{jobname.out}{-}{-}%
14773 \ifx\WriteBookmarks\relax
14774 \global\let\WriteBookmarks\relax
14775 \fi

```

```

14776 \def\@@BOOKMARK[##1][##2]###3###4###5{%
14777 \def\Hy@temp{##4}%
14778 (*pdfTeX)
14779 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14780 \Hy@OutlineName{}\Hy@pstringName{%
14781 ##2\check@bm@number{##3}%
14782 }{%
14783 \expandafter\strip@prefix\meaning\Hy@temp
14784 }%
14785 \pdfTeX)
14786 (*pdfmark)
14787 \pdfmark{%
14788 pdfmark=/OUT,%
14789 Count={##2\check@bm@number{##3}},%
14790 Dest={##3},%
14791 Title=\expandafter\strip@prefix\meaning\Hy@temp
14792 }%
14793 \pdfmark)
14794 (*dvipdfm|xetex)
14795 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14796 \@pdfm@mark{%
14797 outline \ifHy@DvipdfmxOutlineOpen
14798 [%
14799 \ifnum##21>\z@
14800 \else
14801 -%
14802 \fi
14803 ]%
14804 \fi
14805 ##1<<%
14806 /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
14807 /A<<%
14808 /S/GoTo%
14809 /D(\Hy@pstringName)%
14810 >>%
14811 >>%
14812 }%
14813 \dvipdfm|xetex)
14814 }%
14815 \begingroup
14816 \def\WriteBookmarks{0}%
14817 \InputIfFileExists{jobname.out}{-}{-}%
14818 \endgroup
14819 %{\escapechar\m@ne\InputIfFileExists{jobname.out}{-}{-}}%
14820 \endgroup
14821 }%
14822 \ifx\WriteBookmarks\relax
14823 \else
14824 \if@files
14825 \newwrite\@outlinefile
14826 \Hy@OutlineRerunCheck
14827 \immediate\openout\@outlinefile=jobname.out\relax
14828 \ifHy@typexml
14829 \immediate\write\@outlinefile{<relaxxml>\relax}%
14830 \fi
14831 \fi
14832 \fi

```

```

14833 }
14834 \langle *pdfTeX\rangle
14835 \def\Hy@OutlineName#1#2#3#4{%
14836   \pdfoutline goto name{#2}count#3{#4}%
14837 }
14838 \rangle pdfTeX\rangle
14839 \def\check@bm@number#1{%
14840   \expandafter\ifx\csname B_#1\endcsname\relax
14841     0%
14842   \else
14843     \csname B_#1\endcsname
14844   \fi
14845 }
14846 \def\calc@bm@number#1{%
14847   \@tempcnta=\check@bm@number{#1}\relax
14848   \advance\@tempcnta by 1 %
14849   \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
14850 }
14851 \rangle !vtex\rangle

14852 \ifHy@implicit
14853 \else
14854   \expandafter\endinput
14855 \fi

14856 \rangle outlines\rangle
14857 \langle *outlines | hypertex\rangle

14858 \newlength\Hy@SectionHShift
14859 \def\Hy@SectionAnchorHref#1{%
14860   \ifx\protect\@typeset@protect
14861     \Hy@@SectionAnchor{#1}%
14862   \fi
14863 }
14864 \DeclareRobustCommand*{\Hy@@SectionAnchor}[1]{%
14865   \leavevmode
14866   \hbox to 0pt{%
14867     \kern-\Hy@SectionHShift
14868     \Hy@raisedlink{%
14869       \hyper@anchorstart{#1}\hyper@anchorend
14870     }%
14871     \hss
14872   }%
14873 }
14874 \let\H@old@ssect\@ssect
14875 \def\@ssect#1#2#3#4#5{%
14876   \Hy@MakeCurrentHrefAuto{section*}%
14877   \setlength{\Hy@SectionHShift}{#1}%
14878   \begingroup
14879     \toks@{\H@old@ssect{#1}{#2}{#3}{#4}}%
14880     \toks\tw@\expandafter{%
14881       \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14882       #5%
14883     }%
14884   \edef\x{\endgroup
14885     \the\toks@\the\toks\tw@}%
14886   }\x
14887 }
14888 \let\H@old@schapter\@schapter

```

```

14889 \def\@schapter#1{%
14890   \begingroup
14891     \let\@mkboth\@gobbletwo
14892     \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14893     \Hy@raisedlink{%
14894       \hyper@anchorstart{\@currentHref}\hyper@anchorend
14895     }%
14896   \endgroup
14897   \H@old@chapter{#1}%
14898 }

```

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:

```

14899 \ltx@ifundefined{@chapter}{-}{%
14900   \let\Hy@org@chapter\@chapter
14901   \def\@chapter{%
14902     \def\Hy@next{%
14903       \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14904       \Hy@raisedlink{%
14905         \hyper@anchorstart{\@currentHref}\hyper@anchorend
14906       }%
14907     }%
14908     \ifnum\c@secnumdepth>\m@ne
14909       \ltx@ifundefined{if@mainmatter}%
14910       \iftrue{\csname if@mainmatter\endcsname}%
14911       \let\Hy@next\relax
14912     \fi
14913   \fi
14914   \Hy@next
14915   \Hy@org@chapter
14916 }%
14917 }

14918 \let\H@old@part\@part
14919 \begingroup\expandafter\expandafter\expandafter\endgroup
14920 \expandafter\ifx\csname chapter\endcsname\relax
14921   \let\Hy@secnum@part\z@
14922 \else
14923   \let\Hy@secnum@part\m@ne
14924 \fi
14925 \def\@part{%
14926   \ifnum\Hy@secnum@part>\c@secnumdepth
14927     \phantomsection
14928   \fi
14929   \H@old@part
14930 }

14931 \let\H@old@spart\@spart
14932 \def\@spart#1{%
14933   \Hy@MakeCurrentHrefAuto{part*}%
14934   \Hy@raisedlink{%
14935     \hyper@anchorstart{\@currentHref}\hyper@anchorend
14936   }%
14937   \H@old@spart{#1}%
14938 }

14939 \let\H@old@sect\@sect
14940 \def\@sect#1#2#3#4#5#6[#7]#8{%
14941   \ifnum #2>\c@secnumdepth

```

```

14942 \expandafter\@firstoftwo
14943 \else
14944 \expandafter\@secondoftwo
14945 \fi
14946 {%
14947 \Hy@MakeCurrentHrefAuto{section*}%
14948 \setlength{\Hy@SectionHShift}{#3}%
14949 \begingroup
14950 \toks@{\H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}}%
14951 \toks\tw@\expandafter{%
14952 \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14953 #8%
14954 }%
14955 \edef\x{\endgroup
14956 \the\toks@\the\toks\tw@}%
14957 }\x
14958 }{%
14959 \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}{#8}%
14960 }%
14961 }

14962 </outlines | hypertex>
14963 <*outlines>

14964 \expandafter\def\csname Parent-4\endcsname{}
14965 \expandafter\def\csname Parent-3\endcsname{}
14966 \expandafter\def\csname Parent-2\endcsname{}
14967 \expandafter\def\csname Parent-1\endcsname{}
14968 \expandafter\def\csname Parent0\endcsname{}
14969 \expandafter\def\csname Parent1\endcsname{}
14970 \expandafter\def\csname Parent2\endcsname{}
14971 \expandafter\def\csname Parent3\endcsname{}
14972 \expandafter\def\csname Parent4\endcsname{}
14973 </outlines>

```

## 50 Compatibility with koma-script classes

```

14974 <*outlines | hypertex>

```

Hard-wire in an unpleasant over-ride of komascript ‘scrbook’ class for Tobias Isenberg (Tobias.Isenberg@gmx.de). With version 6.71b the hack is also applied to ‘scrreprt’ class and is removed for koma-script versions since 2001/01/01, because Markus Kohm supports hyperref in komascript.

```

14975 \def\Hy@tempa{%
14976 \def\@addchap[##1]##2{%
14977 \typeout{##2}%
14978 \if@twoside
14979 \@mkboth{##1}{}%
14980 \else
14981 \@mkboth{}{##1}%
14982 \fi
14983 \addtocontents{lof}{\protect\addvspace{10\p@}}%
14984 \addtocontents{lot}{\protect\addvspace{10\p@}}%
14985 \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14986 \Hy@raisedlink{%
14987 \hyper@anchorstart{\@currentHref}\hyper@anchorend
14988 }%
14989 \if@twocolumn

```

```

14990 \topnewpage[\@makeschapterhead{##2}]%
14991 \else
14992 \@makeschapterhead{##2}%
14993 \afterheading
14994 \fi
14995 \addcontentsline{toc}{chapter}{##1}%
14996 }%
14997 }
14998 \@ifclassloaded{scrbook}{%
14999 \@ifclasslater{scrbook}{2001/01/01}{%
15000 \let\Hy@tempa\@empty
15001 }{}%
15002 }{%
15003 \@ifclassloaded{scrreprt}{%
15004 \@ifclasslater{scrreprt}{2001/01/01}{%
15005 \let\Hy@tempa\@empty
15006 }{}%
15007 }{%
15008 \let\Hy@tempa\@empty
15009 }%
15010 }%
15011 \Hy@tempa
15012 </outlines | hypertext>

```

## 51 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek.

### 51.1 PD1 encoding

```

15013 <*pd1enc>
15014 \DeclareFontEncoding{PD1}{}{}

Accents
15015 \DeclareTextAccent{'}{PD1}{\textasciigrave}
15016 \DeclareTextAccent{'}{PD1}{\textacute}
15017 \DeclareTextAccent{^}{PD1}{\textasciicircum}
15018 \DeclareTextAccent{~}{PD1}{\texttilde}
15019 \DeclareTextAccent{¨}{PD1}{\textasciidieresis}
15020 \DeclareTextAccent{r}{PD1}{\textstring}
15021 \DeclareTextAccent{v}{PD1}{\textasciicaron}
15022 \DeclareTextAccent{.}{PD1}{\textdotaccent}
15023 \DeclareTextAccent{c}{PD1}{\textcedilla}
15024 \DeclareTextAccent{=}{PD1}{\textasciimacron}
15025 \DeclareTextAccent{b}{PD1}{\textmacronbelow}
15026 \DeclareTextAccent{d}{PD1}{\textdotbelow}
15027 \DeclareTextCompositeCommand{'}{PD1}{\@empty}{\textasciigrave}
15028 \DeclareTextCompositeCommand{'}{PD1}{\@empty}{\textacute}
15029 \DeclareTextCompositeCommand{^}{PD1}{\@empty}{\textasciicircum}
15030 \DeclareTextCompositeCommand{~}{PD1}{\@empty}{\texttilde}
15031 \DeclareTextCompositeCommand{¨}{PD1}{\@empty}{\textasciidieresis}
15032 \DeclareTextCompositeCommand{r}{PD1}{\@empty}{\textstring}
15033 \DeclareTextCompositeCommand{v}{PD1}{\@empty}{\textasciicaron}
15034 \DeclareTextCompositeCommand{.}{PD1}{\@empty}{\textdotaccent}
15035 \DeclareTextCompositeCommand{c}{PD1}{\@empty}{\textcedilla}
15036 \DeclareTextCompositeCommand{=}{PD1}{\@empty}{\textasciimacron}

```

```

15037 \DeclareTextCompositeCommand{\b}{PD1}{\@empty}{\textmacronbelow}
15038 \DeclareTextCompositeCommand{\d}{PD1}{\@empty}{\textdotbelow}
15039 \DeclareTextCompositeCommand{\'}{PD1}{\ }{\textasciigrave}
15040 \DeclareTextCompositeCommand{\`}{PD1}{\ }{\textacute}
15041 \DeclareTextCompositeCommand{\^}{PD1}{\ }{\textasciicircum}
15042 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\texttilde}
15043 \DeclareTextCompositeCommand{\"}{PD1}{\ }{\textasciidieresis}
15044 \DeclareTextCompositeCommand{\r}{PD1}{\ }{\textring}
15045 \DeclareTextCompositeCommand{\v}{PD1}{\ }{\textasciicaron}
15046 \DeclareTextCompositeCommand{\.}{PD1}{\ }{\textdotaccent}
15047 \DeclareTextCompositeCommand{\c}{PD1}{\ }{\textcedilla}
15048 \DeclareTextCompositeCommand{\=}{PD1}{\ }{\textasciimacron}
15049 \DeclareTextCompositeCommand{\b}{PD1}{\ }{\textmacronbelow}
15050 \DeclareTextCompositeCommand{\d}{PD1}{\ }{\textdotbelow}
15051 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}
15052 \DeclareTextCommand{\t}{PD1}[1]{\TextSymbolUnavailable{\t{#1}}#1}
15053 \DeclareTextCommand{\newtie}{PD1}[1]{%
15054 \TextSymbolUnavailable{\newtie{#1}}#1%
15055 }

```

Special white space escape characters not for use in bookmarks but for other PDF strings.

```

15056 % U+0009 (CHARACTER TABULATION)
15057 \DeclareTextCommand{\textHT}{PD1}{\011}% U+0009
15058 % U+000A (LINE FEED)
15059 \DeclareTextCommand{\textLF}{PD1}{\012}% U+000A
15060 % U+000D (CARRIAGE RETURN)
15061 \DeclareTextCommand{\textCR}{PD1}{\015}% U+000D

```

Accent glyph names

```

15062 % U+02D8 BREVE; breve
15063 \DeclareTextCommand{\textasciibreve}{PD1}{\030}% U+02D8
15064 % U+02C7 CARON; caron
15065 \DeclareTextCommand{\textasciicaron}{PD1}{\031}% U+02C7
15066 % U+02C6 MODIFIER LETTER CIRCUMFLEX ACCENT; circumflex
15067 \DeclareTextCommand{\textcircumflex}{PD1}{\032}% U+02C6
15068 % U+02D9 DOT ABOVE; dotaccent
15069 \DeclareTextCommand{\textdotaccent}{PD1}{\033}% U+02D9
15070 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut
15071 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034}% U+02DD
15072 % U+02DB OGONEK; ogonek
15073 \DeclareTextCommand{\textogonek}{PD1}{\035}% U+02DB
15074 % U+02DA RING ABOVE; ring
15075 \DeclareTextCommand{\textring}{PD1}{\036}% U+02DA
15076 % U+02DC SMALL TILDE; ilde, *tilde
15077 \DeclareTextCommand{\texttilde}{PD1}{\037}% U+02DC

```

\040: U+0020 SPACE; \*space, spacehackarabic

\041: U+0021 EXCLAMATION MARK; exclam

```

15078 % U+0022 QUOTATION MARK; quotedbl
15079 \DeclareTextCommand{\textquotedbl}{PD1}{"}% \042 U+0022
15080 % U+0023 NUMBER SIGN; numbersign
15081 \DeclareTextCommand{\textnumbersign}{PD1}{\043}% U+0023
15082 % U+0024 DOLLAR SIGN; dollar
15083 \DeclareTextCommand{\textdollar}{PD1}{\044}% U+0024
15084 % U+0025 PERCENT SIGN; percent
15085 \DeclareTextCommand{\textpercent}{PD1}{\045}% U+0025
15086 % U+0026 AMPERSAND; ampersand
15087 \DeclareTextCommand{\textampersand}{PD1}{\046}% U+0026

```



\047: U+0027 APOSTROPHE; quotesingle  
  
 15088 % U+0028 LEFT PARENTHESIS; parenleft  
 15089 \DeclareTextCommand{\textparenleft}{PD1}{\string\{}% \050 U+0028  
 15090 % U+0029 RIGHT PARENTHESIS; parenright  
 15091 \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  
 15092 % U+002E FULL STOP; period  
 15093 \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  
 15094 % U+003C LESS-THAN SIGN; less  
 15095 \DeclareTextCommand{\textless}{PD1}{<}% \074 U+003C  
  
 \075: U+003D EQUALS SIGN; equal  
 15096 % U+003E GREATER-THAN SIGN; greater  
 15097 \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  
 15098 % U+005C REVERSE SOLIDUS; backslash  
 15099 \DeclareTextCommand{\textbackslash}{PD1}{\134}% U+005C  
 15100 % "U+2216 SET MINUS" simulated by "U+005C REVERSE SOLIDUS"  
 15101 \DeclareTextCommand{\textsetminus}{PD1}{\textbackslash}  
  
 \135: U+005D RIGHT SQUARE BRACKET; bracketright  
 15102 % U+005E CIRCUMFLEX ACCENT; asciicircum  
 15103 \DeclareTextCommand{\textasciicircum}{PD1}{\136}% U+005E  
 15104 % U+005F LOW LINE; underscore  
 15105 \DeclareTextCommand{\textunderscore}{PD1}{\137}% U+005F  
 15106 \DeclareTextCommand{\textmacronbelow}{PD1}{\137}% U+005F  
 15107 % U+0060 GRAVE ACCENT; grave  
 15108 \DeclareTextCommand{\textasciigrave}{PD1}{\140}% U+0060  
  
 \141: U+0061 LATIN SMALL LETTER A; a  
  
 ...  
 \150: U+0068 LATIN SMALL LETTER H; h  
 15109 % U+0069 LATIN SMALL LETTER I; i  
 15110 \DeclareTextCompositeCommand{\.}{PD1}{i}{i}% \151 U+0069  
  
 \152: U+006A LATIN SMALL LETTER J; j  
  
 ...  
 \172: U+007A LATIN SMALL LETTER Z; z  
 15111 % U+007B LEFT CURLY BRACKET; braceleft  
 15112 \DeclareTextCommand{\textbraceleft}{PD1}{\173}% U+007B  
 15113 % U+007C VERTICAL LINE; \*bar, verticalbar

15114 \DeclareTextCommand{\textbar}{PD1}{|}% U+007C  
 15115 % U+007D RIGHT CURLY BRACKET; braceright  
 15116 \DeclareTextCommand{\textbraceright}{PD1}{\175}% U+007D  
 15117 % U+007E TILDE; asciitilde  
 15118 \DeclareTextCommand{\textasciitilde}{PD1}{\176}% U+007E  
 Slot \177 (0x7F) is undefined in PDFDocEncoding.  
 15119 % U+2022 BULLET; bullet  
 15120 \DeclareTextCommand{\textbullet}{PD1}{\200}% U+2022  
 15121 % U+2020 DAGGER; dagger  
 15122 \DeclareTextCommand{\textdagger}{PD1}{\201}% U+2020  
 15123 % U+2021 DOUBLE DAGGER; daggerdbl; \ddagger (LaTeX)  
 15124 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202}% U+2021  
 15125 \DeclareTextCommand{\textddagger}{PD1}{\textddagger}  
 15126 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 15127 \DeclareTextCommand{\textellipsis}{PD1}{\203}% U+2026  
 15128 % U+2014 EM DASH; emdash  
 15129 \DeclareTextCommand{\textemdash}{PD1}{\204}% U+2014  
 15130 % U+2013 EN DASH; endash  
 15131 \DeclareTextCommand{\textendash}{PD1}{\205}% U+2013  
 15132 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
 15133 \DeclareTextCommand{\textflorin}{PD1}{\206}% U+0192  
 15134 % U+2044 FRACTION SLASH; fraction  
 15135 \DeclareTextCommand{\textfractionsolidus}{PD1}{\207}% U+2044  
 15136 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
 ingleft  
 15137 \DeclareTextCommand{\guilsingleft}{PD1}{\210}% U+2039  
 15138 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
 singright  
 15139 \DeclareTextCommand{\guilsingright}{PD1}{\211}% U+203A  
 15140 % U+2212 MINUS SIGN; minus  
 15141 \DeclareTextCommand{\textminus}{PD1}{\212}% U+2212  
 15142 % U+2030 PER MILLE SIGN; perthousand  
 15143 \DeclareTextCommand{\textperthousand}{PD1}{\213}% U+2030  
 15144 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 15145 \DeclareTextCommand{\quotedblbase}{PD1}{\214}% U+201E  
 15146 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 15147 \DeclareTextCommand{\textquotedblleft}{PD1}{\215}% U+201C  
 15148 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 15149 \DeclareTextCommand{\textquotedblright}{PD1}{\216}% U+201D  
 15150 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 15151 \DeclareTextCommand{\textquoteleft}{PD1}{\217}% U+2018  
 15152 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 15153 \DeclareTextCommand{\textquoteright}{PD1}{\220}% U+2019  
 15154 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 15155 \DeclareTextCommand{\quotesinglbase}{PD1}{\221}% U+201A  
 15156 % U+2122 TRADE MARK SIGN; trademark  
 15157 \DeclareTextCommand{\texttrademark}{PD1}{\222}% U+2122  
 15158 % U+FB01 LATIN SMALL LIGATURE FI; fi  
 15159 \DeclareTextCommand{\textfi}{PD1}{\223}% U+FB01  
 15160 % U+FB02 LATIN SMALL LIGATURE FL; fl  
 15161 \DeclareTextCommand{\textfl}{PD1}{\224}% U+FB02  
 15162 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
 15163 \DeclareTextCommand{\L}{PD1}{\225}% U+0141  
 15164 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
 15165 \DeclareTextCommand{\OE}{PD1}{\226}% U+0152  
 15166 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
 15167 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227}% U+0160

15168 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
15169 \DeclareTextCompositeCommand{"Y}{PD1}{Y}{\230}% U+0178  
15170 \DeclareTextCommand{\IJ}{PD1}{IJ}% ligature U+0049 U+004A  
15171 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
15172 \DeclareTextCompositeCommand{v}{PD1}{Z}{\231}% U+017D  
15173 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
15174 \DeclareTextCommand{i}{PD1}{\232}% U+0131  
15175 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
15176 \DeclareTextCommand{l}{PD1}{\233}% U+0142  
15177 % U+0153 LATIN SMALL LIGATURE OE; oe  
15178 \DeclareTextCommand{oe}{PD1}{\234}% U+0153  
15179 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
15180 \DeclareTextCompositeCommand{v}{PD1}{s}{\235}% U+0161  
15181 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
15182 \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.

15183 % U+20AC EURO SIGN; \*Euro, euro  
15184 \DeclareTextCommand{\texteuro}{PD1}{\240}% U+20AC  
15185 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
15186 \DeclareTextCommand{\textexclamdown}{PD1}{\241}% U+00A1  
15187 % U+00A2 CENT SIGN; cent  
15188 \DeclareTextCommand{\textcent}{PD1}{\242}% U+00A2  
15189 % U+00A3 POUND SIGN; sterling  
15190 \DeclareTextCommand{\textsterling}{PD1}{\243}% U+00A3  
15191 % U+00A4 CURRENCY SIGN; currency  
15192 \DeclareTextCommand{\textcurrency}{PD1}{\244}% U+00A4  
15193 % U+00A5 YEN SIGN; yen  
15194 \DeclareTextCommand{\textyen}{PD1}{\245}% U+00A5  
15195 % U+00A6 BROKEN BAR; brokenbar  
15196 \DeclareTextCommand{\textbrokenbar}{PD1}{\246}% U+00A6  
15197 % U+00A7 SECTION SIGN; section  
15198 \DeclareTextCommand{\textsection}{PD1}{\247}% U+00A7  
15199 % U+00A8 DIAERESIS; dieresis  
15200 \DeclareTextCommand{\textasciidieresis}{PD1}{\250}% U+00A8  
15201 % U+00A9 COPYRIGHT SIGN; copyright  
15202 \DeclareTextCommand{\textcopyright}{PD1}{\251}% U+00A9  
15203 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
15204 \DeclareTextCommand{\textordfeminine}{PD1}{\252}% U+00AA  
15205 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
motleft  
15206 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB  
15207 % U+00AC NOT SIGN; logicalnot  
15208 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC  
15209 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not

No glyph \255 in PDFDocEncoding.

15210 % U+00AE REGISTERED SIGN; registered  
15211 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE  
15212 % U+00AF MACRON; \*macron, overscore  
15213 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF  
15214 % U+00B0 DEGREE SIGN; degree  
15215 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0  
15216 % U+00B1 PLUS-MINUS SIGN; plusminus  
15217 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1  
15218 % U+00B2 SUPERSCRIPT TWO; twosuperior  
15219 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}%\* U+00B2  
15220 % U+00B3 SUPERSCRIPT THREE; threesuperior

15221 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}%\* U+00B3  
15222 % U+00B4 ACUTE ACCENT; acute  
15223 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4  
15224 % U+00B5 MICRO SIGN; mu, mul  
15225 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5  
15226 % U+00B6 PILCROW SIGN; paragraph  
15227 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6  
15228 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
15229 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7  
15230 % U+00B8 CEDILLA; cedilla  
15231 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8  
15232 % U+00B9 SUPERSCRIPT ONE; onesuperior  
15233 \DeclareTextCommand{\textonesuperior}{PD1}{\271}%\* U+00B9  
15234 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
15235 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA  
15236 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
motright  
15237 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB  
15238 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
15239 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC  
15240 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
15241 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD  
15242 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
15243 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE  
15244 % U+00BF INVERTED QUESTION MARK; questiondown  
15245 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF  
15246 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
15247 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0  
15248 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
15249 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1  
15250 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
15251 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2  
15252 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
15253 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3  
15254 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
15255 \DeclareTextCompositeCommand{\\"}{PD1}{A}{\304}% U+00C4  
15256 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
15257 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5  
15258 % U+00C6 LATIN CAPITAL LETTER AE; AE  
15259 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6  
15260 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
15261 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7  
15262 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
15263 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310}% U+00C8  
15264 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
15265 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311}% U+00C9  
15266 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
15267 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312}% U+00CA  
15268 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
15269 \DeclareTextCompositeCommand{\\"}{PD1}{E}{\313}% U+00CB  
15270 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
15271 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314}% U+00CC  
15272 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
15273 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315}% U+00CD  
15274 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
15275 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316}% U+00CE  
15276 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis

15277 \DeclareTextCompositeCommand{"}{PD1}{I}{\317}% U+00CF  
15278 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
15279 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0  
15280 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0  
15281 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
15282 \DeclareTextCompositeCommand{~}{PD1}{N}{\321}% U+00D1  
15283 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
15284 \DeclareTextCompositeCommand{'}{PD1}{O}{\322}% U+00D2  
15285 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
15286 \DeclareTextCompositeCommand{'}{PD1}{O}{\323}% U+00D3  
15287 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
15288 \DeclareTextCompositeCommand{^}{PD1}{O}{\324}% U+00D4  
15289 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
15290 \DeclareTextCompositeCommand{~}{PD1}{O}{\325}% U+00D5  
15291 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
15292 \DeclareTextCompositeCommand{"}{PD1}{O}{\326}% U+00D6  
15293 % U+00D7 MULTIPLICATION SIGN; multiply  
15294 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7  
15295 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
15296 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8  
15297 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
15298 \DeclareTextCompositeCommand{'}{PD1}{U}{\331}% U+00D9  
15299 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
15300 \DeclareTextCompositeCommand{'}{PD1}{U}{\332}% U+00DA  
15301 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
15302 \DeclareTextCompositeCommand{^}{PD1}{U}{\333}% U+00DB  
15303 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
15304 \DeclareTextCompositeCommand{"}{PD1}{U}{\334}% U+00DC  
15305 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
15306 \DeclareTextCompositeCommand{'}{PD1}{Y}{\335}% U+00DD  
15307 % U+00DE LATIN CAPITAL LETTER THORN; Thorn; \TH, \Thorn (wasysym)  
15308 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE  
15309 \DeclareTextCommand{\textThorn}{PD1}{\336}%\* U+00DE  
15310 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
15311 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF  
15312 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
15313 \DeclareTextCompositeCommand{'}{PD1}{a}{\340}% U+00E0  
15314 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
15315 \DeclareTextCompositeCommand{'}{PD1}{a}{\341}% U+00E1  
15316 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
15317 \DeclareTextCompositeCommand{^}{PD1}{a}{\342}% U+00E2  
15318 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
15319 \DeclareTextCompositeCommand{~}{PD1}{a}{\343}% U+00E3  
15320 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
15321 \DeclareTextCompositeCommand{"}{PD1}{a}{\344}% U+00E4  
15322 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
15323 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345}% U+00E5  
15324 % U+00E6 LATIN SMALL LETTER AE; ae  
15325 \DeclareTextCommand{\ae}{PD1}{\346}% U+00E6  
15326 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
15327 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347}% U+00E7  
15328 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
15329 \DeclareTextCompositeCommand{'}{PD1}{e}{\350}% U+00E8  
15330 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
15331 \DeclareTextCompositeCommand{'}{PD1}{e}{\351}% U+00E9  
15332 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
15333 \DeclareTextCompositeCommand{^}{PD1}{e}{\352}% U+00EA

15334 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
 15335 \DeclareTextCompositeCommand{"}{PD1}{e}{\353}% U+00EB  
 15336 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
 15337 \DeclareTextCompositeCommand{"}{PD1}{i}{\354}% U+00EC  
 15338 \DeclareTextCompositeCommand{"}{PD1}{i}{\354}% U+00EC  
 15339 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
 15340 \DeclareTextCompositeCommand{"}{PD1}{i}{\355}% U+00ED  
 15341 \DeclareTextCompositeCommand{"}{PD1}{i}{\355}% U+00ED  
 15342 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
 15343 \DeclareTextCompositeCommand{"}{PD1}{i}{\356}% U+00EE  
 15344 \DeclareTextCompositeCommand{"}{PD1}{i}{\356}% U+00EE  
 15345 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
 15346 \DeclareTextCompositeCommand{"}{PD1}{i}{\357}% U+00EF  
 15347 \DeclareTextCompositeCommand{"}{PD1}{i}{\357}% U+00EF  
 15348 % U+00F0 LATIN SMALL LETTER ETH; eth  
 15349 \DeclareTextCommand{\dh}{PD1}{\360}% U+00F0  
 15350 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
 15351 \DeclareTextCompositeCommand{"}{PD1}{n}{\361}% U+00F1  
 15352 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
 15353 \DeclareTextCompositeCommand{"}{PD1}{o}{\362}% U+00F2  
 15354 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
 15355 \DeclareTextCompositeCommand{"}{PD1}{o}{\363}% U+00F3  
 15356 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
 15357 \DeclareTextCompositeCommand{"}{PD1}{o}{\364}% U+00F4  
 15358 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otile  
 15359 \DeclareTextCompositeCommand{"}{PD1}{o}{\365}% U+00F5  
 15360 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
 15361 \DeclareTextCompositeCommand{"}{PD1}{o}{\366}% U+00F6  
 15362 % U+00F7 DIVISION SIGN; divide  
 15363 \DeclareTextCommand{\textdivide}{PD1}{\367}% U+00F7  
 15364 % U+00F8 LATIN SMALL LETTER O WITH STROKE; slash  
 15365 \DeclareTextCommand{\o}{PD1}{\370}% U+00F8  
 15366 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
 15367 \DeclareTextCompositeCommand{"}{PD1}{u}{\371}% U+00F9  
 15368 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
 15369 \DeclareTextCompositeCommand{"}{PD1}{u}{\372}% U+00FA  
 15370 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
 15371 \DeclareTextCompositeCommand{"}{PD1}{u}{\373}% U+00FB  
 15372 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
 15373 \DeclareTextCompositeCommand{"}{PD1}{u}{\374}% U+00FC  
 15374 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
 15375 \DeclareTextCompositeCommand{"}{PD1}{y}{\375}% U+00FD  
 15376 % U+00FE LATIN SMALL LETTER THORN; thorn; \th, \thorn (wasysym)  
 15377 \DeclareTextCommand{\th}{PD1}{\376}% U+00FE  
 15378 \DeclareTextCommand{\textthorn}{PD1}{\376}%\* U+00FE  
 15379 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
 15380 \DeclareTextCompositeCommand{"}{PD1}{y}{\377}% U+00FF  
 15381 \DeclareTextCommand{\ij}{PD1}{ij}% ligature U+0069 U+006A

Glyphs that consist of several characters.

15382 \DeclareTextCommand{\SS}{PD1}{SS}%  
 15383 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}%

Aliases (german.sty)

15384 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}%  
 15385 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}%  
 15386 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}%  
 15387 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}%  
 15388 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}%

```

15389 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}%
15390 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}%
15391 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}%

Aliases (math names)
15392 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}%
15393 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}%
15394 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}%
15395 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}%
15396 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}%
15397 \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).

```

15398 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek
15399 \DeclareTextCompositeCommand{\'}{PD1}{c}{c}% cacute
15400 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek
15401 \DeclareTextCompositeCommand{\'}{PD1}{n}{n}% nacute
15402 \DeclareTextCompositeCommand{\'}{PD1}{s}{s}% sacute
15403 \DeclareTextCompositeCommand{\'}{PD1}{z}{z}% zacute
15404 \DeclareTextCompositeCommand{\.}{PD1}{z}{z}% zdot
15405 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek
15406 \DeclareTextCompositeCommand{\'}{PD1}{C}{C}% Cacute
15407 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek
15408 \DeclareTextCompositeCommand{\'}{PD1}{N}{N}% Nacute
15409 \DeclareTextCompositeCommand{\'}{PD1}{S}{S}% Sacute
15410 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z}% Zacute
15411 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z}% Zdot
15412 </pd1enc>

```

## 51.2 PU encoding

```

15413 <*puenc>
15414 \DeclareFontEncoding{PU}{-}{-}

```

### 51.2.1 NFSS2 accents

```

15415 % U+0300 COMBINING GRAVE ACCENT; gravecmb, *gravecomb
15416 \DeclareTextCommand{\`}{PU}[1]{#1\83\000}% U+0300
15417 % U+0301 COMBINING ACUTE ACCENT; acutecmb, *acutecomb
15418 \DeclareTextCommand{\'}{PU}[1]{#1\83\001}% U+0301
15419 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb
15420 \DeclareTextCommand{\^}{PU}[1]{#1\83\002}% U+0302
15421 % U+0303 COMBINING TILDE; tildecmb, *tildecomb
15422 \DeclareTextCommand{\~}{PU}[1]{#1\83\003}% U+0303
15423 % U+0304 COMBINING MACRON; macroncmb
15424 \DeclareTextCommand{\=}{PU}[1]{#1\83\004}% U+0304
15425 % U+0306 COMBINING BREVE; brevecmb
15426 \DeclareTextCommand{\u}{PU}[1]{#1\83\006}% U+0306
15427 \DeclareTextCommand{\U}{PU}[1]{#1\83\006}% U+0306
15428 % U+0307 COMBINING DOT ABOVE; dotaccentcmb
15429 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307
15430 % U+0308 COMBINING DIAERESIS; dieresiscmb
15431 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308
15432 % U+030A COMBINING RING ABOVE; ringcmb
15433 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A
15434 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb
15435 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B
15436 % U+030C COMBINING CARON; caroncmb

```

```

15437 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C
15438 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb
15439 \DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F
15440 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F
15441 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb
15442 \DeclareTextCommand{\textinvbreve}{PU}[1]{#1\83\021}% U+0311
15443 % U+0323 COMBINING DOT BELOW; dotbelowcmb, *dotbelowcomb
15444 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323
15445 % U+0324 COMBINING DIAERESIS BELOW; dieresisbelowcmb; \textsubum-
    laut (tipa)
15446 \DeclareTextCommand{\textsubumlaut}{PU}[1]{#1\83\044}% U+0324
15447 % U+0325 COMBINING RING BELOW; ringbelowcmb; \textsubring (tipa)
15448 \DeclareTextCommand{\textsubring}{PU}[1]{#1\83\045}% U+0325
15449 % U+0327 COMBINING CEDILLA; cedillacmb
15450 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327
15451 % U+0328 COMBINING OGONEK; ogonekcmb
15452 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328
15453 % U+032D COMBINING CIRCUMFLEX ACCENT BELOW;
15454 % \textsubcircum (tipa)
15455 \DeclareTextCommand{\textsubcircum}{PU}[1]{#1\83\055}% U+032D
15456 % U+032E COMBINING BREVE BELOW; brevebelowcmb
15457 \DeclareTextCommand{\textsubbreve}{PU}[1]{#1\83\056}% U+032E
15458 % U+0330 COMBINING TILDE BELOW; tildebelowcmb; \textsubtilde (tipa)
15459 \DeclareTextCommand{\textsubtilde}{PU}[1]{#1\83\060}% U+0330
15460 % U+0331 COMBINING MACRON BELOW; macronbelowcmb
15461 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331
15462 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddou-
    blecmb
15463 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361
15464 % U+20DD COMBINING ENCLOSING CIRCLE
15465 \DeclareTextCommand{\textcircled}{PU}[1]{#1\9040\335}% U+20DD

```

Double accents.

```

15466 \DeclareTextCommand{\textacutemacron}{PU}[1]{#1\83\001\83\004}% U+0301 U+0304
15467 \DeclareTextCommand{\textgravemacron}{PU}[1]{#1\83\000\83\004}% U+0300 U+0304

```

\@empty is an artefact of the NFSS2 machinery, it gets inserted for empty arguments and spaces.

```

15468 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textasciigrave}%
15469 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}%
15470 \DeclareTextCompositeCommand{\^}{PU}{\@empty}{\textasciicircum}%
15471 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}%
15472 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textasciidieresis}%
15473 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}%
15474 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textasciicaron}%
15475 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}%
15476 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}%
15477 \DeclareTextCompositeCommand{\u}{PU}{\@empty}{\textasciibreve}%
15478 \DeclareTextCompositeCommand{\G}{PU}{\@empty}{\textdoublegrave}%
15479 \DeclareTextCompositeCommand{\=}{PU}{\@empty}{\textasciimacron}%
15480 \DeclareTextCompositeCommand{\H}{PU}{\@empty}{\texthungarumlaut}%
15481 \DeclareTextCompositeCommand{\k}{PU}{\@empty}{\textogonek}%
15482 \DeclareTextCompositeCommand{\textinvbreve}{PU}{\@empty}{\83\021}% U+0311
15483 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{\@empty}{\83\044}% U+0324
15484 \DeclareTextCompositeCommand{\textsubring}{PU}{\@empty}{\textringlow}%
15485 \DeclareTextCompositeCommand{\textsubcircum}{PU}{\@empty}{\textcircum-
    low}%
15486 \DeclareTextCompositeCommand{\textsubbreve}{PU}{\@empty}{\83\056}% U+032E
15487 \DeclareTextCompositeCommand{\textsubtilde}{PU}{\@empty}{\texttildebelow}%

```



```

15488 \DeclareTextCompositeCommand{\b}{PU}{\@empty}{\textmacronbelow}%
15489 \DeclareTextCompositeCommand{\d}{PU}{\@empty}{\textdotbelow}%
15490 \DeclareTextCompositeCommand{\t}{PU}{\@empty}{\texttie}%
15491 \DeclareTextCompositeCommand{\newtie}{PU}{\@empty}{\textnewtie}%
15492 \DeclareTextCompositeCommand{\textcircled}{PU}{\@empty}{\textbigcircle}%
15493 \DeclareTextCompositeCommand{\textacutemacron}{PU}{\@empty}{\{\ \83\001\83\004\}}% U+0301 U
15494 \DeclareTextCompositeCommand{\textgravemacron}{PU}{\@empty}{\{\ \83\000\83\004\}}% U+0300 U
15495 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textasciigrave}%
15496 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textacute}%
15497 \DeclareTextCompositeCommand{\^}{PU}{\ }{\textasciicircum}%
15498 \DeclareTextCompositeCommand{\~}{PU}{\ }{\texttilde}%
15499 \DeclareTextCompositeCommand{\"}{PU}{\ }{\textasciidieresis}%
15500 \DeclareTextCompositeCommand{\r}{PU}{\ }{\textring}%
15501 \DeclareTextCompositeCommand{\v}{PU}{\ }{\textasciicaron}%
15502 \DeclareTextCompositeCommand{\.}{PU}{\ }{\textdotaccent}%
15503 \DeclareTextCompositeCommand{\c}{PU}{\ }{\textcedilla}%
15504 \DeclareTextCompositeCommand{\u}{PU}{\ }{\textasciibreve}%
15505 \DeclareTextCompositeCommand{\G}{PU}{\ }{\textdoublegrave}%
15506 \DeclareTextCompositeCommand{\=}{PU}{\ }{\textasciimacron}%
15507 \DeclareTextCompositeCommand{\H}{PU}{\ }{\texthungarumlaut}%
15508 \DeclareTextCompositeCommand{\k}{PU}{\ }{\textogonek}%
15509 \DeclareTextCompositeCommand{\textinvbreve}{PU}{\ }{\{\ \83\021\}}% U+0311
15510 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{\ }{\{\ \83\044\}}% U+0324
15511 \DeclareTextCompositeCommand{\textsubring}{PU}{\ }{\textringlow}%
15512 \DeclareTextCompositeCommand{\textsubcircum}{PU}{\ }{\textcircumlow}%
15513 \DeclareTextCompositeCommand{\textsubbreve}{PU}{\ }{\{\ \83\056\}}% U+032E
15514 \DeclareTextCompositeCommand{\textsubtilde}{PU}{\ }{\texttildebelow}%
15515 \DeclareTextCompositeCommand{\b}{PU}{\ }{\textmacronbelow}%
15516 \DeclareTextCompositeCommand{\d}{PU}{\ }{\textdotbelow}%
15517 \DeclareTextCompositeCommand{\t}{PU}{\ }{\texttie}%
15518 \DeclareTextCompositeCommand{\newtie}{PU}{\ }{\textnewtie}%
15519 \DeclareTextCompositeCommand{\textcircled}{PU}{\ }{\textbigcircle}%
15520 \DeclareTextCompositeCommand{\textacutemacron}{PU}{\ }{\{\ \83\001\83\004\}}% U+0301 U+0304
15521 \DeclareTextCompositeCommand{\textgravemacron}{PU}{\ }{\{\ \83\000\83\004\}}% U+0300 U+0304

```

Accents for capitals (see encoding TS1)

```

15522 \DeclareTextCommand{\capitalcedilla}{PU}[1]{\c{#1}}%
15523 \DeclareTextCommand{\capitalogonek}{PU}[1]{\k{#1}}%
15524 \DeclareTextCommand{\capitalgrave}{PU}[1]{\{'{#1}}%
15525 \DeclareTextCommand{\capitalacute}{PU}[1]{\'{#1}}%
15526 \DeclareTextCommand{\capitalcircumflex}{PU}[1]{\^{#1}}%
15527 \DeclareTextCommand{\capitaltilde}{PU}[1]{\~{#1}}%
15528 \DeclareTextCommand{\capitaldieresis}{PU}[1]{\"{#1}}%
15529 \DeclareTextCommand{\capitalhungarumlaut}{PU}[1]{\H{#1}}%
15530 \DeclareTextCommand{\capitalring}{PU}[1]{\r{#1}}%
15531 \DeclareTextCommand{\capitalcaron}{PU}[1]{\v{#1}}%
15532 \DeclareTextCommand{\capitalbreve}{PU}[1]{\u{#1}}%
15533 \DeclareTextCommand{\capitalmacron}{PU}[1]{\={#1}}%
15534 \DeclareTextCommand{\capitaldotaccent}{PU}[1]{\.\{#1}}%
15535 \DeclareTextCommand{\capitaltie}{PU}[1]{\t{#1}}%
15536 \DeclareTextCommand{\capitalnewtie}{PU}[1]{\newtie{#1}}%

```

### 51.2.2 Basic Latin: U+0000 to U+007F

Special white space escape characters.

```

15537 % U+0009 (CHARACTER TABULATION)
15538 \DeclareTextCommand{\textHT}{PU}{\80\011}% U+0009
15539 % U+000A (LINE FEED)

```

15540 \DeclareTextCommand{\textLF}{PU}{\80\012}% U+000A  
15541 % U+000D (CARRIAGE RETURN)  
15542 \DeclareTextCommand{\textCR}{PU}{\80\015}% U+000D  
\80\040: U+0020 SPACE; space, spacehackarabic  
\80\041: U+0021 EXCLAMATION MARK; exclam  
15543 % U+0022 QUOTATION MARK; quotedbl  
15544 \DeclareTextCommand{\textquotedbl}{PU}{"}% \80\042 U+0022  
15545 % U+0023 NUMBER SIGN; numbersign  
15546 \DeclareTextCommand{\textnumbersign}{PU}{\80\043}% U+0023  
15547 % U+0024 DOLLAR SIGN; dollar  
15548 \DeclareTextCommand{\textdollar}{PU}{\80\044}% U+0024  
15549 %\* \textdollar -> \mathdollar  
15550 %\* \textdollar -> \EyesDollar (marvosym)  
15551 % U+0025 PERCENT SIGN; percent  
15552 \DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025  
15553 % U+0026 AMPERSAND; ampersand  
15554 \DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026  
15555 %\* \textampersand -> \binampersand (stmaryrd)  
15556 %\* \textampersand -> \with (cml)  
15557 % U+0027 APOSTROPHE; quotesingle  
15558 \DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027  
15559 % U+0028 LEFT PARENTHESIS; parenleft  
15560 \DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028  
15561 % U+0029 RIGHT PARENTHESIS; parenright  
15562 \DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029  
15563 % U+002A ASTERISK; asterisk; (?)  
15564 \DeclareTextCommand{\textasteriskcentered}{PU}{\80\052}% U+002A  
15565 % U+002B PLUS SIGN; plus; \MVPlus (marvosym)  
15566 \DeclareTextCommand{\textMVPlus}{PU}{\80\053}%\* U+002B  
15567 % U+002C COMMA; comma; \MVComma (marvosym)  
15568 \DeclareTextCommand{\textMVComma}{PU}{\80\054}%\* U+002C  
15569 % U+002D HYPHEN-MINUS; hyphen; \MVMinus (marvosym)  
15570 \DeclareTextCommand{\textMVMinus}{PU}{\80\055}%\* U+002D  
15571 % U+002E FULL STOP; period; \MVPeriod (marvosym)  
15572 \DeclareTextCommand{\textMVPeriod}{PU}{\80\056}%\* U+002E  
15573 % U+002F SOLIDUS; slash; \MVDivision (marvosym)  
15574 \DeclareTextCommand{\textMVDivision}{PU}{\80\057}%\* U+002F  
15575 % U+0030 DIGIT ZERO; zero; \MVZero (marvosym)  
15576 \DeclareTextCommand{\textMVZero}{PU}{\80\060}%\* U+0030  
15577 % U+0031 DIGIT ONE; one; \MVOne (marvosym)  
15578 \DeclareTextCommand{\textMVOne}{PU}{\80\061}%\* U+0031  
15579 % U+0032 DIGIT TWO; two; \MVTwo (marvosym)  
15580 \DeclareTextCommand{\textMVTwo}{PU}{\80\062}%\* U+0032  
15581 % U+0033 DIGIT THREE; three; \MVThree (marvosym)  
15582 \DeclareTextCommand{\textMVThree}{PU}{\80\063}%\* U+0033  
15583 % U+0034 DIGIT FOUR; four; \MVFfour (marvosym)  
15584 \DeclareTextCommand{\textMVFfour}{PU}{\80\064}%\* U+0034  
15585 % U+0035 DIGIT FIVE; five; \MVFfive (marvosym)  
15586 \DeclareTextCommand{\textMVFfive}{PU}{\80\065}%\* U+0035  
15587 % U+0036 DIGIT SIX; six; \MVSix (marvosym)  
15588 \DeclareTextCommand{\textMVSix}{PU}{\80\066}%\* U+0036  
15589 % U+0037 DIGIT SEVEN; seven; \MVSeven (marvosym)  
15590 \DeclareTextCommand{\textMVSeven}{PU}{\80\067}%\* U+0037  
15591 % U+0038 DIGIT EIGHT; eight; \MVEight (marvosym)  
15592 \DeclareTextCommand{\textMVEight}{PU}{\80\070}%\* U+0038  
15593 % U+0039 DIGIT NINE; nine; \MVNine (marvosym)  
15594 \DeclareTextCommand{\textMVNine}{PU}{\80\071}%\* U+0039

$\backslash 80\backslash 072$ : U+003A COLON; colon  
 $\backslash 80\backslash 073$ : U+003B SEMICOLON; semicolon  
15595 % U+003C LESS-THAN SIGN; less  
15596  $\backslash \text{DeclareTextCommand}\{\backslash \text{textless}\}\{\text{PU}\}\{<\}\%$   $\backslash 80\backslash 074$  U+003C  
 $\backslash 80\backslash 075$ : U+003D EQUALS SIGN; equal  
15597 % U+003E GREATER-THAN SIGN; greater  
15598  $\backslash \text{DeclareTextCommand}\{\backslash \text{textgreater}\}\{\text{PU}\}\{>\}\%$   $\backslash 80\backslash 076$  U+003E  
 $\backslash 80\backslash 077$ : U+003F QUESTION MARK; question  
15599 % U+0040 COMMERCIAL AT; at;  $\backslash \text{MVAt}$  (marvosym)  
15600  $\backslash \text{DeclareTextCommand}\{\backslash \text{textMVAt}\}\{\text{PU}\}\{\backslash 80\backslash 100\}\%$  U+0040  
 $\backslash 80\backslash 101$ : U+0041 LATIN CAPITAL LETTER A; A  
...  
 $\backslash 80\backslash 132$ : U+005A LATIN CAPITAL LETTER Z; Z  
 $\backslash 80\backslash 133$ : U+005B LEFT SQUARE BRACKET; bracketleft  
15601 % U+005C REVERSE SOLIDUS; backslash  
15602  $\backslash \text{DeclareTextCommand}\{\backslash \text{textbackslash}\}\{\text{PU}\}\{\backslash 80\backslash 134\}\%$  U+005C  
 $\backslash 80\backslash 135$ : U+005D RIGHT SQUARE BRACKET; bracketright  
15603 % U+005E CIRCUMFLEX ACCENT; asciicircum  
15604  $\backslash \text{DeclareTextCommand}\{\backslash \text{textasciicircum}\}\{\text{PU}\}\{\backslash 80\backslash 136\}\%$  U+005E  
15605 % U+005F LOW LINE; underscore  
15606  $\backslash \text{DeclareTextCommand}\{\backslash \text{textunderscore}\}\{\text{PU}\}\{\backslash 80\backslash 137\}\%$  U+005F  
15607 %\*  $\backslash \text{textunderscore} \rightarrow \backslash \text{mathunderscore}$  (LaTeX)  
15608 % U+0060 GRAVE ACCENT; grave  
15609  $\backslash \text{DeclareTextCommand}\{\backslash \text{textasciigrave}\}\{\text{PU}\}\{\backslash 80\backslash 140\}\%$  U+0060  
 $\backslash 80\backslash 141$ : U+0061 LATIN SMALL LETTER A; a  
...  
 $\backslash 80\backslash 150$ : U+0068 LATIN SMALL LETTER H; h  
15610 % U+0069 LATIN SMALL LETTER I; i  
15611  $\backslash \text{DeclareTextCompositeCommand}\{\backslash .\}\{\text{PU}\}\{\text{i}\}\{\text{i}\}\%$   $\backslash 80\backslash 151$  U+0069  
15612  $\backslash \text{DeclareTextCompositeCommand}\{\backslash .\}\{\text{PU}\}\{\text{i}\}\{\text{i}\}\%$   $\backslash 80\backslash 151$  U+0069  
 $\backslash 80\backslash 152$ : U+006A LATIN SMALL LETTER J; j  
...  
 $\backslash 80\backslash 172$ : U+007A LATIN SMALL LETTER Z; z  
15613 % U+007B LEFT CURLY BRACKET; braceleft  
15614  $\backslash \text{DeclareTextCommand}\{\backslash \text{textbraceleft}\}\{\text{PU}\}\{\backslash 80\backslash 173\}\%$  U+007B  
15615 % U+007C VERTICAL LINE; \*bar, verticalbar  
15616  $\backslash \text{DeclareTextCommand}\{\backslash \text{textbar}\}\{\text{PU}\}\{\text{|}\}\%$   $\backslash 80\backslash 174$  U+007C  
15617 %\*  $\backslash \text{textbar} \rightarrow \backslash \text{textvtrline}$  (tipa)  
15618 % U+007D RIGHT CURLY BRACKET; braceright  
15619  $\backslash \text{DeclareTextCommand}\{\backslash \text{textbraceright}\}\{\text{PU}\}\{\backslash 80\backslash 175\}\%$  U+007D  
15620 % U+007E TILDE; asciitilde  
15621  $\backslash \text{DeclareTextCommand}\{\backslash \text{textasciitilde}\}\{\text{PU}\}\{\backslash 80\backslash 176\}\%$  U+007E

### 51.2.3 Latin-1 Supplement: U+0080 to U+00FF

$\backslash 80\backslash 240$ : U+00A0 NO-BREAK SPACE; nbspace, nonbreakingspace  
15622 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
15623  $\backslash \text{DeclareTextCommand}\{\backslash \text{textexclamdown}\}\{\text{PU}\}\{\backslash 80\backslash 241\}\%$  U+00A1  
15624 % U+00A2 CENT SIGN; cent  
15625  $\backslash \text{DeclareTextCommand}\{\backslash \text{textcent}\}\{\text{PU}\}\{\backslash 80\backslash 242\}\%$  U+00A2  
15626 % U+00A3 POUND SIGN; sterling  
15627  $\backslash \text{DeclareTextCommand}\{\backslash \text{textsterling}\}\{\text{PU}\}\{\backslash 80\backslash 243\}\%$  U+00A3  
15628 %\*  $\backslash \text{textsterling} \rightarrow \backslash \text{mathsterling}$  (LaTeX)

15629 %\* \textsterling -> \pounds (LaTeX)  
 15630 % U+00A4 CURRENCY SIGN; currency  
 15631 \DeclareTextCommand{\textcurrency}{PU}{\80\244}% U+00A4  
 15632 % U+00A5 YEN SIGN; yen  
 15633 \DeclareTextCommand{\textyen}{PU}{\80\245}% U+00A5  
 15634 % U+00A6 BROKEN BAR; brokenbar  
 15635 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246}% U+00A6  
 15636 %\* \textbrokenbar -> \brokenvert (wasysym)  
 15637 % U+00A7 SECTION SIGN; section  
 15638 \DeclareTextCommand{\textsection}{PU}{\80\247}% U+00A7  
 15639 %\* \textsection -> \mathsection (LaTeX)  
 15640 %\* \textsection -> \S (LaTeX)  
 15641 % U+00A8 DIAERESIS; dieresis  
 15642 \DeclareTextCommand{\textasciidieresis}{PU}{\80\250}% U+00A8  
 15643 % U+00A9 COPYRIGHT SIGN; copyright  
 15644 \DeclareTextCommand{\textcopyright}{PU}{\80\251}%\* U+00A9  
 15645 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
 15646 \DeclareTextCommand{\textordfeminine}{PU}{\80\252}% U+00AA  
 15647 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
 motleft  
 15648 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB  
 15649 % U+00AC NOT SIGN; logicalnot  
 15650 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254}% U+00AC  
 15651 \DeclareTextCommand{\textlnot}{PU}{\80\254}% U+00AC  
 \80\255: U+00AD SOFT HYPHEN; sftthyphen, softthyphen  
 15652 % U+00AE REGISTERED SIGN; registered  
 15653 \DeclareTextCommand{\textregistered}{PU}{\80\256}% U+00AE  
 15654 % U+00AF MACRON; \*macron, overscore  
 15655 \DeclareTextCommand{\textasciimacron}{PU}{\80\257}% U+00AF  
 15656 % U+00B0 DEGREE SIGN; degree  
 15657 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0  
 15658 % U+00B1 PLUS-MINUS SIGN; plusminus  
 15659 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1  
 15660 % U+00B2 SUPERSCRIPT TWO; twosuperior  
 15661 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}%\* U+00B2  
 15662 % U+00B3 SUPERSCRIPT THREE; threesuperior  
 15663 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}%\* U+00B3  
 15664 % U+00B4 ACUTE ACCENT; acute  
 15665 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4  
 15666 \DeclareTextCommand{\textasciiacute}{PU}{\80\264}% U+00B4  
 15667 % U+00B5 MICRO SIGN; mu, mu1  
 15668 \DeclareTextCommand{\textmu}{PU}{\80\265}% U+00B5  
 15669 % U+00B6 PILCROW SIGN; paragraph  
 15670 \DeclareTextCommand{\textparagraph}{PU}{\80\266}% U+00B6  
 15671 %\* \textparagraph -> \mathparagraph (LaTeX)  
 15672 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
 15673 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267}% U+00B7  
 15674 %\* \textperiodcentered -> \MultiplicationDot (marvosym)  
 15675 %\* \textperiodcentered -> \Squaredot (marvosym)  
 15676 % U+00B8 CEDILLA; cedilla  
 15677 \DeclareTextCommand{\textcedilla}{PU}{\80\270}% U+00B8  
 15678 % U+00B9 SUPERSCRIPT ONE; onesuperior  
 15679 \DeclareTextCommand{\textonesuperior}{PU}{\80\271}%\* U+00B9  
 15680 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
 15681 \DeclareTextCommand{\textordmasculine}{PU}{\80\272}% U+00BA  
 15682 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
 motright

15683 \DeclareTextCommand{\guillemotright}{PU}{\80\273}% U+00BB  
15684 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
15685 \DeclareTextCommand{\textonequarter}{PU}{\80\274}% U+00BC  
15686 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
15687 \DeclareTextCommand{\textonehalf}{PU}{\80\275}% U+00BD  
15688 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
15689 \DeclareTextCommand{\textthreequarters}{PU}{\80\276}% U+00BE  
15690 % U+00BF INVERTED QUESTION MARK; questiondown  
15691 \DeclareTextCommand{\textquestiondown}{PU}{\80\277}% U+00BF  
15692 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
15693 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
15694 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
15695 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
15696 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
15697 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302}% U+00C2  
15698 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
15699 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
15700 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
15701 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304}% U+00C4  
15702 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
15703 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305}% U+00C5  
15704 % U+00C6 LATIN CAPITAL LETTER AE; AE  
15705 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6  
15706 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
15707 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7  
15708 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
15709 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
15710 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
15711 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
15712 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
15713 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312}% U+00CA  
15714 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
15715 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313}% U+00CB  
15716 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
15717 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
15718 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
15719 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
15720 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
15721 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316}% U+00CE  
15722 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
15723 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317}% U+00CF  
15724 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
15725 \DeclareTextCommand{\DH}{PU}{\80\320}% U+00D0  
15726 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
15727 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321}% U+00D1  
15728 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
15729 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
15730 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
15731 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
15732 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
15733 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324}% U+00D4  
15734 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
15735 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
15736 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
15737 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326}% U+00D6  
15738 % U+00D7 MULTIPLICATION SIGN; multiply  
15739 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7

15740 %\* \textmultiply -> \varimes (stmaryrd)  
15741 %\* \textmultiply -> \MVMultiplication (marvosym)  
15742 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
15743 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8  
15744 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
15745 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331}% U+00D9  
15746 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
15747 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA  
15748 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
15749 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333}% U+00DB  
15750 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
15751 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334}% U+00DC  
15752 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
15753 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD  
15754 % U+00DE LATIN CAPITAL LETTER THORN; Thorn; \TH, \Thorn (wasysym)  
15755 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE  
15756 \DeclareTextCommand{\textThorn}{PU}{\80\336}%\* U+00DE  
15757 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
15758 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF  
15759 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
15760 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}% U+00E0  
15761 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
15762 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1  
15763 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
15764 \DeclareTextCompositeCommand{\^}{PU}{a}{\80\342}% U+00E2  
15765 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
15766 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
15767 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
15768 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344}% U+00E4  
15769 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
15770 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5  
15771 % U+00E6 LATIN SMALL LETTER AE; ae  
15772 \DeclareTextCommand{\ae}{PU}{\80\346}% U+00E6  
15773 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
15774 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7  
15775 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
15776 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}% U+00E8  
15777 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
15778 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
15779 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
15780 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA  
15781 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
15782 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353}% U+00EB  
15783 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
15784 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC  
15785 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC  
15786 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
15787 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
15788 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
15789 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
15790 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
15791 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
15792 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
15793 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
15794 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
15795 % U+00F0 LATIN SMALL LETTER ETH; eth  
15796 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0

15797 %\* \dh -> \eth (wsuipa, phonetic)  
 15798 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
 15799 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361}% U+00F1  
 15800 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
 15801 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
 15802 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
 15803 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
 15804 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
 15805 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364}% U+00F4  
 15806 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
 15807 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
 15808 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
 15809 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366}% U+00F6  
 15810 % U+00F7 DIVISION SIGN; divide  
 15811 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7  
 15812 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
 15813 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8  
 15814 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
 15815 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
 15816 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
 15817 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
 15818 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
 15819 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373}% U+00FB  
 15820 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
 15821 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374}% U+00FC  
 15822 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
 15823 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
 15824 % U+00FE LATIN SMALL LETTER THORN; thorn;  
 15825 % \th, \thorn (wasysym), \textthorn (tipa)  
 15826 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE  
 15827 \DeclareTextCommand{\textthorn}{PU}{\80\376}%\* U+00FE  
 15828 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
 15829 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377}% U+00FF

#### 51.2.4 Latin Extended-A: U+0080 to U+017F

15830 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron  
 15831 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% U+0100  
 15832 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron  
 15833 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% U+0101  
 15834 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve  
 15835 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% U+0102  
 15836 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve  
 15837 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% U+0103  
 15838 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek  
 15839 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% U+0104  
 15840 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek  
 15841 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% U+0105  
 15842 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacute  
 15843 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% U+0106  
 15844 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacute  
 15845 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% U+0107  
 15846 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex  
 15847 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% U+0108  
 15848 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex  
 15849 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% U+0109

15850 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotaccent  
15851 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% U+010A  
15852 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent  
15853 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% U+010B  
15854 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron  
15855 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% U+010C  
15856 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron  
15857 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% U+010D  
15858 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron  
15859 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% U+010E  
15860 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron  
15861 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% U+010F  
15862 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash  
15863 \DeclareTextCommand{\DJ}{PU}{\81\020}% U+0110  
15864 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron;  
15865 % \textcrd (tipa)  
15866 \DeclareTextCommand{\dj}{PU}{\81\021}% U+0111  
15867 \DeclareTextCommand{\textcrd}{PU}{\81\021}% U+0111  
15868 %\* \textcrd -> \crossd (wsuipa)  
15869 % An alternate glyph with the stroke through the bowl:  
15870 %\* \textcrd -> \textbard (tipa)  
15871 %\* \textcrd -> \bard (wsuipa)  
15872 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron  
15873 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% U+0112  
15874 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron  
15875 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% U+0113  
15876 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve  
15877 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% U+0114  
15878 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve  
15879 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% U+0115  
15880 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent  
15881 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% U+0116  
15882 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent  
15883 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% U+0117  
15884 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek  
15885 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% U+0118  
15886 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek  
15887 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% U+0119  
15888 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron  
15889 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% U+011A  
15890 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron  
15891 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% U+011B  
15892 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex  
15893 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% U+011C  
15894 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex  
15895 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% U+011D  
15896 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve  
15897 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% U+011E  
15898 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve  
15899 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% U+011F  
15900 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotaccent  
15901 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% U+0120  
15902 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent  
15903 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% U+0121



15904 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcommaaccent  
 15905 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% U+0122  
 15906 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent  
 15907 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% U+0123  
 15908 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex  
 15909 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% U+0124  
 15910 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex  
 15911 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% U+0125  
 15912 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar  
 15913 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126  
 15914 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar; \hbar (AmS)  
 15915 \DeclareTextCommand{\textthbar}{PU}{\81\047}%\* U+0127  
 15916 %\* \textthbar -> \textcrh (tipa)  
 15917 %\* \textthbar -> \crossh (wsuipa)  
 15918 %\* \textthbar -> \planck (phonetic)  
 15919 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; Itilde  
 15920 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128  
 15921 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde  
 15922 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
 15923 \DeclareTextCompositeCommand{\~}{PU}{\i}{\81\051}% U+0129  
 15924 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron  
 15925 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% U+012A  
 15926 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron  
 15927 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
 15928 \DeclareTextCompositeCommand{\=}{PU}{\i}{\81\053}% U+012B  
 15929 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibreve  
 15930 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C  
 15931 % U+012D LATIN SMALL LETTER I WITH BREVE; ibreve  
 15932 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
 15933 \DeclareTextCompositeCommand{\u}{PU}{\i}{\81\055}% U+012D  
 15934 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek  
 15935 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E  
 15936 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek  
 15937 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
 15938 \DeclareTextCompositeCommand{\k}{PU}{\i}{\81\057}% U+012F  
 15939 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent  
 15940 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% U+0130  
 15941 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
 15942 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131  
 15943 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ  
 15944 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132  
 15945 % U+0133 LATIN SMALL LIGATURE IJ; ij  
 15946 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133  
 15947 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex  
 15948 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% U+0134  
 15949 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex  
 15950 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
 15951 \DeclareTextCompositeCommand{\^}{PU}{\j}{\81\065}% U+0135  
 15952 % U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaaccent  
 15953 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136  
 15954 % U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent  
 15955 \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`.

15956 % U+0138 LATIN SMALL LETTER KRA; kgreenlandic  
15957 \DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138  
15958 % U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute  
15959 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071}% U+0139  
15960 % U+013A LATIN SMALL LETTER L WITH ACUTE; lacute  
15961 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072}% U+013A  
15962 % U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaaccent  
15963 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B  
15964 % U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent  
15965 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C  
15966 % U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron  
15967 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D  
15968 % U+013E LATIN SMALL LETTER L WITH CARON; lcaron  
15969 \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.  
15970 % U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotaccent  
15971 \DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F  
15972 % U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent  
15973 \DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140  
15974 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
15975 \DeclareTextCommand{\L}{PU}{\81\101}% U+0141  
15976 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
15977 \DeclareTextCommand{\l}{PU}{\81\102}% U+0142  
15978 % U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute  
15979 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103}% U+0143  
15980 % U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute  
15981 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104}% U+0144  
15982 % U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaaccent  
15983 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105}% U+0145  
15984 % U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent  
15985 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106}% U+0146  
15986 % U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron  
15987 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107}% U+0147  
15988 % U+0148 LATIN SMALL LETTER N WITH CARON; ncaron  
15989 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110}% U+0148  
15990 % U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napostrophe, quoterightn  
15991 \DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149  
15992 % U+014A LATIN CAPITAL LETTER ENG; Eng  
15993 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A  
15994 % U+014B LATIN SMALL LETTER ENG; eng  
15995 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B  
15996 %\* \ng -> \eng (wsuipa)  
15997 %\* \ng -> \engma (phonetic)  
15998 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron  
15999 \DeclareTextCompositeCommand{=} {PU}{O}{\81\114}% U+014C  
16000 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron  
16001 \DeclareTextCompositeCommand{=} {PU}{o}{\81\115}% U+014D  
16002 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve  
16003 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116}% U+014E  
16004 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve  
16005 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117}% U+014F

16006 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odblacute, Ohungarumlaut  
 16007 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120}% U+0150  
 16008 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odblacute, ohungarumlaut  
 16009 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121}% U+0151  
 16010 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
 16011 \DeclareTextCommand{\OE}{PU}{\81\122}% U+0152  
 16012 % U+0153 LATIN SMALL LIGATURE OE; oe  
 16013 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153  
 16014 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute  
 16015 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124}% U+0154  
 16016 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute  
 16017 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125}% U+0155  
 16018 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcommaaccent  
 16019 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126}% U+0156  
 16020 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcommaaccent  
 16021 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127}% U+0157  
 16022 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron  
 16023 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130}% U+0158  
 16024 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron  
 16025 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131}% U+0159  
 16026 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute  
 16027 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132}% U+015A  
 16028 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute  
 16029 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133}% U+015B  
 16030 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex  
 16031 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134}% U+015C  
 16032 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex  
 16033 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135}% U+015D  
 16034 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla  
 16035 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136}% U+015E  
 16036 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla  
 16037 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137}% U+015F  
 16038 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
 16039 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140}% U+0160  
 16040 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
 16041 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141}% U+0161  
 16042 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcommaaccent  
 16043 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162  
 16044 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcommaaccent  
 16045 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163  
 16046 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron  
 16047 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164  
 16048 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron  
 16049 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165  
 16050 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar  
 16051 \DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166  
 16052 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar  
 16053 \DeclareTextCommand{\texttslash}{PU}{\81\147}% U+0167  
 16054 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde  
 16055 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168  
 16056 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde  
 16057 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
 16058 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron

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16059 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152}% U+016A
16060 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron
16061 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153}% U+016B
16062 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve
16063 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154}% U+016C
16064 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve
16065 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155}% U+016D
16066 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring
16067 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156}% U+016E
16068 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring
16069 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157}% U+016F
16070 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Udbla-
      cute, Uhungarumlaut
16071 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160}% U+0170
16072 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; udbla-
      cute, uhungarumlaut
16073 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161}% U+0171
16074 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek
16075 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162}% U+0172
16076 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek
16077 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163}% U+0173
16078 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex
16079 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164}% U+0174
16080 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex
16081 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165}% U+0175
16082 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex
16083 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166}% U+0176
16084 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex
16085 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167}% U+0177
16086 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis
16087 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170}% U+0178
16088 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute
16089 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171}% U+0179
16090 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute
16091 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172}% U+017A
16092 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent
16093 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173}% U+017B
16094 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent
16095 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174}% U+017C
16096 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron
16097 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175}% U+017D
16098 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron
16099 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176}% U+017E
16100 % U+017F LATIN SMALL LETTER LONG S; longs, slong
16101 \DeclareTextCommand{\textlongS}{PU}{\81\177}% U+017F

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### 51.2.5 Latin Extended-B: U+0180 to U+024F

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16102 % U+0180 LATIN SMALL LETTER B WITH STROKE; bstroke; \textcrb (tipa)
16103 \DeclareTextCommand{\textcrb}{PU}{\81\200}% U+0180
16104 %* \textcrb -> \crossb (wsuipa)
16105 % An alternate glyph with the stroke through the bowl:
16106 %* \textcrb -> \textbarb (tipa)
16107 %* \textcrb -> \barb (wsuipa)
16108 % U+0181 LATIN CAPITAL LETTER B WITH HOOK; Bhook; \hausab (pho-
      netic)
16109 \DeclareTextCommand{\texthausaB}{PU}{\81\201}%* U+0181
16110 % U+0188 LATIN SMALL LETTER C WITH HOOK; chook; \texthtc (tipa)

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16111 \DeclareTextCommand{\texthtc}{PU}{\81\210}% U+0188  
16112 % U+018A LATIN CAPITAL LETTER D WITH HOOK; Dhook; \hausad (pho-  
netic)  
16113 \DeclareTextCommand{\texthausad}{PU}{\81\212}%\* U+018A  
16114 % U+018E LATIN CAPITAL LETTER REVERSED E; Ereversed  
16115 \DeclareTextCommand{\textEreversed}{PU}{\81\216}% U+018E  
16116 \DeclareTextCommand{\textrevE}{PU}{\81\216}% U+018E  
16117 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
16118 \DeclareTextCommand{\textflorin}{PU}{\81\222}% U+0192  
16119 %\* \textflorin -> \Florin (marvosym)  
16120 % U+0195 LATIN SMALL LETTER HV; hv; \texthvlig (tipa)  
16121 \DeclareTextCommand{\texthvlig}{PU}{\81\225}% U+0195  
16122 %\* \texthvlig -> \hv (wsuipa)  
16123 % U+0198 LATIN CAPITAL LETTER K WITH HOOK; Khook; \hausak (pho-  
netic)  
16124 \DeclareTextCommand{\texthausak}{PU}{\81\230}%\* U+0198  
16125 % U+0199 LATIN SMALL LETTER K WITH HOOK; khook; \texthtk (tipa)  
16126 \DeclareTextCommand{\texthtk}{PU}{\81\231}% U+0199  
16127 %\* \texthtk -> \hausak (phonetic)  
16128 % U+019A LATIN SMALL LETTER L WITH BAR; lbar;  
16129 % \textbarl (tipa), \barl (wsuipa)  
16130 \DeclareTextCommand{\textbarl}{PU}{\81\232}%\* U+019A  
16131 % U+019B LATIN SMALL LETTER LAMBDA WITH STROKE/  
16132 % LATIN SMALL LETTER BARRED LAMBDA; lambdastroke;  
16133 % \textcrlambda (tipa)  
16134 \DeclareTextCommand{\textcrlambda}{PU}{\81\233}% U+019B  
16135 %\* \textcrlambda -> \crossnilambda (wsuipa)  
16136 %\* \textcrlambda -> \barlambda (phonetic)  
16137 %\* \textcrlambda -> \lambdabar (txfonts/pxfonts)  
16138 %\* \textcrlambda -> \lambdaslash (txfonts/pxfonts)  
16139 % U+019E LATIN SMALL LETTER N WITH LONG RIGHT LEG; nlegright-  
long;  
16140 % \textnrleg (tipx)  
16141 \DeclareTextCommand{\textPUnrleg}{PU}{\81\236}% U+019E  
16142 %\* \textPUnrleg -> \textnrleg (tipx)  
16143 % U+01A5 LATIN SMALL LETTER P WITH HOOK; phook; \texthtp (tipa)  
16144 \DeclareTextCommand{\texthtp}{PU}{\81\245}% U+01A5  
16145 % U+01AB LATIN SMALL LETTER T WITH PALATAL HOOK; tpalatalhook;  
16146 % \textlhookt (tipa)  
16147 \DeclareTextCommand{\textlhookt}{PU}{\81\253}% U+01AB  
16148 % U+01AD LATIN SMALL LETTER T WITH HOOK; thook; \texthtt (tipa)  
16149 \DeclareTextCommand{\texthtt}{PU}{\81\255}% U+01AD  
16150 % U+01B9 LATIN SMALL LETTER EZH REVERSED/  
16151 % LATIN SMALL LETTER REVERSED YOGH; \textrevyogh (tipa)  
16152 \DeclareTextCommand{\textrevyogh}{PU}{\81\271}% U+01B9  
16153 % U+01BB LATIN LETTER TWO WITH STROKE; twostroke; \textcrtwo (tipa)  
16154 \DeclareTextCommand{\textcrtwo}{PU}{\81\273}% U+01BB  
16155 % U+01BE LATIN LETTER INVERTED GLOTTAL STOP WITH STROKE;  
16156 % glottalinvertedstroke; \textcrinvglotstop (tipa)  
16157 \DeclareTextCommand{\textcrinvglotstop}{PU}{\81\276}% U+01BE  
16158 % U+01BF LATIN LETTER WYNN; wynn; \textwynn (tipa)  
16159 \DeclareTextCommand{\textwynn}{PU}{\81\277}% U+01BF  
16160 % U+01C0 LATIN LETTER DENTAL CLICK/LATIN LETTER PIPE; clickden-  
tal;  
16161 % \textpipe (tipa)  
16162 \DeclareTextCommand{\textpipe}{PU}{\81\300}% U+01C0  
16163 %\* \textpipe -> \textpipevar (tipx)

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16164 % U+01C1 LATIN LETTER LATERAL CLICK/LATIN LETTER
16165 % DOUBLE PIPE; clicklateral; \textdoublepipe (tipa)
16166 \DeclareTextCommand{\textdoublepipe}{PU}{\81\301}% U+01C1
16167 %* \textdoublepipe -> \textdoublepipevar (tipx)
16168 % U+01C2 LATIN LETTER ALVEOLAR CLICK/LATIN LETTER PIPE DOU-
BLE BAR;
16169 % clickalveolar; \textdoublebarpipe (tipa)
16170 \DeclareTextCommand{\textdoublebarpipe}{PU}{\81\302}% U+01C2
16171 %* \textdoublebarpipe -> \textdoublebarpipevar (tipx)
16172 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron
16173 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315}% U+01CD
16174 % U+01CE LATIN SMALL LETTER A WITH CARON; acarón
16175 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316}% U+01CE
16176 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icaron
16177 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317}% U+01CF
16178 % U+01D0 LATIN SMALL LETTER I WITH CARON; icarón
16179 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0
16180 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0
16181 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocaron
16182 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1
16183 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocarón
16184 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2
16185 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucaron
16186 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3
16187 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucarón
16188 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4
16189 % U+01DD LATIN SMALL LETTER TURNED E; eturned; \inve (wasysym)
16190 \DeclareTextCommand{\textinve}{PU}{\81\335}%* U+01DD
16191 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke
16192 \DeclareTextCommand{\textGslash}{PU}{\81\344}% U+01E4
16193 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke
16194 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5
16195 %* \textgslash -> \textcrg (tipa)
16196 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcaron
16197 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6
16198 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcarón
16199 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7
16200 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcaron
16201 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8
16202 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcarón
16203 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9
16204 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek
16205 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA
16206 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek
16207 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB
16208 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcarón
16209 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0
16210 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0
16211 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute
16212 \DeclareTextCompositeCommand{\'}{PU}{G}{\81\364}% U+01F4
16213 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute
16214 \DeclareTextCompositeCommand{\'}{PU}{g}{\81\365}% U+01F5
16215 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE
16216 \DeclareTextCompositeCommand{\`}{PU}{N}{\81\370}% U+01F8
16217 % U+01F9 LATIN SMALL LETTER N WITH GRAVE
16218 \DeclareTextCompositeCommand{\`}{PU}{n}{\81\371}% U+01F9
16219 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute

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16220 \DeclareTextCompositeCommand{\'}{PU}{\AE}{\81\374}% U+01FC  
16221 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute  
16222 \DeclareTextCompositeCommand{\'}{PU}{\ae}{\81\375}% U+01FD  
16223 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE;  
16224 % \*Oslashacute, Ostrokeacut  
16225 \DeclareTextCompositeCommand{\'}{PU}{\O}{\81\376}% U+01FE  
16226 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE;  
16227 % \*oslashacute, ostrokeacute  
16228 \DeclareTextCompositeCommand{\'}{PU}{\o}{\81\377}% U+01FF  
16229 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave  
16230 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200  
16231 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave  
16232 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201  
16233 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave  
16234 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204  
16235 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave  
16236 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205  
16237 % U+0206 LATIN CAPITAL LETTER E WITH INVERTED BREVE; Einvert-  
edbreve  
16238 \DeclareTextCompositeCommand{\textinvbreve}{PU}{E}{\82\006}% U+0206  
16239 % U+0207 LATIN SMALL LETTER E WITH INVERTED BREVE; einverted-  
breve  
16240 \DeclareTextCompositeCommand{\textinvbreve}{PU}{e}{\82\007}% U+0207  
16241 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; Idblgrave  
16242 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208  
16243 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave  
16244 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
16245 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
16246 % U+020A LATIN CAPITAL LETTER I WITH INVERTED BREVE; Iinverted-  
breve  
16247 \DeclareTextCompositeCommand{\textinvbreve}{PU}{I}{\82\012}% U+020A  
16248 % U+020B LATIN SMALL LETTER I WITH INVERTED BREVE; iinverted-  
breve  
16249 \DeclareTextCompositeCommand{\textinvbreve}{PU}{i}{\82\013}% U+020B  
16250 \DeclareTextCompositeCommand{\textinvbreve}{PU}{i}{\82\013}% U+020B  
16251 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave  
16252 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C  
16253 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave  
16254 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D  
16255 % U+020E LATIN CAPITAL LETTER O WITH INVERTED BREVE; Oinvert-  
edbreve  
16256 \DeclareTextCompositeCommand{\textinvbreve}{PU}{O}{\82\016}% U+020E  
16257 % U+020F LATIN SMALL LETTER O WITH INVERTED BREVE; oinverted-  
breve  
16258 \DeclareTextCompositeCommand{\textinvbreve}{PU}{o}{\82\017}% U+020F  
16259 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave  
16260 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210  
16261 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave  
16262 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211  
16263 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave  
16264 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214  
16265 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave  
16266 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215  
16267 % U+0216 LATIN CAPITAL LETTER U WITH INVERTED BREVE; Uinvert-  
edbreve  
16268 \DeclareTextCompositeCommand{\textinvbreve}{PU}{U}{\82\026}% U+0216

16269 % U+0217 LATIN SMALL LETTER U WITH INVERTED BREVE; uinverted-breve  
 16270 \DeclareTextCompositeCommand{\textinvbreve}{PU}{u}{\82\027}% U+0217  
 16271 % U+021E LATIN CAPITAL LETTER H WITH CARON  
 16272 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E  
 16273 % U+021F LATIN SMALL LETTER H WITH CARON  
 16274 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F  
 16275 % U+0221 LATIN SMALL LETTER D WITH CURL; \textctd (tipa)  
 16276 \DeclareTextCommand{\textctd}{PU}{\82\041}% U+0221  
 16277 % U+0225 LATIN SMALL LETTER Z WITH HOOK; \textcommatailz (tipa)  
 16278 \DeclareTextCommand{\textcommatailz}{PU}{\82\045}% U+0225  
 16279 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE  
 16280 \DeclareTextCompositeCommand{.}{PU}{A}{\82\046}% U+0226  
 16281 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE  
 16282 \DeclareTextCompositeCommand{.}{PU}{a}{\82\047}% U+0227  
 16283 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA  
 16284 \DeclareTextCompositeCommand{c}{PU}{E}{\82\050}% U+0228  
 16285 % U+0229 LATIN SMALL LETTER E WITH CEDILLA  
 16286 \DeclareTextCompositeCommand{c}{PU}{e}{\82\051}% U+0229  
 16287 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE  
 16288 \DeclareTextCompositeCommand{.}{PU}{O}{\82\056}% U+022E  
 16289 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE  
 16290 \DeclareTextCompositeCommand{.}{PU}{o}{\82\057}% U+022F  
 16291 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON  
 16292 \DeclareTextCompositeCommand{=}{PU}{Y}{\82\062}% U+0232  
 16293 % U+0233 LATIN SMALL LETTER Y WITH MACRON  
 16294 \DeclareTextCompositeCommand{=}{PU}{y}{\82\063}% U+0233  
 16295 % U+0235 LATIN SMALL LETTER N WITH CURL; \textctn (tipa)  
 16296 \DeclareTextCommand{\textctn}{PU}{\82\065}% U+0235  
 16297 % U+0236 LATIN SMALL LETTER T WITH CURL; \textctt (tipa)  
 16298 \DeclareTextCommand{\textctt}{PU}{\82\066}% U+0236  
 16299 % U+0237 LATIN SMALL LETTER DOTLESS J  
 16300 \DeclareTextCommand{j}{PU}{\82\067}% U+0237  
 16301 % U+0238 LATIN SMALL LETTER DB DIGRAPH; \textdblig (tipx)  
 16302 \DeclareTextCommand{\textPUdblig}{PU}{\82\070}% U+0238  
 16303 %\* \textPUdblig -> \textdblig (tipx)  
 16304 % U+0239 LATIN SMALL LETTER QP DIGRAPH; \textqplig (tipx)  
 16305 \DeclareTextCommand{\textPUqplig}{PU}{\82\071}% U+0239  
 16306 %\* \textPUqplig -> \textqplig (tipx)  
 16307 % U+023C LATIN SMALL LETTER C WITH STROKE; \slashc (wsuipa)  
 16308 \DeclareTextCommand{\textslashc}{PU}{\82\074}%\* U+023C  
 16309 %\* \textslashc -> \textcentoldstyle (textcomp)  
 16310 % With bar instead of stroke:  
 16311 %\* \textslashc -> \textbarc (tipa)

### 51.2.6 IPA Extensions: U+0250 to U+02AF

16312 % U+0250 LATIN SMALL LETTER TURNED A; aturned; \textturna (tipa)  
 16313 \DeclareTextCommand{\textturna}{PU}{\82\120}% U+0250  
 16314 %\* \textturna -> \inva (wasysym)  
 16315 % U+0251 LATIN SMALL LETTER ALPHA/LATIN SMALL LETTER  
 16316 % SCRIPT A; ascript; \textscripta (tipa), \scripta (wsuipa)  
 16317 \DeclareTextCommand{\textscripta}{PU}{\82\121}%\* U+0251  
 16318 %\* \textscripta -> \vara (phonetic)  
 16319 % U+0252 LATIN SMALL LETTER TURNED ALPHA; ascriptturned;  
 16320 % \textturnscripta (tipa)  
 16321 \DeclareTextCommand{\textturnscripta}{PU}{\82\122}% U+0252  
 16322 %\* \textturnscripta -> \invscripta (wsuipa)



16323 %\* \textturnscripta -> \rotvara (phonetic)  
16324 % U+0253 LATIN CAPITAL LETTER B WITH HOOK; bhook; \texthtb (tipa)  
16325 \DeclareTextCommand{\texthtb}{PU}{\82\123}% U+0253  
16326 %\* \texthtb -> \hookb (wsuipa)  
16327 %\* \texthtb -> \hausab (phonetic)  
16328 % U+0254 LATIN SMALL LETTER OPEN O; oopen;  
16329 % \textopeno (tipa), \openo (wasysym)  
16330 \DeclareTextCommand{\textopeno}{PU}{\82\124}% U+0254  
16331 %\* \textopeno -> \varopeno (phonetic)  
16332 % U+0255 LATIN SMALL LETTER C WITH CURL; ccurl; \textctc (tipa)  
16333 \DeclareTextCommand{\textctc}{PU}{\82\125}% U+0255  
16334 %\* \textctc -> \curlyc (wsuipa)  
16335 % U+0256 LATIN SMALL LETTER D WITH TAIL; dtail; \textrtaild (tipa)  
16336 \DeclareTextCommand{\textrtaild}{PU}{\82\126}% U+0256  
16337 %\* \textrtaild -> \taild (wsuipa)  
16338 % U+0257 LATIN SMALL LETTER D WITH HOOK; dhook; \texthtd (tipa)  
16339 \DeclareTextCommand{\texthtd}{PU}{\82\127}% U+0257  
16340 %\* \texthtd -> \hookd (wsuipa)  
16341 %\* \texthtd -> \hausad (phonetic)  
16342 % U+0258 LATIN SMALL LETTER REVERSED E; ereversed;  
16343 % \textreve (tipa), \reve (wsuipa)  
16344 \DeclareTextCommand{\textreve}{PU}{\82\130}% U+0258  
16345 % U+0259 LATIN SMALL LETTER SCHWA; schwa;  
16346 % \textschwa (tipa), \schwa (wsuipa, phonetic)  
16347 \DeclareTextCommand{\textschwa}{PU}{\82\131}% U+0259  
16348 % U+025A LATIN SMALL LETTER SCHWA WITH HOOK; schwahook;  
16349 % \textrhookswa (tipa)  
16350 \DeclareTextCommand{\textrhookswa}{PU}{\82\132}% U+025A  
16351 %\* \textrhookswa -> \er (wsuipa)  
16352 % U+025B LATIN SMALL LETTER OPEN E/LATIN SMALL LETTER EP-  
SILON; eopen;  
16353 % \niepsilon (wsuipa)  
16354 \DeclareTextCommand{\textniepsilon}{PU}{\82\133}% U+025B  
16355 %\* \textniepsilon -> \epsi (phonetic)  
16356 % U+025C LATIN SMALL LETTER REVERSED OPEN E; eopenreversed;  
16357 % \textrevepsilon (tipa), \revepsilon (wsuipa)  
16358 \DeclareTextCommand{\textrevepsilon}{PU}{\82\134}% U+025C  
16359 % U+025D LATIN SMALL LETTER REVERSED OPEN E WITH HOOK; eopen-  
reversedhook;  
16360 % \textrhookrevepsilon (tipa)  
16361 \DeclareTextCommand{\textrhookrevepsilon}{PU}{\82\135}% U+025D  
16362 %\* \textrhookrevepsilon -> \hookrevepsilon (wsuipa)  
16363 % U+025E LATIN SMALL LETTER CLOSED REVERSED OPEN E; eopenre-  
versedclosed;  
16364 % \textcloserevepsilon (tipa)  
16365 \DeclareTextCommand{\textcloserevepsilon}{PU}{\82\136}% U+025E  
16366 %\* \textcloserevepsilon -> \closedrevepsilon (wsuipa)  
16367 % U+025F LATIN SMALL LETTER DOTLESS J WITH STROKE; jdot-  
lessstroke;  
16368 % \textbardotlessj (tipa)  
16369 \DeclareTextCommand{\textbardotlessj}{PU}{\82\137}% U+025F  
16370 %\* \textbardotlessj -> \barj (phonetic)  
16371 % U+0260 LATIN SMALL LETTER G WITH HOOK; ghook; \texthtg (tipa)  
16372 \DeclareTextCommand{\texthtg}{PU}{\82\140}% U+0260  
16373 %\* \texthtg -> \hookg (wsuipa)  
16374 % U+0261 LATIN SMALL LETTER SCRIPT G; gscript;  
16375 % \textscriptg (tipa), \scriptg (wsuipa)

16376 \DeclareTextCommand{\textscriptg}{PU}{\82\141}%\* U+0261  
16377 %\* \textscriptg -> \varg (phonetic)  
16378 % U+0262 LATIN SMALL LETTER CAPITAL G; \textscg (tipa), \scg (wsuipa)  
16379 \DeclareTextCommand{\textscg}{PU}{\82\142}%\* U+0262  
16380 % U+0263 LATIN SMALL LETTER GAMMA; gammalatinsmall;  
16381 % \ipagamma (wsuipa), \vod (phonetic)  
16382 \DeclareTextCommand{\textipagamma}{PU}{\82\143}%\* U+0263  
16383 %\* \textipagamma -> \vod (phonetic)  
16384 % U+0264 LATIN SMALL LETTER RAMS HORN; ramshorn;  
16385 % \babygamma (wsuipa)  
16386 \DeclareTextCommand{\textbabygamma}{PU}{\82\144}%\* U+0264  
16387 % U+0265 LATIN SMALL LETTER TURNED H; hturned; \textturnh (tipa)  
16388 \DeclareTextCommand{\textturnh}{PU}{\82\145}% U+0265  
16389 %\* \textturnh -> \invh (wsuipa)  
16390 %\* \textturnh -> \udesc (phonetic)  
16391 % U+0266 LATIN SMALL LETTER H WITH HOOK; hhook; \texthth (tipa)  
16392 \DeclareTextCommand{\texthth}{PU}{\82\146}% U+0266  
16393 %\* \texthth -> \hookh (wsuipa)  
16394 %\* \texthth -> \voicedh (phonetic)  
16395 % U+0267 LATIN SMALL LETTER HENG WITH HOOK; henghook; \tex-  
ththeng (tipa)  
16396 \DeclareTextCommand{\texththeng}{PU}{\82\147}% U+0267  
16397 %\* \texththeng -> \hookheng (wsuipa)  
16398 % U+0268 LATIN SMALL LETTER I WITH STROKE;  
16399 % \textbari (tipa), \bari (wsuipa)  
16400 \DeclareTextCommand{\textbari}{PU}{\82\150}%\* U+0268  
16401 %\* \textbari -> \ibar (phonetic)  
16402 % U+0269 LATIN SMALL LETTER IOTA; iotalatin; \niiota (wsuipa)  
16403 \DeclareTextCommand{\textniiota}{PU}{\82\151}%\* U+0269  
16404 %\* \textniiota -> \vari (phonetic)  
16405 % U+026A LATIN LETTER SMALL CAPITAL I; \textsci (tipa), \sci (wsuipa)  
16406 \DeclareTextCommand{\textsci}{PU}{\82\152}%\* U+026A  
16407 % U+026B LATIN SMALL LETTER L WITH MIDDLE TILDE; lmiddletilde;  
16408 % \textltilde (tipa)  
16409 \DeclareTextCommand{\textltilde}{PU}{\82\153}% U+026B  
16410 %\* \textltilde -> \tildel (wsuipa)  
16411 % U+026C LATIN SMALL LETTER L WITH BELT; lbelt; \textbeltl (tipa)  
16412 \DeclareTextCommand{\textbeltl}{PU}{\82\154}% U+026C  
16413 %\* \textbeltl -> \latfric (wsuipa)  
16414 % U+026D LATIN SMALL LETTER L WITH RETROFLEX HOOK;  
16415 % lhookretroflex; \textrtaill (tipa)  
16416 \DeclareTextCommand{\textrtaill}{PU}{\82\155}% U+026D  
16417 %\* \textrtaill -> \taill (wsuipa)  
16418 % U+026E LATIN SMALL LETTER LEZH; lezh; \textlyoghlig (tipa)  
16419 \DeclareTextCommand{\textlyoghlig}{PU}{\82\156}% U+026E  
16420 %\* \textlyoghlig -> \lz (wsuipa)  
16421 % U+026F LATIN SMALL LETTER TURNED M; mturned; \textturnm (tipa)  
16422 \DeclareTextCommand{\textturnm}{PU}{\82\157}% U+026F  
16423 %\* \textturnm -> \invm (wsuipa)  
16424 %\* \textturnm -> \rotm (phonetic)  
16425 % U+0270 LATIN SMALL LETTER TURNED M WITH LONG LEG; mlongleg-  
turned;  
16426 % \textturnmrleg (tipa)  
16427 \DeclareTextCommand{\textturnmrleg}{PU}{\82\160}% U+0270  
16428 %\* \textturnmrleg -> \legm (wsuipa)  
16429 % U+0271 LATIN SMALL LETTER M WITH HOOK; mhook; \textltailm (tipa)  
16430 \DeclareTextCommand{\textltailm}{PU}{\82\161}% U+0271

16431 %\* \textltailm -> \labdentalnas (wsuipa)  
 16432 %\* \textltailm -> \emgma (phonetic)  
 16433 % U+0272 LATIN SMALL LETTER N WITH LEFT HOOK; nhookleft; \textltailn (tipa)  
 16434 \DeclareTextCommand{\textltailn}{PU}{\82\162}% U+0272  
 16435 %\* \textltailn -> \nj (wsuipa)  
 16436 %\* \textltailn -> \nya (phonetic)  
 16437 % U+0273 LATIN SMALL LETTER N WITH RETROFLEX HOOK;  
 16438 % nhookretroflex; \textrtailn (tipa)  
 16439 \DeclareTextCommand{\textrtailn}{PU}{\82\163}% U+0273  
 16440 %\* \textrtailn -> \tailn (wsuipa)  
 16441 % U+0274 LATIN LETTER SMALL CAPITAL N; \textscn (tipa), \scn (wsuipa)  
 16442 \DeclareTextCommand{\textscn}{PU}{\82\164}% U+0274  
 16443 % U+0275 LATIN CAPITAL LETTER O WITH MIDDLE TILDE/  
 16444 % LATIN CAPITAL LETTER BARRED O; obarred;  
 16445 % \textbaro (tipa), \baro (wsuipa)  
 16446 % But \baro from stmaryrd is different!  
 16447 \DeclareTextCommand{\textbaro}{PU}{\82\165}% U+0275  
 16448 % U+0276 LATIN LETTER SMALL CAPITAL OE; \textscelig (tipa)  
 16449 \DeclareTextCommand{\textscelig}{PU}{\82\166}% U+0276  
 16450 % U+0277 LATIN SMALL LETTER CLOSED OMEGA; omegalatincllosed;  
 16451 % \textcloseomega (tipa)  
 16452 \DeclareTextCommand{\textcloseomega}{PU}{\82\167}% U+0277  
 16453 %\* \textcloseomega -> \closedniomega (wsuipa)  
 16454 %\* \textcloseomega -> \varomega (phonetic)  
 16455 % U+0278 LATIN SMALL LETTER PHI; philatin; \niphi (wsuipa)  
 16456 \DeclareTextCommand{\textniphi}{PU}{\82\170}% U+0278  
 16457 % U+0279 LATIN SMALL LETTER TURNED R; rturned; \textturnr (tipa)  
 16458 \DeclareTextCommand{\textturnr}{PU}{\82\171}% U+0279  
 16459 %\* \textturnr -> \invr (wsuipa)  
 16460 %\* \textturnr -> \rotr (phonetic)  
 16461 % U+027A LATIN SMALL LETTER TURNED R WITH LONG LEG;  
 16462 % rlonglegturned; \textturnlongleg (tipa)  
 16463 \DeclareTextCommand{\textturnlongleg}{PU}{\82\172}% U+027A  
 16464 %\* \textturnlongleg -> \invleg (wsuipa)  
 16465 % U+027B LATIN SMALL LETTER TURNED R WITH HOOK; rhoookturned;  
 16466 % \textturnrrtail (tipa)  
 16467 \DeclareTextCommand{\textturnrrtail}{PU}{\82\173}% U+027B  
 16468 %\* \textturnrrtail -> \tailinvr (wsuipa)  
 16469 % U+027C LATIN SMALL LETTER R WITH LONG LEG; rlongleg; \textlongleg (tipa)  
 16470 \DeclareTextCommand{\textlongleg}{PU}{\82\174}% U+027C  
 16471 %\* \textlongleg -> \leg (wsuipa)  
 16472 % U+027D LATIN SMALL LETTER R WITH TAIL; rhoook; \textrtailr (tipa)  
 16473 \DeclareTextCommand{\textrtailr}{PU}{\82\175}% U+027D  
 16474 %\* \textrtailr -> \tailr (wsuipa)  
 16475 % U+027E LATIN SMALL LETTER R WITH FISHHOOK; rfishhook;  
 16476 % \textfishhookr (tipa)  
 16477 \DeclareTextCommand{\textfishhookr}{PU}{\82\176}% U+027E  
 16478 %\* \textfishhookr -> \flapr (wsuipa)  
 16479 %\* \textfishhookr -> \flap (phonetic)  
 16480 % U+027F LATIN SMALL LETTER REVERSED R WITH FISHHOOK; rfishhookreversed;  
 16481 % \textlhtlongi (tipa)  
 16482 \DeclareTextCommand{\textlhtlongi}{PU}{\82\177}% U+027F  
 16483 % U+0280 LATIN LETTER SMALL CAPITAL R; \textscr (tipa), \scr (wsuipa)  
 16484 \DeclareTextCommand{\textscr}{PU}{\82\200}% U+0280

16485 % U+0281 LATIN LETTER SMALL CAPITAL INVERTED R; Rsmallinverted;  
16486 % \textinvscr (tipa), \invscr (wsuipa)  
16487 \DeclareTextCommand{\textinvscr}{PU}{\82\201}%\* U+0281  
16488 % U+0282 LATIN SMALL LETTER S WITH HOOK; shook; \texttrails (tipa)  
16489 \DeclareTextCommand{\texttrails}{PU}{\82\202}% U+0282  
16490 %\* \texttrails -> \tails (wsuipa)  
16491 % U+0283 LATIN SMALL LETTER ESH; esh; \textesh (tipa), \esh (wsuipa)  
16492 \DeclareTextCommand{\textesh}{PU}{\82\203}%\* U+0283  
16493 % U+0284 LATIN SMALL LETTER DOTLESS J WITH STROKE AND HOOK;  
16494 % dotlessjstrokehook; \texthtbardotlessj (tipa)  
16495 \DeclareTextCommand{\texthtbardotlessj}{PU}{\82\204}% U+0284  
16496 % U+0285 LATIN SMALL LETTER SQUAT REVERSED ESH; eshsquatre-  
versed;  
16497 % \textvibyi (tipa)  
16498 \DeclareTextCommand{\textvibyi}{PU}{\82\205}% U+0285  
16499 % U+0286 LATIN SMALL LETTER ESH WITH CURL; eshcurl; \textctesh (tipa)  
16500 \DeclareTextCommand{\textctesh}{PU}{\82\206}% U+0286  
16501 %\* \textctesh -> \curlyesh (wsuipa)  
16502 % U+0287 LATIN SMALL LETTER TURNED T; tturned; \textturnt (tipa)  
16503 \DeclareTextCommand{\textturnt}{PU}{\82\207}% U+0287  
16504 %\* \textturnt -> \clickt (wsuipa)  
16505 % U+0288 LATIN SMALL LETTER T WITH RETROFLEX HOOK; retroflex-  
hook;  
16506 % \texttrtailt (tipa)  
16507 \DeclareTextCommand{\texttrtailt}{PU}{\82\210}% U+0288  
16508 %\* \texttrtailt -> \tailt (wsuipa)  
16509 % U+0289 LATIN SMALL LETTER U BAR; ubar;  
16510 % \textbaru (tipa), \baru (wsuipa)  
16511 \DeclareTextCommand{\textbaru}{PU}{\82\211}%\* U+0289  
16512 %\* \textbaru -> \ubar (phonetic)  
16513 % U+028A LATIN SMALL LETTER UPSILON; \niupsilon (wsuipa)  
16514 \DeclareTextCommand{\textniupsilon}{PU}{\82\212}%\* U+028A  
16515 %\* \textniupsilon -> \rotOmega (phonetic)  
16516 % U+028B LATIN SMALL LETTER V WITH HOOK/LATIN SMALL LET-  
TER SCRIPT V;  
16517 % vhook; \textscriptv (tipa), \scriptv (wsuipa)  
16518 \DeclareTextCommand{\textscriptv}{PU}{\82\213}%\* U+028B  
16519 % U+028C LATIN SMALL LETTER TURNED V; vturned; \textturnv (tipa)  
16520 \DeclareTextCommand{\textturnv}{PU}{\82\214}%\* U+028C  
16521 %\* \textturnv -> \invv (wsuipa)  
16522 %\* \textturnv -> \pwedge (phonetic)  
16523 % U+028D LATIN SMALL LETTER TURNED W; wturned; \textturnw (tipa)  
16524 \DeclareTextCommand{\textturnw}{PU}{\82\215}%\* U+028D  
16525 %\* \textturnw -> \invw (wsuipa)  
16526 %\* \textturnw -> \rotw (phonetic)  
16527 % U+028E LATIN SMALL LETTER TURNED Y; yturned; \textturny (tipa)  
16528 \DeclareTextCommand{\textturny}{PU}{\82\216}%\* U+028E  
16529 %\* \textturny -> \invy (wsuipa)  
16530 %\* \textturny -> \roty (phonetic)  
16531 % U+028F LATIN LETTER SMALL CAPITAL Y; \textscy (tipa), \scy (wsuipa)  
16532 \DeclareTextCommand{\textscy}{PU}{\82\217}%\* U+028F  
16533 % U+0290 LATIN SMALL LETTER Z WITH RETROFLEX HOOK; zretroflex-  
hook;  
16534 % \texttrtailz (tipa)  
16535 \DeclareTextCommand{\texttrtailz}{PU}{\82\220}% U+0290  
16536 %\* \texttrtailz -> \tailz (wsuipa)  
16537 % U+0291 LATIN SMALL LETTER Z WITH CURL; zcurl; \textctz (tipa)

16538 \DeclareTextCommand{\textctz}{PU}{\82\221}% U+0291  
16539 %\* \textctz -> \curlyz (wsuipa)  
16540 % U+0292 LATIN SMALL LETTER EZH/LATIN SMALL LETTER YOGH; ezh;  
16541 % \textyogh (tipa), \yogh (wsuipa)  
16542 \DeclareTextCommand{\textyogh}{PU}{\82\222}%\* U+0292  
16543 % U+0293 LATIN SMALL LETTER EZH WITH CURL/LATIN SMALL LETTER YOGH CURL;  
16544 % ezhcurl; \textctyogh (tipa)  
16545 \DeclareTextCommand{\textctyogh}{PU}{\82\223}% U+0293  
16546 %\* \textctyogh -> \curlyyogh (wsuipa)  
16547 % U+0294 LATIN LETTER GLOTTAL STOP; glottalstop;  
16548 % \textglotstop (tipa), \glotstop (wsuipa)  
16549 \DeclareTextCommand{\textglotstop}{PU}{\82\224}%\* U+0294  
16550 %\* \textglotstop -> \ejective (wsuipa)  
16551 %\* \textglotstop -> \glottal (phonetic)  
16552 % U+0295 LATIN LETTER PHARYNGEAL VOICED FRICATIVE/  
16553 % LATIN LETTER REVERSED GLOTTAL STOP; glottalstopreversed;  
16554 % \textrevglotstop (tipa), \revglotstop (wsuipa)  
16555 \DeclareTextCommand{\textrevglotstop}{PU}{\82\225}%\* U+0295  
16556 %\* \textrevglotstop -> \reveject (wsuipa)  
16557 % U+0296 LATIN LETTER INVERTED GLOTTAL STOP; glottalstopinverted;  
16558 % \textinvglotstop (tipa), \invglotstop (wsuipa)  
16559 \DeclareTextCommand{\textinvglotstop}{PU}{\82\226}%\* U+0296  
16560 % U+0297 LATIN LETTER STRETCHED C; cstretched; \textstretchc (tipa)  
16561 \DeclareTextCommand{\textstretchc}{PU}{\82\227}% U+0297  
16562 %\* \textstretchc -> \clickc (wsuipa)  
16563 %\* \textstretchc -> \textstretchcvar (tipx)  
16564 % U+0298 LATIN LETTER BILABIAL CLICK; bilabialclick;  
16565 % \textbullseye (tipa)  
16566 \DeclareTextCommand{\textbullseye}{PU}{\82\230}% U+0298  
16567 %\* \textbullseye -> \clickb (wsuipa)  
16568 %\* \textbullseye -> \textObullseye (tipx)  
16569 % U+0299 LATIN LETTER SMALL CAPITAL B; \textscb (tipa)  
16570 \DeclareTextCommand{\textscb}{PU}{\82\231}% U+0299  
16571 % U+029A LATIN SMALL LETTER CLOSED OPEN E; eopenclosed;  
16572 % \textcloseepsilon (tipa)  
16573 \DeclareTextCommand{\textcloseepsilon}{PU}{\82\232}% U+029A  
16574 % U+029B LATIN LETTER SMALL CAPITAL G WITH HOOK; Gsmallhook;  
16575 % \texthtscg (tipa)  
16576 \DeclareTextCommand{\texthtscg}{PU}{\82\233}% U+029B  
16577 % U+029C LATIN LETTER SMALL CAPITAL H; \textsch (tipa)  
16578 \DeclareTextCommand{\textsch}{PU}{\82\234}% U+029C  
16579 % U+029D LATIN SMALL LETTER J WITH CROSSED-TAIL; jcrossetail; \textcdj (tipa)  
16580 \DeclareTextCommand{\textctj}{PU}{\82\235}% U+029D  
16581 %\* \textctj -> \textctjvar (tipx)  
16582 % U+029E LATIN SMALL LETTER TURNED K; kturned; \textturnk (tipa)  
16583 \DeclareTextCommand{\textturnk}{PU}{\82\236}% U+029E  
16584 %\* \textturnk -> \textturnsck (tipx)  
16585 % U+029F LATIN LETTER SMALL CAPITAL L; \textscL (tipa)  
16586 \DeclareTextCommand{\textscL}{PU}{\82\237}% U+029F  
16587 % U+02A0 LATIN SMALL LETTER Q WITH HOOK; qhook; \texthtq (tipa)  
16588 \DeclareTextCommand{\texthtq}{PU}{\82\240}% U+02A0  
16589 % U+02A1 LATIN LETTER GLOTTAL STOP WITH STROKE; glottalstop-stroke;  
16590 % \textbarglotstop (tipa)  
16591 \DeclareTextCommand{\textbarglotstop}{PU}{\82\241}% U+02A1

16592 % U+02A2 LATIN LETTER REVERSED GLOTTAL STOP WITH STROKE/  
 16593 % LATIN LETTER REVERSED GLOTTAL STOP BAR; glottalstopstrokere-  
 versed;  
 16594 % \textbarrevglotstop (tipa)  
 16595 \DeclareTextCommand{\textbarrevglotstop}{PU}{\82\242}% U+02A2  
 16596 % U+02A3 LATIN SMALL LETTER DZ DIGRAPH; dzaltone; \textdzlig (tipa)  
 16597 \DeclareTextCommand{\textdzlig}{PU}{\82\243}% U+02A3  
 16598 %\* \textdzlig -> \dz (wsupipa)  
 16599 % U+02A4 LATIN SMALL LETTER DEZH DIGRAPH; dezh; \textdyogh-  
 lig (tipa)  
 16600 \DeclareTextCommand{\textdyoghlig}{PU}{\82\244}% U+02A4  
 16601 % U+02A5 LATIN SMALL LETTER DZ DIGRAPH WITH CURL; dzcurl;  
 16602 % \textdctzlig (tipa)  
 16603 \DeclareTextCommand{\textdctzlig}{PU}{\82\245}% U+02A5  
 16604 % U+02A6 LATIN SMALL LETTER TS DIGRAPH; ts; \texttslig (tipa)  
 16605 \DeclareTextCommand{\texttslig}{PU}{\82\246}% U+02A6  
 16606 % U+02A7 LATIN SMALL LETTER TESH DIGRAPH; tesh; \texttshlig (tipa)  
 16607 \DeclareTextCommand{\texttshlig}{PU}{\82\247}% U+02A7  
 16608 %\* \texttshlig -> \tesh (wsuipa)  
 16609 % U+02A8 LATIN SMALL LETTER TC DIGRAPH WITH CURL; tccurl;  
 16610 % \texttctclig (tipa)  
 16611 \DeclareTextCommand{\texttctclig}{PU}{\82\250}% U+02A8  
 16612 % U+02AE LATIN SMALL LETTER TURNED H WITH FISHHOOK;  
 16613 % \textlhtlongy (tipa)  
 16614 \DeclareTextCommand{\textlhtlongy}{PU}{\82\256}% U+02AE  
 16615 % U+02AF LATIN SMALL LETTER TURNED H WITH FISHHOOK AND TAIL;  
 16616 % \textvibyy (tipa)  
 16617 \DeclareTextCommand{\textvibyy}{PU}{\82\257}% U+02AF

### 51.2.7 Spacing Modifier Letters: U+02B0 to U+02FF

16618 % U+02BD MODIFIER LETTER REVERSED COMMA;  
 16619 % commareversedmod, afi64937; \textrevapostrophe (tipa)  
 16620 \DeclareTextCommand{\textrevapostrophe}{PU}{\82\275}% U+02BD  
 16621 % U+02C0 MODIFIER LETTER GLOTTAL STOP; glottalstopmod;  
 16622 % \textraiseglotstop (tipa)  
 16623 \DeclareTextCommand{\textraiseglotstop}{PU}{\82\300}% U+02C0  
 16624 % U+02C2 MODIFIER LETTER LEFT ARROWHEAD; arrowheadleftmod;  
 16625 % \textlptr (tipa)  
 16626 \DeclareTextCommand{\textlptr}{PU}{\82\302}% U+02C2  
 16627 % U+02C3 MODIFIER LETTER RIGHT ARROWHEAD; arrowheadrightmod;  
 16628 % \textrptr (tipa)  
 16629 \DeclareTextCommand{\textrptr}{PU}{\82\303}% U+02C3  
 16630 % U+02C7 CARON; caron  
 16631 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7  
 16632 % U+02C8 MODIFIER LETTER VERTICAL LINE; verticallinemod;  
 16633 % \textprimstress (tipa)  
 16634 \DeclareTextCommand{\textprimstress}{PU}{\82\310}% U+02C8  
 16635 % U+02CC MODIFIER LETTER LOW VERTICAL LINE; verticallinelowmod;  
 16636 % \textsecstress (tipa)  
 16637 \DeclareTextCommand{\textsecstress}{PU}{\82\314}% U+02CC  
 16638 % U+02D0 MODIFIER LETTER TRIANGULAR COLON; colontriangularmod;  
 16639 % \textlengthmark (tipa)  
 16640 \DeclareTextCommand{\textlengthmark}{PU}{\82\320}% U+02D0  
 16641 % U+02D1 MODIFIER LETTER HALF TRIANGULAR COLON; colontriangu-  
 larhalfmod;  
 16642 % \texthalflength (tipa)  
 16643 \DeclareTextCommand{\texthalflength}{PU}{\82\321}% U+02D1

16644 % U+02D8 BREVE; breve  
 16645 \DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8  
 16646 % U+02D9 DOT ABOVE; dotaccent  
 16647 \DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9  
 16648 % U+02DA RING ABOVE; ring  
 16649 \DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA  
 16650 % U+02DB OGONEK; ogonek  
 16651 \DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB  
 16652 % U+02DC SMALL TILDE; ilde, \*tilde  
 16653 \DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC  
 16654 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
 16655 \DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD  
 16656 \DeclareTextCommand{\textacutedbl}{PU}{\82\335}% U+02DD  
 16657 % U+02F3 MODIFIER LETTER LOW RING  
 16658 \DeclareTextCommand{\texttringlow}{PU}{\82\363}% U+02F3  
 16659 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT  
 16660 \DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5  
 16661 % U+02F7 MODIFIER LETTER LOW TILDE  
 16662 \DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7  
 16663 % U+02F9 MODIFIER LETTER BEGIN HIGH TONE; \textopencorner (tipa)  
 16664 \DeclareTextCommand{\textopencorner}{PU}{\82\371}% U+02F9  
 16665 % U+02FA MODIFIER LETTER END HIGH TONE; \textcorner (tipa)  
 16666 \DeclareTextCommand{\textcorner}{PU}{\82\372}% U+02FA

### 51.2.8 Combining Diacritical Marks: U+0300 to U+036F

16667 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb  
 16668 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017}% U+030F  
 16669 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
 16670 \DeclareTextCommand{\textnewtie}{PU}{\83\021}% U+0311  
 16671 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcmb  
 16672 \DeclareTextCommand{\textdotbelow}{PU}{\83\043}% U+0323  
 16673 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
 16674 \DeclareTextCommand{\textmacronbelow}{PU}{\83\061}% U+0331  
 16675 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb  
 16676 \DeclareTextCommand{\texttie}{PU}{\83\141}% U+0361

### 51.2.9 Greek and Coptic: U+0370 to U+03FF

16677 % U+0374 GREEK NUMERAL SIGN; numeralsigngreek  
 16678 \DeclareTextCommand{\textnumeralsigngreek}{PU}{\83\164}% U+0374  
 16679 % U+0375 GREEK LOWER NUMERAL SIGN; numeralsignlowergreek  
 16680 \DeclareTextCommand{\textnumeralsignlowergreek}{PU}{\83\165}% U+0375  
 16681 % U+0386 GREEK CAPITAL LETTER ALPHA WITH TONOS; Alphanos  
 16682 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}% U+0386  
 16683 % U+0388 GREEK CAPITAL LETTER EPSILON WITH TONOS; Epsilontonos  
 16684 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}% U+0388  
 16685 % U+0389 GREEK CAPITAL LETTER ETA WITH TONOS; Etatonos  
 16686 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}% U+0389  
 16687 % U+038A GREEK CAPITAL LETTER IOTA WITH TONOS; Iotatonos  
 16688 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}% U+038A  
 16689 % U+038C GREEK CAPITAL LETTER OMICRON WITH TONOS; Omicrontonos  
 16690 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}% U+038C  
 16691 % U+038E GREEK CAPITAL LETTER UPSILON WITH TONOS; Upsilontonos  
 16692 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}% U+038E  
 16693 % U+038F GREEK CAPITAL LETTER OMEGA WITH TONOS; Omegatonos  
 16694 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}% U+038F

16695 % U+0390 GREEK SMALL LETTER IOTA WITH DIALYTIKA AND TONOS;  
 16696 %   iotadieresis  
 16697 \DeclareTextCompositeCommand{\'}{PU}{\textIotadieresis}{\83\220}% U+0390  
 16698 % U+0391 GREEK CAPITAL LETTER ALPHA; Alpha  
 16699 \DeclareTextCommand{\textAlpha}{PU}{\83\221}% U+0391  
 16700 % U+0392 GREEK CAPITAL LETTER BETA; Beta  
 16701 \DeclareTextCommand{\textBeta}{PU}{\83\222}% U+0392  
 16702 % U+0393 GREEK CAPITAL LETTER GAMMA; Gamma; \Gamma (LaTeX)  
 16703 \DeclareTextCommand{\textGamma}{PU}{\83\223}%\* U+0393  
 16704 % U+0394 GREEK CAPITAL LETTER DELTA; Deltagreek, \*Delta; \Delta (LaTeX)  
 16705 \DeclareTextCommand{\textDelta}{PU}{\83\224}%\* U+0394  
 16706 % U+0395 GREEK CAPITAL LETTER EPSILON; Epsilon  
 16707 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}% U+0395  
 16708 % U+0396 GREEK CAPITAL LETTER ZETA; Zeta  
 16709 \DeclareTextCommand{\textZeta}{PU}{\83\226}% U+0396  
 16710 % U+0397 GREEK CAPITAL LETTER ETA; Eta  
 16711 \DeclareTextCommand{\textEta}{PU}{\83\227}% U+0397  
 16712 % U+0398 GREEK CAPITAL LETTER THETA; Theta; \Theta (LaTeX)  
 16713 \DeclareTextCommand{\textTheta}{PU}{\83\230}%\* U+0398  
 16714 % U+0399 GREEK CAPITAL LETTER IOTA; Iota  
 16715 \DeclareTextCommand{\textIota}{PU}{\83\231}% U+0399  
 16716 % U+039A GREEK CAPITAL LETTER KAPPA; Kappa  
 16717 \DeclareTextCommand{\textKappa}{PU}{\83\232}% U+039A  
 16718 % U+039B GREEK CAPITAL LETTER LAMDA; Lambda; \Lambda (LaTeX)  
 16719 \DeclareTextCommand{\textLambda}{PU}{\83\233}%\* U+039B  
 16720 % U+039C GREEK CAPITAL LETTER MU; Mu  
 16721 \DeclareTextCommand{\textMu}{PU}{\83\234}% U+039C  
 16722 % U+039D GREEK CAPITAL LETTER NU; Nu  
 16723 \DeclareTextCommand{\textNu}{PU}{\83\235}% U+039D  
 16724 % U+039E GREEK CAPITAL LETTER XI; Xi; \Xi (LaTeX)  
 16725 \DeclareTextCommand{\textXi}{PU}{\83\236}%\* U+039E  
 16726 % U+039F GREEK CAPITAL LETTER OMICRON; Omicron  
 16727 \DeclareTextCommand{\textOmicron}{PU}{\83\237}% U+039F  
 16728 % U+03A0 GREEK CAPITAL LETTER PI; Pi  
 16729 \DeclareTextCommand{\textPi}{PU}{\83\240}%\* U+03A0  
 16730 % U+03A1 GREEK CAPITAL LETTER RHO; Rho  
 16731 \DeclareTextCommand{\textRho}{PU}{\83\241}% U+03A1  
 16732 % U+03A3 GREEK CAPITAL LETTER SIGMA; Sigma; \Sigma (LaTeX)  
 16733 \DeclareTextCommand{\textSigma}{PU}{\83\243}%\* U+03A3  
 16734 % U+03A4 GREEK CAPITAL LETTER TAU; Tau  
 16735 \DeclareTextCommand{\textTau}{PU}{\83\244}% U+03A4  
 16736 % U+03A5 GREEK CAPITAL LETTER UPSILON; Upsilon; \Upsilon (LaTeX)  
 16737 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}%\* U+03A5  
 16738 % U+03A6 GREEK CAPITAL LETTER PHI; Phi; \Phi (LaTeX)  
 16739 \DeclareTextCommand{\textPhi}{PU}{\83\246}%\* U+03A6  
 16740 % U+03A7 GREEK CAPITAL LETTER CHI; Chi  
 16741 \DeclareTextCommand{\textChi}{PU}{\83\247}% U+03A7  
 16742 % U+03A8 GREEK CAPITAL LETTER PSI; Psi; \Psi (LaTeX)  
 16743 \DeclareTextCommand{\textPsi}{PU}{\83\250}%\* U+03A8  
 16744 % U+03A9 GREEK CAPITAL LETTER OMEGA; Omegagreek, \*Omega;  
 16745 %   \Omega (LaTeX)  
 16746 \DeclareTextCommand{\textOmega}{PU}{\83\251}%\* U+03A9  
 16747 % U+03AA GREEK CAPITAL LETTER IOTA WITH DIALYTIKA; Iotadieresis  
 16748 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}% U+03AA  
 16749 \DeclareTextCompositeCommand{\"}{PU}{\textIota}{\83\252}% U+03AA



16750 % U+03AB GREEK CAPITAL LETTER UPSILON WITH DIALYTIKA; Upsilondieresis  
16751 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}% U+03AB  
16752 % U+03AC GREEK SMALL LETTER ALPHA WITH TONOS; alphanos  
16753 \DeclareTextCompositeCommand{'}{PU}{\textalpha}{\83\254}%\* U+03AC  
16754 % U+03AD GREEK SMALL LETTER EPSILON WITH TONOS; epsilontonos  
16755 \DeclareTextCompositeCommand{'}{PU}{\textepsilon}{\83\255}% U+03AD  
16756 % U+03AE GREEK SMALL LETTER ETA WITH TONOS; etatonos  
16757 \DeclareTextCompositeCommand{'}{PU}{\texteta}{\83\256}% U+03AE  
16758 % U+03AF GREEK SMALL LETTER IOTA WITH TONOS; iotatonos  
16759 \DeclareTextCompositeCommand{'}{PU}{\textiota}{\83\257}% U+03AF  
16760 % U+03B0 GREEK SMALL LETTER UPSILON WITH DIALYTIKA  
16761 % AND TONOS; upsilondieresis  
16762 \DeclareTextCompositeCommand{"}{PU}{\textupsilonacute}{\83\260}% U+03B0  
16763 % U+03B1 GREEK SMALL LETTER ALPHA; alpha; \alpha (LaTeX)  
16764 \DeclareTextCommand{\textalpha}{PU}{\83\261}%\* U+03B1  
16765 % U+03B2 GREEK SMALL LETTER BETA; beta; \beta (LaTeX)  
16766 \DeclareTextCommand{\textbeta}{PU}{\83\262}%\* U+03B2  
16767 % U+03B3 GREEK SMALL LETTER GAMMA; gamma; \gamma (LaTeX)  
16768 \DeclareTextCommand{\textgamma}{PU}{\83\263}%\* U+03B3  
16769 % U+03B4 GREEK SMALL LETTER DELTA; delta; \delta (LaTeX)  
16770 \DeclareTextCommand{\textdelta}{PU}{\83\264}%\* U+03B4  
16771 % U+03B5 GREEK SMALL LETTER EPSILON; epsilon; \epsilon (LaTeX)  
16772 \DeclareTextCommand{\textepsilon}{PU}{\83\265}%\* U+03B5  
16773 % U+03B6 GREEK SMALL LETTER ZETA; zeta; \zeta (LaTeX)  
16774 \DeclareTextCommand{\textzeta}{PU}{\83\266}%\* U+03B6  
16775 % U+03B7 GREEK SMALL LETTER ETA; eta; \eta (LaTeX)  
16776 \DeclareTextCommand{\texteta}{PU}{\83\267}%\* U+03B7  
16777 % U+03B8 GREEK SMALL LETTER THETA; theta; \theta (LaTeX)  
16778 \DeclareTextCommand{\texttheta}{PU}{\83\270}%\* U+03B8  
16779 % U+03B9 GREEK SMALL LETTER IOTA; iota; \iota (LaTeX)  
16780 \DeclareTextCommand{\textiota}{PU}{\83\271}%\* U+03B9  
16781 % U+03BA GREEK SMALL LETTER KAPPA; kappa; \kappa (LaTeX)  
16782 \DeclareTextCommand{\textkappa}{PU}{\83\272}%\* U+03BA  
16783 % U+03BB GREEK SMALL LETTER LAMDA; lambda; \lambda (LaTeX)  
16784 \DeclareTextCommand{\textlambda}{PU}{\83\273}%\* U+03BB  
16785 % U+03BC GREEK SMALL LETTER MU; mugreek; \mu (LaTeX)  
16786 \DeclareTextCommand{\textmugreek}{PU}{\83\274}%\* U+03BC  
16787 % U+03BD GREEK SMALL LETTER NU; nu; \nu (LaTeX)  
16788 \DeclareTextCommand{\textnu}{PU}{\83\275}%\* U+03BD  
16789 % U+03BE GREEK SMALL LETTER XI; xi; \xi (LaTeX)  
16790 \DeclareTextCommand{\textxi}{PU}{\83\276}%\* U+03BE  
16791 % U+03BF GREEK SMALL LETTER OMICRON; omicron  
16792 \DeclareTextCommand{\textomicron}{PU}{\83\277}% U+03BF  
16793 % U+03C0 GREEK SMALL LETTER PI; pi; \pi (LaTeX)  
16794 \DeclareTextCommand{\textpi}{PU}{\83\300}%\* U+03C0  
16795 % U+03C1 GREEK SMALL LETTER RHO; rho; \rho (LaTeX)  
16796 \DeclareTextCommand{\textrho}{PU}{\83\301}%\* U+03C1  
16797 % U+03C2 GREEK SMALL LETTER FINAL SIGMA; \sigma1, \sigmafinal  
16798 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}%\* U+03C2  
16799 % U+03C3 GREEK SMALL LETTER SIGMA; sigma; \sigma (LaTeX)  
16800 \DeclareTextCommand{\textsigma}{PU}{\83\303}%\* U+03C3  
16801 % U+03C4 GREEK SMALL LETTER TAU; tau; \tau (LaTeX)  
16802 \DeclareTextCommand{\texttau}{PU}{\83\304}%\* U+03C4  
16803 % U+03C5 GREEK SMALL LETTER UPSILON; upsilon; \upsilon (LaTeX)  
16804 \DeclareTextCommand{\textupsilon}{PU}{\83\305}%\* U+03C5  
16805 % U+03C6 GREEK SMALL LETTER PHI; phi; \phi (LaTeX)

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16806 \DeclareTextCommand{\textphi}{PU}{\83\306}%* U+03C6
16807 % U+03C7 GREEK SMALL LETTER CHI; chi; \chi (LaTeX)
16808 \DeclareTextCommand{\textchi}{PU}{\83\307}%* U+03C7
16809 % U+03C8 GREEK SMALL LETTER PSI; psi; \psi (LaTeX)
16810 \DeclareTextCommand{\textpsi}{PU}{\83\310}%* U+03C8
16811 % U+03C9 GREEK SMALL LETTER OMEGA; omega; \omega (LaTeX)
16812 \DeclareTextCommand{\textomega}{PU}{\83\311}%* U+03C9
16813 % U+03CA GREEK SMALL LETTER IOTA WITH DIALYTIKA; iotadieresis
16814 \DeclareTextCompositeCommand{\'}{PU}{\textiota}{\83\312}% U+03CA
16815 % U+03CB GREEK SMALL LETTER UPSILON WITH DIALYTIKA; up-
    silondieresis
16816 \DeclareTextCompositeCommand{\'}{PU}{\textupsilon}{\83\313}% U+03CB
16817 % U+03CC GREEK SMALL LETTER OMICRON WITH TONOS; omicrontonos
16818 \DeclareTextCompositeCommand{\'}{PU}{\textomicron}{\83\314}% U+03CC
16819 % U+03CD GREEK SMALL LETTER UPSILON WITH TONOS; upsilontonos
16820 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}% U+03CD
16821 \DeclareTextCompositeCommand{\'}{PU}{\textupsilon}{\83\315}% U+03CD
16822 % U+03CE GREEK SMALL LETTER OMEGA WITH TONOS; omegatonos
16823 \DeclareTextCompositeCommand{\'}{PU}{\textomega}{\83\316}% U+03CE
16824 % U+03DA GREEK LETTER STIGMA; Stigmagreek
16825 \DeclareTextCommand{\textStigmagreek}{PU}{\83\332}% U+03DA
16826 % U+03DB GREEK SMALL LETTER STIGMA
16827 \DeclareTextCommand{\textstigmagreek}{PU}{\83\333}% U+03DB
16828 % U+03DC GREEK LETTER DIGAMMA; Digammagreek
16829 \DeclareTextCommand{\textDigammagreek}{PU}{\83\334}% U+03DC
16830 % U+03DD GREEK SMALL LETTER DIGAMMA
16831 \DeclareTextCommand{\textdigammagreek}{PU}{\83\335}% U+03DD
16832 %* \textdigammagreek -> \digamma (AmS)
16833 % U+03DE GREEK LETTER KOPPA; Koppagreek
16834 \DeclareTextCommand{\textKoppagreek}{PU}{\83\336}% U+03DE
16835 % U+03DF GREEK SMALL LETTER KOPPA
16836 \DeclareTextCommand{\textkoppagreek}{PU}{\83\337}% U+03DF
16837 % U+03E0 GREEK LETTER SAMPI; Sampigreek
16838 \DeclareTextCommand{\textSampigreek}{PU}{\83\340}% U+03E0
16839 % U+03E1 GREEK SMALL LETTER SAMPI
16840 \DeclareTextCommand{\textsampigreek}{PU}{\83\341}% U+03E1
16841 % U+03F6 GREEK REVERSED LUNATE EPSILON SYMBOL;
16842 % \backepsilon (AmS)
16843 \DeclareTextCommand{\textbackepsilon}{PU}{\83\366}% U+03F6

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#### 51.2.10 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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16844 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE
16845 \DeclareTextCompositeCommand{\'}{PU}{\CYRE}{\84\000}% U+0400
16846 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrrilic, *afi10023
16847 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401
16848 \DeclareTextCompositeCommand{\'}{PU}{\CYRE}{\84\001}% U+0401
16849 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, *afi10051
16850 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402
16851 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, *afi10052
16852 \DeclareTextCompositeCommand{\'}{PU}{\CYRG}{\84\003}% U+0403
16853 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrrilic, *afi10053
16854 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404
16855 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzecyrillic, *afi10054
16856 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405
16857 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I;

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16858 % Icyrillic, \*afii10055  
 16859 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406  
 16860 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrillic, \*afii10056  
 16861 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407  
 16862 \DeclareTextCompositeCommand{\"}{PU}{\CYRII}{\84\007}% U+0407  
 16863 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, \*afii10057  
 16864 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408  
 16865 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, \*afii10058  
 16866 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409  
 16867 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, \*afii10059  
 16868 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A  
 16869 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, \*afii10060  
 16870 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B  
 16871 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, \*afii10061  
 16872 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% U+040C  
 16873 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE  
 16874 \DeclareTextCompositeCommand{\`}{PU}{\CYRI}{\84\015}% U+040D  
 16875 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrillic, \*afii10062  
 16876 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E  
 16877 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\016}% U+040E  
 16878 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, \*afii10145  
 16879 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F  
 16880 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, \*afii10017  
 16881 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410  
 16882 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrillic, \*afii10018  
 16883 \DeclareTextCommand{\CYRB}{PU}{\84\021}% U+0411  
 16884 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, \*afii10019  
 16885 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412  
 16886 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, \*afii10020  
 16887 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413  
 16888 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, \*afii10021  
 16889 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414  
 16890 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, \*afii10022  
 16891 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415  
 16892 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, \*afii10024  
 16893 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416  
 16894 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, \*afii10025  
 16895 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417  
 16896 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrillic, \*afii10026  
 16897 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418  
 16898 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; Iishortcyrillic, \*afii10027  
 16899 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419  
 16900 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}% U+0419  
 16901 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, \*afii10028  
 16902 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A  
 16903 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, \*afii10029  
 16904 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B  
 16905 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, \*afii10030  
 16906 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C  
 16907 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, \*afii10031  
 16908 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D  
 16909 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, \*afii10032  
 16910 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E  
 16911 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, \*afii10033  
 16912 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F  
 16913 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, \*afii10034  
 16914 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420

16915 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, \*afii10035  
16916 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421  
16917 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, \*afii10036  
16918 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422  
16919 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, \*afii10037  
16920 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423  
16921 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, \*afii10038  
16922 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424  
16923 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, \*afii10039  
16924 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425  
16925 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, \*afii10040  
16926 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426  
16927 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, \*afii10041  
16928 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427  
16929 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, \*afii10042  
16930 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428  
16931 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, \*afii10043  
16932 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429  
16933 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN;  
16934 % Hardsigncyrillic, \*afii10044  
16935 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A  
16936 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, \*afii10045  
16937 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B  
16938 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN;  
16939 % Softsigncyrillic, \*afii10046  
16940 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C  
16941 % U+042D CYRILLIC CAPITAL LETTER E; Ereversedcyrillic, \*afii10047  
16942 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D  
16943 % U+042E CYRILLIC CAPITAL LETTER YU; IUcyrillic, \*afii10048  
16944 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E  
16945 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, \*afii10049  
16946 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F  
16947 % U+0430 CYRILLIC SMALL LETTER A; acyrillic, \*afii10065  
16948 \DeclareTextCommand{\cyra}{PU}{\84\060}% U+0430  
16949 % U+0431 CYRILLIC SMALL LETTER BE; \*afii10066, becyrillic  
16950 \DeclareTextCommand{\cyrb}{PU}{\84\061}% U+0431  
16951 % U+0432 CYRILLIC SMALL LETTER VE; \*afii10067, vecyrillic  
16952 \DeclareTextCommand{\cyrv}{PU}{\84\062}% U+0432  
16953 % U+0433 CYRILLIC SMALL LETTER GHE; \*afii10068, gecyrillic  
16954 \DeclareTextCommand{\cyrg}{PU}{\84\063}% U+0433  
16955 % U+0434 CYRILLIC SMALL LETTER DE; \*afii10069, decyrillic  
16956 \DeclareTextCommand{\cyrd}{PU}{\84\064}% U+0434  
16957 % U+0435 CYRILLIC SMALL LETTER IE; \*afii10070, iecyrillic  
16958 \DeclareTextCommand{\cyre}{PU}{\84\065}% U+0435  
16959 % U+0436 CYRILLIC SMALL LETTER ZHE; \*afii10072, zhacyrillic  
16960 \DeclareTextCommand{\cyrz}{PU}{\84\066}% U+0436  
16961 % U+0437 CYRILLIC SMALL LETTER ZE; \*afii10073, zecyrillic  
16962 \DeclareTextCommand{\cyrz}{PU}{\84\067}% U+0437  
16963 % U+0438 CYRILLIC SMALL LETTER I; \*afii10074, iicyrillic  
16964 \DeclareTextCommand{\cyri}{PU}{\84\070}% U+0438  
16965 % U+0439 CYRILLIC SMALL LETTER SHORT I; \*afii10075, iishortcyrillic  
16966 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% U+0439  
16967 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}% U+0439  
16968 % U+043A CYRILLIC SMALL LETTER KA; \*afii10076, kacyrillic  
16969 \DeclareTextCommand{\cyrk}{PU}{\84\072}% U+043A  
16970 % U+043B CYRILLIC SMALL LETTER EL; \*afii10077, elcyrillic  
16971 \DeclareTextCommand{\cyrl}{PU}{\84\073}% U+043B

16972 % U+043C CYRILLIC SMALL LETTER EM; \*afii10078, emcyrillic  
 16973 \DeclareTextCommand{\cyrm}{PU}{\84\074}% U+043C  
 16974 % U+043D CYRILLIC SMALL LETTER EN; \*afii10079, encyrillic  
 16975 \DeclareTextCommand{\cyrn}{PU}{\84\075}% U+043D  
 16976 % U+043E CYRILLIC SMALL LETTER O; \*afii10080, ocyrillic  
 16977 \DeclareTextCommand{\cyro}{PU}{\84\076}% U+043E  
 16978 % U+043F CYRILLIC SMALL LETTER PE; \*afii10081, pecyrillic  
 16979 \DeclareTextCommand{\cyrp}{PU}{\84\077}% U+043F  
 16980 % U+0440 CYRILLIC SMALL LETTER ER; \*afii10082, ercyrillic  
 16981 \DeclareTextCommand{\cyrr}{PU}{\84\100}% U+0440  
 16982 % U+0441 CYRILLIC SMALL LETTER ES; \*afii10083, escyrillic  
 16983 \DeclareTextCommand{\cyrs}{PU}{\84\101}% U+0441  
 16984 % U+0442 CYRILLIC SMALL LETTER TE; \*afii10084, tecyrillic  
 16985 \DeclareTextCommand{\cyrt}{PU}{\84\102}% U+0442  
 16986 % U+0443 CYRILLIC SMALL LETTER U; \*afii10085, ucyrillic  
 16987 \DeclareTextCommand{\cyr u}{PU}{\84\103}% U+0443  
 16988 % U+0444 CYRILLIC SMALL LETTER EF; \*afii10086, efcyrillic  
 16989 \DeclareTextCommand{\cyrf}{PU}{\84\104}% U+0444  
 16990 % U+0445 CYRILLIC SMALL LETTER HA; \*afii10087, khacyrillic  
 16991 \DeclareTextCommand{\cyrh}{PU}{\84\105}% U+0445  
 16992 % U+0446 CYRILLIC SMALL LETTER TSE; \*afii10088, tsecyrillic  
 16993 \DeclareTextCommand{\cyrc}{PU}{\84\106}% U+0446  
 16994 % U+0447 CYRILLIC SMALL LETTER CHE; \*afii10089, checyrillic  
 16995 \DeclareTextCommand{\cyrch}{PU}{\84\107}% U+0447  
 16996 % U+0448 CYRILLIC SMALL LETTER SHA; \*afii10090, shacyrillic  
 16997 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% U+0448  
 16998 % U+0449 CYRILLIC SMALL LETTER SHCHA; \*afii10091, shchacyrillic  
 16999 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% U+0449  
 17000 % U+044A CYRILLIC SMALL LETTER HARD SIGN; \*afii10092, hardsigncyril-  
 lic  
 17001 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% U+044A  
 17002 %\* \cyrhrdsn -> \hardsign (tipa)  
 17003 % U+044B CYRILLIC SMALL LETTER YERU; \*afii10093, yericyrillic  
 17004 \DeclareTextCommand{\cyrrery}{PU}{\84\113}% U+044B  
 17005 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; \*afii10094, softsigncyrillic  
 17006 \DeclareTextCommand{\cyr sftsn}{PU}{\84\114}% U+044C  
 17007 %\* \cyr sftsn -> \softsign (tipa)  
 17008 % U+044D CYRILLIC SMALL LETTER E; \*afii10095, ereversedcyrillic  
 17009 \DeclareTextCommand{\cyrrev}{PU}{\84\115}% U+044D  
 17010 % U+044E CYRILLIC SMALL LETTER YU; \*afii10096, iucyrillic  
 17011 \DeclareTextCommand{\cyr yu}{PU}{\84\116}% U+044E  
 17012 % U+044F CYRILLIC SMALL LETTER YA; \*afii10097, iacyrillic  
 17013 \DeclareTextCommand{\cyr ya}{PU}{\84\117}% U+044F  
 17014 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE  
 17015 \DeclareTextCompositeCommand{\'}{PU}{\cyre}{\84\120}% U+0450  
 17016 % U+0451 CYRILLIC SMALL LETTER IO; \*afii10071, iocyrillic  
 17017 \DeclareTextCommand{\cyr yo}{PU}{\84\121}% U+0451  
 17018 \DeclareTextCompositeCommand{\"}{PU}{\cyre}{\84\121}% U+0451  
 17019 % U+0452 CYRILLIC SMALL LETTER DJE; \*afii10099, djecyrillic  
 17020 \DeclareTextCommand{\cyr dje}{PU}{\84\122}% U+0452  
 17021 % U+0453 CYRILLIC SMALL LETTER GJE; \*afii10100, gjecyrillic  
 17022 \DeclareTextCompositeCommand{\'}{PU}{\cyrg}{\84\123}% U+0453  
 17023 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; \*afii10101, ecyrillic  
 17024 \DeclareTextCommand{\cyrie}{PU}{\84\124}% U+0454  
 17025 % U+0455 CYRILLIC SMALL LETTER DZE; \*afii10102, dzecyrillic  
 17026 \DeclareTextCommand{\cyr dze}{PU}{\84\125}% U+0455  
 17027 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I;

17028 % \*afii10103, icyrillic  
 17029 \DeclareTextCommand{\cyrii}{PU}{\84\126}% U+0456  
 17030 % U+0457 CYRILLIC SMALL LETTER YI; \*afii10104, yicyrillic  
 17031 \DeclareTextCommand{\cyryi}{PU}{\84\127}% U+0457  
 17032 \DeclareTextCompositeCommand{\"}{PU}{\cyrii}{\84\127}% U+0457  
 17033 % U+0458 CYRILLIC SMALL LETTER JE; \*afii10105, jecyrillic  
 17034 \DeclareTextCommand{\cyrje}{PU}{\84\130}% U+0458  
 17035 % U+0459 CYRILLIC SMALL LETTER LJE; \*afii10106, ljecyrillic  
 17036 \DeclareTextCommand{\cyrkje}{PU}{\84\131}% U+0459  
 17037 % U+045A CYRILLIC SMALL LETTER NJE; \*afii10107, njecyrillic  
 17038 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% U+045A  
 17039 % U+045B CYRILLIC SMALL LETTER TSHE; \*afii10108, tshecyrillic  
 17040 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% U+045B  
 17041 % U+045C CYRILLIC SMALL LETTER KJE; \*afii10109, kjecyrillic  
 17042 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% U+045C  
 17043 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE  
 17044 \DeclareTextCompositeCommand{\`}{PU}{\cyri}{\84\135}% U+045D  
 17045 % U+045E CYRILLIC SMALL LETTER SHORT U; \*afii10110, ushortcyrillic  
 17046 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E  
 17047 \DeclareTextCompositeCommand{\U}{PU}{\curu}{\84\136}% U+045E  
 17048 % U+045F CYRILLIC SMALL LETTER DZHE; \*afii10193, dzhecyrillic  
 17049 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% U+045F  
 17050 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic  
 17051 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460  
 17052 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrillic  
 17053 \DeclareTextCommand{\cyromega}{PU}{\84\141}% U+0461  
 17054 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, \*afii10146  
 17055 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462  
 17056 % U+0463 CYRILLIC SMALL LETTER YAT; \*afii10194, yatcyrillic  
 17057 \DeclareTextCommand{\cyryat}{PU}{\84\143}% U+0463  
 17058 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic  
 17059 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464  
 17060 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrillic  
 17061 \DeclareTextCommand{\cyriote}{PU}{\84\145}% U+0465  
 17062 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslitlecyrillic  
 17063 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466  
 17064 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslitlecyrillic  
 17065 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467  
 17066 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslitlei-  
 otifiedcyrillic  
 17067 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468  
 17068 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslitleioti-  
 fiedcyrillic  
 17069 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469  
 17070 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbigcyrillic  
 17071 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A  
 17072 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbigcyrillic  
 17073 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B  
 17074 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbigiotified-  
 cyrillic  
 17075 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C  
 17076 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbigiotified-  
 cyrillic  
 17077 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D  
 17078 % U+046E CYRILLIC CAPITAL LETTER KSI; Ksicyrillic  
 17079 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% U+046E  
 17080 % U+046F CYRILLIC SMALL LETTER KSI; ksicyrillic

17081 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F  
17082 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psicyrillic  
17083 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470  
17084 % U+0471 CYRILLIC SMALL LETTER PSI; psicyrillic  
17085 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471  
17086 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, \*afii10147  
17087 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472  
17088 % U+0473 CYRILLIC SMALL LETTER FITA; \*afii10195, fitacyrillic  
17089 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473  
17090 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, \*afii10148  
17091 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474  
17092 % U+0475 CYRILLIC SMALL LETTER IZHITSA; \*afii10196, izhitsacyrillic  
17093 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475  
17094 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE  
17095 % GRAVE ACCENT; Izhitsadblgravecyrillic  
17096 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% U+0476  
17097 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE  
17098 % GRAVE ACCENT; izhitsadblgravecyrillic  
17099 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477  
17100 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic  
17101 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478  
17102 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic  
17103 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479  
17104 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyrillic  
17105 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A  
17106 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic  
17107 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B  
17108 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatitlocyrillic  
17109 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C  
17110 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlocyrillic  
17111 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D  
17112 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic  
17113 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E  
17114 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic  
17115 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F  
17116 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic  
17117 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480  
17118 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic  
17119 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481  
17120 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic  
17121 \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  
17122 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL  
17123 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A

17124 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL  
 17125 \DeclareTextCommand{\cyrishrt dsc}{PU}{\84\213}% U+048B  
 17126 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN  
 17127 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C  
 17128 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN  
 17129 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D  
 17130 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK  
 17131 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E  
 17132 % U+048F CYRILLIC SMALL LETTER ER WITH TICK  
 17133 \DeclareTextCommand{\cyr rtick}{PU}{\84\217}% U+048F  
 17134 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturn-cyrillic, \*afii10050  
 17135 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490  
 17136 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; \*afii10098, gheupturncyrillic  
 17137 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491  
 17138 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestroke-cyrillic  
 17139 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492  
 17140 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic  
 17141 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% U+0493  
 17142 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK;  
 17143 % Ghemiddlehookcyrillic  
 17144 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494  
 17145 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK;  
 17146 % ghemiddlehookcyrillic  
 17147 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495  
 17148 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER;  
 17149 % Zhedescendercyrillic  
 17150 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496  
 17151 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER;  
 17152 % zhedescendercyrillic  
 17153 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% U+0497  
 17154 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescendercyrillic  
 17155 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498  
 17156 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498  
 17157 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescendercyrillic  
 17158 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% U+0499  
 17159 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499  
 17160 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescendercyrillic  
 17161 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A  
 17162 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kadesendercyrillic  
 17163 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% U+049B  
 17164 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE;  
 17165 % Kavertikalstrokecyrillic  
 17166 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C  
 17167 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE;  
 17168 % kavertikalstrokecyrillic  
 17169 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D  
 17170 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic  
 17171 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E  
 17172 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic  
 17173 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% U+049F



17174 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic  
 17175 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0  
 17176 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic  
 17177 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1  
 17178 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescen-  
 dercyrillic  
 17179 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2  
 17180 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endescender-  
 cyrillic  
 17181 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3  
 17182 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic  
 17183 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4  
 17184 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic  
 17185 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5  
 17186 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemid-  
 dlehookcyrillic  
 17187 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6  
 17188 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddle-  
 hookcyrillic  
 17189 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7  
 17190 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyril-  
 lic  
 17191 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8  
 17192 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic  
 17193 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% U+04A9  
 17194 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescen-  
 dercyrillic  
 17195 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA  
 17196 \DeclareTextCompositeCommand{\CYRSDSC}{PU}{\CYRS}{\84\252}% U+04AA  
 17197 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescender-  
 cyrillic  
 17198 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% U+04AB  
 17199 \DeclareTextCompositeCommand{\k}{PU}{\cyrs}{\84\253}% U+04AB  
 17200 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescen-  
 dercyrillic  
 17201 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC  
 17202 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescen-  
 dercyrillic  
 17203 \DeclareTextCommand{\cyrtdsc}{PU}{\84\255}% U+04AD  
 17204 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic  
 17205 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE  
 17206 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; ustraightcyrillic  
 17207 \DeclareTextCommand{\cyry}{PU}{\84\257}% U+04AF  
 17208 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Us-  
 traightstrokecyrillic  
 17209 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0  
 17210 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; us-  
 traightstrokecyrillic  
 17211 \DeclareTextCommand{\cyryhcrs}{PU}{\84\261}% U+04B1  
 17212 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hadescen-  
 dercyrillic  
 17213 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% U+04B2  
 17214 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadescen-  
 dercyrillic  
 17215 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% U+04B3  
 17216 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetsecyrillic  
 17217 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4

17218 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetsecyrillic  
 17219 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% U+04B5  
 17220 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER;  
 17221 % Chedescendercyrillic  
 17222 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6  
 17223 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescen-  
 dercyrillic  
 17224 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% U+04B7  
 17225 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE;  
 17226 % Cheverticalstrokecyrillic  
 17227 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8  
 17228 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE;  
 17229 % cheverticalstrokecyrillic  
 17230 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9  
 17231 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic  
 17232 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA  
 17233 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic  
 17234 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB  
 17235 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasian-  
 cyrillic  
 17236 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC  
 17237 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyril-  
 lic  
 17238 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% U+04BD  
 17239 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCEN-  
 DER; Chedescenderabkhasiancyrillic  
 17240 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE  
 17241 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE  
 17242 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCEN-  
 DER; chedescenderabkhasiancyrillic  
 17243 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% U+04BF  
 17244 \DeclareTextCompositeCommand{\k}{PU}{\cyrabhch}{\84\277}% U+04BF  
 17245 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic  
 17246 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0  
 17247 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic  
 17248 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1  
 17249 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic  
 17250 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% U+04C2  
 17251 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic  
 17252 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3  
 17253 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic  
 17254 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% U+04C4  
 17255 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL  
 17256 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5  
 17257 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL  
 17258 \DeclareTextCommand{\cyrldsc}{PU}{\84\306}% U+04C6  
 17259 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic  
 17260 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7  
 17261 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic  
 17262 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% U+04C8  
 17263 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakas-  
 siancyrillic  
 17264 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB  
 17265 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassian-  
 cyrillic  
 17266 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% U+04CC  
 17267 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL

17268 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD  
 17269 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL  
 17270 \DeclareTextCommand{\cyrmdsc}{PU}{\84\316}% U+04CE  
 \84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA  
 17271 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevecyrillic  
 17272 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0  
 17273 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevecyrillic  
 17274 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% U+04D1  
 17275 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyril-  
 lic  
 17276 \DeclareTextCompositeCommand{\"}{PU}{\CYRA}{\84\322}% U+04D2  
 17277 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresiscyrillic  
 17278 \DeclareTextCompositeCommand{\"}{PU}{\cyra}{\84\323}% U+04D3  
 17279 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aiecyrillic  
 17280 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4  
 17281 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aiecyrillic  
 17282 \DeclareTextCommand{\\cyrae}{PU}{\84\325}% U+04D5  
 17283 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrevocyrillic  
 17284 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6  
 17285 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrevocyrillic  
 17286 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% U+04D7  
 17287 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwacyrillic  
 17288 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8  
 17289 % U+04D9 CYRILLIC SMALL LETTER SCHWA; \*afii10846, schwacyrillic  
 17290 \DeclareTextCommand{\\cyrschwa}{PU}{\84\331}% U+04D9  
 17291 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS;  
 17292 % Schwadieresiscyrillic  
 17293 \DeclareTextCompositeCommand{\"}{PU}{\CYRSCHWA}{\84\332}% U+04DA  
 17294 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS;  
 17295 % schwadieresiscyrillic  
 17296 \DeclareTextCompositeCommand{\"}{PU}{\cyrschwa}{\84\333}% U+04DB  
 17297 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhediere-  
 siscyrillic  
 17298 \DeclareTextCompositeCommand{\"}{PU}{\CYRZH}{\84\334}% U+04DC  
 17299 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedieresis-  
 cyrillic  
 17300 \DeclareTextCompositeCommand{\"}{PU}{\cyrz}{\84\335}% U+04DD  
 17301 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedieresis-  
 cyrillic  
 17302 \DeclareTextCompositeCommand{\"}{PU}{\CYRZ}{\84\336}% U+04DE  
 17303 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedieresiscyril-  
 lic  
 17304 \DeclareTextCompositeCommand{\"}{PU}{\cyrz}{\84\337}% U+04DF  
 17305 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasian-  
 cyrillic  
 17306 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0  
 17307 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasiancyril-  
 lic  
 17308 \DeclareTextCommand{\\cyrabhdze}{PU}{\84\341}% U+04E1  
 17309 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Imacroncyrillic  
 17310 \DeclareTextCompositeCommand{\=}{PU}{\CYRI}{\84\342}% U+04E2  
 17311 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacroncyrillic  
 17312 \DeclareTextCompositeCommand{\=}{PU}{\cyri}{\84\343}% U+04E3  
 17313 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresiscyrillic  
 17314 \DeclareTextCompositeCommand{\"}{PU}{\CYRI}{\84\344}% U+04E4  
 17315 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresiscyrillic  
 17316 \DeclareTextCompositeCommand{\"}{PU}{\cyri}{\84\345}% U+04E5

17317 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresiscyrillic  
17318 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% U+04E6  
17319 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresiscyrillic  
17320 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% U+04E7  
17321 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarredcyrillic  
17322 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8  
17323 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarredcyrillic  
17324 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9  
17325 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERESIS;  
17326 % Obarreddieresiscyrillic  
17327 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% U+04EA  
17328 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS;  
17329 % obarreddieresiscyrillic  
17330 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% U+04EB  
17331 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS  
17332 \DeclareTextCompositeCommand{"}{PU}{\CYREREV}{\84\354}% U+04EC  
17333 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS  
17334 \DeclareTextCompositeCommand{"}{PU}{\cyreref}{\84\355}% U+04ED  
17335 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacroncyrillic  
17336 \DeclareTextCompositeCommand{\=}{PU}{\CYRU}{\84\356}% U+04EE  
17337 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacroncyrillic  
17338 \DeclareTextCompositeCommand{\=}{PU}{\cyru}{\84\357}% U+04EF  
17339 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udieresiscyrillic  
17340 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U+04F0  
17341 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udieresiscyrillic  
17342 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% U+04F1  
17343 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhungarumlautcyrillic  
17344 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U+04F2  
17345 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhungarumlautcyrillic  
17346 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% U+04F3  
17347 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chedieresiscyrillic  
17348 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% U+04F4  
17349 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieresiscyrillic  
17350 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% U+04F5  
17351 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER  
17352 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6  
17353 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER  
17354 \DeclareTextCommand{\cyrgdsc}{PU}{\84\367}% U+04F7  
17355 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudieresiscyrillic  
17356 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% U+04F8  
17357 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudieresiscyrillic  
17358 \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  
17359 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK  
17360 \DeclareTextCommand{\CYRHHK}{PU}{\84\374}% U+04FC  
17361 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK

17362 \DeclareTextCommand{\cyrhkh}{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

### 51.2.11 Hebrew: U+0590 to U+05FF

Macro names are taken from he8enc.def.

17363 % U+05C3 HEBREW PUNCTUATION SOF PASUQ  
 17364 \DeclareTextCommand{\sofpasuq}{PU}{\85\303}% U+05C3  
 17365 % U+05D0 HEBREW LETTER ALEF  
 17366 \DeclareTextCommand{\hebalet}{PU}{\85\320}% U+05D0  
 17367 % U+05D1 HEBREW LETTER BET  
 17368 \DeclareTextCommand{\hebbet}{PU}{\85\321}% U+05D1  
 17369 % U+05D2 HEBREW LETTER GIMEL  
 17370 \DeclareTextCommand{\hebgimel}{PU}{\85\322}% U+05D2  
 17371 % U+05D3 HEBREW LETTER DALET  
 17372 \DeclareTextCommand{\hebdalet}{PU}{\85\323}% U+05D3  
 17373 % U+05D4 HEBREW LETTER HE  
 17374 \DeclareTextCommand{\hebhe}{PU}{\85\324}% U+05D4  
 17375 % U+05D5 HEBREW LETTER VAV  
 17376 \DeclareTextCommand{\hebvav}{PU}{\85\325}% U+05D5  
 17377 % U+05D6 HEBREW LETTER ZAYIN  
 17378 \DeclareTextCommand{\hebzayin}{PU}{\85\326}% U+05D6  
 17379 % U+05D7 HEBREW LETTER HET  
 17380 \DeclareTextCommand{\hebbet}{PU}{\85\327}% U+05D7  
 17381 % U+05D8 HEBREW LETTER TET  
 17382 \DeclareTextCommand{\hebtet}{PU}{\85\330}% U+05D8  
 17383 % U+05D9 HEBREW LETTER YOD  
 17384 \DeclareTextCommand{\hebyod}{PU}{\85\331}% U+05D9  
 17385 % U+05DA HEBREW LETTER FINAL KAF  
 17386 \DeclareTextCommand{\hebfinalkaf}{PU}{\85\332}% U+05DA  
 17387 % U+05DB HEBREW LETTER KAF  
 17388 \DeclareTextCommand{\hebkaf}{PU}{\85\333}% U+05DB  
 17389 % U+05DC HEBREW LETTER LAMED  
 17390 \DeclareTextCommand{\heblamed}{PU}{\85\334}% U+05DC  
 17391 % U+05DD HEBREW LETTER FINAL MEM  
 17392 \DeclareTextCommand{\hebfinalmem}{PU}{\85\335}% U+05DD  
 17393 % U+05DE HEBREW LETTER MEM  
 17394 \DeclareTextCommand{\hebmeme}{PU}{\85\336}% U+05DE  
 17395 % U+05DF HEBREW LETTER FINAL NUN  
 17396 \DeclareTextCommand{\hebfinalnun}{PU}{\85\337}% U+05DF  
 17397 % U+05E0 HEBREW LETTER NUN  
 17398 \DeclareTextCommand{\hebnun}{PU}{\85\340}% U+05E0  
 17399 % U+05E1 HEBREW LETTER SAMEKH  
 17400 \DeclareTextCommand{\hebsamekh}{PU}{\85\341}% U+05E1  
 17401 % U+05E2 HEBREW LETTER AYIN  
 17402 \DeclareTextCommand{\hebayin}{PU}{\85\342}% U+05E2  
 17403 % U+05E3 HEBREW LETTER FINAL PE  
 17404 \DeclareTextCommand{\hebfinalpe}{PU}{\85\343}% U+05E3  
 17405 % U+05E4 HEBREW LETTER PE  
 17406 \DeclareTextCommand{\hebpe}{PU}{\85\344}% U+05E4  
 17407 % U+05E5 HEBREW LETTER FINAL TSADI  
 17408 \DeclareTextCommand{\hebfinaltsadi}{PU}{\85\345}% U+05E5  
 17409 % U+05E6 HEBREW LETTER TSADI  
 17410 \DeclareTextCommand{\hebtsadi}{PU}{\85\346}% U+05E6  
 17411 % U+05E7 HEBREW LETTER QOF  
 17412 \DeclareTextCommand{\hebqof}{PU}{\85\347}% U+05E7

17413 % U+05E8 HEBREW LETTER RESH  
 17414 \DeclareTextCommand{\hebresh}{PU}{\85\350}% U+05E8  
 17415 % U+05E9 HEBREW LETTER SHIN  
 17416 \DeclareTextCommand{\hebshin}{PU}{\85\351}% U+05E9  
 17417 %\* \hebshin -> \hebsin (he8)  
 17418 % U+05EA HEBREW LETTER TAV  
 17419 \DeclareTextCommand{\hebtav}{PU}{\85\352}% U+05EA  
 17420 % U+05F0 HEBREW LIGATURE YIDDISH DOUBLE VAV  
 17421 \DeclareTextCommand{\doublevav}{PU}{\85\360}% U+05F0  
 17422 % U+05F1 HEBREW LIGATURE YIDDISH VAV YOD  
 17423 \DeclareTextCommand{\vavyod}{PU}{\85\361}% U+05F1  
 17424 % U+05F2 HEBREW LIGATURE YIDDISH DOUBLE YOD  
 17425 \DeclareTextCommand{\doubleyod}{PU}{\85\362}% U+05F2

### 51.2.12 Thai: U+0E00 to U+0E7F

17426 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai  
 17427 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

### 51.2.13 Phonetic Extensions: U+1D00 to U+1D7F

17428 % U+1D00 LATIN LETTER SMALL CAPITAL A; \textzca (tipa)  
 17429 \DeclareTextCommand{\textzca}{PU}{\9035\000}% U+1D00  
 17430 % U+1D05 LATIN LETTER SMALL CAPITAL D; \scd (wsuipa)  
 17431 \DeclareTextCommand{\textscd}{PU}{\9035\005}% U+1D05  
 17432 % U+1D07 LATIN LETTER SMALL CAPITAL E; \textsce (tipa)  
 17433 \DeclareTextCommand{\textsce}{PU}{\9035\007}% U+1D07  
 17434 % U+1D0A LATIN LETTER SMALL CAPITAL J; \textscj (tipa)  
 17435 \DeclareTextCommand{\textscj}{PU}{\9035\012}% U+1D0A  
 17436 % U+1D0B LATIN LETTER SMALL CAPITAL K; \textsck (tipx)  
 17437 \DeclareTextCommand{\textPUsck}{PU}{\9035\013}% U+1D0B  
 17438 %\* \textPUsck -> \textscj (tipx)  
 17439 % U+1D0D LATIN LETTER SMALL CAPITAL M; \textscm (tipx)  
 17440 \DeclareTextCommand{\textPUscm}{PU}{\9035\015}% U+1D0D  
 17441 %\* \textPUscm -> \textscm (tipx)  
 17442 % U+1D18 LATIN LETTER SMALL CAPITAL P; \textscp (tipx)  
 17443 \DeclareTextCommand{\textPUscp}{PU}{\9035\030}% U+1D18  
 17444 %\* \textPUscp -> \textscp (tipx)  
 17445 % U+1D19 LATIN LETTER SMALL CAPITAL REVERSED R; \textrevscr (tipx)  
 17446 \DeclareTextCommand{\textPUrevscr}{PU}{\9035\031}% U+1D19  
 17447 %\* \textPUrevscr -> \textrevscr (tipx)  
 17448 % U+1D1C LATIN LETTER SMALL CAPITAL U; \textscu (tipa), \scu (wsuipa)  
 17449 \DeclareTextCommand{\textscu}{PU}{\9035\034}% U+1D1C  
 17450 % U+1D62 LATIN SUBSCRIPT SMALL LETTER I  
 17451 \DeclareTextCommand{\textiinferior}{PU}{\9035\142}% U+1D62  
 17452 % U+1D63 LATIN SUBSCRIPT SMALL LETTER R  
 17453 \DeclareTextCommand{\textrinferior}{PU}{\9035\143}% U+1D63  
 17454 % U+1D64 LATIN SUBSCRIPT SMALL LETTER U  
 17455 \DeclareTextCommand{\textuinferior}{PU}{\9035\144}% U+1D64  
 17456 % U+1D65 LATIN SUBSCRIPT SMALL LETTER V  
 17457 \DeclareTextCommand{\textvinferior}{PU}{\9035\145}% U+1D65  
 17458 % U+1D66 GREEK SUBSCRIPT SMALL LETTER BETA  
 17459 \DeclareTextCommand{\textbetainferior}{PU}{\9035\146}% U+1D66  
 17460 % U+1D67 GREEK SUBSCRIPT SMALL LETTER GAMMA  
 17461 \DeclareTextCommand{\textgammainferior}{PU}{\9035\147}% U+1D67  
 17462 % U+1D68 GREEK SUBSCRIPT SMALL LETTER RHO  
 17463 \DeclareTextCommand{\textrhoinferior}{PU}{\9035\150}% U+1D68  
 17464 % U+1D69 GREEK SUBSCRIPT SMALL LETTER PHI

17465 \DeclareTextCommand{\textphiinferior}{PU}{\9035\151}%\* U+1D69  
 17466 % U+1D6A GREEK SUBSCRIPT SMALL LETTER CHI  
 17467 \DeclareTextCommand{\textchiinferior}{PU}{\9035\152}%\* U+1D6A  
 17468 % U+1D7B LATIN SMALL CAPITAL LETTER I WITH STROKE;  
 17469 % \barsci (wsuipa)  
 17470 \DeclareTextCommand{\textbarsci}{PU}{\9035\173}%\* U+1D7B  
 17471 % U+1D7D LATIN SMALL LETTER P WITH STROKE; \barp (wsuipa)  
 17472 \DeclareTextCommand{\textbarp}{PU}{\9035\175}%\* U+1D7D  
 17473 % U+1D7E LATIN SMALL CAPITAL LETTER U WITH STROKE;  
 17474 % \barscu (wsuipa)  
 17475 \DeclareTextCommand{\textbarscu}{PU}{\9035\176}%\* U+1D7E

#### 51.2.14 Phonetic Extensions Supplement: U+1D80 to U+1DBF

17476 % U+1D8F LATIN SMALL LETTER A WITH RETROFLEX HOOK; \tex-  
 trhooka (tipx)  
 17477 \DeclareTextCommand{\textPUrhooka}{PU}{\9035\217}% U+1D8F  
 17478 %\* \textPUrhooka -> \textrhooka (tipx)  
 17479 % U+1D91 LATIN SMALL LETTER D WITH HOOK AND TAIL; \texthtr-  
 taild (tipa)  
 17480 \DeclareTextCommand{\texthtrtaild}{PU}{\9035\221}%\* U+1D91  
 17481 % U+1D92 LATIN SMALL LETTER E WITH RETROFLEX HOOK; \tex-  
 trhooke (tipx)  
 17482 \DeclareTextCommand{\textPUrhooke}{PU}{\9035\222}% U+1D92  
 17483 %\* \textPUrhooke -> \textrhooke (tipx)  
 17484 % U+1D93 LATIN SMALL LETTER OPEN E WITH RETROFLEX HOOK;  
 17485 % \textrhookepsilon (tipx)  
 17486 \DeclareTextCommand{\textPUrhookepsilon}{PU}{\9035\223}% U+1D93  
 17487 %\* \textPUrhookepsilon -> \textrhookepsilon (tipx)  
 17488 % U+1D97 LATIN SMALL LETTER OPEN O WITH RETROFLEX HOOK;  
 17489 % \textrhookopeno (tipx)  
 17490 \DeclareTextCommand{\textPUrhookopeno}{PU}{\9035\227}% U+1D97  
 17491 %\* \textPUrhookopeno -> \textrhookopeno (tipx)

#### 51.2.15 Latin Extended Additional: U+1E00 to U+1EFF

17492 % U+1E00 LATIN CAPITAL LETTER A WITH RING BELOW; Aringbelow  
 17493 \DeclareTextCompositeCommand{\textsubring}{PU}{A}{\9036\000}% U+1E00  
 17494 % U+1E01 LATIN SMALL LETTER A WITH RING BELOW; aringbelow  
 17495 \DeclareTextCompositeCommand{\textsubring}{PU}{a}{\9036\001}% U+1E01  
 17496 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent  
 17497 \DeclareTextCompositeCommand{\.}{PU}{B}{\9036\002}% U+1E02  
 17498 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent  
 17499 \DeclareTextCompositeCommand{\.}{PU}{b}{\9036\003}% U+1E03  
 17500 % U+1E04 LATIN CAPITAL LETTER B WITH DOT BELOW; Bdotbelow  
 17501 \DeclareTextCompositeCommand{\d}{PU}{B}{\9036\004}% U+1E04  
 17502 % U+1E05 LATIN SMALL LETTER B WITH DOT BELOW; bdotbelow  
 17503 \DeclareTextCompositeCommand{\d}{PU}{b}{\9036\005}% U+1E05  
 17504 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow  
 17505 \DeclareTextCompositeCommand{\b}{PU}{B}{\9036\006}% U+1E06  
 17506 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow  
 17507 \DeclareTextCompositeCommand{\b}{PU}{b}{\9036\007}% U+1E07  
 17508 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent  
 17509 \DeclareTextCompositeCommand{\.}{PU}{D}{\9036\012}% U+1E0A  
 17510 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent  
 17511 \DeclareTextCompositeCommand{\.}{PU}{d}{\9036\013}% U+1E0B  
 17512 % U+1E0C LATIN CAPITAL LETTER D WITH DOT BELOW; Ddotbelow  
 17513 \DeclareTextCompositeCommand{\d}{PU}{D}{\9036\014}% U+1E0C  
 17514 % U+1E0D LATIN SMALL LETTER D WITH DOT BELOW; ddotbelow

17515 \DeclareTextCompositeCommand{\d}{PU}{d}{\9036\015}% U+1E0D  
17516 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow  
17517 \DeclareTextCompositeCommand{\b}{PU}{D}{\9036\016}% U+1E0E  
17518 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow  
17519 \DeclareTextCompositeCommand{\b}{PU}{d}{\9036\017}% U+1E0F  
17520 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla  
17521 \DeclareTextCompositeCommand{\c}{PU}{D}{\9036\020}% U+1E10  
17522 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla  
17523 \DeclareTextCompositeCommand{\c}{PU}{d}{\9036\021}% U+1E11  
17524 % U+1E12 LATIN CAPITAL LETTER D WITH CIRCUMFLEX BELOW; Dcir-  
cumflexbelow  
17525 \DeclareTextCompositeCommand{\textsubcircum}{PU}{D}{\9036\022}% U+1E12  
17526 % U+1E13 LATIN SMALL LETTER D WITH CIRCUMFLEX BELOW; dcir-  
cumflexbelow  
17527 \DeclareTextCompositeCommand{\textsubcircum}{PU}{d}{\9036\023}% U+1E13  
17528 % U+1E14 LATIN CAPITAL LETTER E WITH MACRON AND GRAVE;  
17529 % E macrongrave  
17530 \DeclareTextCompositeCommand{\textgravemacron}{PU}{E}{\9036\024}% U+1E14  
17531 % U+1E15 LATIN SMALL LETTER E WITH MACRON AND GRAVE;  
17532 % e macrongrave  
17533 \DeclareTextCompositeCommand{\textgravemacron}{PU}{e}{\9036\025}% U+1E15  
17534 % U+1E16 LATIN CAPITAL LETTER E WITH MACRON AND ACUTE;  
17535 % E macronacute  
17536 \DeclareTextCompositeCommand{\textacutemacron}{PU}{E}{\9036\026}% U+1E16  
17537 % U+1E17 LATIN SMALL LETTER E WITH MACRON AND ACUTE;  
17538 % e macronacute  
17539 \DeclareTextCompositeCommand{\textacutemacron}{PU}{e}{\9036\027}% U+1E17  
17540 % U+1E18 LATIN CAPITAL LETTER E WITH CIRCUMFLEX BELOW; Ecir-  
cumflexbelow  
17541 \DeclareTextCompositeCommand{\textsubcircum}{PU}{E}{\9036\030}% U+1E18  
17542 % U+1E19 LATIN SMALL LETTER E WITH CIRCUMFLEX BELOW; ecir-  
cumflexbelow  
17543 \DeclareTextCompositeCommand{\textsubcircum}{PU}{e}{\9036\031}% U+1E19  
17544 % U+1E1A LATIN CAPITAL LETTER E WITH TILDE BELOW; Etildebelow  
17545 \DeclareTextCompositeCommand{\textsubtilde}{PU}{E}{\9036\032}% U+1E1A  
17546 % U+1E1B LATIN SMALL LETTER E WITH TILDE BELOW; etildebelow  
17547 \DeclareTextCompositeCommand{\textsubtilde}{PU}{e}{\9036\033}% U+1E1B  
17548 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent  
17549 \DeclareTextCompositeCommand{\.}{PU}{F}{\9036\036}% U+1E1E  
17550 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent  
17551 \DeclareTextCompositeCommand{\.}{PU}{f}{\9036\037}% U+1E1F  
17552 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron  
17553 \DeclareTextCompositeCommand{\=}{PU}{G}{\9036\040}% U+1E20  
17554 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron  
17555 \DeclareTextCompositeCommand{\=}{PU}{g}{\9036\041}% U+1E21  
17556 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent  
17557 \DeclareTextCompositeCommand{\.}{PU}{H}{\9036\042}% U+1E22  
17558 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent  
17559 \DeclareTextCompositeCommand{\.}{PU}{h}{\9036\043}% U+1E23  
17560 % U+1E24 LATIN CAPITAL LETTER H WITH DOT BELOW; Hdotbelow  
17561 \DeclareTextCompositeCommand{\d}{PU}{H}{\9036\044}% U+1E24  
17562 % U+1E25 LATIN SMALL LETTER H WITH DOT BELOW; hdotbelow  
17563 \DeclareTextCompositeCommand{\d}{PU}{h}{\9036\045}% U+1E25  
17564 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis  
17565 \DeclareTextCompositeCommand{\"}{PU}{H}{\9036\046}% U+1E26  
17566 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis  
17567 \DeclareTextCompositeCommand{\"}{PU}{h}{\9036\047}% U+1E27



17568 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla  
17569 \DeclareTextCompositeCommand{\c}{PU}{H}{\9036\050}% U+1E28  
17570 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla  
17571 \DeclareTextCompositeCommand{\c}{PU}{h}{\9036\051}% U+1E29  
17572 % U+1E2A LATIN CAPITAL LETTER H WITH BREVE BELOW; Hbrevebelow  
17573 \DeclareTextCompositeCommand{\textsubbreve}{PU}{H}{\9036\052}% U+1E2A  
17574 % U+1E2B LATIN SMALL LETTER H WITH BREVE BELOW; hbrevebelow  
17575 \DeclareTextCompositeCommand{\textsubbreve}{PU}{h}{\9036\053}% U+1E2B  
17576 % U+1E2C LATIN CAPITAL LETTER I WITH TILDE BELOW; Itildebelow  
17577 \DeclareTextCompositeCommand{\textsubtilde}{PU}{I}{\9036\054}% U+1E2C  
17578 % U+1E2D LATIN SMALL LETTER I WITH TILDE BELOW; itildebelow  
17579 \DeclareTextCompositeCommand{\textsubtilde}{PU}{i}{\9036\055}% U+1E2D  
17580 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute  
17581 \DeclareTextCompositeCommand{\'}{PU}{K}{\9036\060}% U+1E30  
17582 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute  
17583 \DeclareTextCompositeCommand{\'}{PU}{k}{\9036\061}% U+1E31  
17584 % U+1E32 LATIN CAPITAL LETTER K WITH DOT BELOW; Kdotbelow  
17585 \DeclareTextCompositeCommand{\d}{PU}{K}{\9036\062}% U+1E32  
17586 % U+1E33 LATIN SMALL LETTER K WITH DOT BELOW; kdotbelow  
17587 \DeclareTextCompositeCommand{\d}{PU}{k}{\9036\063}% U+1E33  
17588 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow  
17589 \DeclareTextCompositeCommand{\b}{PU}{K}{\9036\064}% U+1E34  
17590 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow  
17591 \DeclareTextCompositeCommand{\b}{PU}{k}{\9036\065}% U+1E35  
17592 % U+1E36 LATIN CAPITAL LETTER L WITH DOT BELOW; Ldotbelow  
17593 \DeclareTextCompositeCommand{\d}{PU}{L}{\9036\066}% U+1E36  
17594 % U+1E37 LATIN SMALL LETTER L WITH DOT BELOW; ldotbelow  
17595 \DeclareTextCompositeCommand{\d}{PU}{l}{\9036\067}% U+1E37  
17596 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow  
17597 \DeclareTextCompositeCommand{\b}{PU}{L}{\9036\072}% U+1E3A  
17598 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow  
17599 \DeclareTextCompositeCommand{\b}{PU}{l}{\9036\073}% U+1E3B  
17600 % U+1E3C LATIN CAPITAL LETTER L WITH CIRCUMFLEX BELOW; Lcir-  
cumflexbelow  
17601 \DeclareTextCompositeCommand{\textsubcircum}{PU}{L}{\9036\074}% U+1E3C  
17602 % U+1E3D LATIN SMALL LETTER L WITH CIRCUMFLEX BELOW; lcir-  
cumflexbelow  
17603 \DeclareTextCompositeCommand{\textsubcircum}{PU}{l}{\9036\075}% U+1E3D  
17604 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute  
17605 \DeclareTextCompositeCommand{\'}{PU}{M}{\9036\076}% U+1E3E  
17606 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute  
17607 \DeclareTextCompositeCommand{\'}{PU}{m}{\9036\077}% U+1E3F  
17608 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent  
17609 \DeclareTextCompositeCommand{\.}{PU}{M}{\9036\100}% U+1E40  
17610 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent  
17611 \DeclareTextCompositeCommand{\.}{PU}{m}{\9036\101}% U+1E41  
17612 % U+1E42 LATIN CAPITAL LETTER M WITH DOT BELOW; Mdotbelow  
17613 \DeclareTextCompositeCommand{\d}{PU}{M}{\9036\102}% U+1E42  
17614 % U+1E43 LATIN SMALL LETTER M WITH DOT BELOW; mdotbelow  
17615 \DeclareTextCompositeCommand{\d}{PU}{m}{\9036\103}% U+1E43  
17616 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent  
17617 \DeclareTextCompositeCommand{\.}{PU}{N}{\9036\104}% U+1E44  
17618 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent  
17619 \DeclareTextCompositeCommand{\.}{PU}{n}{\9036\105}% U+1E45  
17620 % U+1E46 LATIN CAPITAL LETTER N WITH DOT BELOW; Ndotbelow  
17621 \DeclareTextCompositeCommand{\d}{PU}{N}{\9036\106}% U+1E46  
17622 % U+1E47 LATIN SMALL LETTER N WITH DOT BELOW; ndotbelow

17623 \DeclareTextCompositeCommand{\d}{PU}{n}{\9036\107}% U+1E47  
17624 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow  
17625 \DeclareTextCompositeCommand{\b}{PU}{N}{\9036\110}% U+1E48  
17626 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow  
17627 \DeclareTextCompositeCommand{\b}{PU}{n}{\9036\111}% U+1E49  
17628 % U+1E4A LATIN CAPITAL LETTER N WITH CIRCUMFLEX BELOW; Ncir-  
cumflexbelow  
17629 \DeclareTextCompositeCommand{\textsubcircum}{PU}{N}{\9036\112}% U+1E4A  
17630 % U+1E4B LATIN SMALL LETTER N WITH CIRCUMFLEX BELOW; ncir-  
cumflexbelow  
17631 \DeclareTextCompositeCommand{\textsubcircum}{PU}{n}{\9036\113}% U+1E4B  
17632 % U+1E50 LATIN CAPITAL LETTER O WITH MACRON AND GRAVE;  
17633 % Omacrongrave  
17634 \DeclareTextCompositeCommand{\textgravemacron}{PU}{O}{\9036\120}% U+1E50  
17635 % U+1E51 LATIN SMALL LETTER O WITH MACRON AND GRAVE;  
17636 % omacrongrave  
17637 \DeclareTextCompositeCommand{\textgravemacron}{PU}{o}{\9036\121}% U+1E51  
17638 % U+1E52 LATIN CAPITAL LETTER O WITH MACRON AND ACUTE;  
17639 % Omacronacute  
17640 \DeclareTextCompositeCommand{\textacutemacron}{PU}{O}{\9036\122}% U+1E52  
17641 % U+1E53 LATIN SMALL LETTER O WITH MACRON AND ACUTE;  
17642 % omacronacute  
17643 \DeclareTextCompositeCommand{\textacutemacron}{PU}{o}{\9036\123}% U+1E53  
17644 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute  
17645 \DeclareTextCompositeCommand{\'}{PU}{P}{\9036\124}% U+1E54  
17646 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute  
17647 \DeclareTextCompositeCommand{\'}{PU}{p}{\9036\125}% U+1E55  
17648 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent  
17649 \DeclareTextCompositeCommand{\.}{PU}{P}{\9036\126}% U+1E56  
17650 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent  
17651 \DeclareTextCompositeCommand{\.}{PU}{p}{\9036\127}% U+1E57  
17652 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent  
17653 \DeclareTextCompositeCommand{\.}{PU}{R}{\9036\130}% U+1E58  
17654 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent  
17655 \DeclareTextCompositeCommand{\.}{PU}{r}{\9036\131}% U+1E59  
17656 % U+1E5A LATIN CAPITAL LETTER R WITH DOT BELOW; Rdotbelow  
17657 \DeclareTextCompositeCommand{\d}{PU}{R}{\9036\132}% U+1E5A  
17658 % U+1E5B LATIN SMALL LETTER R WITH DOT BELOW; rdotbelow  
17659 \DeclareTextCompositeCommand{\d}{PU}{r}{\9036\133}% U+1E5B  
17660 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow  
17661 \DeclareTextCompositeCommand{\b}{PU}{R}{\9036\136}% U+1E5E  
17662 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow  
17663 \DeclareTextCompositeCommand{\b}{PU}{r}{\9036\137}% U+1E5F  
17664 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent  
17665 \DeclareTextCompositeCommand{\.}{PU}{S}{\9036\140}% U+1E60  
17666 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent  
17667 \DeclareTextCompositeCommand{\.}{PU}{s}{\9036\141}% U+1E61  
17668 % U+1E62 LATIN CAPITAL LETTER S WITH DOT BELOW; Sdotbelow  
17669 \DeclareTextCompositeCommand{\d}{PU}{S}{\9036\142}% U+1E62  
17670 % U+1E63 LATIN SMALL LETTER S WITH DOT BELOW; sdotbelow  
17671 \DeclareTextCompositeCommand{\d}{PU}{s}{\9036\143}% U+1E63  
17672 % U+1E6A LATIN CAPITAL LETTER T WITH DOT ABOVE; Tdotaccent  
17673 \DeclareTextCompositeCommand{\.}{PU}{T}{\9036\152}% U+1E6A  
17674 % U+1E6B LATIN SMALL LETTER T WITH DOT ABOVE; tdotaccent  
17675 \DeclareTextCompositeCommand{\.}{PU}{t}{\9036\153}% U+1E6B  
17676 % U+1E6C LATIN CAPITAL LETTER T WITH DOT BELOW; Tdotbelow  
17677 \DeclareTextCompositeCommand{\d}{PU}{T}{\9036\154}% U+1E6C

17678 % U+1E6D LATIN SMALL LETTER T WITH DOT BELOW; tdotbelow  
17679 \DeclareTextCompositeCommand{\d}{PU}{t}{\9036\155}% U+1E6D  
17680 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow  
17681 \DeclareTextCompositeCommand{\b}{PU}{T}{\9036\156}% U+1E6E  
17682 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow  
17683 \DeclareTextCompositeCommand{\b}{PU}{t}{\9036\157}% U+1E6F  
17684 % U+1E70 LATIN CAPITAL LETTER T WITH CIRCUMFLEX BELOW; Tcir-  
cumflexbelow  
17685 \DeclareTextCompositeCommand{\textsubcircum}{PU}{T}{\9036\160}% U+1E70  
17686 % U+1E71 LATIN SMALL LETTER T WITH CIRCUMFLEX BELOW; tcir-  
cumflexbelow  
17687 \DeclareTextCompositeCommand{\textsubcircum}{PU}{t}{\9036\161}% U+1E71  
17688 % U+1E72 LATIN CAPITAL LETTER U WITH DIAERESIS BELOW; Udiere-  
sisbelow  
17689 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{U}{\9036\162}% U+1E72  
17690 % U+1E73 LATIN SMALL LETTER U WITH DIAERESIS BELOW; udiere-  
sisbelow  
17691 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{u}{\9036\163}% U+1E73  
17692 % U+1E74 LATIN CAPITAL LETTER U WITH TILDE BELOW; Utildebelow  
17693 \DeclareTextCompositeCommand{\textsubtilde}{PU}{U}{\9036\164}% U+1E74  
17694 % U+1E75 LATIN SMALL LETTER U WITH TILDE BELOW; utildebelow  
17695 \DeclareTextCompositeCommand{\textsubtilde}{PU}{u}{\9036\165}% U+1E75  
17696 % U+1E76 LATIN CAPITAL LETTER U WITH CIRCUMFLEX BELOW; Ucir-  
cumflexbelow  
17697 \DeclareTextCompositeCommand{\textsubcircum}{PU}{U}{\9036\166}% U+1E76  
17698 % U+1E77 LATIN SMALL LETTER U WITH CIRCUMFLEX BELOW; ucir-  
cumflexbelow  
17699 \DeclareTextCompositeCommand{\textsubcircum}{PU}{u}{\9036\167}% U+1E77  
17700 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde  
17701 \DeclareTextCompositeCommand{\~}{PU}{V}{\9036\174}% U+1E7C  
17702 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde  
17703 \DeclareTextCompositeCommand{\~}{PU}{v}{\9036\175}% U+1E7D  
17704 % U+1E7E LATIN CAPITAL LETTER V WITH DOT BELOW; Vdotbelow  
17705 \DeclareTextCompositeCommand{\d}{PU}{V}{\9036\176}% U+1E7E  
17706 % U+1E7F LATIN SMALL LETTER V WITH DOT BELOW; vdotbelow  
17707 \DeclareTextCompositeCommand{\d}{PU}{v}{\9036\177}% U+1E7F  
17708 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave  
17709 \DeclareTextCompositeCommand{\`}{PU}{W}{\9036\200}% U+1E80  
17710 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave  
17711 \DeclareTextCompositeCommand{\`}{PU}{w}{\9036\201}% U+1E81  
17712 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute  
17713 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\202}% U+1E82  
17714 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute  
17715 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\203}% U+1E83  
17716 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis  
17717 \DeclareTextCompositeCommand{\"}{PU}{W}{\9036\204}% U+1E84  
17718 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis  
17719 \DeclareTextCompositeCommand{\"}{PU}{w}{\9036\205}% U+1E85  
17720 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent  
17721 \DeclareTextCompositeCommand{\.}{PU}{W}{\9036\206}% U+1E86  
17722 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent  
17723 \DeclareTextCompositeCommand{\.}{PU}{w}{\9036\207}% U+1E87  
17724 % U+1E88 LATIN CAPITAL LETTER W WITH DOT BELOW; wdotbelow  
17725 \DeclareTextCompositeCommand{\d}{PU}{W}{\9036\210}% U+1E88  
17726 % U+1E89 LATIN SMALL LETTER W WITH DOT BELOW; wdotbelow  
17727 \DeclareTextCompositeCommand{\d}{PU}{w}{\9036\211}% U+1E89  
17728 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent

17729 \DeclareTextCompositeCommand{\.}{PU}{X}{\9036\212}% U+1E8A  
17730 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent  
17731 \DeclareTextCompositeCommand{\.}{PU}{x}{\9036\213}% U+1E8B  
17732 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis  
17733 \DeclareTextCompositeCommand{\"}{PU}{X}{\9036\214}% U+1E8C  
17734 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis  
17735 \DeclareTextCompositeCommand{\"}{PU}{x}{\9036\215}% U+1E8D  
17736 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent  
17737 \DeclareTextCompositeCommand{\.}{PU}{Y}{\9036\216}% U+1E8E  
17738 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent  
17739 \DeclareTextCompositeCommand{\.}{PU}{y}{\9036\217}% U+1E8F  
17740 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex  
17741 \DeclareTextCompositeCommand{\^}{PU}{Z}{\9036\220}% U+1E90  
17742 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex  
17743 \DeclareTextCompositeCommand{\^}{PU}{z}{\9036\221}% U+1E91  
17744 % U+1E92 LATIN CAPITAL LETTER Z WITH DOT BELOW; Zdotbelow  
17745 \DeclareTextCompositeCommand{\d}{PU}{Z}{\9036\222}% U+1E92  
17746 % U+1E93 LATIN SMALL LETTER Z WITH DOT BELOW; zdotbelow  
17747 \DeclareTextCompositeCommand{\d}{PU}{z}{\9036\223}% U+1E93  
17748 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow  
17749 \DeclareTextCompositeCommand{\b}{PU}{Z}{\9036\224}% U+1E94  
17750 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow  
17751 \DeclareTextCompositeCommand{\b}{PU}{z}{\9036\225}% U+1E95  
17752 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow  
17753 \DeclareTextCompositeCommand{\b}{PU}{h}{\9036\226}% U+1E96  
17754 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis  
17755 \DeclareTextCompositeCommand{\"}{PU}{t}{\9036\227}% U+1E97  
17756 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring  
17757 \DeclareTextCompositeCommand{\r}{PU}{w}{\9036\230}% U+1E98  
17758 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring  
17759 \DeclareTextCompositeCommand{\r}{PU}{y}{\9036\231}% U+1E99  
17760 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdo-  
taccent  
17761 \DeclareTextCompositeCommand{\.}{PU}{\textlongs}{\9036\233}% U+1E9B  
17762 % U+1EA0 LATIN CAPITAL LETTER A WITH DOT BELOW; Adotbelow  
17763 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}% U+1EA0  
17764 % U+1EA1 LATIN SMALL LETTER A WITH DOT BELOW; adotbelow  
17765 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}% U+1EA1  
17766 % U+1EB8 LATIN CAPITAL LETTER E WITH DOT BELOW; Edotbelow  
17767 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}% U+1EB8  
17768 % U+1EB9 LATIN SMALL LETTER E WITH DOT BELOW; edotbelow  
17769 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}% U+1EB9  
17770 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde  
17771 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
17772 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde  
17773 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
17774 % U+1ECA LATIN CAPITAL LETTER I WITH DOT BELOW; Idotbelow  
17775 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}% U+1ECA  
17776 % U+1ECB LATIN SMALL LETTER I WITH DOT BELOW; idotbelow  
17777 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}% U+1ECB  
17778 % U+1ECC LATIN CAPITAL LETTER O WITH DOT BELOW; Odotbelow  
17779 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}% U+1ECC  
17780 % U+1ECD LATIN SMALL LETTER O WITH DOT BELOW; odotbelow  
17781 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}% U+1ECD  
17782 % U+1EE4 LATIN CAPITAL LETTER U WITH DOT BELOW; Udotbelow  
17783 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4  
17784 % U+1EE5 LATIN SMALL LETTER U WITH DOT BELOW; udotbelow

17785 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}% U+1EE5  
 17786 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave  
 17787 \DeclareTextCompositeCommand{\'}{PU}{Y}{\9036\362}% U+1EF2  
 17788 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave  
 17789 \DeclareTextCompositeCommand{\'}{PU}{y}{\9036\363}% U+1EF3  
 17790 % U+1EF4 LATIN CAPITAL LETTER Y WITH DOT BELOW; Ydotbelow  
 17791 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4  
 17792 % U+1EF5 LATIN SMALL LETTER Y WITH DOT BELOW; ydotbelow  
 17793 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}% U+1EF5  
 17794 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde  
 17795 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8  
 17796 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde  
 17797 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9

### 51.2.16 General Punctuation: U+2000 to U+206F

17798 % U+200C ZERO WIDTH NON-JOINER; \*afii61664, zerowidthnonjoiner  
 17799 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C  
 17800 % U+2013 EN DASH; endash  
 17801 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013  
 17802 % U+2014 EM DASH; emdash  
 17803 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014  
 17804 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar  
 17805 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016  
 17806 %\* \textbardbl -> \textdoublevertline (tipa)  
 17807 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 17808 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018  
 17809 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 17810 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019  
 17811 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 17812 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A  
 17813 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 17814 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034}% U+201C  
 17815 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 17816 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035}% U+201D  
 17817 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 17818 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E  
 17819 % U+2020 DAGGER; dagger  
 17820 \DeclareTextCommand{\textdagger}{PU}{\9040\040}%\* U+2020  
 17821 %\* \textdagger -> \dag (LaTeX)  
 17822 % U+2021 DOUBLE DAGGER; daggerdbl; \ddagger (LaTeX)  
 17823 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021  
 17824 %\* \textdaggerdbl -> \ddagger (LaTeX)  
 17825 %\* \textdaggerdbl -> \dag (LaTeX)  
 17826 % U+2022 BULLET; bullet  
 17827 \DeclareTextCommand{\textbullet}{PU}{\9040\042}%\* U+2022  
 17828 % U+2025 TWO DOT LEADER; \hdotfor (MnSymbol)  
 17829 \DeclareTextCommand{\texthdotfor}{PU}{\9040\045}%\* U+2025  
 17830 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 17831 \DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026  
 17832 %\* \textellipsis -> \mathellipsis  
 17833 % U+2030 PER MILLE SIGN; perthousand  
 17834 \DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030  
 17835 % U+2031 PER TEN THOUSAND SIGN  
 17836 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031  
 17837 % U+2032 PRIME; minute; \prime (MnSymbol)  
 17838 \DeclareTextCommand{\textprime}{PU}{\9040\062}%\* U+2032  
 17839 % U+2033 DOUBLE PRIME; \second (mathabx)

17840 \DeclareTextCommand{\textsecond}{PU}{\9040\063}%\* U+2033  
17841 % U+2034 TRIPLE PRIME; \third (mathabx)  
17842 \DeclareTextCommand{\textthird}{PU}{\9040\064}%\* U+2034  
17843 % U+2035 REVERSED PRIME; \backprime (AmS)  
17844 \DeclareTextCommand{\textbackprime}{PU}{\9040\065}%\* U+2035  
17845 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
inglleft  
17846 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071}% U+2039  
17847 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
inglright  
17848 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072}% U+203A  
17849 % U+203B REFERENCE MARK; referencemark  
17850 \DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B  
17851 % U+203D INTERROBANG  
17852 \DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D  
17853 % U+2044 FRACTION SLASH; fraction  
17854 \DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044  
17855 % U+2045 LEFT SQUARE BRACKET WITH QUILL  
17856 \DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045  
17857 % U+2046 RIGHT SQUARE BRACKET WITH QUILL  
17858 \DeclareTextCommand{\textrquill}{PU}{\9040\106}% U+2046  
17859 % U+2052 COMMERCIAL MINUS SIGN  
17860 \DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052  
17861 % U+2056 THREE DOT PUNCTUATION; \lefttherefore (MnSymbol)  
17862 \DeclareTextCommand{\textlefttherefore}{PU}{\9040\126}%\* U+2056  
17863 % U+2057 QUADRUPLE PRIME; \fourth (mathabx)  
17864 \DeclareTextCommand{\textfourth}{PU}{\9040\127}%\* U+2057  
17865 % U+2058 FOUR DOT PUNCTUATION; \diamonddots (MnSymbol)  
17866 \DeclareTextCommand{\textdiamonddots}{PU}{\9040\130}%\* U+2058

### 51.2.17 Superscripts and Subscripts: U+2070 to U+209F

17867 % U+2070 SUPERSCRIPT ZERO; zerosuperior  
17868 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}%\* U+2070  
17869 % U+2071 SUPERSCRIPT LATIN SMALL LETTER I  
17870 \DeclareTextCommand{\textisuperior}{PU}{\9040\161}%\* U+2071  
17871 % U+2074 SUPERSCRIPT FOUR; foursuperior  
17872 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}%\* U+2074  
17873 % U+2075 SUPERSCRIPT FIVE; fivesuperior  
17874 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}%\* U+2075  
17875 % U+2076 SUPERSCRIPT SIX; sixsuperior  
17876 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}%\* U+2076  
17877 % U+2077 SUPERSCRIPT SEVEN; sevensuperior  
17878 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}%\* U+2077  
17879 % U+2078 SUPERSCRIPT EIGHT; eightsuperior  
17880 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170}%\* U+2078  
17881 % U+2079 SUPERSCRIPT NINE; ninesuperior  
17882 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171}%\* U+2079  
17883 % U+207A SUPERSCRIPT PLUS SIGN; plussuperior  
17884 \DeclareTextCommand{\textplussuperior}{PU}{\9040\172}%\* U+207A  
17885 % U+207B SUPERSCRIPT MINUS  
17886 \DeclareTextCommand{\textminussuperior}{PU}{\9040\173}%\* U+207B  
17887 % U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior  
17888 \DeclareTextCommand{\textequalsuperior}{PU}{\9040\174}%\* U+207C  
17889 % U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftsuperior  
17890 \DeclareTextCommand{\textparenleftsuperior}{PU}{\9040\175}%\* U+207D  
17891 % U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightsuperior  
17892 \DeclareTextCommand{\textparenrightsuperior}{PU}{\9040\176}%\* U+207E

17893 % U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior  
17894 \DeclareTextCommand{\textnsuperior}{PU}{\9040\177}%\* U+207F  
17895 % U+2080 SUBSCRIPT ZERO; zeroinferior  
17896 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}%\* U+2080  
17897 % U+2081 SUBSCRIPT ONE; oneinferior  
17898 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201}%\* U+2081  
17899 % U+2082 SUBSCRIPT TWO; twoinferior  
17900 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}%\* U+2082  
17901 % U+2083 SUBSCRIPT THREE; threeinferior  
17902 \DeclareTextCommand{\textthreeminferior}{PU}{\9040\203}%\* U+2083  
17903 % U+2084 SUBSCRIPT FOUR; fourinferior  
17904 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204}%\* U+2084  
17905 % U+2085 SUBSCRIPT FIVE; fiveinferior  
17906 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}%\* U+2085  
17907 % U+2086 SUBSCRIPT SIX; sixinferior  
17908 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}%\* U+2086  
17909 % U+2087 SUBSCRIPT SEVEN; seveninferior  
17910 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}%\* U+2087  
17911 % U+2088 SUBSCRIPT EIGHT; eightinferior  
17912 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}%\* U+2088  
17913 % U+2089 SUBSCRIPT NINE; nineinferior  
17914 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}%\* U+2089  
17915 % U+208A SUBSCRIPT PLUS SIGN  
17916 \DeclareTextCommand{\textplusinferior}{PU}{\9040\212}%\* U+208A  
17917 % U+208B SUBSCRIPT MINUS  
17918 \DeclareTextCommand{\textminusinferior}{PU}{\9040\213}%\* U+208B  
17919 % U+208C SUBSCRIPT EQUALS SIGN  
17920 \DeclareTextCommand{\textequalsinferior}{PU}{\9040\214}%\* U+208C  
17921 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior  
17922 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}%\* U+208D  
17923 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior  
17924 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}%\* U+208E  
17925 % U+2090 LATIN SUBSCRIPT SMALL LETTER A  
17926 \DeclareTextCommand{\textainferior}{PU}{\9040\220}%\* U+2090  
17927 % U+2091 LATIN SUBSCRIPT SMALL LETTER E  
17928 \DeclareTextCommand{\texteinferior}{PU}{\9040\221}%\* U+2091  
17929 % U+2092 LATIN SUBSCRIPT SMALL LETTER O  
17930 \DeclareTextCommand{\textoinferior}{PU}{\9040\222}%\* U+2092  
17931 % U+2093 LATIN SUBSCRIPT SMALL LETTER X  
17932 \DeclareTextCommand{\textxinferior}{PU}{\9040\223}%\* U+2093  
17933 % U+2094 LATIN SUBSCRIPT SMALL LETTER SCHWA  
17934 \DeclareTextCommand{\textschwainferior}{PU}{\9040\224}%\* U+2094  
17935 % U+2095 LATIN SUBSCRIPT SMALL LETTER H  
17936 \DeclareTextCommand{\texthinferior}{PU}{\9040\225}%\* U+2095  
17937 % U+2096 LATIN SUBSCRIPT SMALL LETTER K  
17938 \DeclareTextCommand{\textkinferior}{PU}{\9040\226}%\* U+2096  
17939 % U+2097 LATIN SUBSCRIPT SMALL LETTER L  
17940 \DeclareTextCommand{\textlinferior}{PU}{\9040\227}%\* U+2097  
17941 % U+2098 LATIN SUBSCRIPT SMALL LETTER M  
17942 \DeclareTextCommand{\textminferior}{PU}{\9040\230}%\* U+2098  
17943 % U+2099 LATIN SUBSCRIPT SMALL LETTER N  
17944 \DeclareTextCommand{\textninferior}{PU}{\9040\231}%\* U+2099  
17945 % U+209A LATIN SUBSCRIPT SMALL LETTER P  
17946 \DeclareTextCommand{\textpinferior}{PU}{\9040\232}%\* U+209A  
17947 % U+209B LATIN SUBSCRIPT SMALL LETTER S  
17948 \DeclareTextCommand{\textsinferior}{PU}{\9040\233}%\* U+209B  
17949 % U+209C LATIN SUBSCRIPT SMALL LETTER T

17950 \DeclareTextCommand{\texttinferior}{PU}{\9040\234}%\* U+209C

### 51.2.18 Currency Symbols: U+20A0 to U+20CF

17951 % U+20A1 COLON SIGN; \*colonmonetary, colonsign  
 17952 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1  
 17953 % U+20A4 LIRA SIGN; afii08941, \*lira  
 17954 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4  
 17955 % U+20A6 NAIRA SIGN  
 17956 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6  
 17957 % U+20A7 PESETA SIGN; peseta  
 17958 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7  
 17959 % U+20A9 WON SIGN; won  
 17960 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9  
 17961 % U+20AB DONG SIGN; dong  
 17962 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB  
 17963 % U+20AC EURO SIGN; \*Euro, euro  
 17964 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC  
 17965 %\* \texteuro -> \EurDig (marvosym)  
 17966 %\* \texteuro -> \EURdig (marvosym)  
 17967 %\* \texteuro -> \EurHv (marvosym)  
 17968 %\* \texteuro -> \EURhv (marvosym)  
 17969 %\* \texteuro -> \EurCr (marvosym)  
 17970 %\* \texteuro -> \EURcr (marvosym)  
 17971 %\* \texteuro -> \EurTm (marvosym)  
 17972 %\* \texteuro -> \EURtm (marvosym)  
 17973 %\* \texteuro -> \Eur (marvosym)  
 17974 % U+20B0 GERMAN PENNY SIGN; \Deleatur (marvosym)  
 17975 \DeclareTextCommand{\textDeleatur}{PU}{\9040\260}%\* U+20B0  
 17976 %\* \textDeleatur -> \Denarius (marvosym)  
 17977 % U+20B1 PESO SIGN  
 17978 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1  
 17979 % U+20B2 GUARANI SIGN  
 17980 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

### 51.2.19 Letterlike Symbols: U+2100 to U+214F

17981 % U+2103 DEGREE CELSIUS; centigrade  
 17982 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103  
 17983 % U+210F PLANCK CONSTANT OVER TWO PI; \hslash (AmS)  
 17984 \DeclareTextCommand{\texthslash}{PU}{\9041\017}%\* U+210F  
 17985 % U+2111 BLACK-LETTER CAPITAL I (=imaginary part); Ifraktur; \Im (LaTeX)  
 17986 \DeclareTextCommand{\textIm}{PU}{\9041\021}%\* U+2111  
 17987 % U+2113 SCRIPT SMALL L (=ell, liter); afii61289, lsquare; \ell (LaTeX)  
 17988 \DeclareTextCommand{\textell}{PU}{\9041\023}%\* U+2113  
 17989 % U+2116 NUMERO SIGN; \*afii61352, numero  
 17990 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116  
 17991 % U+2117 SOUND RECORDING COPYRIGHT  
 17992 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117  
 17993 % U+2118 SCRIPT CAPITAL P (=Weierstrass elliptic function);  
 17994 % weierstrass; \wp (LaTeX)  
 17995 \DeclareTextCommand{\textwp}{PU}{\9041\030}%\* U+2118  
 17996 % U+211C BLACK-LETTER CAPITAL R (=real part); Rfraktur; \Re (LaTeX)  
 17997 \DeclareTextCommand{\textRe}{PU}{\9041\034}%\* U+211C  
 17998 % U+211E PRESCRIPTION TAKE; prescription  
 17999 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E  
 18000 % U+2120 SERVICE MARK  
 18001 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120



18002 % U+2122 TRADE MARK SIGN; trademark  
 18003 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122  
 18004 % U+2126 OHM SIGN; Ohm, Omega  
 18005 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126  
 18006 % U+2127 INVERTED OHM SIGN  
 18007 \DeclareTextCommand{\textmho}{PU}{\9041\047}%\* U+2127  
 18008 %\* \textmho -> \agemO (wasysym)  
 18009 % U+2129 TURNED GREEK SMALL LETTER IOTA; \riota (phonetic)  
 18010 \DeclareTextCommand{\textriota}{PU}{\9041\051}%\* U+2129  
 18011 % U+212B ANGSTROM SIGN; angstrom  
 18012 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B  
 18013 % U+212E ESTIMATED SYMBOL; estimated  
 18014 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E  
 18015 %\* \textestimated -> \EstimatedSign (marvosym)  
 18016 %\* \textestimated -> \Ecommerce (marvosym)  
 18017 % U+2132 TURNED CAPITAL F; \Finv (AmS)  
 18018 \DeclareTextCommand{\textFinv}{PU}{\9041\062}%\* U+2132  
 18019 % U+2135 ALEF SYMBOL; aleph; \aleph (LaTeX)  
 18020 \DeclareTextCommand{\textaleph}{PU}{\9041\065}%\* U+2135  
 18021 % U+2136 BET SYMBOL; \beth (AmS, MnSymbol)  
 18022 \DeclareTextCommand{\textbeth}{PU}{\9041\066}%\* U+2136  
 18023 % U+2137 GIMEL SYMBOL; \gimel (AmS, MnSymbol)  
 18024 \DeclareTextCommand{\textgimel}{PU}{\9041\067}%\* U+2137  
 18025 % U+2138 DALET SYMBOL; \daleth (AmS, MnSymbol)  
 18026 \DeclareTextCommand{\textdaleth}{PU}{\9041\070}%\* U+2138  
 18027 % U+213B FACSIMILE SIGN; \fax (marvosym)  
 18028 \DeclareTextCommand{\textfax}{PU}{\9041\073}%\* U+213B  
 18029 % U+2141 TURNED SANS-SERIF CAPITAL G (=game); \Game  
 18030 \DeclareTextCommand{\textGame}{PU}{\9041\101}%\* U+2141  
 18031 % U+214B TURNED AMPERSAND; \invamp (txfonts/pxfonts)  
 18032 \DeclareTextCommand{\textinvamp}{PU}{\9041\113}% U+214B  
 18033 %\* \textinvamp -> \bindnasrepma (stmaryrd)  
 18034 %\* \textinvamp -> \parr (cml)

### 51.2.20 Number Forms: U+2150 to U+218F

18035 % U+2150 VULGAR FRACTION ONE SEVENTH  
 18036 \DeclareTextCommand{\textoneseventh}{PU}{\9041\120}% U+2150  
 18037 % U+2151 VULGAR FRACTION ONE NINTH  
 18038 \DeclareTextCommand{\textoneninth}{PU}{\9041\121}% U+2151  
 18039 % U+2152 VULGAR FRACTION ONE TENTH  
 18040 \DeclareTextCommand{\textonetenth}{PU}{\9041\122}% U+2152  
 18041 % U+2153 VULGAR FRACTION ONE THIRD; onethird  
 18042 \DeclareTextCommand{\textonethird}{PU}{\9041\123}% U+2153  
 18043 % U+2154 VULGAR FRACTION TWO THIRDS; twothirds  
 18044 \DeclareTextCommand{\texttwothirds}{PU}{\9041\124}% U+2154  
 18045 % U+2155 VULGAR FRACTION ONE FIFTH  
 18046 \DeclareTextCommand{\textonefifth}{PU}{\9041\125}% U+2155  
 18047 % U+2156 VULGAR FRACTION TWO FIFTHS  
 18048 \DeclareTextCommand{\texttwofifths}{PU}{\9041\126}% U+2156  
 18049 % U+2157 VULGAR FRACTION THREE FIFTHS  
 18050 \DeclareTextCommand{\textthreelfths}{PU}{\9041\127}% U+2157  
 18051 % U+2158 VULGAR FRACTION FOUR FIFTHS  
 18052 \DeclareTextCommand{\textfourfifths}{PU}{\9041\130}% U+2158  
 18053 % U+2159 VULGAR FRACTION ONE SIXTH  
 18054 \DeclareTextCommand{\textonesixth}{PU}{\9041\131}% U+2159  
 18055 % U+215A VULGAR FRACTION FIVE SIXTHS  
 18056 \DeclareTextCommand{\textfivesixths}{PU}{\9041\132}% U+215A

18057 % U+215B VULGAR FRACTION ONE EIGHTH; oneeighth  
 18058 \DeclareTextCommand{\textoneeighth}{PU}{\9041\133}% U+215B  
 18059 % U+215C VULGAR FRACTION THREE EIGHTHS; threeeighths  
 18060 \DeclareTextCommand{\textthreeeighths}{PU}{\9041\134}% U+215C  
 18061 % U+215D VULGAR FRACTION FIVE EIGHTHS; fiveeighths  
 18062 \DeclareTextCommand{\textfiveeighths}{PU}{\9041\135}% U+215D  
 18063 % U+215E VULGAR FRACTION SEVEN EIGHTHS; seveneighths  
 18064 \DeclareTextCommand{\textseveneighths}{PU}{\9041\136}% U+215E  
 18065 % U+2184 LATIN SMALL LETTER REVERSED C  
 18066 \DeclareTextCommand{\textrevc}{PU}{\9041\204}% U+2184  
 18067 % U+2189 VULGAR FRACTION ZERO THIRDS  
 18068 \DeclareTextCommand{\textzer thirds}{PU}{\9041\211}% U+2189

### 51.2.21 Arrows: U+2190 to U+21FF

18069 % U+2190 LEFTWARDS ARROW; arrowleft  
 18070 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}%\* U+2190  
 18071 % U+2191 UPWARDS ARROW; arrowup  
 18072 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}%\* U+2191  
 18073 % U+2192 RIGHTWARDS ARROW; arrowright  
 18074 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}%\* U+2192  
 18075 %\* \textrightarrow -> \MVRightArrow (marvosym)  
 18076 %\* \textrightarrow -> \MVRightarrow (marvosym)  
 18077 % U+2193 DOWNWARDS ARROW; arrowdown  
 18078 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}%\* U+2193  
 18079 %\* \textdownarrow -> \MVARrowDown (marvosym)  
 18080 %\* \textdownarrow -> \Force (marvosym)  
 18081 % U+2194 LEFT RIGHT ARROW; arrowboth; \leftrightarrow (LaTeX)  
 18082 \DeclareTextCommand{\textleftrightarrow}{PU}{\9041\224}%\* U+2194  
 18083 % U+2195 UP DOWN ARROW; arrowupdn; \updownarrow (LaTeX)  
 18084 \DeclareTextCommand{\textupdownarrow}{PU}{\9041\225}%\* U+2195  
 18085 % U+2196 NORTH WEST ARROW; arrowupleft; \nwarrow (LaTeX)  
 18086 \DeclareTextCommand{\textnwarrow}{PU}{\9041\226}%\* U+2196  
 18087 % U+2197 NORTH EAST ARROW; arrowupright; \nearrow (LaTeX)  
 18088 \DeclareTextCommand{\textnearrow}{PU}{\9041\227}%\* U+2197  
 18089 %\* \textnearrow -> \textglobrise (tipa)  
 18090 % U+2198 SOUTH EAST ARROW; arrowdownright; \searrow (LaTeX)  
 18091 \DeclareTextCommand{\textsearrow}{PU}{\9041\230}%\* U+2198  
 18092 %\* \textsearrow -> \textglobfall (tipa)  
 18093 % U+2199 SOUTH WEST ARROW; arrowdownleft; \swarrow (LaTeX)  
 18094 \DeclareTextCommand{\textswarrow}{PU}{\9041\231}%\* U+2199  
 18095 % U+219A LEFTWARDS ARROW WITH STROKE; \nleftarrow (AmS)  
 18096 \DeclareTextCommand{\textnleftarrow}{PU}{\9041\232}%\* U+219A  
 18097 % U+219B RIGHTWARDS ARROW WITH STROKE; \nrightarrow (AmS)  
 18098 \DeclareTextCommand{\textnrightarrow}{PU}{\9041\233}%\* U+219B  
 18099 % U+219E LEFTWARDS TWO HEADED ARROW; \twoheadleftarrow (AmS)  
 18100 \DeclareTextCommand{\texttwoheadleftarrow}{PU}{\9041\236}%\* U+219E  
 18101 % \ntwoheadleftarrow (txfonts/pxfonts)  
 18102 \DeclareTextCommand{\textntwoheadleftarrow}{PU}{\9041\236\83\070}%\* U+219E U+0338  
 18103 % U+219F UPWARDS TWO HEADED ARROW; \twoheaduparrow (MnSymbol)  
 18104 \DeclareTextCommand{\texttwoheaduparrow}{PU}{\9041\237}%\* U+219F  
 18105 % U+21A0 RIGHTWARDS TWO HEADED ARROW;  
 18106 % \twoheadrightarrow (AmS)  
 18107 \DeclareTextCommand{\texttwoheadrightarrow}{PU}{\9041\240}%\* U+21A0  
 18108 % \ntwoheadrightarrow (txfonts/pxfonts)  
 18109 \DeclareTextCommand{\textntwoheadrightarrow}{PU}{\9041\240\83\070}%\* U+21A0 U+0338  
 18110 % U+21A1 DOWNWARDS TWO HEADED ARROW; \twoheaddownarrow (Mn-  
 Symbol)

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18111 \DeclareTextCommand{\texttwoheaddownarrow}{PU}{\9041\241}%* U+21A1
18112 % U+21A2 LEFTWARDS ARROW WITH TAIL; \leftarrowtail (AmS)
18113 \DeclareTextCommand{\textleftarrowtail}{PU}{\9041\242}%* U+21A2
18114 % U+21A3 RIGHTWARDS ARROW WITH TAIL; \rightarrowtail (AmS)
18115 \DeclareTextCommand{\textrightarrowtail}{PU}{\9041\243}%* U+21A3
18116 % U+21A6 RIGHTWARDS ARROW FROM BAR; \mapsto (LaTeX)
18117 \DeclareTextCommand{\textmapsto}{PU}{\9041\246}%* U+21A6
18118 % U+21A9 LEFTWARDS ARROW WITH HOOK; \hookleftarrow (LaTeX)
18119 \DeclareTextCommand{\texthookleftarrow}{PU}{\9041\251}%* U+21A9
18120 % U+21AA RIGHTWARDS ARROW WITH HOOK; \hookrightarrow (LaTeX)
18121 \DeclareTextCommand{\texthookrightarrow}{PU}{\9041\252}%* U+21AA
18122 % U+21AB LEFTWARDS ARROW WITH LOOP; \looparrowleft (AmS)
18123 \DeclareTextCommand{\textlooparrowleft}{PU}{\9041\253}%* U+21AB
18124 % U+21AC RIGHTWARDS ARROW WITH LOOP; \looparrowright (AmS)
18125 \DeclareTextCommand{\textlooparrowright}{PU}{\9041\254}%* U+21AC
18126 % U+21AE LEFT RIGHT ARROW WITH STROKE; \leftrightharpoonup (AmS)
18127 \DeclareTextCommand{\textleftrightharpoonup}{PU}{\9041\256}%* U+21AE
18128 % U+21AF DOWNWARDS ZIGZAG ARROW; \lightning (stmaryrd)
18129 \DeclareTextCommand{\textlightning}{PU}{\9041\257}%* U+21AF
18130 %* \textlightning -> \Lightning (marvosym)
18131 % U+21B5 DOWNWARDS ARROW WITH CORNER LEFTWARDS;
18132 % \dsh (mathabx)
18133 \DeclareTextCommand{\textdsh}{PU}{\9041\265}%* U+21B5
18134 % U+21B6 ANTICLOCKWISE TOP SEMICIRCLE ARROW;
18135 % \curvearrowleft (AmS)
18136 \DeclareTextCommand{\textcurvearrowleft}{PU}{\9041\266}%* U+21B6
18137 % U+21B7 CLOCKWISE TOP SEMICIRCLE ARROW; \curvearrowright (AmS)
18138 \DeclareTextCommand{\textcurvearrowright}{PU}{\9041\267}%* U+21B7
18139 % U+21BC LEFTWARDS HARPOON WITH BARB UPWARDS; harpoonleft-
    barbut;
18140 % \leftharpoonup (LaTeX)
18141 \DeclareTextCommand{\textleftharpoonup}{PU}{\9041\274}%* U+21BC
18142 % U+21BD LEFTWARDS HARPOON WITH BARB DOWNWARDS;
18143 % \leftharpoondown (LaTeX)
18144 \DeclareTextCommand{\textleftharpoondown}{PU}{\9041\275}%* U+21BD
18145 % U+21BE UPWARDS HARPOON WITH BARB RIGHTWARDS;
18146 % \upharpoonright (AmS)
18147 \DeclareTextCommand{\textupharpoonright}{PU}{\9041\276}%* U+21BE
18148 % U+21BF UPWARDS HARPOON WITH BARB LEFTWARDS;
18149 % \upharpoonleft (AmS)
18150 \DeclareTextCommand{\textupharpoonleft}{PU}{\9041\277}%* U+21BF
18151 % U+21C0 RIGHTWARDS HARPOON WITH BARB UPWARDS; harpoonright-
    barbut
18152 % \rightharpoonup (LaTeX)
18153 \DeclareTextCommand{\textrightharpoonup}{PU}{\9041\300}%* U+21C0
18154 % U+21C1 RIGHTWARDS HARPOON WITH BARB DOWNWARDS;
18155 % \rightharpoondown (LaTeX)
18156 \DeclareTextCommand{\textrightharpoondown}{PU}{\9041\301}%* U+21C1
18157 % U+21C2 DOWNWARDS HARPOON WITH BARB RIGHTWARDS;
18158 % \downharpoonright (AmS)
18159 \DeclareTextCommand{\textdownharpoonright}{PU}{\9041\302}%* U+21C2
18160 % U+21C3 DOWNWARDS HARPOON WITH BARB LEFTWARDS;
18161 % \downharpoonleft (AmS)
18162 \DeclareTextCommand{\textdownharpoonleft}{PU}{\9041\303}%* U+21C3
18163 % U+21C4 RIGHTWARDS ARROW OVER LEFTWARDS ARROW;
18164 % \rightarrowoverleftarrow; \rightleftarrows (MnSymbol)
18165 \DeclareTextCommand{\textrightleftarrows}{PU}{\9041\304}%* U+21C4

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18166 % U+21C5 UPWARDS ARROW LEFTWARDS OF DOWNWARDS ARROW; arrowupleftofdown;  
 18167 % \updownarrows (MnSymbol)  
 18168 \DeclareTextCommand{\textupdownarrows}{PU}{\9041\305}%\* U+21C5  
 18169 % U+21C6 LEFTWARDS ARROW OVER RIGHTWARDS ARROW; arrowleftoverright;  
 18170 % \leftrightarrows (AmS)  
 18171 \DeclareTextCommand{\textleftrightarrows}{PU}{\9041\306}%\* U+21C6  
 18172 % U+21C7 LEFTWARDS PAIRED ARROWS; \leftleftarrows (AmS)  
 18173 \DeclareTextCommand{\textleftleftarrows}{PU}{\9041\307}%\* U+21C7  
 18174 % U+21C8 UPWARDS PAIRED ARROWS; \upuparrows (AmS)  
 18175 \DeclareTextCommand{\textupuparrows}{PU}{\9041\310}%\* U+21C8  
 18176 % U+21C9 RIGHTWARDS PAIRED ARROWS; \rightrightarrows (AmS)  
 18177 \DeclareTextCommand{\textrightarrows}{PU}{\9041\311}%\* U+21C9  
 18178 % U+21CA DOWNWARDS PAIRED ARROWS; \downdownarrows (AmS)  
 18179 \DeclareTextCommand{\textdowndownarrows}{PU}{\9041\312}%\* U+21CA  
 18180 % U+21CB LEFTWARDS HARPOON OVER RIGHTWARDS HARPOON;  
 18181 % \leftrightharpoons (AmS);  
 18182 \DeclareTextCommand{\textleftrightharpoons}{PU}{\9041\313}%\* U+21CB  
 18183 % U+21CC RIGHTWARDS HARPOON OVER LEFTWARDS HARPOON;  
 18184 % \rightleftharpoons (LaTeX, AmS)  
 18185 \DeclareTextCommand{\textrightleftharpoons}{PU}{\9041\314}%\* U+21CC  
 18186 % U+21CD LEFTWARDS DOUBLE ARROW WITH STROKE; arrowleftdblstroke;  
 18187 % \nLeftarrow (AmS)  
 18188 \DeclareTextCommand{\textnLeftarrow}{PU}{\9041\315}%\* U+21CD  
 18189 % U+21CE LEFT RIGHT DOUBLE ARROW WITH STROKE; \nLeftrightarrow (AmS)  
 18190 \DeclareTextCommand{\textnLeftrightarrow}{PU}{\9041\316}%\* U+21CE  
 18191 % U+21CF RIGHTWARDS DOUBLE ARROW WITH STROKE; arrowrightdblstroke;  
 18192 % \nRightarrow (AmS)  
 18193 \DeclareTextCommand{\textnRightarrow}{PU}{\9041\317}%\* U+21CF  
 18194 % U+21D0 LEFTWARDS DOUBLE ARROW; arrowdblleft, arrowleftdbl;  
 18195 % \Leftarrow (LaTeX)  
 18196 \DeclareTextCommand{\textLeftarrow}{PU}{\9041\320}%\* U+21D0  
 18197 % U+21D1 UPWARDS DOUBLE ARROW; arrowdblup; \Uparrow (LaTeX)  
 18198 \DeclareTextCommand{\textUparrow}{PU}{\9041\321}%\* U+21D1  
 18199 % U+21D2 RIGHTWARDS DOUBLE ARROW; arrowdblright, dblarrowright;  
 18200 % \Rightarrow (LaTeX)  
 18201 \DeclareTextCommand{\textRightarrow}{PU}{\9041\322}%\* U+21D2  
 18202 %\* \textRightarrow -> \Conclusion (marvosym)  
 18203 % U+21D3 DOWNWARDS DOUBLE ARROW; arrowdbl down; \Downarrow (LaTeX)  
 18204 \DeclareTextCommand{\textDownarrow}{PU}{\9041\323}%\* U+21D3  
 18205 % U+21D4 LEFT RIGHT DOUBLE ARROW; arrowdblboth;  
 18206 % \Leftrightarrow (LaTeX)  
 18207 \DeclareTextCommand{\textLeftrightarrow}{PU}{\9041\324}%\* U+21D4  
 18208 %\* \textLeftrightarrow -> \Equivalence (marvosym)  
 18209 % U+21D5 UP DOWN DOUBLE ARROW; \Updownarrow (LaTeX)  
 18210 \DeclareTextCommand{\textUpdownarrow}{PU}{\9041\325}%\* U+21D5  
 18211 % U+21D6 NORTH WEST DOUBLE ARROW; \Nwarrow (MnSymbol)  
 18212 \DeclareTextCommand{\textNwarrow}{PU}{\9041\326}%\* U+21D6  
 18213 % U+21D7 NORTH EAST DOUBLE ARROW; \Nearrow (MnSymbol)  
 18214 \DeclareTextCommand{\textNearrow}{PU}{\9041\327}%\* U+21D7  
 18215 % U+21D8 SOUTH EAST DOUBLE ARROW; \Searrow (MnSymbol)  
 18216 \DeclareTextCommand{\textSearrow}{PU}{\9041\330}%\* U+21D8

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18217 % U+21D9 SOUTH WEST DOUBLE ARROW; \Swarrow (MnSymbol)
18218 \DeclareTextCommand{\textSwarrow}{PU}{\9041\331}%* U+21D9
18219 % U+21DA LEFTWARDS TRIPLE ARROW; \Lleftarrow (AmS)
18220 \DeclareTextCommand{\textLleftarrow}{PU}{\9041\332}%* U+21DA
18221 % U+21DB RIGHTWARDS TRIPLE ARROW; \Rrightarrow (MnSymbol)
18222 \DeclareTextCommand{\textRrightarrow}{PU}{\9041\333}%* U+21DB
18223 % U+21DC LEFTWARDS SQUIGGLE ARROW; \leftsquigarrow (mathabx)
18224 \DeclareTextCommand{\textleftsquigarrow}{PU}{\9041\334}%* U+21DC
18225 % U+21DD RIGHTWARDS SQUIGGLE ARROW; \rightsquigarrow (mathabx)
18226 \DeclareTextCommand{\textright squigarrow}{PU}{\9041\335}%* U+21DD
18227 % U+21E0 LEFTWARDS DASHED ARROW; arrowdashleft;
18228 % \dashleftarrow (AmS)
18229 \DeclareTextCommand{\textdashleftarrow}{PU}{\9041\340}%* U+21E0
18230 %* \textdashleftarrow -> \dashedleftarrow (MnSymbol)
18231 % U+21E1 UPWARDS DASHED ARROW; arrowdashup; \dasheduparrow (Mn-
Symbol)
18232 \DeclareTextCommand{\textdasheduparrow}{PU}{\9041\341}%* U+21E1
18233 % U+21E2 RIGHTWARDS DASHED ARROW; arrowdashright; \dashrightar-
row (AmS)
18234 \DeclareTextCommand{\textdashrightarrow}{PU}{\9041\342}%* U+21E2
18235 %* \textdashrightarrow -> \dashedrightarrow (MnSymbol)
18236 % U+21E3 DOWNWARDS DASHED ARROW; arrowdashdown; \dasheddownar-
row (MnSymbol)
18237 \DeclareTextCommand{\textdasheddownarrow}{PU}{\9041\343}%* U+21E3
18238 % U+21E8 RIGHTWARDS WHITE ARROW; \pointer (wasysym)
18239 \DeclareTextCommand{\textpointer}{PU}{\9041\350}%* U+21E8
18240 % U+21F5 DOWNWARDS ARROW LEFTWARDS OF UPWARDS ARROW;
18241 % \downuparrows (MnSymbol)
18242 \DeclareTextCommand{\textdownuparrows}{PU}{\9041\365}%* U+21F5
18243 % U+21FD LEFTWARDS OPEN-HEADED ARROW; \leftarrowtriangle (stmaryrd)
18244 \DeclareTextCommand{\textleftarrowtriangle}{PU}{\9041\375}%* U+21FD
18245 % U+21FE RIGHTWARDS OPEN-HEADED ARROW; \rightarrowtriangle (stmaryrd)
18246 \DeclareTextCommand{\textrightarrowtriangle}{PU}{\9041\376}%* U+21FE
18247 % U+21FF LEFT RIGHT OPEN-HEADED ARROW; \leftrightarrowtrian-
gle (stmaryrd)
18248 \DeclareTextCommand{\textleftrightarrowtriangle}{PU}{\9041\377}%* U+21FF

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### 51.2.22 Mathematical Operators: U+2200 to U+22FF

```

18249 % U+2200 FOR ALL; forall; \forall (LaTeX)
18250 \DeclareTextCommand{\textforall}{PU}{\9042\000}%* U+2200
18251 % U+2201 COMPLEMENT; \complement (AmS)
18252 \DeclareTextCommand{\textcomplement}{PU}{\9042\001}%* U+2201
18253 % U+2202 PARTIAL DIFFERENTIAL; partialdiff; \partial (LaTeX)
18254 \DeclareTextCommand{\textpartial}{PU}{\9042\002}%* U+2202
18255 % U+2203 THERE EXISTS; existential; \exists (LaTeX)
18256 \DeclareTextCommand{\textexists}{PU}{\9042\003}%* U+2203
18257 % U+2204 THERE DOES NOT EXIST; \nexists (AmS)
18258 \DeclareTextCommand{\textnexists}{PU}{\9042\004}%* U+2204
18259 % U+2205 EMPTY SET; emptyset; \emptyset (LaTeX), \varnothing (AmS)
18260 \DeclareTextCommand{\textemptyset}{PU}{\9042\005}%* U+2205
18261 %* \textemptyset -> \varnothing (AmS)
18262 % U+2206 INCREMENT; increment, Deta; \triangle (LaTeX)
18263 \DeclareTextCommand{\texttriangle}{PU}{\9042\006}%* U+2206
18264 % U+2207 NABLA; nabla, gradient; \nabla (LaTeX)
18265 \DeclareTextCommand{\textnabla}{PU}{\9042\007}%* U+2207
18266 % U+2208 ELEMENT OF; element; \in (LaTeX)
18267 \DeclareTextCommand{\textin}{PU}{\9042\010}%* U+2208

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18268 % U+2209 NOT AN ELEMENT OF; notelement, notelementof; \notin (LaTeX)  
18269 \DeclareTextCommand{\textnotin}{PU}{\9042\011}%\* U+2209  
18270 % U+220A SMALL ELEMENT OF; \smallin (mathdesign)  
18271 \DeclareTextCommand{\textsmallin}{PU}{\9042\012}%\* U+220A  
18272 % U+220B CONTAINS AS MEMBER; suchthat; \ni (LaTeX)  
18273 \DeclareTextCommand{\textni}{PU}{\9042\013}%\* U+220B  
18274 %\* \textni -> \owns (mathabx)  
18275 % U+220C DOES NOT CONTAIN AS MEMBER; \notowner (mathabx)  
18276 \DeclareTextCommand{\textnotowner}{PU}{\9042\014}%\* U+220C  
18277 %\* \textnotowner -> \notni (txfonts/pxfonts)  
18278 % U+220D SMALL CONTAINS AS MEMBER; \smallowns (mathdesign)  
18279 \DeclareTextCommand{\textsmallowns}{PU}{\9042\015}%\* U+220D  
18280 % U+220F N-ARY PRODUCT; \prod (LaTeX)  
18281 \DeclareTextCommand{\textprod}{PU}{\9042\017}%\* U+220F  
18282 % U+2210 N-ARY COPRODUCT; \amalg (LaTeX)  
18283 \DeclareTextCommand{\textamalg}{PU}{\9042\020}%\* U+2210  
18284 % U+2211 N-ARY SUMMATION; summation; \sum (LaTeX)  
18285 \DeclareTextCommand{\textsum}{PU}{\9042\021}%\* U+2211  
18286 % U+2212 MINUS SIGN; minus  
18287 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212  
18288 % U+2213 MINUS-OR-PLUS SIGN; minusplus; \mp (LaTeX)  
18289 \DeclareTextCommand{\textmp}{PU}{\9042\023}%\* U+2213  
18290 % U+2214 DOT PLUS; \dotplus (AmS)  
18291 \DeclareTextCommand{\textdotplus}{PU}{\9042\024}%\* U+2214  
18292 % U+2215 DIVISION SLASH; divisionslash; \Divides (marvosym)  
18293 \DeclareTextCommand{\textDivides}{PU}{\9042\025}%\* U+2215  
18294 % \DividesNot (marvosym)  
18295 \DeclareTextCommand{\textDividesNot}{PU}{\9042\025\9040\322}%\* U+2215 U+20D2  
18296 % U+2216 SET MINUS; \setminus (LaTeX)  
18297 \DeclareTextCommand{\textsetminus}{PU}{\9042\026}%\* U+2216  
18298 % U+2217 ASTERISK OPERATOR; asteriskmath; \ast (LaTeX)  
18299 \DeclareTextCommand{\textast}{PU}{\9042\027}%\* U+2217  
18300 % U+2218 RING OPERATOR; \circ (LaTeX)  
18301 \DeclareTextCommand{\textcirc}{PU}{\9042\030}%\* U+2218  
18302 % U+2219 BULLET OPERATOR; bulletoperator; \bullet (LaTeX)  
18303 \DeclareTextCommand{\textbulletoperator}{PU}{\9042\031}% U+2219  
18304 % U+221A SQUARE ROOT; radical  
18305 \DeclareTextCommand{\textsqrt}{PU}{\9042\032}%\* U+221A  
18306 % U+221D PROPORTIONAL TO; proportional; \propto (LaTeX)  
18307 \DeclareTextCommand{\textpropto}{PU}{\9042\035}%\* U+221D  
18308 %\* \textpropto -> \varprop (wasysym)  
18309 % U+221E INFINITY; infinity; \infty (LaTeX)  
18310 \DeclareTextCommand{\textinfty}{PU}{\9042\036}%\* U+221E  
18311 % U+2220 ANGLE; angle; \angle (LaTeX)  
18312 \DeclareTextCommand{\textangle}{PU}{\9042\040}%\* U+2220  
18313 % U+2221 MEASURED ANGLE; \measuredangle (mathabx, MnSymbol)  
18314 \DeclareTextCommand{\textmeasuredangle}{PU}{\9042\041}%\* U+2221  
18315 % U+2222 SPHERICAL ANGLE; \sphericalangle (AmS)  
18316 \DeclareTextCommand{\textsphericalangle}{PU}{\9042\042}%\* U+2222  
18317 %\* \textsphericalangle -> \varangle (wasysym)  
18318 %\* \textsphericalangle -> \Anglesign (marvosym)  
18319 %\* \textsphericalangle -> \AngleSign (marvosym)  
18320 % U+2223 DIVIDES; divides; \mid (LaTeX)  
18321 \DeclareTextCommand{\textmid}{PU}{\9042\043}%\* U+2223  
18322 % U+2224 DOES NOT DIVIDE; \nmid (AmS)  
18323 \DeclareTextCommand{\textnmid}{PU}{\9042\044}%\* U+2224  
18324 %\* \textnmid -> \notdivides (mathabx)

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18325 % U+2225 PARALLEL TO; parallel; \parallel (LaTeX)
18326 \DeclareTextCommand{\textparallel}{PU}{\9042\045}%* U+2225
18327 % U+2226 NOT PARALLEL TO; notparallel; \nparallel (AmS)
18328 \DeclareTextCommand{\textnparallel}{PU}{\9042\046}%* U+2226
18329 %* \textnparallel -> nUpdownline (MnSymbol)
18330 % U+2227 LOGICAL AND; logicaland; \wedge (LaTeX)
18331 \DeclareTextCommand{\textwedge}{PU}{\9042\047}%* U+2227
18332 % \owedge (stmaryrd)
18333 \DeclareTextCommand{\textowedge}{PU}{\9042\047\9040\335}%* U+2227 U+20DD
18334 %* \textowedge -> \varowedge (stmaryrd)
18335 % U+2228 LOGICAL OR; logicalor; \vee (LaTeX)
18336 \DeclareTextCommand{\textvee}{PU}{\9042\050}%* U+2228
18337 % \ovee (stmaryrd)
18338 \DeclareTextCommand{\textovee}{PU}{\9042\050\9040\335}%* U+2228 U+20DD
18339 %* \textovee -> \varovee (stmaryrd)
18340 % U+2229 INTERSECTION; intersection; \cap (LaTeX)
18341 \DeclareTextCommand{\textcap}{PU}{\9042\051}%* U+2229
18342 % U+222A UNION; union; \cup (LaTeX)
18343 \DeclareTextCommand{\textcup}{PU}{\9042\052}%* U+222A
18344 % U+222B INTEGRAL; integral; \int (LaTeX)
18345 \DeclareTextCommand{\textint}{PU}{\9042\053}%* U+222B
18346 %* \textint -> \varint (wasysym)
18347 % U+222C DOUBLE INTEGRAL; dblintegral; \iint (AmS)
18348 \DeclareTextCommand{\textiint}{PU}{\9042\054}%* U+222C
18349 % U+222D TRIPLE INTEGRAL; \iiint (AmS)
18350 \DeclareTextCommand{\textiiint}{PU}{\9042\055}%* U+222D
18351 % U+222E CONTOUR INTEGRAL; contourintegral; \oint (LaTeX)
18352 \DeclareTextCommand{\textoint}{PU}{\9042\056}%* U+222E
18353 %* \textoint -> \varoint (wasysym)
18354 % U+222F SURFACE INTEGRAL; \oiint (wasysym)
18355 \DeclareTextCommand{\textoiint}{PU}{\9042\057}%* U+222F
18356 % U+2232 CLOCKWISE CONTOUR INTEGRAL;
18357 % \ointclockwise (txfonts/pxfonts)
18358 \DeclareTextCommand{\textointclockwise}{PU}{\9042\062}%* U+2232
18359 % U+2233 ANTICLOCKWISE CONTOUR INTEGRAL; \ointctrackwise (tx-
      fonts/pxfonts)
18360 \DeclareTextCommand{\textointctrackwise}{PU}{\9042\063}%* U+2233
18361 % U+2234 THEREFORE; therefore; \therefore (AmS)
18362 \DeclareTextCommand{\texttherefore}{PU}{\9042\064}%* U+2234
18363 %* \texttherefore -> uptherefore (MnSymbol)
18364 % U+2235 BECAUSE; because; \because (AmS)
18365 \DeclareTextCommand{\textbecause}{PU}{\9042\065}%* U+2235
18366 %* \textbecause -> \downtherefore (MnSymbol)
18367 % U+2236 RATIO; \vdotdot (MnSymbol)
18368 \DeclareTextCommand{\textvdotdot}{PU}{\9042\066}%* U+2236
18369 % U+2237 PROPORTION; \squaredots (MnSymbol)
18370 \DeclareTextCommand{\textsquaredots}{PU}{\9042\067}%* U+2237
18371 % U+2238 DOT MINUS; \dotminus (MnSymbol)
18372 \DeclareTextCommand{\textdotminus}{PU}{\9042\070}%* U+2238
18373 %* \textdotminus -> \textdotdiv (mathabx)
18374 % U+2239 EXCESS; \eqcolon (txfonts/pxfonts)
18375 \DeclareTextCommand{\texteqcolon}{PU}{\9042\071}%* U+2239
18376 % U+223C TILDE OPERATOR; similar; \sim (LaTeX)
18377 \DeclareTextCommand{\textsim}{PU}{\9042\074}%* U+223C
18378 %* \textsim -> \AC (wasysym)
18379 % U+223D REVERSED TILDE; reversedtilde; \backsim (AmS)
18380 \DeclareTextCommand{\textbacksim}{PU}{\9042\075}%* U+223D

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18381 % \nbacksim (txfonts/pxfonts)
18382 \DeclareTextCommand{\textnbacksim}{PU}{\9042\075\83\070}%* U+223D U+0338
18383 % U+2240 WREATH PRODUCT; \wr (LaTeX)
18384 \DeclareTextCommand{\textwr}{PU}{\9042\100}%* U+2240
18385 %* \textwr -> \wreath (MnSymbol)
18386 % U+2241 NOT TILDE; \nsim (AmS)
18387 \DeclareTextCommand{\textnsim}{PU}{\9042\101}%* U+2241
18388 % U+2242 MINUS TILDE; \eqsim (MnSymbol)
18389 \DeclareTextCommand{\texteqsim}{PU}{\9042\102}%* U+2242
18390 % \neqsim (MnSymbol)
18391 \DeclareTextCommand{\textneqsim}{PU}{\9042\102\83\070}%* U+2242 U+0338
18392 % U+2243 ASYMPTOTICALLY EQUAL TO; asymptoticallyequal; \simeq (LaTeX)
18393 \DeclareTextCommand{\textsimeq}{PU}{\9042\103}%* U+2243
18394 % U+2244 NOT ASYMPTOTICALLY EQUAL TO; \nsimeq (txfonts/pxfonts)
18395 \DeclareTextCommand{\textnsimeq}{PU}{\9042\104}%* U+2244
18396 % U+2245 APPROXIMATELY EQUAL TO; approximatelyequal; \cong (LaTeX)
18397 \DeclareTextCommand{\textcong}{PU}{\9042\105}%* U+2245
18398 % U+2247 NEITHER APPROXIMATELY NOR ACTUALLY EQUAL TO;
18399 % \ncong (AmS)
18400 \DeclareTextCommand{\textncong}{PU}{\9042\107}%* U+2247
18401 % U+2248 ALMOST EQUAL TO; approxequal; \approx (LaTeX)
18402 \DeclareTextCommand{\textapprox}{PU}{\9042\110}%* U+2248
18403 % U+2249 NOT ALMOST EQUAL TO; \napprox (txfonts/pxfonts)
18404 \DeclareTextCommand{\textnapprox}{PU}{\9042\111}%* U+2249
18405 %* \textnapprox -> \nthickapprox (txfonts/pxfonts)
18406 % U+224A ALMOST EQUAL OR EQUAL TO; \approxeq (AmS)
18407 \DeclareTextCommand{\textapproxeq}{PU}{\9042\112}%* U+224A
18408 % \napproxeq (txfonts/pxfonts)
18409 \DeclareTextCommand{\textnapproxeq}{PU}{\9042\112\83\070}%* U+224A U+0338
18410 % U+224B TRIPLE TILDE; \triplesim (MnSymbol)
18411 \DeclareTextCommand{\texttriplesim}{PU}{\9042\113}%* U+224B
18412 %* \texttriplesim -> \VHF (wasysym)
18413 % \ntriplesim (MnSymbol)
18414 \DeclareTextCommand{\textntriplesim}{PU}{\9042\113\83\070}%* U+224B U+0338
18415 % U+224C ALL EQUAL TO; allequal; \backcong (MnSymbol)
18416 \DeclareTextCommand{\textbackcong}{PU}{\9042\114}%* U+224C
18417 % \nbackcong (MnSymbol)
18418 \DeclareTextCommand{\textnbackcong}{PU}{\9042\114\83\070}%* U+224C U+0338
18419 % U+224D EQUIVALENT TO; \asymp (LaTeX)
18420 \DeclareTextCommand{\textasymp}{PU}{\9042\115}%* U+224D
18421 % \nasymp (txfonts/pxfonts)
18422 \DeclareTextCommand{\textnasymp}{PU}{\9042\115\83\070}%* U+224D U+0338
18423 %* \textnasymp -> \notasympt (mathabx)
18424 % U+224E GEOMETRICALLY EQUIVALENT TO; \Bumpeq (AmS)
18425 \DeclareTextCommand{\textBumpeq}{PU}{\9042\116}%* U+224E
18426 % \nBumpeq (txfonts/pxfonts)
18427 \DeclareTextCommand{\textnBumpeq}{PU}{\9042\116\83\070}%* U+224E U+0338
18428 % U+224F DIFFERENCE BETWEEN; \bumpeq (AmS)
18429 \DeclareTextCommand{\textbumpeq}{PU}{\9042\117}%* U+224F
18430 % \nbumpeq (txfonts/pxfonts)
18431 \DeclareTextCommand{\textnbumpeq}{PU}{\9042\117\83\070}%* U+224F U+0338
18432 % U+2250 APPROACHES THE LIMIT; approaches; \doteq (LaTeX)
18433 \DeclareTextCommand{\textdoteq}{PU}{\9042\120}%* U+2250
18434 % \ndoteq (MnSymbol)
18435 \DeclareTextCommand{\textndoteq}{PU}{\9042\120\83\070}%* U+2250 U+0338
18436 % U+2251 GEOMETRICALLY EQUAL TO; geometricallyequal;

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18437 % \doteqdot (AmS)
18438 \DeclareTextCommand{\textdoteqdot}{PU}{\9042\121}%* U+2251
18439 %* \textdoteqdot -> \Doteq (MnSymbol)
18440 % \nDoteq (MnSymbol)
18441 \DeclareTextCommand{\textnDoteq}{PU}{\9042\121\83\070}%* U+2251 U+0338
18442 % U+2252 APPROXIMATELY EQUAL TO OR THE IMAGE OF; approx-
qualorimage;
18443 % \fallingdotseq (AmS)
18444 \DeclareTextCommand{\textfallingdotseq}{PU}{\9042\122}%* U+2252
18445 % \nfallingdotseq (MnSymbol)
18446 \DeclareTextCommand{\textnfallingdotseq}{PU}{\9042\122\83\070}%* U+2252 U+0338
18447 % U+2253 IMAGE OF OR APPROXIMATELY EQUAL TO; imageorapprox-
matelyequal;
18448 % \risingdotseq (AmS)
18449 \DeclareTextCommand{\textrisingdotseq}{PU}{\9042\123}%* U+2253
18450 % \nrisingdotseq (MnSymbol)
18451 \DeclareTextCommand{\textnrisingdotseq}{PU}{\9042\123\83\070}%* U+2253 U+0338
18452 % U+2254 COLON EQUALS; \colonequals (colonequals)
18453 \DeclareTextCommand{\textcolonequals}{PU}{\9042\124}%* U+2254
18454 % U+2255 EQUALS COLON; \equalscolon (colonequals)
18455 \DeclareTextCommand{\textequalscolon}{PU}{\9042\125}%* U+2255
18456 % U+2256 RING IN EQUAL TO; \eqcirc (AmS)
18457 \DeclareTextCommand{\texteqcirc}{PU}{\9042\126}%* U+2256
18458 % \neqcirc (MnSymbol)
18459 \DeclareTextCommand{\textneqcirc}{PU}{\9042\126\83\070}%* U+2256 U+0338
18460 % U+2257 RING EQUAL TO; \circeq (AmS)
18461 \DeclareTextCommand{\textcirceq}{PU}{\9042\127}%* U+2257
18462 % \ncirceq (MnSymbol)
18463 \DeclareTextCommand{\textncirceq}{PU}{\9042\127\83\070}%* U+2257 U+0338
18464 % U+2259 ESTIMATES; \hateq (MnSymbol)
18465 \DeclareTextCommand{\texthateq}{PU}{\9042\131}%* U+2259
18466 %* \texthateq -> \corresponds (mathabx)
18467 %* \texthateq -> \Corresponds (marvosym)
18468 % \nhateq (MnSymbol)
18469 \DeclareTextCommand{\textnhateq}{PU}{\9042\131\83\070}%* U+2259 U+0338
18470 % U+225C DELTA EQUAL TO; \triangleeq (AmS)
18471 \DeclareTextCommand{\texttriangleeq}{PU}{\9042\134}%* U+225C
18472 % U+2260 NOT EQUAL TO; notequal; \ne (LaTeX), \neq (LaTeX)
18473 \DeclareTextCommand{\textneq}{PU}{\9042\140}%* U+2260
18474 \DeclareTextCommand{\textne}{PU}{\9042\140}%* U+2260
18475 %* \textneq -> \nequal (MnSymbol)
18476 % U+2261 IDENTICAL TO; equivalence; \equiv (LaTeX)
18477 \DeclareTextCommand{\textequiv}{PU}{\9042\141}%* U+2261
18478 %* \textequiv -> \Congruent (marvosym)
18479 % U+2262 NOT IDENTICAL TO; notidentical; \nequiv (txfonts/pxfonts)
18480 \DeclareTextCommand{\textnequiv}{PU}{\9042\142}%* U+2262
18481 %* \textnequiv -> \NotCongruent (marvosym)
18482 %* \textnequiv -> \notequiv (mathabx)
18483 % U+2264 LESS-THAN OR EQUAL TO; lessequal; \le (LaTeX), \leq (LaTeX)
18484 \DeclareTextCommand{\textleq}{PU}{\9042\144}%* U+2264
18485 \DeclareTextCommand{\textle}{PU}{\9042\144}%* U+2264
18486 %* \textleq -> \LessOrEqual (marvosym)
18487 % U+2265 GREATER-THAN OR EQUAL TO; greaterequal;
18488 % \ge (LaTeX), \geq (LaTeX)
18489 \DeclareTextCommand{\textgeq}{PU}{\9042\145}%* U+2265
18490 \DeclareTextCommand{\textge}{PU}{\9042\145}%* U+2265
18491 %* \textgeq -> \LargerOrEqual (marvosym)

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18492 % U+2266 LESS-THAN OVER EQUAL TO; lessorequal; \leqq (AmS)  
 18493 \DeclareTextCommand{\textleqq}{PU}{\9042\146}%\* U+2266  
 18494 % \leqq (txfonts/pxfonts)  
 18495 \DeclareTextCommand{\textnleqq}{PU}{\9042\146\83\070}%\* U+2266 U+0338  
 18496 % U+2267 GREATER-THAN OVER EQUAL TO; greaterorequal; \geqq (AmS)  
 18497 \DeclareTextCommand{\textgeqq}{PU}{\9042\147}%\* U+2267  
 18498 % \ngeqq (txfonts/pxfonts)  
 18499 \DeclareTextCommand{\textngeqq}{PU}{\9042\147\83\070}%\* U+2267 U+0338  
 18500 % U+2268 LESS-THAN BUT NOT EQUAL TO; \lneqq (AmS)  
 18501 \DeclareTextCommand{\textlneqq}{PU}{\9042\150}%\* U+2268  
 18502 % U+2269 GREATER-THAN BUT NOT EQUAL TO; \gneqq (AmS)  
 18503 \DeclareTextCommand{\textgneqq}{PU}{\9042\151}%\* U+2269  
 18504 % U+226A MUCH LESS-THAN; muchless; \ll (LaTeX)  
 18505 \DeclareTextCommand{\textll}{PU}{\9042\152}%\* U+226A  
 18506 % \ll (txfonts/pxfonts)  
 18507 \DeclareTextCommand{\textnll}{PU}{\9042\152\83\070}%\* U+226A U+0338  
 18508 % U+226B MUCH GREATER-THAN; muchgreater; \gg (LaTeX)  
 18509 \DeclareTextCommand{\textgg}{PU}{\9042\153}%\* U+226B  
 18510 % \ngg (txfonts/pxfonts)  
 18511 \DeclareTextCommand{\textngg}{PU}{\9042\153\83\070}%\* U+226B U+0338  
 18512 % U+226C BETWEEN; \between (AmS)  
 18513 \DeclareTextCommand{\textbetween}{PU}{\9042\154}%\* U+226C  
 18514 % U+226E NOT LESS-THAN; notless; \nless (AmS)  
 18515 \DeclareTextCommand{\textnless}{PU}{\9042\156}%\* U+226E  
 18516 % U+226F NOT GREATER-THAN; notgreater; \ngtr (AmS)  
 18517 \DeclareTextCommand{\textngtr}{PU}{\9042\157}%\* U+226F  
 18518 % U+2270 NEITHER LESS-THAN NOR EQUAL TO; notlessnorequal;  
 18519 % \nleq (AmS)  
 18520 \DeclareTextCommand{\textnleq}{PU}{\9042\160}%\* U+2270  
 18521 % U+2271 NEITHER GREATER-THAN NOR EQUAL TO; notgreaternorequal;  
 18522 \DeclareTextCommand{\textngeq}{PU}{\9042\161}%\* U+2271  
 18523 % U+2272 LESS-THAN OR EQUIVALENT TO; lessorequivalent; \lessim (AmS)  
 18524 \DeclareTextCommand{\textlessim}{PU}{\9042\162}%\* U+2272  
 18525 %\* \textlessim -> \apprle (wasysym)  
 18526 % U+2273 GREATER-THAN OR EQUIVALENT TO; greaterorequivalent; \gtrsim (AmS)  
 18527 \DeclareTextCommand{\textgtrsim}{PU}{\9042\163}%\* U+2273  
 18528 %\* \textgtrsim -> \apprge (wasysym)  
 18529 % U+2274 NEITHER LESS-THAN NOR EQUIVALENT TO; \nlessim (txfonts/pxfonts)  
 18530 \DeclareTextCommand{\textnlessim}{PU}{\9042\164}%\* U+2274  
 18531 % U+2275 NEITHER GREATER-THAN NOR EQUIVALENT TO; \ngtrsim (txfonts/pxfonts)  
 18532 \DeclareTextCommand{\textngtrsim}{PU}{\9042\165}%\* U+2275  
 18533 % U+2276 LESS-THAN OR GREATER-THAN; lessorgreater; \lessgtr (AmS)  
 18534 \DeclareTextCommand{\textlessgtr}{PU}{\9042\166}%\* U+2276  
 18535 % U+2277 GREATER-THAN OR LESS-THAN; greaterorless; \gtrless (AmS)  
 18536 \DeclareTextCommand{\textgtrless}{PU}{\9042\167}%\* U+2277  
 18537 % U+2278 NEITHER LESS-THAN NOR GREATER-THAN; \ngtrless (txfonts/pxfonts)  
 18538 \DeclareTextCommand{\textngtrless}{PU}{\9042\170}%\* U+2278  
 18539 % U+2279 NEITHER GREATER-THAN NOR LESS-THAN; \nlessgtr (txfonts/pxfonts)  
 18540 \DeclareTextCommand{\textnlessgtr}{PU}{\9042\171}%\* U+2279  
 18541 % U+227A PRECEDES; precedes; \prec (LaTeX)  
 18542 \DeclareTextCommand{\textprec}{PU}{\9042\172}%\* U+227A

18543 % U+227B SUCCEEDS; succeeds; \succ (LaTeX)  
18544 \DeclareTextCommand{\textsucc}{PU}{\9042\173}%\* U+227B  
18545 % U+227C PRECEDES OR EQUAL TO; \preccurlyeq (AmS)  
18546 \DeclareTextCommand{\textpreccurlyeq}{PU}{\9042\174}%\* U+227C  
18547 % U+227D SUCCEEDS OR EQUAL TO; \succcurlyeq (AmS)  
18548 \DeclareTextCommand{\textsucccurlyeq}{PU}{\9042\175}%\* U+227D  
18549 % U+227E PRECEDES OR EQUIVALENT TO; \precsim (AmS)  
18550 \DeclareTextCommand{\textprecsim}{PU}{\9042\176}%\* U+227E  
18551 % \nprecsim (txfonts/pxfonts)  
18552 \DeclareTextCommand{\textnprecsim}{PU}{\9042\176\83\070}%\* U+227E U+0338  
18553 % U+227F SUCCEEDS OR EQUIVALENT TO; \succsim (AmS)  
18554 \DeclareTextCommand{\textsuccsim}{PU}{\9042\177}%\* U+227F  
18555 % \nsuccsim (txfonts/pxfonts)  
18556 \DeclareTextCommand{\textnsuccsim}{PU}{\9042\177\83\070}%\* U+227F U+0338  
18557 % U+2280 DOES NOT PRECEDE; notprecedes; \nprec (AmS)  
18558 \DeclareTextCommand{\textnprec}{PU}{\9042\200}%\* U+2280  
18559 % U+2281 DOES NOT SUCCEED; notsucceeds; \nsucc (AmS)  
18560 \DeclareTextCommand{\textnsucc}{PU}{\9042\201}%\* U+2281  
18561 % U+2282 SUBSET OF; propersubset; \subset (LaTeX)  
18562 \DeclareTextCommand{\textsubset}{PU}{\9042\202}%\* U+2282  
18563 % U+2283 SUPERSET OF; propersuperset; \supset (LaTeX)  
18564 \DeclareTextCommand{\textsupset}{PU}{\9042\203}%\* U+2283  
18565 % U+2284 NOT A SUBSET OF; notsubset; \nsubset (mathabx)  
18566 \DeclareTextCommand{\textnsubset}{PU}{\9042\204}%\* U+2284  
18567 % U+2285 NOT A SUPERSET OF; notsuperset; \nsupset (mathabx)  
18568 \DeclareTextCommand{\textnsupset}{PU}{\9042\205}%\* U+2285  
18569 % U+2286 SUBSET OF OR EQUAL TO; reflexsubset; \subsetq (LaTeX)  
18570 \DeclareTextCommand{\textsubsetq}{PU}{\9042\206}%\* U+2286  
18571 % U+2287 SUPERSET OF OR EQUAL TO; reflexsuperset; \supsetq (LaTeX)  
18572 \DeclareTextCommand{\textsupsetq}{PU}{\9042\207}%\* U+2287  
18573 % U+2288 NEITHER A SUBSET OF NOR EQUAL TO; \nsubsetq (AmS)  
18574 \DeclareTextCommand{\textnsubsetq}{PU}{\9042\210}%\* U+2288  
18575 % U+2289 NEITHER A SUPERSET OF NOR EQUAL TO; \nsupsetq (AmS)  
18576 \DeclareTextCommand{\textnsupsetq}{PU}{\9042\211}%\* U+2289  
18577 % U+228A SUBSET OF WITH NOT EQUAL TO; subsetnotequal; \subset-  
neq (AmS)  
18578 \DeclareTextCommand{\textsubsetneq}{PU}{\9042\212}%\* U+228A  
18579 % U+228B SUPERSET OF WITH NOT EQUAL TO; supersetnotequal; \supset-  
neq (AmS)  
18580 \DeclareTextCommand{\textsupsetneq}{PU}{\9042\213}%\* U+228B  
18581 % U+228D MULTISSET MULTIPLICATION; \cupdot (MnSymbol)  
18582 \DeclareTextCommand{\textcupdot}{PU}{\9042\215}%\* U+228D  
18583 % U+228E MULTISSET UNION; \cupplus (MnSymbol)  
18584 \DeclareTextCommand{\textcupplus}{PU}{\9042\216}%\* U+228E  
18585 % U+228F SQUARE IMAGE OF; \sqsubset (latexsym, ...)  
18586 \DeclareTextCommand{\textsqsubset}{PU}{\9042\217}%\* U+228F  
18587 % \nsqsubset (txfonts/pxfonts)  
18588 \DeclareTextCommand{\textnsqsubset}{PU}{\9042\217\83\070}%\* U+228F U+0338  
18589 % U+2290 SQUARE ORIGINAL OF; \sqsupset (latexsym, ...)  
18590 \DeclareTextCommand{\textsqsupset}{PU}{\9042\220}%\* U+2290  
18591 % \nsqsupset (txfonts/pxfonts)  
18592 \DeclareTextCommand{\textnsqsupset}{PU}{\9042\220\83\070}%\* U+2290 U+0338  
18593 % U+2291 SQUARE IMAGE OF OR EQUAL TO; \sqsubsetq (LaTeX)  
18594 \DeclareTextCommand{\textsqsubsetq}{PU}{\9042\221}%\* U+2291  
18595 % \nsqsubsetq (txfonts/pxfonts)  
18596 \DeclareTextCommand{\textnsqsubsetq}{PU}{\9042\221\83\070}%\* U+2291 U+0338  
18597 % U+2292 SQUARE ORIGINAL OF OR EQUAL TO; \sqsupsetq (LaTeX)

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18598 \DeclareTextCommand{\textsqsupseteq}{PU}{\9042\222}%* U+2292
18599 % \nsqsupseteq (txfonts/pxfonts)
18600 \DeclareTextCommand{\textnsqsupseteq}{PU}{\9042\222\83\070}%* U+2292 U+0338
18601 % U+2293 SQUARE CAP; \sqcap (LaTeX)
18602 \DeclareTextCommand{\textsqcap}{PU}{\9042\223}%* U+2293
18603 % U+2294 SQUARE CUP; \sqcup (LaTeX)
18604 \DeclareTextCommand{\textsqcup}{PU}{\9042\224}%* U+2294
18605 % U+2295 CIRCLED PLUS; circleplus; \oplus (LaTeX)
18606 \DeclareTextCommand{\textoplus}{PU}{\9042\225}%* U+2295
18607 %* \textoplus -> \varoplus (stmaryrd)
18608 % U+2296 CIRCLED MINUS; minuscircle; \ominus (LaTeX)
18609 \DeclareTextCommand{\textominus}{PU}{\9042\226}%* U+2296
18610 %* \textominus -> \varominus (stmaryrd)
18611 % U+2297 CIRCLED TIMES; circlemultiply; \otimes (LaTeX)
18612 \DeclareTextCommand{\textotimes}{PU}{\9042\227}%* U+2297
18613 %* \textotimes -> \varotimes (stmaryrd)
18614 % U+2298 CIRCLED DIVISION SLASH; \oslash (LaTeX)
18615 \DeclareTextCommand{\textoslash}{PU}{\9042\230}%* U+2298
18616 %* \textoslash -> \varoslash (stmaryrd)
18617 % U+2299 CIRCLED DOT OPERATOR; circle(d?)ot; \odot (LaTeX)
18618 \DeclareTextCommand{\textodot}{PU}{\9042\231}%* U+2299
18619 %* \textodot -> \varodot (stmaryrd)
18620 % U+229A CIRCLED RING OPERATOR; \circledcirc (AmS)
18621 \DeclareTextCommand{\textcircledcirc}{PU}{\9042\232}%* U+229A
18622 %* \textcircledcirc -> \ocirc (mathabx)
18623 %* \textcircledcirc -> \varocircle (stmaryrd)
18624 % U+229B CIRCLED ASTERISK OPERATOR; \circledast (AmS)
18625 \DeclareTextCommand{\textcircledast}{PU}{\9042\233}%* U+229B
18626 %* \textcircledast -> \varoast (stmaryrd)
18627 %* \textcircledast -> \oasterisk (mathabx)
18628 % U+229D CIRCLED DASH; \circleddash (AmS)
18629 \DeclareTextCommand{\textcircleddash}{PU}{\9042\235}%* U+229D
18630 % U+229E SQUARED PLUS; \boxplus (AmS)
18631 \DeclareTextCommand{\textboxplus}{PU}{\9042\236}%* U+229E
18632 % U+229F SQUARED MINUS; \boxminus (AmS)
18633 \DeclareTextCommand{\textboxminus}{PU}{\9042\237}%* U+229F
18634 % U+22A0 SQUARED TIMES; \boxtimes (AmS)
18635 \DeclareTextCommand{\textboxtimes}{PU}{\9042\240}%* U+22A0
18636 % U+22A1 SQUARED DOT OPERATOR; \boxdot (AmS)
18637 \DeclareTextCommand{\textboxdot}{PU}{\9042\241}%* U+22A1
18638 % U+22A2 RIGHT TACK; \vdash (LaTeX)
18639 \DeclareTextCommand{\textvdash}{PU}{\9042\242}%* U+22A2
18640 %* \textvdash -> \rightvdash (MnSymbol)
18641 % U+22A3 LEFT TACK; tackleft; \dashv (LaTeX)
18642 \DeclareTextCommand{\textdashv}{PU}{\9042\243}%* U+22A3
18643 %* \textdashv -> \leftvdash (MnSymbol)
18644 %* \ndashv (mathabx)
18645 \DeclareTextCommand{\textndashv}{PU}{\9042\243\83\070}%* U+22A3 U+0338
18646 %* \textndashv -> \nleftvdash (MnSymbol)
18647 % U+22A4 DOWN TACK (=top); tackdown; \top (LaTeX)
18648 \DeclareTextCommand{\texttop}{PU}{\9042\244}%* U+22A4
18649 %* \texttop -> \downvdash (MnSymbol)
18650 %* \ndownvdash (MnSymbol)
18651 \DeclareTextCommand{\textndownvdash}{PU}{\9042\244\83\070}%* U+22A4 U+0338
18652 % U+22A5 UP TACK (=base, bottom); \bot (LaTeX)
18653 \DeclareTextCommand{\textbot}{PU}{\9042\245}%* U+22A5
18654 %* \textbot -> \upvdash (MnSymbol)

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18655 % \nupvdash (MnSymbol)
18656 \DeclareTextCommand{\textnupvdash}{PU}{\9042\245\83\070}%* U+22A5 U+0338
18657 %* \textnupvdash -> \nperp (MnSymbol)
18658 % U+22A8 TRUE; \vDash (AmS)
18659 \DeclareTextCommand{\textvDash}{PU}{\9042\250}%* U+22A8
18660 %* \textvDash -> \models (LaTeX)
18661 %* \textvDash -> \rightmodels (MnSymbol)
18662 % U+22A9 FORCES; \Vdash (AmS)
18663 \DeclareTextCommand{\textVdash}{PU}{\9042\251}%* U+22A9
18664 %* \textVdash -> \rightVdash (MnSymbol)
18665 % U+22AA TRIPLE VERTICAL BAR RIGHT TURNSTILE; \Vvdash (AmS)
18666 \DeclareTextCommand{\textVvdash}{PU}{\9042\252}%* U+22AA
18667 % \nVdash (mathabx)
18668 \DeclareTextCommand{\textnVdash}{PU}{\9042\252\83\070}%* U+22AA U+0338
18669 % U+22AB DOUBLE VERTICAL BAR DOUBLE RIGHT TURNSTILE;
18670 % \VDash (mathabx)
18671 \DeclareTextCommand{\textVDash}{PU}{\9042\253}%* U+22AB
18672 %* \textVDash -> \rightModels (MnSymbol)
18673 % U+22AC DOES NOT PROVE; \nvdash (AmS)
18674 \DeclareTextCommand{\textnvdash}{PU}{\9042\254}%* U+22AC
18675 %* \textnvdash -> \nrighvDash (MnSymbol)
18676 % U+22AD NOT TRUE; \nVDash (AmS)
18677 \DeclareTextCommand{\textnVDash}{PU}{\9042\255}%* U+22AD
18678 %* \textnVDash -> \nrighmodels (MnSymbol)
18679 %* \textnVDash -> \nmodels (MnSymbol)
18680 % U+22AE DOES NOT FORCE; \nVdash (txfonts/pxfonts)
18681 \DeclareTextCommand{\textnVdash}{PU}{\9042\256}%* U+22AE
18682 %* \textnVdash -> \nrighVdash (MnSymbol)
18683 % U+22AF NEGATED DOUBLE VERTICAL BAR DOUBLE RIGHT TURN-
      STILE; \nVDash (AmS)
18684 \DeclareTextCommand{\textnVDash}{PU}{\9042\257}%* U+22AF
18685 %* \textnVDash -> \nrighModels (MnSymbol)
18686 % U+22B2 NORMAL SUBGROUP OF; \lhd (latexsym, ...)
18687 \DeclareTextCommand{\textlhd}{PU}{\9042\262}%* U+22B2
18688 %* \textlhd -> \lessclosed (MnSymbol)
18689 % U+22B3 CONTAINS AS NORMAL SUBGROUP; \rhd (latexsym, ...)
18690 \DeclareTextCommand{\textrhd}{PU}{\9042\263}%* U+22B3
18691 %* \textrhd -> \gtrclosed (MnSymbol)
18692 % U+22B4 NORMAL SUBGROUP OF OR EQUAL TO; \unlhd (latexsym, ...)
18693 \DeclareTextCommand{\textunlhd}{PU}{\9042\264}%* U+22B4
18694 %* \textunlhd -> \leqclosed (MnSymbol)
18695 %* \textunlhd -> \trianglelefteq (MnSymbol)
18696 % U+22B5 CONTAINS AS NORMAL SUBGROUP OR EQUAL TO; \unrhd (la-
      texsym, ...)
18697 \DeclareTextCommand{\textunrhd}{PU}{\9042\265}%* U+22B5
18698 %* \textunrhd -> \geqclosed (MnSymbol)
18699 %* \textunrhd -> \trianglerighteq (MnSymbol)
18700 % U+22B6 ORIGINAL OF; \multimapdotbothA (txfonts/pxfonts)
18701 \DeclareTextCommand{\textmultimapdotbothA}{PU}{\9042\266}%* U+22B6
18702 % U+22B7 IMAGE OF; \multimapdotbothB (txfonts/pxfonts)
18703 \DeclareTextCommand{\textmultimapdotbothB}{PU}{\9042\267}%* U+22B7
18704 % U+22B8 MULTIMAP; \multimap (AmS, txfonts/pxfonts)
18705 \DeclareTextCommand{\textmultimap}{PU}{\9042\270}%* U+22B8
18706 % U+22BB XOR; \veebar (AmS)
18707 \DeclareTextCommand{\textveebar}{PU}{\9042\273}%* U+22BB
18708 % U+22BC NAND; \barwedge (mathabx)
18709 \DeclareTextCommand{\textbarwedge}{PU}{\9042\274}%* U+22BC

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18710 % U+22C6 STAR OPERATOR; \star (LaTeX)
18711 \DeclareTextCommand{\textstar}{PU}{\9042\306}%* U+22C6
18712 % U+22C7 DIVISION TIMES; \divideontimes (AmS)
18713 \DeclareTextCommand{\textdivideontimes}{PU}{\9042\307}%* U+22C7
18714 % U+22C8 BOWTIE; \bowtie (LaTeX)
18715 \DeclareTextCommand{\textbowtie}{PU}{\9042\310}%* U+22C8
18716 %* \textbowtie -> \Bowtie (wasysym)
18717 % U+22C9 LEFT NORMAL FACTOR SEMIDIRECT PRODUCT; \ltimes (AmS)
18718 \DeclareTextCommand{\textltimes}{PU}{\9042\311}%* U+22C9
18719 % U+22CA RIGHT NORMAL FACTOR SEMIDIRECT PRODUCT;
18720 % \rtimes (AmS)
18721 \DeclareTextCommand{\textrtimes}{PU}{\9042\312}%* U+22CA
18722 % U+22CB LEFT SEMIDIRECT PRODUCT; \leftthreetimes (AmS)
18723 \DeclareTextCommand{\textleftthreetimes}{PU}{\9042\313}%* U+22CB
18724 % U+22CC RIGHT SEMIDIRECT PRODUCT; \rightthreetimes (AmS)
18725 \DeclareTextCommand{\textrightthreetimes}{PU}{\9042\314}%* U+22CC
18726 % U+22CD REVERSED TILDE EQUALS; \backsimeq (AmS)
18727 \DeclareTextCommand{\textbacksimeq}{PU}{\9042\315}%* U+22CD
18728 % \nbacksimeq (txfonts/pxfonts)
18729 \DeclareTextCommand{\textnbacksimeq}{PU}{\9042\315\83\070}%* U+22CD U+0338
18730 % U+22CE CURLY LOGICAL OR; curlyor; \curlyvee (AmS)
18731 \DeclareTextCommand{\textcurlyvee}{PU}{\9042\316}%* U+22CE
18732 %* \textcurlyvee -> \varcurlyvee (stmaryrd)
18733 % U+22CF CURLY LOGICAL AND; curlyand; \curlywedge (AmS)
18734 \DeclareTextCommand{\textcurlywedge}{PU}{\9042\317}%* U+22CF
18735 %* \textcurlywedge -> \varcurlywedge (stmaryrd)
18736 % U+22D0 DOUBLE SUBSET; \Subset (AmS)
18737 \DeclareTextCommand{\textSubset}{PU}{\9042\320}%* U+22D0
18738 % \nSubset (txfonts/pxfonts)
18739 \DeclareTextCommand{\textnSubset}{PU}{\9042\320\83\070}%* U+22D0 U+0338
18740 % U+22D1 DOUBLE SUPERSET; \Supset (AmS)
18741 \DeclareTextCommand{\textSupset}{PU}{\9042\321}%* U+22D1
18742 % \nSupset (txfonts/pxfonts)
18743 \DeclareTextCommand{\textnSupset}{PU}{\9042\321\83\070}%* U+22D1 U+0338
18744 % U+22D2 DOUBLE INTERSECTION; \Cap (AmS)
18745 \DeclareTextCommand{\textCap}{PU}{\9042\322}%* U+22D2
18746 %* \textCap -> \doublecap (mathabx)
18747 % U+22D3 DOUBLE UNION; \Cup (AmS)
18748 \DeclareTextCommand{\textCup}{PU}{\9042\323}%* U+22D3
18749 %* \textCup -> \doublecup (mathabx)
18750 % U+22D4 PITCHFORK; \pitchfork (mathabx)
18751 \DeclareTextCommand{\textpitchfork}{PU}{\9042\324}%* U+22D4
18752 % U+22D6 LESS-THAN WITH DOT; \lessdot (AmS)
18753 \DeclareTextCommand{\textlessdot}{PU}{\9042\326}%* U+22D6
18754 % U+22D7 GREATER-THAN WITH DOT; \gtrdot (AmS)
18755 \DeclareTextCommand{\textgtrdot}{PU}{\9042\327}%* U+22D7
18756 % U+22D8 VERY MUCH LESS-THAN; \lll (AmS)
18757 \DeclareTextCommand{\textlll}{PU}{\9042\330}%* U+22D8
18758 % U+22D9 VERY MUCH GREATER-THAN; \ggg (AmS)
18759 \DeclareTextCommand{\textggg}{PU}{\9042\331}%* U+22D9
18760 % U+22DA LESS-THAN EQUAL TO OR GREATER-THAN; lessequalorgreater;
18761 % \lesseqgtr (AmS)
18762 \DeclareTextCommand{\textlesseqgtr}{PU}{\9042\332}%* U+22DA
18763 % U+22DB GREATER-THAN EQUAL TO OR LESS-THAN; greaterqualorless;
18764 % \gtreqless (AmS)
18765 \DeclareTextCommand{\textgtreqless}{PU}{\9042\333}%* U+22DB
18766 % U+22DE EQUAL TO OR PRECEDES; \curlyeqprec (MnSymbol)

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18767 \DeclareTextCommand{\textcurlyeqprec}{PU}{\9042\336}%* U+22DE
18768 % \ncurlyeqprec (mathabx)
18769 \DeclareTextCommand{\textncurlyeqprec}{PU}{\9042\336\83\070}%* U+22DE U+0338
18770 % U+22DF EQUAL TO OR SUCCEEDS; \curlyeqsucc (MnSymbol)
18771 \DeclareTextCommand{\textcurlyeqsucc}{PU}{\9042\337}%* U+22DF
18772 % \ncurlyeqsucc (mathabx)
18773 \DeclareTextCommand{\textncurlyeqsucc}{PU}{\9042\337\83\070}%* U+22DF U+0338
18774 % U+22E0 DOES NOT PRECEDE OR EQUAL; \npreccurlyeq (txfonts/pxfonts)
18775 \DeclareTextCommand{\textnpreccurlyeq}{PU}{\9042\340}%* U+22E0
18776 % U+22E1 DOES NOT SUCCEED OR EQUAL; \nsucccurlyeq (txfonts/pxfonts)
18777 \DeclareTextCommand{\textnsucccurlyeq}{PU}{\9042\341}%* U+22E1
18778 % U+22E2 NOT SQUARE IMAGE OF OR EQUAL TO; \nsqsubseteq (tx-
      fonts/pxfonts)
18779 \DeclareTextCommand{\textnqsubseteq}{PU}{\9042\342}%* U+22E2
18780 % U+22E3 NOT SQUARE ORIGINAL OF OR EQUAL TO; \nsqsupseteq (tx-
      fonts/pxfonts)
18781 \DeclareTextCommand{\textnqsupseteq}{PU}{\9042\343}%* U+22E3
18782 % U+22E4 SQUARE IMAGE OF OR NOT EQUAL TO; \sqsubsetneq (mathabx)
18783 \DeclareTextCommand{\textsqsubsetneq}{PU}{\9042\344}%* U+22E4
18784 %* \textsqsubsetneq -> \varsqsubsetneq (mathabx)
18785 % U+22E5 SQUARE ORIGINAL OF OR NOT EQUAL TO; \sqsupsetneq (math-
      abx)
18786 \DeclareTextCommand{\textsqsupsetneq}{PU}{\9042\345}%* U+22E5
18787 %* \textsqsupsetneq -> \varsqsupsetneq (mathabx)
18788 % U+22E6 LESS-THAN BUT NOT EQUIVALENT TO; \lnsim (AmS)
18789 \DeclareTextCommand{\textlnsim}{PU}{\9042\346}%* U+22E6
18790 % U+22E7 GREATER-THAN BUT NOT EQUIVALENT TO; \gnsim (AmS)
18791 \DeclareTextCommand{\textgnsim}{PU}{\9042\347}%* U+22E7
18792 % U+22E8 PRECEDES BUT NOT EQUIVALENT TO; \precnsim (AmS)
18793 \DeclareTextCommand{\textprecnsim}{PU}{\9042\350}%* U+22E8
18794 % U+22E9 SUCCEEDS BUT NOT EQUIVALENT TO; \succnsim (AmS)
18795 \DeclareTextCommand{\textsuccnsim}{PU}{\9042\351}%* U+22E9
18796 % U+22EA NOT NORMAL SUBGROUP OF; \ntriangleleft (AmS)
18797 \DeclareTextCommand{\textntriangleleft}{PU}{\9042\352}%* U+22EA
18798 %* \textntriangleleft -> \nlessclosed (MnSymbol)
18799 % U+22EB DOES NOT CONTAIN AS NORMAL SUBGROUP; \ntriangleright
      (AmS)
18800 \DeclareTextCommand{\textntriangleright}{PU}{\9042\353}%* U+22EB
18801 %* \textntriangleright -> \ngtrclosed (MnSymbol)
18802 % U+22EC NOT NORMAL SUBGROUP OF OR EQUAL TO;
18803 % \ntrianglelefteq (AmS)
18804 \DeclareTextCommand{\textntrianglelefteq}{PU}{\9042\354}%* U+22EC
18805 % U+22ED DOES NOT CONTAIN AS NORMAL SUBGROUP OR EQUAL;
18806 % \ntrianglerighteq (AmS)
18807 \DeclareTextCommand{\textntrianglerighteq}{PU}{\9042\355}%* U+22ED
18808 %* \textntrianglerighteq -> \textngeqclosed
18809 % U+22EE VERTICAL ELLIPSIS; ellipsisvertical; \vdots (LaTeX)
18810 \DeclareTextCommand{\textvdots}{PU}{\9042\356}%* U+22EE
18811 % U+22EF MIDLINE HORIZONTAL ELLIPSIS; \cdots (LaTeX)
18812 \DeclareTextCommand{\textcdots}{PU}{\9042\357}%* U+22EF
18813 % U+22F0 UP RIGHT DIAGONAL ELLIPSIS; \udots (MnSymbol)
18814 \DeclareTextCommand{\textudots}{PU}{\9042\360}%* U+22F0
18815 % U+22F1 DOWN RIGHT DIAGONAL ELLIPSIS; \ddots (LaTeX)
18816 \DeclareTextCommand{\textddots}{PU}{\9042\361}%* U+22F1
18817 % U+22F6 ELEMENT OF WITH OVERBAR; \barin (mathabx)
18818 \DeclareTextCommand{\textbarin}{PU}{\9042\366}%* U+22F6

```

### 51.2.23 Miscellaneous Technical: U+2300 to U+23FF

```

18819 % U+2300 DIAMETER SIGN; \diameter (mathabx,wasysym)
18820 \DeclareTextCommand{\textdiameter}{PU}{\9043\000}%* U+2300
18821 % U+2310 REVERSED NOT SIGN; \backneg (MnSymbol)
18822 \DeclareTextCommand{\textbackneg}{PU}{\9043\020}%* U+2310
18823 % U+2311 SQUARE LOZENGE; \wasylozenge (wasysym)
18824 \DeclareTextCommand{\textwasylozenge}{PU}{\9043\021}%* U+2311
18825 % U+2319 TURNED NOT SIGN; \invbackneg (MnSymbol)
18826 \DeclareTextCommand{\textinvbackneg}{PU}{\9043\031}%* U+2319
18827 % U+231A WATCH; \clock (wasysym)
18828 \DeclareTextCommand{\textclock}{PU}{\9043\032}%* U+231A
18829 %* \textclock -> \Clocklogo (marvosym)
18830 %* \textclock -> \ClockLogo (marvosym)
18831 % U+231C TOP LEFT CORNER; \ulcorner (AmS)
18832 \DeclareTextCommand{\textulcorner}{PU}{\9043\034}%* U+231C
18833 % U+231D TOP RIGHT CORNER; \urcorner (AmS)
18834 \DeclareTextCommand{\texturcorner}{PU}{\9043\035}%* U+231D
18835 % U+231E BOTTOM LEFT CORNER; \llcorner (AmS)
18836 \DeclareTextCommand{\textllcorner}{PU}{\9043\036}%* U+231E
18837 % U+231F BOTTOM RIGHT CORNER; \lrcorner (AmS)
18838 \DeclareTextCommand{\textlrcorner}{PU}{\9043\037}%* U+231F
18839 % U+2322 FROWN; \frown (LaTeX)
18840 \DeclareTextCommand{\textfrown}{PU}{\9043\042}%* U+2322
18841 % U+2323 SMILE; \smile (LaTeX)
18842 \DeclareTextCommand{\textsmile}{PU}{\9043\043}%* U+2323
18843 % U+2328 KEYBOARD; \Keyboard (marvosym)
18844 \DeclareTextCommand{\textKeyboard}{PU}{\9043\050}%* U+2328
18845 % U+2329 LEFT-POINTING ANGLE BRACKET; \angleleft; \angle (LaTeX)
18846 \DeclareTextCommand{\textlangle}{PU}{\9043\051}%* U+2329
18847 % U+232A RIGHT-POINTING ANGLE BRACKET; \angleright; \rangle (LaTeX)
18848 \DeclareTextCommand{\textrangle}{PU}{\9043\052}%* U+232A
18849 % U+2339 APL FUNCTIONAL SYMBOL QUAD DIVIDE; \APLinv (wasysym)
18850 \DeclareTextCommand{\textAPLinv}{PU}{\9043\071}%* U+2339
18851 % U+233C APL FUNCTIONAL SYMBOL QUAD CIRCLE; \Tumbler (marvosym)
18852 \DeclareTextCommand{\textTumbler}{PU}{\9043\074}%* U+233C
18853 % U+233D APL FUNCTIONAL SYMBOL CIRCLE STILE; \baro (stmaryrd)
18854 \DeclareTextCommand{\textstmaryrdbaro}{PU}{\9043\075}%* U+233D
18855 %* \textstmaryrdbaro -> \baro (stmaryrd)
18856 % U+233F APL FUNCTIONAL SYMBOL SLASH BAR; \notslash (wasysym)
18857 \DeclareTextCommand{\textnotslash}{PU}{\9043\077}%* U+233F
18858 % U+2340 APL FUNCTIONAL SYMBOL BACKSLASH BAR;
18859 % \notbackslash (wasysym)
18860 \DeclareTextCommand{\textnotbackslash}{PU}{\9043\100}%* U+2340
18861 % U+2342 APL FUNCTIONAL SYMBOL QUAD BACKSLASH; \boxbackslash (mathabx)
18862 \DeclareTextCommand{\textboxbackslash}{PU}{\9043\102}%* U+2342
18863 % U+2347 APL FUNCTIONAL SYMBOL QUAD LEFTWARDS ARROW;
18864 % \APLleftarrowbox (wasysym)
18865 \DeclareTextCommand{\textAPLleftarrowbox}{PU}{\9043\107}%* U+2347
18866 % U+2348 APL FUNCTIONAL SYMBOL QUAD RIGHTWARDS ARROW;
18867 % \APLrightarrowbox (wasysym)
18868 \DeclareTextCommand{\textAPLrightarrowbox}{PU}{\9043\110}%* U+2348
18869 % U+2350 APL FUNCTIONAL SYMBOL QUAD UPWARDS ARROW; \APLuparrowbox (wasysym)
18870 \DeclareTextCommand{\textAPLuparrowbox}{PU}{\9043\120}%* U+2350
18871 % U+2357 APL FUNCTIONAL SYMBOL QUAD DOWNWARDS ARROW;

```



18872 % \APLdownarrowbox (wasysym)  
 18873 \DeclareTextCommand{\textAPLdownarrowbox}{PU}{\9043\127}%\* U+2357  
 18874 % U+235E APL FUNCTIONAL SYMBOL QUOTE QUAD;  
 18875 % \APLinput (wasysym)  
 18876 \DeclareTextCommand{\textAPLinput}{PU}{\9043\136}%\* U+235E  
 18877 % U+2370 APL FUNCTIONAL SYMBOL QUAD QUESTION; \Request (china2e)  
 18878 \DeclareTextCommand{\textRequest}{PU}{\9043\160}%\* U+2370  
 18879 % U+2393 DIRECT CURRENT SYMBOL FORM TWO; \Beam (marvosym)  
 18880 \DeclareTextCommand{\textBeam}{PU}{\9043\223}%\* U+2393  
 18881 % U+2394 SOFTWARE-FUNCTION SYMBOL; \hexagon (wasysym)  
 18882 \DeclareTextCommand{\texthexagon}{PU}{\9043\224}%\* U+2394  
 18883 % U+2395 APL FUNCTIONAL SYMBOL QUAD; \APLbox (wasysym)  
 18884 \DeclareTextCommand{\textAPLbox}{PU}{\9043\225}%\* U+2395  
 18885 % U+23ED BLACK RIGHT-POINTING DOUBLE TRIANGLE WITH VERTI-  
 CAL BAR;  
 18886 % \ForwardToIndex (marvosym)  
 18887 \DeclareTextCommand{\textForwardToIndex}{PU}{\9043\355}%\* U+23ED  
 18888 % U+23EE BLACK LEFT-POINTING DOUBLE TRIANGLE WITH VERTI-  
 CAL BAR;  
 18889 % \RewindToIndex (marvosym)  
 18890 \DeclareTextCommand{\textRewindToIndex}{PU}{\9043\356}%\* U+23EE

#### 51.2.24 Control Pictures: U+2400 to U+243F

18891 % U+2422 BLANK SYMBOL  
 18892 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422  
 18893 % U+2423 OPEN BOX; blank  
 18894 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

#### 51.2.25 Optical Character Recognition: U+2440 to U+245F

18895 % U+244A OCR DOUBLE BACKSLASH; \bbslash (stmaryrd)  
 18896 \DeclareTextCommand{\textbbslash}{PU}{\9044\112}%\* U+244A  
 18897 %\* \textbbslash -> \varparallelinv (txfonts/pxfonts)

#### 51.2.26 Enclosed Alphanumerics: U+2460 to U+24FF

18898 % U+2460 CIRCLED DIGIT ONE; onecircle  
 18899 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460  
 18900 % U+2461 CIRCLED DIGIT TWO; twocircle  
 18901 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461  
 18902 % U+2462 CIRCLED DIGIT THREE; threecircle  
 18903 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462  
 18904 % U+2463 CIRCLED DIGIT FOUR; fourcircle  
 18905 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463  
 18906 % U+2464 CIRCLED DIGIT FIVE; fivecircle  
 18907 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464  
 18908 % U+2465 CIRCLED DIGIT SIX; sixcircle  
 18909 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465  
 18910 % U+2466 CIRCLED DIGIT SEVEN; sevendigit  
 18911 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466  
 18912 % U+2467 CIRCLED DIGIT EIGHT; eightcircle  
 18913 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467  
 18914 % U+2468 CIRCLED DIGIT NINE; ninecircle  
 18915 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468  
 18916 % U+2469 CIRCLED NUMBER TEN; tencircle  
 18917 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469  
 18918 % U+246A CIRCLED NUMBER ELEVEN; elevencircle  
 18919 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A  
 18920 % U+246B CIRCLED NUMBER TWELVE; twelvecircle

18921 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B  
 18922 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle  
 18923 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C  
 18924 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle  
 18925 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D  
 18926 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle  
 18927 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E  
 18928 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle  
 18929 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F  
 18930 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle  
 18931 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470  
 18932 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle  
 18933 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471  
 18934 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle  
 18935 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472  
 18936 % U+2473 CIRCLED NUMBER TWENTY; twentycircle  
 18937 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473  
 18938 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle  
 18939 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6  
 18940 % \CircledA (marvosym)  
 18941 \DeclareTextCommand{\textCircledA}{PU}{\9044\266}%\* U+24B6  
 18942 %\* \textCircledA -> \CleaningA  
 18943 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle  
 18944 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7  
 18945 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle  
 18946 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8  
 18947 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle  
 18948 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9  
 18949 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle  
 18950 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA  
 18951 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle  
 18952 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB  
 18953 % \CleaningF (marvosym)  
 18954 \DeclareTextCommand{\textCleaningF}{PU}{\9044\273}%\* U+24BB  
 18955 % \CleaningFF (marvosym)  
 18956 \DeclareTextCommand{\textCleaningFF}{PU}{\9044\273\83\062}%\* U+24BB U+0332  
 18957 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle  
 18958 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC  
 18959 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle  
 18960 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD  
 18961 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle  
 18962 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE  
 18963 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle  
 18964 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF  
 18965 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle  
 18966 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0  
 18967 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle  
 18968 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1  
 18969 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle  
 18970 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2  
 18971 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle  
 18972 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3  
 18973 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle  
 18974 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4  
 18975 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle  
 18976 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5  
 18977 % \CleaningP (marvosym)

18978 \DeclareTextCommand{\textCleaningP}{PU}{\9044\305}%\* U+24C5  
 18979 % \CleaningPP (marvosym)  
 18980 \DeclareTextCommand{\textCleaningPP}{PU}{\9044\305\83\062}%\* U+24C5 U+0332  
 18981 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle  
 18982 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6  
 18983 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle  
 18984 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7  
 18985 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle  
 18986 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8  
 18987 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle  
 18988 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9  
 18989 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle  
 18990 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA  
 18991 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle  
 18992 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB  
 18993 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle  
 18994 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC  
 18995 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle  
 18996 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD  
 18997 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle  
 18998 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE  
 18999 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle  
 19000 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF  
 19001 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle  
 19002 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0  
 19003 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle  
 19004 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1  
 19005 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle  
 19006 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2  
 19007 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle  
 19008 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3  
 19009 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle  
 19010 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4  
 19011 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle  
 19012 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5  
 19013 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle  
 19014 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6  
 19015 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle  
 19016 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7  
 19017 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle  
 19018 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8  
 19019 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcircle  
 19020 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9  
 19021 % U+24DA CIRCLED LATIN SMALL LETTER K; kcircle  
 19022 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA  
 19023 % U+24DB CIRCLED LATIN SMALL LETTER L; lcircle  
 19024 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB  
 19025 % U+24DC CIRCLED LATIN SMALL LETTER M; mcircle  
 19026 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC  
 19027 % U+24DD CIRCLED LATIN SMALL LETTER N; ncircle  
 19028 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD  
 19029 % U+24DE CIRCLED LATIN SMALL LETTER O; ocircle  
 19030 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE  
 19031 % U+24DF CIRCLED LATIN SMALL LETTER P; pcircle  
 19032 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF  
 19033 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcircle  
 19034 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0

```

19035 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcircle
19036 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1
19037 % U+24E2 CIRCLED LATIN SMALL LETTER S; scircle
19038 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2
19039 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcircle
19040 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3
19041 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucircle
19042 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4
19043 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcircle
19044 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5
19045 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcircle
19046 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6
19047 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcircle
19048 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7
19049 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycircle
19050 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8
19051 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcircle
19052 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9
19053 % U+24EA CIRCLED DIGIT ZERO
19054 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

```

### 51.2.27 Box Drawing: U+2500 to 257F

```

19055 % U+2504 BOX DRAWINGS LIGHT TRIPLE DASH HORIZONTAL; \Cutting-
      Line (marvosym)
19056 \DeclareTextCommand{\textCuttingLine}{PU}{\9045\004}%* U+2504
19057 %* \textCuttingLine -> \Kutline (marvosym)
19058 %* \textCuttingLine -> \CutLine (marvosym)
19059 %* \textCuttingLine -> \Cutline (marvosym)

```

### 51.2.28 Geometric Shapes: U+25A0 to U+25FF

```

19060 % U+25B2 BLACK UP-POINTING TRIANGLE; \UParrow (wasysym)
19061 \DeclareTextCommand{\textUParrow}{PU}{\9045\262}%* U+25B2
19062 %* \textUParrow -> \MoveUp (marvosym)
19063 % U+25B3 WHITE UP-POINTING TRIANGLE; whiteuppointingtriangle;
19064 % \bigtriangleup (LaTeX)
19065 \DeclareTextCommand{\textbigtriangleup}{PU}{\9045\263}%* U+25B3
19066 %* \textbigtriangleup -> \APLup (wasysym)
19067 %* \textbigtriangleup -> \Bleech (marvosym)
19068 % U+25B6 BLACK RIGHT-POINTING TRIANGLE; \Forward (marvosym)
19069 \DeclareTextCommand{\textForward}{PU}{\9045\266}%* U+25B6
19070 % U+25B7 WHITE RIGHT-POINTING TRIANGLE (= z notation range restric-
      tion);
19071 % whiterightpointingtriangle; \triangleright (LaTeX)
19072 \DeclareTextCommand{\texttriangleright}{PU}{\9045\267}%* U+25B7
19073 % U+25BA BLACK RIGHT-POINTING POINTER; \RHD (wasysym)
19074 \DeclareTextCommand{\textRHD}{PU}{\9045\272}%* U+25BA
19075 % U+25BC BLACK DOWN-POINTING TRIANGLE; \DOWNarrow (wasysym)
19076 \DeclareTextCommand{\textDOWNarrow}{PU}{\9045\274}%* U+25BC
19077 %* \textDOWNarrow -> \MoveDown (marvosym)
19078 % U+25BD WHITE DOWN-POINTING TRIANGLE; whitedownpointingtri-
      angle;
19079 % \bigtriangledown (LaTeX)
19080 \DeclareTextCommand{\textbigtriangledown}{PU}{\9045\275}%* U+25BD
19081 %* \textbigtriangledown -> \APLdown (wasysym)
19082 % U+25C0 BLACK LEFT-POINTING TRIANGLE; \Rewind (marvosym)
19083 \DeclareTextCommand{\textRewind}{PU}{\9045\300}%* U+25C0

```

19084 % U+25C1 WHITE RIGHT-POINTING TRIANGLE (= z notation domain restriction);  
19085 % whiteleftpointingtriangle; \triangleleft (LaTeX)  
19086 \DeclareTextCommand{\texttriangleleft}{PU}{\9045\301}%\* U+25C1  
19087 % U+25C4 BLACK LEFT-POINTING POINTER; \LHD (wasysym)  
19088 \DeclareTextCommand{\textLHD}{PU}{\9045\304}%\* U+25C4  
19089 % U+25C7 WHITE DIAMOND; whitediamond; \diamond (LaTeX)  
19090 \DeclareTextCommand{\textdiamond}{PU}{\9045\307}%\* U+25C7  
19091 %\* \textdiamond -> \Diamond (wasysym)  
19092 % U+25CA LOZENGE; lozenge; \lozenge (AmS)  
19093 \DeclareTextCommand{\textlozenge}{PU}{\9045\312}%\* U+25CA  
19094 % U+25D6 LEFT HALF BLACK CIRCLE; \LEFTCIRCLE (wasysym)  
19095 \DeclareTextCommand{\textLEFTCIRCLE}{PU}{\9045\326}%\* U+25D6  
19096 % U+25D7 RIGHT HALF BLACK CIRCLE; \RIGHTCIRCLE (wasysym)  
19097 \DeclareTextCommand{\textRIGHTCIRCLE}{PU}{\9045\327}%\* U+25D7  
19098 % U+25E6 WHITE BULLET; \*openbullet, whitebullet  
19099 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}%\* U+25E6  
19100 % U+25EB WHITE SQUARE WITH VERTICAL BISECTING LINE;  
19101 % \boxbar (stmaryrd)  
19102 \DeclareTextCommand{\textboxbar}{PU}{\9045\353}%\* U+25EB  
19103 % U+25EF LARGE CIRCLE; largecircle  
19104 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}%\* U+25EF  
19105 %\* \textbigcircle -> \varbigcirc (stmaryrd)  
19106 %

### 51.2.29 Miscellaneous Symbols: U+2600 to U+26FF

19107 % U+2601 CLOUD; \Cloud (ifsym)  
19108 \DeclareTextCommand{\textCloud}{PU}{\9046\001}%\* U+2601  
19109 % U+2605 BLACK STAR; \FiveStar (bding)  
19110 \DeclareTextCommand{\textFiveStar}{PU}{\9046\005}%\* U+2605  
19111 % U+2606 WHITE STAR; \FiveStarOpen (bding)  
19112 \DeclareTextCommand{\textFiveStarOpen}{PU}{\9046\006}%\* U+2606  
19113 % U+260E BLACK TELEPHONE; telephoneblack; \Phone (bding)  
19114 \DeclareTextCommand{\textPhone}{PU}{\9046\016}%\* U+260E  
19115 %\* \textPhone -> \Telefon (marvosym)  
19116 % U+2610 BALLOT BOX; \boxempty (stmaryrd)  
19117 \DeclareTextCommand{\textboxempty}{PU}{\9046\020}%\* U+2610  
19118 %\* \textboxempty -> \Box (wasysym)  
19119 % U+2611 BALLOT BOX WITH CHECK; \Checkedbox (marvosym)  
19120 \DeclareTextCommand{\textCheckedbox}{PU}{\9046\021}%\* U+2611  
19121 %\* \textCheckedbox -> \CheckedBox (marvosym)  
19122 % U+2612 BALLOT BOX WITH X; \Crossedbox (marvosym)  
19123 \DeclareTextCommand{\textCrossedbox}{PU}{\9046\022}%\* U+2612  
19124 %\* \textCrossedbox -> \XBox (wasysym)  
19125 %\* \textCrossedbox -> \CrossedBox (marvosym)  
19126 % U+2615 HOT BEVERAGE; \Coffeecup (marvosym)  
19127 \DeclareTextCommand{\textCoffeecup}{PU}{\9046\025}%\* U+2615  
19128 % U+261A BLACK LEFT POINTING INDEX; \HandCuffLeft (bding)  
19129 \DeclareTextCommand{\textHandCuffLeft}{PU}{\9046\032}%\* U+261A  
19130 % U+261B BLACK RIGHT POINTING INDEX; \HandCuffRight (bding)  
19131 \DeclareTextCommand{\textHandCuffRight}{PU}{\9046\033}%\* U+261B  
19132 % U+261C WHITE LEFT POINTING INDEX; \HandLeft (bding)  
19133 \DeclareTextCommand{\textHandLeft}{PU}{\9046\034}%\* U+261C  
19134 %\* \textHandLeft -> \rightpointleft (fourier)  
19135 % U+261E WHITE RIGHT POINTING INDEX; \HandRight (bding)  
19136 \DeclareTextCommand{\textHandRight}{PU}{\9046\036}%\* U+261E  
19137 %\* \textHandRight -> \leftpointright (fourier)

19138 %\* \textHandRight -> \PointingHand (marvosym)  
 19139 %\* \textHandRight -> \Pointinghand (marvosym)  
 19140 % U+2622 RADIOACTIVE SIGN; \Radioactivity (marvosym)  
 19141 \DeclareTextCommand{\textRadioactivity}{PU}{\9046\042}%\* U+2622  
 19142 %\* \textRadioactivity -> \Radiation (ifsym)  
 19143 % U+2623 BIOHAZARD SIGN; \Biohazard (marvosym)  
 19144 \DeclareTextCommand{\textBiohazard}{PU}{\9046\043}%\* U+2623  
 19145 % U+2625 ANKH; \Ankh (marvosym)  
 19146 \DeclareTextCommand{\textAnkh}{PU}{\9046\045}%\* U+2625  
 19147 % U+262F YIN YANG; \YinYang (marvosym)  
 19148 \DeclareTextCommand{\textYinYang}{PU}{\9046\057}%\* U+262F  
 19149 %\* \textYinYang -> \Yinyang (marvosym)  
 19150 %\* \textYinYang -> \YingYang (marvosym)  
 19151 %\* \textYinYang -> \Yingyang (marvosym)  
 19152 % U+2639 WHITE FROWNING FACE; \frownie (wasysym)  
 19153 \DeclareTextCommand{\textfrownie}{PU}{\9046\071}%\* U+2639  
 19154 %\* \textfrownie -> \Frowny (marvosym)  
 19155 % U+263A WHITE SMILING FACE; \smiley (wasysym)  
 19156 \DeclareTextCommand{\textsmiley}{PU}{\9046\072}%\* U+263A  
 19157 %\* \textsmiley -> \Smiley (marvosym)  
 19158 % U+263B BLACK SMILING FACE; \blacksmiley (wasysym)  
 19159 \DeclareTextCommand{\textblacksmiley}{PU}{\9046\073}%\* U+263B  
 19160 % U+263C WHITE SUN WITH RAYS; \sun (wasysym)  
 19161 \DeclareTextCommand{\textsun}{PU}{\9046\074}%\* U+263C  
 19162 %\* \textsun -> \Sun (marvosym)  
 19163 % U+263D FIRST QUARTER MOON; \leftmoon (wasysym, mathabx)  
 19164 \DeclareTextCommand{\textleftmoon}{PU}{\9046\075}%\* U+263D  
 19165 % U+263E LAST QUARTER MOON; \rightmoon (wasysym, mathabx)  
 19166 \DeclareTextCommand{\textrightmoon}{PU}{\9046\076}%\* U+263E  
 19167 % U+263F MERCURY; \mercury (wasysym)  
 19168 \DeclareTextCommand{\textmercury}{PU}{\9046\077}%\* U+263F  
 19169 %\* \textmercury -> \Mercury (marvosym)  
 19170 % U+2640 FEMALE SIGN; female; \female (wasysym)  
 19171 \DeclareTextCommand{\textPUfemale}{PU}{\9046\100}% U+2640  
 19172 %\* \textPUfemale -> \textfemale (tipx)  
 19173 %\* \textPUfemale -> \female (wasysym)  
 19174 %\* \textPUfemale -> \venus (wasysym)  
 19175 %\* \textPUfemale -> \Venus (marvosym)  
 19176 %\* \textPUfemale -> \Female (marvosym)  
 19177 % U+2641 EARTH; \earth (wasysym)  
 19178 \DeclareTextCommand{\textearth}{PU}{\9046\101}%\* U+2641  
 19179 %\* \textearth -> \Earth (marvosym)  
 19180 % U+2642 MALE SIGN; male, mars; \male (wasysym)  
 19181 \DeclareTextCommand{\textmale}{PU}{\9046\102}%\* U+2642  
 19182 %\* \textmale -> \mars (wasysym)  
 19183 %\* \textmale -> \Mars (marvosym)  
 19184 %\* \textmale -> \Male (marvosym)  
 19185 % U+2643 JUPITER; \jupiter (wasysym)  
 19186 \DeclareTextCommand{\textjupiter}{PU}{\9046\103}%\* U+2643  
 19187 %\* \textjupiter -> \Jupiter (marvosym)  
 19188 % U+2644 SATURN; \saturn (wasysym)  
 19189 \DeclareTextCommand{\textsaturn}{PU}{\9046\104}%\* U+2644  
 19190 %\* \textsaturn -> \Saturn (marvosym)  
 19191 % U+2645 URANUS; \uranus (wasysym)  
 19192 \DeclareTextCommand{\texturanus}{PU}{\9046\105}%\* U+2645  
 19193 %\* \texturanus -> \Uranus (marvosym)  
 19194 % U+2646 NEPTUNE; \neptune (wasysym)

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19195 \DeclareTextCommand{\textneptune}{PU}{\9046\106}%* U+2646
19196 %* \textneptune -> \Neptune (marvosym)
19197 % U+2647 PLUTO; \pluto (wasysym)
19198 \DeclareTextCommand{\textpluto}{PU}{\9046\107}%* U+2647
19199 %* \textpluto -> \Pluto (marvosym)
19200 % U+2648 ARIES; \aries (wasysym)
19201 \DeclareTextCommand{\textaries}{PU}{\9046\110}%* U+2648
19202 %* \textaries -> \Aries (marvosym)
19203 % U+2649 TAURUS; \taurus (wasysym)
19204 \DeclareTextCommand{\texttaurus}{PU}{\9046\111}%* U+2649
19205 %* \texttaurus -> \Taurus (marvosym)
19206 % U+264A GEMINI; \gemini (wasysym)
19207 \DeclareTextCommand{\textgemini}{PU}{\9046\112}%* U+264A
19208 %* \textgemini -> \Gemini (marvosym)
19209 % U+264B CANCER; \cancer (wasysym)
19210 \DeclareTextCommand{\textcancer}{PU}{\9046\113}%* U+264B
19211 %* \textcancer -> \Cancer (marvosym)
19212 % U+264C LEO; \leo (wasysym)
19213 \DeclareTextCommand{\textleo}{PU}{\9046\114}%* U+264C
19214 %* \textleo -> \Leo (marvosym)
19215 % U+264D VIRGO; \virgo (wasysym)
19216 \DeclareTextCommand{\textvirgo}{PU}{\9046\115}%* U+264D
19217 %* \textvirgo -> \Virgo (marvosym)
19218 % U+264E LIBRA; \libra (wasysym)
19219 \DeclareTextCommand{\textlibra}{PU}{\9046\116}%* U+264E
19220 %* \textlibra -> \Libra (marvosym)
19221 % U+264F SCORPIO; \scorpio (wasysym)
19222 \DeclareTextCommand{\textscorpio}{PU}{\9046\117}%* U+264F
19223 %* \textscorpio -> \Scorpio (marvosym)
19224 % U+2650 SAGITTARIUS; \sagittarius (wasysym)
19225 \DeclareTextCommand{\textsagittarius}{PU}{\9046\120}%* U+2650
19226 %* \textsagittarius -> \Sagittarius (marvosym)
19227 % U+2651 CAPRICORN; \capricorn (wasysym)
19228 \DeclareTextCommand{\textcapricorn}{PU}{\9046\121}%* U+2651
19229 %* \textcapricorn -> \Capricorn (marvosym)
19230 % U+2652 AQUARIUS; \aquarius (wasysym)
19231 \DeclareTextCommand{\textaquarius}{PU}{\9046\122}%* U+2652
19232 %* \textaquarius -> \Aquarius (marvosym)
19233 % U+2653 PISCES; \pisces (wasysym)
19234 \DeclareTextCommand{\textpisces}{PU}{\9046\123}%* U+2653
19235 %* \textpisces -> \Pisces (marvosym)
19236 % U+2660 BLACK SPADE SUIT; spade, spadesuitblack; \spadesuit (LaTeX)
19237 \DeclareTextCommand{\textspadesuitblack}{PU}{\9046\140}% U+2660
19238 %* \textspadesuitblack -> \spadesuit (MnSymbol)
19239 % U+2661 WHITE HEART SUIT; heartsuitwhite; \heartsuit (LaTeX)
19240 \DeclareTextCommand{\textheartsuitwhite}{PU}{\9046\141}% U+2661
19241 %* \textheartsuitwhite -> \Heart (marvosym)
19242 %* \textheartsuitwhite -> \heartsuit (MnSymbol)
19243 % U+2662 WHITE DIAMOND SUIT; diamondsuitwhite; \diamondsuit (LaTeX)
19244 \DeclareTextCommand{\textdiamondsuitwhite}{PU}{\9046\142}% U+2662
19245 %* \textdiamondsuitwhite -> \diamondsuit (MnSymbol)
19246 % U+2663 BLACK CLUB SUIT; club, clubsuitblack; \clubsuit (LaTeX)
19247 \DeclareTextCommand{\textclubsuitblack}{PU}{\9046\143}% U+2663
19248 %* \textclubsuitblack -> \clubsuit (MnSymbol)
19249 % U+2664 WHITE SPADE SUIT; spadesuitwhite
19250 \DeclareTextCommand{\textspadesuitwhite}{PU}{\9046\144}% U+2664
19251 % U+2665 BLACK HEART SUIT; heartsuitblack, heart

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19252 \DeclareTextCommand{\textheartsuitblack}{PU}{\9046\145}% U+2665  
 19253 % U+2666 BLACK DIAMOND SUIT; diamond  
 19254 \DeclareTextCommand{\textdiamondsuitblack}{PU}{\9046\146}% U+2666  
 19255 % U+2667 WHITE CLUB SUIT; clubsuitwhite  
 19256 \DeclareTextCommand{\textclubsuitwhite}{PU}{\9046\147}% U+2667  
 19257 % U+2669 QUARTER NOTE; quarternote; \quarternote (wasysym, arev)  
 19258 \DeclareTextCommand{\textquarternote}{PU}{\9046\151}%\* U+2669  
 19259 % U+266A EIGHTH NOTE; musicalnote; \textmusicalnote (textcomp)  
 19260 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}% U+266A  
 19261 %\* \textmusicalnote -> \eighthnote (wasysym, arev)  
 19262 % U+266B BEAMED EIGHTH NOTES; eighthnotebeamed; \twonotes (wasysym)  
 19263 \DeclareTextCommand{\texttwonotes}{PU}{\9046\153}%\* U+266B  
 19264 % U+266C BEAMED SIXTEENTH NOTES; beamedsixteenthnotes; \sixteenth-  
     note (arev)  
 19265 \DeclareTextCommand{\textsixteenthnote}{PU}{\9046\154}%\* U+266C  
 19266 % U+266D MUSIC FLAT SIGN; musicflatsign; \flat (LaTeX)  
 19267 \DeclareTextCommand{\textflat}{PU}{\9046\155}%\* U+266D  
 19268 % U+266E MUSIC NATURAL SIGN; \natural (LaTeX)  
 19269 \DeclareTextCommand{\textnatural}{PU}{\9046\156}%\* U+266E  
 19270 % U+266F MUSIC SHARP SIGN; musicsharpsign; \sharp (LaTeX)  
 19271 \DeclareTextCommand{\textsharp}{PU}{\9046\157}%\* U+266F  
 19272 % U+2672 UNIVERSAL RECYCLING SYMBOL; \recycle (recycle)  
 19273 \DeclareTextCommand{\textrecycle}{PU}{\9046\162}%\* U+2672  
 19274 %\* \textrecycle -> \Recycling (marvosym)  
 19275 % U+267F WHEELCHAIR SYMBOL; \Wheelchair (marvosym)  
 19276 \DeclareTextCommand{\textWheelchair}{PU}{\9046\177}%\* U+267F  
 19277 % U+2691 BLACK FLAG; \Flag (ifsym)  
 19278 \DeclareTextCommand{\textFlag}{PU}{\9046\221}%\* U+2691  
 19279 %\* \textFlag -> \VarFlag (ifsym)  
 19280 % U+2692 HAMMER AND PICK; \MineSign (marvosym)  
 19281 \DeclareTextCommand{\textMineSign}{PU}{\9046\222}%\* U+2692  
 19282 % U+2694 CROSSED SWORDS; \dsmilitary (dictsym)  
 19283 \DeclareTextCommand{\textdsmilitary}{PU}{\9046\224}%\* U+2694  
 19284 %\* \textdsmilitary -> \textxswup (fourier)  
 19285 % U+2695 STAFF OF AESCULAPIUS; \dsmedical (dictsym)  
 19286 \DeclareTextCommand{\textdsmedical}{PU}{\9046\225}%\* U+2695  
 19287 % U+2696 SCALES; \dsjuridical (dictsym)  
 19288 \DeclareTextCommand{\textdsjuridical}{PU}{\9046\226}%\* U+2696  
 19289 % U+2697 ALEMBIC; \dschemical (dictsym)  
 19290 \DeclareTextCommand{\textdschemical}{PU}{\9046\227}%\* U+2697  
 19291 % U+2698 FLOWER; \dsbiological (dictsym)  
 19292 \DeclareTextCommand{\textdsbiological}{PU}{\9046\230}%\* U+2698  
 19293 % U+269A STAFF OF HERMES; \dscommercial (dictsym)  
 19294 \DeclareTextCommand{\textdscommercial}{PU}{\9046\232}%\* U+269A  
 19295 % U+269D OUTLINED WHITE STAR; \manstar (manfnt)  
 19296 \DeclareTextCommand{\textmanstar}{PU}{\9046\235}%\* U+269D  
 19297 % U+26A0 WARNING SIGN; \danger (fourier)  
 19298 \DeclareTextCommand{\textdanger}{PU}{\9046\240}%\* U+26A0  
 19299 % U+26A2 DOUBLED FEMALE SIGN; \FemaleFemale (marvosym)  
 19300 \DeclareTextCommand{\textFemaleFemale}{PU}{\9046\242}%\* U+26A2  
 19301 % U+26A3 DOUBLED MALE SIGN; \MaleMale (marvosym)  
 19302 \DeclareTextCommand{\textMaleMale}{PU}{\9046\243}%\* U+26A3  
 19303 % U+26A4 INTERLOCKED FEMALE AND MALE SIGN; \FemaleMale (mar-  
     vosym)  
 19304 \DeclareTextCommand{\textFemaleMale}{PU}{\9046\244}%\* U+26A4  
 19305 % U+26A5 MALE AND FEMALE SIGN; \Hermaphrodite (marvosym)  
 19306 \DeclareTextCommand{\textHermaphrodite}{PU}{\9046\245}%\* U+26A5



19307 % U+26AA MEDIUM WHITE CIRCLE; \Neural (marvosym)  
 19308 \DeclareTextCommand{\textNeutral}{PU}{\9046\252}%\* U+26AA  
 19309 % U+26AD MARRIAGE SYMBOL  
 19310 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD  
 19311 % U+26AE DIVORCE SYMBOL  
 19312 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE  
 19313 % U+26B2 NEUTER; \textuncrfemale (tipx)  
 19314 \DeclareTextCommand{\textPUuncrfemale}{PU}{\9046\262}% U+26B2  
 19315 %\* \textPUuncrfemale -> \textuncrfemale (tipx)  
 19316 % U+26B9 SEXTILE; \hexstar (wasysym)  
 19317 \DeclareTextCommand{\texthexstar}{PU}{\9046\271}%\* U+26B9  
 19318 % U+26BD SOCCER BALL; \Football (marvosym)  
 19319 \DeclareTextCommand{\textSoccerBall}{PU}{\9046\275}% U+26BD  
 19320 %\* \textSoccerBall -> \Football (marvosym)  
 19321 % U+26C5 SUN BEHIND CLOUD; \SunCloud (ifsym)  
 19322 \DeclareTextCommand{\textSunCloud}{PU}{\9046\305}%\* U+26C5  
 19323 % U+26C6 RAIN; \Rain (ifsym)  
 19324 \DeclareTextCommand{\textRain}{PU}{\9046\306}%\* U+26C6  
 19325 % U+26D4 NO ENTRY; \noway (fourier)  
 19326 \DeclareTextCommand{\textnoway}{PU}{\9046\324}%\* U+26D4  
 19327 % U+26F0 MOUNTAIN; \Mountain (ifsym)  
 19328 \DeclareTextCommand{\textMountain}{PU}{\9046\360}%\* U+26F0  
 19329 % U+26FA TENT; \Tent (ifsym)  
 19330 \DeclareTextCommand{\textTent}{PU}{\9046\372}%\* U+26FA

### 51.2.30 Dingbats: U+2700 to U+27BF

19331 % U+2701 UPPER BLADE SCISSORS; \ScissorRightBrokenBottom (bbding)  
 19332 \DeclareTextCommand{\textScissorRightBrokenBottom}{PU}{\9047\001}% U+2701  
 19333 %\* \textScissorRightBrokenBottom -> \CutLeft (marvosym)  
 19334 %\* \textScissorRightBrokenBottom -> \Cutright (marvosym)  
 19335 % U+2702 BLACK SCISSORS; \ScissorRight (bbding)  
 19336 \DeclareTextCommand{\textScissorRight}{PU}{\9047\002}%\* U+2702  
 19337 %\* \textScissorRight -> \RightScissors (marvosym)  
 19338 %\* \textScissorRight -> \Leftscissors (marvosym)  
 19339 % U+2703 LOWER BLADE SCISSORS; \ScissorRightBrokenTop (bbding)  
 19340 \DeclareTextCommand{\textScissorRightBrokenTop}{PU}{\9047\003}%\* U+2703  
 19341 % U+2704 WHITE SCISSORS; \ScissorHollowRight (bbding)  
 19342 \DeclareTextCommand{\textScissorHollowRight}{PU}{\9047\004}%\* U+2704  
 19343 % U+2706 TELEPHONE LOCATION SIGN; \PhoneHandset (bbding)  
 19344 \DeclareTextCommand{\textPhoneHandset}{PU}{\9047\006}%\* U+2706  
 19345 % U+2707 TAPE DRIVE; \Tape (bbding)  
 19346 \DeclareTextCommand{\textTape}{PU}{\9047\007}%\* U+2707  
 19347 % U+2708 AIRPLANE; \Plane (bbding)  
 19348 \DeclareTextCommand{\textPlane}{PU}{\9047\010}%\* U+2708  
 19349 % U+2709 ENVELOPE; \Envelope (bbding),  
 19350 \DeclareTextCommand{\textEnvelope}{PU}{\9047\011}%\* U+2709  
 19351 %\* \textEnvelope -> \Letter (marvosym)  
 19352 % U+270C VICTORY HAND; \Peace (bbding)  
 19353 \DeclareTextCommand{\textPeace}{PU}{\9047\014}%\* U+270C  
 19354 % U+270D WRITING HAND; \WritingHand (marvosym)  
 19355 \DeclareTextCommand{\textWritingHand}{PU}{\9047\015}%\* U+270D  
 19356 %\* \textWritingHand -> \Writinghand (marvosym)  
 19357 % U+270E LOWER RIGHT PENCIL; \PencilRightDown (bbding)  
 19358 \DeclareTextCommand{\textPencilRightDown}{PU}{\9047\016}%\* U+270E  
 19359 % U+270F PENCIL; \PencilRight (bbding)  
 19360 \DeclareTextCommand{\textPencilRight}{PU}{\9047\017}%\* U+270F  
 19361 % U+2710 UPPER RIGHT PENCIL; \PencilRightUp (bbding)

19362 \DeclareTextCommand{\textPencilRightUp}{PU}{\9047\020}%\* U+2710  
 19363 % U+2711 WHITE NIB; \NibRight (bbling)  
 19364 \DeclareTextCommand{\textNibRight}{PU}{\9047\021}%\* U+2711  
 19365 % U+2712 BLACK NIB; \NibSolidRight (bbling)  
 19366 \DeclareTextCommand{\textNibSolidRight}{PU}{\9047\022}%\* U+2712  
 19367 % U+2713 CHECK MARK; checkmark; \Checkmark (bbling)  
 19368 \DeclareTextCommand{\textCheckmark}{PU}{\9047\023}%\* U+2713  
 19369 %\* \textCheckmark -> \checkmark (MnSymbol)  
 19370 % U+2714 HEAVY CHECK MARK; \CheckmarkBold (bbling)  
 19371 \DeclareTextCommand{\textCheckmarkBold}{PU}{\9047\024}%\* U+2714  
 19372 % U+2715 MULTIPLICATION X; \XSolid (bbling)  
 19373 \DeclareTextCommand{\textXSolid}{PU}{\9047\025}%\* U+2715  
 19374 % U+2716 HEAVY MULTIPLICATION X; \XSolidBold (bbling)  
 19375 \DeclareTextCommand{\textXSolidBold}{PU}{\9047\026}%\* U+2716  
 19376 % U+2717 BALLOT X; \XSolidBrush (bbling)  
 19377 \DeclareTextCommand{\textXSolidBrush}{PU}{\9047\027}%\* U+2717  
 19378 % U+2719 OUTLINED GREEK CROSS; \PlusOutline (bbling)  
 19379 \DeclareTextCommand{\textPlusOutline}{PU}{\9047\031}%\* U+2719  
 19380 % U+271A HEAVY GREEK CROSS; \Plus (bbling)  
 19381 \DeclareTextCommand{\textPlus}{PU}{\9047\032}%\* U+271A  
 19382 % U+271B OPEN CENTRE CROSS; \PlusThinCenterOpen (bbling)  
 19383 \DeclareTextCommand{\textPlusThinCenterOpen}{PU}{\9047\033}%\* U+271B  
 19384 % U+271C HEAVY OPEN CENTRE CROSS; \PlusCenterOpen (bbling)  
 19385 \DeclareTextCommand{\textPlusCenterOpen}{PU}{\9047\034}%\* U+271C  
 19386 % U+271D LATIN CROSS; \Cross (bbling)  
 19387 \DeclareTextCommand{\textCross}{PU}{\9047\035}%\* U+271D  
 19388 % U+271E SHADOWED WHITE LATIN CROSS; \CrossOpenShadow (bbling)  
 19389 \DeclareTextCommand{\textCrossOpenShadow}{PU}{\9047\036}%\* U+271E  
 19390 % U+271F OUTLINED LATIN CROSS; \CrossOutline (bbling)  
 19391 \DeclareTextCommand{\textCrossOutline}{PU}{\9047\037}%\* U+271F  
 19392 % U+2720 MALTESE CROSS; \CrossMaltese (bbling)  
 19393 \DeclareTextCommand{\textCrossMaltese}{PU}{\9047\040}%\* U+2720  
 19394 % U+2721 STAR OF DAVID; \DavidStar (bbling)  
 19395 \DeclareTextCommand{\textDavidStar}{PU}{\9047\041}%\* U+2721  
 19396 %\* \textDavidStar -> \davidstar (wasysym)  
 19397 % U+2722 FOUR TEARDROP-SPOKED ASTERISK; \FourAsterisk (bbling)  
 19398 \DeclareTextCommand{\textFourAsterisk}{PU}{\9047\042}%\* U+2722  
 19399 % U+2723 FOUR BALLOON-SPOKED ASTERISK; \JackStar (bbling)  
 19400 \DeclareTextCommand{\textJackStar}{PU}{\9047\043}%\* U+2723  
 19401 % U+2724 HEAVY FOUR BALLOON-SPOKED ASTERISK; \JackStarBold (bbling)  
 19402 \DeclareTextCommand{\textJackStarBold}{PU}{\9047\044}%\* U+2724  
 19403 % U+2725 FOUR CLUB-SPOKED ASTERISK; \CrossClowerTips (bbling)  
 19404 \DeclareTextCommand{\textClowerTips}{PU}{\9047\045}%\* U+2725  
 19405 % U+2726 BLACK FOUR POINTED STAR; \FourStar (bbling)  
 19406 \DeclareTextCommand{\textFourStar}{PU}{\9047\046}%\* U+2726  
 19407 % U+2727 WHITE FOUR POINTED STAR; \FourStarOpen (bbling)  
 19408 \DeclareTextCommand{\textFourStarOpen}{PU}{\9047\047}%\* U+2727  
 19409 % U+272A CIRCLED WHITE STAR; \FiveStarOpenCircled (bbling)  
 19410 \DeclareTextCommand{\textFiveStarOpenCircled}{PU}{\9047\052}%\* U+272A  
 19411 % U+272B OPEN CENTRE BLACK STAR; \FiveStarCenterOpen (bbling)  
 19412 \DeclareTextCommand{\textFiveStarCenterOpen}{PU}{\9047\053}%\* U+272B  
 19413 % U+272C BLACK CENTRE WHITE STAR; \FiveStarOpenDotted (bbling)  
 19414 \DeclareTextCommand{\textFiveStarOpenDotted}{PU}{\9047\054}%\* U+272C  
 19415 % U+272D OUTLINED BLACK STAR; \FiveStarOutline (bbling)  
 19416 \DeclareTextCommand{\textFiveStarOutline}{PU}{\9047\055}%\* U+272D  
 19417 % U+272E HEAVY OUTLINED BLACK STAR; \FiveStarOutlineHeavy (bbling)

19418 \DeclareTextCommand{\textFiveStarOutlineHeavy}{PU}{\9047\056}%\* U+272E  
 19419 % U+272F PINWHEEL STAR; \FiveStarConvex (bding)  
 19420 \DeclareTextCommand{\textFiveStarConvex}{PU}{\9047\057}%\* U+272F  
 19421 % U+2730 SHADOWED WHITE STAR; \FiveStarShadow (bding)  
 19422 \DeclareTextCommand{\textFiveStarShadow}{PU}{\9047\060}%\* U+2730  
 19423 % U+2731 HEAVY ASTERISK; \AsteriskBold (bding)  
 19424 \DeclareTextCommand{\textAsteriskBold}{PU}{\9047\061}%\* U+2731  
 19425 % U+2732 OPEN CENTRE ASTERISK; \AsteriskCenterOpen (bding)  
 19426 \DeclareTextCommand{\textAsteriskCenterOpen}{PU}{\9047\062}%\* U+2732  
 19427 % U+2734 EIGHT POINTED BLACK STAR; \EightStarTaper (bding)  
 19428 \DeclareTextCommand{\textEightStarTaper}{PU}{\9047\064}%\* U+2734  
 19429 % U+2735 EIGHT POINTED PINWHEEL STAR; \EightStarConvex (bding)  
 19430 \DeclareTextCommand{\textEightStarConvex}{PU}{\9047\065}%\* U+2735  
 19431 % U+2736 SIX POINTED BLACK STAR; \SixStar (bding)  
 19432 \DeclareTextCommand{\textSixStar}{PU}{\9047\066}%\* U+2736  
 19433 % U+2737 EIGHT POINTED RECTILINEAR BLACK STAR; \EightStar (bding)  
 19434 \DeclareTextCommand{\textEightStar}{PU}{\9047\067}%\* U+2737  
 19435 % U+2738 HEAVY EIGHT POINTED RECTILINEAR BLACK STAR; \EightStarBold (bding)  
 19436 \DeclareTextCommand{\textEightStarBold}{PU}{\9047\070}%\* U+2738  
 19437 % U+2739 TWELVE POINTED BLACK STAR; \TwelveStar (bding)  
 19438 \DeclareTextCommand{\textTwelveStar}{PU}{\9047\071}%\* U+2739  
 19439 % U+273A SIXTEEN POINTED ASTERISK; \SixteenStarLight (bding)  
 19440 \DeclareTextCommand{\textSixteenStarLight}{PU}{\9047\072}%\* U+273A  
 19441 % U+273B TEARDROP-SPOKED ASTERISK; \SixFlowerPetalRemoved (bding)  
 19442 \DeclareTextCommand{\textSixFlowerPetalRemoved}{PU}{\9047\073}%\* U+273B  
 19443 % U+273C OPEN CENTRE TEARDROP-SPOKED ASTERISK;  
 19444 % \SixFlowerOpenCenter (bding)  
 19445 \DeclareTextCommand{\textSixFlowerOpenCenter}{PU}{\9047\074}%\* U+273C  
 19446 % U+273D HEAVY TEARDROP-SPOKED ASTERISK; \Asterisk (bding)  
 19447 \DeclareTextCommand{\textAsterisk}{PU}{\9047\075}%\* U+273D  
 19448 % U+273E SIX PETALLED BLACK AND WHITE FLORETTE; \SixFlowerAlternate (bding)  
 19449 \DeclareTextCommand{\textSixFlowerAlternate}{PU}{\9047\076}%\* U+273E  
 19450 % U+273F BLACK FLORETTE; \FiveFlowerPetal (bding)  
 19451 \DeclareTextCommand{\textFiveFlowerPetal}{PU}{\9047\077}%\* U+273F  
 19452 % U+2740 WHITE FLORETTE; \FiveFlowerOpen (bding)  
 19453 \DeclareTextCommand{\textFiveFlowerOpen}{PU}{\9047\100}%\* U+2740  
 19454 % U+2741 EIGHT PETALLED OUTLINED BLACK FLORETTE; \EightFlowerPetal (bding)  
 19455 \DeclareTextCommand{\textEightFlowerPetal}{PU}{\9047\101}%\* U+2741  
 19456 % U+2742 CIRCLED OPEN CENTRE EIGHT POINTED STAR; \SunshineOpenCircled (bding)  
 19457 \DeclareTextCommand{\textSunshineOpenCircled}{PU}{\9047\102}%\* U+2742  
 19458 % U+2743 HEAVY TEARDROP-SPOKED PINWHEEL ASTERISK; \SixFlowerAltPetal (bding)  
 19459 \DeclareTextCommand{\textSixFlowerAltPetal}{PU}{\9047\103}%\* U+2743  
 19460 % U+2744 SNOWFLAKE; \SnowflakeChevron (bding)  
 19461 \DeclareTextCommand{\textSnowflakeChevron}{PU}{\9047\104}%\* U+2744  
 19462 % U+2745 TIGHT TRIFOLIATE SNOWFLAKE; \Snowflake (bding)  
 19463 \DeclareTextCommand{\textSnowflake}{PU}{\9047\105}%\* U+2745  
 19464 % U+2746 HEAVY CHEVRON SNOWFLAKE; \SnowflakeChevronBold (bding)  
 19465 \DeclareTextCommand{\textSnowflakeChevronBold}{PU}{\9047\106}%\* U+2746  
 19466 % U+2747 SPARKLE; \Sparkle (bding)  
 19467 \DeclareTextCommand{\textSparkle}{PU}{\9047\107}%\* U+2747

19468 % U+2748 HEAVY SPARKLE; \SparkleBold (bding)  
 19469 \DeclareTextCommand{\textSparkleBold}{PU}{\9047\110}%\* U+2748  
 19470 % U+2749 BALLOON-SPOKED ASTERISK; \AsteriskRoundedEnds (bding)  
 19471 \DeclareTextCommand{\textAsteriskRoundedEnds}{PU}{\9047\111}%\* U+2749  
 19472 % U+274A EIGHT TEARDROP-SPOKED PROPELLER ASTERISK;  
 19473 % \EightFlowerPetalRemoved (bding)  
 19474 \DeclareTextCommand{\textEightFlowerPetalRemoved}{PU}{\9047\112}%\* U+274A  
 19475 % U+274B HEAVY EIGHT TEARDROP-SPOKED PROPELLER ASTERISK;  
 19476 % \EightAsterisk (bding)  
 19477 \DeclareTextCommand{\textEightAsterisk}{PU}{\9047\113}%\* U+274B  
 19478 % U+274D SHADOWED WHITE CIRCLE; \CircleShadow (bding)  
 19479 \DeclareTextCommand{\textCircleShadow}{PU}{\9047\115}%\* U+274D  
 19480 % U+274F LOWER RIGHT DROP-SHADOWED WHITE SQUARE;  
 19481 % \SquareShadowBottomRight (bding)  
 19482 \DeclareTextCommand{\textSquareShadowBottomRight}{PU}{\9047\117}%\* U+274F  
 19483 % U+2750 UPPER RIGHT DROP-SHADOWED WHITE SQUARE;  
 19484 % \SquareShadowTopRight (bding)  
 19485 \DeclareTextCommand{\textSquareTopRight}{PU}{\9047\120}%\* U+2750  
 19486 % U+2751 LOWER RIGHT SHADOWED WHITE SQUARE;  
 19487 % \SquareCastShadowBottomRight (bding)  
 19488 \DeclareTextCommand{\textSquareCastShadowBottomRight}{PU}{\9047\121}%\* U+2751  
 19489 % U+2752 UPPER RIGHT SHADOWED WHITE SQUARE;  
 19490 % \SquareCastShadowTopRight (bding)  
 19491 \DeclareTextCommand{\textSquareCastShadowTopRight}{PU}{\9047\122}%\* U+2752  
 19492 % U+2756 BLACK DIAMOND MINUS WHITE X; \OrnamentDiamandSolid (bding)  
 19493 \DeclareTextCommand{\textDiamandSolid}{PU}{\9047\126}%\* U+2756  
 19494 % U+2758 LIGHT VERTICAL BAR; \RectangleThin (bding)  
 19495 \DeclareTextCommand{\textRectangleThin}{PU}{\9047\130}%\* U+2758  
 19496 % U+2759 MEDIUM VERTICAL BAR; \Rectangle (bding)  
 19497 \DeclareTextCommand{\textRectangle}{PU}{\9047\131}%\* U+2759  
 19498 % U+275A HEAVY VERTICAL BAR; \RectangleBold (bding)  
 19499 \DeclareTextCommand{\textRectangleBold}{PU}{\9047\132}%\* U+275A

### 51.2.31 Miscellaneous Mathematical Symbols-A: U+27C0 to U+27EF

19500 % U+27C2 PERPENDICULAR; perpendicular; \perp (LaTeX)  
 19501 \DeclareTextCommand{\textperp}{PU}{\9047\302}%\* U+27C2  
 19502 % \notperp (mathabx)  
 19503 \DeclareTextCommand{\textnotperp}{PU}{\9047\302\83\070}%\* U+27C2 U+0338  
 19504 % U+27C7 OR WITH DOT INSIDE; \veedot (MnSymbol)  
 19505 \DeclareTextCommand{\textveedot}{PU}{\9047\307}%\* U+27C7  
 19506 % U+27D1 AND WITH DOT; \wedgedot (MnSymbol)  
 19507 \DeclareTextCommand{\textwedgedot}{PU}{\9047\321}%\* U+27D1  
 19508 % U+27DC LEFT MULTIMAP; \leftspoon (MnSymbol)  
 19509 \DeclareTextCommand{\textleftspoon}{PU}{\9047\334}%\* U+27DC  
 19510 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET  
 19511 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}%\* U+27E6  
 19512 %\* \textlbrackdbl -> \lbracket (stmaryrd)  
 19513 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET  
 19514 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}%\* U+27E7  
 19515 %\* \textrbrackdbl -> \rrbracket (stmaryrd)

### 51.2.32 Supplemental Arrows-A: U+27F0 to U+27FF

19516 % U+27F2 ANTICLOCKWISE GAPPED CIRCLE ARROW;  
 19517 % \circlearrowleft (AmS)  
 19518 \DeclareTextCommand{\textcirclearrowleft}{PU}{\9047\362}%\* U+27F2  
 19519 % U+27F3 CLOCKWISE GAPPED CIRCLE ARROW; \circlearrowright (AmS)

19520 \DeclareTextCommand{\textcirclearrowright}{PU}{\9047\363}%\* U+27F3  
 19521 % U+27F5 LONG LEFTWARDS ARROW; \longleftarrow (AmS)  
 19522 \DeclareTextCommand{\textlongleftarrow}{PU}{\9047\365}%\* U+27F5  
 19523 % U+27F6 LONG RIGHTWARDS ARROW; \longrightarrow (AmS)  
 19524 \DeclareTextCommand{\textlongrightarrow}{PU}{\9047\366}%\* U+27F6  
 19525 % U+27F7 LONG LEFT RIGHT ARROW; \longlefttrightarrow (AmS)  
 19526 \DeclareTextCommand{\textlonglefttrightarrow}{PU}{\9047\367}%\* U+27F7  
 19527 % U+27F8 LONG LEFTWARDS DOUBLE ARROW; \Longleftarrow (AmS)  
 19528 \DeclareTextCommand{\textLongleftarrow}{PU}{\9047\370}%\* U+27F8  
 19529 % U+27F9 LONG RIGHTWARDS DOUBLE ARROW; \Longrightarrow (AmS)  
 19530 \DeclareTextCommand{\textLongrightarrow}{PU}{\9047\371}%\* U+27F9  
 19531 % U+27FA LONG LEFT RIGHT DOUBLE ARROW; \Longlefttrightarrow (AmS)  
 19532 \DeclareTextCommand{\textLonglefttrightarrow}{PU}{\9047\372}%\* U+27FA  
 19533 % U+27FC LONG RIGHTWARDS ARROW FROM BAR; \longmapsto (AmS)  
 19534 \DeclareTextCommand{\textlongmapsto}{PU}{\9047\374}%\* U+27FC  
 19535 % U+27FD LONG LEFTWARDS DOUBLE ARROW FROM BAR; \Longmaps-  
 from (stmaryrd)  
 19536 \DeclareTextCommand{\textLongmapsfrom}{PU}{\9047\375}%\* U+27FD  
 19537 % U+27FE LONG RIGHTWARDS DOUBLE ARROW FROM BAR; \Longmap-  
 sto (stmaryrd)  
 19538 \DeclareTextCommand{\textLongmapsto}{PU}{\9047\376}%\* U+27FE

### 51.2.33 Supplemental Arrows-B: U+2900 to U+297F

19539 % U+2921 NORTH WEST AND SOUTH EAST ARROW; \nwsearrow (MnSym-  
 bol)  
 19540 \DeclareTextCommand{\textnwsearrow}{PU}{\9051\041}%\* U+2921  
 19541 % U+2922 NORTH EAST AND SOUTH WEST ARROW; \neswarrow (MnSym-  
 bol)  
 19542 \DeclareTextCommand{\textneswarrow}{PU}{\9051\042}%\* U+2922  
 19543 % U+2923 NORTH WEST ARROW WITH HOOK; \hooknwarrow (MnSymbol)  
 19544 \DeclareTextCommand{\textlhooknwarrow}{PU}{\9051\043}%\* U+2923  
 19545 % U+2924 NORTH EAST ARROW WITH HOOK; \rhooknearrow (MnSymbol)  
 19546 \DeclareTextCommand{\textrhooknearrow}{PU}{\9051\044}%\* U+2924  
 19547 % U+2925 SOUTH EAST ARROW WITH HOOK; \hooksearrow (MnSymbol)  
 19548 \DeclareTextCommand{\textlhooksearrow}{PU}{\9051\045}%\* U+2925  
 19549 % U+2926 SOUTH WEST ARROW WITH HOOK; \rhookswarrow (MnSymbol)  
 19550 \DeclareTextCommand{\textrhookswarrow}{PU}{\9051\046}%\* U+2926  
 19551 % U+2933 WAVE ARROW POINTING DIRECTLY RIGHT; \leadsto (wasysym)  
 19552 \DeclareTextCommand{\textleadsto}{PU}{\9051\063}%\* U+2933  
 19553 % U+2934 ARROW POINTING RIGHTWARDS THEN CURVING UPWARDS;  
 19554 % \rcurvearrowne (MnSymbol)  
 19555 \DeclareTextCommand{\textrcurvearrowne}{PU}{\9051\064}%\* U+2934  
 19556 % U+2935 ARROW POINTING RIGHTWARDS THEN CURVING DOWN-  
 WARDS;  
 19557 % \lcurvearrowse (MnSymbol)  
 19558 \DeclareTextCommand{\textlcurvearrowse}{PU}{\9051\065}%\* U+2935  
 19559 % U+2936 ARROW POINTING DOWNWARDS THEN CURVING LEFT-  
 WARDS;  
 19560 % \lcurvearrowsw (MnSymbol)  
 19561 \DeclareTextCommand{\textlcurvearrowsw}{PU}{\9051\066}%\* U+2936  
 19562 % U+2937 ARROW POINTING DOWNWARDS THEN CURVING RIGHT-  
 WARDS;  
 19563 % \rcurvearrowse (MnSymbol)  
 19564 \DeclareTextCommand{\textrcurvearrowse}{PU}{\9051\067}%\* U+2937  
 19565 % U+2938 RIGHT-SIDE ARC CLOCKWISE ARROW; \lcurvearrowdown (Mn-  
 Symbol)  
 19566 \DeclareTextCommand{\textlcurvearrowdown}{PU}{\9051\070}%\* U+2938

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19567 %* \textlcurvearrowdown -> \RightTorque (marvosym)
19568 %* \textlcurvearrowdown -> \Righttorque (marvosym)
19569 % U+2939 LEFT-SIDE ARC ANTICLOCKWISE ARROW;
19570 % \rcurvearrowdown (MnSymbol)
19571 \DeclareTextCommand{\textrcurvearrowdown}{PU}{\9051\071}%* U+2939
19572 %* \textrcurvearrowdown -> \LeftTorque (marvosym)
19573 %* \textrcurvearrowdown -> \Lefttorque (marvosym)
19574 % U+293A TOP ARC ANTICLOCKWISE ARROW; \rcurvearrowleft (MnSymbol)
19575 \DeclareTextCommand{\textrcurvearrowleft}{PU}{\9051\072}%* U+293A
19576 % U+293B BOTTOM ARC ANTICLOCKWISE ARROW;
19577 % \rcurvearrowright (MnSymbol)
19578 \DeclareTextCommand{\textrcurvearrowright}{PU}{\9051\073}%* U+293B
19579 % U+294A LEFT BARB UP RIGHT BARB DOWN HARPOON; \leftrightharpoon (mathabx)
19580 \DeclareTextCommand{\textleftrightharpoon}{PU}{\9051\112}%* U+294A
19581 % U+294B LEFT BARB DOWN RIGHT BARB UP HARPOON; \rightleftharpoon (mathabx)
19582 \DeclareTextCommand{\textrightleftharpoon}{PU}{\9051\113}%* U+294B
19583 % U+294C UP BARB RIGHT DOWN BARB LEFT HARPOON;
19584 % \updownharpoonrightleft (MnSymbol)
19585 \DeclareTextCommand{\textupdownharpoonrightleft}{PU}{\9051\114}%* U+294C
19586 % U+294D UP BARB LEFT DOWN BARB RIGHT HARPOON;
19587 % \updownharpoonleftright (MnSymbol)
19588 \DeclareTextCommand{\textupdownharpoonleftright}{PU}{\9051\115}%* U+294D
19589 % U+2962 LEFTWARDS HARPOON WITH BARB UP ABOVE LEFTWARDS
19590 % HARPOON WITH BARB DOWN; \leftleftharpoons (mathabx)
19591 \DeclareTextCommand{\textleftleftharpoons}{PU}{\9051\142}%* U+2962
19592 % U+2963 UPWARDS HARPOON WITH BARB LEFT BESIDE UPWARDS
19593 % HARPOON WITH BARB RIGHT; \upupharpoons (mathabx)
19594 \DeclareTextCommand{\textupupharpoons}{PU}{\9051\143}%* U+2963
19595 % U+2964 RIGHTWARDS HARPOON WITH BARB UP ABOVE RIGHTWARDS HARPOON
19596 % WITH BARB DOWN; \rightrightarpoons (mathabx)
19597 \DeclareTextCommand{\textrightarpoons}{PU}{\9051\144}%* U+2964
19598 % U+2965 DOWNWARDS HARPOON WITH BARB LEFT BESIDE DOWNWARDS HARPOON
19599 % WITH BARB RIGHT; \downdownharpoons (mathabx)
19600 \DeclareTextCommand{\textdowndownharpoons}{PU}{\9051\145}%* U+2965
19601 % U+296A LEFTWARDS HARPOON WITH BARB UP ABOVE LONG DASH;
19602 % \leftbarharpoon (mathabx)
19603 \DeclareTextCommand{\textleftbarharpoon}{PU}{\9051\152}%* U+296A
19604 % U+296B LEFTWARDS HARPOON WITH BARB DOWN BELOW
19605 % LONG DASH; \barleftharpoon (mathabx)
19606 \DeclareTextCommand{\textbarleftharpoon}{PU}{\9051\153}%* U+296B
19607 % U+296C RIGHTWARDS HARPOON WITH BARB UP ABOVE
19608 % LONG DASH; \rightbarharpoon (mathabx)
19609 \DeclareTextCommand{\textrightbarharpoon}{PU}{\9051\154}%* U+296C
19610 % U+296D RIGHTWARDS HARPOON WITH BARB DOWN BELOW
19611 % LONG DASH; \barrightharpoon (mathabx)
19612 \DeclareTextCommand{\textbarrightharpoon}{PU}{\9051\155}%* U+296D
19613 % U+296E UPWARDS HARPOON WITH BARB LEFT BESIDE DOWNWARDS HARPOON
19614 % WITH BARB RIGHT; \updownharpoons (mathabx)
19615 \DeclareTextCommand{\textupdownharpoons}{PU}{\9051\156}%* U+296E
19616 % U+296F DOWNWARDS HARPOON WITH BARB LEFT BESIDE UPWARDS HARPOON

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19617 % WITH BARB RIGHT; \downupharpoons (mathabx)  
 19618 \DeclareTextCommand{\textdownupharpoons}{PU}{\9051\157}%\* U+296F  
 19619 % U+297F DOWN FISH TAIL  
 19620 \DeclareTextCommand{\textmoo}{PU}{\9051\177\83\066}%\* U+297F U+0336

### 51.2.34 Miscellaneous Mathematical Symbols-B: U+2980 to U+29FF

19621 % U+2987 Z NOTATION LEFT IMAGE BRACKET; \llparenthesis (stmaryrd)  
 19622 \DeclareTextCommand{\textllparenthesis}{PU}{\9051\207}%\* U+2987  
 19623 % U+2988 Z NOTATION RIGHT IMAGE BRACKET; \rrparenthesis (stmaryrd)  
 19624 \DeclareTextCommand{\textrrparenthesis}{PU}{\9051\210}%\* U+2988  
 19625 % U+29B0 REVERSED EMPTY SET; \invdiameter (wasysym)  
 19626 \DeclareTextCommand{\textinvdiameter}{PU}{\9051\260}%\* U+29B0  
 19627 % U+29B6 CIRCLED VERTICAL BAR; \obar (stmaryrd)  
 19628 \DeclareTextCommand{\textobar}{PU}{\9051\266}%\* U+29B6  
 19629 %\* \textobar -> \textvarobar (stmaryrd)  
 19630 % U+29B8 CIRCLED REVERSE SOLIDUS; \obslash (stmaryrd)  
 19631 \DeclareTextCommand{\textobslash}{PU}{\9051\270}%\* U+29B8  
 19632 %\* \textobslash -> \circledbslash (txfonts/pxfonts)  
 19633 %\* \textobslash -> \obackslash (mathabx)  
 19634 %\* \textobslash -> \varobslash (stmaryrd)  
 19635 % U+29BA CIRCLE DIVIDED BY HORIZONTAL BAR AND TOP HALF  
 19636 % DIVIDED BY VERTICAL BAR; \obot (mathabx)  
 19637 \DeclareTextCommand{\textobot}{PU}{\9051\272}%\* U+29BA  
 19638 %\* \textobot -> \odplus (ulsy)  
 19639 % U+29BB CIRCLE WITH SUPERIMPOSED X; \NoChemicalCleaning (marvosym)  
 19640 \DeclareTextCommand{\textNoChemicalCleaning}{PU}{\9051\273}%\* U+29BB  
 19641 % U+29C0 CIRCLED LESS-THAN; \olessthan (stmaryrd)  
 19642 \DeclareTextCommand{\textolessthan}{PU}{\9051\300}%\* U+29C0  
 19643 %\* \textolessthan -> \varolessthan (stmaryrd)  
 19644 % U+29C1 CIRCLED GREATER-THAN; \ogreaterthan (stmaryrd)  
 19645 \DeclareTextCommand{\textogreaterthan}{PU}{\9051\301}%\* U+29C1  
 19646 %\* \textogreaterthan -> \varogreaterthan (stmaryrd)  
 19647 % U+29C4 SQUARED RISING DIAGONAL SLASH; \boxslash (mathabx, stmaryrd)  
 19648 \DeclareTextCommand{\textboxslash}{PU}{\9051\304}%\* U+29C4  
 19649 % U+29C5 SQUARED FALLING DIAGONAL SLASH; \boxbslash (stmaryrd)  
 19650 \DeclareTextCommand{\textboxbslash}{PU}{\9051\305}%\* U+29C5  
 19651 % U+29C6 SQUARED ASTERISK; \boxast (stmaryrd)  
 19652 \DeclareTextCommand{\textboxast}{PU}{\9051\306}%\* U+29C6  
 19653 % U+29C7 SQUARED SMALL CIRCLE; \boxcircle (stmaryrd)  
 19654 \DeclareTextCommand{\textboxcircle}{PU}{\9051\307}%\* U+29C7  
 19655 % U+29C8 SQUARED SQUARE; \boxbox (stmaryrd)  
 19656 \DeclareTextCommand{\textboxbox}{PU}{\9051\310}%\* U+29C8  
 19657 % U+29D3 BLACK BOWTIE; \Valve (marvosym)  
 19658 \DeclareTextCommand{\textValve}{PU}{\9051\323}%\* U+29D3  
 19659 % U+29DF DOUBLE-ENDED MULTIMAP; \multimapboth (txfonts/pxfonts)  
 19660 \DeclareTextCommand{\textmultimapboth}{PU}{\9051\337}%\* U+29DF  
 19661 % U+29E2 SHUFFLE PRODUCT; \shuffle (shuffle)  
 19662 \DeclareTextCommand{\textshuffle}{PU}{\9051\342}%\* U+29E2

### 51.2.35 Supplemental Mathematical Operators: U+2A00 to U+2AFF

19663 % U+2A04 N-ARY UNION OPERATOR WITH PLUS; \uplus (LaTeX)  
 19664 \DeclareTextCommand{\textuplus}{PU}{\9052\004}%\* U+2A04  
 19665 % U+2A07 TWO LOGICAL AND OPERATOR; \bigdoublewedge (MnSymbol)  
 19666 \DeclareTextCommand{\textbigdoublewedge}{PU}{\9052\007}%\* U+2A07  
 19667 % U+2A08 TWO LOGICAL OR OPERATOR; \bigdoublevee (MnSymbol)  
 19668 \DeclareTextCommand{\textbigdoublevee}{PU}{\9052\010}%\* U+2A08

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19669 % U+2A1D JOIN; \Join (latexsym, amsfonts, amssymb, mathabx, txfonts,
19670 %   pxfonts, wasysym)
19671 \DeclareTextCommand{\textJoin}{PU}{\9052\035}%* U+2A1D
19672 % U+2A1F Z NOTATION SCHEMA COMPOSITION; \fatsemi (stmaryrd)
19673 \DeclareTextCommand{\textfatsemi}{PU}{\9052\037}%* U+2A1F
19674 % U+2A22 PLUS SIGN WITH SMALL CIRCLE ABOVE; \circplus (mathabx)
19675 \DeclareTextCommand{\textcircplus}{PU}{\9052\042}%* U+2A22
19676 % U+2A2A MINUS SIGN WITH DOT BELOW; \minusdot (MnSymbol)
19677 \DeclareTextCommand{\textminusdot}{PU}{\9052\052}%* U+2A2A
19678 %* \textminusdot -> \divdot (mathabx)
19679 % U+2A30 MULTIPLICATION SIGN WITH DOT ABOVE; \dottimes (math-
19680 %   abx)
19680 \DeclareTextCommand{\textdottimes}{PU}{\9052\060}%* U+2A30
19681 % U+2A32 SEMIDIRECT PRODUCT WITH BOTTOM CLOSED;
19682 %   \dtimes (mathdesign)
19683 \DeclareTextCommand{\textdtimes}{PU}{\9052\062}%* U+2A32
19684 % U+2A38 CIRCLED DIVISION SIGN; \odiv (mathabx)
19685 \DeclareTextCommand{\textodiv}{PU}{\9052\070}%* U+2A38
19686 % U+2A3C INTERIOR PRODUCT; \invneg (MnSymbol)
19687 \DeclareTextCommand{\textinvneg}{PU}{\9052\074}%* U+2A3C
19688 % U+2A4E DOUBLE SQUARE INTERSECTION; \sqdoublecap (mathabx)
19689 \DeclareTextCommand{\textsqdoublecap}{PU}{\9052\116}%* U+2A4E
19690 %* \textsqdoublecap -> \doublesqcap (MnSymbol)
19691 % U+2A40 INTERSECTION WITH DOT; \capdot (MnSymbol)
19692 \DeclareTextCommand{\textcapdot}{PU}{\9052\100}%* U+2A40
19693 % U+2A4F DOUBLE SQUARE UNION; \sqdoublecup (mathabx)
19694 \DeclareTextCommand{\textsqdoublecup}{PU}{\9052\117}%* U+2A4F
19695 %* \textsqdoublecup -> \doublesqcup (MnSymbol)
19696 % U+2A55 TWO INTERSECTING LOGICAL AND; \doublewedge (MnSymbol)
19697 \DeclareTextCommand{\textdoublewedge}{PU}{\9052\125}%* U+2A55
19698 % U+2A56 TWO INTERSECTING LOGICAL OR; \doublevee (MnSymbol)
19699 \DeclareTextCommand{\textdoublevee}{PU}{\9052\126}%* U+2A56
19700 %* \textdoublevee -> \merge (stmaryrd)
19701 % U+2A5E LOGICAL AND WITH DOUBLE OVERBAR;
19702 %   \doublebarwedge (AmS)
19703 \DeclareTextCommand{\textdoublebarwedge}{PU}{\9052\136}%* U+2A5E
19704 % U+2A63 LOGICAL OR WITH DOUBLE UNDERBAR;
19705 %   \veedoublebar (mahtabx)
19706 \DeclareTextCommand{\textveedoublebar}{PU}{\9052\143}%* U+2A63
19707 % U+2A66 EQUALS SIGN WITH DOT BELOW; \eqdot (MnSymbol)
19708 \DeclareTextCommand{\texteqdot}{PU}{\9052\146}%* U+2A66
19709 % \neqdot (MnSymbol)
19710 \DeclareTextCommand{\textneqdot}{PU}{\9052\146\83\070}%* U+2A66 U+0338
19711 % U+2A74 DOUBLE COLON EQUAL; \coloncolonequals (colonequals)
19712 \DeclareTextCommand{\textcoloncolonequals}{PU}{\9052\164}%* U+2A74
19713 % U+2A7D LESS-THAN OR SLANTED EQUAL TO; \leqslant (AmS)
19714 \DeclareTextCommand{\textleqslant}{PU}{\9052\175}%* U+2A7D
19715 % \nleqslant (txfonts/pxfonts)
19716 \DeclareTextCommand{\textnleqslant}{PU}{\9052\175\83\070}%* U+2A7D U+0338
19717 % U+2A7E GREATER-THAN OR SLANTED EQUAL TO; \geqslant (AmS)
19718 \DeclareTextCommand{\textgeqslant}{PU}{\9052\176}%* U+2A7E
19719 % \ngeqslant (txfonts/pxfonts)
19720 \DeclareTextCommand{\textngeqslant}{PU}{\9052\176\83\070}%* U+2A7E U+0338
19721 % U+2A85 LESS-THAN OR APPROXIMATE; \lessapprox (AmS)
19722 \DeclareTextCommand{\textlessapprox}{PU}{\9052\205}%* U+2A85
19723 % \nlessapprox (txfonts/pxfonts)
19724 \DeclareTextCommand{\textnlessapprox}{PU}{\9052\205\83\070}%* U+2A85 U+0338

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19725 % U+2A86 GREATER-THAN OR APPROXIMATE; \gtrapprox (AmS)  
 19726 \DeclareTextCommand{\textgtrapprox}{PU}{\9052\206}%\* U+2A86  
 19727 % \ngtrapprox (txfonts/pxfonts)  
 19728 \DeclareTextCommand{\textngtrapprox}{PU}{\9052\206\83\070}%\* U+2A86 U+0338  
 19729 % U+2A87 LESS-THAN AND SINGLE-LINE NOT EQUAL TO; \lneq (AmS)  
 19730 \DeclareTextCommand{\textlneq}{PU}{\9052\207}%\* U+2A87  
 19731 % U+2A88 GREATER-THAN AND SINGLE-LINE NOT EQUAL TO;  
 19732 % \gneq (AmS)  
 19733 \DeclareTextCommand{\textgneq}{PU}{\9052\210}%\* U+2A88  
 19734 % U+2A89 LESS-THAN AND NOT APPROXIMATE; \lnapprox (AmS)  
 19735 \DeclareTextCommand{\textlnapprox}{PU}{\9052\211}%\* U+2A89  
 19736 % U+2A8A GREATER-THAN AND NOT APPROXIMATE; \gnapprox (AmS)  
 19737 \DeclareTextCommand{\textgnapprox}{PU}{\9052\212}%\* U+2A8A  
 19738 % U+2A8B LESS-THAN ABOVE DOUBLE-LINE EQUAL ABOVE GREATER-THAN;  
 19739 % \lesseqgtr (AmS)  
 19740 \DeclareTextCommand{\textlesseqgtr}{PU}{\9052\213}%\* U+2A8B  
 19741 % U+2A8C GREATER-THAN ABOVE DOUBLE-LINE EQUAL ABOVE LESS-THAN;  
 19742 % \gtreqless (AmS)  
 19743 \DeclareTextCommand{\textgtreqless}{PU}{\9052\214}%\* U+2A8C  
 19744 % U+2A95 SLANTED EQUAL TO OR LESS-THAN; \eqslantless (AmS)  
 19745 \DeclareTextCommand{\texteqslantless}{PU}{\9052\225}%\* U+2A95  
 19746 % U+2A96 SLANTED EQUAL TO OR GREATER-THAN; \eqslantgtr (AmS)  
 19747 \DeclareTextCommand{\texteqslantgtr}{PU}{\9052\226}%\* U+2A96  
 19748 % U+2AA6 LESS-THAN CLOSED BY CURVE; \leftslice (stmaryrd)  
 19749 \DeclareTextCommand{\textleftslice}{PU}{\9052\246}%\* U+2AA6  
 19750 % U+2AA7 GREATER-THAN CLOSED BY CURVE; \rightslice (stmaryrd)  
 19751 \DeclareTextCommand{\textright slice}{PU}{\9052\247}%\* U+2AA7  
 19752 % U+2AAF PRECEDES ABOVE SINGLE-LINE EQUALS SIGN; \preceq (Mn-Symbol)  
 19753 \DeclareTextCommand{\textpreceq}{PU}{\9052\257}%\* U+2AAF  
 19754 % \npreceq (txfonts/pxfonts)  
 19755 \DeclareTextCommand{\textnpreceq}{PU}{\9052\257\83\070}%\* U+2AAF U+0338  
 19756 % U+2AB0 SUCCEEDS ABOVE SINGLE-LINE EQUALS SIGN; \succeq (Mn-Symbol)  
 19757 \DeclareTextCommand{\textsucceq}{PU}{\9052\260}%\* U+2AB0  
 19758 % \nsucceq (txfonts/pxfonts)  
 19759 \DeclareTextCommand{\textnsucceq}{PU}{\9052\260\83\070}%\* U+2AB0 U+0338  
 19760 % U+2AB1 PRECEDES ABOVE SINGLE-LINE NOT EQUAL TO; \precneq (mathabx)  
 19761 \DeclareTextCommand{\textprecneq}{PU}{\9052\261}%\* U+2AB1  
 19762 % U+2AB2 SUCCEEDS ABOVE SINGLE-LINE NOT EQUAL TO; \succneq (mathabx)  
 19763 \DeclareTextCommand{\textsuccneq}{PU}{\9052\262}%\* U+2AB2  
 19764 % U+2AB3 PRECEDES ABOVE EQUALS SIGN; \preceqq (txfonts/pxfonts)  
 19765 \DeclareTextCommand{\textpreceqq}{PU}{\9052\263}%\* U+2AB3  
 19766 % \npreceqq (txfonts/pxfonts)  
 19767 \DeclareTextCommand{\textnpreceqq}{PU}{\9052\263\83\070}%\* U+2AB3 U+0338  
 19768 % U+2AB4 SUCCEEDS ABOVE EQUALS SIGN; \succeqq (txfonts/pxfonts)  
 19769 \DeclareTextCommand{\textsucceqq}{PU}{\9052\264}%\* U+2AB4  
 19770 % \nsucceqq (txfonts/pxfonts)  
 19771 \DeclareTextCommand{\textnsucceqq}{PU}{\9052\264\83\070}%\* U+2AB4 U+0338  
 19772 % U+2AB5 PRECEDES ABOVE NOT EQUAL TO; \precneqq (txfonts/pxfonts)  
 19773 \DeclareTextCommand{\textprecneqq}{PU}{\9052\265}%\* U+2AB5  
 19774 % U+2AB6 SUCCEEDS ABOVE NOT EQUAL TO; \succneqq (txfonts/pxfonts)  
 19775 \DeclareTextCommand{\textsuccneqq}{PU}{\9052\266}%\* U+2AB6  
 19776 % U+2AB7 PRECEDES ABOVE ALMOST EQUAL TO; \precapprox (AmS)  
 19777 \DeclareTextCommand{\textprecapprox}{PU}{\9052\267}%\* U+2AB7

```

19778 % \nprecapprox (txfonts/pxfonts)
19779 \DeclareTextCommand{\textnprecapprox}{PU}{\9052\267\83\070}%* U+2AB7 U+0338
19780 % U+2AB8 SUCCEEDS ABOVE ALMOST EQUAL TO; \succapprox (AmS)
19781 \DeclareTextCommand{\textsuccapprox}{PU}{\9052\270}%* U+2AB8
19782 % \nsuccapprox (txfonts/pxfonts)
19783 \DeclareTextCommand{\textnsuccapprox}{PU}{\9052\270\83\070}%* U+2AB8 U+0338
19784 % U+2AB9 PRECEDES ABOVE NOT ALMOST EQUAL TO; \precnapprox (AmS)
19785 \DeclareTextCommand{\textprecnapprox}{PU}{\9052\271}%* U+2AB9
19786 % U+2ABA SUCCEEDS ABOVE NOT ALMOST EQUAL TO; \succnapprox (AmS)
19787 \DeclareTextCommand{\textsuccnapprox}{PU}{\9052\272}%* U+2ABA
19788 % U+2AC5 SUBSET OF ABOVE EQUALS SIGN; \subseteqq (AmS)
19789 \DeclareTextCommand{\textsubseteqq}{PU}{\9052\305}%* U+2AC5
19790 % \nsubseteqq (txfonts/pxfonts, mathabx)
19791 \DeclareTextCommand{\textnsubseteqq}{PU}{\9052\305\83\070}%* U+2AC5 U+0338
19792 % U+2AC6 SUPERSET OF ABOVE EQUALS SIGN; \supseteqq (AmS)
19793 \DeclareTextCommand{\textsupseteqq}{PU}{\9052\306}%* U+2AC6
19794 % \nsupseteqq (mathabx)
19795 \DeclareTextCommand{\textnsupseteqq}{PU}{\9052\306\83\070}%* U+2AC6 U+0338
19796 % U+2AE3 DOUBLE VERTICAL BAR LEFT TURNSTILE
19797 \DeclareTextCommand{\textdashV}{PU}{\9052\343}%* U+2AE3
19798 %* \textdashV -> \leftVdash (MnSymbol)
19799 % \ndashV (mathabx)
19800 \DeclareTextCommand{\textndashV}{PU}{\9052\343\83\070}%* U+2AE3 U+0338
19801 %* \textndashV -> \nleftVdash (MnSymbol)
19802 % U+2AE4 VERTICAL BAR DOUBLE LEFT TURNSTILE; \Dashv (mathabx)
19803 \DeclareTextCommand{\textDashv}{PU}{\9052\344}%* U+2AE4
19804 %* \textDashv -> \leftmodels (MnSymbol)
19805 % \nDashv (mathabx)
19806 \DeclareTextCommand{\textnDashv}{PU}{\9052\344\83\070}%* U+2AE4 U+0338
19807 %* \textnDashv -> \nleftmodels (MnSymbol)
19808 % U+2AE5 DOUBLE VERTICAL BAR DOUBLE LEFT TURNSTILE;
19809 % \DashV (mathabx)
19810 \DeclareTextCommand{\textDashV}{PU}{\9052\345}%* U+2AE5
19811 %* \textDashV -> \leftModels (MnSymbol)
19812 % \nDashV (mathabx)
19813 \DeclareTextCommand{\textnDashV}{PU}{\9052\345\83\070}%* U+2AE5 U+0338
19814 %* \textnDashV -> \nleftModels (MnSymbol)
19815 % U+2AEA DOUBLE DOWN TACK; \downmodels (MnSymbol)
19816 \DeclareTextCommand{\textdownmodels}{PU}{\9052\352}%* U+2AEA
19817 % \ndownmodels (MnSymbol)
19818 \DeclareTextCommand{\textndownmodels}{PU}{\9052\352\83\070}%* U+2AEA U+0338
19819 % U+2AEB DOUBLE UP TACK; \upmodels (MnSymbol)
19820 \DeclareTextCommand{\textupmodels}{PU}{\9052\353}%* U+2AEB
19821 % \nupmodels (MnSymbol)
19822 \DeclareTextCommand{\textnupmodels}{PU}{\9052\353\83\070}%* U+2AEB U+0338
19823 % U+2AEF VERTICAL LINE WITH CIRCLE ABOVE; \upspoon (MnSymbol)
19824 \DeclareTextCommand{\textupspoon}{PU}{\9052\357}%* U+2AEF
19825 % U+2AF4 TRIPLE VERTICAL BAR BINARY RELATION;
19826 % \interleave (stmaryrd)
19827 \DeclareTextCommand{\textinterleave}{PU}{\9052\364}%* U+2AF4
19828 % U+2AFD DOUBLE SOLIDUS OPERATOR; \sslash (stmaryrd)
19829 \DeclareTextCommand{\textsslash}{PU}{\9052\375}%* U+2AFD
19830 %* \textsslash -> \varparallel (txfonts/pxfonts)

```

### 51.2.36 Miscellaneous Symbols and Arrows: U+2B00 to U+2BFF

19831 % U+2B20 WHITE PENTAGON; \pentagon (wasysym)  
 19832 \DeclareTextCommand{\textpentagon}{PU}{\9053\040}%\* U+2B20  
 19833 % U+2B21 WHITE HEXAGON; \varhexagon (wasysym)  
 19834 \DeclareTextCommand{\textvarhexagon}{PU}{\9053\041}%\* U+2B21

### 51.2.37 Latin Extended-C: U+2C60 to U+2C7F

19835 % U+2C7C LATIN SUBSCRIPT SMALL LETTER J  
 19836 \DeclareTextCommand{\textjinferior}{PU}{\9054\174}%\* U+2C7C

### 51.2.38 Supplemental Punctuation: U+2E00 to U+2E7F

19837 % U+2E13 DOTTED OBELOS; \slashdiv (MnSymbol)  
 19838 \DeclareTextCommand{\textslashdiv}{PU}{\9056\023}%\* U+2E13  
 19839 % U+2E18 INVERTED INTERROBANG; \textinterrobangdown (textcomp)  
 19840 \DeclareTextCommand{\textinterrobangdown}{PU}{\9056\030}% U+2E18  
 19841 % U+2E2D FIVE DOT MARK; \fivedots (MnSymbol)  
 19842 \DeclareTextCommand{\textfivedots}{PU}{\9056\055}%\* U+2E2D

### 51.2.39 Modifier Tone Letters: U+A700 to U+A71F

19843 % U+A71B MODIFIER LETTER RAISED UP ARROW; \textupstep (tipa)  
 19844 \DeclareTextCommand{\textupstep}{PU}{\9247\033}% U+A71B  
 19845 % U+A71C MODIFIER LETTER RAISED DOWN ARROW;  
 19846 % \textdownstep (tipa)  
 19847 \DeclareTextCommand{\textdownstep}{PU}{\9247\034}% U+A71C

### 51.2.40 Latin Extended-D: U+A720 to U+A7FF

19848 % U+A727 LATIN SMALL LETTER HENG; \textheng (tipx)  
 19849 \DeclareTextCommand{\textPUheng}{PU}{\9247\047}% U+A727  
 19850 %\* \textPUheng -> \textheng (tipx)  
 19851 % U+A72C LATIN CAPITAL LETTER CUATRILLO; \textlhookfour (tipx)  
 19852 \DeclareTextCommand{\textPULhookfour}{PU}{\9247\054}% U+A72C  
 19853 %\* \textPULhookfour -> \textlhookfour (tipx)  
 19854 % U+A730 LATIN LETTER SMALL CAPITAL F; \textscf (tipx)  
 19855 \DeclareTextCommand{\textPUscf}{PU}{\9247\060}% U+A730  
 19856 %\* \textPUscf -> \textscf (tipx)  
 19857 % U+A735 LATIN SMALL LETTER AO; \textao lig (tipx)  
 19858 \DeclareTextCommand{\textPUaolig}{PU}{\9247\065}% U+A735  
 19859 %\* \textPUaolig -> \textao lig (tipx)  
 19860 % U+A74F LATIN SMALL LETTER OO; \oo (wsuipa)  
 19861 \DeclareTextCommand{\textoo}{PU}{\9247\117}%\* U+A74F  
 19862 % U+A788 MODIFIER LETTER LOW CIRCUMFLEX ACCENT  
 19863 \DeclareTextCommand{\textcircumlow}{PU}{\9247\210}% U+A788

### 51.2.41 Alphabetic Presentation Forms: U+FB00 to U+FB4F

19864 % U+FB01 LATIN SMALL LIGATURE FI; fi  
 19865 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01  
 19866 % U+FB02 LATIN SMALL LIGATURE FL; fl  
 19867 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02

### 51.2.42 Musical Symbols: U+1D100 to U+1D1FF

19868 % U+1D13B MUSICAL SYMBOL WHOLE REST; \GaPa (harmony)  
 19869 \DeclareTextCommand{\textGaPa}{PU}{\9330\064\9335\073}%\* U+1D13B  
 19870 % U+1D13C MUSICAL SYMBOL HALF REST; \HaPa (harmony)  
 19871 \DeclareTextCommand{\textHaPa}{PU}{\9330\064\9335\074}%\* U+1D13C  
 19872 % U+1D13D MUSICAL SYMBOL QUARTER REST; \ViPa (harmony)  
 19873 \DeclareTextCommand{\textViPa}{PU}{\9330\064\9335\075}%\* U+1D13D  
 19874 % U+1D13E MUSICAL SYMBOL EIGHTH REST; \AcPa (harmony)  
 19875 \DeclareTextCommand{\textAcPa}{PU}{\9330\064\9335\076}%\* U+1D13E

19876 % U+1D13F MUSICAL SYMBOL SIXTEENTH REST; \SePa (harmony)  
 19877 \DeclareTextCommand{\textSePa}{PU}{\9330\064\9335\077}%\* U+1D13F  
 19878 % U+1D140 MUSICAL SYMBOL THIRTY-SECOND REST; \ZwPa (harmony)  
 19879 \DeclareTextCommand{\textZwPa}{PU}{\9330\064\9335\100}%\* U+1D140  
 19880 % U+1D15D MUSICAL SYMBOL WHOLE NOTE; \fullnote (wasysym)  
 19881 \DeclareTextCommand{\textfullnote}{PU}{\9330\064\9335\135}%\* U+1D15D  
 19882 %\* \textfullnote -> \Ganz (harmony)  
 19883 % U+1D15E MUSICAL SYMBOL HALF NOTE; \halfnote (wasysym)  
 19884 \DeclareTextCommand{\texthalfnote}{PU}{\9330\064\9335\136}%\* U+1D15E  
 19885 %\* \texthalfnote -> \Halb (harmony)  
 19886 % U+1D15F MUSICAL SYMBOL QUARTER NOTE; \Vier (harmony)  
 19887 \DeclareTextCommand{\textVier}{PU}{\9330\064\9335\137}%\* U+1D15F  
 19888 % U+1D160 MUSICAL SYMBOL EIGHTH NOTE; \Acht (harmony)  
 19889 \DeclareTextCommand{\textAcht}{PU}{\9330\064\9335\140}%\* U+1D160  
 19890 % U+1D161 MUSICAL SYMBOL SIXTEENTH NOTE; \Sech (harmony)  
 19891 \DeclareTextCommand{\textSech}{PU}{\9330\064\9335\141}%\* U+1D161  
 19892 % U+1D162 MUSICAL SYMBOL THIRTY-SECOND NOTE; \Zwdr (harmony)  
 19893 \DeclareTextCommand{\textZwdr}{PU}{\9330\064\9335\142}%\* U+1D162

#### 51.2.43 Miscellaneous Symbols and Pictographs: U+1F300 to U+1F5FF

19894 % U+1F30D EARTH GLOBE EUROPE-AFRICA; \Mundus (marvosym)  
 19895 \DeclareTextCommand{\textMundus}{PU}{\9330\074\9337\015}%\* U+1F30D  
 19896 % U+1F319 CRESCENT MOON; \Moon (marvosym)  
 19897 \DeclareTextCommand{\textMoon}{PU}{\9330\074\9337\031}%\* U+1F319  
 19898 % U+1F468 MAN; \ManFace (marvosym)  
 19899 \DeclareTextCommand{\textManFace}{PU}{\9330\075\9334\150}%\* U+1F468  
 19900 % U+1F469 WOMAN; \WomanFace (marvosym)  
 19901 \DeclareTextCommand{\textWomanFace}{PU}{\9330\075\9334\151}%\* U+1F469  
 19902 %\* \textWomanFace -> \Womanface (marvosym)  
 19903 % U+1F4E0 FAX MACHINE; \Fax (marvosym)  
 19904 \DeclareTextCommand{\textFax}{PU}{\9330\075\9334\340}%\* U+1F4E0  
 19905 %\* \textFax -> \Faxmachine (marvosym)  
 19906 % U+1F525 FIRE; \Fire (ifsym)  
 19907 \DeclareTextCommand{\textFire}{PU}{\9330\075\9335\045}%\* U+1F525

#### 51.2.44 Transport and Map Symbols: U+1F680 to U+1F6FF

19908 % U+1F6B2 BICYCLE; \Bicycle (marvosym)  
 19909 \DeclareTextCommand{\textBicycle}{PU}{\9330\075\9336\262}%\* U+1F6B2  
 19910 % U+1F6B9 MENS SYMBOL; \Gentsroom (marvosym)  
 19911 \DeclareTextCommand{\textGentsroom}{PU}{\9330\075\9336\271}%\* U+1F6B9  
 19912 % U+1F6BA WOMENS SYMBOL; \Ladiesroom (marvosym)  
 19913 \DeclareTextCommand{\textLadiesroom}{PU}{\9330\075\9336\272}%\* U+1F6BA

#### 51.2.45 Miscellaneous

19914 \DeclareTextCommand{\SS}{PU}{SS}%  
 19915 % \textcopyleft (textcomp)  
 19916 \DeclareTextCommand{\textcopyleft}{PU}{\9041\204\9040\335}% U+2184 U+20DD  
 19917 % \ccnc (ccllicenses)  
 19918 \DeclareTextCommand{\textccnc}{PU}{\80\044\9040\340}%\* U+0024 U+20E0  
 19919 % \ccnd (ccllicenses)  
 19920 \DeclareTextCommand{\textccnd}{PU}{=\9040\335}%\* U+003D U+20DD  
 19921 % \ccsa (ccllicenses)  
 19922 \DeclareTextCommand{\textccsa}{PU}{\9047\362\9040\335}%\* U+27F2 U+20DD  
 19923 % \Info (marvosym, china2e)  
 19924 \DeclareTextCommand{\textInfo}{PU}{\9330\065\9334\042\9040\336}%\* U+1D422 U+20DE  
 19925 % \CESign (marvosym)  
 19926 \DeclareTextCommand{\textCESign}{PU}{\80\103\80\105}%\* U+0043 U+0045

19927 %\* \textCESign -> \CESign (marvosym)

### 51.2.46 Aliases

Aliases (german.sty)

```
19928 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}%
19929 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}%
19930 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}%
19931 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}%
19932 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}%
19933 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}%
19934 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}%
19935 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}%

```

Aliases (math names)

```
19936 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}%*
19937 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}%*
19938 \DeclareTextCommand{\textdiv}{PU}{\textdivide}%*
19939 \DeclareTextCommand{\textpm}{PU}{\textplusminus}%*
19940 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}%*
19941 </puenc>

```

## 51.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```
19942 <*puvnenc>
19943 \DeclareTextCommand{\abreve}{PU}{\81\003}% U+0103
19944 \DeclareTextCommand{\acircumflex}{PU}{\80\342}% U+00E2
19945 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}% U+00EA
19946 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}% U+00F4
19947 \DeclareTextCommand{\ohorn}{PU}{\81\241}% U+01A1
19948 \DeclareTextCommand{\uhorn}{PU}{\81\260}% U+01B0
19949 \DeclareTextCommand{\ABREVE}{PU}{\81\002}% U+0102
19950 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}% U+00C2
19951 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}% U+00CA
19952 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}% U+00D4
19953 \DeclareTextCommand{\OHORN}{PU}{\81\240}% U+01A0
19954 \DeclareTextCommand{\UHORN}{PU}{\81\257}% U+01AF
19955 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1
19956 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}% U+1EA1
19957 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}% U+00E0
19958 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}% U+1EA3
19959 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3
19960 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}% U+1EAF
19961 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}% U+1EB7
19962 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}% U+1EB1
19963 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}% U+1EB3
19964 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}% U+1EB5
19965 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}% U+1EA5
19966 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}% U+1EAD
19967 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}% U+1EA7
19968 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}% U+1EA9
19969 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}% U+1EAB
19970 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9
19971 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}% U+1EB9
19972 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}% U+00E8

```

19973 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}% U+1EBB  
19974 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
19975 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}% U+1EBF  
19976 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}% U+1EC7  
19977 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}% U+1EC1  
19978 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}% U+1EC3  
19979 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}% U+1EC5  
19980 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
19981 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}% U+1ECB  
19982 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC  
19983 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}% U+1EC9  
19984 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
19985 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
19986 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}% U+1ECD  
19987 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}% U+00F2  
19988 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}% U+1ECF  
19989 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
19990 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}% U+1ED1  
19991 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}% U+1ED9  
19992 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\323}% U+1ED3  
19993 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}% U+1ED5  
19994 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}% U+1ED7  
19995 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}% U+1EDB  
19996 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}% U+1EE3  
19997 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\335}% U+1EDD  
19998 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}% U+1EDF  
19999 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}% U+1EE1  
20000 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
20001 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}% U+1EE5  
20002 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}% U+00F9  
20003 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}% U+1EE7  
20004 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
20005 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}% U+1EE9  
20006 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}% U+1EF1  
20007 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\353}% U+1EEB  
20008 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}% U+1EED  
20009 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}% U+1EEF  
20010 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
20011 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}% U+1EF5  
20012 \DeclareTextCompositeCommand{\'}{PU}{y}{\9036\363}% U+1EF3  
20013 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}% U+1EF7  
20014 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9  
20015 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
20016 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}% U+1EA0  
20017 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\300}% U+00C0  
20018 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}% U+1EA2  
20019 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
20020 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}% U+1EAE  
20021 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}% U+1EB6  
20022 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\260}% U+1EB0  
20023 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}% U+1EB2  
20024 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}% U+1EB4  
20025 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}% U+1EA4  
20026 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}% U+1EAC  
20027 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\246}% U+1EA6  
20028 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}% U+1EA8  
20029 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}% U+1EAA

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20030 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9
20031 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}% U+1EB8
20032 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\310}% U+00C8
20033 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}% U+1EBA
20034 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC
20035 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\276}% U+1EBE
20036 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}% U+1EC6
20037 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\300}% U+1EC0
20038 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}% U+1EC2
20039 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}% U+1EC4
20040 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD
20041 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}% U+1ECA
20042 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\314}% U+00CC
20043 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}% U+1EC8
20044 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128
20045 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3
20046 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}% U+1ECC
20047 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\322}% U+00D2
20048 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}% U+1ECE
20049 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5
20050 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}% U+1ED0
20051 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}% U+1ED8
20052 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\322}% U+1ED2
20053 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}% U+1ED4
20054 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}% U+1ED6
20055 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\332}% U+1EDA
20056 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}% U+1EE2
20057 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\334}% U+1EDC
20058 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}% U+1EDE
20059 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}% U+1EE0
20060 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA
20061 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4
20062 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331}% U+00D9
20063 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}% U+1EE6
20064 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168
20065 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}% U+1EE8
20066 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}% U+1EF0
20067 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\352}% U+1EEA
20068 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}% U+1EEC
20069 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}% U+1EEE
20070 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD
20071 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4
20072 \DeclareTextCompositeCommand{\'}{PU}{Y}{\9036\362}% U+1EF2
20073 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}% U+1EF6
20074 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8
20075 </p>

```

## 51.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```

20076 <*puarenc>
20077 % U+0621;afii57409;ARABIC LETTER HAMZA
20078 \DeclareTextCommand{\hamza}{PU}{\86\041}% U+0621
20079 % U+0622;afii57410;ARABIC LETTER ALEF WITH MADDA ABOVE
20080 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% U+0622
20081 % U+0623;afii57411;ARABIC LETTER ALEF WITH HAMZA ABOVE

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20082 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% U+0623  
 20083 % U+0624;afii57412;ARABIC LETTER WAW WITH HAMZA ABOVE  
 20084 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% U+0624  
 20085 % U+0625;afii57413;ARABIC LETTER ALEF WITH HAMZA BELOW  
 20086 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% U+0625  
 20087 % U+0626;afii57414;ARABIC LETTER YEH WITH HAMZA ABOVE  
 20088 \DeclareTextCommand{\yahamza}{PU}{\86\046}% U+0626  
 20089 % U+0627;afii57415;ARABIC LETTER ALEF  
 20090 \DeclareTextCommand{\alef}{PU}{\86\047}% U+0627  
 20091 % U+0628;afii57416;ARABIC LETTER BEH  
 20092 \DeclareTextCommand{\baa}{PU}{\86\050}% U+0628  
 20093 % U+0629;afii57417;ARABIC LETTER TEH MARBUTA  
 20094 \DeclareTextCommand{\T}{PU}{\86\051}% U+0629  
 20095 % U+062A;afii57418;ARABIC LETTER TEH  
 20096 \DeclareTextCommand{\taa}{PU}{\86\052}% U+062A  
 20097 % U+062B;afii57419;ARABIC LETTER THEH  
 20098 \DeclareTextCommand{\thaa}{PU}{\86\053}% U+062B  
 20099 % U+062C;afii57420;ARABIC LETTER JEEM  
 20100 \DeclareTextCommand{\jeem}{PU}{\86\054}% U+062C  
 20101 % U+062D;afii57421;ARABIC LETTER HAH  
 20102 \DeclareTextCommand{\Haa}{PU}{\86\055}% U+062D  
 20103 % U+062E;afii57422;ARABIC LETTER KHAH  
 20104 \DeclareTextCommand{\kha}{PU}{\86\056}% U+062E  
 20105 % U+062F;afii57423;ARABIC LETTER DAL  
 20106 \DeclareTextCommand{\dal}{PU}{\86\057}% U+062F  
 20107 % U+0630;afii57424;ARABIC LETTER THAL  
 20108 \DeclareTextCommand{\dhal}{PU}{\86\060}% U+0630  
 20109 % U+0631;afii57425;ARABIC LETTER REH  
 20110 \DeclareTextCommand{\ra}{PU}{\86\061}% U+0631  
 20111 % U+0632;afii57426;ARABIC LETTER ZAIN  
 20112 \DeclareTextCommand{\zay}{PU}{\86\062}% U+0632  
 20113 % U+0633;afii57427;ARABIC LETTER SEEN  
 20114 \DeclareTextCommand{\seen}{PU}{\86\063}% U+0633  
 20115 % U+0634;afii57428;ARABIC LETTER SHEEN  
 20116 \DeclareTextCommand{\sheen}{PU}{\86\064}% U+0634  
 20117 % U+0635;afii57429;ARABIC LETTER SAD  
 20118 \DeclareTextCommand{\sad}{PU}{\86\065}% U+0635  
 20119 % U+0636;afii57430;ARABIC LETTER DAD  
 20120 \DeclareTextCommand{\dad}{PU}{\86\066}% U+0636  
 20121 % U+0637;afii57431;ARABIC LETTER TAH  
 20122 \DeclareTextCommand{\Ta}{PU}{\86\067}% U+0637  
 20123 % U+0638;afii57432;ARABIC LETTER ZAH  
 20124 \DeclareTextCommand{\za}{PU}{\86\070}% U+0638  
 20125 % U+0639;afii57433;ARABIC LETTER AIN  
 20126 \DeclareTextCommand{\ayn}{PU}{\86\071}% U+0639  
 20127 % U+063A;afii57434;ARABIC LETTER GHAIN  
 20128 \DeclareTextCommand{\ghayn}{PU}{\86\072}% U+063A  
 20129 % U+0640;afii57440;ARABIC TATWEEL  
 20130 \DeclareTextCommand{\tatweel}{PU}{\86\100}% U+0640  
 20131 % U+0641;afii57441;ARABIC LETTER FEH  
 20132 \DeclareTextCommand{\fa}{PU}{\86\101}% U+0641  
 20133 % U+0642;afii57442;ARABIC LETTER QAF  
 20134 \DeclareTextCommand{\qaf}{PU}{\86\102}% U+0642  
 20135 % U+0643;afii57443;ARABIC LETTER KAF  
 20136 \DeclareTextCommand{\kaf}{PU}{\86\103}% U+0643  
 20137 % U+0644;afii57444;ARABIC LETTER LAM  
 20138 \DeclareTextCommand{\lam}{PU}{\86\104}% U+0644



20139 % U+0645;afi57445;ARABIC LETTER MEEM  
 20140 \DeclareTextCommand{\meem}{PU}{\86\105}% U+0645  
 20141 % U+0646;afi57446;ARABIC LETTER NOON  
 20142 \DeclareTextCommand{\nun}{PU}{\86\106}% U+0646  
 20143 % U+0647;afi57470;ARABIC LETTER HEH  
 20144 \DeclareTextCommand{\ha}{PU}{\86\107}% U+0647  
 20145 % U+0648;afi57448;ARABIC LETTER WAW  
 20146 \DeclareTextCommand{\waw}{PU}{\86\110}% U+0648  
 20147 % U+0649;afi57449;ARABIC LETTER ALEF MAKSURA  
 20148 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% U+0649  
 20149 % U+064A;afi57450;ARABIC LETTER YEH  
 20150 \DeclareTextCommand{\ya}{PU}{\86\112}% U+064A  
  
 20151 % U+064B;afi57451;ARABIC FATHATAN  
 20152 \DeclareTextCommand{\nasb}{PU}{\86\113}% U+064B  
 20153 % U+064C;afi57452;ARABIC DAMMATAN  
 20154 \DeclareTextCommand{\raff}{PU}{\86\114}% U+064C  
 20155 % U+064D;afi57453;ARABIC KASRATAN  
 20156 \DeclareTextCommand{\jarr}{PU}{\86\115}% U+064D  
 20157 % U+064E;afi57454;ARABIC FATHA  
 20158 \DeclareTextCommand{\fatha}{PU}{\86\116}% U+064E  
 20159 % U+064F;afi57455;ARABIC DAMMA  
 20160 \DeclareTextCommand{\damma}{PU}{\86\117}% U+064F  
 20161 % U+0650;afi57456;ARABIC KASRA  
 20162 \DeclareTextCommand{\kasra}{PU}{\86\120}% U+0650  
 20163 % U+0651;afi57457;ARABIC SHADDA  
 20164 \DeclareTextCommand{\shadda}{PU}{\86\121}% U+0651  
 20165 % U+0652;afi57458;ARABIC SUKUN  
 20166 \DeclareTextCommand{\sukun}{PU}{\86\122}% U+0652  
  
 Farsi  
 20167 % U+067E ARABIC LETTER PEH; afi57506  
 20168 \DeclareTextCommand{\peh}{PU}{\86\176}% U+067E  
 20169 % U+0686 ARABIC LETTER TCHEH; afi57507  
 20170 \DeclareTextCommand{\tch eh}{PU}{\86\206}% U+0686  
 20171 % U+0698 ARABIC LETTER JEH; afi57508  
 20172 \DeclareTextCommand{\j eh}{PU}{\86\230}% U+0698  
 20173 % U+06A9 ARABIC LETTER KEHEH  
 20174 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% U+06A9  
 20175 % U+06AF ARABIC LETTER GAF; afi57509  
 20176 \DeclareTextCommand{\gaf}{PU}{\86\257}% U+06AF  
 20177 % U+06CC ARABIC LETTER FARSI YEH  
 20178 \DeclareTextCommand{\farsiya}{PU}{\86\314}% U+06CC  
  
 20179 % U+200C ZERO WIDTH NON-JOINER; afi61664  
 20180 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% U+200C  
 20181 % U+200D ZERO WIDTH JOINER; afi301  
 20182 \DeclareTextCommand{\noboundary}{PU}{\9040\015}% U+200D  
 20183 (/puarenc)  
 20184 (\*psdextra)  
 20185 \Hy@VersionCheck{psdextra.def}  
 20186 \newcommand\*{\psdmapshortnames}{%  
 20187 \let\MVPlus\textMVPlus  
 20188 \let\MVComma\textMVComma  
 20189 \let\MVMinus\textMVMinus  
 20190 \let\MVPeriod\textMVPeriod  
 20191 \let\MVDivision\textMVDivision  
 20192 \let\MVZero\textMVZero

20193 \let\MVOne\textMVOne  
 20194 \let\MVTwo\textMVTwo  
 20195 \let\MVThree\textMVThree  
 20196 \let\MVFour\textMVFour  
 20197 \let\MVFive\textMVFive  
 20198 \let\MVSix\textMVSix  
 20199 \let\MVSeven\textMVSeven  
 20200 \let\MVEight\textMVEight  
 20201 \let\MVNine\textMVNine  
 20202 \let\MVAt\textMVAt  
 20203 \let\copyright\textcopyright  
 20204 \let\twosuperior\texttwosuperior  
 20205 \let\threesuperior\textthreesuperior  
 20206 \let\onesuperior\textonesuperior  
 20207 \let\Thorn\textThorn  
 20208 \let\thorn\textthorn  
 20209 \let\hbar\texthbar  
 20210 \let\hausA\texthausA  
 20211 \let\hausD\texthausD  
 20212 \let\hausK\texthausK  
 20213 \let\barl\textbarl  
 20214 \let\inve\textinve  
 20215 \let\slashc\textslashc  
 20216 \let\scripta\textscripta  
 20217 \let\openo\textopeno  
 20218 \let\rtaild\textrtaild  
 20219 \let\reve\textreve  
 20220 \let\schwa\textschwa  
 20221 \let\niepsilon\textniepsilon  
 20222 \let\repsilon\textrepsilon  
 20223 \let\rhookrepsilon\text\rhookrepsilon  
 20224 \let\scriptg\textscriptg  
 20225 \let\scg\textscg  
 20226 \let\ipagamma\textipagamma  
 20227 \let\babygamma\textbabygamma  
 20228 \let\bari\textbari  
 20229 \let\niota\textniota  
 20230 \let\sci\textsci  
 20231 \let\scn\textscn  
 20232 \let\niphi\textniphi  
 20233 \let\longlegr\textlonglegr  
 20234 \let\scr\textscr  
 20235 \let\invscr\textinvscr  
 20236 \let\esh\textesh  
 20237 \let\baru\textbaru  
 20238 \let\niupsilon\textniupsilon  
 20239 \let\scriptv\textscriptv  
 20240 \let\turnv\textturnv  
 20241 \let\turnw\textturnw  
 20242 \let\turny\textturny  
 20243 \let\scy\textscy  
 20244 \let\yogh\textyogh  
 20245 \let\glotstop\textglotstop  
 20246 \let\revglotstop\textrevglotstop  
 20247 \let\invglotstop\textinvglotstop  
 20248 \let\Gamma\textGamma  
 20249 \let\Delta\textDelta

20250  $\backslash\mathrm{let}\backslash\mathrm{Theta}\backslash\mathrm{textTheta}$   
 20251  $\backslash\mathrm{let}\backslash\mathrm{Lambda}\backslash\mathrm{textLambda}$   
 20252  $\backslash\mathrm{let}\backslash\mathrm{Xi}\backslash\mathrm{textXi}$   
 20253  $\backslash\mathrm{let}\backslash\mathrm{Pi}\backslash\mathrm{textPi}$   
 20254  $\backslash\mathrm{let}\backslash\mathrm{Sigma}\backslash\mathrm{textSigma}$   
 20255  $\backslash\mathrm{let}\backslash\mathrm{Upsilon}\backslash\mathrm{textUpsilon}$   
 20256  $\backslash\mathrm{let}\backslash\mathrm{Phi}\backslash\mathrm{textPhi}$   
 20257  $\backslash\mathrm{let}\backslash\mathrm{Psi}\backslash\mathrm{textPsi}$   
 20258  $\backslash\mathrm{let}\backslash\mathrm{Omega}\backslash\mathrm{textOmega}$   
 20259  $\backslash\mathrm{let}\backslash\mathrm{alpha}\backslash\mathrm{textalpha}$   
 20260  $\backslash\mathrm{let}\backslash\mathrm{beta}\backslash\mathrm{textbeta}$   
 20261  $\backslash\mathrm{let}\backslash\mathrm{gamma}\backslash\mathrm{textgamma}$   
 20262  $\backslash\mathrm{let}\backslash\mathrm{delta}\backslash\mathrm{textdelta}$   
 20263  $\backslash\mathrm{let}\backslash\mathrm{epsilon}\backslash\mathrm{textepsilon}$   
 20264  $\backslash\mathrm{let}\backslash\mathrm{zeta}\backslash\mathrm{textzeta}$   
 20265  $\backslash\mathrm{let}\backslash\mathrm{eta}\backslash\mathrm{texteta}$   
 20266  $\backslash\mathrm{let}\backslash\mathrm{theta}\backslash\mathrm{texttheta}$   
 20267  $\backslash\mathrm{let}\backslash\mathrm{iota}\backslash\mathrm{textiota}$   
 20268  $\backslash\mathrm{let}\backslash\mathrm{kappa}\backslash\mathrm{textkappa}$   
 20269  $\backslash\mathrm{let}\backslash\mathrm{lambda}\backslash\mathrm{textlambda}$   
 20270  $\backslash\mathrm{let}\backslash\mathrm{mugreek}\backslash\mathrm{textmugreek}$   
 20271  $\backslash\mathrm{let}\backslash\mathrm{nu}\backslash\mathrm{textnu}$   
 20272  $\backslash\mathrm{let}\backslash\mathrm{xi}\backslash\mathrm{textxi}$   
 20273  $\backslash\mathrm{let}\backslash\mathrm{pi}\backslash\mathrm{textpi}$   
 20274  $\backslash\mathrm{let}\backslash\mathrm{rho}\backslash\mathrm{textrho}$   
 20275  $\backslash\mathrm{let}\backslash\mathrm{varsigma}\backslash\mathrm{textvarsigma}$   
 20276  $\backslash\mathrm{let}\backslash\mathrm{sigma}\backslash\mathrm{textsigma}$   
 20277  $\backslash\mathrm{let}\backslash\mathrm{tau}\backslash\mathrm{texttau}$   
 20278  $\backslash\mathrm{let}\backslash\mathrm{upsilon}\backslash\mathrm{textupsilon}$   
 20279  $\backslash\mathrm{let}\backslash\mathrm{phi}\backslash\mathrm{textphi}$   
 20280  $\backslash\mathrm{let}\backslash\mathrm{chi}\backslash\mathrm{textchi}$   
 20281  $\backslash\mathrm{let}\backslash\mathrm{psi}\backslash\mathrm{textpsi}$   
 20282  $\backslash\mathrm{let}\backslash\mathrm{omega}\backslash\mathrm{textomega}$   
 20283  $\backslash\mathrm{let}\backslash\mathrm{scd}\backslash\mathrm{textscd}$   
 20284  $\backslash\mathrm{let}\backslash\mathrm{scu}\backslash\mathrm{textscu}$   
 20285  $\backslash\mathrm{let}\backslash\mathrm{inferior}\backslash\mathrm{textinferior}$   
 20286  $\backslash\mathrm{let}\backslash\mathrm{rinferior}\backslash\mathrm{textrinferior}$   
 20287  $\backslash\mathrm{let}\backslash\mathrm{uinferior}\backslash\mathrm{textuinferior}$   
 20288  $\backslash\mathrm{let}\backslash\mathrm{vinferior}\backslash\mathrm{textvinferior}$   
 20289  $\backslash\mathrm{let}\backslash\mathrm{betainferior}\backslash\mathrm{textbetainferior}$   
 20290  $\backslash\mathrm{let}\backslash\mathrm{gammainferior}\backslash\mathrm{textgammainferior}$   
 20291  $\backslash\mathrm{let}\backslash\mathrm{rhoinferior}\backslash\mathrm{textrhoinferior}$   
 20292  $\backslash\mathrm{let}\backslash\mathrm{phiinferior}\backslash\mathrm{textphiinferior}$   
 20293  $\backslash\mathrm{let}\backslash\mathrm{chiinferior}\backslash\mathrm{textchiinferior}$   
 20294  $\backslash\mathrm{let}\backslash\mathrm{barsci}\backslash\mathrm{textbarsci}$   
 20295  $\backslash\mathrm{let}\backslash\mathrm{barp}\backslash\mathrm{textbarp}$   
 20296  $\backslash\mathrm{let}\backslash\mathrm{barscu}\backslash\mathrm{textbarscu}$   
 20297  $\backslash\mathrm{let}\backslash\mathrm{htrtaild}\backslash\mathrm{texthtrtaild}$   
 20298  $\backslash\mathrm{let}\backslash\mathrm{dagger}\backslash\mathrm{textdagger}$   
 20299  $\backslash\mathrm{let}\backslash\mathrm{bullet}\backslash\mathrm{textbullet}$   
 20300  $\backslash\mathrm{let}\backslash\mathrm{hdotfor}\backslash\mathrm{texthdotfor}$   
 20301  $\backslash\mathrm{let}\backslash\mathrm{prime}\backslash\mathrm{textprime}$   
 20302  $\backslash\mathrm{let}\backslash\mathrm{second}\backslash\mathrm{textsecond}$   
 20303  $\backslash\mathrm{let}\backslash\mathrm{third}\backslash\mathrm{textthird}$   
 20304  $\backslash\mathrm{let}\backslash\mathrm{backprime}\backslash\mathrm{textbackprime}$   
 20305  $\backslash\mathrm{let}\backslash\mathrm{lefttherefore}\backslash\mathrm{textlefttherefore}$   
 20306  $\backslash\mathrm{let}\backslash\mathrm{fourth}\backslash\mathrm{textfourth}$

20307 \let\diamonddots\textdiamonddots  
 20308 \let\zerosuperior\textzerosuperior  
 20309 \let\isuperior\textisuperior  
 20310 \let\foursuperior\textfoursuperior  
 20311 \let\fivesuperior\textfivesuperior  
 20312 \let\sixsuperior\textsixsuperior  
 20313 \let\sevensuperior\textsevensuperior  
 20314 \let\eightsuperior\texteightsuperior  
 20315 \let\ninesuperior\textninesuperior  
 20316 \let\plussuperior\textplussuperior  
 20317 \let\minussuperior\textminussuperior  
 20318 \let\equalsuperior\textequalsuperior  
 20319 \let\parenleftsuperior\textparenleftsuperior  
 20320 \let\parenrightsuperior\textparenrightsuperior  
 20321 \let\nsuperior\textnsuperior  
 20322 \let\zeroinferior\textzeroinferior  
 20323 \let\oneinferior\textoneinferior  
 20324 \let\twoinferior\texttwoinferior  
 20325 \let\threeinferior\textthreeinferior  
 20326 \let\fourinferior\textfourinferior  
 20327 \let\fiveinferior\textfiveinferior  
 20328 \let\sixinferior\textsixinferior  
 20329 \let\seveninferior\textseveninferior  
 20330 \let\eightinferior\texteightinferior  
 20331 \let\nineinferior\textnineinferior  
 20332 \let\plusinferior\textplusinferior  
 20333 \let\minusinferior\textminusinferior  
 20334 \let\equalsinferior\textequalsinferior  
 20335 \let\parenleftinferior\textparenleftinferior  
 20336 \let\parenrightinferior\textparenrightinferior  
 20337 \let\ainferior\textainferior  
 20338 \let\einferior\texteinferior  
 20339 \let\oinferior\textoinferior  
 20340 \let\xinferior\textxinferior  
 20341 \let\schwainferior\textschwainferior  
 20342 \let\hinferior\texthinferior  
 20343 \let\kinferior\textkinferior  
 20344 \let\linferior\textlinferior  
 20345 \let\minferior\textminferior  
 20346 \let\ninferior\textninferior  
 20347 \let\pinferior\textpinferior  
 20348 \let\sinferior\textsinferior  
 20349 \let\tinferior\texttinferior  
 20350 \let\Deleatur\textDeleatur  
 20351 \let\hslash\texthslash  
 20352 \let\Im\textIm  
 20353 \let\ell\textell  
 20354 \let\wp\textwp  
 20355 \let\Re\textRe  
 20356 \let\mho\textmho  
 20357 \let\riota\textriota  
 20358 \let\Finv\textFinv  
 20359 \let\aleph\textaleph  
 20360 \let\beth\textbeth  
 20361 \let\gimel\textgimel  
 20362 \let\daleth\textdaleth  
 20363 \let\xfax\textfax

20364 \let\Game\textGame  
 20365 \let\leftarrow\textleftarrow  
 20366 \let\uparrow\textuparrow  
 20367 \let\rightarrow\textrightarrow  
 20368 \let\downarrow\textdownarrow  
 20369 \let\leftrightarrow\textleftrightarrow  
 20370 \let\updownarrow\textupdownarrow  
 20371 \let\nwarrow\textnwarrow  
 20372 \let\nearrow\textnearrow  
 20373 \let\searrow\textsearrow  
 20374 \let\swarrow\textswarrow  
 20375 \let\nleftarrow\textnleftarrow  
 20376 \let\nrightarrow\textnrightarrow  
 20377 \let\twoheadleftarrow\texttwoheadleftarrow  
 20378 \let\ntwoheadleftarrow\textntwoheadleftarrow  
 20379 \let\twoheaduparrow\texttwoheaduparrow  
 20380 \let\twoheadrightarrow\texttwoheadrightarrow  
 20381 \let\ntwoheadrightarrow\textntwoheadrightarrow  
 20382 \let\twoheaddownarrow\texttwoheaddownarrow  
 20383 \let\leftarrowtail\textleftarrowtail  
 20384 \let\rightarrowtail\textrightarrowtail  
 20385 \let\mapsto\textmapsto  
 20386 \let\hookleftarrow\texthookleftarrow  
 20387 \let\hookrightarrow\texthookrightarrow  
 20388 \let\looparrowleft\textlooparrowleft  
 20389 \let\looparrowright\textlooparrowright  
 20390 \let\leftrightharpoonup\textleftrightharpoonup  
 20391 \let\lightning\textlightning  
 20392 \let\dlsh\textdlsh  
 20393 \let\curvearrowleft\textcurvearrowleft  
 20394 \let\curvearrowright\textcurvearrowright  
 20395 \let\leftharpoonup\textleftharpoonup  
 20396 \let\leftharpoondown\textleftharpoondown  
 20397 \let\upharpoonright\textupharpoonright  
 20398 \let\upharpoonleft\textupharpoonleft  
 20399 \let\rightharpoonup\textrightharpoonup  
 20400 \let\rightharpoondown\textrightharpoondown  
 20401 \let\downharpoonright\textdownharpoonright  
 20402 \let\downharpoonleft\textdownharpoonleft  
 20403 \let\rightleftarrows\textrightleftarrows  
 20404 \let\updownarrows\textupdownarrows  
 20405 \let\leftrightarrows\textleftrightarrows  
 20406 \let\leftleftarrows\textleftleftarrows  
 20407 \let\upuparrows\textupuparrows  
 20408 \let\righttrightarrows\textrighttrightarrows  
 20409 \let\downdownarrows\textdowndownarrows  
 20410 \let\leftrightharpoons\textleftrightharpoons  
 20411 \let\rightleftharpoons\textrightleftharpoons  
 20412 \let\nLeftarrow\textnLeftarrow  
 20413 \let\nLeftrightarrow\textnLeftrightarrow  
 20414 \let\nRightarrow\textnRightarrow  
 20415 \let\Leftarrow\textLeftarrow  
 20416 \let\Uparrow\textUparrow  
 20417 \let\Rightarrow\textRightarrow  
 20418 \let\Downarrow\textDownarrow  
 20419 \let\Leftrightarrow\textLeftrightarrow  
 20420 \let\Updownarrow\textUpdownarrow

20421 `\let\Narrow\textNarrow`  
 20422 `\let\Nearrow\textNearrow`  
 20423 `\let\Searrow\textSearrow`  
 20424 `\let\Svarrow\textSvarrow`  
 20425 `\let\Lleftarrow\textLleftarrow`  
 20426 `\let\Rrightarrow\textRrightarrow`  
 20427 `\let\leftsquigarrow\textleftsquigarrow`  
 20428 `\let\rightsquigarrow\textright squigarrow`  
 20429 `\let\dashleftarrow\textdashleftarrow`  
 20430 `\let\dasheduparrow\textdasheduparrow`  
 20431 `\let\dashrightarrow\textdashrightarrow`  
 20432 `\let\dasheddownarrow\textdasheddownarrow`  
 20433 `\let\pointer\textpointer`  
 20434 `\let\downuparrows\textdownuparrows`  
 20435 `\let\leftarrowtriangle\textleftarrowtriangle`  
 20436 `\let\rightarrowtriangle\textrightarrowtriangle`  
 20437 `\let\leftrightarrowtriangle\textleftrightarrowtriangle`  
 20438 `\let\forall\textforall`  
 20439 `\let\complement\textcomplement`  
 20440 `\let\partial\textpartial`  
 20441 `\let\exists\textexists`  
 20442 `\let\nexists\textnexists`  
 20443 `\let\emptyset\textemptyset`  
 20444 `\let\triangle\texttriangle`  
 20445 `\let\nabla\textnabla`  
 20446 `\let\in\textin`  
 20447 `\let\notin\textnotin`  
 20448 `\let\smallin\textsmallin`  
 20449 `\let\ni\textni`  
 20450 `\let\notowner\textnotowner`  
 20451 `\let\smallowns\textsmallowns`  
 20452 `\let\prod\textprod`  
 20453 `\let\amalg\textamalg`  
 20454 `\let\sum\textsum`  
 20455 `\let\mp\textmp`  
 20456 `\let\dotplus\textdotplus`  
 20457 `\let\Divides\textDivides`  
 20458 `\let\DividesNot\textDividesNot`  
 20459 `\let\setminus\textsetminus`  
 20460 `\let\ast\textast`  
 20461 `\let\circ\textcirc`  
 20462 `\let\surd\textsurd`  
 20463 `\let\propto\textpropto`  
 20464 `\let\infty\textinfty`  
 20465 `\let\angle\textangle`  
 20466 `\let\measuredangle\textmeasuredangle`  
 20467 `\let\sphericalangle\textsphericalangle`  
 20468 `\let\mid\textmid`  
 20469 `\let\nmid\textnmid`  
 20470 `\let\parallel\textparallel`  
 20471 `\let\nparallel\textnparallel`  
 20472 `\let\wedge\textwedge`  
 20473 `\let\owedge\textowedge`  
 20474 `\let\vee\textvee`  
 20475 `\let\ovee\textovee`  
 20476 `\let\cap\textcap`  
 20477 `\let\cup\textcup`

20478 `\let\int\textint`  
 20479 `\let\iint\textiint`  
 20480 `\let\iiint\textiiint`  
 20481 `\let\oint\textoint`  
 20482 `\let\oiint\textoiint`  
 20483 `\let\ointclockwise\textointclockwise`  
 20484 `\let\ointctrlockwise\textointctrlockwise`  
 20485 `\let\therefore\texttherefore`  
 20486 `\let\because\textbecause`  
 20487 `\let\vdotdot\textvdotdot`  
 20488 `\let\squaredots\textsquaredots`  
 20489 `\let\dotminus\textdotminus`  
 20490 `\let\eqcolon\texteqcolon`  
 20491 `\let\sim\textsim`  
 20492 `\let\backsim\textbacksim`  
 20493 `\let\backsim\textnbacksim`  
 20494 `\let\wr\textwr`  
 20495 `\let\sim\textnsim`  
 20496 `\let\eqsim\texteqsim`  
 20497 `\let\neqsim\textneqsim`  
 20498 `\let\simeq\textsimeq`  
 20499 `\let\sim\textnsimeq`  
 20500 `\let\cong\textcong`  
 20501 `\let\cong\textncong`  
 20502 `\let\approx\textapprox`  
 20503 `\let\approx\textnapprox`  
 20504 `\let\approx\textapprox`  
 20505 `\let\approx\textnapprox`  
 20506 `\let\triplesim\texttriplesim`  
 20507 `\let\triplesim\textntriplesim`  
 20508 `\let\backcong\textbackcong`  
 20509 `\let\backcong\textnbackcong`  
 20510 `\let\asympt\textasympt`  
 20511 `\let\asympt\textnasympt`  
 20512 `\let\Bumpeq\textBumpeq`  
 20513 `\let\Bumpeq\textnBumpeq`  
 20514 `\let\bumpeq\textbumpeq`  
 20515 `\let\bumpeq\textnbumpeq`  
 20516 `\let\doteq\textdoteq`  
 20517 `\let\doteq\textndoteq`  
 20518 `\let\doteqdot\textdoteqdot`  
 20519 `\let\ndoteq\textndoteq`  
 20520 `\let\fallingdoteq\textfallingdoteq`  
 20521 `\let\fallingdoteq\textnfallingdoteq`  
 20522 `\let\risingdoteq\textrisingdoteq`  
 20523 `\let\risingdoteq\textnrisingdoteq`  
 20524 `\let\colonequals\textcolonequals`  
 20525 `\let\equalscolon\textequalscolon`  
 20526 `\let\eqcirc\texteqcirc`  
 20527 `\let\neqcirc\textneqcirc`  
 20528 `\let\circeq\textcirceq`  
 20529 `\let\ncirceq\textncirceq`  
 20530 `\let\hateq\texthateq`  
 20531 `\let\hateq\textnhateq`  
 20532 `\let\triangleeq\texttriangleeq`  
 20533 `\let\neq\textneq`  
 20534 `\let\neq\textne`

20535 \let\equiv\textequiv  
 20536 \let\nequiv\textnequiv  
 20537 \let\leq\textleq  
 20538 \let\le\textle  
 20539 \let\geq\textgeq  
 20540 \let\ge\textge  
 20541 \let\leqq\textleqq  
 20542 \let\leqq\textleqq  
 20543 \let\geqq\textgeqq  
 20544 \let\geqq\textgeqq  
 20545 \let\lneqq\textlneqq  
 20546 \let\gneqq\textgneqq  
 20547 \let\ll\textll  
 20548 \let\nll\textnll  
 20549 \let\gg\textgg  
 20550 \let\ngg\textngg  
 20551 \let\between\textbetween  
 20552 \let\nless\textnless  
 20553 \let\ngtr\textngtr  
 20554 \let\lneq\textlneq  
 20555 \let\ngeq\textngeq  
 20556 \let\lesssim\textlessssim  
 20557 \let\gtrsim\textgtrsim  
 20558 \let\nlesssim\textnlesssim  
 20559 \let\ngtrsim\textngtrsim  
 20560 \let\lessgtr\textlessgtr  
 20561 \let\gtrless\textgtrless  
 20562 \let\ngtrless\textngtrless  
 20563 \let\nlessgtr\textnlessgtr  
 20564 \let\prec\textprec  
 20565 \let\succ\textsucc  
 20566 \let\preccurlyeq\textpreccurlyeq  
 20567 \let\succcurlyeq\textsucccurlyeq  
 20568 \let\prec\textprec  
 20569 \let\prec\textprec  
 20570 \let\succsim\textsuccsim  
 20571 \let\nsuccsim\textnsuccsim  
 20572 \let\prec\textprec  
 20573 \let\succ\textsucc  
 20574 \let\subset\textsubset  
 20575 \let\supset\textsupset  
 20576 \let\nsubset\textnsubset  
 20577 \let\nsupset\textnsupset  
 20578 \let\subse\textsubse  
 20579 \let\supseteq\textsupseteq  
 20580 \let\nsubse\textnsubse  
 20581 \let\nsupseteq\textnsupseteq  
 20582 \let\subsetneq\textsubsetneq  
 20583 \let\supsetneq\textsupsetneq  
 20584 \let\cupdot\textcupdot  
 20585 \let\cupplus\textcupplus  
 20586 \let\sqs\textsqsubset  
 20587 \let\nsqsubset\textnsqsubset  
 20588 \let\sqs\textsqsupset  
 20589 \let\nsqsupset\textnsqsupset  
 20590 \let\sqs\textsqsubseteq  
 20591 \let\nsqsubseteq\textnsqsubseteq



20592  $\backslash\mathrm{sqsupseteq}\backslash\mathrm{textsqsupseteq}$   
 20593  $\backslash\mathrm{nsqsupseteq}\backslash\mathrm{textnsqsupseteq}$   
 20594  $\backslash\mathrm{sqcap}\backslash\mathrm{textsqcap}$   
 20595  $\backslash\mathrm{sqcup}\backslash\mathrm{textsqcup}$   
 20596  $\backslash\mathrm{oplus}\backslash\mathrm{textoplus}$   
 20597  $\backslash\mathrm{ominus}\backslash\mathrm{textominus}$   
 20598  $\backslash\mathrm{otimes}\backslash\mathrm{textotimes}$   
 20599  $\backslash\mathrm{oslash}\backslash\mathrm{textoslash}$   
 20600  $\backslash\mathrm{odot}\backslash\mathrm{textodot}$   
 20601  $\backslash\mathrm{circledcirc}\backslash\mathrm{textcircledcirc}$   
 20602  $\backslash\mathrm{circledast}\backslash\mathrm{textcircledast}$   
 20603  $\backslash\mathrm{circleddash}\backslash\mathrm{textcircleddash}$   
 20604  $\backslash\mathrm{boxplus}\backslash\mathrm{textboxplus}$   
 20605  $\backslash\mathrm{boxminus}\backslash\mathrm{textboxminus}$   
 20606  $\backslash\mathrm{boxtimes}\backslash\mathrm{textboxtimes}$   
 20607  $\backslash\mathrm{boxdot}\backslash\mathrm{textboxdot}$   
 20608  $\backslash\mathrm{vdash}\backslash\mathrm{textvdash}$   
 20609  $\backslash\mathrm{dashv}\backslash\mathrm{texdashv}$   
 20610  $\backslash\mathrm{ndashv}\backslash\mathrm{textndashv}$   
 20611  $\backslash\mathrm{top}\backslash\mathrm{texttop}$   
 20612  $\backslash\mathrm{ndownvdash}\backslash\mathrm{textndownvdash}$   
 20613  $\backslash\mathrm{bot}\backslash\mathrm{textbot}$   
 20614  $\backslash\mathrm{nupvdash}\backslash\mathrm{textnupvdash}$   
 20615  $\backslash\mathrm{vDash}\backslash\mathrm{textvDash}$   
 20616  $\backslash\mathrm{VDash}\backslash\mathrm{textVDash}$   
 20617  $\backslash\mathrm{Vdash}\backslash\mathrm{textVdash}$   
 20618  $\backslash\mathrm{nVdash}\backslash\mathrm{textnVdash}$   
 20619  $\backslash\mathrm{VDash}\backslash\mathrm{textVDash}$   
 20620  $\backslash\mathrm{nvDash}\backslash\mathrm{textnvDash}$   
 20621  $\backslash\mathrm{nvDash}\backslash\mathrm{textnvDash}$   
 20622  $\backslash\mathrm{nVdash}\backslash\mathrm{textnVdash}$   
 20623  $\backslash\mathrm{nVDash}\backslash\mathrm{textnVDash}$   
 20624  $\backslash\mathrm{lhs}\backslash\mathrm{textrhs}$   
 20625  $\backslash\mathrm{rhd}\backslash\mathrm{textrhd}$   
 20626  $\backslash\mathrm{unlhd}\backslash\mathrm{textunlhd}$   
 20627  $\backslash\mathrm{unrhd}\backslash\mathrm{textunrhd}$   
 20628  $\backslash\mathrm{multimapdotbothA}\backslash\mathrm{textmultimapdotbothA}$   
 20629  $\backslash\mathrm{multimapdotbothB}\backslash\mathrm{textmultimapdotbothB}$   
 20630  $\backslash\mathrm{multimap}\backslash\mathrm{textmultimap}$   
 20631  $\backslash\mathrm{veebar}\backslash\mathrm{textveebar}$   
 20632  $\backslash\mathrm{barwedge}\backslash\mathrm{textbarwedge}$   
 20633  $\backslash\mathrm{star}\backslash\mathrm{textstar}$   
 20634  $\backslash\mathrm{divideontimes}\backslash\mathrm{textdivideontimes}$   
 20635  $\backslash\mathrm{bowtie}\backslash\mathrm{textbowtie}$   
 20636  $\backslash\mathrm{ltimes}\backslash\mathrm{textltimes}$   
 20637  $\backslash\mathrm{rtimes}\backslash\mathrm{textrtimes}$   
 20638  $\backslash\mathrm{leftthreetimes}\backslash\mathrm{textleftthreetimes}$   
 20639  $\backslash\mathrm{rightthreetimes}\backslash\mathrm{textrightthreetimes}$   
 20640  $\backslash\mathrm{backsimeq}\backslash\mathrm{textbacksimeq}$   
 20641  $\backslash\mathrm{nbacksimeq}\backslash\mathrm{textnbacksimeq}$   
 20642  $\backslash\mathrm{curlyvee}\backslash\mathrm{textcurlyvee}$   
 20643  $\backslash\mathrm{curlywedge}\backslash\mathrm{textcurlywedge}$   
 20644  $\backslash\mathrm{Subset}\backslash\mathrm{textSubset}$   
 20645  $\backslash\mathrm{nSubset}\backslash\mathrm{textnSubset}$   
 20646  $\backslash\mathrm{Supset}\backslash\mathrm{textSupset}$   
 20647  $\backslash\mathrm{nSupset}\backslash\mathrm{textnSupset}$   
 20648  $\backslash\mathrm{Cap}\backslash\mathrm{textCap}$

20649  $\backslash\text{let}\backslash\text{Cup}\backslash\text{textCup}$   
 20650  $\backslash\text{let}\backslash\text{pitchfork}\backslash\text{textpitchfork}$   
 20651  $\backslash\text{let}\backslash\text{lessdot}\backslash\text{textlessdot}$   
 20652  $\backslash\text{let}\backslash\text{gtrdot}\backslash\text{textgtrdot}$   
 20653  $\backslash\text{let}\backslash\text{lll}\backslash\text{textlll}$   
 20654  $\backslash\text{let}\backslash\text{ggg}\backslash\text{textggg}$   
 20655  $\backslash\text{let}\backslash\text{lesseqgtr}\backslash\text{textlesseqgtr}$   
 20656  $\backslash\text{let}\backslash\text{gtreqless}\backslash\text{textgtreqless}$   
 20657  $\backslash\text{let}\backslash\text{curlyeqprec}\backslash\text{textcurlyeqprec}$   
 20658  $\backslash\text{let}\backslash\text{ncurlyeqprec}\backslash\text{textncurlyeqprec}$   
 20659  $\backslash\text{let}\backslash\text{curlyeqsucc}\backslash\text{textcurlyeqsucc}$   
 20660  $\backslash\text{let}\backslash\text{ncurlyeqsucc}\backslash\text{textncurlyeqsucc}$   
 20661  $\backslash\text{let}\backslash\text{npreccurlyeq}\backslash\text{textnpreccurlyeq}$   
 20662  $\backslash\text{let}\backslash\text{nsucccurlyeq}\backslash\text{textnsucccurlyeq}$   
 20663  $\backslash\text{let}\backslash\text{nqsubseteq}\backslash\text{textnqsubseteq}$   
 20664  $\backslash\text{let}\backslash\text{nqsupseteq}\backslash\text{textnqsupseteq}$   
 20665  $\backslash\text{let}\backslash\text{sqsubsetneq}\backslash\text{textsqsubsetneq}$   
 20666  $\backslash\text{let}\backslash\text{sqsupsetneq}\backslash\text{textsqsupsetneq}$   
 20667  $\backslash\text{let}\backslash\text{lnsim}\backslash\text{textlnsim}$   
 20668  $\backslash\text{let}\backslash\text{gnsim}\backslash\text{textgnsim}$   
 20669  $\backslash\text{let}\backslash\text{precnsim}\backslash\text{textprecnsim}$   
 20670  $\backslash\text{let}\backslash\text{succnsim}\backslash\text{textsuccnsim}$   
 20671  $\backslash\text{let}\backslash\text{ntriangleleft}\backslash\text{textntriangleleft}$   
 20672  $\backslash\text{let}\backslash\text{ntriangleright}\backslash\text{textntriangleright}$   
 20673  $\backslash\text{let}\backslash\text{ntrianglelefteq}\backslash\text{textntrianglelefteq}$   
 20674  $\backslash\text{let}\backslash\text{ntrianglerighteq}\backslash\text{textntrianglerighteq}$   
 20675  $\backslash\text{let}\backslash\text{vdots}\backslash\text{textvdots}$   
 20676  $\backslash\text{let}\backslash\text{cdots}\backslash\text{textcdots}$   
 20677  $\backslash\text{let}\backslash\text{udots}\backslash\text{textudots}$   
 20678  $\backslash\text{let}\backslash\text{ddots}\backslash\text{textddots}$   
 20679  $\backslash\text{let}\backslash\text{barin}\backslash\text{textbarin}$   
 20680  $\backslash\text{let}\backslash\text{diameter}\backslash\text{textdiameter}$   
 20681  $\backslash\text{let}\backslash\text{backneg}\backslash\text{textbackneg}$   
 20682  $\backslash\text{let}\backslash\text{wasylounge}\backslash\text{textwasylounge}$   
 20683  $\backslash\text{let}\backslash\text{invbackneg}\backslash\text{textinvbackneg}$   
 20684  $\backslash\text{let}\backslash\text{clock}\backslash\text{textclock}$   
 20685  $\backslash\text{let}\backslash\text{ulcorner}\backslash\text{textulcorner}$   
 20686  $\backslash\text{let}\backslash\text{urcorner}\backslash\text{texturcorner}$   
 20687  $\backslash\text{let}\backslash\text{llcorner}\backslash\text{textllcorner}$   
 20688  $\backslash\text{let}\backslash\text{lrcorner}\backslash\text{textlrcorner}$   
 20689  $\backslash\text{let}\backslash\text{frown}\backslash\text{textfrown}$   
 20690  $\backslash\text{let}\backslash\text{smile}\backslash\text{textsmile}$   
 20691  $\backslash\text{let}\backslash\text{Keyboard}\backslash\text{textKeyboard}$   
 20692  $\backslash\text{let}\backslash\text{langle}\backslash\text{textlangle}$   
 20693  $\backslash\text{let}\backslash\text{rangle}\backslash\text{textrangle}$   
 20694  $\backslash\text{let}\backslash\text{APLinv}\backslash\text{textAPLinv}$   
 20695  $\backslash\text{let}\backslash\text{Tumbler}\backslash\text{textTumbler}$   
 20696  $\backslash\text{let}\backslash\text{notslash}\backslash\text{textnotslash}$   
 20697  $\backslash\text{let}\backslash\text{notbackslash}\backslash\text{textnotbackslash}$   
 20698  $\backslash\text{let}\backslash\text{boxbackslash}\backslash\text{textboxbackslash}$   
 20699  $\backslash\text{let}\backslash\text{APLleftarrowbox}\backslash\text{textAPLleftarrowbox}$   
 20700  $\backslash\text{let}\backslash\text{APLrightarrowbox}\backslash\text{textAPLrightarrowbox}$   
 20701  $\backslash\text{let}\backslash\text{APLuparrowbox}\backslash\text{textAPLuparrowbox}$   
 20702  $\backslash\text{let}\backslash\text{APLdownarrowbox}\backslash\text{textAPLdownarrowbox}$   
 20703  $\backslash\text{let}\backslash\text{APLinput}\backslash\text{textAPLinput}$   
 20704  $\backslash\text{let}\backslash\text{Request}\backslash\text{textRequest}$   
 20705  $\backslash\text{let}\backslash\text{Beam}\backslash\text{textBeam}$

20706 \let\hexagon\texthexagon  
 20707 \let\APLbox\textAPLbox  
 20708 \let\ForwardToIndex\textForwardToIndex  
 20709 \let\RewindToIndex\textRewindToIndex  
 20710 \let\bbslash\textbbslash  
 20711 \let\CircledA\textCircledA  
 20712 \let\CleaningF\textCleaningF  
 20713 \let\CleaningFF\textCleaningFF  
 20714 \let\CleaningP\textCleaningP  
 20715 \let\CleaningPP\textCleaningPP  
 20716 \let\CuttingLine\textCuttingLine  
 20717 \let\UParrow\textUParrow  
 20718 \let\bigtriangleup\textbigtriangleup  
 20719 \let\Forward\textForward  
 20720 \let\triangleright\texttriangleright  
 20721 \let\RHD\textRHD  
 20722 \let\DOWNarrow\textDOWNarrow  
 20723 \let\bigtriangledown\textbigtriangledown  
 20724 \let\Rewind\textRewind  
 20725 \let\triangleleft\texttriangleleft  
 20726 \let\LHD\textLHD  
 20727 \let\diamond\textdiamond  
 20728 \let\lozenge\textlozenge  
 20729 \let\LEFTCIRCLE\textLEFTCIRCLE  
 20730 \let\RIGHTCIRCLE\textRIGHTCIRCLE  
 20731 \let\openbullet\textopenbullet  
 20732 \let\boxbar\textboxbar  
 20733 \let\bigcircle\textbigcircle  
 20734 \let\Cloud\textCloud  
 20735 \let\FiveStar\textFiveStar  
 20736 \let\FiveStarOpen\textFiveStarOpen  
 20737 \let\Phone\textPhone  
 20738 \let\boxempty\textboxempty  
 20739 \let\Checkedbox\textCheckedbox  
 20740 \let\Crossedbox\textCrossedbox  
 20741 \let\Coffeecup\textCoffeecup  
 20742 \let\HandCuffLeft\textHandCuffLeft  
 20743 \let\HandCuffRight\textHandCuffRight  
 20744 \let\HandLeft\textHandLeft  
 20745 \let\HandRight\textHandRight  
 20746 \let\Radioactivity\textRadioactivity  
 20747 \let\Biohazard\textBiohazard  
 20748 \let\Ankh\textAnkh  
 20749 \let\YinYang\textYinYang  
 20750 \let\frownie\textfrownie  
 20751 \let\smiley\textsmiley  
 20752 \let\blacksmiley\textblacksmiley  
 20753 \let\sun\textsun  
 20754 \let\leftmoon\textleftmoon  
 20755 \let\rightmoon\textrightmoon  
 20756 \let\mercury\textmercury  
 20757 \let\earth\textearth  
 20758 \let\male\textmale  
 20759 \let\jupiter\textjupiter  
 20760 \let\saturn\textsaturn  
 20761 \let\uranus\texturanus  
 20762 \let\neptune\textneptune

20763 \let\pluto\textpluto  
 20764 \let\aries\textaries  
 20765 \let\taurus\texttaurus  
 20766 \let\gemini\textgemini  
 20767 \let\cancer\textcancer  
 20768 \let\leo\textleo  
 20769 \let\virgo\textvirgo  
 20770 \let\libra\textlibra  
 20771 \let\scorpio\textscorpio  
 20772 \let\sagittarius\textsagittarius  
 20773 \let\capricorn\textcapricorn  
 20774 \let\aquarius\textaquarius  
 20775 \let\pisces\textpisces  
 20776 \let\quarternote\textquarternote  
 20777 \let\twonotes\texttwonotes  
 20778 \let\sixteenthnote\textsixteenthnote  
 20779 \let\flat\textflat  
 20780 \let\natural\textnatural  
 20781 \let\sharp\textsharp  
 20782 \let\recycle\textrecycle  
 20783 \let\Wheelchair\textWheelchair  
 20784 \let\Flag\textFlag  
 20785 \let\MineSign\textMineSign  
 20786 \let\ds\textds  
 20787 \let\dsmedical\textdsmedical  
 20788 \let\dsjuridical\textdsjuridical  
 20789 \let\dschemical\textdschemical  
 20790 \let\dsbiological\textdsbiological  
 20791 \let\dscommercial\textdscommercial  
 20792 \let\manstar\textmanstar  
 20793 \let\danger\textdanger  
 20794 \let\FemaleFemale\textFemaleFemale  
 20795 \let\MaleMale\textMaleMale  
 20796 \let\FemaleMale\textFemaleMale  
 20797 \let\Hermaphrodite\textHermaphrodite  
 20798 \let\Neutral\textNeutral  
 20799 \let\hexstar\texthexstar  
 20800 \let\SunCloud\textSunCloud  
 20801 \let\Rain\textRain  
 20802 \let\noway\textnoway  
 20803 \let\Mountain\textMountain  
 20804 \let\Tent\textTent  
 20805 \let\ScissorRight\textScissorRight  
 20806 \let\ScissorRightBrokenTop\textScissorRightBrokenTop  
 20807 \let\ScissorHollowRight\textScissorHollowRight  
 20808 \let\PhoneHandset\textPhoneHandset  
 20809 \let\Tape\textTape  
 20810 \let\Plane\textPlane  
 20811 \let\Envelope\textEnvelope  
 20812 \let\Peace\textPeace  
 20813 \let\WritingHand\textWritingHand  
 20814 \let\PencilRightDown\textPencilRightDown  
 20815 \let\PencilRight\textPencilRight  
 20816 \let\PencilRightUp\textPencilRightUp  
 20817 \let\NibRight\textNibRight  
 20818 \let\NibSolidRight\textNibSolidRight  
 20819 \let\Checkmark\textCheckmark

20820 \let\CheckmarkBold\textCheckmarkBold  
 20821 \let\XSolid\textXSolid  
 20822 \let\XSolidBold\textXSolidBold  
 20823 \let\XSolidBrush\textXSolidBrush  
 20824 \let\PlusOutline\textPlusOutline  
 20825 \let\Plus\textPlus  
 20826 \let\PlusThinCenterOpen\textPlusThinCenterOpen  
 20827 \let\PlusCenterOpen\textPlusCenterOpen  
 20828 \let\Cross\textCross  
 20829 \let\CrossOpenShadow\textCrossOpenShadow  
 20830 \let\CrossOutline\textCrossOutline  
 20831 \let\CrossMaltese\textCrossMaltese  
 20832 \let\DavidStar\textDavidStar  
 20833 \let\FourAsterisk\textFourAsterisk  
 20834 \let\JackStar\textJackStar  
 20835 \let\JackStarBold\textJackStarBold  
 20836 \let\ClowerTips\textClowerTips  
 20837 \let\FourStar\textFourStar  
 20838 \let\FourStarOpen\textFourStarOpen  
 20839 \let\FiveStarOpenCircled\textFiveStarOpenCircled  
 20840 \let\FiveStarCenterOpen\textFiveStarCenterOpen  
 20841 \let\FiveStarOpenDotted\textFiveStarOpenDotted  
 20842 \let\FiveStarOutline\textFiveStarOutline  
 20843 \let\FiveStarOutlineHeavy\textFiveStarOutlineHeavy  
 20844 \let\FiveStarConvex\textFiveStarConvex  
 20845 \let\FiveStarShadow\textFiveStarShadow  
 20846 \let\AsteriskBold\textAsteriskBold  
 20847 \let\AsteriskCenterOpen\textAsteriskCenterOpen  
 20848 \let\EightStarTaper\textEightStarTaper  
 20849 \let\EightStarConvex\textEightStarConvex  
 20850 \let\SixStar\textSixStar  
 20851 \let\EightStar\textEightStar  
 20852 \let\EightStarBold\textEightStarBold  
 20853 \let\TwelveStar\textTwelveStar  
 20854 \let\SixteenStarLight\textSixteenStarLight  
 20855 \let\SixFlowerPetalRemoved\textSixFlowerPetalRemoved  
 20856 \let\SixFlowerOpenCenter\textSixFlowerOpenCenter  
 20857 \let\Asterisk\textAsterisk  
 20858 \let\SixFlowerAlternate\textSixFlowerAlternate  
 20859 \let\FiveFlowerPetal\textFiveFlowerPetal  
 20860 \let\FiveFlowerOpen\textFiveFlowerOpen  
 20861 \let\EightFlowerPetal\textEightFlowerPetal  
 20862 \let\SunshineOpenCircled\textSunshineOpenCircled  
 20863 \let\SixFlowerAltPetal\textSixFlowerAltPetal  
 20864 \let\SnowflakeChevron\textSnowflakeChevron  
 20865 \let\Snowflake\textSnowflake  
 20866 \let\SnowflakeChevronBold\textSnowflakeChevronBold  
 20867 \let\Sparkle\textSparkle  
 20868 \let\SparkleBold\textSparkleBold  
 20869 \let\AsteriskRoundedEnds\textAsteriskRoundedEnds  
 20870 \let\EightFlowerPetalRemoved\textEightFlowerPetalRemoved  
 20871 \let\EightAsterisk\textEightAsterisk  
 20872 \let\CircleShadow\textCircleShadow  
 20873 \let\SquareShadowBottomRight\textSquareShadowBottomRight  
 20874 \let\SquareTopRight\textSquareTopRight  
 20875 \let\SquareCastShadowBottomRight\textSquareCastShadowBottomRight  
 20876 \let\SquareCastShadowTopRight\textSquareCastShadowTopRight

20877 \let\DiamondSolid\textDiamondSolid  
 20878 \let\RectangleThin\textRectangleThin  
 20879 \let\Rectangle\textRectangle  
 20880 \let\RectangleBold\textRectangleBold  
 20881 \let\perp\textperp  
 20882 \let\notperp\textnotperp  
 20883 \let\veedot\textveedot  
 20884 \let\wedgedot\textwedgedot  
 20885 \let\leftspoon\textleftspoon  
 20886 \let\lbrackdbl\textlbrackdbl  
 20887 \let\rbrackdbl\textrbrackdbl  
 20888 \let\circlearrowleft\textcirclearrowleft  
 20889 \let\circlearrowright\textcirclearrowright  
 20890 \let\longleftarrow\textlongleftarrow  
 20891 \let\longrightarrow\textlongrightarrow  
 20892 \let\longleftrightarrow\textlongleftrightarrow  
 20893 \let\Longleftarrow\textLongleftarrow  
 20894 \let\Longrightarrow\textLongrightarrow  
 20895 \let\Longleftrightarrow\textLongleftrightarrow  
 20896 \let\longmapsto\textlongmapsto  
 20897 \let\Longmapsfrom\textLongmapsfrom  
 20898 \let\Longmapsto\textLongmapsto  
 20899 \let\nwsearrow\textnwsearrow  
 20900 \let\neswarrow\textneswarrow  
 20901 \let\hookrightarrow\texthookrightarrow  
 20902 \let\rhookrightarrow\texthookrightarrow  
 20903 \let\hookrightarrow\texthookrightarrow  
 20904 \let\rhookrightarrow\texthookrightarrow  
 20905 \let\leadsto\textleadsto  
 20906 \let\rcurvesearrow\textrcurvesearrow  
 20907 \let\lcurvesearrow\textlcurvesearrow  
 20908 \let\lcurvesearrowsw\textlcurvesearrowsw  
 20909 \let\rcurvesearrowse\textrcurvesearrowse  
 20910 \let\lcurvesearrowdown\textlcurvesearrowdown  
 20911 \let\rcurvesearrowdown\textrcurvesearrowdown  
 20912 \let\rcurvesearrowleft\textrcurvesearrowleft  
 20913 \let\rcurvesearrowright\textrcurvesearrowright  
 20914 \let\leftrightharpoon\textleftrightharpoon  
 20915 \let\rightrightarpoon\textrightarpoon  
 20916 \let\updownharpoonrightleft\textupdownharpoonrightleft  
 20917 \let\updownharpoonleftright\textupdownharpoonleftright  
 20918 \let\leftleftharpoons\textleftleftharpoons  
 20919 \let\upupharpoons\textupupharpoons  
 20920 \let\righttrightharpoons\textrighttrightharpoons  
 20921 \let\downdownharpoons\textdowndownharpoons  
 20922 \let\leftbarharpoon\textleftbarharpoon  
 20923 \let\barleftharpoon\textbarleftharpoon  
 20924 \let\rightbarharpoon\textrightbarharpoon  
 20925 \let\barrightharpoon\textbarrightharpoon  
 20926 \let\updownharpoons\textupdownharpoons  
 20927 \let\downupharpoons\textdownupharpoons  
 20928 \let\moo\textmoo  
 20929 \let\llparenthesis\textllparenthesis  
 20930 \let\rrparenthesis\textrrparenthesis  
 20931 \let\invdiameter\textinvdiameter  
 20932 \let\obar\textobar  
 20933 \let\obslash\textobslash

20934  $\backslash\text{obot}\backslash\text{textobot}$   
 20935  $\backslash\text{let}\backslash\text{NoChemicalCleaning}\backslash\text{textNoChemicalCleaning}$   
 20936  $\backslash\text{let}\backslash\text{olessthan}\backslash\text{textolessthan}$   
 20937  $\backslash\text{let}\backslash\text{ogreaterthan}\backslash\text{textogreaterthan}$   
 20938  $\backslash\text{let}\backslash\text{boxslash}\backslash\text{textboxslash}$   
 20939  $\backslash\text{let}\backslash\text{boxbslash}\backslash\text{textboxbslash}$   
 20940  $\backslash\text{let}\backslash\text{boxast}\backslash\text{textboxast}$   
 20941  $\backslash\text{let}\backslash\text{boxcircle}\backslash\text{textboxcircle}$   
 20942  $\backslash\text{let}\backslash\text{boxbox}\backslash\text{textboxbox}$   
 20943  $\backslash\text{let}\backslash\text{Valve}\backslash\text{textValve}$   
 20944  $\backslash\text{let}\backslash\text{multimapboth}\backslash\text{textmultimapboth}$   
 20945  $\backslash\text{let}\backslash\text{shuffle}\backslash\text{textshuffle}$   
 20946  $\backslash\text{let}\backslash\text{uplus}\backslash\text{textuplus}$   
 20947  $\backslash\text{let}\backslash\text{bigdoublewedge}\backslash\text{textbigdoublewedge}$   
 20948  $\backslash\text{let}\backslash\text{bigdoublevee}\backslash\text{textbigdoublevee}$   
 20949  $\backslash\text{let}\backslash\text{Join}\backslash\text{textJoin}$   
 20950  $\backslash\text{let}\backslash\text{fatsemi}\backslash\text{textfatsemi}$   
 20951  $\backslash\text{let}\backslash\text{circplus}\backslash\text{textcircplus}$   
 20952  $\backslash\text{let}\backslash\text{minusdot}\backslash\text{textminusdot}$   
 20953  $\backslash\text{let}\backslash\text{dottimes}\backslash\text{textdottimes}$   
 20954  $\backslash\text{let}\backslash\text{dtimes}\backslash\text{textdtimes}$   
 20955  $\backslash\text{let}\backslash\text{odiv}\backslash\text{textodiv}$   
 20956  $\backslash\text{let}\backslash\text{invneg}\backslash\text{textinvneg}$   
 20957  $\backslash\text{let}\backslash\text{sqdoublecap}\backslash\text{textsquaddoublecap}$   
 20958  $\backslash\text{let}\backslash\text{capdot}\backslash\text{textcapdot}$   
 20959  $\backslash\text{let}\backslash\text{sqdoublecup}\backslash\text{textsquaddoublecup}$   
 20960  $\backslash\text{let}\backslash\text{doublewedge}\backslash\text{textdoublewedge}$   
 20961  $\backslash\text{let}\backslash\text{doublevee}\backslash\text{textdoublevee}$   
 20962  $\backslash\text{let}\backslash\text{doublebarwedge}\backslash\text{textdoublebarwedge}$   
 20963  $\backslash\text{let}\backslash\text{veedoublebar}\backslash\text{textveedoublebar}$   
 20964  $\backslash\text{let}\backslash\text{eqdot}\backslash\text{texteqdot}$   
 20965  $\backslash\text{let}\backslash\text{neqdot}\backslash\text{textneqdot}$   
 20966  $\backslash\text{let}\backslash\text{coloncolonequals}\backslash\text{textcoloncolonequals}$   
 20967  $\backslash\text{let}\backslash\text{leqslant}\backslash\text{textleqslant}$   
 20968  $\backslash\text{let}\backslash\text{nleqslant}\backslash\text{textnleqslant}$   
 20969  $\backslash\text{let}\backslash\text{geqslant}\backslash\text{textgeqslant}$   
 20970  $\backslash\text{let}\backslash\text{ngeqslant}\backslash\text{textngeqslant}$   
 20971  $\backslash\text{let}\backslash\text{lessapprox}\backslash\text{textlessapprox}$   
 20972  $\backslash\text{let}\backslash\text{nlessapprox}\backslash\text{textnlessapprox}$   
 20973  $\backslash\text{let}\backslash\text{gtrapprox}\backslash\text{textgtrapprox}$   
 20974  $\backslash\text{let}\backslash\text{ngtrapprox}\backslash\text{textngtrapprox}$   
 20975  $\backslash\text{let}\backslash\text{lneq}\backslash\text{textlneq}$   
 20976  $\backslash\text{let}\backslash\text{gneq}\backslash\text{textgneq}$   
 20977  $\backslash\text{let}\backslash\text{lnapprox}\backslash\text{textlnapprox}$   
 20978  $\backslash\text{let}\backslash\text{gnapprox}\backslash\text{textgnapprox}$   
 20979  $\backslash\text{let}\backslash\text{lesseqqgtr}\backslash\text{textlesseqqgtr}$   
 20980  $\backslash\text{let}\backslash\text{gtreqqlless}\backslash\text{textgtreqqlless}$   
 20981  $\backslash\text{let}\backslash\text{eqslantless}\backslash\text{texteqslantless}$   
 20982  $\backslash\text{let}\backslash\text{eqslantgtr}\backslash\text{texteqslantgtr}$   
 20983  $\backslash\text{let}\backslash\text{leftslice}\backslash\text{textleftslice}$   
 20984  $\backslash\text{let}\backslash\text{rightslice}\backslash\text{textrightslice}$   
 20985  $\backslash\text{let}\backslash\text{preceq}\backslash\text{textpreceq}$   
 20986  $\backslash\text{let}\backslash\text{npreceq}\backslash\text{textnpreceq}$   
 20987  $\backslash\text{let}\backslash\text{succeq}\backslash\text{textsucceq}$   
 20988  $\backslash\text{let}\backslash\text{nsucceq}\backslash\text{textnsucceq}$   
 20989  $\backslash\text{let}\backslash\text{precneq}\backslash\text{textprecneq}$   
 20990  $\backslash\text{let}\backslash\text{succneq}\backslash\text{textsuccneq}$

20991 \let\preceqq\textpreceqq  
 20992 \let\npreceqq\textnpreceqq  
 20993 \let\succeqq\textsucceqq  
 20994 \let\nsucceqq\textnsucceqq  
 20995 \let\precneqq\textprecneqq  
 20996 \let\succneqq\textsuccneqq  
 20997 \let\precapprox\textprecapprox  
 20998 \let\nprecapprox\textnprecapprox  
 20999 \let\succapprox\textsuccapprox  
 21000 \let\nsuccapprox\textnsuccapprox  
 21001 \let\precnapprox\textprecnapprox  
 21002 \let\succnapprox\textsuccnapprox  
 21003 \let\subseteqq\textsubseteqq  
 21004 \let\nsubseteqq\textnsubseteqq  
 21005 \let\supseteqq\textsupseteqq  
 21006 \let\nsupseteqq\textnsupseteqq  
 21007 \let\dashV\textdashV  
 21008 \let\ndashV\textndashV  
 21009 \let\Dashv\textDashv  
 21010 \let\ndashv\textndashv  
 21011 \let\DashV\textDashV  
 21012 \let\ndashV\textndashV  
 21013 \let\downmodels\textdownmodels  
 21014 \let\ndownmodels\textndownmodels  
 21015 \let\upmodels\textupmodels  
 21016 \let\nupmodels\textnupmodels  
 21017 \let\upspoon\textupspoon  
 21018 \let\interleave\textinterleave  
 21019 \let\slash\textslash  
 21020 \let\pentagon\textpentagon  
 21021 \let\varhexagon\textvarhexagon  
 21022 \let\jinferior\textjinferior  
 21023 \let\slashdiv\textslashdiv  
 21024 \let\fivedots\textfivedots  
 21025 \let\oo\textoo  
 21026 \let\GaPa\textGaPa  
 21027 \let\HaPa\textHaPa  
 21028 \let\ViPa\textViPa  
 21029 \let\AcPa\textAcPa  
 21030 \let\SePa\textSePa  
 21031 \let\ZwPa\textZwPa  
 21032 \let\fullnote\textfullnote  
 21033 \let\halfnote\texthalfnote  
 21034 \let\Vier\textVier  
 21035 \let\Acht\textAcht  
 21036 \let\Sech\textSech  
 21037 \let\Zwdr\textZwdr  
 21038 \let\Mundus\textMundus  
 21039 \let\Moon\textMoon  
 21040 \let\ManFace\textManFace  
 21041 \let\WomanFace\textWomanFace  
 21042 \let\Fax\textFax  
 21043 \let\Fire\textFire  
 21044 \let\Bicycle\textBicycle  
 21045 \let\Gentsroom\textGentsroom  
 21046 \let\Ladiesroom\textLadiesroom  
 21047 \let\ccnc\textccnc



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21048 \let\ccsa\textccsa
21049 \let\Info\textInfo
21050 \let\CESign\textCESign
21051 \let\neg\textneg
21052 \let\times\texttimes
21053 \let\div\textdiv
21054 \let\pm\textpm
21055 \let\cdot\textcdot
21056 }% \psdmapshortnames
21057 \newcommand*{\psdaliasnames}{%
21058 \let\epsdice\HyPsd@DieFace
21059 \let\fcdice\HyPsd@DieFace
21060 \let\MoonPha\HyPsd@MoonPha
21061 \let\mathdollar\textdollar
21062 \let\EyesDollar\textdollar
21063 \let\binampersand\textampersand
21064 \let\with\textampersand
21065 \let\mathunderscore\textunderscore
21066 \let\textvertline\textbar
21067 \let\mathsterling\textsterling
21068 \let\pounds\textsterling
21069 \let\brokenvert\textbrokenbar
21070 \let\mathsection\textsection
21071 \let\S\textsection
21072 \let\mathparagraph\textparagraph
21073 \let\MultiplicationDot\textperiodcentered
21074 \let\Squaredot\textperiodcentered
21075 \let\var times\textmultiply
21076 \let\MVMultiplication\textmultiply
21077 \let\eth\dh
21078 \let\crossd\textcrd
21079 \let\textbard\textcrd
21080 \let\bard\textcrd
21081 \let\textcrh\texthbar
21082 \let\crossh\texthbar
21083 \let\planck\texthbar
21084 \let\eng\ng
21085 \let\engma\ng
21086 \let\crossb\textcrb
21087 \let\textbarb\textcrb
21088 \let\barb\textcrb
21089 \let\Florin\textflorin
21090 \let\hv\texthvlig
21091 \let\hausak\texthtk
21092 \let\crossnilambda\textcrlambda
21093 \let\barlambda\textcrlambda
21094 \let\lambdabar\textcrlambda
21095 \let\lambdaslash\textcrlambda
21096 \let\textnrleg\textPUnrleg
21097 \let\textpipevar\textpipe
21098 \let\textdoublepipevar\textdoublepipe
21099 \let\textdoublebarpipevar\textdoublebarpipe
21100 \let\textcrg\textgslash
21101 \let\textdblig\textPUdblig
21102 \let\textqplig\textPUqplig
21103 \let\textcentoldstyle\textslashc
21104 \let\textbarc\textslashc

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21105 \let\inva\textturna  
 21106 \let\vara\textscripta  
 21107 \let\invscripta\textturnscripta  
 21108 \let\rotvara\textturnscripta  
 21109 \let\hookb\texthtb  
 21110 \let\hausab\texthtb  
 21111 \let\varopeno\textopeno  
 21112 \let\curlyc\textctc  
 21113 \let\taild\textrtaild  
 21114 \let\hookd\texthtd  
 21115 \let\hausad\texthtd  
 21116 \let\er\textrhookschwa  
 21117 \let\epsi\textniepsilon  
 21118 \let\hookrevepsilon\texthookrevepsilon  
 21119 \let\closedrevepsilon\textcloserevepsilon  
 21120 \let\barj\textbardotlessj  
 21121 \let\hookg\texthtg  
 21122 \let\varg\textscriptg  
 21123 \let\vod\textipagamma  
 21124 \let\invh\textturnh  
 21125 \let\udesc\textturnh  
 21126 \let\hookh\texthth  
 21127 \let\voicedh\texthth  
 21128 \let\hookheng\texththeng  
 21129 \let\ibar\textbari  
 21130 \let\vari\textniota  
 21131 \let\tildel\textltilde  
 21132 \let\latfric\textbeltl  
 21133 \let\tail\textrtail  
 21134 \let\lz\textlyoghlig  
 21135 \let\invm\textturnm  
 21136 \let\rotm\textturnm  
 21137 \let\legm\textturnmrleg  
 21138 \let\labdentalnas\textltailm  
 21139 \let\emgma\textltailm  
 21140 \let\nj\textltailn  
 21141 \let\enya\textltailn  
 21142 \let\tailn\textrtailn  
 21143 \let\closedniomega\textcloseomega  
 21144 \let\varomega\textcloseomega  
 21145 \let\invr\textturnr  
 21146 \let\rotr\textturnr  
 21147 \let\invlegr\textturnlonglegr  
 21148 \let\tailinvr\textturnrrtail  
 21149 \let\legr\textlonglegr  
 21150 \let\tailr\textrtailr  
 21151 \let\flapr\textfishhookr  
 21152 \let\flap\textfishhookr  
 21153 \let\tails\textrtails  
 21154 \let\curlyesh\textctesh  
 21155 \let\clickt\textturnt  
 21156 \let\tailt\textrtailt  
 21157 \let\ubar\textbaru  
 21158 \let\rotOmega\textniupsilon  
 21159 \let\invv\textturnv  
 21160 \let\pwedge\textturnv  
 21161 \let\invw\textturnw

21162 \let\rotw\textturnw  
 21163 \let\invy\textturny  
 21164 \let\roty\textturny  
 21165 \let\tailz\texttrtailz  
 21166 \let\curlyz\textctz  
 21167 \let\curlyyogh\textctyogh  
 21168 \let\ejective\textglotstop  
 21169 \let\glottal\textglotstop  
 21170 \let\reject\textrevglotstop  
 21171 \let\clickc\textstretchc  
 21172 \let\textstretchcvar\textstretchc  
 21173 \let\clickb\textbullseye  
 21174 \let\textObullseye\textbullseye  
 21175 \let\textctjvar\textctj  
 21176 \let\textturnsck\textturnk  
 21177 \let\dz\textdzlig  
 21178 \let\tesh\textteshlig  
 21179 \let\digamma\textdigammagreek  
 21180 \let\hardsign\cyrhrdsn  
 21181 \let\softsign\cyrsoftsn  
 21182 \let\hebsin\hebshin  
 21183 \let\textsck\textPUsc  
 21184 \let\textscm\textPUscm  
 21185 \let\textscp\textPUscp  
 21186 \let\textrevscr\textPUrevscr  
 21187 \let\textrhooka\textPURhooka  
 21188 \let\textrhooke\textPURhooke  
 21189 \let\textrhookepsilon\textPURhookepsilon  
 21190 \let\textrhookeno\textPURhookopeno  
 21191 \let\textdoublevertline\textbardbl  
 21192 \let\dag\textdagger  
 21193 \let\ddagger\textdaggerdbl  
 21194 \let\ddag\textdaggerdbl  
 21195 \let\mathellipsis\textellipsis  
 21196 \let\EurDig\texteuro  
 21197 \let\EURdig\texteuro  
 21198 \let\EurHv\texteuro  
 21199 \let\EURhv\texteuro  
 21200 \let\EurCr\texteuro  
 21201 \let\EURcr\texteuro  
 21202 \let\EurTm\texteuro  
 21203 \let\EURtm\texteuro  
 21204 \let\Eur\texteuro  
 21205 \let\Denarius\textDeleatur  
 21206 \let\agemO\textmho  
 21207 \let\EstimatedSign\textestimated  
 21208 \let\Ecommerce\textestimated  
 21209 \let\bindnasrepma\textinvamp  
 21210 \let\parr\textinvamp  
 21211 \let\MVRightArrow\textrightarrow  
 21212 \let\MVRightarrow\textrightarrow  
 21213 \let\MVArrowDown\textdownarrow  
 21214 \let\Force\textdownarrow  
 21215 \let\textglobrise\textnearrow  
 21216 \let\textglobfall\textsearrow  
 21217 \let\Lightning\textlightning  
 21218 \let\Conclusion\textRightarrow

21219 \let\dashedleftarrow\textdashleftarrow  
21220 \let\dashedrightarrow\textdashrightarrow  
21221 \let\varnothing\textemptyset  
21222 \let\owns\textni  
21223 \let\notni\textnotowner  
21224 \let\varprop\textpropto  
21225 \let\varangle\textsphericalangle  
21226 \let\Anglesign\textsphericalangle  
21227 \let\AngleSign\textsphericalangle  
21228 \let\notdivides\textnmid  
21229 \let\varowedge\textowedge  
21230 \let\varovee\textovee  
21231 \let\varint\textint  
21232 \let\varoint\textoint  
21233 \let\downtherefore\textbecause  
21234 \let\textdotdiv\textdotminus  
21235 \let\AC\textsim  
21236 \let\wreath\textwr  
21237 \let\nthickapprox\textnapprox  
21238 \let\VHF\texttriplesim  
21239 \let\notasymp\textnasymp  
21240 \let\Doteq\textdoteqdot  
21241 \let\corresponds\texthateq  
21242 \let\Corresponds\texthateq  
21243 \let\nequal\textneq  
21244 \let\Congruent\textequiv  
21245 \let\NotCongruent\textnequiv  
21246 \let\notequiv\textnequiv  
21247 \let\LessOrEqual\textleq  
21248 \let\LargerOrEqual\textgeq  
21249 \let\apprle\textlesssim  
21250 \let\apprge\textgtrsim  
21251 \let\varoplus\textoplus  
21252 \let\varominus\textominus  
21253 \let\varotimes\textotimes  
21254 \let\varoslash\textoslash  
21255 \let\varodot\textodot  
21256 \let\ocirc\textcircledcirc  
21257 \let\varocircle\textcircledcirc  
21258 \let\varoast\textcircledast  
21259 \let\oasterisk\textcircledast  
21260 \let\rightvdash\textvdash  
21261 \let\leftvdash\textdashv  
21262 \let\nleftvdash\textndashv  
21263 \let\downvdash\texttop  
21264 \let\upvdash\textbot  
21265 \let\nperp\textnupvdash  
21266 \let\models\textvDash  
21267 \let\rightmodels\textvDash  
21268 \let\rightVdash\textVdash  
21269 \let\rightModels\textVDash  
21270 \let\nrightvdash\textnvDash  
21271 \let\nrightmodels\textnvDash  
21272 \let\nmodels\textnvDash  
21273 \let\nrightVdash\textnVdash  
21274 \let\nrightModels\textnVDash  
21275 \let\lessclosed\textlhd

21276 \let\gtrclosed\texttrhd  
 21277 \let\leqclosed\textunlhd  
 21278 \let\trianglelefteq\textunlhd  
 21279 \let\geqclosed\textunrhd  
 21280 \let\trianglerighteq\textunrhd  
 21281 \let\Bowtie\textbowtie  
 21282 \let\varcurlyvee\textcurlyvee  
 21283 \let\varcurlywedge\textcurlywedge  
 21284 \let\doublecap\textCap  
 21285 \let\doublecup\textCup  
 21286 \let\varsqsubsetneq\textsqsubsetneq  
 21287 \let\varsqsupsetneq\textsqsupsetneq  
 21288 \let\nlessclosed\textntriangleleft  
 21289 \let\ngtrclosed\textntriangleright  
 21290 \let\Clocklogo\textclock  
 21291 \let\ClockLogo\textclock  
 21292 \let\baro\textstmaryrdbaro  
 21293 \let\varparallelinv\textbbslash  
 21294 \let\CleaningA\textCircledA  
 21295 \let\Kutline\textCuttingLine  
 21296 \let\CutLine\textCuttingLine  
 21297 \let\Cutline\textCuttingLine  
 21298 \let\MoveUp\textUParrow  
 21299 \let\APLup\textbigtriangleup  
 21300 \let\Bleech\textbigtriangleup  
 21301 \let\MoveDown\textDOWNarrow  
 21302 \let\APLdown\textbigtriangledown  
 21303 \let\Diamond\textdiamond  
 21304 \let\varbigcirc\textbigcircle  
 21305 \let\Telefon\textPhone  
 21306 \let\Box\textboxempty  
 21307 \let\CheckedBox\textCheckedbox  
 21308 \let\XBox\textCrossedbox  
 21309 \let\CrossedBox\textCrossedbox  
 21310 \let\rightpointleft\textHandLeft  
 21311 \let\leftpointright\textHandRight  
 21312 \let\PointingHand\textHandRight  
 21313 \let\Pointinghand\textHandRight  
 21314 \let\Radiation\textRadioactivity  
 21315 \let\Yinyang\textYinYang  
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 21319 \let\Smiley\textsmiley  
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 21321 \let\Mercury\textmercury  
 21322 \let\textfemale\textPUfemale  
 21323 \let\female\textPUfemale  
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 21349 \let\Heart\textheartsuitwhite  
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 21357 \let\textuncrfemale\textPUuncrfemale  
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 21384 \let\leftVdash\textdashV  
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21390 \let\varparallel\textsslash
21391 \let\textheng\textPUheng
21392 \let\textlhookfour\textPUlhookfour
21393 \let\textscf\textPUscf
21394 \let\textaoig\textPUaoig
21395 \let\Ganz\textfullnote
21396 \let\Halb\texthalfnote
21397 \let\Womanface\textWomanFace
21398 \let\Faxmachine\textFax
21399 \let\CEsign\textCESign
21400 }% \psdaliasnames
21401 </psdextra>

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## 52 End of file hyccheck.tex

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21402 <*check>
21403 \typeout{}
21404 \begin{document}
21405 \end{document}
21406 </check>

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