

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

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<https://github.com/latex3/hyperref/issues>  
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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).

**ChangeLog** This file records the version history.

**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 <*check>
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<sub>␣</sub> 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

change 2020-07-24: require newer pdftexcmds and remove fallback code for version older than 2010. change 2021-08-14: require expl3

```

232 \ifx\ExplSyntaxOn\undefined \RequirePackage{expl3}\fi
233 \RequirePackage{ltxcmds}[2010/11/12]
234 \RequirePackage{iftex}[2019/10/24]
235 \RequirePackage{pdftexcmds}[2018/09/10]
236 \RequirePackage{infwarerr}[2010/04/08]
237 \RequirePackage{keyval}[1997/11/10]
238 \RequirePackage{kvsetkeys}[2007/09/29]
239 \RequirePackage{kvdefinekeys}[2011/04/07]
240 \RequirePackage{pdfescape}[2007/11/11]
241 \RequirePackage{hycolor}
242 \RequirePackage{letltxmacro}[2008/06/13]
243 \RequirePackage{auxhook}[2009/12/14]
244 \RequirePackage{nameref}[2012/07/28]

```

```

245 \RequirePackage{etoolbox}
246 \def\Hy@Error{\@PackageError{hyperref}}
247 \def\Hy@Warning{\@PackageWarning{hyperref}}
248 \def\Hy@WarningNoLine{\@PackageWarningNoLine{hyperref}}
249 \def\Hy@Info{\@PackageInfo{hyperref}}
250 \def\Hy@InfoNoLine{\@PackageInfoNoLine{hyperref}}
251 \def\Hy@Message#1{%
252   \GenericWarning{%
253     (hyperref)\@spaces\@spaces\@spaces\@spaces
254   }{%
255     Package hyperref Message: #1\ltx@gobble
256   }%
257 }

```

## 4.2 Version check

\Hy@VersionChecked

```

258 \chardef\Hy@VersionChecked=0 %

```

\Hy@VersionCheck

```

259 \def\Hy@VersionCheck#1{%
260   \begingroup
261   \ltx@ifundefined{ver@hyperref.sty}{%
262     \Hy@Error{%
263       This should not happen!\MessageBreak
264       Missing hyperref version%
265     }\@ehd
266   }{%
267     \ltx@ifundefined{ver@#1}{%
268       \Hy@Error{%
269         This should not happen!\MessageBreak
270         Missing version of `#1'%
271       }\@ehd
272     }{%
273       \def\x##1##2##3{%
274         \expandafter\expandafter\expandafter\Hy@@VersionCheck
275         \expandafter\expandafter\expandafter##2%
276         \csname ver@##3\endcsname##1##1\@nil
277       }%
278       \x{ }\y{hyperref.sty}%
279       \x{ }\z{#1}%
280       \ifx\y\z
281         \else
282         \edef\a{#1}%
283         \edef\b{\HyOpt@CustomDriver.def}%
284         \ifx\a\b
285           \Hy@WarningNoLine{%
286             Version mismatch (custom driver)!\MessageBreak
287             * \y: hyperref.sty\MessageBreak
288             * \z: \a
289           }%
290         \else
291           \Hy@Error{%
292             Version mismatch!\MessageBreak

```

```

293      * \y: hyperref.sty\MessageBreak
294      * \z: \a
295      }\@ehd
296      \fi
297      \fi
298      }%
299      }%
300 \endgroup
301 \chardef\Hy@VersionChecked=1 %
302 }

```

\Hy@@VersionCheck

```

303 \def\Hy@@VersionCheck #1#2 #3 #4\@nil{%
304 \def#1{#2 #3}%
305 }

```

### 4.3 Checks with regular expressions

```

306 \ltx@ifundefined{pdfmatch}{%
307 \def\Hy@Match#1#2#3#4#5{%
308 }{%
309 \def\Hy@Match#1#2#3{%
310 \begingroup
311 \edef\~{\ltx@backslashchar\string~}%
312 \edef\.{\ltx@backslashchar.}%
313 \edef\[\{\ltx@backslashchar[]}%
314 \edef\${\ltx@backslashchar$}%
315 \edef\(\{\ltx@backslashchar(}%
316 \edef\)\{\ltx@backslashchar)}%
317 \edef\|\{\ltx@backslashchar|}%
318 \edef\*\{\ltx@backslashchar*}%
319 \edef\+\{\ltx@backslashchar+}%
320 \edef\?\{\ltx@backslashchar?}%
321 \edef\{\{\ltx@backslashchar\ltx@leftbracechar}%
322 \edef\}\{\ltx@rightbracechar}%
323 \edef\\{\ltx@backslashchar\ltx@backslashchar}%
324 \let\ \ltx@space
325 \ifcase\pdfmatch#2{#3}{#1} %
326 \endgroup
327 \expandafter\ltx@secondoftwo
328 \or
329 \endgroup
330 \expandafter\ltx@firstoftwo
331 \else
332 \Hy@Warning{%
333 Internal error: Wrong pattern!\MessageBreak
334 --> #3 <--\MessageBreak
335 Pattern check ignored%
336 }%
337 \endgroup
338 \expandafter\ltx@firstoftwo
339 \fi
340 }%
341 }

```

## 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`.

```
342 \@ifundefined{AfterBeginDocument}{%
343   \def\AfterBeginDocument{\AtBeginDocument}%
344 }{}%
```

`\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.

```
345 \def\Hy@AtBeginDocument{%
346   \ltx@LocalAppendToMacro\Hy@AtBeginDocumentHook
347 }
```

`\Hy@AtEndOfPackage`

```
348 \def\Hy@AtEndOfPackage{%
349   \ltx@LocalAppendToMacro\Hy@AtEndOfPackageHook
350 }
```

`\Hy@AtBeginDocumentHook`

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

`\Hy@AtEndOfPackageHook`

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

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

```
353 \AtEndOfPackage{%
354   \Hy@AtEndOfPackageHook
355   \let\Hy@AtEndOfPackageHook\@undefined
356   \AfterBeginDocument{%
357     \Hy@AtBeginDocumentHook}%
358   \let\Hy@AtBeginDocumentHook\@undefined
359 }%
360 }
```

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

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

## 4.5 Switches

```
362 \newif\ifHy@stoppedearly
363 \newif\ifHy@typexml
364 \newif\ifHy@activeanchor
365 \newif\ifHy@backref
366 \newif\ifHy@bookmarks
```

```

367 \newif\ifHy@bookmarksnumbered
368 \newif\ifHy@bookmarksopen
369 \newif\ifHy@breaklinks
370 \newif\ifHy@pdfcenterwindow
371 \newif\ifHy@CJKbookmarks
372 \newif\ifHy@colorlinks
373 \newif\ifHy@destlabel
374 \newif\ifHy@draft
375 \let\Hy@finaltrue\Hy@draftfalse
376 \let\Hy@finalfalse\Hy@drafttrue
377 \newif\ifHy@pdfescapeform
378 \newif\ifHy@hyperfigures
379 \newif\ifHy@pdfitwindow
380 \newif\ifHy@frenchlinks
381 \newif\ifHy@hyperfootnotes
382 \newif\ifHy@hyperindex
383 \newif\ifHy@hypertextnames
384 \newif\ifHy@implicit
385 \newif\ifHy@linktopage
386 \newif\ifHy@localanchorname
387 \newif\ifHy@pdfmenubar
388 \newif\ifHy@naturalnames
389 \newif\ifHy@nesting
390 \newif\ifHy@pdfnewwindowset
391 \newif\ifHy@pdfnewwindow
392 \newif\ifHy@ocgcolorlinks
393 \newif\ifHy@pageanchor
394 \newif\ifHy@pdfpagelabels
395 \newif\ifHy@pdfstring
396 \newif\ifHy@plainpages
397 \newif\ifHy@psize
398 \newif\ifHy@raiselinks
399 \newif\ifHy@seminarslides
400 \newif\ifHy@setpagesize
401 \newif\ifHy@texht
402 \newif\ifHy@psdextra
403 \newif\ifHy@pdftoolbar
404 \newif\ifHy@unicode
405 \newif\ifHy@pdfusetitle
406 \newif\ifHy@verbose
407 \let\Hy@debugtrue\Hy@verbosetrue
408 \let\Hy@debugfalse\Hy@verbosefalse
409 \newif\ifHy@pdfwindowui
410 \newif\ifHy@pdfdisplaydoctitle
411 \newif\ifHy@pdfa

```

Defaults for the switches are now set.

```

412 \Hy@backreffalse
413 \Hy@bookmarksnumberedfalse
414 \Hy@bookmarksopenfalse
415 \Hy@bookmarkstrue
416 \Hy@breaklinksfalse
417 \Hy@pdfcenterwindowfalse
418 \Hy@CJKbookmarksfalse
419 \Hy@destlabelfalse

```



```

420 \Hy@pdfescapeformfalse
421 \Hy@hyperfiguresfalse
422 \Hy@pdffitwindowfalse
423 \Hy@hyperfootnotesttrue
424 \Hy@hyperindextrue
425 \Hy@hypertextnamestrue
426 \Hy@implicitttrue
427 \Hy@linktocpagefalse
428 \Hy@localanchornamefalse
429 \Hy@pdfmenubartrue
430 \Hy@naturalnamesfalse
431 \Hy@nestingfalse
432 \Hy@pdfnewwindowsetfalse
433 \Hy@pdfnewwindowfalse
434 \Hy@pageanchortrue
435 \Hy@pdfpagelabelstrue
436 \Hy@pdfstringfalse
437 \Hy@plainpagesfalse
438 \Hy@raiselinksfalse
439 \Hy@setpagesizetrue
440 \Hy@texhtfalse
441 \Hy@psdextrafalse
442 \Hy@pdftoolbartrue
443 \Hy@unicodetrue
444 \ifx\kanjiskip\@undefined
445 \else
446 \ifx\forcecjktoken\@undefined
447 \Hy@unicodefalse
448 \fi
449 \fi
450 \Hy@pdfusetitlefalse
451 \Hy@verbosefalse
452 \Hy@pdfwindowuitrue
453 \Hy@pdfdisplaydoctitlefalse
454 \Hy@pdfafalse

```

## 5 Common help macros

\Hy@StepCount

```

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

```

\Hy@GlobalStepCount

```

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

```

```

457 \newdimen\@linkdim
458 \let\Hy@driver\ltx@empty
459 \let\MaybeStopEarly\relax
460 \newcount\Hy@linkcounter
461 \newcount\Hy@pagecounter
462 \Hy@linkcounter0
463 \Hy@pagecounter0

```

### 5.1 Macros for recursions

```

464 \let\Hy@ReturnEnd\@empty
465 \long\def\Hy@ReturnAfterFiFiEnd#1\fi#2\Hy@ReturnEnd{\fi\fi#1}
466 \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.

```

467 \def\Hy@safe@activetrue{\csname @safe@activetrue\endcsname}
468 \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 the now required e-TeX extensions an expandable implementation is very easy; `\hypercalcbp` can be used everywhere and is expanded at use.

Example (TeX):

```

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

```

`\hypercalcbp`

```

469 \def\hypercalcbp#1{%
470   \strip@pt\dimexpr 0.99626401\dimexpr(#1)\relax\relax
471 }%
472 \def\hypercalcbpdef{\def}%

```

## 6 Dealing with PDF strings

The PDF string stuff done by Heiko Oberdiek.

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

### 6.1 Description of PDF strings

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

- They are surrounded by parentheses. The hexadecimal form is not supported.

- Like PostScript language strings they use the same escaping mechanism:
 

<code>\\</code>	the backslash itself
<code>\), \((</code>	unbalanced parentheses
<code>\n, \r, \t, \b, \f</code>	special white space escape sequences
<code>\ddd</code>	octal character code <code>ddd</code>
- Strings are stored either in PDFDocEncoding, which is a superset of ISO-Latin1 and is compatible with Unicode with character codes below 256, or in Unicode.

## 6.2 Definition of `\pdfstringdef`

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

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

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

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

`\MakeUppercase` and `\MakeLowercase` do not work by expansion in legacy code but if the `expl3` code is available we can handle them. If a current babel or polyglossia is used we can also make use of the language.

`\MakeUppercaseUnsupportedInPdfStrings`  
`\MakeLowercaseUnsupportedInPdfStrings`

```

473 \providecommand*\BCPdata[1]{}
474 \ExplSyntaxOn
475 \@ifundefined{text_uppercase:n}{}
476 {
477   \def\MakeUppercaseUnsupportedInPdfStrings#1
478     {\use:e
479       {\exp_args:Ne
480         \text_uppercase:nn{\BCPdata { casing }}{#1}
481       }
482     }
483   \def\MakeLowercaseUnsupportedInPdfStrings#1
484     {\use:e
485       {\exp_args:Ne
486         \text_lowercase:nn{\BCPdata { casing }}{#1}
487       }
488     }
489 }
490 \ExplSyntaxOff

```

`\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 cat-codes 10 until 12.

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

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

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

```
492 \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.

```
493 \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.

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

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

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

```
497 \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.

```
498 \ifHy@unicode
```

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

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

```
501 \fontencoding{PU}%
```

```

502 \HyPsd@UTFviii
503 \def\ifpdfstringunicode##1##2{##1}%
504 \else
505 \fontencoding{PD1}%
506 \def\ifpdfstringunicode##1##2{##2}%
507 \fi
508 \let\utf@viii@undeferr\HyPsd@utf@viii@undeferr
509 \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).

```

510 \@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).

```

511 \let\@inmathwarn\HyPsd@inmathwarn

```

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

```

512 \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. UF 29.09.2017: added a mapping for `\noboundary`, see issue #37 <https://github.com/latex3/hyperref/issues/37> No test for PU, if some definition for PD1 is added it will work too.

```

513 \let\{\textbraceleft
514 \let\}\textbraceright
515 \let\\\textbackslash
516 \let\#\textnumbersign
517 \let\$\textdollar
518 \let\%\textpercent
519 \let\&\textampersand
520 % \let\~\textasciitilde
521 \let\_ \textunderscore
522 \let\P\textparagraph
523 \let\ldots\textellipsis
524 \let\dots\textellipsis
525 \ltx@ifundefined{textEncodingNoboundary}%
526 {}{\let\noboundary\textEncodingNoboundary}%

```

**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.

```
527 \def\{\pdfstringdefWarn\}%
528 \def\newline{\pdfstringdefWarn\newline}%
```

**Logos.** Because the box shifting used in the  $\text{\TeX}$  logo does not work while writing to a file, the standard  $\text{\TeX}$  logos are redefined. We use the direct PU code to avoid problems if `\textepsilon` is not defined.

```
529 \def\TeX{\TeX}%
530 \def\LaTeX{\LaTeX}%
531 \def\LaTeXe{%
532   \LaTeX2%
533   \ifHy@unicode\83\265\else e\fi
534 }%
535 \def\eTeX{%
536   \ifHy@unicode\83\265\else e\fi
537   -\TeX%
538 }%
539 \def\SliTeX{\SliTeX}%
540 \def\MF{Metafont}%
541 \def\MP{Metapost}%
```

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

```
542 \let\fontencoding\@gobble
543 \let\fontfamily\@gobble
544 \let\fontseries\@gobble
545 \let\fontshape\@gobble
546 \let\fontsize\@gobbletwo
547 \let\selectfont\@empty
548 \let\usefont\@gobblefour
549 \let\emph\@firstofone
550 \let\textnormal\@firstofone
551 \let\textrm\@firstofone
552 \let\textsf\@firstofone
553 \let\texttt\@firstofone
554 \let\textbf\@firstofone
555 \let\textmd\@firstofone
556 \let\textit\@firstofone
557 \let\textsc\@firstofone
558 \let\textsl\@firstofone
559 \let\textup\@firstofone
560 \let\normalfont\@empty
561 \let\rmfamily\@empty
```

```

562 \let\sfamily\@empty
563 \let\ttfamily\@empty
564 \let\bfseries\@empty
565 \let\mdseries\@empty
566 \let\itshape\@empty
567 \let\scshape\@empty
568 \let\slshape\@empty
569 \let\upshape\@empty
570 \let\em\@empty
571 \let\rm\@empty
572 \let\Huge\@empty
573 \let\LARGE\@empty
574 \let\Large\@empty
575 \let\footnotesize\@empty
576 \let\huge\@empty
577 \let\large\@empty
578 \let\normalsize\@empty
579 \let\scriptsize\@empty
580 \let\small\@empty
581 \let\tiny\@empty
582 \let\mathversion\@gobble
583 \let\phantom\@gobble
584 \let\vphantom\@gobble
585 \let\hphantom\@gobble

```

#### Package pifont.

```

586 \let\ding\HyPsd@ding
587 \let\Cube\HyPsd@DieFace
588 %* \HyPsd@DieFace -> \epsdice (epsdice)
589 %* \HyPsd@DieFace -> \fcdice (hhcount)

```

#### Environments.

```

590 \def\begin##1{\csname##1\endcsname}%
591 \def\end##1{\csname end##1\endcsname}%

```

#### Package color.

```

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

```

#### Upper- and lowercase.

```

593 \def\MakeUppercase{\MakeUppercaseUnsupportedInPdfStrings}%
594 \def\MakeLowercase{\MakeLowercaseUnsupportedInPdfStrings}%

```

**TextOrMath** The `\TextOrMath` command is protected in a current L<sup>A</sup>T<sub>E</sub>X and so can not be processed.

```

595 \def\TextOrMath{\ifmmode\expandafter\@secondoftwo\else\expandafter\@firstoftwo\fi}%

```

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

```

596 \ifHy@psdextra
597 \ifHy@unicode

```

```

598     \csname psdmapshortnames\endcsname
599     \csname psdaliasnames\endcsname
600     \fi
601     \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)).

```

602     \let\foreignlanguage\@secondoftwo
603     \let\textlatin\@firstofone
604     \ltx@ifundefined{language@group}{\}%
605         \let\bbl@info\@gobble
606         \csname HyPsd@babel@\language@group\endcsname
607     }%
608     \let\@safe@activetrue\relax
609     \let\@safe@activesfalse\relax
610
    Disable \cyr, used in russianb.ldf.
610     \let\cyr\relax

```

**Package german.**

```

611     \let\glqq\textglqq
612     \let\grqq\textgrqq
613     \let\glq\textglq
614     \let\grq\textgrq
615     \let\flqq\textflqq
616     \let\frqq\textfrqq
617     \let\flq\textflq
618     \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}
619     \let\if@mid@expandable\@firstoftwo

```

**AMS classes.**

```

620     \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.

```

621     \let\hspace\HyPsd@hspace

```



**Commands of referencing and indexing systems.** Some L<sup>A</sup>T<sub>E</sub>X commands that are legal in \section commands have to be disabled here.

```
622 \let\label\@gobble
623 \let\index\@gobble
624 \let\glossary\@gobble
625 \let\href\HyPsd@href
626 \let\@mkboth\@gobbletwo
```

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

```
627 \let\ref\HyPsd@ref
628 \let\pageref\HyPsd@pageref
629 \let\nameref\HyPsd@nameref
630 \let\autoref\HyPsd@autoref
```

**Miscellaneous commands.**

```
631 \let\leavevmode\@empty
632 \let\mbox\@empty
```

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

```
633 \def\halign{\pdfstringdefWarn\halign\@gobble}%
634 \let\ignorespaces\HyPsd@ignorespaces
635 \let\Hy@SectionAnchorHref\@gobble
636 \let\ensuremath\@firstofone
```

**Patch for cjk bookmarks.**

```
637 \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 T<sub>E</sub>X'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 \pdfstringdef-PreHook.

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).

```
638 \Hy@pdfstringtrue
639 \pdfstringdefPreHook
```

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

```
640 \HyPsd@LetUnexpandableSpace\space
641 \HyPsd@LetUnexpandableSpace\ %
642 \HyPsd@LetUnexpandableSpace~%
643 \HyPsd@LetUnexpandableSpace\nobreakspace
```

### Package xspace.

```
644 \ltx@ifundefined{@xspace}{%
645 \let\xspace\HyPsd@ITALCORR
646 }{%
647 \let\xspace\HyPsd@XSPACE
648 }%
649 \let\/\HyPsd@ITALCORR
650 \let\bgroup\/%
651 \let\egroup\/%
```

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

```
652 \let\discretionary\@gobbletwo
```

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

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

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

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

```
653 \def\@ifnextchar{\HyPsd@ifnextchar\@ifnextchar}%
654 \def\kernel@ifnextchar{\HyPsd@ifnextchar\kernel@ifnextchar}%
655 \def\new@ifnextchar{\HyPsd@ifnextchar\new@ifnextchar}%
656 \let\@protected@testopt\HyPsd@protected@testopt
```

Support for package 'xargs':

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

### 6.2.2 Expansion

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

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

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

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

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

```
658 \begingroup
659 \let\GenericError\@gobblefour
660 \let\GenericWarning\@gobbletwo
661 \let\GenericInfo\@gobbletwo
```

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

```
662 \ifx\nofrenchguillemets\@undefined
663 \else
664 \nofrenchguillemets
665 \fi
```

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

```
666 \let\Hy@temp\xdef
667 \let\def\HyPsd@DefCommand
668 \let\gdef\HyPsd@DefCommand
669 \let\edef\HyPsd@DefCommand
670 \let\xdef\HyPsd@DefCommand
671 \let\futurelet\HyPsd@LetCommand
672 \let\let\HyPsd@LetCommand
673 \Hy@temp#1{#2}%
674 \endgroup
```

### 6.2.3 Postprocessing

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

```
675 \ifx#1\@empty
676 \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 the following item takes into account, that makes makes things a litte 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 find 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 an marker for the xspace support.
- $\text{\TeX}$  silently removes the outmost pair of braces of an argument. To prevent this on unwanted places, in the following the character | is appended to the string to make an outer brace to an inner one.

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

```

677 \HyPsd@ProtectSpaces#1%
678 \let\HyPsd@String\@empty
679 \expandafter\HyPsd@RemoveBraces\expandafter{#1|}%
680 \global\let#1\HyPsd@String

```

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

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

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

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

```

681 \let\HyPsd@SPACEOPTI\relax
682 {%
683 \let\HyPsd@String\@empty
684 \expandafter\HyPsd@CheckCatcodes#1\HyPsd@End
685 \global\let#1\HyPsd@String
686 }%
687 \expandafter\HyPsd@RemoveMask\expandafter
688 |\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.

```
689 \expandafter
690 \HyPsd@Subst\expandafter{\HyPsd@GLYPHERR}{\relax}#1%
691 \let\HyPsd@String\@empty
692 \expandafter\HyPsd@GlyphProcess#1\relax\@empty
693 \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.

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

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

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

```
695 \ifHy@unicode
696 \expandafter\HyPsd@StringSubst\csname 80\040\endcsname
697 \HyPsd@SPACEOPTI#1%
698 \edef\Hy@temp@A{\HyPsd@SPACEOPTI\HyPsd@SPACEOPTI\80\273}%
699 \expandafter\HyPsd@Subst\expandafter{\Hy@temp@A}%
700 {\HyPsd@SPACEOPTI\80\273}#1%
701 \else
702 \HyPsd@StringSubst{\040}\HyPsd@SPACEOPTI#1%
703 \expandafter\HyPsd@Subst\expandafter{%
704 \expandafter\HyPsd@SPACEOPTI\expandafter\HyPsd@SPACEOPTI
705 \string\273}{\HyPsd@SPACEOPTI\273}#1%
706 \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.

```
707 \ifHy@unicode
708 \HyPsd@StringSubst{\)}{\80\051}#1%
709 \HyPsd@Subst){\80\051}#1%
```

```

710 \let\HyPsd@empty\relax
711 \expandafter\HyPsd@StringSubst\csname 80\051\endcsname
712 {\HyPsd@empty\80\051}#1%
713 \else
714 \HyPsd@StringSubst{\}){\051}#1%
715 \HyPsd@Subst){\051}#1%
716 \let\HyPsd@empty\relax
717 \HyPsd@StringSubst{\051}{\HyPsd@empty\string\}){\051}#1%
718 \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`.

```

719 \expandafter\HyPsd@Subst\expandafter{\}/\HyPsd@empty#1%
720 \ltx@ifundefined{@xspace}{%
721 }{%
722 \let\HyPsd@xspace\relax
723 \expandafter\HyPsd@Subst\expandafter
724 {\HyPsd@XSPACE}\HyPsd@xspace#1%
725 \let\HyPsd@xspace\HyPsd@doxspace
726 }%
727 \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.

```

728 \HyPsd@Subst{---}\textemdash#1%
729 \HyPsd@Subst{--}\textendash#1%
730 % \HyPsd@Subst{fi}\textfi#1%
731 % \HyPsd@Subst{fl}\textfl#1%
732 \HyPsd@Subst{!`}\textexclamdown#1%
733 \HyPsd@Subst{?`}\textquestiondown#1%

```

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

```
734 \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.

```
735 \ifHy@unicode
736 \HyPsd@StringSubst\(\textparenleft#1%
737 \HyPsd@Subst\(\textparenleft#1%
738 \else
739 \HyPsd@StringSubst\({\050}#1%
740 \HyPsd@Subst({\050}#1%
741 \HyPsd@StringSubst{\050}{\string\}#1%
742 \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.

```
743 \ifHy@unicode
744 \edef\HyPsd@SPACEOPTI{\80\040}%
745 \else
746 \let\HyPsd@SPACEOPTI\HyPsd@spaceopti
747 \fi
748 \xdef#1{#1\@empty}%
749 \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.

```
750 \endgroup
751 \begingroup
752 \ifHy@unicode
753 \HyPsd@ConvertToUnicode#1%
```

**Try conversion back to PDFDocEncoding.**

```
754 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
755 \ltx@ifundefined{StringEncodingConvertTest}{%
756 }{%
757 \EdefUnescapeString\HyPsd@temp#1%
758 \iftutex
759 \let\HyPsd@UnescapedString\HyPsd@temp
760 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
761 {utf16be}{ascii-print}{%
762 \EdefEscapeString\HyPsd@temp\HyPsd@temp
763 \global\let#1\HyPsd@temp
764 \HyPsd@EscapeTeX#1%
765 \Hy@unicodedefalse
766 }{%
```

```

767      \HyPsd@EscapeTeX#1%
768    }%
769  \else
770    \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
771      {utf16be}{pdfdoc}{%
772      \EdefEscapeString\HyPsd@temp\HyPsd@temp
773      \global\let#1\HyPsd@temp
774      \HyPsd@EscapeTeX#1%
775      \Hy@unicodedefalse
776    }{}%
777  \fi
778 }%
779 \fi
780 \fi

```

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

```

781 \pdfstringdefPostHook#1%
782 \endgroup
783 }

```

`\Hy@pdfstringdef`

```

784 \def\Hy@pdfstringdef#1#2{%
785 \pdfstringdef\Hy@gtemp{#2}%
786 \let#1\Hy@gtemp
787 }

```

## 6.3 Encodings

### 6.3.1 XeTeX

change 2020-05-13: the special code for XeTeX big chars has been removed as no longer needed.

### 6.3.2 Workaround for package linguex

```

788 \@ifpackageloaded{linguex}{%
789 \let\HyLinguex@OrgB\b
790 \let\HyLinguex@OrgC\c
791 \let\HyLinguex@OrgD\d
792 \def\HyLinguex@Restore{%
793 \let\b\HyLinguex@OrgB
794 \let\c\HyLinguex@OrgC
795 \let\d\HyLinguex@OrgD
796 }%
797 \Hy@AtEndOfPackage{%
798 \pdfstringdefDisableCommands{%
799 \ltx@ifundefined{oldb}{\let\b\oldb}%
800 \ltx@ifundefined{oldc}{\let\c\oldc}%
801 \ltx@ifundefined{oldd}{\let\d\oldd}%
802 }%
803 }%
804 }{%

```



```

805 \let\HyLinguex@Restore\relax
806 }%

```

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

\Hy@SaveCatcodeSettings

```

807 \def\Hy@SaveCatcodeSettings#1{%
808 \expandafter\edef\csname Hy@cat@#1\endcsname{%
809 \endlinechar=\the\endlinechar\relax
810 \catcode32 \the\catcode32\relax % (space)
811 \catcode34 \the\catcode34\relax % "
812 \catcode35 \the\catcode35\relax % #
813 \catcode37 \the\catcode37\relax % (percent)
814 \catcode40 \the\catcode40\relax % (
815 \catcode41 \the\catcode41\relax % )
816 \catcode42 \the\catcode42\relax % *
817 \catcode46 \the\catcode46\relax % .
818 \catcode58 \the\catcode58\relax % :
819 \catcode60 \the\catcode60\relax % <
820 \catcode61 \the\catcode61\relax % =
821 \catcode62 \the\catcode62\relax % >
822 \catcode64 \the\catcode64\relax % @
823 \catcode91 \the\catcode91\relax % [
824 \catcode92 \the\catcode92\relax % (backslash)
825 \catcode93 \the\catcode93\relax % ]
826 \catcode123 \the\catcode123\relax % {
827 \catcode124 \the\catcode124\relax % |
828 \catcode125 \the\catcode125\relax % }
829 }%
830 \endlinechar=-1 %
831 \catcode32 10 % (space)
832 \catcode34 12 % "
833 \catcode35 6 % #
834 \catcode37 14 % (percent)
835 \catcode40 12 % (
836 \catcode41 12 % )
837 \catcode42 12 % *
838 \catcode46 12 % .
839 \catcode58 12 % :
840 \catcode60 12 % <
841 \catcode61 12 % =
842 \catcode62 12 % >
843 \catcode91 12 % [
844 \catcode92 0 % (backslash)
845 \catcode93 12 % ]
846 \catcode123 1 % {
847 \catcode124 12 % |
848 \catcode125 2 % }
849 \makeatletter
850 }

```

\Hy@RestoreCatcodeSettings

```

851 \def\Hy@RestoreCatcodeSettings#1{%
852 \csname Hy@cat@#1\endcsname
853 \expandafter\let\csname Hy@cat@#1\endcsname\relax

```

854 }

### 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.

```
855 \@ifundefined{T@PD1}{%
856   \Hy@SaveCatcodeSettings{pd1}%
857   \input{pd1enc.def}%
858   \Hy@RestoreCatcodeSettings{pd1}%
859   \HyLinguex@Restore
860 }{}
861 \DeclareFontFamily{PD1}{pdf}{}
862 \DeclareFontShape{PD1}{pdf}{m}{n}{ <-> cmr10 }{}
863 \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. change 2020-08-14: Starting with version v7.00f the file is always loaded and unicode is the default 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`.

```
864 \def\HyPsd@LoadUnicode{%
865   \@ifundefined{T@PU}{%
866     \Hy@SaveCatcodeSettings{pu}%
867     \input{puenc.def}%
868     \Hy@RestoreCatcodeSettings{pu}%
869     \HyLinguex@Restore
870   }{}%
871   \DeclareFontFamily{PU}{pdf}{}%
872   \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%
873   \DeclareFontSubstitution{PU}{pdf}{m}{n}%
874   \HyPsd@LoadExtra
875   \let\HyPsd@LoadUnicode\relax
876 }
```

`\HyPsd@LoadExtra`

```
877 \def\HyPsd@LoadExtra{%
878   \ifHy@psdextra
879     \ltx@iffileloaded{puenc.def}{%
880       \Hy@SaveCatcodeSettings{psdextra}%
881       \input{psdextra.def}%
882       \Hy@RestoreCatcodeSettings{psdextra}%
883       \let\HyPsd@LoadExtra\relax
```

```

884   }{}%
885   \fi
886 }

```

## 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 T<sub>E</sub>X's stomach, the second contains the replacement for PDF strings.

```

887 \def\texorpdfstring{%
888   \ifHy@pdfstring
889     \expandafter\@secondoftwo
890   \else
891     \expandafter\@firstoftwo
892   \fi
893 }

```

### 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`.

```

894 \@ifundefined{pdfstringdefPreHook}{%
895   \let\pdfstringdefPreHook\@empty
896 }{}
897 \@ifundefined{pdfstringdefPostHook}{%
898   \let\pdfstringdefPostHook\@gobble
899 }{}

```

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

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

```

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

```

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

```

900 \def\pdfstringdefDisableCommands{%
901   \begingroup
902     \makeatletter
903     \HyPsd@DisableCommands
904 }

```

`\HyPsd@DisableCommands`

```
905 \long\def\HyPsd@DisableCommands#1{%
906   \ltx@GlobalAppendToMacro\pdfstringdefPreHook{#1}%
907   \endgroup
908 }
```

`\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`.

```
909 \def\pdfstringdefWarn#1{%
910   \expandafter\noexpand\csname<>-string#1\endcsname
911 }
```

## 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.

```
912 \begingroup
913   \catcode0=12 %
914   \def\x{\endgroup
915     \def\HyPsd@ignorespaces{%
916       \romannumeral\expandafter`\expandafter^^@%
917       \romannumeral^^@%
918     }%
919   }%
920 \x
```

### 6.5.2 Babel languages

change 2020-10-10: moved language patches to its own file as a first step toward removing them completely.

```
921 \newif\ifHy@next
922 </package>
```

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

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

As consequence the shorthands were shown in the bookmarks, and required a hyperref patch. In version 3.48 babel removed this unneeded code and so the patch could be removed.

Nothing to do for english. change 2020/07/16: removed patch for french. No longer needed. change 2020/07/21: removed patches for german, ngerman. Will be done by the language package. <https://github.com/jspitz/babel-german/issues/4> change 2020/10/10: removed patches for danish, dutch, finnish, portugues, swedish, usorbian, slovene see <https://github.com/latex3/babel/issues/84> change 2020/10/10: removed patch for macedonian, ukrainian; maintainers notified. change 2020/10/11: removed patch for russian, has been merged into babel-russian see <https://github.com/kia999/babel-russian/pull/3> change 2021/02/04: removed patches for greek numerals, code is now in babel-greek. spanish: Nested quoting environments are not supported (<<, >>). change 2021/07/19: removed patches for spanish, code is now in babel-spanish.

```
923 <*package>
```

### 6.5.3 CJK patch

```
924 \RequirePackage{intcalc}[2007/09/27]
```

```
\HyPsd@CJKhook
```

```
925 \def\HyPsd@CJKhook{%
926   \ltx@ifpackageloaded{CJK}{%
927     \let\CJK@kern\relax
928     \let\CJKkern\relax
929     \let\CJK@CJK\relax
930     \ifHy@CJKbookmarks
931       \HyPsd@CJKhook@bookmarks
932     \fi
933     \HyPsd@CJKhook@unicode
934   }{}%
935 }
```

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

```
936 \beginingroup
937 \catcode"7F=\active
938 \toks@{%
939   \let\CJK@ignorespaces\empty
940   \def\CJK@char#1{\@gobbletwo}%
941   \let\CJK@charx\@gobblefour
942   \let\CJK@punctchar\@gobblefour
943   \def\CJK@punctcharx#1{\@gobblefour}%
944   \catcode"7F=\active
945   \def^^7f#1^^7f#2^^7f{%
946     \string #1\HyPsd@DecimalToOctal{#2}%
```

```

947 }%
948 % ... ?
949 \ifHy@unicode
950 \def\Hy@cjkpu{\80}%
951 \else
952 \let\Hy@cjkpu\@empty
953 \fi
954 \HyPsd@CJKActiveChars
955 }%
956 \count@=127 %
957 \@whilenum\count@<255 \do{%
958 \advance\count@ by 1 %
959 \lccode\~=\count@
960 \lowercase{%
961 \toks@\expandafter{\the\toks@ ~}%
962 }%
963 }%
964 \toks@\expandafter{\the\toks@ !}%
965 \xdef\HyPsd@CJKhook@bookmarks{%
966 \the\toks@
967 }%
968 \endgroup

```

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

```

969 \def\HyPsd@CJKActiveChars#1{%
970 \ifx#1!%
971 \let\HyPsd@CJKActiveChars\relax
972 \else
973 \edef#1{\noexpand\Hy@cjkpu\string#1}%
974 \fi
975 \HyPsd@CJKActiveChars
976 }

```

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

```

977 \def\HyPsd@DecimalToOctal#1{%
978 \ifcase #1 %
979 \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
980 \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
981 \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
982 \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
983 \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
984 \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
985 \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
986 \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
987 \or @\or A\or B\or C\or D\or E\or F\or G%
988 \or H\or I\or J\or K\or L\or M\or N\or O%
989 \or P\or Q\or R\or S\or T\or U\or V\or W%
990 \or X\or Y\or Z\or \133\or \134\or \135\or \136\or \137%
991 \or \140\or a\or b\or c\or d\or e\or f\or g%
992 \or h\or i\or j\or k\or l\or m\or n\or o%
993 \or p\or q\or r\or s\or t\or u\or v\or w%
994 \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
995 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%

```

```

996 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
997 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
998 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
999 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1000 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1001 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1002 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1003 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1004 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1005 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1006 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1007 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1008 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1009 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1010 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1011 \fi
1012 }

```

### 6.5.5 CJK unicode

\HyPsd@CJKhook@unicode

```

1013 \def\HyPsd@CJKhook@unicode{%
1014 \let\Unicode\HyPsd@CJK@Unicode
1015 \let\CJKnumber\HyPsd@CJKnumber
1016 \let\CJKdigits\HyPsd@CJKdigits
1017 }

```

\HyPsd@CJK@Unicode

```

1018 \def\HyPsd@CJK@Unicode#1#2{%
1019 \ifnum#1<256 %
1020 \HyPsd@DecimalToOctalFirst{#1}%
1021 \HyPsd@DecimalToOctalSecond{#2}%
1022 \else
1023 \933%
1024 \expandafter\expandafter\expandafter\HyPsd@HighA
1025 \intcalcDiv{#1}{4}!%
1026 \933%
1027 \ifcase\intcalcMod{#1}{4} %
1028 4\or 5\or 6\or 7%
1029 \fi
1030 \HyPsd@DecimalToOctalSecond{#2}%
1031 \fi
1032 }

1033 \def\HyPsd@HighA#1!{%
1034 \expandafter\expandafter\expandafter\HyPsd@HighB
1035 \IntCalcDiv#1!64!!%
1036 \expandafter\expandafter\expandafter\HyPsd@HighD
1037 \IntCalcMod#1!64!!%
1038 }

1039 \def\HyPsd@HighB#1!{%
1040 \expandafter\expandafter\expandafter\HyPsd@HighC
1041 \IntCalcDec#1!!%
1042 }

```

```

1043 \def\HyPsd@HighC#1!{%
1044   \IntCalcDiv#1!4!%
1045   \@backslashchar
1046   \IntCalcMod#1!4!%
1047 }
1048 \def\HyPsd@HighD#1!{%
1049   \ifcase\IntCalcDiv#1!8! %
1050     0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1051   \fi
1052   \ifcase\IntCalcMod#1!8! %
1053     0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1054   \fi
1055 }
1056 \def\HyPsd@DecimalToOctalFirst#1{%
1057   \9%
1058   \ifcase#1 %
1059     000\or 001\or 002\or 003\or 004\or 005\or 006\or 007%
1060     \or 010\or 011\or 012\or 013\or 014\or 015\or 016\or 017%
1061     \or 020\or 021\or 022\or 023\or 024\or 025\or 026\or 027%
1062     \or 030\or 031\or 032\or 033\or 034\or 035\or 036\or 037%
1063     \or 040\or 041\or 042\or 043\or 044\or 045\or 046\or 047%
1064     \or 050\or 051\or 052\or 053\or 054\or 055\or 056\or 057%
1065     \or 060\or 061\or 062\or 063\or 064\or 065\or 066\or 067%
1066     \or 070\or 071\or 072\or 073\or 074\or 075\or 076\or 077%
1067     \or 100\or 101\or 102\or 103\or 104\or 105\or 106\or 107%
1068     \or 120\or 111\or 112\or 113\or 114\or 115\or 116\or 117%
1069     \or 120\or 121\or 122\or 123\or 124\or 125\or 126\or 127%
1070     \or 130\or 131\or 132\or 133\or 134\or 135\or 136\or 137%
1071     \or 140\or 141\or 142\or 143\or 144\or 145\or 146\or 147%
1072     \or 150\or 151\or 152\or 153\or 154\or 155\or 156\or 157%
1073     \or 160\or 161\or 162\or 163\or 164\or 165\or 166\or 167%
1074     \or 170\or 171\or 172\or 173\or 174\or 175\or 176\or 177%
1075     \or 200\or 201\or 202\or 203\or 204\or 205\or 206\or 207%
1076     \or 210\or 211\or 212\or 213\or 214\or 215\or 216\or 217%
1077     \or 220\or 221\or 222\or 223\or 224\or 225\or 226\or 227%
1078     \or 230\or 231\or 232\or 233\or 234\or 235\or 236\or 237%
1079     \or 240\or 241\or 242\or 243\or 244\or 245\or 246\or 247%
1080     \or 250\or 251\or 252\or 253\or 254\or 255\or 256\or 257%
1081     \or 260\or 261\or 262\or 263\or 264\or 265\or 266\or 267%
1082     \or 270\or 271\or 272\or 273\or 274\or 275\or 276\or 277%
1083     \or 300\or 301\or 302\or 303\or 304\or 305\or 306\or 307%
1084     \or 310\or 311\or 312\or 313\or 314\or 315\or 316\or 317%
1085     \or 320\or 321\or 322\or 323\or 324\or 325\or 326\or 327%
1086     \or 330\or 331\or 332\or 333\or 334\or 335\or 336\or 337%
1087     \or 340\or 341\or 342\or 343\or 344\or 345\or 346\or 347%
1088     \or 350\or 351\or 352\or 353\or 354\or 355\or 356\or 357%
1089     \or 360\or 361\or 362\or 363\or 364\or 365\or 366\or 367%
1090     \or 370\or 371\or 372\or 373\or 374\or 375\or 376\or 377%
1091   \fi
1092 }
1093 \def\HyPsd@DecimalToOctalSecond#1{%
1094   \ifcase #1 %
1095     \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
1096     \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%

```



```

1097 \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
1098 \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
1099 \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
1100 \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
1101 \or \060\or \061\or \062\or \063\or \064\or \065\or \066\or \067%
1102 \or \070\or \071\or \072\or \073\or \074\or \075\or \076\or \077%
1103 \or \100\or \101\or \102\or \103\or \104\or \105\or \106\or \107%
1104 \or \110\or \111\or \112\or \113\or \114\or \115\or \116\or \117%
1105 \or \120\or \121\or \122\or \123\or \124\or \125\or \126\or \127%
1106 \or \130\or \131\or \132\or \133\or \134\or \135\or \136\or \137%
1107 \or \140\or \141\or \142\or \143\or \144\or \145\or \146\or \147%
1108 \or \150\or \151\or \152\or \153\or \154\or \155\or \156\or \157%
1109 \or \160\or \161\or \162\or \163\or \164\or \165\or \166\or \167%
1110 \or \170\or \171\or \172\or \173\or \174\or \175\or \176\or \177%
1111 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
1112 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
1113 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1114 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
1115 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1116 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1117 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1118 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1119 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1120 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1121 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1122 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1123 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1124 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1125 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1126 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1127 \fi
1128 }

1129 \def\HyPsd@CJKnumber#1{%
1130 \ifnum#1<\z@
1131 \CJK@minus
1132 \expandafter\HyPsd@@CJKnumber\expandafter{\number-\number#1}%
1133 \else
1134 \expandafter\HyPsd@@CJKnumber\expandafter{\number#1}%
1135 \fi
1136 }

1137 \def\HyPsd@@CJKnumber#1{%
1138 \ifcase#1 %
1139 \CJK@zero\or\CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1140 \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine\or
1141 \CJK@ten\or\CJK@ten\CJK@one\or\CJK@ten\CJK@two\or
1142 \CJK@ten\CJK@three\or\CJK@ten\CJK@four\or\CJK@ten\CJK@five\or
1143 \CJK@ten\CJK@six\or\CJK@ten\CJK@seven\or\CJK@ten\CJK@eight\or
1144 \CJK@ten\CJK@nine
1145 \else
1146 \ifnum#1<10000 %
1147 \HyPsd@CJKnumberFour#1!\@empty{20}%
1148 \@empty
1149 \else
1150 \ifnum#1<100000000 %

```

```

1151 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1152 \IntCalcDiv#1!10000!%
1153 !\CJK@zero{10}%
1154 \CJK@tenthousand
1155 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1156 \IntCalcMod#1!10000!%
1157 !\CJK@zero{10}%
1158 \@empty
1159 \else
1160 \expandafter\HyPsd@CJKnumberLarge
1161 \number\IntCalcDiv#1!100000000!\expandafter!%
1162 \number\IntCalcMod#1!100000000!!%
1163 \fi
1164 \fi
1165 \fi
1166 }
1167 \def\HyPsd@CJKnumberLarge#1!#2!{%
1168 \HyPsd@CJKnumberFour#1!{20}%
1169 \CJK@hundredmillion
1170 \ifnum#2=\z@
1171 \else
1172 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1173 \IntCalcDiv#2!10000!%
1174 !\CJK@zero{10}%
1175 \CJK@tenthousand
1176 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1177 \IntCalcMod#2!10000!%
1178 !\CJK@zero{10}%
1179 \@empty
1180 \fi
1181 }
1182 \def\HyPsd@CJKnumberFour#1!#2#3{%
1183 \ifnum#1=\z@
1184 \expandafter\@gobble
1185 \else
1186 \ifnum#1<1000 %
1187 #2%
1188 \HyPsd@CJKnumberThree#1!{3}%
1189 \else
1190 \HyPsd@@CJKnumber{\IntCalcDiv#1!1000!}%
1191 \CJK@thousand
1192 \expandafter\expandafter\expandafter\HyPsd@CJKnumberThree
1193 \IntCalcMod#1!1000!%
1194 !\CJK@zero{10}%
1195 \fi
1196 \fi
1197 }
1198 \def\HyPsd@CJKnumberThree#1!#2#3{%
1199 \ifnum#1=\z@
1200 \else
1201 \ifnum#1<100 %
1202 #2%
1203 \HyPsd@CJKnumberTwo#1!{3}%
1204 \else

```

```

1205 \HyPsd@@CJKnumber{\IntCalcDiv#1!100!}%
1206 \CJK@hundred
1207 \expandafter\expandafter\expandafter\HyPsd@CJKnumberTwo
1208 \IntCalcMod#1!100!%
1209 !\CJK@zero{10}%
1210 \fi
1211 \fi
1212 }
1213 \def\HyPsd@CJKnumberTwo#1!#2#3{%
1214 \ifnum#1=\z@
1215 \else
1216 \ifnum#1<#3 %
1217 #2%
1218 \HyPsd@@CJKnumber{#1}%
1219 \else
1220 \HyPsd@@CJKnumber{\IntCalcDiv#1!10!}%
1221 \CJK@ten
1222 \ifnum\IntCalcMod#1!10!=\z@
1223 \else
1224 \HyPsd@@CJKnumber{\IntCalcMod#1!10!}%
1225 \fi
1226 \fi
1227 \fi
1228 }
1229 \def\HyPsd@CJKdigits#1{%
1230 \ifx*#1\relax
1231 \expandafter\HyPsd@@CJKdigits\expandafter\CJK@zero
1232 \else
1233 \HyPsd@@CJKdigits\CJK@null{#1}%
1234 \fi
1235 }
1236 \def\HyPsd@@CJKdigits#1#2{%
1237 \ifx\#2\%
1238 \else
1239 \HyPsd@@@CJKdigits#1#2\@nil
1240 \fi
1241 }%
1242 \def\HyPsd@@@CJKdigits#1#2#3\@nil{%
1243 \HyPsd@CJKdigit#1{#2}%
1244 \ifx\#3\%
1245 \expandafter\@gobble
1246 \else
1247 \expandafter\@firstofone
1248 \fi
1249 {%
1250 \HyPsd@@@CJKdigits#1#3\@nil
1251 }%
1252 }
1253 \def\HyPsd@CJKdigit#1#2{%
1254 \ifcase#2 %
1255 #1\or
1256 \CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1257 \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine
1258 \fi

```

### 6.5.6 \@inmathwarn-Patch

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

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

```

\def\@current@cmd#1{%
  \ifx\protect\@typesetprotect
    \@inmathwarn#1%
  \else
    \noexpand#1\expandafter\@gobble
  \fi}
\def\@changed@cmd#1#2{%
  \ifx\protect\@typesetprotect
    \@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}

1260 \def\HyPsd@inmathwarn#1#2{%
1261   \ifx#2\expandafter
1262     \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
1263       \HyPsd@GLYPHERR
1264       \expandafter\@gobble\string#1%
1265       >%
1266       \expandafter\expandafter\expandafter\HyPsd@EndWithElse

```

```

1267 \else
1268 \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
1269 \fi
1270 \else
1271 \expandafter#2%
1272 \fi
1273 }
1274 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
1275 \def\HyPsd@EndWithElse#1\else{\else}

```

`\HyPsd@add@accent`

```

1276 \def\HyPsd@add@accent#1#2{%
1277 \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
1278 #2%
1279 }%

```

### 6.5.7 Unexpandable spaces

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

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

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

```

1280 \def\HyPsd@LetUnexpandableSpace#1{%
1281 \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
1282 }

```

`\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.

```

1283 \HyPsd@LetUnexpandableSpace\HyPsd@UnexpandableSpace

```

### 6.5.8 Marker for commands

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

```

1284 \edef\HyPsd@XSPACE{\string#\string X}
1285 \edef\HyPsd@ITALCORR{\string#\string I}
1286 \edef\HyPsd@GLYPHERR{\string#\string G}

```

### 6.5.9 `\hspace` fix

`\HyPsd@hspace`

```

1287 \def\HyPsd@hspace#1{\HyPsd@@hspace#1*END}

```

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

```

1288 \def\HyPsd@@hspace#1*#2END{%
1289 \ifx\#2\\%

```

```

1290 \HyPsd@hspacetest{#1}%
1291 \else
1292 \expandafter\HyPsd@hspacetest
1293 \fi
1294 }

```

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

```

1295 \def\HyPsd@hspacetest#1{\ifdim\dimexpr#1\relax>\z@\space\fi}

```

#### 6.5.10 Fix for AMS classes

```

1296 \ltx@ifundefined{tocsection}{%
1297 \let\HyPsd@AMSclassfix\relax
1298 }{%
1299 \def\HyPsd@AMSclassfix{%
1300 \let\tocpart\HyPsd@tocsection
1301 \let\tocchapter\HyPsd@tocsection
1302 \let\tocappendix\HyPsd@tocsection
1303 \let\tocsection\HyPsd@tocsection
1304 \let\tocsubsection\HyPsd@tocsection
1305 \let\tocsubsubsection\HyPsd@tocsection
1306 \let\tocparagraph\HyPsd@tocsection
1307 }%
1308 \def\HyPsd@tocsection#1#2#3{%
1309 \if @#2@ \else \if @#1@ \else #1 \fi #2. \fi
1310 #3%
1311 }%
1312 }

```

#### 6.5.11 Reference commands

`\HyPsd@href`

```

1313 \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.

```

1314 \def\HyPsd@ref#1{\HyPsd@@ref#1*\END}%

```

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

```

1315 \def\HyPsd@@ref#1*#2\END{%
1316 \ifx\#2\%
1317 \HyPsd@@@ref{#1}%
1318 \else
1319 \expandafter\HyPsd@@@ref
1320 \fi
1321 }%

```

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

```

1322 \def\HyPsd@@@ref#1{%
1323 \expandafter\ifx\csname r@#1\endcsname\relax
1324 ??%
1325 \else
1326 \expandafter\expandafter\expandafter

```

```

1327 \car\csname r@#1\endcsname\@nil
1328 \fi
1329 }

```

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

```

1330 \def\HyPsd@pageref#1{\HyPsd@@pageref#1*END}

```

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

```

1331 \def\HyPsd@@pageref#1*#2END{%
1332 \ifx\#2\%
1333 \HyPsd@@@pageref{#1}%
1334 \else
1335 \expandafter\HyPsd@@@pageref
1336 \fi
1337 }

```

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

```

1338 \def\HyPsd@@@pageref#1{%
1339 \expandafter\ifx\csname r@#1\endcsname\relax
1340 ??%
1341 \else
1342 \expandafter\expandafter\expandafter\expandafter
1343 \expandafter\expandafter\expandafter\@car
1344 \expandafter\expandafter\expandafter\@gobble
1345 \csname r@#1\endcsname{}\@nil
1346 \fi
1347 }

```

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

```

1348 \def\HyPsd@nameref#1{\HyPsd@@nameref#1*END}

```

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

```

1349 \def\HyPsd@@nameref#1*#2END{%
1350 \ifx\#2\%
1351 \HyPsd@@@nameref{#1}%
1352 \else
1353 \expandafter\HyPsd@@@nameref
1354 \fi
1355 }

```

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

```

1356 \def\HyPsd@@@nameref#1{%
1357 \expandafter\ifx\csname r@#1\endcsname\relax
1358 ??%
1359 \else
1360 \expandafter\expandafter\expandafter\expandafter
1361 \expandafter\expandafter\expandafter\@car
1362 \expandafter\expandafter\expandafter\@gobbletwo
1363 \csname r@#1\endcsname{}\@nil
1364 \fi
1365 }

```

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

```
1366 \def\HyPsd@autoref#1{\HyPsd@@autoref#1*\END}
```

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

```
1367 \def\HyPsd@@autoref#1*#2\END{%
1368   \ifx\#2\%
1369     \HyPsd@@@autoref{#1}%
1370   \else
1371     \expandafter\HyPsd@@@autoref
1372   \fi
1373 }
```

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

```
1374 \def\HyPsd@@@autoref#1{%
1375   \expandafter\ifx\csname r@#1\endcsname\relax
1376     ??%
1377   \else
1378     \expandafter\expandafter\expandafter\HyPsd@autorefname
1379       \csname r@#1\endcsname\relax\@nil
1380     \expandafter\expandafter\expandafter
1381       \@car\csname r@#1\endcsname\@nil
1382   \fi
1383 }
```

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

```
1384 \def\HyPsd@autorefname#1#2#3#4#5\@nil{%
1385   \ifx\#4\%
1386   \else
1387     \HyPsd@@autorefname#4.\@nil
1388   \fi
1389 }
```

`\HyPsd@@autorefname`

```
1390 \def\HyPsd@@autorefname#1.#2\@nil{%
1391   \ltx@ifundefined{#1autorefname}{%
1392     \ltx@ifundefined{#1name}{%
1393       }{%
1394         \csname#1name\endcsname\space
1395       }%
1396     }{%
1397       \csname#1autorefname\endcsname\space
1398     }%
1399 }
```

### 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 1400 \begingroup
1401   \def\x#1#2{%
1402     \endgroup
1403     \let#1\def
1404     \def\HyPsd@DefCommand##1##2###{%
1405       #1%
1406       \expandafter\noexpand
1407       \csname\expandafter\@gobble\string##1\@empty\endcsname
1408       \@gobble
1409     }%
1410     \let#2\let
1411     \def\HyPsd@@LetCommand##1{%
1412       \expandafter\ifx\csname##1\expandafter\endcsname
1413         \csname iftrue\endcsname
1414       \pdfstringdefWarn\let
1415       \expandafter\@gobble
1416     \else
1417       \expandafter\ifx\csname##1\expandafter\endcsname
1418         \csname iffalse\endcsname
1419       \pdfstringdefWarn\let
1420       \expandafter\expandafter\expandafter\@gobble
1421     \else
1422       #2%
1423       \expandafter\noexpand
1424       \csname##1\expandafter\expandafter\expandafter\endcsname
1425     \fi
1426   \fi
1427 }%
1428 }%
```

```

1429 \expandafter\x\csname <def>-command\expandafter\endcsname
1430         \csname <let>-command\endcsname
1431 \def\HyPsd@LetCommand#1{%
1432 \expandafter\expandafter\expandafter\HyPsd@@LetCommand
1433 \expandafter\expandafter\expandafter{%
1434 \expandafter\@gobble\string#1\@empty
1435 }%
1436 }

```

### 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).

```

1437 \def\HyPsd@ifnextchar#1{%
1438 \pdfstringdefWarn#1%
1439 \expandafter\@gobbletwo\@gobble
1440 }

```

### 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`.

```

1441 \def\HyPsd@protected@testopt#1{%
1442 \pdfstringdefWarn#1%
1443 \@gobbletwo
1444 }

```

## 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:

```

1445 \def\HyPsd@Warning#1{%
1446 \begingroup
1447 \let\space\ltx@space
1448 \Hy@Warning{#1}%
1449 \endgroup
1450 }

```

## 6.6.2 Protecting spaces

`\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`.

```

1451 \let\HyPsd@fi\fi
1452 \def\HyPsd@ProtectSpaces#1{%
1453   \xdef#1{%
1454     \iftrue
1455       \expandafter\HyPsd@@ProtectSpacesFi
1456       \expandafter|\expandafter\@empty#1| %
1457     \HyPsd@fi
1458   }%
1459   \expandafter\HyPsd@RemoveMask#1\HyPsd@End#1%
1460 }%
```

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

```

1461 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@fi{%
1462   \fi
1463   \unexpanded{#1}%
1464   \ifx\scrollmode#2\scrollmode
1465   \else
1466     \HyPsd@@ProtectSpacesFi\HyPsd@UnexpandableSpace#2%
1467   \HyPsd@fi
1468 }%
```

### 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.

```

1469 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1470   \xdef#2{\unexpanded\expandafter{#1}}%
1471 }%
```

## 6.6.3 Remove grouping braces

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

```

1472 \def\HyPsd@RemoveBraces#1{%
1473   \ifx\scrollmode#1\scrollmode
1474   \else
1475     \HyPsd@@RemoveBracesFi#1\HyPsd@End{#1}%
1476   \fi
1477 }
```

`\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`.

```

1478 \def\HyPsd@@RemoveBracesFi#1#2\HyPsd@End#3\fi{%
1479   \fi
1480   \def\Hy@temp@A{#1#2}%
1481   \def\Hy@temp@B{#3}%
1482   \ifx\Hy@temp@A\Hy@temp@B
1483     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1484       \HyPsd@String#1%
1485     }%
1486     \ifx\scrollmode#2\scrollmode
1487       \else
1488         \Hy@ReturnAfterFiFiEnd{%
1489           \HyPsd@RemoveBraces{#2}%
1490         }%
1491       \fi
1492     \else
1493       \def\Hy@temp@A{#1}%
1494       \HyPsd@AppendItalcrr\HyPsd@String
1495       \ifx\Hy@temp@A\@empty
1496         \Hy@ReturnAfterElseFiFiEnd{%
1497           \HyPsd@RemoveBraces{#2}%
1498         }%
1499       \else
1500         \HyPsd@ProtectSpaces\Hy@temp@A
1501         \HyPsd@AppendItalcrr\Hy@temp@A
1502         \Hy@ReturnAfterFiFiEnd{%
1503           \expandafter\HyPsd@RemoveBraces\expandafter
1504             {\Hy@temp@A#2}%
1505         }%
1506       \fi
1507     \fi
1508   \Hy@ReturnEnd
1509 }
```

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

```

1510 \def\HyPsd@AppendItalcrr#1{%
1511   \expandafter\HyPsd@@AppendItalcrr\expandafter{\/#1%
1512 }
1513 \def\HyPsd@@AppendItalcrr#1#2{%
1514   \expandafter\def\expandafter#2\expandafter{#2#1}%
1515 }
```

#### 6.6.4 Catcode check

**Workaround for LuaTeX.** `\HyPsd@CheckCatcodes` might trigger a bug of LuaTeX (0.60.2, 0.70.1, 0.70.2, ...) in the comparison with `\ifcat`, see <http://tracker.luaotex.org/view.php?id=773>.

```

1516 \ltx@ifundefined{directlua}{%
1517 }{%
1518 \expandafter\ifx\csname\endcsname\relax\fi
1519 }

```

### 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`.

```

1520 \begingroup
1521 \catcode`\Q=\active
1522 \let Q\ltx@empty
1523 \gdef\HyPsd@CheckCatcodes#1#2\HyPsd@End{%
1524 \global\let\HyPsd@Rest\relax
1525 \ifcat\relax\noexpand#1\relax
1526 \ifx#1\protect
1527 \else
1528 \ifx#1\penalty
1529 \setbox\z@=\hbox{%
1530 \afterassignment\HyPsd@AfterCountRemove
1531 \count@=#2\HyPsd@End
1532 }%
1533 \else
1534 \ifx#1\kern
1535 \setbox\z@=\hbox{%
1536 \afterassignment\HyPsd@AfterDimenRemove
1537 \dimen@=#2\HyPsd@End
1538 }%
1539 \else
1540 \ifx#1\hskip
1541 \setbox\z@=\hbox{%
1542 \afterassignment\HyPsd@AfterSkipRemove
1543 \skip@=#2\HyPsd@End
1544 }%
1545 \else
1546 \HyPsd@CatcodeWarning{#1}%
1547 \fi
1548 \fi
1549 \fi
1550 \fi
1551 \else
1552 \ifcat\noexpand#1\noexpandQ% active character
1553 \expandafter\expandafter\expandafter\def

```

```

1554 \expandafter\expandafter\expandafter\HyPsd@String
1555 \expandafter\expandafter\expandafter{%
1556 \expandafter\HyPsd@String\string#1%
1557 }%
1558 \else
1559 \ifcat#1A% letter
1560 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1561 \HyPsd@String#1%
1562 }%
1563 \else
1564 \ifcat#1 % SPACE
1565 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1566 \HyPsd@String\HyPsd@SPACEOPTI
1567 }%
1568 \else
1569 \ifcat$#1%
1570 \HyPsd@CatcodeWarning{math shift}%
1571 \else
1572 \ifcat&#1%
1573 \HyPsd@CatcodeWarning{alignment tab}%
1574 \else
1575 \ifcat^#1%
1576 \HyPsd@CatcodeWarning{superscript}%
1577 \else
1578 \ifcat_#1%
1579 \HyPsd@CatcodeWarning{subscript}%
1580 \else
1581 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1582 \HyPsd@String#1%
1583 }%
1584 \fi
1585 \fi
1586 \fi
1587 \fi
1588 \fi
1589 \fi
1590 \fi
1591 \fi
1592 \ifx\HyPsd@Rest\relax
1593 \ifx\scrollmode#2\scrollmode
1594 \else
1595 \Hy@ReturnAfterFiFiEnd{%
1596 \HyPsd@CheckCatcodes#2\HyPsd@End
1597 }%
1598 \fi
1599 \else
1600 \ifx\HyPsd@Rest\@empty
1601 \else
1602 \Hy@ReturnAfterFiFiEnd{%
1603 \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@End
1604 }%
1605 \fi
1606 \fi
1607 \Hy@ReturnEnd

```

```

1608 }%
1609 \endgroup

```

### Remove counts, dimens, skips.

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

```

1610 \def\HyPsd@AfterCountRemove#1\HyPsd@end{%
1611   \gdef\HyPsd@Rest{#1}%
1612 }

```

`\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.

```

1613 \def\HyPsd@AfterDimenRemove#1\HyPsd@end{%
1614   \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@>1ex %
1615     \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1616     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1617   \else
1618     \ifdim\dimen@=\z@
1619     \else
1620       \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1621     \fi
1622     \gdef\HyPsd@Rest{#1}%
1623   \fi
1624 }

```

`\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).

```

1625 \def\HyPsd@AfterSkipRemove#1\HyPsd@end{%
1626   \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@>1ex %
1627     \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1628     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1629   \else
1630     \ifdim\skip@=\z@
1631     \else
1632       \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1633     \fi
1634     \gdef\HyPsd@Rest{#1}%
1635   \fi
1636 }

```

### Catcode warnings.

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

```

1637 \def\HyPsd@CatcodeWarning#1{%
1638   \HyPsd@Warning{%
1639     Token not allowed in a PDF string (%
1640     \ifHy@unicode
1641       Unicode%
1642     \else
1643       PDFDocEncoding%
1644     \fi

```

```

1645 ):%
1646 \MessageBreak removing ``\HyPsd@RemoveCmdPrefix#1'%
1647 }%
1648 }
1649 \beginngroup
1650 \catcode`\|=0 %
1651 \catcode`\|=12 %
1652 |gdef|HyPsd@RemoveCmdPrefix#1{%
1653 |expandafter|HyPsd@@RemoveCmdPrefix
1654 |string#1|@empty\<>-|@empty|@empty
1655 }%
1656 |gdef|HyPsd@@RemoveCmdPrefix#1\<>-#2|@empty#3|@empty{#1#2}%
1657 |endgroup

```

\HyPsd@RemoveSpaceWarning

```

1658 \def\HyPsd@RemoveSpaceWarning#1{%
1659 \HyPsd@Warning{%
1660 Token not allowed in a PDF string (%)
1661 \ifHy@unicode
1662 Unicode%
1663 \else
1664 PDFDocEncoding%
1665 \fi
1666 ):%
1667 \MessageBreak #1\MessageBreak
1668 removed%
1669 }%
1670 }

```

\HyPsd@ReplaceSpaceWarning

```

1671 \def\HyPsd@ReplaceSpaceWarning#1{%
1672 \HyPsd@Warning{%
1673 Token not allowed in a PDF string (%)
1674 \ifHy@unicode
1675 Unicode%
1676 \else
1677 PDFDocEncoding%
1678 \fi
1679 ):%
1680 \MessageBreak #1\MessageBreak
1681 replaced by space%
1682 }%
1683 }

```

### 6.6.5 Check for wrong glyphs

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

```

1684 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
1685 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1686 \HyPsd@String#1%
1687 }%
1688 \ifx\|#2\%
1689 \else

```



```

1690 \ltx@ReturnAfterFi{%
1691 \HyPsd@GlyphProcessWarning#2\@empty
1692 }%
1693 \fi
1694 }
1695 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
1696 \HyPsd@@@GlyphProcessWarning#1++>%
1697 \HyPsd@GlyphProcess#2\@empty
1698 }
1699 \def\HyPsd@@@GlyphProcessWarning#1+#2+#3>{%
1700 \ifx\#2\%
1701 \HyPsd@Warning{%
1702 Glyph not defined in %
1703 P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
1704 removing \@backslashchar#1'%
1705 }%
1706 \else
1707 \HyPsd@Warning{%
1708 Composite letter \@backslashchar#1+#2'\MessageBreak
1709 not defined in P\ifHy@unicode U\else D1\fi\space encoding,%
1710 \MessageBreak
1711 removing \@backslashchar#1'%
1712 }%
1713 \fi
1714 }

```

## 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`.

```

1715 \def\HyPsd@spaceopti#1{ % first space
1716 \ifx\HyPsd@spaceopti#1%
1717 \040%
1718 \else
1719 #1%
1720 \fi
1721 }%

```

### 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.
1722 \def\HyPsd@Subst#1#2#3{%
1723 \def\HyPsd@@@ReplaceFi##1#1##2\END\fi{%
1724 \fi
1725 ##1%
1726 \ifx\scrollmode##2\scrollmode

```

```

1727 \else
1728   #2%
1729   \HyPsd@@ReplaceFi##2\END
1730 \fi
1731 }%
1732 \xdef#3{%
1733   \iftrue
1734     \expandafter\HyPsd@@ReplaceFi#3#1\END
1735   \fi
1736 }%
1737 }

```

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

```

1738 \def\HyPsd@StringSubst#1{%
1739   \expandafter\HyPsd@Subst\expandafter{\string#1}%
1740 }

```

`\HyPsd@EscapeTeX`

```

1741 \begingroup
1742 \lccode`!=`\\%%
1743 \lccode`|=`\\%%
1744 \lccode`\(=`{\%
1745 \lccode`\)=`}\%
1746 \lccode`0=\ltx@zero
1747 \lccode`1=\ltx@zero
1748 \lccode`3=\ltx@zero
1749 \lccode`4=\ltx@zero
1750 \lccode`5=\ltx@zero
1751 \lccode`7=\ltx@zero
1752 \lowercase{\endgroup
1753 \def\HyPsd@EscapeTeX#1{%
1754   \HyPsd@Subst!{|045}#1%
1755   \HyPsd@Subst({|173}#1%
1756   \HyPsd@Subst){|175}#1%
1757 }%
1758 }

```

### 6.6.7 Support for package `xspace`

`\HyPsd@doxspace` `\xspace` does not work, because it uses a `\futurelet` that cannot be executed in  $\text{\TeX}$ '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.

```

1759 \def\HyPsd@doxspace#1{%
1760   \ifx#1\relax\else
1761     \ifx#1.\else
1762       \ifx#1:\else
1763         \ifx#1,\else
1764           \ifx#1;\else
1765             \ifx#1!\else
1766               \ifx#1?\else
1767                 \ifx#1/\else

```

```

1768     \ifx#1-\else
1769     \ifx#1'\else
1770     \HyPsd@SPACEOPTI
1771     \fi
1772     \fi
1773     \fi
1774     \fi
1775     \fi
1776     \fi
1777     \fi
1778     \fi
1779     \fi
1780     \fi
1781     #1%
1782 }%

```

### 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.

```

1783 \beginngroup
1784 \catcode`\|=0 %
1785 \catcode`\|=12 %

```

\HyPsd@ConvertToUnicode

```

1786 |gdef|HyPsd@ConvertToUnicode#1{%
1787 |xdef#1{%
1788 |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
1789 }%
1790 |ifx#1|@empty
1791 |else
1792 |xdef#1{%
1793 \376\377%
1794 #1%
1795 }%
1796 |fi
1797 }%

```

\HyPsd@DoConvert

```

1798 |gdef|HyPsd@DoConvert#1{%
1799 |ifx#1|@empty
1800 |else
1801 |ltx@ReturnAfterFi{%
1802 |ifx#1\%%
1803 \%%
1804 |expandafter|HyPsd@DoEscape
1805 |else
1806 |HyPsd@Char{#1}%
1807 |expandafter|HyPsd@DoConvert
1808 |fi
1809 }%
1810 |fi
1811 }%

```

\HyPsd@DoEscape

```

1812 |gdef|HyPsd@DoEscape#1{%
1813   |ifx#19%
1814   |expandafter|HyPsd@GetTwoBytes
1815   |else
1816   |ltx@ReturnAfterFi{%
1817   |ifx#18%
1818     00%
1819   |expandafter|HyPsd@GetTwoBytes
1820   |else
1821     #1%
1822   |expandafter|HyPsd@GetOneByte
1823   |fi
1824 }%
1825 |fi
1826 }%

```

\HyPsd@GetTwoBytes

```

1827 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
1828   #1\#2#3#4%
1829   |HyPsd@DoConvert
1830 }%

```

\HyPsd@GetOneByte

```

1831 |gdef|HyPsd@GetOneByte#1#2{%
1832   #1#2%
1833   |HyPsd@DoConvert
1834 }%
1835 |endgroup

```

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

```

1836 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
1837   \xdef#4{#4#1#2}%
1838   \HyPsd@@ConvertToUnicode#3\END#4%
1839 }

```

\HyPsd@Char

```

1840 \begingroup
1841   \catcode0=9 %
1842   \catcode`\^=7 %
1843   \catcode`\^^~ =12 %
1844   \def\x{^^~0000}%
1845   \expandafter\endgroup
1846   \ifx\x\@empty
1847     \def\HyPsd@Char#1{%
1848       \ifnum`#1<128 %
1849         \@backslashchar 000#1%
1850       \else
1851         \ifnum`#1<65536 %
1852           \expandafter\HyPsd@CharTwoByte\number`#1!%
1853         \else
1854           \expandafter\expandafter\expandafter\HyPsd@CharSurrogate

```

```

1855     \intcalcSub{`#1}{65536}!%
1856     \fi
1857 \fi
1858 }%
1859 \def\HyPsd@CharTwoByte#1!{%
1860   \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1861   \IntCalcDiv#1!256!!%
1862   \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1863   \IntCalcMod#1!256!!%
1864 }%
1865 \def\HyPsd@CharOctByte#1!{%
1866   \@backslashchar
1867   \IntCalcDiv#1!64!%
1868   \intcalcDiv{\IntCalcMod#1!64!}{8}%
1869   \IntCalcMod#1!8!%
1870 }%
1871 \def\HyPsd@CharSurrogate#1!{%
1872   \@backslashchar 33%
1873   \IntCalcDiv#1!262144!%
1874   \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1875   \intcalcDiv{\IntCalcMod#1!262144!}{1024}!%
1876   \@backslashchar 33%
1877   \expandafter\expandafter\expandafter\IntCalcAdd
1878   \intcalcDiv{\IntCalcMod#1!1024!}{256}!4!%
1879   \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1880   \IntCalcMod#1!256!!%
1881 }%
1882 \else
1883 \def\HyPsd@Char#1{%
1884   \@backslashchar 000#1%
1885 }%
1886 \fi

```

change 2022-02-21 For the case that utf8 chars are protected we need to expand them. This works only is `\UTFviii@loop` is not defined in a group, which will be the case in the new latex code, so we test for it.

```

1887 \ifcsname UTFviii@loop\endcsname
1888 \def\HyPsd@expand@utfvii{%
1889   \count@"C2
1890   \@tempcnta"F5
1891   \def\UTFviii@tmp{\expandafter\def\expandafter~\expandafter{~}}%
1892   \UTFviii@loop
1893 }
1894 \else
1895 \def\HyPsd@expand@utfvii{}
1896 \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

1897 \begingroup
1898 \lccode\~=`^^f4\relax
1899 \lowercase{\endgroup
1900 \def\HyPsd@UTFviii{%
1901   \HyPsd@expand@utfvii
1902   \let\UTFviii@two@octets\HyPsd@UTFviii@two
1903   \let\UTFviii@three@octets\HyPsd@UTFviii@three
1904   \let\UTFviii@four@octets\HyPsd@UTFviii@four
1905   \ifx~\HyPsd@UTFviii@ccxliv@undef
1906     \let~\HyPsd@UTFviii@ccxliv@def
1907   \fi
1908   \let\unichar\HyPsd@unichar
1909 }%
1910 }%
1911 \def\HyPsd@UTFviii@ccxliv@undef{\@inpenc@undefined@{utf8}}%
1912 \edef\HyPsd@UTFviii@ccxliv@def{%
1913   \noexpand\UTFviii@four@octets\string ^^f4%
1914 }%

```

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

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

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

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

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

$$(5)$$

```

1915 \def\HyPsd@UTFviii@two#1#2{%
1916   \expandafter\HyPsd@UTFviii@@two
1917   \number\dimexpr.25\dimexpr`#1sp\expandafter\relax\expandafter| %
1918   \number`#1\expandafter| %
1919   \number\dimexpr.125\dimexpr`#2sp\expandafter\relax\expandafter| %
1920   \number`#2 \@nil
1921 }%
1922 \def\HyPsd@UTFviii@@two#1|#2|#3|#4|\@nil{%
1923   \expandafter\8%
1924   \number\numexpr #1-48\expandafter\relax
1925   \csname\number\numexpr #2-4*#1\relax\expandafter\endcsname
1926   \number\numexpr #3-8*%
1927   \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
1928   \number\numexpr #4-8*#3\relax
1929 }%

```

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

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

$$\begin{aligned}
b &:= 2 * (A - 4 * (A/4)) + ((B - 128 < 32)?0 : 1) & (7) \\
c &:= B/4 - 32 - ((B - 128 < 32)?0 : 8) & (8) \\
d &:= B - 4 * (B/4) & (9) \\
e &:= C/8 - 16 & (10) \\
f &:= C - 8 * (C/8) & (11) \\
& & (12)
\end{aligned}$$

```

1930 \def\HyPsd@UTFviii@three#1#2#3{%
1931   \expandafter\HyPsd@UTFviii@@three
1932   \number\dimexpr.25\dimexpr`#1sp\expandafter\relax\expandafter| %
1933   \number`#1\expandafter| %
1934   \number\ifnum\dimexpr`#2-128\relax <32 0\else 1\fi\expandafter| %
1935   \number\dimexpr.25\dimexpr`#2sp\expandafter\relax\expandafter| %
1936   \number`#2\expandafter| %
1937   \number\dimexpr.125\dimexpr`#3sp\expandafter\relax\expandafter| %
1938   \number`#3 \@nil
1939 }%
1940 \def\HyPsd@UTFviii@@three#1|#2|#3|#4|#5|#6|#7\@nil{%
1941   \expandafter\9%
1942   \number\dimexpr #1-56\expandafter\relax
1943   \number\dimexpr 2*(#2-4*#1)+#3\expandafter\relax
1944   \number\dimexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax
1945   \csname\number\dimexpr #5-4*#4\relax\expandafter\endcsname
1946   \number\dimexpr #6-16\expandafter\relax
1947   \number\dimexpr #7-8*#6\relax
1948 }%

```

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

```

```

1949 \def\HyPsd@UTFviii@four#1#2{%
1950   \expandafter\HyPsd@@UTFviii@four\dimexpr
1951   \dimexpr-1+(\`#1-240)*4+\dimexpr.0625\dimexpr`#2sp-128sp%
1952   \expandafter|\number
1953   \dimexpr`#2-16*\dimexpr.0625\dimexpr`#2sp| %
1954 }%
1955 \def\HyPsd@@UTFviii@four#1|#2|#3{%
1956   \933\dimexpr.25\dimexpr#1sp\relax\relax
1957   \csname\dimexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1958   \ifodd#2 %
1959     \number\dimexpr(#2-1)/2\relax
1960   \else
1961     \number\dimexpr#2/2\relax
1962   \fi
1963   \number\dimexpr\ifodd#2 4+\fi
1964   \dimexpr.0625\dimexpr`#3sp-128sp\relax\relax\relax
1965   \933%
1966   \expandafter\HyPsd@@@UTFviii@four\dimexpr
1967   \dimexpr`#3-16*\dimexpr.0625\dimexpr`#3sp| %

```

```

1968 }%
1969 \def\HyPsd@@@UTFviii@four#1|#2{%
1970   \number\numexpr4+\dimexpr.25\dimexpr#1sp\relax\relax\relax
1971   \csname\number\numexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1972   \number\dimexpr.125\dimexpr`#2sp-128sp\relax\relax
1973   \number\numexpr`#2-8*\dimexpr.125\dimexpr`#2sp\relax\relax\relax
1974 }%

```

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

```

1975 \def\HyPsd@unichar#1{%
1976   \ifHy@unicode
1977     \ifnum#1>"10FFFF %
1978       \HyPsd@UnicodeReplacementCharacter % illegal
1979     \else
1980       \ifnum#1>"FFFF %

```

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

```

1981   \expandafter\HyPsd@unichar\expandafter{%
1982     \number\numexpr 55296+%
1983     \dimexpr.0009765625\dimexpr\number#1sp-\p@
1984     \relax\relax\relax
1985   }%

```

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

```

1986   \expandafter\HyPsd@unichar\expandafter{%
1987     \number\numexpr#1-9216%
1988     -1024*\dimexpr.0009765625\dimexpr\number#1sp-\p@
1989     \relax\relax\relax
1990   }%
1991   \else
1992     \ifnum#1>"7FFF %
1993       \9%
1994       \expandafter\HyPsd@unichar@first@byte\expandafter{%
1995         \number
1996         \dimexpr.00390625\dimexpr\number#1sp\relax\relax
1997       }%
1998     \else
1999       \8%
2000       \number\dimexpr.00390625\dimexpr\number#1sp\relax\relax
2001     \fi
2002     \expandafter\HyPsd@unichar@second@byte\expandafter{%
2003       \number
2004       \numexpr#1-256*\number
2005       \dimexpr.00390625\dimexpr\number#1sp\relax\relax\relax
2006     }%
2007     \fi
2008     \fi
2009   \else
2010     .% unsupported (Unicode -> PDF Doc Encoding)
2011     \fi
2012   }%
2013 \def\HyPsd@UnicodeReplacementCharacter{\9377\375}%
2014 \def\HyPsd@unichar@first@byte#1{%
2015   \number\dimexpr.015625\dimexpr#1sp\relax\relax

```



```

2016 \expandafter\HyPsd@unichar@octtwo\expandafter{%
2017 \number
2018 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2019 \relax\relax\relax
2020 }%
2021 }%
2022 \def\HyPsd@unichar@second@byte#1{%
2023 \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
2024 \expandafter\HyPsd@unichar@octtwo\expandafter{%
2025 \number
2026 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2027 \relax\relax\relax
2028 }%
2029 }%
2030 \def\HyPsd@unichar@octtwo#1{%
2031 \number\dimexpr.125\dimexpr#1sp\relax\relax
2032 \number\dimexpr#1-8*\number\dimexpr.125\dimexpr#1sp%
2033 \relax\relax\relax
2034 }%

```

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

```

2035 \def\HyPsd@utf@viii@undeferr#1#2#3#4#5#6{%
2036 \ifx\@gobble#1%
2037 \else
2038 [Please insert \textbackslash PrerenderUnicode%
2039 \textbraceleft#1\textbraceright\space
2040 into preamble]%
2041 \fi
2042 }%

```

### 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.

```

2043 \def\HyPsd@DieFace#1{%
2044 \ifHy@unicode
2045 \ifnum#1<1 %
2046 \HyPsd@UnicodeReplacementCharacter
2047 \else
2048 \ifnum#1>6 %
2049 \9046\205%
2050 \expandafter\expandafter\expandafter
2051 \HyPsd@DieFaceLarge\intcalcSub{#1}{6}!%
2052 \else
2053 \9046\20\intcalcDec{#1}%
2054 \fi

```

```

2055 \fi
2056 \else
2057 .% Die faces are not part of PDFDocEncoding
2058 \fi
2059 }

```

\HyPsd@DieFaceLarge

```

2060 \def\HyPsd@DieFaceLarge#1{%
2061 \ifnum#1>6 %
2062 \expandafter\ltx@firstoftwo
2063 \else
2064 \expandafter\ltx@secondoftwo
2065 \fi
2066 {%
2067 \9046\205%
2068 \expandafter\expandafter\expandafter
2069 \HyPsd@DieFaceLarge\IntCalcSub#1!6!!%
2070 }{%
2071 \9046\20\IntCalcDec#1!%
2072 }%
2073 }

```

#### 6.6.11 Support for moon phases of package china2e

```

2074 \def\HyPsd@MoonPha#1{%
2075 \ifcase\intcalcNum{#1} %
2076 \HyPsd@UnicodeReplacementCharacter
2077 \or % 1
2078 % U+1F31A NEW MOON WITH FACE; \MoonPha{1} (china2e)
2079 \9330\074\9337\032%
2080 \or % 2
2081 \HyPsd@UnicodeReplacementCharacter
2082 \or % 3
2083 % U+1F31D FULL MOON WITH FACE; \MoonPha{3} (china2e)
2084 \9330\074\9337\035%
2085 \or % 4
2086 % U+1F31C LAST QUARTER MOON WITH FACE; \MoonPha{4} (china2e)
2087 \9330\074\9337\034%
2088 \else
2089 \HyPsd@UnicodeReplacementCharacter
2090 \fi
2091 }
2092 %* \HyPsd@MoonPha -> \MoonPha

```

#### 6.6.12 Support for package pifont

\HyPsd@ding

```

2093 \def\HyPsd@ding#1{%
2094 \ifHy@unicode
2095 \ifnum#1<32 %
2096 \HyPsd@UnicodeReplacementCharacter
2097 \else
2098 \ifnum#1>254 %
2099 \HyPsd@UnicodeReplacementCharacter
2100 \else

```

```

2101     \ifnum#1<127 %
2102         \expandafter\expandafter\expandafter
2103         \HyPsd@@ding\intcalcNum{#1}!%
2104     \else
2105         \ifnum#1>160 %
2106             \expandafter\expandafter\expandafter
2107             \HyPsd@@ding\intcalcNum{#1}!%
2108         \else
2109             \HyPsd@UnicodeReplacementCharacter
2110         \fi
2111     \fi
2112 \fi
2113 \fi
2114 \else
2115     .% Dingbats are not part of PDFDocEncoding
2116 \fi
2117 }

```

\HyPsd@@ding

```

2118 \def\HyPsd@@ding#1!{%
2119     \ltx@ifundefined{HyPsd@ding@#1}{%
2120         \ifnum#1<127 %
2121             \9047%
2122             \HyPsd@DecimalToOctalSecond{\IntCalcSub#1!32!}%
2123         \else
2124             \ifnum#1<168 %
2125                 \9047\14\IntCalcSub#1!160!%
2126             \else
2127                 \ifnum#1>181 %
2128                     \9047\HyPsd@DecimalToOctalSecond{\IntCalcSub#1!64!}%
2129                 \else
2130                     % 172..181 -> U+2460..U+2469
2131                     \9044\HyPsd@DecimalToOctalSecond{\IntCalcSub#1!76!}%
2132                 \fi
2133             \fi
2134         \fi
2135     }{%
2136         \csname HyPsd@ding@#1\endcsname
2137     }%
2138 }

2139 \@namedef{HyPsd@ding@32}{\space}
2140 % U+260E BLACK TELEPHONE
2141 \@namedef{HyPsd@ding@37}{\9046\016}% U+260E
2142 % U+261B BLACK RIGHT POINTING INDEX
2143 \@namedef{HyPsd@ding@42}{\9046\033}% U+261B
2144 % U+261E WHITE RIGHT POINTING INDEX
2145 \@namedef{HyPsd@ding@43}{\9046\036}% U+261E
2146 % U+2605 BLACK STAR
2147 \@namedef{HyPsd@ding@72}{\9046\005}% U+2605
2148 % U+25CF BLACK CIRCLE
2149 \@namedef{HyPsd@ding@108}{\9045\317}% U+25CF
2150 % U+25A0 BLACK SQUARE
2151 \@namedef{HyPsd@ding@110}{\9045\240}% U+25A0

```

```

2152 % U+25B2 BLACK UP-POINTING TRIANGLE
2153 \@namedef{HyPsd@ding@115}{\9045\262}% U+25B2
2154 % U+25BC BLACK DOWN-POINTING TRIANGLE
2155 \@namedef{HyPsd@ding@116}{\9045\274}% U+25BC
2156 % U+25C6 BLACK DIAMOND
2157 \@namedef{HyPsd@ding@117}{\9045\306}% U+25C6
2158 % U+25D7 RIGHT HALF BLACK CIRCLE
2159 \@namedef{HyPsd@ding@119}{\9045\327}% U+25D7
2160 \@namedef{HyPsd@ding@168}{\textclubsuitblack}%
2161 \@namedef{HyPsd@ding@169}{\textdiamondsuitblack}%
2162 \@namedef{HyPsd@ding@170}{\textheartsuitblack}%
2163 \@namedef{HyPsd@ding@171}{\textspadesuitblack}%
2164 \@namedef{HyPsd@ding@213}{\textrightarrow}%
2165 \@namedef{HyPsd@ding@214}{\textleftarrow}%
2166 \@namedef{HyPsd@ding@215}{\textupdownarrow}%
2167 \@namedef{HyPsd@ding@240}{\HyPsd@UnicodeReplacementCharacter}

```

## 7 Support of other packages

### 7.1 Package subfigure

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

```

2168 \@ifpackageloaded{subfigure}{%
2169   \ltx@ifundefined{sub@label}{%
2170     \Hy@hypertextnamesfalse
2171   }{%
2172     \renewcommand*{\sub@label}[1]{%
2173       \@bsphack
2174       \subfig@oldlabel{#1}%
2175       \if@filesw
2176         \begingroup
2177           \edef\@currentlabstr{%
2178             \expandafter\strip@prefix\meaning\@currentlabelname
2179           }%
2180           \protected@write\@auxout{}{%
2181             \string\newlabel{sub@#1}{%
2182               {\@nameuse{@@thesub\@capytype}}%
2183               {\thepage}%
2184             }%
2185             \expandafter\strip@period\@currentlabstr
2186             \relax.\relax\@@@%
2187           }%
2188           {\@currentHref}%
2189           {}%
2190         }%
2191       }%
2192     \endgroup
2193   \fi
2194   \@esphack
2195 }%
2196 }%
2197 }{}

```

## 7.2 Package xr and xr-hyper

The beta version of xr that supports \XR@addURL is called **xr-hyper**. 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. Change 2023-05-14: xr-hyper adds the field.

```
2198 \def\Hy@true{true}
2199 \def\Hy@false{false}

    Providing dummy definitions.

2200 \let\literalps@out\@gobble
2201 \newcommand\pdfbookmark[3][]{ }
2202 \def\Acrobatmenu#1#2{\leavevmode#2}
2203 \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

```
2204 \let\HyperRaiseLinkHook\@empty
2205 \def\HyperRaiseLinkDefault{\baselineskip}
```

\HyperRaiseLinkHook allows the user to reassign \HyperRaiseLinkLength.

```
2206 \newcount\Hy@SavedSpaceFactor
2207 \def\Hy@SaveSpaceFactor{%
2208   \global\Hy@SavedSpaceFactor=\ifhmode\spacefactor\else\z@\fi
2209 }
2210 \def\Hy@RestoreSpaceFactor{%
2211   \relax
2212   \ifhmode
2213     \ifnum\Hy@SavedSpaceFactor>\z@
2214       \spacefactor=\Hy@SavedSpaceFactor
2215     \fi
2216   \fi
2217 }
2218 \def\Hy@SaveSavedSpaceFactor{%
2219   \edef\Hy@RestoreSavedSpaceFactor{%
2220     \global\Hy@SavedSpaceFactor=\the\Hy@SavedSpaceFactor\relax
2221   }%
2222 }
```

Packages like varwidth need an option to change the handling in vmode. (Issue #204). With a new format we therefore insert a socket.

```

2223 \@if@t@r\fmtversion{2023-11-01}
2224 {\NewSocket{hyp/raisedlink}{1}}
2225 {\providecommand\UseSocket[2]{#2}}
2226 \def\Hy@raisedlink#1{%
2227   \ifvmode
2228     \UseSocket{hyp/raisedlink}{#1}%
2229   \else
2230     \Hy@SaveSpaceFactor
2231     \penalty\@M
2232     \smash{%
2233       \begingroup
2234         \let\HyperRaiseLinkLength\@tempdima
2235         \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
2236         \HyperRaiseLinkHook
2237         \expandafter\endgroup
2238         \expandafter\raise\the\HyperRaiseLinkLength\hbox{%
2239           \Hy@RestoreSpaceFactor
2240           #1%
2241           \Hy@SaveSpaceFactor
2242         }%
2243       }%
2244     \Hy@RestoreSpaceFactor
2245   \fi
2246 }

```

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

```

\Hy@RestoreLastskip 2247 \def\Hy@SaveLastskip{%
2248   \let\Hy@RestoreLastskip\relax
2249   \ifvmode
2250     \ifdim\lastskip=\z@
2251       \ifnum\lastnodetype=1 %
2252         \let\Hy@RestoreLastskip\relax
2253       \else
2254         \let\Hy@RestoreLastskip\nobreak
2255       \fi
2256     \else
2257       \begingroup
2258         \skip@=-\lastskip
2259         \edef\x{%
2260           \endgroup
2261           \def\noexpand\Hy@RestoreLastskip{%
2262             \noexpand\ifvmode
2263               \noexpand\nobreak
2264               \vskip\the\skip@
2265               \vskip\the\lastskip\relax
2266             \noexpand\fi
2267           }%
2268         }%
2269       \x
2270     \fi
2271   \else
2272     \ifhmode
2273       \ifdim\lastskip=\z@
2274         \let\Hy@RestoreLastskip\nobreak

```

```

2275 \else
2276 \begingroup
2277 \skip@=-\lastskip
2278 \edef\x{%
2279 \endgroup
2280 \def\noexpand\Hy@RestoreLastskip{%
2281 \noexpand\ifhmode
2282 \noexpand\nobreak
2283 \hskip\the\skip@
2284 \hskip\the\lastskip\relax
2285 \noexpand\fi
2286 }%
2287 }%
2288 \x
2289 \fi
2290 \fi
2291 \fi
2292 }%

```

## 9 Options

```

2293 \SetupKeyvalOptions{%
2294 family=Hyp,%
2295 prefix=HyOpt%
2296 }

```

### 9.1 Help macros

Package like hyperxmp want to retrieve the value of keys like `pdfauthor`. To avoid that we have two parallel interfaces we provide the interface from the `pdfmanagement/ltldocinit` if it doesn't exist.

```

\AddToDocumentProperties
\GetDocumentProperties 2297 \ExplSyntaxOn
2298 \@ifundefined{AddToDocumentProperties}
2299 {
2300 \prop_new:N \g__hyp_documentproperties_prop
2301 \NewDocumentCommand\AddToDocumentProperties{O{\@currname}mm}
2302 {
2303 \exp_args:NNx
2304 \prop_gput:Nnn \g__hyp_documentproperties_prop
2305 {
2306 \tl_if_blank:eTF {#1}{top-level/}{#1/} #2
2307 }
2308 { #3}
2309 }
2310 \NewExpandableDocumentCommand\GetDocumentProperties{m}
2311 {
2312 \prop_item:Nn \g__hyp_documentproperties_prop {#1}
2313 }
2314 }{}
2315 \ExplSyntaxOff

\IfHyperBooleanExists

```

```

2316 \def\IfHyperBooleanExists#1{%
2317   \ltx@ifundefined{Hy@#1}{false}\ltx@secondoftwo{%
2318     \ltx@ifundefined{KV@Hyp@#1@default}\ltx@secondoftwo\ltx@firstoftwo
2319   }%
2320 }

2321 \@namedef{KV@Hyp@stoppeearly@default}{}

```

\IfHyperBoolean

```

2322 \def\IfHyperBoolean#1{%
2323   \IfHyperBooleanExists{#1}{%
2324     \csname ifHy@#1\endcsname
2325     \expandafter\ltx@firstoftwo
2326   }%
2327   \expandafter\ltx@secondoftwo
2328   \fi
2329 } \ltx@secondoftwo
2330 }

```

\Hy@boolkey

```

2331 \def\Hy@boolkey#1#2{%
2332   \edef\Hy@tempa{#2}%
2333   \lowercase\expandafter{%
2334     \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
2335   }%
2336   \ifx\Hy@tempa\@empty
2337     \let\Hy@tempa\Hy@true
2338   \fi
2339   \ifx\Hy@tempa\Hy@true
2340   \else
2341     \ifx\Hy@tempa\Hy@false
2342     \else
2343       \let\Hy@tempa\relax
2344     \fi
2345   \fi
2346   \ifx\Hy@tempa\relax
2347     \Hy@WarnOptionValue{#2}{#1}{`true' or `false'}%
2348   \else
2349     \Hy@Info{Option `#1' set ``\Hy@tempa'}%
2350     \csname Hy@#1\Hy@tempa\endcsname
2351   \fi
2352 }

```

\Hy@WarnOptionValue

```

2353 \def\Hy@WarnOptionValue#1#2#3{%
2354   \Hy@Warning{%
2355     Unexpected value `#1'\MessageBreak
2356     of option `#2' instead of\MessageBreak
2357     #3%
2358   }%
2359 }

```

\Hy@DisableOption

```

2360 \def\Hy@DisableOption#1{%

```



```

2361 \ltx@ifundefined{KV@Hyp@#1@default}{%
2362   \define@key{Hyp}{#1}%
2363 }{%
2364   \define@key{Hyp}{#1}[]%
2365 }%
2366 {\Hy@WarnOptionDisabled{#1}}%
2367 }
2368

```

`\Hy@WarnOptionDisabled`

```

2369 \def\Hy@WarnOptionDisabled#1{%
2370   \Hy@Warning{%
2371     Option `#1' has already been used,\MessageBreak
2372     setting the option has no effect%
2373   }%
2374 }

```

`\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`.

```

2375 \def\Hy@CheckOptionValue#1#2#3{%
2376   \begingroup
2377   \edef\x{#1}%
2378   \@onelevel@sanitize\x
2379   \let\y=y%
2380   \def\do##1##2{%
2381     \def\z{##1}%
2382     \@onelevel@sanitize\z
2383     \ifx\x\z
2384       \let\y=n%
2385       \let\do\@gobbletwo
2386     \fi
2387   }%
2388   #3%
2389   \ifx\y y%
2390     \def\do##1##2{%
2391       * `##1'%
2392       \ifx\\##2\\\else\space(##2)\fi
2393       \MessageBreak
2394     }%
2395     \Hy@Warning{%
2396       Values of option `#2':\MessageBreak
2397       #3%
2398       * An empty value disables the option.\MessageBreak
2399       Unknown value `x'%
2400     }%
2401     \fi
2402   \endgroup
2403 }

```

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

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

```

2404 \def\Hy@DefNameKey#1{%
2405   \expandafter\Hy@@DefNameKey\csname @#1\endcsname{#1}%
2406 }

```

\Hy@@DefNameKey #1: macro for value storage

#2: option name

#3: \do list with known values.

```

2407 \def\Hy@@DefNameKey#1#2#3{%
2408   \define@key{Hyp}{#2}{%
2409     \edef#1{##1}%
2410     \ifx#1\@empty
2411       \else
2412         \Hy@CheckOptionValue{##1}{#2}{#3}%
2413       \fi
2414     }%
2415     \let#1\@empty
2416 }

```

\Hy@UseNameKey

```

2417 \def\Hy@UseNameKey#1#2{%
2418   \ifx#2\@empty
2419     \else
2420       /#1/#2%
2421     \fi
2422 }

```

## 9.2 Defining the options

```

2423 \define@key{Hyp}{implicit}[true]{%
2424   \Hy@boolkey{implicit}{#1}%
2425 }
2426 \define@key{Hyp}{draft}[true]{%
2427   \Hy@boolkey{draft}{#1}%
2428 }
2429 \define@key{Hyp}{final}[true]{%
2430   \Hy@boolkey{final}{#1}%
2431 }
2432 \let\KV@Hyp@nolinks\KV@Hyp@draft
2433 \def\Hy@ObsoletePaperOption#1{%
2434   \Hy@WarningNoLine{%
2435     Option `#1' is no longer used%
2436   }%
2437   \define@key{Hyp}{#1}[true]{}%
2438 }
2439 \def\Hy@temp#1{%
2440   \define@key{Hyp}{#1}[true]{%
2441     \Hy@ObsoletePaperOption{#1}%
2442   }%
2443 }
2444 \Hy@temp{a4paper}
2445 \Hy@temp{a5paper}
2446 \Hy@temp{b5paper}
2447 \Hy@temp{letterpaper}

```

```

2448 \Hy@temp{legalpaper}
2449 \Hy@temp{executivepaper}

2450 \define@key{Hyp}{setpagesize}[true]{%
2451   \Hy@boolkey{setpagesize}{#1}%
2452 }
2453 \define@key{Hyp}{debug}[true]{%
2454   \Hy@boolkey{debug}{#1}%
2455 }
2456 \define@key{Hyp}{linktocpage}[true]{%
2457   \Hy@boolkey{linktocpage}{#1}%
2458   \ifHy@linktocpage
2459     \let\Hy@linktoc\Hy@linktoc@page
2460   \else
2461     \let\Hy@linktoc\Hy@linktoc@section
2462   \fi
2463 }
2464 \chardef\Hy@linktoc@none=0 %
2465 \chardef\Hy@linktoc@section=1 %
2466 \chardef\Hy@linktoc@page=2 %
2467 \chardef\Hy@linktoc@all=3 %
2468 \ifHy@linktocpage
2469   \let\Hy@linktoc\Hy@linktoc@page
2470 \else
2471   \let\Hy@linktoc\Hy@linktoc@section
2472 \fi
2473 \define@key{Hyp}{linktoc}{%
2474   \@ifundefined{Hy@linktoc@#1}{%
2475     \Hy@Warning{%
2476       Unexpected value `#1' of\MessageBreak
2477       option `linktoc' instead of `none',\MessageBreak
2478       `section', `page' or `all'%
2479     }%
2480   }{%
2481     \expandafter\let\expandafter\Hy@linktoc
2482     \csname Hy@linktoc@#1\endcsname
2483   }%
2484 }
2485 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
2486 \let\XR@ext\relax
2487 \define@key{Hyp}{verbose}[true]{%
2488   \Hy@boolkey{verbose}{#1}%
2489 }

```

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.

```

2490 \define@key{Hyp}{raiselinks}[true]{%
2491   \Hy@boolkey{raiselinks}{#1}%
2492 }

```

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

```

2493 \def\Hy@setbreaklinks#1{%
2494   \csname breaklinks#1\endcsname
2495 }

```

```

2496 \def\Hy@breaklinks@unsupported{%
2497   \ifx\Hy@setbreaklinks\@gobble
2498     \ifHy@breaklinks
2499       \Hy@WarningNoLine{%
2500         You have enabled option `breaklinks'.\MessageBreak
2501         But driver `\'Hy@driver.def' does not support this.\MessageBreak
2502         Expect trouble with the link areas of broken links%
2503       }%
2504     \fi
2505   \fi
2506 }

2507 \define@key{Hyp}{breaklinks}[true]{%
2508   \Hy@boolkey{breaklinks}{#1}%
2509   \let\Hy@setbreaklinks\@gobble
2510 }

2511 \define@key{Hyp}{localanchorname}[true]{%
2512   \Hy@WarningNoLine{%
2513     Option `localanchorname' is deprecated%
2514   }%
2515   \Hy@boolkey{localanchorname}{#1}%
2516 }

Determines whether an automatic anchor is put on each page
2517 \define@key{Hyp}{pageanchor}[true]{%
2518   \Hy@boolkey{pageanchor}{#1}%
2519 }

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.
2520 \define@key{Hyp}{plainpages}[true]{%
2521   \Hy@boolkey{plainpages}{#1}%
2522 }

Are the names for anchors made as per the HyperTeX system, or do they simply
use what LATEX provides?
2523 \define@key{Hyp}{naturalnames}[true]{%
2524   \Hy@boolkey{naturalnames}{#1}%
2525 }

Completely ignore the names as per the HyperTeX system, and use unique coun-
ters.
2526 \define@key{Hyp}{hypertexnames}[true]{%
2527   \Hy@boolkey{hypertexnames}{#1}%
2528 }

Currently, dvips doesn't allow anchors nested within targets, so this option tries
to stop that happening. Other processors may be able to cope.
2529 \define@key{Hyp}{nesting}[true]{%
2530   \Hy@boolkey{nesting}{#1}%
2531 }

2532 \define@key{Hyp}{destlabel}[true]{%
2533   \Hy@boolkey{destlabel}{#1}%
2534 }

2535 \define@key{Hyp}{unicode}[true]{%
2536   \Hy@boolkey{unicode}{#1}%

```

```

2537 \ifHy@unicode
2538   \def\HyPsd@pdfencoding{unicode}%
2539   \HyPsd@LoadUnicode
2540 \else
2541   \def\HyPsd@pdfencoding{pdfdoc}%
2542 \fi
2543 }
2544 \Hy@AtBeginDocument{%
2545   \ifx\HyPsd@LoadUnicode\relax
2546   \else
2547     \def\HyPsd@LoadUnicode{%
2548       \Hy@Error{%
2549         Unicode support for bookmarks is not available.\MessageBreak
2550         Activate unicode support by using one of the options\MessageBreak
2551         `unicode', `pdfencoding=unicode', `pdfencoding=auto'\MessageBreak
2552         in the preamble%
2553       } \@ehc
2554       \global\let\HyPsd@LoadUnicode\relax
2555       \global\Hy@unicodedefalse
2556       \global\let\Hy@unicodetrue\Hy@unicodedefalse
2557     }%
2558   \fi
2559 }

2560 \define@key{Hyp}{pdfencoding}{%
2561   \edef\HyPsd@temp{#1}%
2562   \ifx\HyPsd@temp\HyPsd@pdfencoding@pdfdoc
2563     \let\HyPsd@pdfencoding\HyPsd@temp
2564     \Hy@unicodedefalse
2565   \else
2566     \ifcase\ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
2567       \z@
2568     \else
2569       \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
2570         \z@
2571       \else
2572         \@ne
2573       \fi
2574     \fi
2575     \let\HyPsd@pdfencoding\HyPsd@temp
2576     \hypersetup{unicode}%
2577     \ifHy@unicode
2578       \def\HyPsd@pdfencoding{#1}%
2579       \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
2580         \HyPsd@LoadStringEncoding
2581       \fi
2582     \else
2583       \Hy@Warning{Cannot switch to unicode bookmarks}%
2584       \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
2585     \fi
2586   \else
2587     \@onelevel@sanitize\HyPsd@temp
2588     \Hy@Warning{%
2589       Values of option `pdfencoding':\MessageBreak
2590       `pdfdoc', `unicode', `auto'.\MessageBreak

```

```

2591     Ignoring unknown value ``\HyPsd@temp'%
2592   }%
2593   \fi
2594 \fi
2595 }
2596 \def\HyPsd@pdfencoding@auto{auto}
2597 \def\HyPsd@pdfencoding@pdfdoc{pdfdoc}
2598 \def\HyPsd@pdfencoding@unicode{unicode}

```

change 2020-08-14, use unicode by default:

```

2599 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
2600 \HyPsd@LoadUnicode
2601 \def\HyPsd@LoadStringEnc{%
2602   \RequirePackage{stringenc}[2009/12/15]%
2603   \let\HyPsd@LoadStringEnc\relax
2604 }
2605 \Hy@AtBeginDocument{%
2606   \ifpackageloaded{stringenc}{%
2607     \let\HyPsd@LoadStringEnc\relax
2608   }{%
2609     \def\HyPsd@LoadStringEnc{%
2610       \Hy@WarningNoLine{%
2611         Missing package `stringenc'. Use `pdfencoding=auto'\MessageBreak
2612         in the preamble or load the package there%
2613       }%
2614     }%
2615   }%
2616 }
2617 \define@key{Hyp}{psdextra}[true]{%
2618   \Hy@boolkey{psdextra}{#1}%
2619   \HyPsd@LoadExtra
2620 }
2621 \def\hypersetup{\kvsetkeys{Hyp}}
2622 \newif\ifHy@setpdfversion
2623 \define@key{Hyp}{pdfversion}{%
2624   \@ifundefined{Hy@pdfversion@#1}{%
2625     \PackageWarning{hyperref}{%
2626       Unsupported PDF version `#1'.\MessageBreak
2627       Valid values: 1.2-1.7, 2.0%
2628     }%
2629   }{%
2630     \Hy@setpdfversiontrue
2631     \@nameuse{Hy@pdfversion@#1}%
2632   }%
2633 }

```

\Hy@pdfminorversion already used elsewhere to denote \pdfminorversion or \pdfvariable majorversion} so introduce new names here.

```

2634 \@namedef{Hy@pdfversion@1.2}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
  norversion{2}}%
2635 \@namedef{Hy@pdfversion@1.3}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
  norversion{3}}%
2636 \@namedef{Hy@pdfversion@1.4}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
  norversion{4}}%

```

```

2637 \@namedef{Hy@pdfversion@1.5}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
norversion{5}}%
2638 \@namedef{Hy@pdfversion@1.6}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
norversion{6}}%
2639 \@namedef{Hy@pdfversion@1.7}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
norversion{7}}%
2640 \@namedef{Hy@pdfversion@2.0}{\def\Hy@pdf@majorversion{2}\def\Hy@pdf@mi-
norversion{0}}%
2641 \def\Hy@pdf@majorversion{1}\def\Hy@pdf@minorversion{5}
Legacy name, earlier releases assumed 1.x
2642 \let\Hy@pdfversion\Hy@pdf@minorversion
2643 \def\Hy@pdf@majorminor@version{\numexpr100*\Hy@pdf@majorversion+\Hy@pdf@mi-
norversion\relax}
2644 \def\Hy@pdf@majorminor@version{\numexpr100*\Hy@pdf@majorversion+\Hy@pdf@mi-
norversion\relax}
if pdfminorversion is defined, make sure pdfmajorversion is too.
2645 \@ifundefined{pdfminorversion}{}{%
2646 \@ifundefined{pdfmajorversion}{}{%
2647 \newcount\pdfmajorversion
2648 \pdfmajorversion=1
2649 }{}%
2650 }
2651 \ifx\pdfmajorversion\undefined\else
2652 \def\Hy@pdf@majorversion{\pdfmajorversion}
2653 \fi

```

## 10 Options for different drivers

```

2654 \newif\ifHy@DviMode
2655 \let\Hy@DviErrMsg\ltx@empty
2656 \ifpdf
2657 \def\Hy@DviErrMsg{pdfTeX or LuaTeX is running in PDF mode}%
2658 \else
2659 \ifxetex
2660 \def\Hy@DviErrMsg{XeTeX is running}%
2661 \else
2662 \ifvtex
2663 \ifnum\OpMode=\z@
2664 \Hy@DviModetrue
2665 \else
2666 \def\Hy@DviErrMsg{VTeX is running, but not in DVI mode}%
2667 \fi
2668 \else
2669 \Hy@DviModetrue
2670 \fi
2671 \fi
2672 \fi
2673 \def\Hy@Opt@CheckDvi#1{%
2674 \ifHy@DviMode
2675 \expandafter\ltx@firstofone
2676 \else
2677 \Hy@Error{%
2678 Wrong DVI mode driver option `#1',\MessageBreak
2679 because \Hy@DviErrMsg

```

```

2680   }\@ehc
2681   \expandafter\ltx@gobble
2682 \fi
2683 }

2684 \DeclareVoidOption{tex4ht}{%
2685   \Hy@texhttrue
2686   \kvsetkeys{Hyp}{colorlinks=true}%
2687   \def\BeforeTeXIVht{\RequirePackage{color}}%
2688   \def\Hy@driver{htex4ht}%
2689   \def\MaybeStopEarly{%
2690     \Hy@Message{Stopped early}%
2691     \Hy@AtBeginDocument{%
2692       \PDF@FinishDoc
2693       \gdef\PDF@FinishDoc{}}%
2694   }%
2695   \endinput
2696 }%
2697 }

2698 \DeclareVoidOption{pdftex}{%
2699   \ifpdf
2700     \def\Hy@driver{hpdftex}%
2701     \PassOptionsToPackage{pdftex}{color}%
2702   \else
2703     \Hy@Error{%
2704       Wrong driver option `pdftex',\MessageBreak
2705       because pdfTeX in PDF mode is not detected%
2706     }\@ehc
2707   \fi
2708 }

2709 \DeclareVoidOption{luatex}{%
2710   \ifpdf
2711     \ifx\pdfextension\@undefined
2712       \def\Hy@driver{hpdftex}%
2713       \PassOptionsToPackage{pdftex}{color}%
2714     \else
2715       \def\Hy@driver{hluatex}%
2716       \PassOptionsToPackage{luatex}{color}%
2717     \fi
2718   \else
2719     \Hy@Error{%
2720       Wrong driver option `luatex',\MessageBreak
2721       because luaTeX in PDF mode is not detected%
2722     }\@ehc
2723   \fi
2724 }

2725 \DeclareVoidOption{nativepdf}{%
2726   \HyOpt@CheckDvi{nativepdf}{%
2727     \def\Hy@driver{hdvips}%
2728     \PassOptionsToPackage{dvips}{color}%
2729   }%
2730 }

2731 \DeclareVoidOption{dvipdfm}{%
2732   \HyOpt@CheckDvi{dvipdfm}{%
2733     \def\Hy@driver{hdvipdfm}%

```



```

2734 }%
2735 }
2736 \DeclareVoidOption{dvipdfmx}{%
2737   \HyOpt@CheckDvi{dvipdfmx}{%
2738     \def\Hy@driver{hdvipdfm}%
2739     \PassOptionsToPackage{dvipdfmx}{color}%
2740   }%
2741 }
2742 \define@key{Hyp}{dvipdfmx-outline-open}[true]{%
2743   \expandafter\ifx\csname if#1\expandafter\endcsname
2744     \csname iftrue\endcsname
2745     \chardef\SpecialDvipdfmxOutlineOpen\@ne
2746   \else
2747     \chardef\SpecialDvipdfmxOutlineOpen\z@
2748   \fi
2749 }
2750 \DeclareVoidOption{xetex}{%
2751   \ifxetex
2752     \def\Hy@driver{hxetex}%
2753   \else
2754     \Hy@Error{%
2755       Wrong driver option `xetex',\MessageBreak
2756       because XeTeX is not detected%
2757     }\@ehc
2758   \fi
2759 }
2760 \DeclareVoidOption{pdfmark}{%
2761   \HyOpt@CheckDvi{pdfmark}{%
2762     \def\Hy@driver{hdvips}%
2763   }%
2764 }
2765 \DeclareVoidOption{dvips}{%
2766   \HyOpt@CheckDvi{dvips}{%
2767     \def\Hy@driver{hdvips}%
2768     \PassOptionsToPackage{dvips}{color}%
2769   }%
2770 }
2771 \DeclareVoidOption{hypertex}{%
2772   \HyOpt@CheckDvi{hypertex}{%
2773     \def\Hy@driver{hypertex}%
2774   }%
2775 }
2776 \let\Hy@MaybeStopNow\relax
2777 \DeclareVoidOption{vtex}{%
2778   \ifvtex
2779     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2780     \def\Hy@driver{hvtex}%
2781   \else
2782     \ifnum\OpMode=10\relax
2783     \def\Hy@driver{hvtexhtm}%
2784     \def\MaybeStopEarly{%
2785       \Hy@Message{Stopped early}%
2786       \Hy@AtBeginDocument{%
2787         \PDF@FinishDoc

```

```

2788         \gdef\PDF@FinishDoc{%
2789             }%
2790         \endinput
2791     }%
2792     \else
2793         \Hy@Error{%
2794             Wrong driver option `vtex',\MessageBreak
2795             because of wrong OpMode (\the\OpMode)%
2796         }\@ehc
2797     \fi
2798 \fi
2799 \else
2800     \Hy@Error{%
2801         Wrong driver option `vtex',\MessageBreak
2802         because VTeX is not running%
2803     }\@ehc
2804 \fi
2805 }
2806 \DeclareVoidOption{vtxpdfmark}{%
2807     \ifvtex
2808         \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2809         \def\Hy@driver{hvtexmrk}%
2810     \else
2811         \Hy@Error{%
2812             Wrong driver option `vtxpdfmark',\MessageBreak
2813             because of wrong OpMode (\the\OpMode)%
2814         }\@ehc
2815     \fi
2816 \else
2817     \Hy@Error{%
2818         Wrong driver option `vtxpdfmark,\MessageBreak
2819         because VTeX is not running%
2820     }\@ehc
2821 \fi
2822 }
2823 \DeclareVoidOption{dviwindo}{%
2824     \HyOpt@CheckDvi{dviwindo}{%
2825         \def\Hy@driver{hdviwind}%
2826         \kvsetkeys{Hyp}{colorlinks}%
2827         \PassOptionsToPackage{dviwindo}{color}%
2828     }%
2829 }
2830 \DeclareVoidOption{dvipsone}{%
2831     \HyOpt@CheckDvi{dvipsone}{%
2832         \def\Hy@driver{hdvipson}%
2833         \PassOptionsToPackage{dvipsone}{color}%
2834     }%
2835 }
2836 \DeclareVoidOption{textures}{%
2837     \HyOpt@CheckDvi{textures}{%
2838         \def\Hy@driver{htexture}%
2839     }%
2840 }
2841 \DeclareVoidOption{latex2html}{%

```

```

2842 \Hy@Warning{Option `latex2html` is obsolete. \MessageBreak
2843 A current html.sty will do all necessary (re)definitions%
2844 }%
2845 }
2846 \DeclareVoidOption{hitex}{%
2847 \ifhint
2848 \IfFileExists{hhitex.def}
2849 {\def\Hy@driver{hhitex}}%
2850 {\Hy@Warning{%
2851 Missing driver file `hhitex.def',\MessageBreak
2852 ignoring hitex driver%
2853 }}%
2854 \else
2855 \Hy@Error{%
2856 Wrong driver option `hitex',\MessageBreak
2857 because HiTeX is not detected%
2858 } \@ehc
2859 \fi
2860 }

```

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

```

2861 \DeclareVoidOption{ps2pdf}{%
2862 \HyOpt@CheckDvi{ps2pdf}{%
2863 \def\Hy@driver{hdvips}%
2864 \PassOptionsToPackage{dvips}{color}%
2865 }%
2866 }
2867 \let\HyOpt@DriverFallback\ltx@empty
2868 \define@key{Hyp}{driverfallback}{%
2869 \ifHy@DviMode
2870 \def\HyOpt@DriverFallback{#1}%
2871 \Hy@Match\HyOpt@DriverFallback{}{%
2872 ~(|dvipdfm|dvipdfmx|dvips|dvipsone|dviwindo|hypertex|ps2pdf|
2873 latex2html|tex4ht)$%
2874 }{}{%
2875 \Hy@Warning{%
2876 Invalid driver `#1' for option\MessageBreak
2877 `driverfallback'%
2878 }%
2879 \let\HyOpt@DriverFallback\ltx@empty
2880 }%
2881 \fi
2882 }
2883 \let\HyOpt@CustomDriver\ltx@empty
2884 \define@key{Hyp}{customdriver}{%
2885 \IfFileExists{#1.def}{%
2886 \def\HyOpt@CustomDriver{#1}%
2887 }{%
2888 \Hy@Warning{%
2889 Missing driver file `#1.def',\MessageBreak
2890 ignoring custom driver%
2891 }%
2892 }%
2893 }

```

## 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.

```
2894 \define@key{Hyp}{hyperfigures}[true]{%
2895   \Hy@boolkey{hyperfigures}{#1}%
2896 }
```

The automatic footnote linking can be disabled by option hyperfootnotes.

```
2897 \define@key{Hyp}{hyperfootnotes}[true]{%
2898   \Hy@boolkey{hyperfootnotes}{#1}%
2899 }
```

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

```
2900 \def\back@none{none}
2901 \def\back@section{section}
2902 \def\back@page{page}
2903 \def\back@slide{slide}
2904 \define@key{Hyp}{backref}[section]{%
2905   \lowercase{\def\Hy@tempa{#1}}%
2906   \ifx\Hy@tempa\@empty
2907     \let\Hy@tempa\back@section
2908   \fi
2909   \ifx\Hy@tempa\Hy@false
2910     \let\Hy@tempa\back@none
2911   \fi
2912   \ifx\Hy@tempa\back@slide
2913     \let\Hy@tempa\back@section
2914   \fi
2915   \ifx\Hy@tempa\back@page
2916     \PassOptionsToPackage{hyperpageref}{backref}%
2917     \Hy@backreftrue
2918   \else
2919     \ifx\Hy@tempa\back@section
2920       \PassOptionsToPackage{hyperref}{backref}%
2921       \Hy@backreftrue
2922     \else
2923       \ifx\Hy@tempa\back@none
2924         \Hy@backreffalse
2925       \else
2926         \Hy@WarnOptionValue{#1}{backref}{%
2927           `section', `slide', `page', `none',\MessageBreak
2928           or `false'}%
2929       \fi
2930     \fi
2931   \fi
2932 }
2933 \define@key{Hyp}{pagebackref}[true]{%
2934   \edef\Hy@tempa{#1}%
2935   \lowercase\expandafter{%
2936     \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
2937   }%
2938   \ifx\Hy@tempa\@empty
2939     \let\Hy@tempa\Hy@true
2940   \fi
```

```

2941 \ifx\Hy@tempa\Hy@true
2942   \PassOptionsToPackage{hyperpageref}{backref}%
2943   \Hy@backreftrue
2944 \else
2945   \ifx\Hy@tempa\Hy@false
2946     \Hy@backreffalse
2947   \else
2948     \Hy@WarnOptionValue{#1}{pagebackref}{`true' or `false'}%
2949   \fi
2950 \fi
2951 }

```

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

```

2952 \define@key{Hyp}{hyperindex}[true]{%
2953   \Hy@boolkey{hyperindex}{#1}%
2954 }

```

Configuration of encap char.

```

2955 \define@key{Hyp}{encap}[|]{%
2956   \def\HyInd@EncapChar{#1}%
2957 }

```

## 12 Language options

The \autoref feature depends on the language.

```

2958 \def\HyLang@afrikaans{%
2959   \def\equationautorefname{Vergelyking}%
2960   \def\footnoteautorefname{Voetnota}%
2961   \def\itemautorefname{Item}%
2962   \def\figureautorefname{Figuur}%
2963   \def\tableautorefname{Tabel}%
2964   \def\partautorefname{Deel}%
2965   \def\appendixautorefname{Bylae}%
2966   \def\chapterautorefname{Hoofstuk}%
2967   \def\sectionautorefname{Afdeling}%
2968   \def\subsectionautorefname{Subafdeling}%
2969   \def\subsubsectionautorefname{Subsubafdeling}%
2970   \def\paragraphautorefname{Paragraaf}%
2971   \def\subparagraphautorefname{Subparagraaf}%
2972   \def\FancyVerbLineautorefname{Lyn}%
2973   \def\theoremautorefname{Teorema}%
2974   \def\pageautorefname{Bladsy}%
2975 }
2976 \def\HyLang@english{%
2977   \def\equationautorefname{Equation}%
2978   \def\footnoteautorefname{footnote}%
2979   \def\itemautorefname{item}%
2980   \def\figureautorefname{Figure}%
2981   \def\tableautorefname{Table}%
2982   \def\partautorefname{Part}%
2983   \def\appendixautorefname{Appendix}%
2984   \def\chapterautorefname{chapter}%
2985   \def\sectionautorefname{section}%

```

```

2986 \def\subsectionautorefname{subsection}%
2987 \def\subsubsectionautorefname{subsubsection}%
2988 \def\paragraphautorefname{paragraph}%
2989 \def\subparagraphautorefname{subparagraph}%
2990 \def\FancyVerbLineautorefname{line}%
2991 \def\theoremautorefname{Theorem}%
2992 \def\pageautorefname{page}%
2993 }
2994 \def\HyLang@french{%
2995 \def\equationautorefname{'equation}%
2996 \def\footnoteautorefname{note}%
2997 \def\itemautorefname{item}%
2998 \def\figureautorefname{figure}%
2999 \def\tableautorefname{tableau}%
3000 \def\partautorefname{partie}%
3001 \def\appendixautorefname{annexe}%
3002 \def\chapterautorefname{chapitre}%
3003 \def\sectionautorefname{section}%
3004 \def\subsectionautorefname{sous-section}%
3005 \def\subsubsectionautorefname{sous-sous-section}%
3006 \def\paragraphautorefname{paragraphe}%
3007 \def\subparagraphautorefname{sous-paragraphe}%
3008 \def\FancyVerbLineautorefname{ligne}%
3009 \def\theoremautorefname{th\`eor\`eme}%
3010 \def\pageautorefname{page}%
3011 }
3012 \def\HyLang@german{%
3013 \def\equationautorefname{Gleichung}%
3014 \def\footnoteautorefname{Fu\ss note}%
3015 \def\itemautorefname{Punkt}%
3016 \def\figureautorefname{Abbildung}%
3017 \def\tableautorefname{Tabelle}%
3018 \def\partautorefname{Teil}%
3019 \def\appendixautorefname{Anhang}%
3020 \def\chapterautorefname{Kapitel}%
3021 \def\sectionautorefname{Abschnitt}%
3022 \def\subsectionautorefname{Unterabschnitt}%
3023 \def\subsubsectionautorefname{Unterunterabschnitt}%
3024 \def\paragraphautorefname{Absatz}%
3025 \def\subparagraphautorefname{Unterabsatz}%
3026 \def\FancyVerbLineautorefname{Zeile}%
3027 \def\theoremautorefname{Theorem}%
3028 \def\pageautorefname{Seite}%
3029 }
3030 \def\HyLang@italian{%
3031 \def\equationautorefname{Equazione}%
3032 \def\footnoteautorefname{nota}%
3033 \def\itemautorefname{punto}%
3034 \def\figureautorefname{Figura}%
3035 \def\tableautorefname{Tabella}%
3036 \def\partautorefname{Parte}%
3037 \def\appendixautorefname{Appendice}%
3038 \def\chapterautorefname{Capitolo}%
3039 \def\sectionautorefname{sezione}%

```

```

3040 \def\subsectionautorefname{sottosezione}%
3041 \def\subsubsectionautorefname{sottosottosezione}%
3042 \def\paragraphautorefname{paragrafo}%
3043 \def\subparagraphautorefname{sottoparagrafo}%
3044 \def\FancyVerbLineautorefname{linea}%
3045 \def\theoremautorefname{Teorema}%
3046 \def\pageautorefname{Pag.\@}%
3047 }
3048 \def\HyLang@magyar{%
3049 \def\equationautorefname{Egyenlet}%
3050 \def\footnoteautorefname{l'abjegyzet}%
3051 \def\itemautorefname{Elem}%
3052 \def\figureautorefname{'Abra}%
3053 \def\tableautorefname{T\abl'azat}%
3054 \def\partautorefname{R'esz}%
3055 \def\appendixautorefname{F\"uggel'ek}%
3056 \def\chapterautorefname{fejezet}%
3057 \def\sectionautorefname{szakasz}%
3058 \def\subsectionautorefname{alszakasz}%
3059 \def\subsubsectionautorefname{alalszakasz}%
3060 \def\paragraphautorefname{bekezd'es}%
3061 \def\subparagraphautorefname{albekezd'es}%
3062 \def\FancyVerbLineautorefname{sor}%
3063 \def\theoremautorefname{T'etel}%
3064 \def\pageautorefname{oldal}%
3065 }
3066 \def\HyLang@portuges{%
3067 \def\equationautorefname{Equa\c c\~ao}%
3068 \def\footnoteautorefname{Nota de rodap'e}%
3069 \def\itemautorefname{Item}%
3070 \def\figureautorefname{Figura}%
3071 \def\tableautorefname{Tabela}%
3072 \def\partautorefname{Parte}%
3073 \def\appendixautorefname{Ap\~endice}%
3074 \def\chapterautorefname{Cap\itulo}%
3075 \def\sectionautorefname{Se\c c\~ao}%
3076 \def\subsectionautorefname{Subse\c c\~ao}%
3077 \def\subsubsectionautorefname{Subsubse\c c\~ao}%
3078 \def\paragraphautorefname{par\agrafo}%
3079 \def\subparagraphautorefname{subpar\agrafo}%
3080 \def\FancyVerbLineautorefname{linha}%
3081 \def\theoremautorefname{Teorema}%
3082 \def\pageautorefname{P\agina}%
3083 }

```

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`.

```

3084 \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`?

```
3085 \def\equationautorefname{\cyr\cyrv\cyrery\cyrr.}%
```

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

```
3086 % \def\equationautorefname{%
3087 %   \cyr\cyrv\cyrery\cyrr\cyra\cyrzh\cyre\cyrn\cyri\cyre
3088 % }%
```

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

```
3089 \def\footnoteautorefname{%
3090   \cyr\cyrp\cyro\cyrd\cyrz\cyrt\cyrr.\ \cyrp\cyrr\cyri\cyrn.%
3091 }%
```

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

```
3092 % \def\footnoteautorefname{%
3093 %   \cyr\cyrp\cyro\cyrd\cyrz\cyrt\cyrr\cyro\cyrch\cyrn\cyro\cyre\ %
3094 %   \cyrp\cyrr\cyri\cyrn\cyre\cyrch\cyra\cyrn\cyri\cyre
3095 % }%
```

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

```
3096 % \def\Nomfootnoteautorefname{\cyr\cyrz\cyrn\cyro\cyrz\cyrk\cyra}%
3097 % \def\Accfootnoteautorefname{\cyr\cyrz\cyrn\cyro\cyrz\cyrk\cyrz}%
```

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.

```
3098 \def\itemautorefname{\cyr\cyrp.}%
3099 % \def\itemautorefname{\cyr\cyrp\cyrz\cyrn\cyrk\cyrz}%
```

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

```
3100 \def\figureautorefname{\cyr\cyrr\cyri\cyrz.}%
3101 \def\tableautorefname{\cyr\cyrt\cyra\cyrb\cyrz.}%
```

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

```
3102 \def\partautorefname{\cyr\cyrch.}%
3103 \def\chapterautorefname{\cyr\cyrz\cyrz.}%
3104 \def\sectionautorefname{\cyr\cyrr\cyra\cyrz\cyrz.}%
```

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.

```
3105 \def\appendixautorefname{\cyr\cyrp\cyrr\cyri\cyrz.}%
3106 % \def\appendixautorefname{%
3107 %   \cyr\cyrp\cyrr\cyri\cyrz\cyro\cyrzh\cyre\cyrn\cyri\cyre
3108 % }%
```



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.

```
3109 \def\subsectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
3110 \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.

```
3111 \def\paragraphautorefname{\cyr\cyrp.}%
3112 \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.

```
3113 % \def\paragraphautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyrt}%
3114 % \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.

```
3115 \def\FancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr.}%
```

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

```
3116 % \def\NomFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyra}%
3117 % \def\AccFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyru}%
```

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

```
3118 % \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 ...

```
3119 \def\theoremautorefname{\cyr\cyrt\cyre\cyro\cyrr.}%
```

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

```
3120 % \def\Nomtheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyra}%
3121 % \def\Acctheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyru}%
```

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

```
3122 \def\pageautorefname{\cyr\cyrs.}%
3123 }
```

```
3124 \def\HyLang@spanish{%
3125 \def\equationautorefname{Ecuaci\'on}%
3126 \def\footnoteautorefname{Nota a pie de p\'agina}%
3127 \def\itemautorefname{Elemento}%
3128 \def\figureautorefname{Figura}%
3129 \def\tableautorefname{Tabla}%
3130 \def\partautorefname{Parte}%
3131 \def\appendixautorefname{Ap\'endice}%
3132 \def\chapterautorefname{Cap\'itulo}%
3133 \def\sectionautorefname{Secci\'on}%
```

```

3134 \def\subsectionautorefname{Subsecci\`on}%
3135 \def\subsubsectionautorefname{Subsubsecci\`on}%
3136 \def\paragraphautorefname{P\`arrafo}%
3137 \def\subparagraphautorefname{Subp\`arrafo}%
3138 \def\FancyVerbLineautorefname{L\`inea}%
3139 \def\theoremautorefname{Teorema}%
3140 \def\pageautorefname{P\`agina}%
3141 }

3142 \def\HyLang@catalan{%
3143 \def\equationautorefname{Equaci\`o}%
3144 \def\footnoteautorefname{Nota al peu de p\`agina}%
3145 \def\itemautorefname{Element}%
3146 \def\figureautorefname{Figura}%
3147 \def\tableautorefname{Taula}%
3148 \def\partautorefname{Part}%
3149 \def\appendixautorefname{Ap\`endix}%
3150 \def\chapterautorefname{Cap\`itol}%
3151 \def\sectionautorefname{Secci\`o}%
3152 \def\subsectionautorefname{Subsecci\`o}%
3153 \def\subsubsectionautorefname{Subsubsecci\`o}%
3154 \def\paragraphautorefname{Par\`agraf}%
3155 \def\subparagraphautorefname{Subpar\`agraf}%
3156 \def\FancyVerbLineautorefname{L\`inia}%
3157 \def\theoremautorefname{Teorema}%
3158 \def\pageautorefname{P\`agina}%
3159 }

3160 \def\HyLang@vietnamese{%
3161 \def\equationautorefname{Ph\`uhorn\`o\`horn\`ng tr\`inh}%
3162 \def\footnoteautorefname{Ch\`u th\`ich}%
3163 \def\itemautorefname{m\`d\`u\`c}%
3164 \def\figureautorefname{H\`inh}%
3165 \def\tableautorefname{B\`h\`a\`ng}%
3166 \def\partautorefname{Ph\`acircumflex\`n}%
3167 \def\appendixautorefname{Ph\`d\`u\`l\`d\`u\`c}%
3168 \def\chapterautorefname{ch\`uhorn\`o\`horn\`ng}%
3169 \def\sectionautorefname{m\`d\`u\`c}%
3170 \def\subsectionautorefname{m\`d\`u\`c}%
3171 \def\subsubsectionautorefname{m\`d\`u\`c}%
3172 \def\paragraphautorefname{\`dj\`o\`d\`a\`n}%
3173 \def\subparagraphautorefname{\`dj\`o\`d\`a\`n}%
3174 \def\FancyVerbLineautorefname{d\`ong}%
3175 \def\theoremautorefname{\`DJ\`d\`i\`nh l\`y}%
3176 \def\pageautorefname{Trang}%
3177 }

```

Greek, see github issue 52

```

3178 \def\HyLang@greek{%
3179 \def\equationautorefname{\textEpsilon\textxi\acctonos\textiota\textsigma\textomega\textsigma\texteta}%
3180 \def\footnoteautorefname{\textupsilon\textpi\textomicron\textsigma\texteta\textmu\textepsilon\acctonos\textiota\textomega\textsigma\texteta}%
3181 \def\itemautorefname{\textalpha\textnu\texttau\textiota\textkappa\textepsilon\acctonos\textiota\textmu\textepsilon\textnu\textomicron}%

```

```

3182 \def\figureautorefname{\textSigma\textchi\acconos\texteta\textmu\textal-
pha}%
3183 \def\tableautorefname{\textPi\acconos\textiota\textnu\textalpha\textkappa\textal-
pha}%
3184 \def\partautorefname{\textMu\acconos\textepsilon\textrho\textomicron\textvar-
sigma}%
3185 \def\appendixautorefname{\textPi\textalpha\textrho\acconos\textalpha\text-
rho\texttau\texteta\textmu\textalpha}%
3186 \def\chapterautorefname{\textkappa\textepsilon\textphi\acconos\textal-
pha\textlambda\textalpha\textiota\textomicron}%
3187 \def\sectionautorefname{\textepsilon\textnu\acconos\textomicron\texttau\text-
eta\texttau\textalpha}%
3188 \def\subsectionautorefname{\textupsilon\textpi\textomicron\textepsilon\textnu\ac-
conos\textomicron\texttau\texteta\texttau\textalpha}%
3189 \def\subsubsectionautorefname{\textupsilon\textpi\textomicron\textepsilon\textnu\ac-
conos\textomicron\texttau\texteta\texttau\textalpha}%
3190 \def\paragraphautorefname{\textpi\textalpha\textrho\acconos\textalpha\textgamma\text-
rho\textalpha\textphi\textomicron\textvarsigma}%
3191 \def\subparagraphautorefname{\textupsilon\textpi\textomicron\textpi\text-
alpha\textrho\acconos\textalpha\textgamma\textrho\textalpha\textphi\textomi-
cron\textvarsigma}%
3192 \def\FancyVerbLineautorefname{\textgamma\textrho\textalpha\textmu\textmu\ac-
conos\texteta}%
3193 \def\theoremautorefname{\textTheta\textepsilon\acconos\textomega\text-
rho\texteta\textmu\textalpha}%
3194 \def\pageautorefname{\textsigma\textepsilon\textlambda\acconos\textiota\textdelta\text-
alpha}%
3195 }

3196 \def\HyLang@dutch{%
3197 \def\equationautorefname{Vergelijking}%
3198 \def\footnoteautorefname{voetnoot}%
3199 \def\itemautorefname{punt}%
3200 \def\figureautorefname{Figuur}%
3201 \def\tableautorefname{Tabel}%
3202 \def\partautorefname{Deel}%
3203 \def\appendixautorefname{Bijlage}%
3204 \def\chapterautorefname{hoofdstuk}%
3205 \def\sectionautorefname{paragraaf}%
3206 \def\subsectionautorefname{deelparagraaf}%
3207 \def\subsubsectionautorefname{deel-deelparagraaf}%
3208 \def\paragraphautorefname{alinea}%
3209 \def\subparagraphautorefname{deelalinea}%
3210 \def\FancyVerbLineautorefname{regel}%
3211 \def\theoremautorefname{Stelling}%
3212 \def\pageautorefname{pagina}%
3213 }

3214 \def\HyLang@norsk{%
3215 \def\equationautorefname{Ligning}%
3216 \def\footnoteautorefname{fotnote}%
3217 \def\itemautorefname{element}%
3218 \def\figureautorefname{Figur}%
3219 \def\tableautorefname{Tabell}%
3220 \def\partautorefname{Del}%
3221 \def\appendixautorefname{Tillegg}%
3222 \def\chapterautorefname{kapittel}%

```

```

3223 \def\sectionautorefname{seksjon}%
3224 \def\subsectionautorefname{underseksjon}%
3225 \def\subsubsectionautorefname{under-underseksjon}%
3226 \def\paragraphautorefname{avsnitt}%
3227 \def\subparagraphautorefname{underavsnitt}%
3228 \def\FancyVerbLineautorefname{Linje}%
3229 \def\theoremautorefname{Teorem}%
3230 \def\pageautorefname{side}%
3231 }
3232 \def\HyLang@danish{%
3233 \def\equationautorefname{Ligning}%
3234 \def\footnoteautorefname{fodnote}%
3235 \def\itemautorefname{element}%
3236 \def\figureautorefname{Figur}%
3237 \def\tableautorefname{Tabel}%
3238 \def\partautorefname{Del}%
3239 \def\appendixautorefname{Bilag}%
3240 \def\chapterautorefname{kapitel}%
3241 \def\sectionautorefname{sektion}%
3242 \def\subsectionautorefname{under-sektion}%
3243 \def\subsubsectionautorefname{under-under-sektion}%
3244 \def\paragraphautorefname{afsnit}%
3245 \def\subparagraphautorefname{underafsnit}%
3246 \def\FancyVerbLineautorefname{linje}%
3247 \def\theoremautorefname{Teorem}%
3248 \def\pageautorefname{side}%
3249 }
3250 \def\HyLang@swedish{%
3251 \def\equationautorefname{Ekvation}%
3252 \def\footnoteautorefname{fotnot}%
3253 \def\itemautorefname{punkt}%
3254 \def\figureautorefname{Figur}%
3255 \def\tableautorefname{Tabell}%
3256 \def\partautorefname{Del}%
3257 \def\appendixautorefname{Bilaga}%
3258 \def\chapterautorefname{kapitel}%
3259 \def\sectionautorefname{avsnitt}%
3260 \def\subsectionautorefname{underavsnitt}%
3261 \def\subsubsectionautorefname{under-underavsnitt}%
3262 \def\paragraphautorefname{paragraf}%
3263 \def\subparagraphautorefname{underparagraf}%
3264 \def\FancyVerbLineautorefname{linje}%
3265 \def\theoremautorefname{Teorem}%
3266 \def\pageautorefname{sida}%
3267 }

```

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

```

3268 \def\HyLang@addto#1#2{%
3269 #2%
3270 \@temptokena{#2}%
3271 \ifx#1\relax
3272 \let#1\@empty
3273 \fi

```

```

3274 \ifx#1\@undefined
3275 \edef#1{\the\@temptokena}%
3276 \else
3277 \toks@\expandafter{#1}%
3278 \edef#1{\the\toks@\the\@temptokena}%
3279 \fi
3280 \@temptokena{}\toks@\@temptokena
3281 }

3282 \def\HyLang@DeclareLang#1#2#3{%
3283 \ifcsname extras#1\endcsname
3284 \expandafter\HyLang@addto
3285 \csname extras#1\expandafter\endcsname
3286 \csname HyLang@#2\endcsname
3287 \begingroup
3288 \edef\x{\endgroup
3289 #3%
3290 }%
3291 \x
3292 \@namedef{HyLang@#1@done}{}%
3293 \fi
3294 \begingroup
3295 \edef\x##1##2{%
3296 \noexpand\ifx##2\relax
3297 \errmessage{No definitions for language #2' found!}%
3298 \noexpand\fi
3299 \endgroup
3300 \noexpand\define@key{Hyp}{#1}[]{%
3301 \noexpand\@ifundefined{HyLang@#1@done}{%
3302 \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
3303 #3%
3304 \noexpand\@namedef{HyLang@#1@done}{}%
3305 }{}%
3306 }%
3307 }%
3308 \expandafter\x\csname extras#1\expandafter\endcsname
3309 \csname HyLang@#2\endcsname
3310 }

3311 \HyLang@DeclareLang{english}{english}{}
3312 \HyLang@DeclareLang{UKenglish}{english}{}
3313 \HyLang@DeclareLang{british}{english}{}
3314 \HyLang@DeclareLang{USenglish}{english}{}
3315 \HyLang@DeclareLang{american}{english}{}
3316 \HyLang@DeclareLang{german}{german}{}
3317 \HyLang@DeclareLang{austrian}{german}{}
3318 \HyLang@DeclareLang{ngerman}{german}{}
3319 \HyLang@DeclareLang{naustrian}{german}{}
3320 \HyLang@DeclareLang{nswissgerman}{german}{}
3321 \HyLang@DeclareLang{swissgerman}{german}{}
3322 \HyLang@DeclareLang{russian}{russian}{\noexpand\hypersetup{unicode}}
3323 \HyLang@DeclareLang{brazil}{portuges}{}
3324 \HyLang@DeclareLang{brazilian}{portuges}{}
3325 \HyLang@DeclareLang{portuguese}{portuges}{}
3326 \HyLang@DeclareLang{spanish}{spanish}{}
3327 \HyLang@DeclareLang{catalan}{catalan}{}

```

```

3328 \HyLang@DeclareLang{afrikaans}{afrikaans}{}
3329 \HyLang@DeclareLang{french}{french}{}
3330 \HyLang@DeclareLang{frenchb}{french}{}
3331 \HyLang@DeclareLang{français}{french}{}
3332 \HyLang@DeclareLang{acadian}{french}{}
3333 \HyLang@DeclareLang{canadien}{french}{}
3334 \HyLang@DeclareLang{italian}{italian}{}
3335 \HyLang@DeclareLang{magyar}{magyar}{}
3336 \HyLang@DeclareLang{hungarian}{magyar}{}
3337 \HyLang@DeclareLang{greek}{greek}{}
3338 \HyLang@DeclareLang{dutch}{dutch}{}
3339 \HyLang@DeclareLang{norsk}{norsk}{}
3340 \HyLang@DeclareLang{norwegian}{norsk}{}
3341 \HyLang@DeclareLang{danish}{danish}{}
3342 \HyLang@DeclareLang{swedish}{swedish}{}

```

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

```

3343 \DeclareVoidOption{vietnamese}{%
3344   \HyLang@addto\extrasvietnamese\HyLang@vietnamese
3345   \Hy@AtEndOfPackage{%
3346     \@ifundefined{T@PU}{}{}%
3347     \input{puvnenc.def}%
3348   }%
3349 }%
3350 }
3351 \DeclareVoidOption{vietnam}{%
3352   \HyLang@addto\extravietnam\HyLang@vietnamese
3353   \Hy@AtEndOfPackage{%
3354     \@ifundefined{T@PU}{}{}%
3355     \input{puvnenc.def}%
3356   }%
3357 }%
3358 }

```

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

```

3359 \DeclareVoidOption{arabic}{%
3360   \Hy@AtEndOfPackage{%
3361     \@ifundefined{T@PU}{}{}%
3362     \input{puarenc.def}%
3363   }%
3364 }%
3365 }

```

## 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.

```

3366 \define@key{Hyp}{colorlinks}[true]{%
3367   \Hy@boolkey{colorlinks}{#1}%
3368 }
3369 \DeclareVoidOption{hidelinks}{%
3370   \Hy@colorlinksfalse
3371   \Hy@ocgcolorlinksfalse
3372   \Hy@frenchlinksfalse

```

```

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

```

## 14 Bookmarking

```

3396 \begingroup\expandafter\expandafter\expandafter\endgroup
3397 \expandafter\ifx\csname chapter\endcsname\relax
3398   \def\toclevel@part{0}%
3399 \else
3400   \def\toclevel@part{-1}%
3401 \fi
3402 \def\toclevel@chapter{0}
3403 \def\toclevel@section{1}
3404 \def\toclevel@subsection{2}
3405 \def\toclevel@subsubsection{3}
3406 \def\toclevel@paragraph{4}
3407 \def\toclevel@subparagraph{5}
3408 \def\toclevel@figure{0}
3409 \def\toclevel@table{0}
3410 \define@key{Hyp}{bookmarks}[true]{%
3411   \Hy@boolkey{bookmarks}{#1}%
3412 }
3413 \define@key{Hyp}{bookmarksopen}[true]{%
3414   \Hy@boolkey{bookmarksopen}{#1}%
3415 }

```

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.

```

3416 \let\Hy@bookmarksdepth\c@tocdepth
3417 \define@key{Hyp}{bookmarksdepth}[]{%
3418   \begingroup
3419     \edef\x{#1}%
3420     \ifx\x\empty
3421       \global\let\Hy@bookmarksdepth\c@tocdepth
3422     \else
3423       \ifundefined{toclevel@\x}{%
3424         \@onelevel@sanitize\x
3425         \edef\y{\expandafter\@car\x\@nil}%
3426         \ifcase 0\expandafter\ifx\y-1\fi
3427           \expandafter\ifnum\expandafter`\y>47 %
3428             \expandafter\ifnum\expandafter`\y<58 1\fi\fi\relax
3429           \Hy@Warning{Unknown document division name (\x)}%
3430         \else
3431           \setbox\z@=\hbox{%
3432             \count@=\x
3433             \xdef\Hy@bookmarksdepth{\the\count@}%
3434           }%
3435         \fi
3436       }{%
3437         \setbox\z@=\hbox{%
3438           \count@=\csname toclevel@\x\endcsname
3439           \xdef\Hy@bookmarksdepth{\the\count@}%
3440         }%
3441       }%
3442     \fi
3443   \endgroup
3444 }
```

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

```

3445 \define@key{Hyp}{bookmarksopenlevel}{%
3446   \def\@bookmarksopenlevel{#1}%
3447 }
3448 \def\@bookmarksopenlevel{\maxdimen}
3449 % `bookmarkstype' to specify which `toc' file to mimic
3450 \define@key{Hyp}{bookmarkstype}{%
3451   \def\Hy@bookmarkstype{#1}%
3452 }
3453 \def\Hy@bookmarkstype{toc}
```

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

```

3454 \define@key{Hyp}{bookmarksnumbered}[true]{%
3455   \Hy@boolkey{bookmarksnumbered}{#1}%
3456 }
```

Option `CJKbookmarks` enables the patch for CJK bookmarks.

```

3457 \define@key{Hyp}{CJKbookmarks}[true]{%
3458   \Hy@boolkey{CJKbookmarks}{#1}%
3459 }
```



```

3460 \def\Hy@temp#1{%
3461   \expandafter\Hy@@temp\csname @##1color\endcsname{#1}%
3462 }
3463 \def\Hy@@temp#1#2#3{%
3464   \define@key{Hyp}{#2color}{%
3465     \HyColor@HyperrefColor{##1}#1%
3466   }%
3467   \def#1{#3}%
3468 }
3469 \Hy@temp{link}{red}
3470 \Hy@temp{anchor}{black}
3471 \Hy@temp{cite}{green}
3472 \Hy@temp{file}{cyan}
3473 \Hy@temp{url}{magenta}
3474 \Hy@temp{menu}{red}
3475 \Hy@temp{run}{\@filecolor}
3476 \define@key{Hyp}{pagecolor}{%
3477   \Hy@WarningPageColor
3478 }
3479 \def\Hy@WarningPageColor{%
3480   \Hy@WarningNoLine{Option 'pagecolor' is not available anymore}%
3481   \global\let\Hy@WarningPageColor\relax
3482 }
3483 \define@key{Hyp}{allcolors}{%
3484   \HyColor@HyperrefColor{#1}\@linkcolor
3485   \HyColor@HyperrefColor{#1}\@anchorcolor
3486   \HyColor@HyperrefColor{#1}\@citecolor
3487   \HyColor@HyperrefColor{#1}\@filecolor
3488   \HyColor@HyperrefColor{#1}\@urlcolor
3489   \HyColor@HyperrefColor{#1}\@menucolor
3490   \HyColor@HyperrefColor{#1}\@runcolor
3491 }

3492 \def\hyperbaseurl#1{\def\@baseurl{#1}}
3493 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
3494 \let\@baseurl\empty
3495 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
3496 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
3497 \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.

```

3498 \let\@pdfpagetransition\relax
3499 \define@key{Hyp}{pdfpagetransition}{%
3500   \def\@pdfpagetransition{#1}%
3501 }

```

`\@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.

```

3502 \let\@pdfpageduration\relax
3503 \define@key{Hyp}{pdfpageduration}{%
3504   \def\@pdfpageduration{#1}%
3505   \Hy@Match\@pdfpageduration}{}%
3506   ^(|[0-9]+\.\?[0-9]*|[0-9]*\.\?[0-9]+)$%
3507 }{}{%
3508   \Hy@Warning{%
3509     Invalid value '\@pdfpageduration'\MessageBreak
3510     of option `pdfpageduration'\MessageBreak
3511     is replaced by an empty value%
3512   }%
3513   \let\@pdfpageduration\ltx@empty
3514 }%
3515 }

```

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).

```

3516 \def\Hy@ColorList{cite,file,link,menu,run,url}
3517 \@for\Hy@temp:=\Hy@ColorList\do{%
3518   \edef\Hy@temp{%
3519     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
3520       \noexpand\HyColor@HyperrefBorderColor
3521       {##1}%
3522       \expandafter\noexpand\csname @\Hy@temp bordercolor\endcsname
3523       {hyperref}%
3524       {\Hy@temp bordercolor}%
3525     }%
3526   }%
3527   \Hy@temp
3528 }
3529 \define@key{Hyp}{pagebordercolor}{%
3530   \Hy@WarningPageBorderColor
3531 }
3532 \def\Hy@WarningPageBorderColor{%
3533   \Hy@WarningNoLine{Option `pagebordercolor' is not available anymore}%
3534   \global\let\Hy@WarningPageBorderColor\relax
3535 }
3536 \define@key{Hyp}{allbordercolors}{%
3537   \def\Hy@temp##1##2{%
3538     \HyColor@HyperrefBorderColor{#1}##1{hyperref}{##2bordercolor}%
3539   }%
3540   \Hy@temp\@citebordercolor{cite}%
3541   \Hy@temp\@filebordercolor{file}%
3542   \Hy@temp\@linkbordercolor{link}%
3543   \Hy@temp\@menubordercolor{menu}%
3544   \Hy@temp\@runbordercolor{run}%
3545   \Hy@temp\@urlbordercolor{url}%
3546 }

```

```

3547 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{#1}}
3548 \Hy@DefNameKey{pdfhighlight}{%
3549   \do{/I}{Invert}%
3550   \do{/N}{None}%
3551   \do{/O}{Outline}%
3552   \do{/P}{Push}%
3553 }
3554 \def\Hy@setpdfhighlight{%
3555   \ifx\@pdfhighlight\@empty
3556   \else
3557     /H\@pdfhighlight
3558   \fi
3559 }
3560 \define@key{Hyp}{pdfborder}{%
3561   \let\Hy@temp\@pdfborder
3562   \def\@pdfborder{#1}%
3563   \Hy@Match\@pdfborder{}{%
3564     ~\HyPat@NonNegativeReal/ %
3565     \HyPat@NonNegativeReal/ %
3566     \HyPat@NonNegativeReal/%
3567     ( ?\[\HyPat@NonNegativeReal/( \HyPat@NonNegativeReal/)*])?$$%
3568   }{}{%
3569     \Hy@Warning{%
3570       Invalid value ` \@pdfborder'\MessageBreak
3571       for option `pdfborder'.\MessageBreak
3572       Option setting is ignored%
3573     }%
3574     \let\@pdfborder\Hy@temp
3575   }%
3576 }
3577 \define@key{Hyp}{pdfborderstyle}{%
3578   \let\Hy@temp\@pdfborderstyle
3579   \def\@pdfborderstyle{#1}%
3580   \Hy@Match\@pdfborderstyle{}{%
3581     ~%
3582     ( */Type */Border%
3583     | */W +\HyPat@NonNegativeReal/%
3584     | */S */[SDBIU]%
3585     | */D *\[ *(\HyPat@NonNegativeReal/( \HyPat@NonNegativeReal/))?)?]%
3586     )* *$%
3587   }{}{%
3588     \Hy@Warning{%
3589       Invalid value ` \@pdfborderstyle'\MessageBreak
3590       for option `pdfborderstyle'.\MessageBreak
3591       Option setting is ignored%
3592     }%
3593     \let\@pdfborderstyle\Hy@temp
3594   }%
3595 }
3596 \def\Hy@setpdfborder{%
3597   \ifx\@pdfborder\@empty
3598   \else
3599     /Border[\@pdfborder]%
3600   \fi

```

```

3601 \ifx\@pdfborderstyle\@empty
3602 \else
3603 /BS<<\@pdfborderstyle>>%
3604 \fi
3605 }
3606 \Hy@DefNameKey{pdfpagemode}{%
3607 \do{UseNone}{}%
3608 \do{UseOutlines}{}%
3609 \do{UseThumbs}{}%
3610 \do{FullScreen}{}%
3611 \do{UseOC}{PDF 1.5}%
3612 \do{UseAttachments}{PDF 1.6}%
3613 }
3614 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
3615 \do{UseNone}{}%
3616 \do{UseOutlines}{}%
3617 \do{UseThumbs}{}%
3618 \do{FullScreen}{}%
3619 \do{UseOC}{PDF 1.5}%
3620 \do{UseAttachments}{PDF 1.6}%
3621 }
3622 \Hy@DefNameKey{pdfdirection}{%
3623 \do{L2R}{Left to right}%
3624 \do{R2L}{Right to left}%
3625 }
3626 \Hy@DefNameKey{pdfviewarea}{%
3627 \do{MediaBox}{}%
3628 \do{CropBox}{}%
3629 \do{BleedBox}{}%
3630 \do{TrimBox}{}%
3631 \do{ArtBox}{}%
3632 }
3633 \Hy@DefNameKey{pdfviewclip}{%
3634 \do{MediaBox}{}%
3635 \do{CropBox}{}%
3636 \do{BleedBox}{}%
3637 \do{TrimBox}{}%
3638 \do{ArtBox}{}%
3639 }
3640 \Hy@DefNameKey{pdfprintarea}{%
3641 \do{MediaBox}{}%
3642 \do{CropBox}{}%
3643 \do{BleedBox}{}%
3644 \do{TrimBox}{}%
3645 \do{ArtBox}{}%
3646 }
3647 \Hy@DefNameKey{pdfprintclip}{%
3648 \do{MediaBox}{}%
3649 \do{CropBox}{}%
3650 \do{BleedBox}{}%
3651 \do{TrimBox}{}%
3652 \do{ArtBox}{}%
3653 }
3654 \Hy@DefNameKey{pdfprintscaling}{%

```

```

3655 \do{AppDefault}{}%
3656 \do{None}{}%
3657 }
3658 \Hy@DefNameKey{pdfduplex}{%
3659 \do{Simplex}{}%
3660 \do{DuplexFlipShortEdge}{}%
3661 \do{DuplexFlipLongEdge}{}%
3662 }
3663 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
3664 \do{true}{}%
3665 \do{false}{}%
3666 }
3667 \define@key{Hyp}{pdfprintpagerange}{%
3668 \def\@pdfprintpagerange{#1}%
3669 }
3670 \Hy@DefNameKey{pdfnumcopies}{%
3671 \do{2}{two copies}%
3672 \do{3}{three copies}%
3673 \do{4}{four copies}%
3674 \do{5}{five copies}%
3675 }

3676 \define@key{Hyp}{pdfusetitle}[true]{%
3677 \Hy@boolkey{pdfusetitle}{#1}%
3678 }
3679 \def\HyXeTeX@CheckUnicode{%
3680 \ifxetex
3681 \ifHy@unicode
3682 \else
3683 \Hy@WarningNoLine{%
3684 XeTeX driver only supports unicode.\MessageBreak
3685 Enabling option `unicode'%
3686 }%
3687 \kvsetkeys{Hyp}{unicode}%
3688 \fi
3689 \else
3690 \let\HyXeTeX@CheckUnicode\relax
3691 \fi
3692 }
3693 \def\HyPsd@PrerenderUnicode#1{%
3694 \begingroup
3695 \expandafter\ifx\csname PrerenderUnicode\endcsname\relax
3696 \else
3697 \sbox0{%
3698 \let\GenericInfo\@gobbletwo
3699 \let\GenericWarning\@gobbletwo
3700 \let\GenericError\@gobblefour
3701 \PrerenderUnicode{#1}%
3702 }%
3703 \fi
3704 \endgroup
3705 }
3706 \define@key{Hyp}{pdftitle}{%
3707 \AddToDocumentProperties[hyperref]{pdftitle}{#1}%
3708 \HyXeTeX@CheckUnicode

```

```

3709 \HyPsd@PrerenderUnicode{#1}%
3710 \pdfstringdef\@pdftitle{#1}%
3711 }
3712 \define@key{Hyp}{pdfauthor}{%
3713 \AddToDocumentProperties[hyperref]{pdfauthor}{#1}%
3714 \HyXeTeX@CheckUnicode
3715 \HyPsd@PrerenderUnicode{#1}%
3716 \pdfstringdef\@pdfauthor{#1}%
3717 }
3718 \define@key{Hyp}{pdfproducer}{%
3719 \AddToDocumentProperties[hyperref]{pdfproducer}{#1}%
3720 \HyXeTeX@CheckUnicode
3721 \HyPsd@PrerenderUnicode{#1}%
3722 \pdfstringdef\@pdfproducer{#1}%
3723 }
3724 \define@key{Hyp}{pdfcreator}{%
3725 \AddToDocumentProperties[hyperref]{pdfcreator}{#1}%
3726 \HyXeTeX@CheckUnicode
3727 \HyPsd@PrerenderUnicode{#1}%
3728 \pdfstringdef\@pdfcreator{#1}%
3729 }
3730 \define@key{Hyp}{addtopdfcreator}{%
3731 \HyXeTeX@CheckUnicode
3732 \HyPsd@PrerenderUnicode{#1}%
3733 \pdfstringdef\@pdfcreator{\@pdfcreator, #1}%
3734 }
3735 \define@key{Hyp}{pdfcreationdate}{%
3736 \begingroup
3737 \Hy@unicodfalse
3738 \pdfstringdef\@pdfcreationdate{#1}%
3739 \endgroup
3740 }
3741 \define@key{Hyp}{pdfmoddate}{%
3742 \begingroup
3743 \Hy@unicodfalse
3744 \pdfstringdef\@pdfmoddate{#1}%
3745 \endgroup
3746 }
3747 \define@key{Hyp}{pdfsubject}{%
3748 \AddToDocumentProperties[hyperref]{pdfsubject}{#1}%
3749 \HyXeTeX@CheckUnicode
3750 \HyPsd@PrerenderUnicode{#1}%
3751 \pdfstringdef\@pdfsubject{#1}%
3752 }
3753 \define@key{Hyp}{pdfkeywords}{%
3754 \AddToDocumentProperties[hyperref]{pdfkeywords}{#1}%
3755 \HyXeTeX@CheckUnicode
3756 \HyPsd@PrerenderUnicode{#1}%
3757 \pdfstringdef\@pdfkeywords{#1}%
3758 }
3759 \define@key{Hyp}{pdftrapped}{%
3760 \lowercase{\edef\Hy@temp{#1}}%
3761 \ifx\Hy@temp\HyInfo@trapped@true
3762 \def\@pdftrapped{True}%

```

```

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

```

```

3817 \def\HyInfo@AddonHandler#1#2{%
3818   \ifx\kv@value\relax
3819     \Hy@Warning{%
3820       Option `pdfinfo': ignoring key `\'kv@key' without value%
3821     }%
3822   \else
3823     \EdefEscapeName\HyInfo@KeyEscaped{\kv@key}%
3824     \EdefUnescapeName\HyInfo@Key{\HyInfo@KeyEscaped}%
3825     \expandafter\ifx\csname KV@pdfinfo@\HyInfo@Key\endcsname\relax
3826     \ifHyInfo@AddonUnsupported
3827       \Hy@Warning{%
3828         This driver does not support additional\MessageBreak
3829         information entries, therefore\MessageBreak
3830         `\'kv@key' is ignored%
3831       }%
3832     \else
3833       \def\HyInfo@tmp###1{%
3834         \kv@define@key{pdfinfo}{###1}{%
3835           \HyXeTeX@CheckUnicode
3836           \HyPsd@PrerenderUnicode{####1}%
3837           \pdfstringdef\HyInfo@Value{####1}%
3838           \global\expandafter
3839           \let\csname HyInfo@Value@##1\endcsname
3840             \HyInfo@Value
3841         }%
3842       }%
3843       \expandafter\HyInfo@tmp\expandafter{\HyInfo@Key}%
3844       \global\expandafter
3845       \let\csname KV@pdfinfo@\HyInfo@Key\expandafter\endcsname
3846       \csname KV@pdfinfo@\HyInfo@Key\endcsname
3847       \xdef\HyInfo@AddonList{%
3848         \HyInfo@AddonList
3849         \HyInfo@do{\HyInfo@Key}%
3850       }%
3851       \expandafter\kv@parse@normalized\expandafter{%
3852         \HyInfo@Key={#2}%
3853       }{%
3854         \kv@processor@default{pdfinfo}%
3855       }%
3856     \fi
3857   \else
3858     \expandafter\kv@parse@normalized\expandafter{%
3859       \HyInfo@Key={#2}%
3860     }{%
3861       \kv@processor@default{pdfinfo}%
3862     }%
3863   \fi
3864 \fi
3865 }
3866 \def\HyInfo@GenerateAddons{%
3867   \ifHyInfo@AddonUnsupported
3868     \def\HyInfo@Addons{}%
3869   \else
3870     \begingroup

```



```

3871 \toks@{}%
3872 \def\HyInfo@do###1{%
3873 \EdefEscapeName\HyInfo@Key{###1}%
3874 \edef\x{%
3875 \toks@{}%
3876 \the\toks@
3877 /\HyInfo@Key(\csname HyInfo@Value@##1\endcsname)%
3878 }%
3879 }%
3880 \x
3881 }%
3882 \HyInfo@AddonList
3883 \edef\x{\endgroup
3884 \def\noexpand\HyInfo@Addons{\the\toks@}%
3885 }%
3886 \x
3887 \fi
3888 }
3889 \global\let\HyInfo@AddonList\ltx@empty

3890 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \\\}
3891 \define@key{Hyp}{pdfinkmargin}{\setpdfinkmargin{#1}}
3892 \let\setpdfinkmargin@gobble
3893 \def\calculate@pdfview#1 #2\{\%
3894 \def\@pdfview{#1}%
3895 \ifx\#2\%
3896 \def\@pdfviewparams{-32768}%
3897 \else
3898 \def\@pdfviewparams{#2}%
3899 \fi
3900 }

3901 \def\Hy@number#1{%
3902 \the\numexpr#1\relax
3903 }%
3904 \define@key{Hyp}{pdfstartpage}{\%
3905 \ifx\#1\%
3906 \let\@pdfstartpage\ltx@empty
3907 \else
3908 \edef\@pdfstartpage{\Hy@number{#1}}%
3909 \fi
3910 }%
3911 \define@key{Hyp}{pdfstartview}{\%
3912 \ifx\#1\%
3913 \let\@pdfstartview\ltx@empty
3914 \else
3915 \def\@pdfstartview{/#1}%
3916 \fi
3917 }

3918 \def\HyPat@NonNegativeReal/{\%
3919 \ *([0-9]+\.[0-9]*|[0-9]*\.[0-9]+) *%
3920 }

3921 \define@key{Hyp}{pdfremotestartview}{\%
3922 \ifx\#1\%
3923 \def\@pdfremotestartview{/Fit}%
3924 \else

```

```

3925 \edef\@pdfremotestartview{#1}%
3926 \Hy@Match\@pdfremotestartview{}\{%
3927   ^{XYZ(%
3928     ()| %
3929     (null|-?\HyPat@NonNegativeReal/) %
3930     (null|-?\HyPat@NonNegativeReal/) %
3931     (null|\HyPat@NonNegativeReal/)%
3932   )| % end of "XYZ"
3933   Fit(%
3934     ()| %
3935     B| %
3936     (H|V|BH|BV)(%
3937       ()| %
3938       (null|\HyPat@NonNegativeReal/)%
3939     )| %
3940     R %
3941     \HyPat@NonNegativeReal/ %
3942     \HyPat@NonNegativeReal/ %
3943     \HyPat@NonNegativeReal/ %
3944     \HyPat@NonNegativeReal/%
3945   ) % end of "Fit"
3946   )$%
3947   }{}{%
3948     \Hy@Warning{%
3949       Invalid value ` \@pdfremotestartview'\MessageBreak
3950       of `pdfremotestartview'\MessageBreak
3951       is replaced by `Fit'%
3952     }%
3953     \let\@pdfremotestartview\@empty
3954   }%
3955   \ifx\@pdfremotestartview\@empty
3956     \def\@pdfremotestartview{/Fit}%
3957   \else
3958     \edef\@pdfremotestartview{/ \@pdfremotestartview}%
3959   \fi
3960 \fi
3961 }
3962 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
3963 \define@key{Hyp}{pdftoolbar}[true]{%
3964   \Hy@boolkey{pdftoolbar}{#1}%
3965 }
3966 \define@key{Hyp}{pdfmenubar}[true]{%
3967   \Hy@boolkey{pdfmenubar}{#1}%
3968 }
3969 \define@key{Hyp}{pdfwindowui}[true]{%
3970   \Hy@boolkey{pdfwindowui}{#1}%
3971 }
3972 \define@key{Hyp}{pdffitwindow}[true]{%
3973   \Hy@boolkey{pdffitwindow}{#1}%
3974 }
3975 \define@key{Hyp}{pdfcenterwindow}[true]{%
3976   \Hy@boolkey{pdfcenterwindow}{#1}%
3977 }
3978 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%

```

```

3979 \Hy@boolkey{pdfdisplaydoctitle}{#1}%
3980 }
3981 \define@key{Hyp}{pdfa}[true]{%
3982 \Hy@boolkey{pdfa}{#1}%
3983 }
3984 \define@key{Hyp}{pdfnewwindow}[true]{%
3985 \def\Hy@temp{#1}%
3986 \ifx\Hy@temp\@empty
3987 \Hy@pdfnewwindowsetfalse
3988 \else
3989 \Hy@pdfnewwindowsettrue
3990 \Hy@boolkey{pdfnewwindow}{#1}%
3991 \fi
3992 }
3993 \def\Hy@SetNewWindow{%
3994 \ifHy@pdfnewwindowset
3995 /NewWindow %
3996 \ifHy@pdfnewwindow true\else false\fi
3997 \fi
3998 }
3999 \Hy@DefNameKey{pdfpagelayout}{%
4000 \do{SinglePage}{}%
4001 \do{OneColumn}{}%
4002 \do{TwoColumnLeft}{}%
4003 \do{TwoColumnRight}{}%
4004 \do{TwoPageLeft}{PDF 1.5}%
4005 \do{TwoPageRight}{PDF 1.5}%
4006 }
4007 \define@key{Hyp}{pdflang}{%
4008 \edef\@pdflang{#1}%
4009 \def\Hy@temp{\relax}%
4010 \ifx\@pdflang\Hy@temp
4011 \let\@pdflang\relax
4012 \fi
4013 \ifx\@pdflang\relax
4014 \else
4015 \ifx\@pdflang\ltx@empty
4016 \else

```

Test according to ABNF of RFC 3066.

```

4017 \Hy@Match\@pdflang{icase}{%
4018 ~%
4019 [a-z]{1,8}%
4020 (-[a-z0-9]{1,8})*%
4021 $%
4022 }{%

```

Test according to ABNF of RFC 5646.

```

4023 \Hy@Match\@pdflang{icase}{%
4024 ~%
4025 (%
4026 % langtag
4027 (% language
4028 [a-z]{2,3}%
4029 ([a-z]{3}(-[a-z]{3}){0,2})?% extlang

```

```

4030         |[a-z]{4}% reserved for future use
4031         |[a-z]{5,8}% registered language subtag
4032     )%
4033     (-[a-z]{4})?% script
4034     (-([a-z]{2}|[0-9]{3}))?% region
4035     (-([a-z]{5,8}|[0-9][a-z0-9]{3}))% variant
4036     (-[0-9a-wyz](-[a-z0-9]{2,8})+)% extension
4037     (-x(-[a-z0-9]{1,8})+)?% privateuse
4038 % privateuse
4039     |x(-[a-z0-9]{1,8})+)%
4040 % grandfathered/irregular
4041     |en-GB-oed%
4042     |i-(ami|bnn|default|enochian|hak|klinton|lux|%
4043         mingo|navajo|pwn|tao|tay|tsu)%
4044     |sgn-(BE-FR|BE-NL|CH-DE)%
4045 % grandfathered/regular
4046     |art-lojban%
4047     |cel-gaulish%
4048     |no-(bok|nyn)%
4049     |zh-(guoyu|hakka|min|min-nan|xiang)%
4050 )%
4051 $%
4052 }{%

```

Test for unique extensions.

```

4053 \Hy@Match{-\@pdflang}{icase}{-[a-wyz0-9]-}{%
4054 \Hy@Match\@pdflang{icase}{~x-}{}%
4055 % remove privateuse
4056 \edef\Hy@temp{-\@pdflang}%
4057 \Hy@Match\Hy@temp{icase}{{%
4058 ~%
4059 (%
4060 (-[a-wyz0-9]|-[a-z0-9]{2,8})%
4061 )%
4062 -x-%
4063 }{%
4064 \edef\Hy@temp{%
4065 \expandafter\strip@prefix\pdfastmatch1%
4066 }%
4067 }}%
4068 \Hy@Match\Hy@temp{icase}{{%
4069 (-[a-wyz0-9]-).*\ltx@backslashchar1%
4070 }{%
4071 \Hy@Warning{%
4072     Invalid language identifier `#1'\MessageBreak
4073     for option `pdflang', because it violates\MessageBreak
4074     well-formedness defined in RFC 4646\MessageBreak
4075     by duplicate singleton subtags%
4076 }%
4077 \let\@pdflang\relax
4078 }}%
4079 }%
4080 }{}%

```

User-assigned country codes are forbidden in language tags (RFC 3066).

```

4081 \ifx\@pdflang\relax
4082 \else
4083 \Hy@Match\@pdflang{icase}{%
4084 ~%
4085 [a-zA-Z]{2}-%
4086 (%
4087 aa|AA|%
4088 [qQ][m-zA-Z]|%
4089 [xX][a-zA-Z]|%
4090 zz|ZZ%
4091 )%
4092 (-|$)%
4093 }{%
4094 \Hy@Warning{%
4095 Invalid language identifier `#1'\MessageBreak
4096 for option `pdflang' because of invalid country code%
4097 \MessageBreak
4098 in second subtag (RFC 3066)%
4099 }%
4100 \let\@pdflang\relax
4101 }{%}%
4102 \fi
4103 }{%
4104 \Hy@Warning{%
4105 Invalid language identifier `#1'\MessageBreak
4106 for option `pdflang', because it violates\MessageBreak
4107 well-formedness defined in RFC 5646%
4108 }%
4109 \let\@pdflang\relax
4110 }%
4111 }{%
4112 \Hy@Warning{%
4113 Invalid language identifier `#1'\MessageBreak
4114 for option `pdflang' (RFC 3066)%
4115 }%
4116 \let\@pdflang\relax
4117 }%
4118 \fi
4119 \fi
4120 }
4121 \define@key{Hyp}{pdfpagelabels}[true]{%
4122 \Hy@boolkey{pdfpagelabels}{#1}%
4123 }
4124 \define@key{Hyp}{pdfescapeform}[true]{%
4125 \Hy@boolkey{pdfescapeform}{#1}%
4126 }

```

Default values:

```

4127 \def\@linkbordercolor{1 0 0}
4128 \def\@urlbordercolor{0 1 1}
4129 \def\@menubordercolor{1 0 0}
4130 \def\@filebordercolor{0 .5 .5}
4131 \def\@runbordercolor{0 .7 .7}
4132 \def\@citebordercolor{0 1 0}
4133 \def\@pdfhighlight{/I}

```

```

4134 \let\@pdftitle\ltx@empty
4135 \let\@pdfauthor\ltx@empty
4136 \let\@pdfproducer\relax
4137 \def\@pdfcreator{LaTeX with hyperref}
4138 \let\@pdfcreationdate\ltx@empty
4139 \let\@pdfmoddate\ltx@empty
4140 \let\@pdfsubject\ltx@empty
4141 \let\@pdfkeywords\ltx@empty
4142 \let\@pdftrapped\ltx@empty
4143 \let\@pdfpagescrop\ltx@empty
4144 \def\@pdfstartview{/Fit}
4145 \def\@pdfremotestartview{/Fit}
4146 \def\@pdfstartpage{1}
4147 \let\@pdfprintpagerange\ltx@empty
4148 \let\@pdflang\relax
4149 \let\PDF@SetupDoc\@empty
4150 \let\PDF@FinishDoc\@empty
4151 \let\phantomsection\@empty
4152 \let\special@paper\@empty
4153 \def\HyperDestNameFilter#1{#1}
4154 \Hy@AtBeginDocument{%
4155   \begingroup
4156     \edef\x{\ifdim\stockheight>\z@ \stockheight\else\paperheight\fi}%
4157     \dimen@=\x\relax
4158     \ifdim\dimen@>\z@
4159       \else
4160         \dimen@=11in\relax
4161         \Hy@WarningNoLine{%
4162           Height of page (\expandafter\string\x) %
4163           is invalid (\the\x),\MessageBreak
4164           using 11in%
4165         }%
4166       \fi
4167       \dimen@=0.99626401\dimen@
4168       \xdef\Hy@pageheight{\strip@pt\dimen@}%
4169     \endgroup
4170 }
4171 \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.

```

4172 \let\hyper@normalise\ExecuteOptions
4173 \let\ExecuteOptions\hypersetup
4174 \Hy@RestoreCatcodes
4175 \InputIfFileExists{hyperref.cfg}{-}{-}
4176 \Hy@SetCatcodes
4177 \let\ExecuteOptions\hyper@normalise
4178 \ifx\Hy@MaybeStopNow\relax
4179 \else
4180   \Hy@stoppedearlytrue
4181   \expandafter\Hy@MaybeStopNow
4182 \fi
4183 \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.

```

4184 \SetupKeyvalOptions{family=Hyp}
4185 \DeclareLocalOptions{%
4186   a4paper,a5paper,b5paper,letterpaper,legalpaper,executivepaper%
4187 }

```

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

```

4188 \@ifpackagewith{hyperref}{tex4ht}{%
4189 }{%
4190   \@ifpackageloaded{tex4ht}{%
4191     \PassOptionsToPackage{tex4ht}{hyperref}%
4192   }{%
4193     \ltx@ifundefined{HCode}{%
4194     }{%
4195       \begingroup
4196       \def\Hy@pkg{tex4ht}%
4197       \def\Hy@temp@A#1\RequirePackage[#2]#3#4\Hy@NIL{%
4198         \def\Hy@param{#2#3}%
4199         \ifx\Hy@param\ltx@empty
4200           \expandafter\ltx@gobble
4201         \else
4202           \def\Hy@param{#3}%
4203           \ifx\Hy@param\Hy@pkg
4204             \PassOptionsToPackage{#2}{tex4ht}%
4205             \expandafter\expandafter\expandafter\@gobble
4206           \else
4207             \expandafter\expandafter\expandafter\ltx@firstofone
4208           \fi
4209         \fi
4210         {\Hy@temp@A#4\Hy@NIL}%
4211       }%
4212       \expandafter
4213       \Hy@temp@A\@documentclasshook\RequirePackage[]{}\Hy@NIL
4214     \endgroup
4215     \PassOptionsToPackage{tex4ht}{hyperref}%
4216   }%
4217 }%
4218 }

4219 \let\ReadBookmarks\relax
4220 \ProcessKeyvalOptions{Hyp}

```

After processing options.

## 15.1 Package `xspace` support

```

4221 \def\Hy@xspace@end{}
4222 \ltx@ifundefined{xspaceaddexceptions}{%
4223   \Hy@AtBeginDocument{%
4224     \ltx@ifundefined{xspaceaddexceptions}{%
4225     }{%
4226       \def\Hy@xspace@end{%
4227         \ltx@gobble{end for xspace}%
4228       }%

```

```

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

```

## 15.2 Option draft

```

4240 \Hy@AtBeginDocument{%
4241 \ifHy@draft
4242 \let\hyper@@anchor\@gobble
4243 \gdef\hyper@link#1#2#3{#3\Hy@xspace@end}%
4244 \def\hyper@anchorstart#1#2{#2\Hy@xspace@end}%
4245 \def\hyper@anchorend{\Hy@xspace@end}%
4246 \let\hyper@linkstart\@gobbletwo
4247 \def\hyper@linkend{\Hy@xspace@end}%
4248 \def\hyper@linkurl#1#2{#1\Hy@xspace@end}%
4249 \def\hyper@linkfile#1#2#3{#1\Hy@xspace@end}%
4250 \def\hyper@link@{#1}#2#3#4{#4\Hy@xspace@end}%
4251 \def\Acrobatmenu#1#2{\leavevmode#2\Hy@xspace@end}%
4252 \let\PDF@SetupDoc\@empty
4253 \let\PDF@FinishDoc\@empty
4254 \let\ReadBookmarks\relax
4255 \let\WriteBookmarks\relax
4256 \Hy@WarningNoLine{Draft mode on}%
4257 \fi
4258 \Hy@DisableOption{draft}%
4259 \Hy@DisableOption{nolinks}%
4260 \Hy@DisableOption{final}%
4261 }

```

## 15.3 PDF/A

```

4262 \Hy@DisableOption{pdfa}
4263 \ifHy@pdfa
4264 \ifnum \Hy@pdf@majorminor@version< 104
4265 \kvsetkeys{Hyp}{pdfversion=1.4}%
4266 \fi
4267 \Hy@DisableOption{pdfversion}%
4268 \def\Hy@Acrobatmenu#1#2{%
4269 \leavevmode
4270 \begingroup
4271 \edef\x{#1}%
4272 \@onelevel@sanitize\x
4273 \ifx\x\Hy@NextPage
4274 \let\y=Y%
4275 \else
4276 \ifx\x\Hy@PrevPage
4277 \let\y=Y%

```



```

4278     \else
4279     \ifx\x\Hy@FirstPage
4280     \let\y=Y%
4281     \else
4282     \ifx\x\Hy@LastPage
4283     \let\y=Y%
4284     \else
4285     \let\y=N%
4286     \fi
4287     \fi
4288     \fi
4289     \fi
4290 \expandafter\endgroup
4291 \ifx\y Y%
4292 \else
4293   \Hy@Error{%
4294     PDF/A: Named action `#1' is not permitted%
4295   }\@ehc
4296   {#2}%
4297   \expandafter\@gobble
4298 \fi
4299 }%
4300 \def\Hy@temp#1{%
4301   \expandafter\def\csname Hy@#1\endcsname{#1}%
4302   \expandafter\@onelevel@sanitize\csname Hy@#1\endcsname
4303 }%
4304 \Hy@temp{NextPage}%
4305 \Hy@temp{PrevPage}%
4306 \Hy@temp{FirstPage}%
4307 \Hy@temp{LastPage}%
4308 \else
4309 \def\Hy@Acrobatmenu#1#2{\leavevmode}%
4310 \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.

change 2020-10-10: no trace of \texttilde can be found in the three languages spanish, galician and estonian so the patch has been removed as outdated.

```

4311 \def\Hy@wrapper@babel#1#2{%
4312   \begingroup
4313   \Hy@safe@activetrue
4314   \set@display@protect
4315   \edef\x{#2}%
4316   \@onelevel@sanitize\x
4317   \toks@{#1}%
4318   \edef\x{\endgroup\the\toks@{\x}}%
4319   \x
4320 }
4321 \def\Hy@WrapperDef#1{%
4322   \begingroup
4323   \escapechar=\m@ne

```

```

4324 \xdef\Hy@gtemp{%
4325 \expandafter\noexpand\csname HyWrap@\string#1\endcsname
4326 }%
4327 \endgroup
4328 \edef#1{%
4329 \noexpand\Hy@wrapper@babel
4330 \expandafter\noexpand\Hy@gtemp
4331 }%
4332 \expandafter\def\Hy@gtemp
4333 }

4334 \ifHy@hyperfigures
4335 \Hy@Info{Hyper figures ON}%
4336 \else
4337 \Hy@Info{Hyper figures OFF}%
4338 \fi
4339 \ifHy@nesting
4340 \Hy@Info{Link nesting ON}%
4341 \else
4342 \Hy@Info{Link nesting OFF}%
4343 \fi
4344 \ifHy@hyperindex
4345 \Hy@Info{Hyper index ON}%
4346 \else
4347 \Hy@Info{Hyper index OFF}%
4348 \fi
4349 \ifHy@plainpages
4350 \Hy@Info{Plain pages ON}%
4351 \else
4352 \Hy@Info{Plain pages OFF}%
4353 \fi
4354 \ifHy@backref
4355 \Hy@Info{Backreferencing ON}%
4356 \else
4357 \Hy@Info{Backreferencing OFF}%
4358 \fi
4359 \ifHy@implicit
4360 \Hy@InfoNoLine{Implicit mode ON; LaTeX internals redefined}%
4361 \else
4362 \Hy@InfoNoLine{Implicit mode OFF; no redefinition of LaTeX internals}%
4363 \def\MaybeStopEarly{%
4364 \Hy@Message{Stopped early}%
4365 \Hy@AtBeginDocument{%
4366 \PDF@FinishDoc
4367 \gdef\PDF@FinishDoc{}}%
4368 }%
4369 \endinput
4370 }%
4371 \Hy@AtBeginDocument{%
4372 \let\autoref\ref
4373 \let\autopageref\pageref
4374 \ifx\@pdfpagemode\@empty
4375 \gdef\@pdfpagemode{UseNone}%
4376 \fi
4377 \global\Hy@backreffalse

```

```

4378 }%
4379 \Hy@AtEndOfPackage{%
4380   \global\let\ReadBookmarks\relax
4381   \global\let\WriteBookmarks\relax
4382 }%
4383 \fi
4384 \Hy@DisableOption{implicit}

```

#### 15.4.1 Driver loading

Ensure that `\stockwidth` and `\stockheight` are defined

```

4385 \@ifundefined{stockwidth}{\newdimen\stockwidth}{}
4386 \@ifundefined{stockheight}{\newdimen\stockheight}{}

4387 \Hy@AtEndOfPackage{%
4388   \@ifpackageloaded{tex4ht}{%
4389     \def\Hy@driver{htex4ht}%
4390     \Hy@texhttrue
4391   }{}%

```

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.

```

4392 \ifx\Hy@driver\@empty
4393 \else
4394   \ifx\pdfextension\@undefined
4395     \def\Hy@temp{hpdfTeX}%
4396   \else
4397     \def\Hy@temp{hluatex}%
4398   \fi
4399 \ifpdf
4400   \ifx\Hy@driver\Hy@temp
4401   \else
4402     \Hy@WarningNoLine{%
4403       Wrong driver `\'Hy@driver.def';\MessageBreak
4404       pdfTeX is running in PDF mode.\MessageBreak
4405       Forcing driver `\'Hy@temp.def'%
4406     }%
4407     \let\Hy@driver\Hy@temp
4408   \fi
4409 \else
4410   \ifx\Hy@driver\Hy@temp
4411   \Hy@WarningNoLine{%
4412     Wrong driver `\'Hy@driver.def';\MessageBreak
4413     pdfTeX is not running in PDF mode.\MessageBreak
4414     Using default driver%
4415   }%
4416   \let\Hy@driver\@empty
4417 \fi
4418 \fi
4419 \fi
4420 \ifHy@texht
4421 \else
4422   \ifx\Hy@driver\@empty
4423   \else
4424     \def\Hy@temp{hxeTeX}%

```

```

4425 \ifxetex
4426 \ifx\Hy@driver\Hy@temp
4427 \else
4428 \Hy@WarningNoLine{%
4429   Wrong driver ``\Hy@driver.def';\MessageBreak
4430   XeTeX is running.\MessageBreak
4431   Forcing driver ``\Hy@temp.def' for XeTeX%
4432 }%
4433 \let\Hy@driver\Hy@temp
4434 \fi
4435 \fi
4436 \fi
4437 \fi
4438 \ifx\Hy@driver\@empty
4439 \else
4440 \def\Hy@temp{hhitex}%
4441 \ifhint
4442 \ifx\Hy@driver\Hy@temp
4443 \else
4444 \Hy@WarningNoLine{%
4445   Wrong driver ``\Hy@driver.def';\MessageBreak
4446   hitex is running.\MessageBreak
4447   Forcing driver ``\Hy@temp.def'%
4448 }%
4449 \let\Hy@driver\Hy@temp
4450 \fi
4451 \fi
4452 \fi
4453 \ifx\Hy@driver\@empty
4454 \else
4455 \def\Hy@temp{hvtexhtm}%
4456 \ifnum\ifvtex\OpMode\else\m@ne\fi=10 %
4457 \ifx\Hy@driver\Hy@temp
4458 \else
4459 \Hy@WarningNoLine{%
4460   Wrong driver ``\Hy@driver.def';\MessageBreak
4461   VTeX is running in HTML mode.\MessageBreak
4462   Forcing driver ``\Hy@temp.def'%
4463 }%
4464 \let\Hy@driver\Hy@temp
4465 \fi
4466 \else
4467 \ifx\Hy@driver\Hy@temp
4468 \Hy@WarningNoLine{%
4469   Wrong driver ``\Hy@driver.def';\MessageBreak
4470   VTeX is not running in HTML mode.\MessageBreak
4471   Using default driver%
4472 }%
4473 \let\Hy@driver\@empty
4474 \fi
4475 \fi
4476 \fi

```

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

```

4477 \let\HyOpt@DriverType\ltx@empty

```

```

4478 \ifx\HyOpt@CustomDriver\ltx@empty
4479 \ifx\Hy@driver@empty
4480 \def\HyOpt@DriverType{ (autodetected)}%
4481 \providecommand*{\Hy@defaultdriver}{hdvips}%
4482 \ifpdf
4483 \ifx\pdfextension\@undefined
4484 \def\Hy@driver{hpdfTeX}%
4485 \else
4486 \def\Hy@driver{hluatex}%
4487 \fi
4488 \else
4489 \ifxetex
4490 \def\Hy@driver{hxetex}%
4491 \else
4492 \ifnum\ifvtex\OpMode\else\m@ne\fi=10 %
4493 \def\Hy@driver{hvtexhtm}%
4494 \def\MaybeStopEarly{%
4495 \Hy@Message{Stopped early}}%
4496 \Hy@AtBeginDocument{%
4497 \PDF@FinishDoc
4498 \gdef\PDF@FinishDoc{}}%
4499 }%
4500 \endinput
4501 }%
4502 \else
4503 \ifhint
4504 \def\Hy@driver{hhitex}
4505 \else
4506 \ifnum\ifvtex\OpMode\else\m@ne\fi=\@ne
4507 \def\Hy@driver{hvtex}%
4508 \else
4509 \ifnum\ifvtex\OpMode\else\m@ne\fi=\tw@
4510 \def\Hy@driver{hvtex}%
4511 \else
4512 \ifx\HyOpt@DriverFallback\ltx@empty
4513 \let\Hy@driver\Hy@defaultdriver
4514 \def\HyOpt@DriverType{ (default)}%
4515 \else
4516 \begingroup
4517 \toks@{\expandafter{\HyOpt@DriverFallback}}%
4518 \edef\x{\endgroup
4519 \noexpand\kvsetkeys{Hyp}{\the\toks@}}%
4520 }%
4521 \x
4522 \ifx\Hy@driver\ltx@empty
4523 \let\Hy@driver\Hy@defaultdriver
4524 \def\HyOpt@DriverType{ (default)}%
4525 \else
4526 \def\HyOpt@DriverType{ (fallback)}%
4527 \fi
4528 \fi
4529 \fi
4530 \fi
4531 \fi

```

```

4532     \fi
4533   \fi
4534 \fi
4535 \ifx\Hy@driver\Hy@defaultdriver
4536   \def\Hy@temp{hdvwind}%
4537   \ifx\Hy@temp\Hy@driver
4538     \kvsetkeys{Hyp}{colorlinks}%
4539     \PassOptionsToPackage{dviwindo}{color}%
4540   \fi
4541 \fi
4542 \fi
4543 \else
4544   \def\HyOpt@DriverType{ (custom)}%
4545   \let\Hy@driver\HyOpt@CustomDriver
4546 \fi
4547 \Hy@InfoNoLine{Driver\HyOpt@DriverType: \Hy@driver}%
4548 \chardef\Hy@VersionChecked=0 %
4549 \input{\Hy@driver.def}%
4550 \ifcase\Hy@VersionChecked
4551   \Hy@VersionCheck{\Hy@driver.def}%
4552 \fi
4553 \let\@unprocessedoptions\relax
4554 \Hy@RestoreCatcodes
4555 \Hy@DisableOption{tex4ht}%
4556 \Hy@DisableOption{pdftex}%
4557 \Hy@DisableOption{nativepdf}%
4558 \Hy@DisableOption{dvipdfm}%
4559 \Hy@DisableOption{dvipdfmx}%
4560 \Hy@DisableOption{dvipdfmx-outline-open}%
4561 \Hy@DisableOption{pdfmark}%
4562 \Hy@DisableOption{dvips}%
4563 \Hy@DisableOption{hypertex}%
4564 \Hy@DisableOption{vtex}%
4565 \Hy@DisableOption{vtexpdfmark}%
4566 \Hy@DisableOption{dviwindo}%
4567 \Hy@DisableOption{dvipsone}%
4568 \Hy@DisableOption{textures}%
4569 \Hy@DisableOption{latex2html}%
4570 \Hy@DisableOption{ps2pdf}%
4571 \Hy@DisableOption{xetex}%
4572 \Hy@DisableOption{driverfallback}%
4573 \Hy@DisableOption{customdriver}%
4574 \Hy@DisableOption{pdfversion}%
4575 }

```

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.

```

4576 \newif\ifHy@DvipdfmxOutlineOpen
4577 \ifxetex
4578   \ifdim\number\XeTeXversion\XeTeXrevision in<0.9995in %
4579   \else
4580     \chardef\SpecialDvipdfmxOutlineOpen\@ne
4581     \Hy@DvipdfmxOutlineOpen>true

```

```

4582 \fi
4583 \fi
4584 \begingroup\expandafter\expandafter\expandafter\endgroup
4585 \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax
4586 \else
4587 \ifnum\SpecialDvipdfmxOutlineOpen>\z@
4588 \Hy@DvipdfmxOutlineOpentru
4589 \fi
4590 \fi

```

## 15.4.2 Bookmarks

```

4591 \def\WriteBookmarks{0}
4592 \def\@bookmarkopenstatus#1{%
4593 \ifHy@bookmarksopen

```

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

```

4594 \ifnum#1<\expandafter\@firstofone\expandafter
4595 {\number\@bookmarkopenlevel} % explicit space
4596 \else
4597 -%
4598 \fi
4599 \else
4600 -%
4601 \fi
4602 }
4603 \ifHy@bookmarks
4604 \Hy@Info{Bookmarks ON}%
4605 \ifx\@pdfpagemode\@empty
4606 \def\@pdfpagemode{UseOutlines}%
4607 \fi
4608 \else
4609 \let\@bookmarkopenstatus\ltx@gobble
4610 \Hy@Info{Bookmarks OFF}%
4611 \Hy@AtEndOfPackage{%
4612 \global\let\ReadBookmarks\relax
4613 \global\let\WriteBookmarks\relax
4614 }%
4615 \ifx\@pdfpagemode\@empty
4616 \def\@pdfpagemode{UseNone}%
4617 \fi
4618 \fi
4619 \Hy@DisableOption{bookmarks}

```

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

```

4620 \def\Hy@CatcodeWrapper#1{%
4621 \let\Hy@endWrap\ltx@empty
4622 \def\TMP@EnsureCode##1##2{%
4623 \edef\Hy@endWrap{%
4624 \Hy@endWrap
4625 \catcode##1 \the\catcode##1\relax
4626 }%
4627 \catcode##1 ##2\relax
4628 }%

```

```

4629 \TMP@EnsureCode{10}{12}% ^^J
4630 \TMP@EnsureCode{33}{12}% !
4631 \TMP@EnsureCode{34}{12}% "
4632 \TMP@EnsureCode{36}{3}% $ (math)
4633 \TMP@EnsureCode{38}{4}% & (alignment)
4634 \TMP@EnsureCode{39}{12}% '
4635 \TMP@EnsureCode{40}{12}% (
4636 \TMP@EnsureCode{41}{12}% )
4637 \TMP@EnsureCode{42}{12}% *
4638 \TMP@EnsureCode{43}{12}% +
4639 \TMP@EnsureCode{44}{12}% ,
4640 \TMP@EnsureCode{45}{12}% -
4641 \TMP@EnsureCode{46}{12}% .
4642 \TMP@EnsureCode{47}{12}% /
4643 \TMP@EnsureCode{58}{12}% :
4644 \TMP@EnsureCode{59}{12}% ;
4645 \TMP@EnsureCode{60}{12}% <
4646 \TMP@EnsureCode{61}{12}% =
4647 \TMP@EnsureCode{62}{12}% >
4648 \TMP@EnsureCode{63}{12}% ?
4649 \TMP@EnsureCode{91}{12}% [
4650 \TMP@EnsureCode{93}{12}% ]
4651 \TMP@EnsureCode{94}{7}% ^ (superscript)
4652 \TMP@EnsureCode{95}{8}% _ (subscript)
4653 \TMP@EnsureCode{96}{12}% `
4654 \TMP@EnsureCode{124}{12}% |
4655 \TMP@EnsureCode{126}{13}% ~ (active)
4656 #1\relax
4657 \Hy@EndWrap
4658 }

```

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

```

4659 \Hy@AtBeginDocument{%
4660   \ifHy@ocgcolorlinks
4661     \kvsetkeys{Hyp}{colorlinks}%
4662     \ifHy@pdfa
4663       \Hy@Warning{%
4664         PDF/A: Optional Content Groups are prohibited,\MessageBreak
4665         using `colorlinks' instead of `ocgcolorlinks'%
4666       }%
4667       \Hy@ocgcolorlinksfalse
4668     \fi
4669   \fi
4670   \ifHy@ocgcolorlinks
4671   \else
4672     \Hy@DisableOption{ocgcolorlinks}%
4673   \fi
4674   \ifHy@colorlinks
4675     \def\@pdfborder{0 0 0}%
4676     \let\@pdfborderstyle\@empty
4677     \Hy@CatcodeWrapper{%
4678       \RequirePackage{color}%
4679     }%
4680     \def\Hy@colorlink#1{%

```



```

4681 \begingroup
4682 \HyColor@UseColor#1%
4683 }%
4684 \def\Hy@endcolorlink{\endgroup}%
4685 \Hy@Info{Link coloring ON}%
4686 \else
4687 \ifHy@frenchlinks
4688 \def\Hy@colorlink#1{\begingroup\fontshape{\scdefault}\selectfont}%
4689 \def\Hy@endcolorlink{\endgroup}%
4690 \Hy@Info{French linking ON}%
4691 \else

```

for grouping consistency:

```

4692 \def\Hy@colorlink#1{\begingroup}%
4693 \def\Hy@endcolorlink{\endgroup}%
4694 \Hy@Info{Link coloring OFF}%
4695 \fi
4696 \fi
4697 \Hy@DisableOption{colorlinks}%
4698 \Hy@DisableOption{frenchlinks}%
4699 \ifHy@texht
4700 \else

```

With active links we have to redefine the starred versions to avoid that they get links from the include \@setref:

```

4701 \ifHy@implicit
4702 \let \T@Ref\HyRef@Ref
4703 \def\@refstar#1{%
4704 \NR@ref@showkeys{#1}%
4705 \HyRef@StarSetRef{#1}\@firstoffive
4706 }
4707 \def\@pagerefstar#1{%
4708 \NR@ref@showkeys{#1}%
4709 \HyRef@StarSetRef{#1}\@secondoffive
4710 }
4711 \def\@namerefstar#1{%
4712 \NR@ref@showkeys{#1}%
4713 \HyRef@StarSetRef{#1}\@thirdoffive
4714 }
4715 \def\@Refstar#1{%
4716 \NR@ref@showkeys{#1}%
4717 \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
4718 }%
4719 \else
4720 \fi
4721 \fi
4722 }
4723 \Hy@AtBeginDocument{%
4724 \ifx\ReadBookmarks\relax
4725 \else
4726 \Hy@CatcodeWrapper\ReadBookmarks
4727 \fi
4728 }
4729 \ifHy@backref
4730 \RequirePackage{backref}%

```

```

4731 \else
4732 \let\Hy@backout\@gobble
4733 \fi
4734 \Hy@DisableOption{backref}
4735 \Hy@DisableOption{pagebackref}
4736 \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.

```

4737 \begingroup
4738 \endlinechar=-1 %
4739 \catcode`\^^A=14 %
4740 \catcode`\^^M\active
4741 \catcode`\%\active
4742 \catcode`\#\active
4743 \catcode`\_\active
4744 \catcode`\$\active
4745 \catcode`\&\active
4746 \gdef\hyper@normalise{^^A
4747 \begingroup
4748 \catcode`\^^M\active
4749 \def^^M{ }^^A
4750 \catcode`\%\active
4751 \let%\@percentchar
4752 \let%\@percentchar
4753 \catcode`\#\active
4754 \def#{\hyper@hash}^^A
4755 \def#{\hyper@hash}^^A
4756 \@makeother\&^^A
4757 \edef&{\string&}^^A
4758 \edef&{\string&}^^A
4759 \edef\textunderscore{\string_}^^A
4760 \let_\textunderscore
4761 \catcode`\_\active
4762 \let_\textunderscore
4763 \let~\hyper@tilde
4764 \let~\hyper@tilde
4765 \let\textasciitilde\hyper@tilde
4766 \let\\\@backslashchar
4767 \edef$\string$}^^A
4768 \Hy@safe@activetrue
4769 \hyper@n@rmalise
4770 }^^A
4771 \catcode`\#=6 ^^A
4772 \gdef\Hy@ActiveCarriageReturn{^^M}^^A
4773 \gdef\hyper@n@rmalise#1#2{^^A

```

```

4774 \def\Hy@tempa{#2}^^A
4775 \ifx\Hy@tempa\Hy@ActiveCarriageReturn
4776 \ltx@ReturnAfterElseFi{^^A
4777 \hyper@@normalise{#1}^^A
4778 }^^A
4779 \else
4780 \ltx@ReturnAfterFi{^^A
4781 \hyper@@normalise{#1}{#2}^^A
4782 }^^A
4783 \fi
4784 }^^A
4785 \gdef\hyper@@normalise#1#2{^^A
4786 \edef\Hy@tempa{^^A
4787 \endgroup
4788 \noexpand#1{\Hy@RemovePercentCr#2%^M\@nil}^^A
4789 }^^A
4790 \Hy@tempa
4791 }^^A
4792 \gdef\Hy@RemovePercentCr#1%^M#2\@nil{^^A
4793 #1^^A
4794 \ifx\limits#2\limits
4795 \else
4796 \ltx@ReturnAfterFi{^^A
4797 \Hy@RemovePercentCr #2\@nil
4798 }^^A
4799 \fi
4800 }^^A
4801 \endgroup
4802 \providecommand*\hyper@chars{%
4803 \let\#\hyper@hash
4804 \let\%\@percentchar
4805 \Hy@safe@activetrue
4806 }

4807 \def\hyperlink#1#2{%
4808 \hyper@@link{}{#1}{#2}%
4809 }

4810 \def\Hy@VerboseLinkStart#1#2{%
4811 \ifHy@verbose
4812 \begingroup
4813 \Hy@safe@activetrue
4814 \xdef\Hy@VerboseGlobalTemp{(#1) `#2'}%
4815 \Hy@Info{Reference \Hy@VerboseGlobalTemp}%
4816 \xdef\Hy@VerboseGlobalTemp{%
4817 \Hy@VerboseGlobalTemp, %
4818 line \the\inputlineno
4819 }%
4820 \endgroup
4821 \let\Hy@VerboseLinkInfo\Hy@VerboseGlobalTemp
4822 \@onelevel@sanitize\Hy@VerboseLinkInfo
4823 \fi
4824 }

4825 \def\Hy@VerboseLinkInfo{<VerboseLinkInfo>}
4826 \def\Hy@VerboseLinkStop{%

```

```

4827 \ifHy@verbose
4828 \begingroup
4829 \edef\x{\endgroup
4830 \write\m@ne{%
4831 Package `hyperref' Info: %
4832 End of reference \Hy@VerboseLinkInfo.%
4833 }%
4834 }%
4835 \x
4836 \fi
4837 }

4838 \def\Hy@VerboseAnchor#1{%
4839 \ifHy@verbose
4840 \begingroup
4841 \Hy@safe@activetrue
4842 \Hy@Info{Anchor `\'HyperDestNameFilter{#1}'}%
4843 \endgroup
4844 \fi
4845 }

4846 \def\Hy@AllowHyphens{%
4847 \relax
4848 \ifhmode
4849 \penalty\@M
4850 \hskip\z@skip
4851 \fi
4852 }

4853 \DeclareRobustCommand*{\href}[1][]{%
4854 \begingroup
4855 \setkeys{href}{#1}%
4856 \@ifnextchar\bgroup\Hy@href{\hyper@normalise\href@}%
4857 }
4858 \def\Hy@href#1{%
4859 \hyper@normalise\href@
4860 }
4861 \begingroup
4862 \catcode`\$=6 %
4863 \catcode`\#=12 %
4864 \gdef\href@\$1{\expandafter\href@split$1##\}%
4865 \gdef\href@split$1#$2#$3\\$4{%
4866 \hyper@@link{$1}{$2}{$3}{$4}%
4867 \endgroup
4868 }%
4869 \endgroup

```

Option ‘page’.

```

4870 \define@key{href}{page}{%
4871 \def\Hy@href@page{#1}%
4872 }
4873 \let\Hy@href@page\@empty
4874 \newcount\c@Hy@tempcnt
4875 \def\theHy@tempcnt{\the\c@Hy@tempcnt}
4876 \def\Hy@MakeRemoteAction{%
4877 \ifx\Hy@href@page\@empty

```

```

4878 \def\Hy@href@page{0}%
4879 \else
4880 \setcounter{Hy@tempcnt}{\Hy@href@page}%
4881 \ifnum\c@Hy@tempcnt<\@ne
4882 \Hy@Warning{%
4883   Invalid page number (\theHy@tempcnt)\MessageBreak
4884   for remote PDF file.\MessageBreak
4885   Using page 1%
4886 }%
4887 \def\Hy@href@page{0}%
4888 \else
4889 \global\advance\c@Hy@tempcnt\m@ne
4890 \edef\Hy@href@page{\theHy@tempcnt}%
4891 \fi
4892 \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.

```

4893 \ifx\Hy@href@nextactionraw\@empty
4894 \else
4895 \Hy@pdfnewwindowsettrue
4896 \Hy@pdfnewwindowtrue
4897 \fi
4898 }

```

Option ‘pdfremotestartview’.

```

4899 \define@key{href}{pdfremotestartview}{%
4900 \setkeys{Hyp}{pdfremotestartview={#1}}}%
4901 }

```

Option ‘pdfnewwindow’.

```

4902 \let\KV@href@pdfnewwindow\KV@Hyp@pdfnewwindow
4903 \let\KV@href@pdfnewwindow@default\KV@Hyp@pdfnewwindow@default

```

Option ‘ismap’.

```

4904 \newif\ifHy@href@ismap
4905 \define@key{href}{ismap}[true]{%
4906 \ltx@ifundefined{Hy@href@ismap#1}{%
4907 \Hy@Error{%
4908   Invalid value (#1) for key `ismap'.\MessageBreak
4909   Permitted values are `true' or `false'.\MessageBreak
4910   Ignoring `ismap'%
4911 }\@ehc
4912 }{%
4913 \csname Hy@href@ismap#1\endcsname
4914 }%
4915 }

```

Option ‘nextactionraw’.

```

4916 \let\Hy@href@nextactionraw\@empty
4917 \define@key{href}{nextactionraw}{%
4918 \edef\Hy@href@nextactionraw{#1}%
4919 \ifx\Hy@href@nextactionraw\@empty
4920 \else
4921 \Hy@Match\Hy@href@nextactionraw{}{%
4922   ~(\HyPat@ObjRef|<<.*[/S[/].+>>|}%

```

```

4923 \[( ?\HyPat@ObjRef/|<<.*[/].+>>)+ ?)]$%
4924 }{}{%
4925 \Hy@Warning{Invalid value for `nextactionraw':\MessageBreak
4926 \Hy@href@nextactionraw\MessageBreak
4927 The action is discarded%
4928 }%
4929 }%
4930 \ifx\Hy@href@nextactionraw\@empty
4931 \else
4932 \edef\Hy@href@nextactionraw{/Next \Hy@href@nextactionraw}%
4933 \fi
4934 \fi
4935 }
4936 \def\HyPat@ObjRef/{. +}

```

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

```

4937 \RequirePackage{url}
4938 \let\HyOrg@url\url
4939 \def\Hurl{\begingroup \Url}
4940 \DeclareRobustCommand*\nolinkurl{\hyper@normalise\nolinkurl@}
4941 \def\nolinkurl@#1{\Hurl{#1}}
4942 \DeclareRobustCommand*\url{\hyper@normalise:url@}
4943 \def:url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}
4944 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
4945 \providecommand\hyper@image[2]{#2}
4946 \def\hypertarget#1#2{%
4947 \ifHy@nesting
4948 \hyper@@anchor{#1}{#2}%
4949 \else
4950 \hyper@@anchor{#1}{\relax}#2%
4951 \fi
4952 }

```

`\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.

```

4953 \DeclareRobustCommand*\hyperref{%
4954 \@ifnextchar{\Hy@babelnormalise\label@hyperref}\@hyperref
4955 }
4956 \def\Hy@babelnormalise#1[#2]{%
4957 \begingroup
4958 \Hy@safe@activestru
4959 \let\protect\@unexpandable@protect
4960 \edef\Hy@tempa{%
4961 \endgroup
4962 \noexpand#1[{#2}]%
4963 }%
4964 \Hy@tempa
4965 }

```

```

4966 \def\@hyperref{\hyper@normalise\@hyperref}
4967 \def\@hyperref#1#2#3{%
4968   \edef\ref@one{\ifx\#2\else#2.\fi#3}%
4969   \expandafter\tryhyper@link\ref@one\{#1}%
4970 }
4971 \def\tryhyper@link#1\#2{%
4972   \hyper@@link{#2}{#1}%
4973 }

4974 \def\hyperdef{\@ifnextchar{\label@hyperdef}\@hyperdef}}
4975 \def\@hyperdef#1#2#3{%, category, name, text
4976   \ifx\#1\%
4977     \def\Hy@AnchorName{#2}%
4978   \else
4979     \def\Hy@AnchorName{#1.#2}%
4980   \fi
4981   \ifHy@nesting
4982     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#3}%
4983   \else
4984     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#3%
4985   \fi
4986 }

```

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. `\hyperrefundefinedlink` may be redefined by a user to add colour or other formatting.

```

4987 \let\hyperrefundefinedlink\@firstofone
4988 \def\label@hyperref{#1}{%
4989   \expandafter\label@@hyperref\csname r@#1\endcsname{#1}%
4990 }%
4991 \def\label@@hyperref#1#2#3{%
4992   \ifx#1\relax
4993     \protect\G@refundefinedtrue
4994     \@latex@warning{%
4995       Hyper reference `#2' on page \thepage \space undefined%
4996     }%
4997     \begingroup
4998       \hyperrefundefinedlink{#3}%
4999     \endgroup
5000   \else
5001     \hyper@@link{\expandafter\@fifthoffive#1}%
5002     {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
5003   \fi
5004 }
5005 \def\label@hyperdef{#1}#2#3#4{% label name, category, name,
5006                               % anchor text
5007   \@bsphack
5008   \ifx\#2\%
5009     \def\Hy@AnchorName{#3}%
5010   \else
5011     \def\Hy@AnchorName{#2.#3}%
5012   \fi
5013   \if@files@
5014     \protected@write\@auxout{}{%
5015       \string\newlabel{#1}{\{#\}\}\{\Hy@AnchorName\}\}%

```

```

5016 }%
5017 \fi
5018 \@esphack
5019 \ifHy@nesting
5020   \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#4}%
5021 \else
5022   \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#4%
5023 \fi
5024 }

```

`\hyperget` To create manually bookmarks one need the destination name. If there is a label, the name can be retrieved with commands from `refcount`. Such a destination name must take `\HyperDestNameFilter` into account

```
\HyperDestNameFilter{\getrefbykeydefault{label}{anchor}{Doc-Start}}
```

To make this easier, we define `\hyperget`

```

5025 \ExplSyntaxOn
5026 \cs_new:Npn \hyperget #1 #2
5027 {
5028   \use:c { __hyp_get_#1:n } { #2}
5029 }
5030
5031 \cs_new:Npn \__hyp_get_anchor:n #1
5032 {
5033   \HyperDestNameFilter
5034   {
5035     \cs_if_exist:cTF {r@#1}
5036     {
5037       \tl_item:cn {r@#1}{4}
5038     }
5039     {
5040       Doc-Start
5041     }
5042   }
5043 }
5044 \cs_new:Npn \__hyp_get_pageanchor:n #1
5045 {
5046   \HyperDestNameFilter
5047   {
5048     \cs_if_exist:cTF {r@#1}
5049     {
5050       page. \tl_item:cn {r@#1}{2}
5051     }
5052     {
5053       Doc-Start
5054     }
5055   }
5056 }
5057 \cs_new:Npn \__hyp_get_currentanchor:n #1
5058 {
5059   \HyperDestNameFilter { \@currentHref }
5060 }
5061 \ExplSyntaxOff

```



## 16.1 Link box support for XeTeX

```

5062 \newdimen\XeTeXLinkMargin
5063 \setlength{\XeTeXLinkMargin}{2pt}
5064 \ifxetex
5065   \font\XeTeXLink@font=pzdr at 1sp\relax
5066   \newcommand*{\XeTeXLink@space}{%
5067     \begingroup
5068       \XeTeXLink@font
5069       \@xxxii
5070     \endgroup
5071   }%
5072   \newcommand{\XeTeXLinkBox}[1]{%
5073     \begingroup
5074       \leavevmode
5075       \sbox\z@{#1}%
5076       \begingroup
5077         \dimen@=\dp\z@
5078         \advance\dimen@\XeTeXLinkMargin
5079         \setbox\tw@=\llap{%
5080           \hb@xt@\XeTeXLinkMargin{%
5081             \lower\dimen@\hbox{\XeTeXLink@space}%
5082             \hss
5083           }%
5084         }%
5085         \dp\tw@=\dp\z@
5086         \ht\tw@=\ht\z@
5087         \copy\tw@
5088       \endgroup
5089       \copy\z@
5090       \dimen@=\ht\z@
5091       \advance\dimen@\XeTeXLinkMargin
5092       \setbox\tw@=\rlap{%
5093         \hb@xt@\XeTeXLinkMargin{%
5094           \hss
5095           \raise\dimen@\hbox{\XeTeXLink@space}%
5096         }%
5097       }%
5098       \dp\tw@=\dp\z@
5099       \ht\tw@=\ht\z@
5100       \copy\tw@
5101     \endgroup
5102   }%
5103 \else
5104   \newcommand*{\XeTeXLinkBox}[1]{%
5105     \begingroup
5106       \leavevmode
5107       \sbox\z@{#1}%
5108       \copy\z@
5109     \endgroup
5110   }%
5111 \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.

```

5112 \def\hyper@@link{\let\Hy@reserved@a\relax
5113 \@ifnextchar{\hyper@link@}{\hyper@link@[link]}%
5114 }
5115 % #1: type
5116 % #2: URL
5117 % #3: destination name
5118 % #4: text
5119 \def\hyper@link@[#1]#2#3#4{%
5120 \ltx@ifempty{#4}{% link text
5121   \Hy@Warning{Suppressing empty link}%
5122 }{%
5123   \begingroup
5124   \protected@edef\Hy@tempa{#2}%
5125   \edef\Hy@tempb{#3}%
5126   \ifx\Hy@tempa\ltx@empty
5127     \ifx\Hy@tempb\ltx@empty
5128       \Hy@Warning{Suppressing link with empty target}%
5129       \toks@{%
5130         \endgroup
5131         \ltx@secondoftwo
5132       }%
5133     \else
5134       \toks@{%
5135         \endgroup
5136         \hyper@link{#1}%
5137       }%
5138     \fi
5139   \else
5140     \toks@{%
5141       \endgroup
5142       \expandafter\hyper@readexternallink#2\{#1}%
5143     }%
5144   \fi
5145   \Hy@safe@activesfalse
5146   \toks@\expandafter{%
5147     \the\expandafter\toks@
5148     \expandafter{\Hy@tempb}{#4}%
5149   }%
5150   \the\toks@
5151 }%
5152 }

```

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.

```

5153 \def\hyper@readexternallink#1\{#2#3#4{%

```

```

5154 \begingroup
5155   \let\\\relax
5156 \expandafter\endgroup
5157 \expandafter\@hyper\@readexternallink#1\{\#2}\{\#3}\{\#4}%
5158 }
5159 \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.

```

5160 \@hyper\@readexternallink{\#2}\{\#3}\{\#4}\#1::\{\#1}%
5161 }

```

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

```

5162 \def\@pdftempwordfile{file}%
5163 \def\@pdftempwordrun{run}%
5164 \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**:

```

5165 \ifx\\\#6\\\%
5166   \@hyper\linkfile file:\#7\\\{\#3}\{\#2}\{\#7}%
5167 \else
5168   \ifx\\\#4\\\%
5169     \@hyper\linkfile file:\#7\\\{\#3}\{\#2}\{\#7}%
5170   \else

```

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

```

5171   \def\@pdftempa{\#4}%
5172   \ifx\@pdftempa\@pdftempwordfile
5173     \@hyper\linkfile\#7\\\{\#3}\{\#2}\{\#7}%
5174   \else

```

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

```

5175     \ifx\@pdftempa\@pdftempwordrun
5176       \ifHy\pdfa
5177         \Hy@Error{%
5178           PDF/A: Launch action is prohibited%
5179         }\@ehc
5180     \begingroup
5181       \leavevmode
5182       \#2%
5183     \endgroup

```

```

5184      \else
5185      \@hyper@launch#7\{\#3}\#2}%
5186      \fi
5187      \else

```

otherwise its a URL

```

5188      \hyper@linkurl{\#3}\#7\ifx\#2\else\hyper@hash#2\fi}%
5189      \fi
5190      \fi
5191      \fi
5192      \fi
5193 }

```

By default, turn run: into file:

```

5194 \def\@hyper@launch run:#1\#2#3{% filename, anchor text, linkname
5195   \hyper@linkurl{\#2}{%
5196     \Hy@linkfileprefix
5197     #1%
5198     \ifx\#3\%
5199     \else
5200     \hyper@hash
5201     #3%
5202     \fi
5203   }%
5204 }

```

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

```

5205 \def\@hyper@linkfile file:#1\#2#3#4{%
5206   %file url,link string, name, original uri
5207   \filename@parse{\#1}%
5208   \ifx\filename@ext\relax
5209   \edef\filename@ext{\XR@ext}%
5210   \fi
5211   \def\use@file{\filename@area\filename@base.\filename@ext}%
5212   \Hy@ifStringEndsWith\filename@ext\XR@ext{%
5213     \hyper@linkfile{\#2}\use@file{\#3}%
5214   }{%
5215     \ifx\@baseurl\@empty
5216     \hyper@linkurl{\#2}{%
5217       #4\ifx\#3\else\hyper@hash#3\fi
5218     }%
5219     \else
5220     \hyper@linkurl{\#2}\use@file\ifx\#3\else\hyper@hash#3\fi}%
5221     \fi
5222   }%
5223 }

5224 \def\Hy@ifStringEndsWith#1#2{%
5225   \begingroup
5226   \edef\x{\#1}%
5227   \@onelevel@sanitize\x
5228   \edef\x{.\x}%
5229   \edef\y{\#2}%
5230   \@onelevel@sanitize\y
5231   \edef\y{.\y}%

```

```

5232 \expandafter\def\expandafter\z\expandafter##\expandafter1\y##2\@nil{%
5233 \endgroup
5234 \ifx\relax##2\relax
5235 \expandafter\ltx@secondoftwo
5236 \else
5237 \expandafter\ltx@firstoftwo
5238 \fi
5239 }%
5240 \expandafter\expandafter\expandafter\z\expandafter\x\y\@nil
5241 }

5242 \def\Hy@StringLocalhost{localhost}
5243 \@onelevel@sanitize\Hy@StringLocalhost
5244 \def\Hy@CleanupFile#1{%
5245 \edef#1{#1}%
5246 \expandafter\Hy@@CleanupFile#1\hbox{//\hbox\@nil{#1}%
5247 }
5248 \def\Hy@@CleanupFile#1//#2/#3\hbox#4\@nil#5{%
5249 \begingroup
5250 \toks@{\endgroup}%
5251 \def\x{#1}%
5252 \ifx\x\@empty
5253 \def\x{#2}%
5254 \ifx\x\@empty
5255 \toks@{\endgroup\def#5{/#3}}%
5256 \else
5257 \@onelevel@sanitize\x
5258 \ifx\x\Hy@StringLocalhost
5259 \toks@{\endgroup\def#5{/#3}}%
5260 \fi
5261 \fi
5262 \fi
5263 \the\toks@
5264 }

```

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.

```

5265 \long\def\hyper@@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
5266 \long\def\@hyper@@@anchor#1\relax#2#3\relax{%
5267 \ifx\#1\%
5268 #2\Hy@Warning{Ignoring empty anchor}%
5269 \else
5270 \def\anchor@spot{#2#3}%
5271 \let\put@me@back\@empty
5272 \ifx\relax#2\relax
5273 \else
5274 \ifHy@nesting
5275 \else
5276 \ifcat a\noexpand#2\relax
5277 \else

```

```

5278     \ifcat 0\noexpand#2 \relax
5279     \else
5280 %       \typeout{Anchor start is not alphanumeric %
5281 %         on input line\the\inputlineno%
5282 %       }%
5283     \let\anchor@spot\@empty
5284     \def\put@me@back{#2#3}%
5285     \fi
5286   \fi
5287 \fi
5288 \fi
5289 \ifHy@activeanchor
5290   \anchor@spot
5291 \else
5292   \hyper@anchor{#1}%
5293 \fi
5294 \expandafter\put@me@back
5295 \fi
5296 \let\anchor@spot\@empty
5297 }
5298 \let\anchor@spot\ltx@empty

```

## 18 Option ‘destlabel’

```

5299 \ifHy@destlabel

\hyper@newdestlabel

5300 \def\hyper@newdestlabel#1#2{%
5301   \begingroup
5302     \Hy@safe@activetrue
5303     \edef\x{\endgroup
5304       \noexpand\@newl@bel{HyDL}{#1}{#2}%
5305     }%
5306     \x
5307 }%

\hyper@destlabel@hook

5308 \providecommand*\hyper@destlabel@hook{}%

\Hy@DestRename

5309 \newcommand*\Hy@DestRename[2]{%
5310   \ltx@ifundefined{HyDL!#1}{%
5311     \begingroup
5312       \Hy@safe@activetrue
5313       \edef\dest@name{#1}%
5314       \edef\label@name{#2}%
5315       \hyper@destlabel@hook
5316       \Hy@IsNotEmpty{dest@name}{%
5317         \Hy@IsNotEmpty{label@name}{%
5318           \global\expandafter
5319           \let\csname HyDL!#1\endcsname\ltx@empty
5320         \if@files
5321           \protected@write\@auxout{}{%

```

```

5322         \string\hyper@newdestlabel
5323         {#1}%
5324         {\label@name}%
5325     }%
5326     \fi
5327 }%
5328 }%
5329 \endgroup
5330 }{}%
5331 }%

```

#### \HyperDestRename

```

5332 \newcommand*{\HyperDestRename}[2]{%
5333     \AtBeginDocument{%
5334         \Hy@DestRename{#1}{#2}%
5335     }%
5336 }%
5337 \AtBeginDocument{%
5338     \let\HyperDestRename\Hy@DestRename
5339 }%

```

#### \Hy@IsNotEmpty

```

5340 \def\Hy@IsNotEmpty#1{%
5341     \ltx@ifundefined{#1}\ltx@gobble{%
5342         \expandafter\ifx\csname#1\endcsname\ltx@empty
5343         \expandafter\ltx@gobble
5344     \else
5345         \expandafter\ltx@firstofone
5346     \fi
5347 }%
5348 }%
5349 \ltx@GlobalAppendToMacro\label@hook{%
5350     \HyperDestRename\@currentHref\label@name
5351 }%

```

#### \HyperDestLabelReplace

```

5352 \def\HyperDestLabelReplace#1{%
5353     \ltx@ifundefined{HyDL@#1}{%
5354         #1%
5355     }{%
5356         \csname HyDL@#1\endcsname
5357     }%
5358 }%

```

#### \HyperDestNameFilter

```

5359 \let\HyperDestNameFilter\HyperDestLabelReplace
5360 \else

```

#### \hyper@newdestlabel

```

5361 \let\hyper@newdestlabel\ltx@gobbletwo

```

#### \HyperDestLabelReplace

```

5362 \let\HyperDestLabelReplace\ltx@firstofone

```

`\HyperDestRename`

```
5363 \let\HyperDestRename\ltx@gobbletwo
```

```
5364 \fi
```

```
5365 \Hy@DisableOption{destlabel}
```

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

```
5366 \AddToHook{include/before}
```

```
5367 {\immediate\write\@partaux{\string\providecommand\string\hyper@newdest-  
label[2]{}}}
```

```
5368 \AddToHook{begindocument}
```

```
5369 {\immediate\write\@mainaux{\string\providecommand\string\hyper@newdest-  
label[2]{}}}
```

## 19 Forms creation

Allow for creation of PDF or HTML forms. The effects here are limited somewhat by the need to support both output formats, so it may not be as clever as something which only wants to make PDF forms.

I (Sebastian) could not have started this without the encouragement of T V Raman.

### 19.1 Field flags

The field flags are organized in a bit set.

```
5370 \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

```
5371 \def\HyField@NewFlag#1#2{%
```

```
5372 \lowercase{\HyField@NewOption{#2}}%
```

```
5373 \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
```

```
5374 }
```

`\HyField@NewFlagOnly`

```
5375 \def\HyField@NewFlagOnly#1#2{%
```

```
5376 \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
```

```
5377 }
```

`\HyField@NewOption` #1: option name

```
5378 \def\HyField@NewOption#1{%
```

```
5379 \expandafter\newif\csname ifFld@#1\endcsname
```

```
5380 \define@key{Field}{#1}[true]{%
```

```
5381 \lowercase{\Field@boolkey{##1}}{#1}%
```



```

5382 }%
5383 }

```

`\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
5384 \def\HyField@NewBitsetFlag#1#2#3#4{%
5385   \begingroup
5386     \count@=#4\relax
5387     \advance\count@\m@ne
5388     \def\x##1{%
5389       \endgroup
5390       \expandafter\def\csname HyField@#3@#1\endcsname{##1}%
5391       \expandafter\ifx\csname HyField@#3@#1\endcsname\relax
5392         \expandafter\edef\csname HyField@#3@#1\endcsname{%
5393           (\number#4) #2%
5394         }%
5395       \else
5396         \expandafter\edef\csname HyField@#3@#1\endcsname{%
5397           \csname HyField@#3@#1\endcsname
5398           /#2%
5399         }%
5400       \fi
5401     }%
5402   \expandafter\x\expandafter{\the\count@}%
5403 }

```

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

```

5404 \def\HyField@UseFlag#1#2{%
5405   \lowercase{\HyField@@UseFlag{#2}}{#1}%
5406 }

```

`\HyField@@UseFlag`

```

5407 \def\HyField@@UseFlag#1#2{%
5408   \bitsetSetValue{HyField@#2}{%
5409     \csname HyField@#2@#1\endcsname
5410   }{%
5411     \csname ifFld@#1\endcsname 1\else 0\fi
5412   }%
5413 }

```

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

```

5414 \def\HyField@SetFlag#1#2{%
5415   \lowercase{\HyField@@SetFlag{#2}}{#1}%
5416 }

```

`\HyField@@SetFlag`

```

5417 \def\HyField@@SetFlag#1#2{%
5418   \bitsetSetValue{HyField@#2}{%
5419     \csname HyField@#2@#1\endcsname
5420   }{1}%
5421 }

```

\HyField@PrintFlags

```
5422 \def\HyField@PrintFlags#1#2{%
5423   \ifHy@verbose
5424     \begingroup
5425     \let\Hy@temp\@empty
5426     \let\MessageBreak\relax
5427     \expandafter\@for\expandafter\x\expandafter:\expandafter=%
5428     \bitsetGetSetBitList{HyField@#1}\do{%
5429       \edef\Hy@temp{%
5430         \Hy@temp
5431         \csname HyField@#1@\x\endcsname\MessageBreak
5432       }%
5433     }%
5434   \edef\x{\endgroup
5435     \noexpand\Hy@Info{%
5436       Field flags: %
5437       \expandafter\ifx\@car#1\@nil S\else/\fi
5438       #1 %
5439       \bitsetGetDec{HyField@#1} %
5440       (0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
5441       \Hy@temp
5442       for #2%
5443     }%
5444   }\x
5445 \fi
5446 }
```

### 19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```
5447 \HyField@NewFlag{Ff}{ReadOnly}{1}
5448 \HyField@NewFlag{Ff}{Required}{2}
5449 \HyField@NewFlag{Ff}{NoExport}{3}
```

“Table 8.75 Field flags specific to button fields”

```
5450 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
5451 \HyField@NewFlag{Ff}{Radio}{16}
5452 \HyField@NewFlag{Ff}{Pushbutton}{17}
5453 \HyField@NewFlag{Ff}{RadiosInUnison}{26}
```

“Table 8.77 Field flags specific to text fields”

```
5454 \HyField@NewFlag{Ff}{Multiline}{13}
5455 \HyField@NewFlag{Ff}{Password}{14}
5456 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
5457 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5458 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4
5459 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4
5460 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5
```

“Table 8.79 field flags specific to choice fields”

```
5461 \HyField@NewFlag{Ff}{Combo}{18}
5462 \HyField@NewFlag{Ff}{Edit}{19}
5463 \HyField@NewFlag{Ff}{Sort}{20}
5464 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4
5465 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
```

```
5466 \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.

```
5467 \newif\ifFld@popdown
5468 \define@key{Field}{popdown}[true]{%
5469 \lowercase{\Field@boolkey{#1}}{popdown}%
5470 }
```

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.

```
5471 \HyField@NewFlag{F}{Invisible}{1}
5472 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2
5473 \HyField@NewFlag{F}{Print}{3}% PDF 1.2
5474 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2
5475 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3
5476 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3
5477 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4
5478 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5
5479 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7

5480 \ifHy@pdfa
5481 \def\HyField@PDFAFFlagWarning#1#2{%
5482 \Hy@Warning{%
5483 PDF/A: Annotation flag `#1' must\MessageBreak
5484 be set to `#2'%
5485 }%
5486 }%
5487 \Fld@invisiblefalse
5488 \def\Fld@invisibletrue{%
5489 \HyField@PDFAFFlagWarning{invisible}{false}%
5490 }%
5491 \Fld@hiddenfalse
5492 \def\Fld@hiddentrue{%
5493 \HyField@PDFAFFlagWarning{hidden}{false}%
5494 }%
5495 \Fld@printtrue
5496 \def\Fld@printfalse{%
5497 \HyField@PDFAFFlagWarning{print}{true}%
5498 }%
5499 \Fld@nozoomtrue
5500 \def\Fld@nozoomfalse{%
5501 \HyField@PDFAFFlagWarning{nozoom}{true}%
5502 }%
5503 \Fld@norotatetrue
5504 \def\Fld@norotatefalse{%
5505 \HyField@PDFAFFlagWarning{norotate}{true}%
5506 }%
5507 \Fld@noviewfalse
5508 \def\Fld@noviewtrue{%
5509 \HyField@PDFAFFlagWarning{noview}{false}%
```

```

5510 }%
5511 \fi

```

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

```

5512 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
5513 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
5514 \HyField@NewFlag{Submit}{GetMethod}{4}
5515 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
5516 \HyField@NewFlagOnly{Submit}{XFDF}{6}
5517 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}
5518 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
5519 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}
5520 \HyField@NewFlag{Submit}{CanonicalFormat}{10}
5521 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
5522 \HyField@NewFlag{Submit}{ExclFKey}{12}
5523 \HyField@NewFlag{Submit}{EmbedForm}{14}

5524 \define@key{Field}{export}{%
5525   \lowercase{\def\Hy@temp{#1}}%
5526   \@ifundefined{Fld@export@\Hy@temp}{%
5527     \@onelevel@sanitize\Hy@temp
5528     \Hy@Error{%
5529       Unknown export format `'\Hy@temp'.\MessageBreak
5530       Known formats are `FDF', `HTML', `XFDF', and `PDF'%
5531     }\@ehc
5532   }%
5533   \let\Fld@export\Hy@temp
5534 }%
5535 }

5536 \def\Fld@export{fdf}
5537 \@namedef{Fld@export@fdf}{0}%
5538 \@namedef{Fld@export@html}{1}%
5539 \@namedef{Fld@export@xfdf}{2}%
5540 \@namedef{Fld@export@pdf}{3}%

```

### 19.1.2 Set submit flags

`\HyField@FlagsSubmit`

```

5541 \def\HyField@FlagsSubmit{%
5542   \bitsetReset{HyField@Submit}%
5543   \ifcase\@nameuse{Fld@export@\Fld@export} %
5544     % FDF
5545     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5546     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5547     \HyField@UseFlag{Submit}{IncludeAppendSaves}%
5548     \HyField@UseFlag{Submit}{IncludeAnnotations}%
5549     \HyField@UseFlag{Submit}{CanonicalFormat}%
5550     \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
5551     \HyField@UseFlag{Submit}{ExclFKey}%
5552     \HyField@UseFlag{Submit}{EmbedForm}%
5553   \or % HTML
5554     \HyField@SetFlag{Submit}{ExportFormat}%
5555     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5556     \HyField@UseFlag{Submit}{GetMethod}%

```

```

5557 \HyField@UseFlag{Submit}{SubmitCoordinates}%
5558 \HyField@UseFlag{Submit}{CanonicalFormat}%
5559 \or % XFDF
5560 \HyField@SetFlag{Submit}{XFDF}%
5561 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5562 \HyField@UseFlag{Submit}{SubmitCoordinates}%
5563 \HyField@UseFlag{Submit}{CanonicalFormat}%
5564 \or % PDF
5565 \HyField@SetFlag{Submit}{SubmitPDF}%
5566 \HyField@UseFlag{Submit}{GetMethod}%
5567 \fi
5568 \HyField@PrintFlags{Submit}{submit button field}%
5569 \bitsetIsEmpty{HyField@Submit}{%
5570 \let\Fld@submitflags\ltx@empty
5571 }{%
5572 \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}%
5573 }%
5574 }

```

### 19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

5575 \def\HyField@FlagsAnnot#1{%
5576 \bitsetReset{HyField@F}%
5577 \HyField@UseFlag{F}{Invisible}%
5578 \HyField@UseFlag{F}{Hidden}%
5579 \HyField@UseFlag{F}{Print}%
5580 \HyField@UseFlag{F}{NoZoom}%
5581 \HyField@UseFlag{F}{NoRotate}%
5582 \HyField@UseFlag{F}{NoView}%
5583 \HyField@UseFlag{F}{Locked}%
5584 \HyField@UseFlag{F}{ToggleNoView}%
5585 \HyField@UseFlag{F}{LockedContents}%
5586 \HyField@PrintFlags{F}{#1}%
5587 \bitsetIsEmpty{HyField@F}{%
5588 \let\Fld@annotflags\ltx@empty
5589 }{%
5590 \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}%
5591 }%
5592 }

```

### 19.1.4 Pushbutton field

\HyField@FlagsPushButton

```

5593 \def\HyField@FlagsPushButton{%
5594 \HyField@FlagsAnnot{push button field}%
5595 \bitsetReset{HyField@Ff}%
5596 \HyField@UseFlag{Ff}{ReadOnly}%
5597 \HyField@UseFlag{Ff}{Required}%
5598 \HyField@UseFlag{Ff}{NoExport}%
5599 \HyField@SetFlag{Ff}{PushButton}%
5600 \HyField@PrintFlags{Ff}{push button field}%
5601 \bitsetIsEmpty{HyField@Ff}{%

```

```

5602 \let\Fld@flags\ltx@empty
5603 }{%
5604 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5605 }%
5606 }

```

### 19.1.5 Check box field

\HyField@FlagsCheckBox

```

5607 \def\HyField@FlagsCheckBox{%
5608 \HyField@FlagsAnnot{check box field}%
5609 \bitsetReset{HyField@Ff}%
5610 \HyField@UseFlag{Ff}{ReadOnly}%
5611 \HyField@UseFlag{Ff}{Required}%
5612 \HyField@UseFlag{Ff}{NoExport}%
5613 \HyField@PrintFlags{Ff}{check box field}%
5614 \bitsetIsEmpty{HyField@Ff}{%
5615 \let\Fld@flags\ltx@empty
5616 }{%
5617 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5618 }%
5619 }

```

### 19.1.6 Radio button field

\HyField@FlagsRadioButton

```

5620 \def\HyField@FlagsRadioButton{%
5621 \HyField@FlagsAnnot{radio button field}%
5622 \bitsetReset{HyField@Ff}%
5623 \HyField@UseFlag{Ff}{ReadOnly}%
5624 \HyField@UseFlag{Ff}{Required}%
5625 \HyField@UseFlag{Ff}{NoExport}%
5626 \HyField@UseFlag{Ff}{NoToggleToOff}%
5627 \HyField@SetFlag{Ff}{Radio}%
5628 \HyField@UseFlag{Ff}{RadiosInUnison}%
5629 \HyField@PrintFlags{Ff}{radio button field}%
5630 \bitsetIsEmpty{HyField@Ff}{%
5631 \let\Fld@flags\ltx@empty
5632 }{%
5633 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5634 }%
5635 }

```

### 19.1.7 Text fields

\HyField@FlagsText

```

5636 \def\HyField@FlagsText{%
5637 \HyField@FlagsAnnot{text field}%
5638 \bitsetReset{HyField@Ff}%
5639 \HyField@UseFlag{Ff}{ReadOnly}%
5640 \HyField@UseFlag{Ff}{Required}%
5641 \HyField@UseFlag{Ff}{NoExport}%
5642 \HyField@UseFlag{Ff}{Multiline}%

```

```

5643 \HyField@UseFlag{Ff}{Password}%
5644 \HyField@UseFlag{Ff}{FileSelect}%
5645 \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5646 \HyField@UseFlag{Ff}{DoNotScroll}%
5647 \ifFld@comb
5648   \ifcase0\ifFld@multiline
5649     \else\ifFld@password
5650     \else\ifFld@fileselect
5651     \else 1\fi\fi\fi\relax
5652   \Hy@Error{%
5653     Field option `comb' cannot used together with\MessageBreak
5654     `multiline', `password', or `fileselect'%
5655   }\@ehc
5656 \else
5657   \HyField@UseFlag{Ff}{Comb}%
5658 \fi
5659 \fi
5660 \HyField@UseFlag{Ff}{RichText}%
5661 \HyField@PrintFlags{Ff}{text field}%
5662 \bitsetIsEmpty{HyField@Ff}{%
5663   \let\Fld@flags\ltx@empty
5664 }{%
5665   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5666 }%
5667 }

```

### 19.1.8 Choice fields

\HyField@FlagsChoice

```

5668 \def\HyField@FlagsChoice{%
5669   \HyField@FlagsAnnot{choice field}%
5670   \bitsetReset{HyField@Ff}%
5671   \HyField@UseFlag{Ff}{ReadOnly}%
5672   \HyField@UseFlag{Ff}{Required}%
5673   \HyField@UseFlag{Ff}{NoExport}%
5674   \HyField@UseFlag{Ff}{Combo}%
5675   \ifFld@combo
5676     \HyField@UseFlag{Ff}{Edit}%
5677   \fi
5678   \HyField@UseFlag{Ff}{Sort}%
5679   \HyField@UseFlag{Ff}{MultiSelect}%
5680   \ifFld@combo
5681     \ifFld@edit
5682       \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5683     \fi
5684   \fi
5685   \HyField@UseFlag{Ff}{CommitOnSelChange}%
5686   \HyField@PrintFlags{Ff}{choice field}%
5687   \bitsetIsEmpty{HyField@Ff}{%
5688     \let\Fld@flags\ltx@empty
5689   }{%
5690     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5691   }%
5692 }

```

## 19.2 Choice field

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

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

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

```

5693 \def\HyField@PDFChoices#1{%
5694   \begingroup
5695   \global\let\Fld@choices\ltx@empty
5696   \let\HyTmp@optlist\ltx@empty
5697   \let\HyTmp@optitem\relax
5698   \count@=0 %
5699   \kv@parse{#1}{%
5700     \Hy@pdfstringdef\kv@key\kv@key
5701     \ifx\kv@value\relax
5702       \ifnum\Hy@pdf@majorminor@version<103 % implementation note 122, PDF spec 1.7
5703         \xdef\Fld@choices{\Fld@choices(\kv@key)(\kv@key)}{%
5704           \else
5705             \xdef\Fld@choices{\Fld@choices(\kv@key)}{%
5706             \fi
5707           \else
5708             \Hy@pdfstringdef\kv@value\kv@value
5709             \xdef\Fld@choices{\Fld@choices(\kv@value)(\kv@key)}{%
5710             \fi
5711             \edef\HyTmp@optlist{%
5712               \HyTmp@optlist
5713               \HyTmp@optitem{\the\count@}{\kv@key}0%
5714             }%
5715             \advance\count@ by 1 %
5716             \@gobbletwo
5717           }%
5718           \xdef\Fld@choices{/Opt{\Fld@choices}}{%
5719           \ifFld@multiselect
5720             \HyField@@PDFChoices{DV}\Fld@default
5721             \HyField@@PDFChoices{V}\Fld@value
5722           \else
5723             \ifx\Fld@default\relax
5724             \else
5725               \pdfstringdef\Hy@gtemp\Fld@default
5726               \xdef\Fld@choices{\Fld@choices/DV(\Hy@gtemp)}{%
5727             \fi
5728             \ifx\Fld@value\relax
5729             \else
5730               \pdfstringdef\Hy@gtemp\Fld@value
5731               \xdef\Fld@choices{\Fld@choices/V(\Hy@gtemp)}{%
5732             \fi
5733             \fi
5734           \endgroup
5735 }
```

`\HyField@@PDFChoices`

```

5736 \def\HyField@@PDFChoices#1#2{%
5737   \ifx#2\relax
5738   \else
```



```

5739 \count@=0 %
5740 \def\HyTmp@optitem##1##2##3{%
5741   \def\HyTmp@key{##2}%
5742   \ifx\HyTmp@key\Hy@gtemp
5743     \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5744       \HyTmp@optlist
5745       \HyTmp@optitem{##1}{##2}1%
5746     }%
5747     \let\HyTmp@found=Y%
5748   \else
5749     \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5750       \HyTmp@optlist
5751       \HyTmp@optitem{##1}{##2}##3%
5752     }%
5753   \fi
5754 }%
5755 \expandafter\comma@parse\expandafter{#2}{%
5756   \pdfstringdef\Hy@gtemp\comma@entry
5757   \let\HyTmp@found=N %
5758   \expandafter\let\expandafter\HyTmp@optlist\expandafter\@empty
5759   \HyTmp@optlist
5760   \ifx\HyTmp@found Y%
5761     \advance\count@ by 1 %
5762   \else
5763     \@onelevel@sanitize\comma@entry
5764     \PackageWarning{hyperref}{%
5765       \string\ChoiceBox: Ignoring value `\'comma@entry',%
5766       \MessageBreak
5767       it cannot be found in the choices%
5768     }%
5769   \fi
5770   \@gobble
5771 }%
5772 \def\HyTmp@optitem##1##2##3{%
5773   \ifnum##3=1 %
5774     (##2)%
5775   \fi
5776 }%
5777 \ifcase\count@
5778 \or
5779   \xdef\Fld@choices{\Fld@choices/#1\HyTmp@optlist}%
5780 \else
5781   \xdef\Fld@choices{\Fld@choices/#1[\HyTmp@optlist]}%
5782 \ifx#1V%
5783   \def\HyTmp@optitem##1##2##3{%
5784     \ifnum##3=1 %
5785       \@firstofone{ ##1}%
5786     \fi
5787   }%
5788   \edef\HyTmp@optlist{\HyTmp@optlist}%
5789   \xdef\Fld@choices{%
5790     \Fld@choices
5791     /I\expandafter\@firstofone\HyTmp@optlist}%
5792 }%

```

```

5793     \fi
5794     \fi
5795 \fi
5796 }

```

## 19.3 Forms

\HyField@SetKeys

```

5797 \def\HyField@SetKeys{%
5798   \kvsetkeys{Field}%
5799 }

5800 \newif\ifFld@checked
5801 \newif\ifFld@disabled
5802 \Fld@checkedfalse
5803 \Fld@disabledfalse
5804 \newcount\Fld@menulength
5805 \newdimen\Fld@Width
5806 \newdimen\Fld@charsize
5807 \Fld@charsize=10\p@
5808 \def\Fld@maxlen{0}
5809 \def\Fld@align{0}
5810 \def\Fld@color{0 0 0 rg}
5811 \def\Fld@bcolor{1 1 1}
5812 \def\Fld@bordercolor{1 0 0}
5813 \def\Fld@bordersep{1\p@}
5814 \def\Fld@borderwidth{1}
5815 \def\Fld@borderstyle{S}
5816 \def\Fld@cbsymbol{4}
5817 \def\Fld@radiosymbol{H}
5818 \def\Fld@rotation{0}
5819 \def\Fld@Form{\@ifnextchar[{\@Form}{\@Form[]}}
5820 \def\Fld@endForm{\@endForm}
5821 \newif\ifForm@html
5822 \Form@htmlfalse
5823 \def\Fld@boolkey#1#2{%
5824   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5825 }
5826 \define@key{Form}{action}{%
5827   \hyper@normalise\Hy@DefFormAction{#1}%
5828 }
5829 \def\Hy@DefFormAction{\def\Fld@action}
5830 \def\Fld@enc@html{html}
5831 \define@key{Form}{encoding}{%
5832   \def\Hy@tempa{#1}%
5833   \ifx\Hy@tempa\enc@html
5834     \Form@htmltrue
5835     \def\Fld@export{html}%
5836   \else
5837     \Hy@Warning{%
5838       Form `encoding' key with \MessageBreak
5839       unknown value `#1'%
5840     }%
5841     \Form@htmlfalse

```

```

5842 \fi
5843 }
5844 \define@key{Form}{method}{%
5845 \lowercase{\def\Hy@temp{#1}}}%
5846 \@ifundefined{Form@method@\Hy@temp}{%
5847 \onelevel@sanitize\Hy@temp
5848 \Hy@Error{%
5849   Unknown method ``\Hy@temp'.\MessageBreak
5850   Known values are `post' and `get'%
5851 } \@ehc
5852 }{%
5853 \let\Form@method\Hy@temp
5854 \ifcase\@nameuse{Form@method@\Hy@temp} %
5855 \Fld@getmethodfalse
5856 \else
5857 \Fld@getmethodtrue
5858 \fi
5859 }%
5860 }
5861 \def\Form@method{}
5862 \@namedef{Form@method@post}{0}
5863 \@namedef{Form@method@get}{1}

5864 \newif\ifHyField@NeedAppearances
5865 \def\HyField@NeedAppearancesfalse{%
5866 \global\let\ifHyField@NeedAppearances\iffalse
5867 }
5868 \def\HyField@NeedAppearancetrue{%
5869 \global\let\ifHyField@NeedAppearances\iftrue
5870 }
5871 \HyField@NeedAppearancetrue
5872 \define@key{Form}{NeedAppearances}[true]{%
5873 \edef\Hy@tempa{#1}}%
5874 \ifx\Hy@tempa\Hy@true
5875 \HyField@NeedAppearancetrue
5876 \else
5877 \ifx\Hy@tempa\Hy@false
5878 \HyField@NeedAppearancesfalse
5879 \else
5880 \Hy@Error{%
5881   Unexpected value ``\Hy@tempa'.\MessageBreak
5882   of option `NeedAppearances' instead of\MessageBreak
5883   `true' or `false'%
5884 } \@ehc
5885 \fi
5886 \fi
5887 }
5888 \def\Field@boolkey#1#2{%
5889 \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5890 }
5891 \ifHy@texht
5892 \newtoks\Field@toks
5893 \Field@toks={ }%
5894 \def\Field@addtoks#1#2{%
5895 \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}}%

```

```

5896 \@@processme
5897 }%
5898 \else
5899 \def\Hy@WarnHTMLFieldOption#1{%
5900 \Hy@Warning{%
5901 HTML field option `#1'\MessageBreak
5902 is ignored%
5903 }%
5904 }%
5905 \fi
5906 \def\Fld@checkequals#1=#2=#3\\{%
5907 \def\@currDisplay{#1}%
5908 \ifx\\#2\\%
5909 \def\@currValue{#1}%
5910 \else
5911 \def\@currValue{#2}%
5912 \fi
5913 \expandafter\Hy@pdfstringdef\expandafter\@currValue\expandafter{\@currValue}%
5914 }
5915 \define@key{Field}{loc}{%
5916 \def\Fld@loc{#1}%
5917 }
5918 \define@key{Field}{checked}[true]{%
5919 \lowercase{\Field@boolkey{#1}}{checked}%
5920 }
5921 \define@key{Field}{disabled}[true]{%
5922 \lowercase{\Field@boolkey{#1}}{disabled}%
5923 }
5924 \ifHy@texht
5925 \define@key{Field}{accesskey}{%
5926 \Field@addtoks{accesskey}{#1}%
5927 }%
5928 \define@key{Field}{tabkey}{%
5929 \Field@addtoks{tabkey}{#1}%
5930 }%
5931 \else
5932 \define@key{Field}{accesskey}{%
5933 \Hy@WarnHTMLFieldOption{accesskey}%
5934 }%
5935 \define@key{Field}{tabkey}{%
5936 \Hy@WarnHTMLFieldOption{tabkey}%
5937 }%
5938 \fi
5939 \define@key{Field}{name}{%
5940 \def\Fld@name{#1}%
5941 }
5942 \let\Fld@altname\relax
5943 \define@key{Field}{altname}{%
5944 \def\Fld@altname{#1}%
5945 }
5946 \let\Fld@mappingname\relax
5947 \define@key{Field}{mappingname}{%
5948 \def\Fld@mappingname{#1}%
5949 }

```

```

5950 \define@key{Field}{width}{%
5951   \def\Fld@width{#1}%
5952   \Field@Width#1\setbox0=\hbox{m}%
5953 }
5954 \define@key{Field}{maxlen}{%
5955   \def\Fld@maxlen{#1}%
5956 }
5957 \define@key{Field}{menulength}{%
5958   \Fld@menulength=#1\relax
5959 }
5960 \define@key{Field}{height}{%
5961   \def\Fld@height{#1}%
5962 }
5963 \define@key{Field}{charsize}{%
5964   \setlength{\Fld@charsize}{#1}%
5965 }
5966 \define@key{Field}{borderwidth}{%
5967   \Hy@defaultbp\Fld@borderwidth{#1}%
5968 }
5969 \def\Hy@defaultbp#1#2{%
5970   \begingroup
5971   \afterassignment\Hy@defaultbpAux
5972   \dimen@=#2bp\relax{#1}{#2}%
5973 }
5974 \def\Hy@defaultbpAux#1\relax#2#3{%
5975   \ifx!#1!%
5976     \endgroup
5977     \def#2{#3}%
5978   \else
5979     \edef\x{\endgroup
5980       \def\noexpand#2{%
5981         \strip@pt\dimexpr\dimen@*800/803\relax
5982       }%
5983     }\x
5984   \fi
5985 }%
5986 \define@key{Field}{borderstyle}{%
5987   \let\Hy@temp\Fld@borderstyle
5988   \def\Fld@borderstyle{#1}%
5989   \Hy@Match\Fld@borderstyle{}{%
5990     ^[SDBIU]$%
5991   }{}{%
5992     \Hy@Warning{%
5993       Invalid value ` \@pdfborderstyle'\MessageBreak
5994       for option `pdfborderstyle'. Valid values:\MessageBreak
5995       \space\space S (Solid), D (Dashed), B (Beveled),\MessageBreak
5996       \space\space I (Inset), U (Underline)\MessageBreak
5997       Option setting is ignored%
5998     }%
5999     \let\Fld@borderstyle\Hy@temp
6000   }%
6001 }
6002 \define@key{Field}{bordersep}{%
6003   \def\Fld@bordersep{#1}%

```

```

6004 }
6005 \define@key{Field}{default}{%
6006   \Hy@pdfstringdef\Fld@default{#1}%
6007 }
6008 \define@key{Field}{align}{%
6009   \def\Fld@align{#1}%
6010 }
6011 \define@key{Field}{value}{%
6012   \Hy@pdfstringdef\Fld@value{#1}%
6013 }
6014 \define@key{Field}{checkboxsymbol}{%
6015   \Fld@DingDef\Fld@cbsymbol{#1}%
6016 }
6017 \define@key{Field}{radiosymbol}{%
6018   \Fld@DingDef\Fld@radiosymbol{#1}%
6019 }
6020 \def\Fld@DingDef#1#2{%
6021   \let\Fld@temp\ltx@empty
6022   \Fld@@@DingDef#2\ding{ }\@nil
6023   \let#1\Fld@temp
6024 }
6025 \def\Fld@@@DingDef#1\ding#2#3\@nil{%
6026   \expandafter\def\expandafter\Fld@temp\expandafter{%
6027     \Fld@temp
6028     #1%
6029   }%
6030   \ifx\\#3\\%
6031     \expandafter\@gobble
6032   \else
6033     \begingroup
6034     \lccode`0=#2\relax
6035     \lowercase{\endgroup
6036       \expandafter\def\expandafter\Fld@temp\expandafter{%
6037         \Fld@temp
6038         0%
6039       }%
6040     }%
6041     \expandafter\@firstofone
6042   \fi
6043   {%
6044     \Fld@@@DingDef#3\@nil
6045   }%
6046 }

6047 \define@key{Field}{rotation}{%
6048   \def\Fld@rotation{#1}%
6049 }

6050 \define@key{Field}{backgroundcolor}{%
6051   \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
6052 }
6053 \define@key{Field}{bordercolor}{%
6054   \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
6055 }
6056 \define@key{Field}{color}{%

```

```

6057 \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
6058 }

6059 \let\Fld@onclick@code\ltx@empty
6060 \let\Fld@format@code\ltx@empty
6061 \let\Fld@validate@code\ltx@empty
6062 \let\Fld@calculate@code\ltx@empty
6063 \let\Fld@keystroke@code\ltx@empty
6064 \let\Fld@onfocus@code\ltx@empty
6065 \let\Fld@onblur@code\ltx@empty
6066 \let\Fld@onmousedown@code\ltx@empty
6067 \let\Fld@onmouseup@code\ltx@empty
6068 \let\Fld@onenter@code\ltx@empty
6069 \let\Fld@onexit@code\ltx@empty
6070 \def\Hy@temp#1{%
6071   \expandafter\Hy@@temp\csname Fld@#1@code\endcsname{#1}%
6072 }
6073 \def\Hy@@temp#1#2{%
6074   \ifHy@pdfa
6075     \define@key{Field}{#2}{%
6076       \Hy@Error{%
6077         PDF/A: Additional action `#2' is prohibited%
6078       }\@ehc
6079     }%
6080   \else
6081     \define@key{Field}{#2}{%
6082       \def#1{##1}%
6083     }%
6084   \fi
6085 }
6086 \Hy@temp{keystroke}
6087 \Hy@temp{format}
6088 \Hy@temp{validate}
6089 \Hy@temp{calculate}
6090 \Hy@temp{onfocus}
6091 \Hy@temp{onblur}
6092 \Hy@temp{onenter}
6093 \Hy@temp{onexit}

6094 \let\Fld@calculate@sortkey\ltx@empty
6095 \define@key{Field}{calculatesortkey}[1]{%
6096   \def\Fld@calculate@sortkey{#1}%
6097 }

6098 \ifHy@texht
6099   \def\Hy@temp#1{%
6100     \define@key{Field}{#1}{%
6101       \Field@addtoks{#1}{##1}%
6102     }%
6103   }%
6104 \else
6105   \def\Hy@temp#1{%
6106     \define@key{Field}{#1}{%
6107       \Hy@WarnHTMLFieldOption{#1}%
6108     }%
6109   }%

```

```

6110 \fi
6111 \Hy@temp{ondblclick}
6112 \Hy@temp{onmousedown}
6113 \Hy@temp{onmouseup}
6114 \Hy@temp{onmouseover}
6115 \Hy@temp{onmousemove}
6116 \Hy@temp{onmouseout}
6117 \Hy@temp{onkeydown}
6118 \Hy@temp{onkeyup}
6119 \Hy@temp{onselect}
6120 \Hy@temp{onchange}
6121 \Hy@temp{onkeypress}
6122 \ifHy@texht
6123   \define@key{Field}{onclick}{%
6124     \Field@addtoks{onclick}{#1}%
6125   }%
6126 \else
6127   \ifHy@pdfa
6128     \define@key{Field}{onclick}{%
6129       \Hy@Error{%
6130         PDF/A: Action `onclick' is prohibited%
6131       } \@ehc
6132     }%
6133   \else
6134     \define@key{Field}{onclick}{%
6135       \def\Fld@onclick@code{#1}%
6136     }%
6137   \fi
6138 \fi

6139 \DeclareRobustCommand\TextField{%
6140   \@ifnextchar[{\@TextField}{\@TextField[]}%
6141 }
6142 \DeclareRobustCommand\ChoiceMenu{%
6143   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
6144 }
6145 \DeclareRobustCommand\CheckBox{%
6146   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
6147 }
6148 \DeclareRobustCommand\PushButton{%
6149   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
6150 }
6151 \DeclareRobustCommand\Gauge{%
6152   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
6153 }
6154 \DeclareRobustCommand\Submit{%
6155   \@ifnextchar[{\@Submit}{\@Submit[]}%
6156 }
6157 \DeclareRobustCommand\Reset{%
6158   \@ifnextchar[{\@Reset}{\@Reset[]}%
6159 }
6160 \def\LayoutTextField#1#2{% label, field
6161   \def\Hy@temp{#1}%
6162   \ifx\Hy@temp\@empty
6163     #2%

```



```

6164 \else
6165   #1 #2%
6166 \fi
6167 }
6168 \def\LayoutChoiceField#1#2{% label, field
6169 \def\Hy@temp{#1}%
6170 \ifx\Hy@temp\@empty
6171   #2%
6172 \else
6173   #1 #2%
6174 \fi
6175 }
6176 \def\LayoutCheckField#1#2{% label, field
6177 \def\Hy@temp{#1}%
6178 \ifx\Hy@temp\@empty
6179   #2%
6180 \else
6181   #1 #2%
6182 \fi
6183 }
6184 \def\LayoutPushButtonField#1{% button
6185   #1%
6186 }
6187 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6188 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6189 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6190 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6191 \def\MakeButtonField#1{%
6192   \sbox0{%
6193     \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
6194   }%
6195   \@tempdima\ht0 %
6196   \advance\@tempdima by \Fld@borderwidth bp %
6197   \advance\@tempdima by \Fld@borderwidth bp %
6198   \ht0\@tempdima
6199   \@tempdima\dp0 %
6200   \advance\@tempdima by \Fld@borderwidth bp %
6201   \advance\@tempdima by \Fld@borderwidth bp %
6202   \dp0\@tempdima
6203   \box0\relax
6204 }
6205 \def\DefaultHeightofSubmit{14pt}
6206 \def\DefaultWidthofSubmit{2cm}
6207 \def\DefaultHeightofReset{14pt}
6208 \def\DefaultWidthofReset{2cm}
6209 \def\DefaultHeightofCheckBox{\normalbaselineskip}
6210 \def\DefaultWidthofCheckBox{\normalbaselineskip}
6211 \def\DefaultHeightofChoiceMenu{\normalbaselineskip}
6212 \def\DefaultWidthofChoiceMenu{\normalbaselineskip}
6213 \def\DefaultHeightofText{\normalbaselineskip}
6214 \def\DefaultHeightofTextMultiline{4\normalbaselineskip}
6215 \def\DefaultWidthofText{3cm}
6216 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
6217 \def\DefaultOptionsofReset{print,name=Reset,noexport}

```

```

6218 \def\DefaultOptionsofPushButton{print}
6219 \def\DefaultOptionsofCheckBox{print}
6220 \def\DefaultOptionsofText{print}

```

Default options for the types of \ChoiceMenu.

```

6221 \def\DefaultOptionsofListBox{print}
6222 \def\DefaultOptionsofComboBox{print,edit,sort}
6223 \def\DefaultOptionsofPopdownBox{print}
6224 \def\DefaultOptionsofRadio{print,notoggletooff}

```

## 20 Setup

```

6225 \ifHy@hyperfigures
6226 \Hy@Info{Hyper figures ON}%
6227 \else
6228 \Hy@Info{Hyper figures OFF}%
6229 \fi
6230 \ifHy@nesting
6231 \Hy@Info{Link nesting ON}%
6232 \else
6233 \Hy@Info{Link nesting OFF}%
6234 \fi
6235 \ifHy@hyperindex
6236 \Hy@Info{Hyper index ON}%
6237 \else
6238 \Hy@Info{Hyper index OFF}%
6239 \fi
6240 \ifHy@backref
6241 \Hy@Info{backreferencing ON}%
6242 \else
6243 \Hy@Info{backreferencing OFF}%
6244 \fi
6245 \ifHy@colorlinks
6246 \Hy@Info{Link coloring ON}%
6247 \else
6248 \Hy@Info{Link coloring OFF}%
6249 \fi
6250 \ifHy@ocgcolorlinks
6251 \Hy@Info{Link coloring with OCG ON}%
6252 \else
6253 \Hy@Info{Link coloring with OCG OFF}%
6254 \fi
6255 \ifHy@pdfa
6256 \Hy@Info{PDF/A mode ON}%
6257 \else
6258 \Hy@Info{PDF/A mode OFF}%
6259 \fi

```

## 21 Low-level utility macros

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

```

6260 \edef\hyper@hash{\string#}

```

```

6261 \edef\hyper@tilde{\string~}
6262 \edef\hyper@quote{\string"}

```

Support \label before \begin{document}.

```

6263 \def\@currentHref{Doc-Start}
6264 \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.

```

6265 \Hy@AtBeginDocument{%
6266   \Hy@pdfstringtrue
6267   \PDF@SetupDoc
6268   \let\PDF@SetupDoc\@empty
6269   \Hy@DisableOption{pdfpagescrop}%
6270   \Hy@DisableOption{pdfpagemode}%
6271   \Hy@DisableOption{pdfnonfullscreenpagemode}%
6272   \Hy@DisableOption{pdfdirection}%
6273   \Hy@DisableOption{pdfviewarea}%
6274   \Hy@DisableOption{pdfviewclip}%
6275   \Hy@DisableOption{pdfprintarea}%
6276   \Hy@DisableOption{pdfprintclip}%
6277   \Hy@DisableOption{pdfprintscaling}%
6278   \Hy@DisableOption{pdfduplex}%
6279   \Hy@DisableOption{pdfpicktraybypdfsize}%
6280   \Hy@DisableOption{pdfprintpagerange}%
6281   \Hy@DisableOption{pdfnumcopies}%
6282   \Hy@DisableOption{pdfstartview}%
6283   \Hy@DisableOption{pdfstartpage}%
6284   \Hy@DisableOption{pdftoolbar}%
6285   \Hy@DisableOption{pdfmenubar}%
6286   \Hy@DisableOption{pdfwindowui}%
6287   \Hy@DisableOption{pdffitwindow}%
6288   \Hy@DisableOption{pdfcenterwindow}%
6289   \Hy@DisableOption{pdfdisplaydoctitle}%
6290   \Hy@DisableOption{pdfpagelayout}%
6291   \Hy@DisableOption{pdflang}%
6292   \Hy@DisableOption{baseurl}%
6293   \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
6294   \Hy@pdfstringfalse
6295 }

```

## 22 Localized nullifying of package

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

```

6296 \def\NoHyper{%
6297   \def\hyper@link@[##1]##2##3##4{##4\Hy@xspace@end}%
6298   \def\hyper@anchor##1##2{##2\Hy@xspace@end}%
6299   \global\let\hyper@livelink\hyper@link
6300   \gdef\hyper@link##1##2##3{##3\Hy@xspace@end}%
6301   \let\hyper@anchor\ltx@gobble

```

```

6302 \let\hyper@anchorstart\ltx@gobble
6303 \def\hyper@anchorend{\Hy@xspace@end}%
6304 \let\hyper@linkstart\ltx@gobbletwo
6305 \def\hyper@linkend{\Hy@xspace@end}%
6306 \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%
6307 \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
6308 \let\Hy@backout\@gobble
6309 }
6310 \def\stop@hyper{%
6311 \def\hyper@link@[##1]##2##3##4{##4\Hy@xspace@end}%
6312 \let\Hy@backout\@gobble
6313 \let\hyper@@anchor\ltx@gobble
6314 \def\hyper@link##1##2##3{##3\Hy@xspace@end}%
6315 \let\hyper@anchor\ltx@gobble
6316 \let\hyper@anchorstart\ltx@gobble
6317 \def\hyper@anchorend{\Hy@xspace@end}%
6318 \let\hyper@linkstart\ltx@gobbletwo
6319 \def\hyper@linkend{\Hy@xspace@end}%
6320 \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%
6321 \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
6322 }
6323 \def\endNoHyper{%
6324 \global\let\hyper@link\hyper@livelink
6325 }
6326 \endpackage

```

## 23 Package nohyperref

This package is introduced by Sebastian Rahtz.

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

Some low-level commands:

```

6327 (*nohyperref)
6328 \RequirePackage{letltxmacro}[2008/06/13]
6329 \let\hyper@@anchor\@gobble
6330 \def\hyper@link#1#2#3{#3}%
6331 \let\hyper@anchorstart\@gobble
6332 \let\hyper@anchorend\@empty
6333 \let\hyper@linkstart\@gobbletwo
6334 \let\hyper@linkend\@empty
6335 \def\hyper@linkurl#1#2{#1}%
6336 \def\hyper@linkfile#1#2#3{#1}%
6337 \def\hyper@link@[#1]#2#3{#1}%
6338 \let\PDF@SetupDoc\@empty
6339 \let\PDF@FinishDoc\@empty
6340 \def\nohyperpage#1{#1}

```

Some top-level commands:

```

6341 \def\Acrobatmenu#1#2{\leavevmode#2}
6342 \let\pdfstringdefDisableCommands\@gobbletwo
6343 \let\texorpdfstring\@firstoftwo

```

```

6344 \let\pdfbookmark\@undefined
6345 \newcommand\pdfbookmark[3][]{ }
6346 \let\phantomsection\@empty
6347 \let\hypersetup\@gobble
6348 \let\hyperbaseurl\@gobble
6349 \newcommand*\href[3][]{#3}
6350 \let\hyperdef\@gobbletwo
6351 \let\hyperlink\@gobble
6352 \let\hypertarget\@gobble
6353 \def\hyperref{%
6354   \ifnextchar\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
6355 }
6356 \long\def\@gobbleopt[#1]{ }
6357 \let\hyperpage\@empty
6358 \nohyperref

```

## 24 The Mangling Of Aux and Toc Files

Some extra tests so that the hyperref package may be removed or added to a document without having to remove .aux and .toc files (this section is by David Carlisle) All the code is delayed to `\begin{document}` change 2023-08-13: with a new format it is no longer needed to handle different `\newlabel` definitions. The code can be removed completely later.

```

6359 (*package)
6360 \if@t@r\fmtversion{2023-06-01}{ }
6361 {
6362   \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 `\newlabel` is defined to cope with the extra arguments. change 2022-03-28: removed the code for `\contentsline`, it is no longer needed as `\contentsline` has now always four arguments.

```

6363   \if@filesw
6364     \immediate\write\@auxout{%
6365       \string\providecommand\string\HyperFirstAtBeginDocument{%
6366         \string\AtBeginDocument}^^J%
6367       \string\HyperFirstAtBeginDocument{%
6368         \string\ifx\string\hyper@anchor\string\@undefined^^J%
6369         \string\global\string\let\string\oldnewlabel\string\newlabel^^J%
6370         \string\gdef\string\newlabel\string#1\string#2{%
6371           \string\newlabelxx{\string#1}\string#2}^^J%
6372         \string\gdef\string\newlabelxx%
6373           \string#1\string#2\string#3\string#4\string#5\string#6{%
6374           \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.

```

6375       \string\AtEndDocument{%
6376         \string\ifx\string\hyper@anchor\string\@undefined^^J%
6377         \string\let\string\newlabel\string\oldnewlabel^^J%
6378         \string\fi%
6379       }^^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.

```

6380      \string\fi%
6381      }^^J%
6382      \string\global\string\let\string\hyper@last\relax^^J%
6383      \string\gdef\string\HyperFirstAtBeginDocument\string#1{\string#1}%
6384      }%
6385      \fi
6386      \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. change 2022-03-28: removed the test for an old toc. \contentsline has now always four arguments.

```

6387      \ifx\hyper@last@\undefined
6388      \def\newlabel#1#2{\@newl@bel r{#1}{#2}{}}}%
6389      \fi
6390  }
6391 }

```

## 25 Title strings

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

```

6392 \ifHy@pdfusetitle
6393 \let\HyOrg@title\title
6394 \let\HyOrg@author\author
6395 \def\title{\@ifnextchar{\Hy@scanopttitle}{\Hy@scantitle}}%
6396 \def\Hy@scanopttitle#1{%
6397   \gdef\Hy@title{#1}%
6398   \HyOrg@title{#1}%
6399 }%
6400 \def\Hy@scantitle#1{%
6401   \gdef\Hy@title{#1}%
6402   \HyOrg@title{#1}%
6403 }%
6404 \def\author{\@ifnextchar{\Hy@scanoptauthor}{\Hy@scanauthor}}%
6405 \def\Hy@scanoptauthor#1{%
6406   \gdef\Hy@author{#1}%
6407   \HyOrg@author{#1}%
6408 }%
6409 \def\Hy@scanauthor#1{%
6410   \gdef\Hy@author{#1}%
6411   \HyOrg@author{#1}%
6412 }%

```

The case, that \title, or \author are given before hyperref is loaded, is much more complicate, because LaTeX initializes the macros \@title and \@author with LaTeX error and warning messages.

```

6413 \begingroup
6414 \def\process@me#1\@nil#2{%
6415   \expandafter\let\expandafter\x\csname @#2\endcsname
6416   \edef\y{\expandafter\strip@prefix\meaning\x}%

```

```

6417 \def\c##1##2\@nil{%
6418 \ifx\\##1\\%
6419 \else
6420 \expandafter\gdef\csname Hy@#2\expandafter\endcsname
6421 \expandafter{x}%
6422 \fi
6423 }%
6424 \expandafter\c\y\relax#1\@nil
6425 }%
6426 \expandafter\process@me\string\@latex@\@nil{title}%
6427 \expandafter\process@me\string\@latex@\@nil{author}%
6428 \endgroup
6429 \fi
6430 \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.

A possible <sup>1</sup> removes its argument.

```

6431 \def\Hy@UseMaketitleString#1{%
6432 \ltx@ifundefined{Hy@#1}{-}{%
6433 \begingroup
6434 \let\Hy@saved@hook\pdfstringdefPreHook
6435 \pdfstringdefDisableCommands{%
6436 \expandafter\let\expandafter\\ \csname Hy@newline@#1\endcsname
6437 \let\newline\\%
6438 \def\and{; }%
6439 \let\thanks\@gobble%
6440 }%
6441 \expandafter\ifx\csname @pdf#1\endcsname\@empty
6442 \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
6443 \csname Hy@#1\endcsname\@empty
6444 }%
6445 \fi
6446 \global\let\pdfstringdefPreHook\Hy@saved@hook
6447 \endgroup
6448 }%
6449 }
6450 \def\Hy@newline@title#1{ #1}
6451 \def\Hy@newline@author#1{, #1}
6452 \def\Hy@UseMaketitleInfos{%
6453 \Hy@UseMaketitleString{title}%
6454 \Hy@UseMaketitleString{author}%
6455 }

```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.

## 27 Every page

```
6456 \RequirePackage{atbegshi}[2007/09/09]
6457 \let\Hy@EveryPageHook\ltx@empty
6458 \let\Hy@EveryPageBoxHook\ltx@empty
6459 \let\Hy@FirstPageHook\ltx@empty
6460 \AtBeginShipout{%
6461   \Hy@EveryPageHook
6462   \ifx\Hy@EveryPageBoxHook\ltx@empty
6463     \else
6464       \setbox\AtBeginShipoutBox=\vbox{%
6465         \offinterlineskip
6466         \Hy@EveryPageBoxHook
6467         \box\AtBeginShipoutBox
6468       }%
6469     \fi
6470 }
6471 \ltx@iffileloaded{hpdftex.def}{%
6472   \AtBeginShipout{%
6473     \Hy@FirstPageHook
6474     \global\let\Hy@FirstPageHook\ltx@empty
6475   }%
6476 }{%
6477   \AtBeginShipoutFirst{%
6478     \Hy@FirstPageHook
6479   }%
6480 }
6481 \g@addto@macro\Hy@FirstPageHook{%
6482   \PDF@FinishDoc
6483   \global\let\PDF@FinishDoc\ltx@empty
6484 }
```

### 27.1 PDF /PageLabels

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

```
6485 \ifHy@pdfpagelabels
6486   \begingroup\expandafter\expandafter\expandafter\endgroup
6487   \expandafter\ifx\csname thepage\endcsname\relax
6488     \Hy@pdfpagelabelsfalse
6489     \Hy@WarningNoLine{%
6490       Option `pdfpagelabels' is turned off\MessageBreak
6491       because \string\thepage\space is undefined%
6492     }%
6493     \csname fi\endcsname
6494     \csname iffalse\expandafter\endcsname
6495   \fi
```

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



```

6496 \def\thispdfpagelabel#1{%
6497   \gdef\HyPL@thisLabel{#1}%
6498 }%
6499 \global\let\HyPL@thisLabel\relax

```

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

```

6500 \let\HyPL@Labels\ltx@empty

```

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

```

6501 \newcount\Hy@abspage
6502 \Hy@abspage=0 %

```

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

```

6503 \def\HyPL@LastType{init}%
6504 \def\HyPL@LastNumber{0}%
6505 \let\HyPL@LastPrefix\ltx@empty

```

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

```

6506 \def\HyPL@arabic{D}%
6507 \def\HyPL@Roman{R}%
6508 \def\HyPL@roman{r}%
6509 \def\HyPL@Alph{A}%
6510 \def\HyPL@alph{a}%

6511 \let\HyPL@SlidesSetPage\ltx@empty
6512 \ltx@ifclassloaded{slides}{%
6513   \def\HyPL@SlidesSetPage{%
6514     \advance\c@page\ltx@one
6515     \ifnum\value{page}>\ltx@one
6516       \protected@edef\HyPL@SlidesOptionalPage{%
6517         \Hy@SlidesFormatOptionalPage{thepage}%
6518       }%
6519     \else
6520       \let\HyPL@SlidesOptionalPage\ltx@empty
6521     \fi
6522     \advance\c@page-\ltx@one
6523     \def\HyPL@page{%
6524       \csname the\Hy@SlidesPage\endcsname
6525       \HyPL@SlidesOptionalPage
6526     }%
6527   }%
6528 }{}%

```

**\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.

```

6529 \def\HyPL@EveryPage{%
6530   \begingroup
6531   \ifx\HyPL@thisLabel\relax
6532     \let\HyPL@page\thepage
6533     \HyPL@SlidesSetPage
6534   \else
6535     \let\HyPL@page\HyPL@thisLabel
6536     \global\let\HyPL@thisLabel\relax

```

```

6537 \fi
6538 \let\HyPL@Type\relax
6539 \ifnum\c@page>0 %
6540 \ifx\HyPL@SlidesSetPage\ltx@empty
6541 \expandafter\HyPL@CheckThePage\HyPL@page\@nil
6542 \fi
6543 \fi
6544 \let\Hy@temp Y%
6545 \ifx\HyPL@Type\HyPL@LastType
6546 \else
6547 \let\Hy@temp N%
6548 \fi
6549 \ifx\HyPL@Type\relax
6550 \pdfstringdef\HyPL@Prefix{\HyPL@page}%
6551 \else
6552 \pdfstringdef\HyPL@Prefix\HyPL@Prefix
6553 \fi
6554 \ifx\HyPL@Prefix\HyPL@LastPrefix
6555 \else
6556 \let\Hy@temp N%
6557 \fi
6558 \if Y\Hy@temp
6559 \advance\c@page by -1 %
6560 \ifnum\HyPL@LastNumber=\the\c@page\relax
6561 \else
6562 \let\Hy@temp N%
6563 \fi
6564 \Hy@StepCount\c@page
6565 \fi
6566 \if N\Hy@temp
6567 \ifx\HyPL@Type\relax
6568 \HyPL@StorePageLabel{/P(\HyPL@Prefix)}%
6569 \else
6570 \HyPL@StorePageLabel{%
6571 \ifx\HyPL@Prefix\@empty
6572 \else
6573 /P(\HyPL@Prefix)%
6574 \fi
6575 /S/\csname HyPL\HyPL@Type\endcsname
6576 \ifnum\the\c@page=1 %
6577 \else
6578 \space/St \the\c@page
6579 \fi
6580 }%
6581 \fi
6582 \fi
6583 \xdef\HyPL@LastNumber{\the\c@page}%
6584 \global\let\HyPL@LastType\HyPL@Type
6585 \global\let\HyPL@LastPrefix\HyPL@Prefix
6586 \endgroup
6587 \Hy@GlobalStepCount\Hy@abspage
6588 }%

```

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

```

6589 \def\HyPL@CheckThePage#1\@nil{%
6590   \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
6591 }%

```

`\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`.

```

6592 \def\HyPL@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
6593   \def\Hy@tempa{#4}%
6594   \def\Hy@tempb{\csname\endcsname\c@page}%
6595   \ifx\Hy@tempa\Hy@tempb
6596     \expandafter\ifx\csname HyPL#3\endcsname\relax
6597     \else
6598       \def\HyPL@Type{#3}%
6599       \def\HyPL@Prefix{#2}%
6600       \fi
6601     \else
6602       \begingroup
6603         \let\Hy@next\endgroup
6604         \let\HyPL@found\@undefined
6605         \def\arabic{\HyPL@Format{arabic}}%
6606         \def\Roman{\HyPL@Format{Roman}}%
6607         \def\roman{\HyPL@Format{roman}}%
6608         \def\Alph{\HyPL@Format{Alph}}%
6609         \def\alph{\HyPL@Format{alph}}%
6610         \protected@edef\Hy@temp{#1}%
6611         \ifx\HyPL@found\relax
6612           \toks@{\expandafter{\Hy@temp}}%
6613           \edef\Hy@next{\endgroup
6614             \noexpand\HyPL@@@CheckThePage\the\toks@
6615             \noexpand\HyPL@found\relax\noexpand\@nil
6616           }%
6617         \fi
6618       \Hy@next
6619     \fi
6620 }%

```

`\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`.

```

6621 \def\HyPL@Format#1#2{%
6622   \ifx\HyPL@found\@undefined
6623     \expandafter\ifx\csname c@#2\endcsname\c@page
6624       \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
6625     \else
6626       \expandafter\noexpand\csname#1\endcsname{#2}%
6627     \fi
6628   \else
6629     \expandafter\noexpand\csname#1\endcsname{#2}%
6630   \fi
6631 }%

```

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

```
6632 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
6633   \def\Hy@tempa{#3}%
6634   \def\Hy@tempb{\HyPL@found\relax}%
6635   \ifx\Hy@tempa\Hy@tempb
6636     \def\HyPL@Type{#2}%
6637     \def\HyPL@Prefix{#1}%
6638   \fi
6639 }%
```

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

```
6640 \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`.

```
6641 \def\HyPL@Useless{0<</S/D>>}%
6642 \@onelevel@sanitize\HyPL@Useless
```

`\HyPL@SetPageLabels` The page labels are written to the PDF cataloge. The command `\Hy@PutCatalog` is defined in the driver files.

```
6643 \def\HyPL@SetPageLabels{%
6644   \@onelevel@sanitize\HyPL@Labels
6645   \ifx\HyPL@Labels\@empty
6646     \else
6647     \ifx\HyPL@Labels\HyPL@Useless
6648     \else
6649       \Hy@PutCatalog{/PageLabels<</Nums[\HyPL@Labels]>>}%
6650     \fi
6651   \fi
6652 }%
```

```
6653 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
6654 \fi
```

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

```
6655 \Hy@DisableOption{pdfpagelabels}
6656 \</package>
```

### 27.1.1 pdfTeX and VTeX

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

`\Hy@PutCatalog`

```
6657 <*\pdfTeX>
6658 \pdf@ifdraftmode{%
6659   \let\Hy@PutCatalog\ltx@gobble
6660 }{%
6661   \let\Hy@PutCatalog\pdfcatalog
6662 }
6663 </pdfTeX>
```

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

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

```

6664 <*vtex>
6665 \providecommand*\XR@ext}{pdf}
6666 \edef\Hy@VTeXversion{%
6667   \ifx\VTeXversion\@undefined
6668     \z@
6669   \else
6670     \ifx\VTeXversion\relax
6671       \z@
6672     \else
6673       \VTeXversion
6674     \fi
6675   \fi
6676 }
6677 \begingroup
6678   \ifnum\Hy@VTeXversion<660 %
6679     \gdef\Hy@PutCatalog#1{%
6680       \Hy@WarningNoLine{%
6681         VTeX 6.59g or above required for pdfpagelabels%
6682       }%
6683     }%
6684   \else
6685     \gdef\Hy@PutCatalog#1{%
6686       \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
6687     }%
6688     \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
6689       \ifx\#2\%
6690         \else
6691           \immediate\special{!pdfpagelabels #2}%
6692         \fi
6693       }%
6694     \fi
6695 \endgroup
6696 </vtex>

6697 <*pdftex|vtex>

```

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

```

6698 \ifHy@pdfpagelabels
6699   \def\HyPL@StorePageLabel#1{%
6700     \toks@\expandafter{\HyPL@Labels}%
6701     \xdef\HyPL@Labels{%
6702       \the\toks@
6703       \the\Hy@abspace<<#1>>%
6704     }%
6705   }%

```

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.

```

6706 \RequirePackage{atveryend}[2009/12/07]%
6707 \AtVeryEndDocument{%
6708   \HyPL@SetPageLabels
6709 }%

6710 \fi
6711 </pdfTeX | vTeX>

```

### 27.1.2 xetex

```

6712 <*xetex>
6713 \HyPsd@LoadUnicode
6714 \Hy@unicodetrue
6715 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
6716 \else
6717   \let\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
6718 \fi
6719 \HyPsd@LoadStringEnc
6720 \define@key{Hyp}{unicode}[true]{%
6721   \Hy@boolkey{unicode}{#1}%
6722   \ifHy@unicode
6723   \else
6724     \Hy@Warning{%
6725       XeTeX driver only supports `unicode=true'. Ignoring\MessageBreak
6726       option setting `unicode=false'%
6727     }%
6728   \Hy@unicodetrue
6729 \fi
6730 }
6731 \define@key{Hyp}{pdfencoding}{%
6732   \edef\HyPsd@temp{#1}%
6733   \ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
6734     \let\HyPsd@pdfencoding\HyPsd@temp
6735   \else
6736     \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
6737       \let\HyPsd@pdfencoding\HyPsd@temp
6738     \else
6739       \Hy@Warning{%
6740         XeTeX driver only supports\MessageBreak
6741         `pdfencoding=unicode|auto'. Ignoring option\MessageBreak
6742         setting `pdfencoding=\HyPsd@temp'%
6743       }%
6744     \fi
6745   \fi
6746 }
6747 \let\HyXeTeX@CheckUnicode\relax

```

Since 2016 (x)dvipdfmx has a special to control the spacing of annotation borders. So let's make use of it:

```

6748 \def\setpdfinkmargin#1{%
6749   \begingroup
6750     \setlength{\dimen@}{#1}%
6751     \special{dvipdfmx:config g \strip@pt\dimen@}%
6752   \endgroup}
6753 </xetex>

```

set the pdf version

```
6754 < *dvipdfm | xetex>
6755 \special{pdf:majorversion \Hy@pdf@majorversion}
6756 \special{pdf:minorversion \Hy@pdf@minorversion}
6757 < /dvipdfm | xetex>
```

### 27.1.3 pdfmarkbase, dvipdfm, xetex

```
6758 < *pdfmarkbase>
6759 \begingroup
6760 \@ifundefined{headerps@out}{-}{%
6761   \toks@ \expandafter{\Hy@FirstPageHook}%
6762   \xdef\Hy@FirstPageHook{%
6763     \noexpand\headerps@out{%
6764       systemdict /pdfmark known%
6765       {%
6766         userdict /?pdfmark systemdict /exec get put%
6767       }{%
6768         userdict /?pdfmark systemdict /pop get put %
6769         userdict /pdfmark systemdict /cleartomark get put%
6770       }%
6771       ifelse%
6772     }%
6773   \the\toks@
6774 }%
6775 }%
6776 \endgroup
6777 < /pdfmarkbase>
```

\Hy@PutCatalog

```
6778 < dvipdfm | xetex> \def\Hy@PutCatalog#1{\@pdfm@mark{docview <<#1>>}}
6779 < *pdfmarkbase>
6780 \def\Hy@PutCatalog#1{%
6781   \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} <<#1>>}}%
6782 }
6783 < /pdfmarkbase>

6784 < *pdfmarkbase | dvipdfm | xetex>
6785 \ifHy@pdfpagelabels
```

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

```
6786 \def\HyPL@StorePageLabel#1{%
6787   \if@filesw
6788     \begingroup
6789     \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
6790     \immediate\write\@mainaux{%
6791       \string\HyPL@Entry{\Hy@tempa}%
6792     }%
6793   \endgroup
6794   \fi
6795 }%
```

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.

```

6796 \Hy@AtBeginDocument{%
6797   \if@filesw
6798     \immediate\write\@mainaux{%
6799       \string\providecommand\string*\string\HyPL@Entry[1]{}%
6800     }%
6801   \fi
6802   \ifx\HyPL@Labels\@empty
6803     \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
6804   \else
6805     \HyPL@SetPageLabels
6806   \fi
6807   \let\HyPL@Entry\@gobble
6808 }%

\HyPL@Entry
6809 \def\HyPL@Entry#1{%
6810   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
6811     \HyPL@Labels
6812     #1%
6813   }%
6814 }%

6815 \fi
6816 </pdfmarkbase | dvipdfm | xetex>
6817 <*\packageEnd>

6818 \ifx\MaybeStopEarly\relax
6819 \else
6820   \Hy@stoppedearlytrue
6821   \expandafter\MaybeStopEarly
6822 \fi
6823 \Hy@stoppedearlyfalse

```

## 28 Automated L<sup>A</sup>T<sub>E</sub>X hypertext cross-references

Anything which can be referenced advances some counter; we overload this to put in a hypertext starting point (with no visible anchor), and make a note of that for later use in `\label`. This will fail badly if `\theH<name>` does not expand to a sensible reference. This means that classes or package which introduce new elements need to define an equivalent `\theH<name>` for every `\the<name>`. We do make a trap to make `\theH<name>` be the same as `\arabic{<name>}`, if `\theH<name>` is not defined, but this is not necessarily a good idea. Alternatively, the ‘naturalnames’ option uses whatever L<sup>A</sup>T<sub>E</sub>X provides, which may be useable. But then its up to you to make sure these are legal PDF and HTML names. The ‘hypertextnames=false’ option just makes up arbitrary names.

All the shenanigans is to make sure section numbers etc are always arabic, separated by dots. Who knows how people will set up `\@currentlabel`? If they put spaces in, or brackets (quite legal) then the hypertext processors will get upset.

But this is flaky, and open to abuse. Styles like `subeqn` will mess it up, for starters. Appendices are an issue, too. We just hope to cover most situations. We can at least cope with the standard sectioning structure, allowing for `\part` and `\chapter`.



Start with a fallback for equations

```

6824 \def\Hy@CounterExists#1{%
6825   \begingroup\expandafter\expandafter\expandafter\endgroup
6826   \expandafter\ifx\csname c@#1\endcsname\relax
6827     \expandafter\@gobble
6828   \else
6829     \begingroup\expandafter\expandafter\expandafter\endgroup
6830     \expandafter\ifx\csname the#1\endcsname\relax
6831       \expandafter\expandafter\expandafter\@gobble
6832     \else
6833       \expandafter\expandafter\expandafter\@firstofone
6834     \fi
6835   \fi
6836 }
6837 \Hy@CounterExists{section}{%
6838   \providecommand\theHequation{\theHsection.\arabic{equation}}}%
6839 }
6840 \providecommand\theHequation{\arabic{equation}}}%
6841 \Hy@CounterExists{part}{%
6842   \providecommand\theHpart{\arabic{part}}}%
6843 }
6844 \ltx@ifundefined{thechapter}{%
6845   \providecommand\theHsection   {\arabic{section}}}%
6846   \providecommand\theHfigure    {\arabic{figure}}}%
6847   \providecommand\theHtable     {\arabic{table}}}%
6848 }{%
6849   \providecommand\theHchapter    {\arabic{chapter}}}%
6850   \providecommand\theHfigure     {\theHchapter.\arabic{figure}}}%
6851   \providecommand\theHtable      {\theHchapter.\arabic{table}}}%
6852   \providecommand\theHsection    {\theHchapter.\arabic{section}}}%
6853 }
6854 \providecommand\theHsubsection   {\theHsection.\arabic{subsection}}
6855 \providecommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
6856 \providecommand\theHparagraph    {\theHsubsubsection.\arabic{paragraph}}
6857 \providecommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
6858 \providecommand\theHtheorem      {\theHsection.\arabic{theorem}}
6859 \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.

6860 \let\H@item\item
6861 \newcounter{Item}
6862 \def\theHItem{\arabic{Item}}
6863 \def\item{%
6864   \@hyper@itemfalse
6865   \if@nmbrlist\@hyper@itemtrue\fi
6866   \H@item
6867 }

6868 \providecommand\theHenumi   {\theHItem}
6869 \providecommand\theHenumii  {\theHItem}
6870 \providecommand\theHenumiii {\theHItem}
6871 \providecommand\theHenumiv  {\theHItem}
6872 \providecommand\theHHfootnote {\arabic{Footnote}}

```

```

6873 \providecommand\theHmpfootnote{\arabic{mpfootnote}}
6874 \@ifundefined{theHHmpfootnote}{%
6875   \let\theHHmpfootnote\theHHfootnote
6876 }{}

```

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.

```

6877 \let\H@refstepcounter\refstepcounter
6878 \edef\name@of@eq{equation}%

```

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. change 2022-04-22: removed test for the slide counter and for the equation name. change 2022-05-02: added the new boolean set by `\LinkTargetOn/\LinkTargetOff`

```

6879 \newif\if@hyper@item
6880 \newif\if@skiphyperref
6881 \@hyper@itemfalse
6882 \@skiphyperreffalse
6883 \ExplSyntaxOn
6884 \def\refstepcounter#1{%
6885   \legacy_if:nF {Hy@pdfstring}
6886   {
6887     \H@refstepcounter{#1}%
6888     \bool_lazy_and:nnT
6889       { \l__hyp_target_create_bool }
6890       { ! \legacy_if_p:n{@skiphyperref} }
6891     {
6892       \legacy_if:nTF {@hyper@item}
6893       {
6894         \stepcounter{Item}%
6895         \hyper@refstepcounter{Item}%
6896         \@hyper@itemfalse
6897       }
6898       {
6899         \hyper@refstepcounter{#1}%
6900       }
6901     }
6902   }
6903 }
6904 \ExplSyntaxOff
6905 \let\Hy@saved@refstepcounter\refstepcounter

```

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

```

6906 \newif\ifmeasuring@\measuring@false
6907 \newcommand\Hy@ifnotmeasuring[1]{#1}
6908 \AddToHook{package/amsmath/after}
6909 {
6910   \renewcommand\Hy@ifnotmeasuring[1]
6911   {\ifmeasuring@ \else #1\fi}
6912 }

```

\hyper@refstepcounter

```

6913 \def\hyper@refstepcounter#1{%
6914   \HyCnt@ProvideTheHCounter{#1}%
6915   \hyper@makecurrent{#1}%
6916   \Hy@ifnotmeasuring
6917   {\Hy@raisedlink{%
6918     \hyper@anchorstart{\@currentHref}\hyper@anchorend
6919   }}%
6920 }

```

\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.

```

6921 \def\HyCnt@ProvideTheHCounter#1{%
6922   \@ifundefined{theH#1}{%
6923     \expandafter\def\csname theH#1\endcsname{}%
6924     \def\Hy@temp{\@elt{#1}}%
6925     \ltx@onelevel@sanitize\Hy@temp
6926     \let\HyOrg@elt\@elt
6927     \edef\@elt{%
6928       \noexpand\HyCnt@LookForParentCounter
6929       \expandafter\noexpand\csname theH#1\endcsname
6930     }%
6931     \cl@ckpt
6932     \let\@elt\HyOrg@elt
6933     \expandafter
6934     \ltx@LocalAppendToMacro\csname theH#1\endcsname\expandafter\endcsname
6935     \expandafter{%
6936       \expandafter\@arabic\csname c@#1\endcsname
6937     }%
6938   }{}%
6939 }

```

\Hy@LookForParentCounter

```

6940 \def\HyCnt@LookForParentCounter#1#2{%
6941   \expandafter\let\expandafter\Hy@temp@A\csname cl@#2\endcsname
6942   \ltx@ifundefined{cl@#2}{%
6943   }{%
6944     \ltx@onelevel@sanitize\Hy@temp@A
6945     \edef\Hy@temp@A{%
6946       \noexpand\in@{\Hy@temp}{\Hy@temp@A}%
6947     }\Hy@temp@A
6948     \ifin@
6949     \ltx@ifundefined{theH#2}{%
6950       \expandafter\ltx@LocalAppendToMacro\expandafter#1%
6951       \expandafter{%
6952         \expandafter\@arabic\csname c@#2\endcsname.%
6953       }%
6954     }{}%

```

```

6955     \expandafter\ltx@LocalAppendToMacro\expandafter#1%
6956     \expandafter{%
6957         \csname theH#2\endcsname.%
6958     }%
6959 }%
6960 \fi
6961 }%
6962 }

```

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`.

```

6963 \begingroup\expandafter\expandafter\expandafter\endgroup
6964 \expandafter\ifx\csname chapter\endcsname\relax
6965   \def\Hy@chapterstring{section}%
6966 \else
6967   \def\Hy@chapterstring{chapter}%
6968 \fi
6969 \def\Hy@appendixstring{appendix}
6970 \def\Hy@chapapp{\Hy@chapterstring}
6971 \ltx@ifundefined{appendix}{%
6972 }{%
6973   \let\HyOrg@appendix\appendix
6974   \def\Hy@AlphNoErr#1{%
6975     \ifnum\value{#1}>26 %
6976       Alph\number\value{#1}%
6977     \else
6978       \ifnum\value{#1}<1 %
6979         Alph\number\value{#1}%
6980       \else
6981         \Alph{#1}%
6982       \fi
6983     \fi
6984   }%
6985   \def\appendix{%
6986     \ltx@ifundefined{chapter}{%
6987       \gdef\theHsection{\Hy@AlphNoErr{section}}%
6988     }{%
6989       \gdef\theHchapter{\Hy@AlphNoErr{chapter}}%
6990     }%
6991     \xdef\Hy@chapapp{\Hy@appendixstring}%
6992     \HyOrg@appendix
6993   }%
6994 }

```

`\Hy@Test@alph`

```

6995 \def\Hy@Test@alph#1{%
6996   \ifcase#1\or
6997     a\or b\or c\or d\or e\or f\or g\or h\or i\or j\or
6998     k\or l\or m\or n\or o\or p\or q\or r\or s\or t\or

```

```

6999   u\or v\or w\or x\or y\or z%
7000   \else
7001     \@ctrerr
7002   \fi
7003 }

```

`\Hy@Test@Alph`

```

7004 \def\Hy@Test@Alph#1{%
7005   \ifcase#1\or
7006     A\or B\or C\or D\or E\or F\or G\or H\or I\or J\or
7007     K\or L\or M\or N\or O\or P\or Q\or R\or S\or T\or
7008     U\or V\or W\or X\or Y\or Z%
7009   \else
7010     \@ctrerr
7011   \fi
7012 }

```

We define a hook to allow to overwrite the next destination name.

```

7013 \NewHook{__hyp/target/setname }
7014 \define@key{Hyp}{next-anchor}{%
7015   \AddToHookNext{__hyp/target/setname}%
7016   {\Hy@MakeCurrentHref{#1}}%
7017 }

```

`\hyper@makecurrent` Because of Babel mucking around, nullify `\textlatin` when making names. And `\@number` because of babel's `lrbabel.def`. change 2021-08-15: For new formats we add a hook which allows to overwrite the name of the next destination.

```

7018 \def\hyper@makecurrent#1{%
7019   \begingroup
7020     \Hy@safe@activestrue
7021     \edef\Hy@param{#1}%
7022     \ifx\Hy@param\Hy@chapterstring
7023       \let\Hy@param\Hy@chapapp
7024     \fi
7025     \ifHy@hypertextnames
7026       \let\@number\@firstofone
7027       \def\@fnsymbol##1{\fnsymbol\number##1}%
7028       \def\@arabic##1{\number##1}%
7029       \ifx\@alph\Hy@Test@alph
7030       \else
7031         \def\@alph{alph\number}%
7032       \fi
7033       \ifx\@Alph\Hy@Test@Alph
7034       \else
7035         \def\@Alph{Alph\number}%
7036       \fi
7037     \ifHy@naturalnames
7038       \let\textlatin\@firstofone
7039       \xdef\HyperGlobalCurrentHref{\csname the#1\endcsname}%
7040     \else
7041       \xdef\HyperGlobalCurrentHref{%
7042         \csname
7043           the%
7044           \expandafter\ifx\csname theH#1\endcsname\relax\else H\fi

```

```

7045      #1%
7046      \endcsname
7047    }%
7048  \fi
7049  \xdef\HyperGlobalCurrentHref{%
7050    \Hy@param.\expandafter\strip@prefix\meaning\HyperGlobalCurrentHref
7051  }%
7052  \else
7053    \Hy@GlobalStepCount\Hy@linkcounter
7054    \xdef\HyperGlobalCurrentHref{\Hy@param.\the\Hy@linkcounter}%
7055  \fi
7056  \endgroup
7057  \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
7058  \ifHy@localanchorname
7059    \let\@currentHref\HyperLocalCurrentHref
7060  \else
7061    \global\let\@currentHref\HyperGlobalCurrentHref
7062  \fi
7063  \UseHook{__hyp/target/setname}%
7064 }

```

`\Hy@MakeCurrentHref`

```

7065 \def\Hy@MakeCurrentHref#1{%
7066   \edef\HyperLocalCurrentHref{#1}%
7067   \@onelevel@sanitize\HyperLocalCurrentHref
7068   \global\let\HyperGlobalCurrentHref\HyperLocalCurrentHref
7069   \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
7070   \ifHy@localanchorname
7071     \let\@currentHref\HyperLocalCurrentHref
7072   \else
7073     \global\let\@currentHref\HyperGlobalCurrentHref
7074   \fi
7075 }

```

`\Hy@MakeCurrentHrefAuto` This command is e.g. used to create destinations for unnumbered sections and chapters. For new formats we add a hook which allows to overwrite the name of the next destination.

```

7076   \def\Hy@MakeCurrentHrefAuto#1{%
7077     \Hy@GlobalStepCount\Hy@linkcounter
7078     \Hy@MakeCurrentHref{#1.\the\Hy@linkcounter}%
7079     \UseHook{__hyp/target/setname}}

```

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

```

7080 \def\@currentHlabel{\@currentHref}

```

## 29 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.

```

7081 \def\hypergetref#1{\getrefbykeydefault{#1}{}{??}}
7082 \def\hypergetpageref#1{\getrefbykeydefault{#1}{page}{0}}

```

## 30 Package varwidth support

2023-11-07: varwidth needs a special configuration point to insert its handler.  
We use a socket for this.

```
7083 \@if@t@r\fmtversion{2023-11-01}
7084 {
7085   \AddToHook{package/varwidth/after}
7086   {
7087     \NewSocketPlug{hyp/raisedlink}{varwidth}{\@vwid@wrap{#1}}
7088     \appto\@vwid@setup{\AssignSocketPlug{hyp/raisedlink}{varwidth}}
7089   }
7090 }
```

## 31 Package titlesec and titletoc support

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

Package titlesec support:

```
7091 \@ifpackageloaded{titlesec}{%
7092   \def\ttl@Hy@steplink#1{%
7093     \Hy@MakeCurrentHrefAuto{#1*}%
7094     \edef\ttl@Hy@saveanchor{%
7095       \noexpand\Hy@raisedlink{%
7096         \noexpand\hyper@anchorstart{\@currentHref}%
7097         \noexpand\hyper@anchorend
7098         \def\noexpand\ttl@Hy@SavedCurrentHref{\@currentHref}%
7099         \noexpand\ttl@Hy@PatchSaveWrite
7100       }%
7101     }%
7102   }%
7103   \def\ttl@Hy@PatchSaveWrite{%
7104     \begingroup
7105     \toks@ \expandafter{\ttl@savewrite}%
7106     \edef\x{\endgroup
7107       \def\noexpand\ttl@savewrite{%
7108         \let\noexpand\@currentHref
7109         \noexpand\ttl@Hy@SavedCurrentHref
7110         \the\toks@
7111       }%
7112     }%
7113   \x
7114 }%
7115 \def\ttl@Hy@refstepcounter#1{%
7116   \let\ttl@b\Hy@raisedlink
7117   \def\Hy@raisedlink##1{%
7118     \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
7119   }%
7120   \refstepcounter{#1}%
7121   \let\Hy@raisedlink\ttl@b
7122 }%
7123 }
```

## 32 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

```

7124 \ifpackageloaded{longtable}{%
7125 \ifundefined{hyper@nopatch@longtable}{%
7126 \begingroup
7127 \def\y{\LT@array}%
7128 \@ifdefined{scr@LT@array}{%
7129 \ifundefined{adl@LT@array}{\def\y{\adl@LT@array}}%
7130 }\def\y{\scr@LT@array}%
7131 \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
7132 \expandafter\endgroup
7133 \expandafter\def\y[##1]##2{%
7134 \H@refstepcounter{#1}%
7135 \hyper@makecurrent{table}%
7136 \let\Hy@LT@currentHref\@currentHref
7137 #2\@sharp###4%
7138 }%
7139 }%
7140 \expandafter\expandafter\expandafter\x\y[{#1}]{#2}\@nil

```

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

```

7141 \begingroup
7142 \def\x#1\ifvoid\LT@foot#2\fi#3\@nil{%
7143 \endgroup
7144 \def\LT@start{%
7145 #1%
7146 \ifvoid\LT@foot#2\fi
7147 \let\@currentHref\Hy@LT@currentHref
7148 \Hy@raisedlink{%
7149 \hyper@anchorstart{\@currentHref}\hyper@anchorend
7150 }%
7151 #3%
7152 }%
7153 }%
7154 \expandafter\x\LT@start\@nil
7155 }{}
7156 }{}

```

## 33 Equations

We want to make the whole equation a target anchor. Overload `equation`, temporarily reverting to original `\refstepcounter`. If, however, it is in AMS math, we do not do anything, as the tag mechanism is used there (see section 41). change 2023-06-14: previously hyperref contained code that moved the equation incrementation inside the math environment to avoid specials outside and a wrong vertical spacing of equation environments. Since 2021/08/24 this code is now in `amsmath` directly and so has been removed here.



This and more math related patches can be suppressed with `\hyper@nopatch@mathenv`

```
7157 \let\new@refstepcounter\refstepcounter
7158 \let\H@equation\equation
7159 \let\H@endequation\endequation
7160 \@ifundefined{hyper@nopatch@mathenv}{%
```

If `amsmath` was loaded before the following does nothing. If `amsmath` is loaded later it will overwrite the definition again, which is what is wanted here. If it is not loaded the new definition of `equation` will be used.

```
7161 \@ifpackageloaded{amsmath}{}%
7162 \def\equation{%
7163 \let\refstepcounter\H@refstepcounter
7164 \H@equation
7165 \hyper@makecurrent{equation}}%
```

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

```
7166 \mathopen{%
7167 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}}%
7168 }%
7169 \let\refstepcounter\new@refstepcounter
7170 }%
7171 \def\endequation{%
7172 \ifx\Hy@raisedlink\ltx@empty
7173 \hyper@anchorend
7174 \else
7175 \mathclose{\Hy@raisedlink{\hyper@anchorend}}}%
7176 \fi
7177 \H@endequation
7178 }%
7179 }
7180 }
```

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.

```
7181 \newif\if@eqnstar
7182 \@eqnstarfalse
7183 \let\H@eqnarray\eqnarray
7184 \let\H@endeqnarray\endeqnarray
7185 \@ifundefined{hyper@nopatch@mathenv}{%
7186 \def\eqnarray{%
7187 \let\Hy@reserved@a\relax
7188 \def\@currentHref{}%
7189 \H@eqnarray
7190 \if@eqnstar
7191 \else
7192 \ifx\\\@currentHref\%
7193 \else
7194 \hyper@makecurrent{equation}%
7195 \mathopen{%
7196 \Hy@raisedlink{%
7197 \hyper@anchorstart{\@currentHref}\hyper@anchorend
```

```

7198     }%
7199     }%
7200   \fi
7201 \fi
7202 }
7203 \def\endeqnarray{%
7204   \H@endeqnarray
7205 }
7206 }{}

```

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.

```

7207 \@namedef{eqnarray*}{%
7208   \protected\def\@eqnrcr{\nonumber\@seqnrcr}\@eqnstarttrue\eqnarray
7209 }
7210 \@namedef{endeqnarray*}{%
7211   \nonumber\endeqnarray\@eqnstarfalse
7212 }

```

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

```

7213 \ltx@ifundefined{subeqnarray}{}{%
7214   \let\H@subeqnarray\subeqnarray
7215   \let\H@endsubeqnarray\endsubeqnarray
7216   \def\subeqnarray{%
7217     \let\Hy@reserved@a\relax
7218     \H@subeqnarray
7219     \hyper@makecurrent{equation}%
7220     \hyper@anchorstart{\@currentHref}{\hyper@anchorend
7221   }%
7222   \def\endsubeqnarray{%
7223     \H@endsubeqnarray
7224   }%
7225   \providecommand\theHsubequation{\theHequation\alph{subequation}}%
7226 }

```

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

```

7227 \def\make@stripped@name#1{%
7228   \begingroup
7229   \escapechar\m@ne
7230   \global\let\newname\@empty
7231   \protected@edef\Hy@tempa{#1}%
7232   \edef\@tempb{%
7233     \noexpand\@tfor\noexpand\Hy@tempa:=%
7234     \expandafter\strip@prefix\meaning\Hy@tempa
7235   }%
7236   \@tempb\do{%
7237     \if{\Hy@tempa\else
7238     \if{\Hy@tempa\else
7239     \xdef\newname{\newname\Hy@tempa}%
7240   \fi
7241   \fi
7242   }%

```

```

7243 \endgroup
7244 }

Support for amsmath's subequations: change 2023-06-14: we use hooks to no
longer depend on amsmath being loaded before hyperref. Once amsmath sets the
theH-representation itself this can go completely.

7245 \AddToHook{cmd/subequations/before}
7246 {%
7247   \stepcounter{equation}%
7248   \protected@edef\theHparentequation{\theHequation}%
7249   \addtocounter{equation}{-1}%
7250 }
7251
7252 \AddToHook{cmd/subequations/after}
7253 {%
7254   \def\theHequation{\theHparentequation\alph{equation}}%
7255   \ignorespaces
7256 }

```

## 34 Support for theorems

Hyperlink support in theorems has to resolve typically three problems:

- The `\refstepcounter` can be issued too early. The target it produces can be separated from the theorem and then the link is wrong (see testfiles thm-005-xx). It can also affect spacing. This means that it is better if this `\refstepcounter` doesn't produce a target.
- The natural place for the target (before the theorem label) is normally not printed directly but delayed to the next paragraph begin (through the `\item` code or by other means). and `\label` commands used directly at the begin of the environment are perhaps processed *before* the target is created and so do not know the correct `\@currentHref` value. That means that if `\refstepcounter` does not produce a target, it should nevertheless update the target name.
- The target should be placed (in horizontal mode) before the theorem label to avoid side effects on spacing. For this a suitable place must be found depending on the actual theorem definition.

Theorems typically issue the `\refstepcounter` in `\@thm`. The first two points can therefore be resolved by patching this command and replacing the `\refstepcounter`.

The last point is the most complicated. Simply moving at the point `\refstepcounter` is encountered into the next para hook doesn't work, as this can be in a header if there is a page break. The next item hook doesn't work for the same reason, also not every theorem environment actually uses `\item` (e.g. `amsthm` and `ams-classes`). Patching (or using a hook) `\@begintheorem` doesn't work either as `ntheorem` redefines this on the fly.

For now we move the target creation into the item hook. This is not perfect, as it can end up in header or be too much to the right, but there is not really a better place.

The patch will not apply to `cleveref`, this means that with `cleveref` there can be a page break between target and theorem but beside this it hopefully it does the right thing. `\@currentHref` is updated directly for labels set before the actual start of the paragraph. The target can be behind a target created from a following list, so we restore `\@currentHref` just in case. Later we could use sockets here (or hope that the packages take this over).

```

7257 \newcommand\Hy@theorem@refstepcounter[1]
7258 {%
7259   \H@refstepcounter{#1}%
7260   \hyper@makecurrent{#1}%
7261   \global\let\Hy@dth@currentHref\@currentHref
7262   \Hy@theorem@makelinktarget{\Hy@dth@currentHref}%
7263 }
7264 \newcommand\Hy@theorem@makelinktarget[1]
7265 {
7266   \AddToHookNext{cmd/item/before}
7267   {\AddToHookNext{para/begin}
7268     {\let\Hy@tempa\@currentHref
7269       \MakeLinkTarget*{#1}% \Hy@dth@currentHref
7270       \global\let\@currentHref\Hy@tempa
7271     }%
7272   }%
7273 }
```

`amsthm` doesn't issue an item in the theorem, we delay the target into `\deferred@thm@head` and hope that it always begins a paragraph.

```

7274 \AddToHook{begindocument}
7275 {%
7276   \@ifundefined{deferred@thm@head}{}
7277   {%
7278     \renewcommand\Hy@theorem@makelinktarget[1]
7279     {%
7280       \AddToHookNext{cmd/deferred@thm@head/before}
7281       {\AddToHookNext{para/begin}
7282         {\let\Hy@tempa\@currentHref
7283           \MakeLinkTarget*{#1}%
7284           \global\let\@currentHref\Hy@tempa
7285         }%
7286       }%
7287     }%
7288   }%
7289 }
7290 \@ifundefined{hyper@nopatch@thm}{%
7291   \AtBeginDocument{%
7292     \@ifpackageloaded{cleveref}
7293     {\AddToHook{cmd/@thm/before}{\ifhmode\unskip\fi}}
7294     {%
7295       \ifpatchable\@thm{\refstepcounter}
7296       {\patchcmd\@thm{\refstepcounter}{\Hy@theorem@refstepcounter}{}{}}
7297       {}%
7298     }}}}{}%
```

## 35 Footnotes

The footnote mark is a hypertext link, and the text is a target. We separately number the footnotes sequentially through the text, separately from whatever labels the text assigns. Too hard to keep track of markers otherwise. If the raw forms `\footnotemark` and `\footnotetext` are used, force them to use un-hyper original. If `\hyper@nopath@footnote` is defined we don't patch but assume that additions links to footnotes is handled elsewhere.

```

7299 \ifundefined{hyper@nopath@footnote}{%
7300 \ifHy@hyperfootnotes
7301 \newcounter{Hfootnote}%
7302 \let\H@@footnotetext\@footnotetext
7303 \let\H@@footnotemark\@footnotemark
7304 \def\@xfootnotenext[#1]{%
7305 \begingroup
7306 \csname c@\@mpfn\endcsname #1\relax
7307 \unrestored@protected@xdef\@thefnmark{\thempfn}%
7308 \endgroup
7309 \ifx\@footnotetext\@mpfootnotetext
7310 \expandafter\H@@mpfootnotetext
7311 \else
7312 \expandafter\H@@footnotetext
7313 \fi
7314 }%
7315 \def\@xfootnotemark[#1]{%
7316 \begingroup
7317 \c@footnote #1\relax
7318 \unrestored@protected@xdef\@thefnmark{\thefnmark}%
7319 \endgroup
7320 \H@@footnotemark
7321 }%
7322 \let\H@@mpfootnotetext\@mpfootnotetext
7323 \long\def\@mpfootnotetext#1{%
7324 \H@@mpfootnotetext{%
7325 \ifHy@nesting
7326 \expandafter\ltx@firstoftwo
7327 \else
7328 \expandafter\ltx@secondoftwo
7329 \fi
7330 {%
7331 \expandafter\hyper@@@anchor\expandafter{%
7332 \Hy@footnote@currentHref
7333 }\ignorespaces #1}%
7334 }{%
7335 \Hy@raisedlink{%
7336 \expandafter\hyper@@@anchor\expandafter{%
7337 \Hy@footnote@currentHref
7338 }\relax}%
7339 }\ignorespaces #1%
7340 }%
7341 }%
7342 }%
7343 \long\def\@footnotetext#1{%

```

```

7344 \H@@footnotetext{%
7345 \ifHy@nesting
7346 \expandafter\ltx@firstoftwo
7347 \else
7348 \expandafter\ltx@secondoftwo
7349 \fi
7350 {%
7351 \expandafter\hyper@@anchor\expandafter{%
7352 \Hy@footnote@currentHref
7353 }\ignorespaces #1}%
7354 }{%
7355 \Hy@raisedlink{%
7356 \expandafter\hyper@@anchor\expandafter{%
7357 \Hy@footnote@currentHref
7358 }\relax}%
7359 }%
7360 \let\@currentHref\Hy@footnote@currentHref
7361 \let\@currentlabelname\@empty
7362 \ignorespaces #1%
7363 }%
7364 }%
7365 }%

```

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.

```

7366 \def\@footnotemark{%
7367 \leavevmode
7368 \ifhmode\edef\x@sf{\the\spacefactor}\nobreak\fi
7369 \stepcounter{Hfootnote}%
7370 \global\let\Hy@saved@currentHref\@currentHref
7371 \hyper@makecurrent{Hfootnote}%
7372 \global\let\Hy@footnote@currentHref\@currentHref
7373 \global\let\@currentHref\Hy@saved@currentHref
7374 \hyper@linkstart{link}{\Hy@footnote@currentHref}%
7375 \@makefnmark
7376 \hyper@linkend
7377 \ifhmode\spacefactor\x@sf\fi
7378 \relax
7379 }%

```

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

```

7380 \@ifpackageloaded{tabularx}{%
7381 \let\HyOrg@TX@endtabularx\TX@endtabularx
7382 \def\Hy@tabularx@hook{%
7383 \let\@footnotetext\H@@footnotetext
7384 \let\@footnotemark\H@@footnotemark
7385 \let\@mpfootnotetext\H@@mpfootnotetext
7386 }%
7387 \begingroup
7388 \toks@\expandafter{\TX@endtabularx}%
7389 \xdef\Hy@gtemp{%

```

```

7390     \noexpand\Hy@tabularx@hook
7391     \the\toks@
7392   }%
7393 \endgroup
7394 \let\TX@endtabularx\Hy@gtemp
7395 }{}%

```

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

```

7396 \ifpackageloaded{longtable}{%
7397   \CheckCommand{\LT@p@ftntext}[1]{%
7398     \edef\@tempa{%
7399       \the\LT@p@ftn
7400       \noexpand\footnotetext[\the\c@footnote]%
7401     }%
7402     \global\LT@p@ftn\expandafter{\@tempa{#1}}%
7403   }%
7404   \long\def\LT@p@ftntext#1{%
7405     \edef\@tempa{%
7406       \the\LT@p@ftn
7407       \begingroup
7408         \noexpand\c@footnote=\the\c@footnote\relax
7409         \noexpand\protected@xdef\noexpand\@thefnmark{%
7410           \noexpand\thempfn
7411         }%
7412         \noexpand\Hy@LT@footnotetext{%
7413           \Hy@footnote@currentHref
7414         }%
7415       }%
7416       \global\LT@p@ftn\expandafter{%
7417         \@tempa{#1}%
7418       }%
7419     }%
7420   }%
7421   \long\def\Hy@LT@footnotetext#1#2{%
7422     \H@@@footnotetext{%
7423       \ifHy@nesting
7424         \hyper@@anchor{#1}{#2}%
7425       \else
7426         \Hy@raisedlink{%
7427           \hyper@@anchor{#1}{\relax}%
7428         }%
7429       \def\@currentHref{#1}%
7430       \let\@currentlabelname\@empty
7431       #2%
7432     }%
7433   }%
7434 }%
7435 }{}%

```

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

```

7436 \ifpackageloaded{fancyvrb}{%
7437   \def\V@@@footnotetext{%

```

```

7438 \insert\footins\bgroup
7439 \csname reset@font\endcsname
7440 \footnotesize
7441 \interlinepenalty\interfootnotelinepenalty
7442 \splittopskip\footnotesep
7443 \splitmaxdepth\dp\strutbox
7444 \floatingpenalty \@MM
7445 \hsize\columnwidth
7446 \@parboxrestore
7447 \def\@currentcounter{footnote}%
7448 \protected@edef\@currentlabel{\csname p@footnote\endcsname\@thefn-
mark}%
7449 \@makefnmark{}%
7450 \rule{\z@}{\footnotesep}%
7451 \bgroup
7452 \aftergroup\V@@@footnotetext
7453 \Hy@raisedlink{%
7454 \expandafter\hyper@@anchor\expandafter{%
7455 \Hy@footnote@currentHref
7456 }\relax}%
7457 }%
7458 \let\@currentHref\Hy@footnote@currentHref
7459 \let\@currentlabelname\@empty
7460 \ignorespaces
7461 }%
7462 }{}%

```

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

```

7463 \def\Hy@temp#1{%
7464 \begingroup
7465 \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7466 \endgroup
7467 \@footnotemark
7468 }%
7469 \ifx\Hy@temp\footref
7470 \def\footref#1{%
7471 \begingroup
7472 \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7473 \endgroup
7474 \H@@@footnotemark
7475 }%
7476 \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.

```

7477 \let\HyOrg@maketitle\maketitle
7478 \def\maketitle{%
7479 \let\Hy@saved@footnotemark\@footnotemark
7480 \let\Hy@saved@footnotetext\@footnotetext
7481 \let\@footnotemark\H@@@footnotemark
7482 \let\@footnotetext\H@@@footnotetext
7483 \@ifnextchar[\Hy@maketitle@optarg{% ]
7484 \HyOrg@maketitle

```



```

7485 \Hy@maketitle@end
7486 }%
7487 }%
7488 \def\Hy@maketitle@optarg[#1]{%
7489 \HyOrg@maketitle[{#1}]%
7490 \Hy@maketitle@end
7491 }%
7492 \def\Hy@maketitle@end{%
7493 \ifx\@footnotemark\H@@footnotemark
7494 \let\@footnotemark\Hy@saved@footnotemark
7495 \fi
7496 \ifx\@footnotetext\H@@footnotetext
7497 \let\@footnotetext\Hy@saved@footnotetext
7498 \fi
7499 }%

```

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

```

7500 \def\realfootnote{%
7501 \@ifnextchar[\@xfootnote%]
7502 {\stepcounter{\@mpfn}%
7503 \protected@xdef\@thefnmark{\thempfn}%
7504 \H@@@footnotemark\H@@@footnotetext
7505 }%
7506 }%

7507 \fi
7508 }{}
7509 \Hy@DisableOption{hyperfootnotes}

7510 \</packageEnd>
7511 \< *check>
7512 \checklatex
7513 \checkcommand\def\@xfootnotenext[#1]{%
7514 \begingroup
7515 \csname c@\@mpfn\endcsname #1\relax
7516 \unrestored@protected@xdef\@thefnmark{\thempfn}%
7517 \endgroup
7518 \@footnotetext
7519 }
7520 \checkcommand\def\@xfootnotemark[#1]{%
7521 \begingroup
7522 \c@footnote #1\relax
7523 \unrestored@protected@xdef\@thefnmark{\thefnmark}%
7524 \endgroup
7525 \@footnotemark
7526 }
7527 \checkcommand\def\@footnotemark{%
7528 \leavevmode
7529 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7530 \@makefnmark
7531 \ifhmode\spacefactor\@x@sf\fi
7532 \relax
7533 }
7534 \</check>
7535 \< *packageEnd>

```

## 36 Float captions

Make the float caption the hypertext anchor; curiously enough, we can't just copy the definition of `\@caption`. Its all to do with expansion. It screws up. Sigh.

```

7536 \@ifundefined{hyper@nopatch@caption}{%
7537 \def\caption{%
7538   \ifx\@cuptype\@undefined
7539     \@latex@error{\noexpand\caption outside float}\@ehd
7540     \expandafter\@gobble
7541   \else
7542     \H@refstepcounter\@cuptype
7543     \let\Hy@tempa\@caption
7544     \@ifundefined{float@caption}{%
7545     }{%
7546       \expandafter\ifx\csname @float@c@\@cuptype\endcsname
7547         \float@caption
7548       \let\Hy@tempa\Hy@float@caption
7549     \fi
7550     }%
7551     \expandafter\@firstofone
7552   \fi
7553   {\@dblarg{\Hy@tempa\@cuptype}}}%
7554 }
7555 \long\def\@caption#1[#2]#3{%
7556   \expandafter\ifx\csname if@capstart\expandafter\endcsname
7557     \csname iftrue\endcsname
7558     \global\let\@currentHref\hc@currentHref
7559   \else
7560     \hyper@makecurrent{\@cuptype}%
7561   \fi
7562   \@ifundefined{NR@getttitle}{%
7563     \def\@currentlabelname{#2}%
7564   }{%
7565     \NR@getttitle{#2}%
7566   }%
7567   \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
7568     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7569   }%
7570   \begingroup
7571     \@parboxrestore
7572     \if@minipage
7573       \setminipage
7574     \fi
7575     \normalsize
7576     \expandafter\ifx\csname if@capstart\expandafter\endcsname
7577       \csname iftrue\endcsname
7578       \global\@capstartfalse
7579       \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
7580     \else
7581       \@makecaption{\csname fnum@#1\endcsname}{%
7582         \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

7583     \ifHy@nesting

```

```

7584     \expandafter\hyper@@anchor\expandafter{\@currentHref}{#3}%
7585     \else
7586     \Hy@raisedlink{%
7587     \expandafter\hyper@@anchor\expandafter{%
7588     \@currentHref
7589     }\relax}%
7590     }%
7591     #3%
7592     \fi
7593     }%
7594     \fi
7595     \par
7596     \endgroup
7597 }}{}%end no patch

```

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’.

```

7598 \let\Hy@float@caption\@caption
7599 \newcommand{\HyNew@float@makebox}[1]{%
7600 \HyOrg@float@makebox{%
7601   #1\relax
7602   \ifx\Hy@float@currentHref\@undefined
7603   \else
7604     \expandafter\hyper@@anchor\expandafter{%
7605     \Hy@float@currentHref
7606     }\relax}%
7607   \global\let\Hy@float@currentHref\@undefined
7608   \fi
7609   }%
7610 }%
7611 \@ifpackageloaded{float}{%
7612 \def\Hy@float@caption{%
7613   \ifx\Hy@float@currentHref\@undefined
7614     \hyper@makecurrent{\@cuptype}%
7615     \global\let\Hy@float@currentHref\@currentHref
7616   \else
7617     \let\@currentHref\Hy@float@currentHref
7618   \fi
7619   \float@caption
7620 }%
7621 \let\HyOrg@float@makebox\float@makebox
7622 \let\float@makebox\HyNew@float@makebox
7623 }{}

7624 \</packageEnd>
7625 \< *check>
7626 \checklatex[1999/06/01 - 2000/06/01]
7627 \checkcommand\def\caption{%
7628   \ifx\@cuptype\@undefined
7629     \@latex@error{\noexpand\caption outside float}\@ehd
7630     \expandafter\@gobble
7631   \else

```

```

7632 \refstepcounter\@captype
7633 \expandafter\@firstofone
7634 \fi
7635 {\@dblarg{\@caption\@captype}}}%
7636 }
7637 \checkcommand\long\def\@caption#1[#2]#3{%
7638 \par
7639 \addcontentsline{\csname ext@#1\endcsname}{#1}{%
7640 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7641 }%
7642 \begingroup
7643 \@parboxrestore
7644 \if@minipage
7645 \@setminipage
7646 \fi
7647 \normalsize
7648 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
7649 \endgroup
7650 }
7651 \</check>
7652 \<packageEnd>

```

## 37 Bibliographic references

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

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

```

7653 \def\hyper@natlinkstart#1{%
7654 \Hy@backout{#1}%
7655 \hyper@linkstart{cite}{cite.#1}%
7656 \def\hyper@nat@current{#1}%
7657 }
7658 \def\hyper@natlinkend{%
7659 \hyper@linkend
7660 }
7661 \def\hyper@natlinkbreak#1#2{%
7662 \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
7663 }
7664 \def\hyper@natanchorstart#1{%
7665 \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
7666 }
7667 \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.

```

7668 \ifundefined{hyper@nopatch@bib}
7669 {%
7670   \ltx@ifundefined{NAT@parse}{%
7671     \providecommand*\@extra@binfo{}%
7672     \providecommand*\@extra@b@citeb{}%
7673     \def\bibcite#1#2{%
7674       \@newl@bel{b}{#1\@extra@binfo}{%
7675         \hyper@@link[cite]{#1\@extra@b@citeb}{#2}%
7676       }%
7677     }%
7678   \gdef\@extra@binfo{}%

```

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

```

7679   \let\Hy@bibcite\bibcite
7680   \begingroup
7681     \ifundefined{bbl@cite@choice}{%
7682       \g@addto@macro\bbl@cite@choice{%
7683         \let\bibcite\Hy@bibcite
7684       }%
7685     }%
7686   \endgroup

```

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

```

7687   \providecommand*\@BIBLABEL{\@biblabel}%
7688   \def\@lbibitem[#1]#2{%
7689     \@skiphyperrtrue
7690     \H@item[%
7691       \ifx\Hy@raisedlink\@empty
7692         \hyper@anchorstart{cite.#2\@extra@b@citeb}%
7693         \@BIBLABEL{#1}%
7694         \hyper@anchorend
7695       \else
7696         \Hy@raisedlink{%
7697           \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
7698         }%
7699       \@BIBLABEL{#1}%
7700     \fi
7701     \hfill
7702   ]%
7703   \@skiphyperrfalse
7704   \if@filesw
7705     \begingroup
7706       \let\protect\noexpand
7707       \immediate\write\@auxout{%
7708         \string\bibcite{#2}{#1}%
7709       }%
7710     \endgroup
7711     \fi
7712     \ignorespaces
7713   }%

```

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

```

7714   \def\@bibitem#1{%

```

```

7715 \@skiphyperreftrue\H@item\@skiphyperreffalse
7716 \Hy@raisedlink{%
7717 \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
7718 }%
7719 \if@filesw
7720 \begingroup
7721 \let\protect\noexpand
7722 \immediate\write\@auxout{%
7723 \string\bibcite{#1}{\the\value{\@listctr}}}%
7724 }%
7725 \endgroup
7726 \fi
7727 \ignorespaces
7728 }%
7729 }{}%
7730 }{}

7731 </packageEnd>
7732 <*check>
7733 \checklatex
7734 \checkcommand\def\@bibitem[#1]#2{%
7735 \item[\@biblabel{#1}]{\hfill}%
7736 \if@filesw
7737 {%
7738 \let\protect\noexpand
7739 \immediate\write\@auxout{%
7740 \string\bibcite{#2}{#1}%
7741 }%
7742 }%
7743 \fi
7744 \ignorespaces
7745 }
7746 \checkcommand\def\@bibitem#1{%
7747 \item
7748 \if@filesw
7749 \immediate\write\@auxout{%
7750 \string\bibcite{#1}{\the\value{\@listctr}}}%
7751 }%
7752 \fi
7753 \ignorespaces
7754 }
7755 </check>
7756 <*packageEnd>

```

### 37.1 Package harvard

Override Peter Williams' Harvard package; we have to a) make each of the citation types into a link; b) make each citation write a backref entry, and c) kick off a backreference section for each bibliography entry.

The redefinitions have to be deferred to `\begin{document}`, because if `harvard.sty` is loaded and `html.sty` is present and detects pdf<sub>TEX</sub>, then `hyperref` is already loaded at the begin of `harvard.sty`, and the `\newcommand` macros causes error messages.

```

7757 \@ifpackageloaded{harvard}{%

```

```

7758 \Hy@AtBeginDocument{%
7759 \Hy@Info{*** compatibility with harvard *** }%
7760 \Hy@raiselinksfalse
7761 \def\harvardcite#1#2#3#4{%
7762 \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{cite.#1}{#2}}%
7763 \global\@namedef{HAR@an@#1}{\hyper@link[cite]{cite.#1}{#3}}%
7764 \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{cite.#1}{#4}}%
7765 \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
7766 }%
7767 \def\HAR@citetoaux#1{%
7768 \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
7769 \ifHy@backref
7770 \ifx\@empty\@currentlabel
7771 \else
7772 \@bsphack
7773 \if@filesw
7774 \protected@write\@auxout{}{%
7775 \string\@writefile{brf}{%
7776 \string\backcite{#1}{%
7777 {\thepage}{\@currentlabel}{\@currentHref}%
7778 }%
7779 }%
7780 }%
7781 \fi
7782 \@esphack
7783 \fi
7784 \fi
7785 }%
7786 \def\harvarditem{%
7787 \@ifnextchar{\@harvarditem}{\@harvarditem[\null]}%
7788 }%
7789 \def\@harvarditem[#1]#2#3#4#5\par{%
7790 \item[]%
7791 \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
7792 \if@filesw
7793 \begingroup
7794 \def\protect##1{\string ##1\space}%
7795 \ifthenelse{\equal{#1}{\null}}%
7796 {\def\next{{#4}{#2}{#2}{#3}}}%
7797 {\def\next{{#4}{#2}{#1}{#3}}}%
7798 \immediate\write\@auxout{\string\harvardcite\codeof\next}%
7799 \endgroup
7800 \fi
7801 \protect\hspace*{-\labelwidth}%
7802 \protect\hspace*{-\labelsep}%
7803 \ignorespaces
7804 #5%
7805 \ifHy@backref
7806 \newblock
7807 \backref{\csname br@#4\endcsname}%
7808 \fi
7809 \par
7810 }%

```

`\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`:

```

7811 \long\def\HAR@checkcitations#1#2#3#4{%
7812 \def\HAR@tempa{\hyper@@link[cite]{#1}{#2}}%
7813 \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
7814 \def\HAR@tempa{\hyper@@link[cite]{#1}{#3}}%
7815 \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
7816 \def\HAR@tempa{\hyper@@link[cite]{#1}{#4}}%
7817 \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
7818 \else
7819 \@tempswatrue
7820 \fi
7821 \else
7822 \@tempswatrue
7823 \fi
7824 \else
7825 \@tempswatrue
7826 \fi
7827 }%
7828 }%

7829 }{}

```

## 37.2 Package `chicago`

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

```

7830 \@ifpackageloaded{chicago}{%

```

`\citeN`

```

7831 \def\citeN{%
7832 \def\@citesep{~}{-1000}%
7833 \def\@cite##1##2{##1}%
7834 \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
7835 \@citedata@opt
7836 }%

```

`\shortciteN`

```

7837 \def\shortciteN{%
7838 \def\@citesep{~}{-1000}%
7839 \def\@cite##1##2{##1}%
7840 \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
7841 \@citedata@opt
7842 }%

```

`\@citedata@opt`

```

7843 \def\@citedata@opt{%
7844 \let\@cite@opt\@empty
7845 \@ifnextchar [{%
7846 \@tempswatrue
7847 \@citedatax@opt
7848 }{%
7849 \@tempswafalse

```



```

7850 \citedatax[]%
7851 }%
7852 }%

\citedatax@opt
7853 \def\citedatax@opt[#1]{%
7854 \def\cite@opt{, #1}%
7855 \citedatax[{#1}]%
7856 }%

7857 }{}

```

## 38 Page numbers

The last page should not contain a /Dur key, because there is no page after the last page. Therefore at the last page there should be a command `\hypersetup{pdfpageduration={}}`. This can be set with `\AtEndDocument`, but it can be too late, if the last page is already finished, or too early, if lots of float pages will follow. Therefore currently nothing is done by hyperref.

Experimental!

This where we supply a destination for each page.

The name of destination is stored in the global command `\@currentHpage`, this allows it to retrieve it with an extended reference system like zref or the new property code from L<sup>A</sup>T<sub>E</sub>X 2023-11-01.

```

7858 \def\@currentHpage{Doc-Start}

7859 \ltx@ifclassloaded{slides}{%
7860 \def\Hy@SlidesFormatOptionalPage#1{(#1)}%
7861 \def\Hy@PageAnchorSlidesPlain{%
7862 \advance\c@page\ltx@one
7863 \xdef\@currentHpage{page.\the\c@slide.\the\c@overlay.\the\c@note%
7864 \ifnum\c@page=\ltx@one
7865 \else
7866 .\the\c@page
7867 \fi}%
7868 \edef\Hy@TempPageAnchor{%
7869 \noexpand\hyper@@@anchor{%
7870 \@currentHpage
7871 }%
7872 }%
7873 \advance\c@page-\ltx@one
7874 }%
7875 \def\Hy@PageAnchorSlide{%
7876 \advance\c@page\ltx@one
7877 \ifnum\c@page>\ltx@one
7878 \ltx@ifundefined{theHpage}{%
7879 \protected@edef\Hy@TheSlideOptionalPage{%
7880 \Hy@SlidesFormatOptionalPage{theHpage}%
7881 }%
7882 }{%
7883 \protected@edef\Hy@TheSlideOptionalPage{%
7884 \Hy@SlidesFormatOptionalPage{theHpage}%
7885 }%
7886 }%

```

```

7887 \else
7888 \def\Hy@TheSlideOptionalPage{}%
7889 \fi
7890 \advance\c@page-\ltx@one
7891 \pdfstringdef\@the@H@page{%
7892 \csname
7893 the%
7894 \ltx@ifundefined{theH\Hy@SlidesPage}{H}%
7895 \Hy@SlidesPage
7896 \endcsname
7897 \Hy@TheSlideOptionalPage
7898 }%
7899 \ltx@gobblethree
7900 }%
7901 \def\Hy@SlidesPage{slide}%
7902 \g@addto@macro\slide{%
7903 \def\Hy@SlidesPage{slide}%
7904 }%
7905 \g@addto@macro\overlay{%
7906 \def\Hy@SlidesPage{overlay}%
7907 }%
7908 \g@addto@macro\note{%
7909 \def\Hy@SlidesPage{note}%
7910 }%
7911 }{%
7912 \def\Hy@PageAnchorSlidesPlain{}%
7913 \def\Hy@PageAnchorSlide{}%
7914 }
7915 \def\Hy@EveryPageAnchor{%
7916 \Hy@DistillerDestFix
7917 \ifHy@pageanchor
7918 \ifHy@hypertexnames
7919 \ifHy@plainpages
7920 \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
7921 \xdef\@currentHpage{page.\the\c@page}%
7922 \Hy@PageAnchorSlidesPlain
7923 \else
7924 \begingroup
7925 \let\@number\@firstofone
7926 \Hy@unicodedefalse
7927 \Hy@PageAnchorSlide
7928 \pdfstringdef\@the@H@page{\thepage}%
7929 \endgroup
7930 \EdefUnescapeString\@the@H@page{\@the@H@page}%
7931 \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
7932 \xdef\@currentHpage{page.\@the@H@page}%
7933 \fi
7934 \else
7935 \Hy@GlobalStepCount\Hy@pagecounter
7936 \def\Hy@TempPageAnchor{%
7937 \hyper@@anchor{page.\the\Hy@pagecounter}%
7938 }%
7939 \xdef\@currentHpage{page.\the\Hy@pagecounter}%
7940 \fi

```

```

7941 \vbox to 0pt{%
7942 \kern\voffset
7943 \kern\topmargin
7944 \kern-1bp\relax
7945 \hbox to 0pt{%
7946 \kern\hoffset
7947 \kern\ifodd\value{page}%
7948 \oddsidemargin
7949 \else
7950 \evensidemargin
7951 \fi
7952 \kern-1bp\relax
7953 \Hy@TempPageAnchor\relax
7954 \hss
7955 }%
7956 \vss
7957 }%
7958 \fi
7959 }
7960 \g@addto@macro\Hy@EveryPageBoxHook{%
7961 \Hy@EveryPageAnchor
7962 }

```

## 39 Table of contents

TV Raman noticed that people who add arbitrary material into the TOC generate a bad or null link. We avoid that by checking if the current destination is empty. But if ‘the most recent destination’ is not what you expect, you will be in trouble. In newer L<sup>A</sup>T<sub>E</sub>X releases this is defined to put a % at the end of the line in the tocfile.

```

7963 \providecommand\protected@file@percent{}
7964 \@ifundefined{hyper@nopatch@toc}{%
7965 \def\addcontentsline#1#2#3{% toc extension, type, tag
7966 \begingroup
7967 \let\label\@gobble
7968 \ifx\@currentHref\@empty
7969 \Hy@Warning{%
7970 No destination for bookmark of \string\addcontentsline,%
7971 \MessageBreak destination is added%
7972 }%
7973 \phantomsection
7974 \fi
7975 \expandafter\ifx\csname toplevel@#2\endcsname\relax
7976 \begingroup
7977 \def\Hy@tempa{#1}%
7978 \ifx\Hy@tempa\Hy@bookmarkstype
7979 \Hy@WarningNoLine{%
7980 bookmark level for unknown #2 defaults to 0%
7981 }%
7982 \else
7983 \Hy@Info{bookmark level for unknown #2 defaults to 0}%
7984 \fi

```

```

7985 \endgroup
7986 \expandafter\gdef\csname toplevel@#2\endcsname{0}%
7987 \fi
7988 \edef\Hy@toclevel{\csname toplevel@#2\endcsname}%
7989 \Hy@writebookmark{\csname the#2\endcsname}%
7990 {#3}%
7991 {\@currentHref}%
7992 {\Hy@toclevel}%
7993 {#1}%
7994 \ifHy@verbose
7995 \begingroup
7996 \def\Hy@tempa{#3}%
7997 \@onelevel@sanitize\Hy@tempa
7998 \let\temp@online\on@line
7999 \let\on@line\@empty
8000 \Hy@Info{%
8001 bookmark\temp@online:\MessageBreak
8002 thecounter {\csname the#2\endcsname}\MessageBreak
8003 text {\Hy@tempa}\MessageBreak
8004 reference {\@currentHref}\MessageBreak
8005 toplevel {\Hy@toclevel}\MessageBreak
8006 type {#1}%
8007 }%
8008 \endgroup
8009 \fi
8010 \addtocontents{#1}{%
8011 \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}\protected@file@per-
cent
8012 }%
8013 \endgroup
8014 }
8015 }{}

```

`\contentsline` The page number might be empty. In this case the link for the page number is suppressed to avoid little link boxes.

change 2022-11-13: To avoid problems if `MakeUppercase` is used around the entry we use special protected commands:

```

8016 \protected\def\Hy@toclinkstart{\hyper@linkstart{link}{\Hy@tocdestname}}
8017 \protected\def\Hy@toclinkend{\hyper@linkend}
8018
8019 \@ifundefined{hyper@nopatch@toc}{%
8020 \def\contentsline#1#2#3#4{%
8021 \begingroup
8022 \Hy@safe@activetrue
8023 \edef\x{\endgroup
8024 \def\noexpand\Hy@tocdestname{#4}%
8025 }\x
8026 \ifx\Hy@tocdestname\ltx@empty
8027 \csname l@#1\endcsname{#2}{#3}%
8028 \else
8029 \ifcase\Hy@linktoc % none
8030 \csname l@#1\endcsname{#2}{#3}%
8031 \or % section
8032 \csname l@#1\endcsname{%

```

```

8033     \Hy@toclinkstart{#2}\Hy@toclinkend
8034   }{#3}%
8035 \or % page
8036   \def\Hy@temp{#3}%
8037   \ifx\Hy@temp\ltx@empty
8038     \csname l@#1\endcsname{#2}{#3}%
8039   \else
8040     \csname l@#1\endcsname{#2}{#2}{%
8041       \Hy@toclinkstart{#3}\Hy@toclinkend
8042     }%
8043   \fi
8044 \else % all
8045   \def\Hy@temp{#3}%
8046   \ifx\Hy@temp\ltx@empty
8047     \csname l@#1\endcsname{%
8048       \Hy@toclinkstart{#2}\Hy@toclinkend
8049     }{}%
8050   \else
8051     \csname l@#1\endcsname{%
8052       \Hy@toclinkstart{#2}\Hy@toclinkend
8053     }{%
8054       \Hy@toclinkstart{#3}\Hy@toclinkend
8055     }%
8056   \fi
8057 \fi
8058 \fi
8059 }
8060 {}

8061 \endpackage
8062 \check
8063 \checklatex
8064 \checkcommand\def\addcontentsline#1#2#3{%
8065   \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
8066 }
8067 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
8068 \endcheck
8069 \endpackage

```

## 40 New counters

The whole theorem business makes up new counters on the fly; we are going to intercept this. Sigh. Do it at the level where new counters are defined.

```

8070 \@ifundefined{hyper@nopatch@counter}
8071 {
8072   \let\H@definecounter\@definecounter
8073   \def\@definecounter#1{%
8074     \H@definecounter{#1}%
8075     \expandafter\gdef\csname theH#1\endcsname{\arabic{#1}}%
8076   }
8077 }{}

```

But what if they have used the optional argument to e.g. `\newtheorem` to deter-

mine when the numbering is reset? OK, we'll trap that too.

```

8078 \ifundefined{hyper@nopatch@counter}
8079 {
8080   \let\H@newctr\@newctr
8081   \def\@newctr#1[#2]{%
8082     \H@newctr#1[#2]}%
8083   \expandafter\gdef\csname theH#1\endcsname{%
8084     \csname the\@ifundefined{theH#2}{H}#2\endcsname.\arabic{#1}%
8085   }%
8086 }
8087 }{}

```

## 41 AMS $\LaTeX$ compatibility

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

Version 6.77p uses a patch by Ross Moore.

If `\hyper@nopatch@amsmath@tag` is defined we don't patch but assume that kernel code adds anchors to equations. change 2023-06-14: use a hook to make it independent of loading order.

```

8088 \ifundefined{hyper@nopatch@amsmath@tag}
8089 {%
8090   \AddToHook{package/amsmath/after}{%
8091     \def\Hy@make@anchor{%
8092       \Hy@MakeCurrentHrefAuto{AMS}%
8093       \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
8094     }%
8095     \def\Hy@make@df@tag@@#1{%
8096       \gdef\df@tag{%
8097         \maketag@@@{\Hy@make@anchor#1}%
8098         \def\@currentlabel{#1}%
8099       }%
8100     }%
8101     \def\Hy@make@df@tag@@@#1{%
8102       \gdef\df@tag{%
8103         \tagform@{\Hy@make@anchor#1}%
8104         \toks@{\xp{p@equation{#1}}}%
8105         \edef\@currentlabel{\the\toks@}%
8106       }%
8107     }%
8108     \let\HyOrg@make@df@tag@@\make@df@tag@@
8109     \let\HyOrg@make@df@tag@@@ \make@df@tag@@@
8110     \let\make@df@tag@@\Hy@make@df@tag@@
8111     \let\make@df@tag@@@ \Hy@make@df@tag@@@
8112   }{}
8113 }{}

```

This code I simply cannot remember what I was trying to achieve. The final result

seems to do nothing anyway.

```
\let\H@tagform@\tagform@
\def\tagform@#1{%
  \maketag@@@{\hyper@@anchor{\@currentHref}%
    {(\ignorespaces#1\unskip)}}%
}
\def\eqref#1{\textup{\H@tagform@\ref{#1}}}
```

#### 41.1 \@addtoreset and \numberwithin patches

\@addtoreset puts a counter to the reset list of another counter. After a reset the counter starts again with perhaps already used values. Therefore the hyperref version of the counter print command \theHcounter is redefined in order to add the parent counter.

```
8114 \@ifundefined{hyper@nopatch@counter}
8115 {
8116   \let\HyOrg@addtoreset\@addtoreset
8117   \def\@addtoreset#1#2{%
8118     \HyOrg@addtoreset{#1}{#2}%
8119     \expandafter\xdef\csname theH#1\endcsname{%
8120       \expandafter\noexpand
8121       \csname the\@ifundefined{theH#2}{H#2\endcsname
8122       .\noexpand\the\noexpand\value{#1}}%
8123     }%
8124   }
8125 }
```

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

```
8126 \</packageEnd>
8127 \<check>
8128 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
8129 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
8130   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
8131     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
8132       \@addtoreset{#2}{#3}%
8133       \@xp\xdef\csname the#2\endcsname{%
8134         \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8135       }%
8136     }%
8137   }%
8138 }%
8139 \</check>
```

change 2023-06-14: use hook to make independent of loading order

```
8140 \<packageEnd>
8141 \@ifundefined{hyper@nopatch@counter}
8142 {
8143   \AddToHook{package/amsmath/after}{%
8144     \renewcommand*\numberwithin[3][\arabic]{%
8145       \@ifundefined{c@#2}{\@nocounterr{#2}}{%
8146         \@ifundefined{c@#3}{\@nocnterr{#3}}{%
8147           \HyOrg@addtoreset{#2}{#3}%
8148         }
8149       }
8150     }
8151 }
```

```

8148      \@xp\xdef\csname the#2\endcsname{%
8149      \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8150      }%
8151      \@xp\xdef\csname theH#2\endcsname{%
8152      \@xp\@nx
8153      \csname the\@ifundefined{theH#3}{H#3\endcsname
8154      .\@nx#1{#2}%
8155      }%
8156      }%
8157      }%
8158      }%
8159      }{}
8160      }{}

```

## 42 Included figures

Simply intercept the low level graphics package macro.

```

8161 \ifHy@hyperfigures
8162 \let\Hy@Gin@setfile\Gin@setfile
8163 \def\Gin@setfile#1#2#3{%
8164 \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
8165 }%
8166 \fi
8167 \Hy@DisableOption{hyperfigures}

```

## 43 hyperindex entries

Internal command names are prefixed with `\HyInd@`.

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

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

```

8168 \ifHy@hyperindex
8169 \def\HyInd@ParenLeft{({}%
8170 \def\HyInd@ParenRight{)}}%
8171 \def\hyperindexformat#1#2{%
8172 \let\HyOrg@hyperpage\hyperpage
8173 \let\hyperpage\@firstofone
8174 #1{\HyOrg@hyperpage{#2}}%
8175 \let\hyperpage\HyOrg@hyperpage
8176 }%
8177 \Hy@nextfalse
8178 \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
8179 \@ifpackageloaded{index}{\Hy@nexttrue}{}%
8180 \@ifpackageloaded{amsmidx}{\Hy@nexttrue}{}%
8181 \begingroup
8182 \lccode`\|=\expandafter\HyInd@EncapChar\relax

```



```

8183 \lccode`\/=`\\relax
8184 \lowercase{\endgroup
8185 \ifHy@next
8186 \let\HyInd@org@wrindex\@wrindex
8187 \def\@wrindex#1#2{\HyInd@@wrindex{#1}#2|\\}%
8188 \def\HyInd@@wrindex#1#2|#3|#4\\{%
8189 \ifx\\#3\\%
8190 \HyInd@org@wrindex{#1}{#2|hyperpage}%
8191 \else
8192 \HyInd@@@wrindex{#1}{#2}#3\\%
8193 \fi
8194 }%
8195 \def\HyInd@@@wrindex#1#2#3#4\\{%
8196 \def\Hy@temp@A{#3}%
8197 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8198 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8199 \relax
8200 \HyInd@org@wrindex{#1}{%
8201 #2|hyperindexformat{/#3#4}%
8202 }%
8203 \else
8204 \ifx\\#4\\%
8205 \ifx\Hy@temp@A\HyInd@ParenRight
8206 \HyInd@org@wrindex{#1}{#2|#3}%
8207 \else
8208 \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
8209 \fi
8210 \else
8211 \HyInd@org@wrindex{#1}{%
8212 #2|#3hyperindexformat{/#4}%
8213 }%
8214 \fi
8215 \fi
8216 }%
8217 \else
8218 \def\@wrindex#1{\@@wrindex#1|\\}%
8219 \def\@@wrindex#1|#2|#3\\{%
8220 \if@filesw
8221 \ifx\\#2\\%
8222 \protected@write\@indexfile{}{%
8223 \string\indexentry{#1|hyperpage}{\thepage}%
8224 }%
8225 \else
8226 \HyInd@@@wrindex{#1}#2\\%
8227 \fi
8228 \fi
8229 \endgroup
8230 \@esphack
8231 }%
8232 \def\HyInd@@@wrindex#1#2#3\\{%
8233 \def\Hy@temp@A{#2}%
8234 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8235 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8236 \relax

```

```

8237 \protected@write\@indexfile{}\{%
8238 \string\indexentry{%
8239 #1|hyperindexformat{/#2#3}%
8240 }\the page}%
8241 }%
8242 \else
8243 \ifx\#3\%
8244 \ifx\Hy@temp@A\HyInd@ParenRight
8245 \HyInd@DefKey{#1}%
8246 \ltx@ifundefined{HyInd@(\HyInd@key)}{%
8247 \let\Hy@temp\ltx@empty
8248 }{%
8249 \expandafter\let\expandafter\Hy@temp
8250 \csname HyInd@(\HyInd@key)\endcsname
8251 }%
8252 \protected@write\@indexfile{}\{%
8253 \string\indexentry{#1|#2\Hy@temp}\the page}%
8254 }%
8255 \else
8256 \protected@write\@indexfile{}\{%
8257 \string\indexentry{#1|#2hyperpage}\the page}%
8258 }%
8259 \HyInd@DefKey{#1}%
8260 \expandafter
8261 \gdef\csname HyInd@(\HyInd@key)\endcsname{%
8262 hyperpage%
8263 }%
8264 \fi
8265 \else
8266 \protected@write\@indexfile{}\{%
8267 \string\indexentry{%
8268 #1|#2hyperindexformat{/#3}%
8269 }\the page}%
8270 }%
8271 \ifx\Hy@temp@A\HyInd@ParenLeft
8272 \HyInd@DefKey{#1}%
8273 \expandafter
8274 \gdef\csname HyInd@(\HyInd@key)\endcsname{%
8275 hyperindexformat{/#3}%
8276 }%
8277 \fi
8278 \fi
8279 \fi
8280 }%
8281 \def\HyInd@DefKey#1{%
8282 \begingroup
8283 \let\protect\@unexpandable@protect
8284 \edef\Hy@temp{#1}%
8285 \ltx@onelevel@sanitize\Hy@temp
8286 \global\let\HyInd@key\Hy@temp
8287 \endgroup
8288 }%
8289 \fi
8290 }%

```

```

8291 \fi
8292 \Hy@DisableOption{hyperindex}
8293 \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.

```

8294 \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.

```

8295 \def\hyperpage#1{%
8296   \HyInd@hyperpage#1\nohyperpage{}\@nil
8297 }
8298 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{%
8299   \HyInd@@hyperpage{#1}%
8300   #2%
8301   \def\Hy@temp{#3}%
8302   \ifx\Hy@temp\@empty
8303   \else
8304     \ltx@ReturnAfterFi{%
8305       \HyInd@hyperpage#3\@nil
8306     }%
8307   \fi
8308 }
8309 \def\HyInd@@hyperpage#1{\@hyperpage#1----\}
8310 \def\@hyperpage#1--#2--#3\{\%
8311   \ifx\#2\%
8312     \@commahyperpage{#1}%
8313   \else
8314     \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
8315   \fi
8316 }
8317 \def\@commahyperpage#1{\@commahyperpage#1, \}
8318 \def\@commahyperpage#1, #2,#3\{\%
8319   \ifx\#2\%
8320     \HyInd@pagelink{#1}%
8321   \else
8322     \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
8323   \fi
8324 }

```

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

```

8325 \def\HyInd@pagelink#1{%
8326   \begingroup
8327   \toks@={}%
8328   \HyInd@removespaces#1 \@nil
8329   \endgroup
8330 }
8331 \def\HyInd@removespaces#1 #2\@nil{%
8332   \toks@=\expandafter{\the\toks@#1}%
8333   \ifx\#2\%
8334     \edef\x{\the\toks@}%
8335     \ifx\x\@empty

```

```

8336 \else
8337 \hyperlink{page.\the\toks@}{\the\toks@}%
8338 \fi
8339 \else
8340 \ltx@ReturnAfterFi{%
8341 \HyInd@removespaces#2\@nil
8342 }%
8343 \fi
8344 }

```

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.)

change 2022-11-13: added an `\@empty` for issue#261.

```

8345 \ifHy@texht
8346 \expandafter\endinput
8347 \fi
8348 \let\real@setref\@setref
8349 \def\@setref#1#2#3{% csname, extract group, refname
8350 \ifx#1\relax
8351 \protect\G@refundefinedtrue
8352 \nfss@text{\reset@font\bfseries ??}%
8353 \@latex@warning{%
8354 Reference `#3' on page \thepage \space undefined%
8355 }%
8356 \else
8357 \expandafter\Hy@setref@link#1\@empty\@empty\@empty\@nil{#2}%
8358 \fi
8359 }

```

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

```

8360 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
8361 \begingroup
8362 \toks0={\hyper@@link{#5}{#4}}%
8363 \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
8364 \edef\x{\endgroup
8365 \the\toks0 {\the\toks1 }%
8366 }%
8367 \x
8368 }
8369 \def\@pagesetref#1#2#3{% csname, extract macro, ref
8370 \ifx#1\relax
8371 \protect\G@refundefinedtrue
8372 \nfss@text{\reset@font\bfseries ??}%
8373 \@latex@warning{%
8374 Reference `#3' on page \thepage \space undefined%
8375 }%
8376 \else
8377 \protect\hyper@@link
8378 {\expandafter\@fifthoffive#1}%
8379 {page.\expandafter\@secondoffive#1}%
8380 {\expandafter\@secondoffive#1}%
8381 \fi
8382 }

```

```

8383 \endpackage
8384 \check
8385 \checklatex
8386 \checkcommand\def\@setref#1#2#3{%
8387   \ifx#1\relax
8388     \protect\G@refundefinedtrue
8389     \nfss@text{\reset@font\bfseries ??}%
8390     \@latex@warning{%
8391       Reference `#3' on page \thepage\space undefined%
8392     }%
8393   \else
8394     \expandafter#2#1\null
8395   \fi
8396 }
8397 \endcheck
8398 \endpackage

```

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

```

8399 \def\HyRef@StarSetRef#1{%
8400   \begingroup
8401   \Hy@safe@activetrue
8402   \let\protect\@unexpandable@protect
8403   \edef\x{#1}%
8404   \@onelevel@sanitize\x
8405   \edef\x{\endgroup
8406     \noexpand\HyRef@@StarSetRef
8407     \expandafter\noexpand\csname r@\x\endcsname{\x}%
8408   }%
8409   \x
8410 }
8411 \def\HyRef@@StarSetRef#1#2#3{%
8412   \ifx#1\@undefined
8413     \let#1\relax
8414   \fi
8415   \real@setref#1#3{#2}%
8416 }
8417 \def\@refstar#1{%
8418   \HyRef@StarSetRef{#1}\@firstoffive
8419 }
8420 \def\@pagerefstar#1{%
8421   \HyRef@StarSetRef{#1}\@secondoffive
8422 }
8423 \def\@namerefstar#1{%
8424   \HyRef@StarSetRef{#1}\@thirdoffive
8425 }
8426 \def\@Refstar#1{%
8427   \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
8428 }%
8429 \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
8430   \MakeUppercase#1%
8431 }%
8432 \def\HyRef@Ref#1{%
8433   \hyperref[{#1}]{\Ref*{#1}}%

```

```

8434 }%
8435 \Hy@AtBeginDocument{%
8436   \@ifpackageloaded{varioref}{%

```

This are the patches for a varioref newer after 2019-09 Older versions are no longer supported. If `\hyper@nopatch@varioref` is defined we don't patch but assume that varioref handles the hyperlinks.

```

8437   \@ifundefined{hyper@nopatch@varioref}
8438   {
8439     \renewcommand\Vref@star[2][]{%
8440       \begingroup
8441         \let\T@pageref\@pagerefstar
8442         \Ref*{#2}
8443         \vpageref[#1]{#2}%
8444       \endgroup
8445     }%
8446     \renewcommand\Vr@f[2][]{%
8447       \begingroup
8448         \let\T@pageref\@pagerefstar
8449         \hyperref[{#2}]{%
8450           \Ref*{#2}
8451           \vpageref[#1]{#2}%
8452         }%
8453       \endgroup
8454     }%
8455     \renewcommand\vr@f[2][]{%
8456       \begingroup
8457         \let\T@pageref\@pagerefstar
8458         \hyperref[{#2}]{%
8459           \ref*{#2}
8460           \vpageref[#1]{#2}%
8461         }%
8462       \endgroup
8463     }%
8464     \renewcommand\vref@star[2][]{%
8465       \begingroup
8466         \let\T@pageref\@pagerefstar
8467         \ref*{#2}
8468         \vpageref[#1]{#2}%
8469       \endgroup
8470     }%
8471   }{}%
8472 }{}%
8473 }

8474 \DeclareRobustCommand*\autopageref}{%
8475   \@ifstar{%
8476     \HyRef@autopagerefname\pageref*%
8477   }\HyRef@autopageref
8478 }
8479 \def\HyRef@autopageref#1{%
8480   \hyperref[{#1}]{\HyRef@autopagerefname\pageref*{#1}}%
8481 }
8482 \def\HyRef@autopagerefname{%
8483   \ltx@ifundefined{pageautorefname}{%

```

```

8484 \ltx@ifundefined{pagename}{%
8485 \Hy@Warning{No autoref name for `page'}%
8486 }{%
8487 \pagename\nobreakspace
8488 }%
8489 }{%
8490 \pageautorefname\nobreakspace
8491 }%
8492 }

```

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

```

8493 \NewDocumentCommand\autoref{s}
8494 {\leavevmode
8495 \IfBooleanTF{#1}{\HyRef@autoref\@gobbletwo}{\HyRef@autoref\hyper@@link}}
8496 \def\HyRef@autoref#1#2{%
8497 \begingroup
8498 \Hy@safe@activestrue
8499 \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
8500 \endgroup
8501 }
8502 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
8503 \HyRef@ShowKeysRef{#2}%
8504 \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
8505 \edef\HyRef@thisref{%
8506 \expandafter\@fourthoffive#1\@empty\@empty\@empty
8507 }%
8508 \expandafter\HyRef@testreftype\HyRef@thisref.\.%
8509 \Hy@safe@activesfalse
8510 #3{%
8511 \expandafter\@fifthoffive#1\@empty\@empty\@empty
8512 }{%
8513 \expandafter\@fourthoffive#1\@empty\@empty\@empty
8514 }{%
8515 \HyRef@currentHtag
8516 \expandafter\@firstoffive#1\@empty\@empty\@empty
8517 \null
8518 }%
8519 \else
8520 \protect\G@refundefinedtrue
8521 \nfss@text{\reset@font\bfseries ??}%
8522 \@latex@warning{%
8523 Reference `#2' on page \thepage\space undefined%
8524 }%
8525 \fi
8526 }
8527 \def\HyRef@testreftype#1.#2\.{%
8528 \ltx@ifundefined{#1autorefname}{%
8529 \ltx@ifundefined{#1name}{%
8530 \HyRef@StripStar#1\*\*\@nil{#1}%
8531 \ltx@ifundefined{\HyRef@name autorefname}{%
8532 \ltx@ifundefined{\HyRef@name name}{%
8533 \def\HyRef@currentHtag{}%
8534 \Hy@Warning{No autoref name for `#1'}%

```

```

8535     }{%
8536         \edef\HyRef@currentHtag{%
8537             \expandafter\noexpand\csname\HyRef@name name\endcsname
8538             \noexpand~%
8539         }%
8540     }%
8541 }{%
8542     \edef\HyRef@currentHtag{%
8543         \expandafter\noexpand
8544         \csname\HyRef@name autorefname\endcsname
8545         \noexpand~%
8546     }%
8547 }%
8548 }{%
8549     \edef\HyRef@currentHtag{%
8550         \expandafter\noexpand\csname#1name\endcsname
8551         \noexpand~%
8552     }%
8553 }%
8554 }{%
8555     \edef\HyRef@currentHtag{%
8556         \expandafter\noexpand\csname#1autorefname\endcsname
8557         \noexpand~%
8558     }%
8559 }%
8560 }
8561 \def\HyRef@StripStar#1*\#2\@nil#3{%
8562     \def\HyRef@name{#2}%
8563     \ifx\HyRef@name\HyRef@CaseStar
8564         \def\HyRef@name{#1}%
8565     \else
8566         \def\HyRef@name{#3}%
8567     \fi
8568 }
8569 \def\HyRef@CaseStar{*\\}
8570 \def\HyRef@currentHtag{}

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

8571 \let\HyRef@ShowKeysRef\@gobble
8572 \def\HyRef@ShowKeysInit{%
8573     \@ifundefined{SK@@label}{-}{
8574         {%
8575             \ifx\SK@ref\@empty
8576             \else
8577                 \def\HyRef@ShowKeysRef{%
8578                     \SK@\SK@\ref
8579                 }%
8580             \fi
8581         }%
8582     }
8583 \AddToHook{package/showkeys/after}{\HyRef@ShowKeysInit}

```

Defaults for the names that \autoref uses.



```

8584 \providecommand*\AMSautorefname{\equationautorefname}
8585 \providecommand*\Hfootnoteautorefname{\footnoteautorefname}
8586 \providecommand*\Itemautorefname{\itemautorefname}
8587 \providecommand*\itemautorefname{item}
8588 \providecommand*\equationautorefname{Equation}
8589 \providecommand*\footnoteautorefname{footnote}
8590 \providecommand*\itemautorefname{item}
8591 \providecommand*\figureautorefname{Figure}
8592 \providecommand*\tableautorefname{Table}
8593 \providecommand*\partautorefname{Part}
8594 \providecommand*\appendixautorefname{Appendix}
8595 \providecommand*\chapterautorefname{chapter}
8596 \providecommand*\sectionautorefname{section}
8597 \providecommand*\subsectionautorefname{subsection}
8598 \providecommand*\subsubsectionautorefname{subsubsection}
8599 \providecommand*\paragraphautorefname{paragraph}
8600 \providecommand*\subparagraphautorefname{subparagraph}
8601 \providecommand*\FancyVerbLineautorefname{line}
8602 \providecommand*\theoremautorefname{Theorem}
8603 \providecommand*\pageautorefname{page}
8604 \endpackage

```

## 44 Configuration files

### 44.1 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`.

```

8605 (*pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo)
8606 \begingroup\expandafter\expandafter\expandafter\endgroup
8607 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
8608   \begingroup
8609     \catcode`\|=0 %
8610     \@makeother\|%
8611     |@firstofone{|endgroup
8612     |def|Hy@pstringdef#1#2{%
8613       |begingroup
8614         |edef~{|string~}%
8615         |xdef|Hy@gtemp{#2}%
8616       |endgroup
8617       |let#1|Hy@gtemp
8618       |@onelevel@sanitize#1%
8619       |edef#1{|expandafter|Hy@ExchangeBackslash#1\|@nil}%
8620       |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
8621       |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
8622     }%
8623     |def|Hy@ExchangeBackslash#1\#2|@nil{%

```

```

8624    #1%
8625    |ifx|\#2|\%%
8626    |else
8627        \\\%
8628        |ltx@ReturnAfterFi{%
8629        |Hy@ExchangeBackslash#2|@nil
8630    }%
8631    |fi
8632 }%
8633 }%
8634 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
8635    #1%
8636    \ifx\\#2\\%
8637    \else
8638        \@backslashchar(%
8639        \ltx@ReturnAfterFi{%
8640        \Hy@ExchangeLeftParenthesis#2\@nil
8641    }%
8642    \fi
8643 }%
8644 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
8645    #1%
8646    \ifx\\#2\\%
8647    \else
8648        \@backslashchar)%
8649        \ltx@ReturnAfterFi{%
8650        \Hy@ExchangeRightParenthesis#2\@nil
8651    }%
8652    \fi
8653 }%
8654 \else
8655 \def\Hy@pstringdef#1#2{%
8656 \begingroup
8657 \edef~{\string~}%
8658 \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
8659 \endgroup
8660 \let#1\Hy@gtemp
8661 }%
8662 \fi
8663 </pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>

```

## 44.2 pdfTeX

```

8664 <*pdfTeX>
8665 \providecommand*\XR@ext}{pdf}
8666 \Hy@setbreaklinks{true}
8667 \def\HyPat@ObjRef{%
8668 [0-9]*[1-9][0-9]* 0 R%
8669 }

```

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.

- pdfTeX 1.10a, 2003-01-16: \pdfoptionpdfminorversion
- pdfTeX 1.30, 2005-08-081: \pdfminorversion

```

8670 \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
8671 \def\Hy@pdfminorversion{\pdfminorversion}%
8672 \ifHy@ocgcolorlinks
8673   \ifnum\Hy@pdfmajorminor@version<105 %
8674     \kvsetkeys{Hyp}{pdfversion=1.5}%
8675   \fi
8676 \fi
8677 \ifHy@setpdfversion
8678   \ifnum\Hy@pdf@majorminor@version<105 %
8679     \ltx@ifundefined{pdfobjcompresslevel}{%
8680       {%
8681         \ifHy@verbose
8682           \Hy@InfoNoLine{%
8683             PDF object streams are disabled, because they are%
8684             \MessageBreak
8685             not supported in requested PDF version %
8686             \Hy@pdf@majorversion.\Hy@pdf@minorversion
8687           }%
8688         \fi
8689         \pdfobjcompresslevel=\ltx@zero
8690       }%
8691     \fi
8692   \ifnum\Hy@pdfmajorminor@version=\Hy@pdf@majorminor@version\relax
8693   \else
8694     \let\Hy@temp\ltx@empty
8695     \def\Hy@temp@A#1#2{%
8696       \ifnum#1>\ltx@zero
8697         \edef\Hy@temp{%
8698           \Hy@temp
8699           \space\space
8700           \the#1\space #2%
8701           \ifnum#1=\ltx@one\else s\fi
8702           \MessageBreak
8703         }%
8704       \fi
8705     }%
8706     \Hy@temp@A\pdflastobj{PDF object}%
8707     \Hy@temp@A\pdflastxform{form XObject}%
8708     \Hy@temp@A\pdflastximage{image XObject}%
8709     \Hy@temp@A\pdflastannot{annotation}%
8710     \ltx@ifundefined{pdflastlink}{%
8711       {%
8712         \Hy@temp@A\pdflastlink{link}%
8713       }%
8714     \fi
8715     \Hy@pdfmajorversion=\Hy@pdf@majorversion\relax
8716     \Hy@pdfminorversion=\Hy@pdf@minorversion\relax
8717   \else
8718     \let\Hy@temp@A\ltx@empty
8719     \ifnum\Hy@pdf@majorminor@version=104 %
8720       \IfFileExists{pdf14.sty}{%

```

```

8721 \def\Hy@temp@A{%
8722 \MessageBreak
8723 Or \string\RequirePackage{pdf14} can be used%
8724 \MessageBreak
8725 before \string\documentclass\space as shortcut%
8726 }%
8727 }{}%
8728 \fi
8729 \Hy@WarningNoLine{%
8730 The PDF version number could not be set,\MessageBreak
8731 because some PDF objects are already written:%
8732 \MessageBreak
8733 \Hy@temp
8734 The version should be set as early as possible:%
8735 \MessageBreak
8736 \space\space
8737 \expandafter\string\Hy@pdfmajorversion=\Hy@pdf@majorversion, %
8738 \expandafter\string\Hy@pdfminorversion=\Hy@pdf@minorversion
8739 \string\relax
8740 \ifnum\Hy@pdf@majorminor@version<105 %
8741 \ltx@ifundefined{pdfobjcompresslevel}{%
8742 }{%
8743 \MessageBreak
8744 \space\space
8745 \string\pdfobjcompresslevel=0\string\relax
8746 }%
8747 \fi
8748 \Hy@temp@A
8749 }%
8750 \fi
8751 \fi
8752 \PackageInfo{hyperref}{%
8753 \expandafter\string\Hy@pdfmajorversion.%
8754 \expandafter\string\Hy@pdfminorversion
8755 :=\number\Hy@pdf@majorversion.\number\Hy@pdf@minorversion\space
8756 }%
8757 \fi
8758 \edef\Hy@pdf@majorversion{\number\Hy@pdfmajorversion}%
8759 \edef\Hy@pdf@minorversion{\number\Hy@pdfminorversion}%
8760 \Hy@DisableOption{pdfversion}%
8761 \ifHy@ocgcolorlinks
8762 \pdf@ifdraftmode{}{%
8763 \immediate\pdfobj{%
8764 <<%
8765 /Type/OCG%
8766 /Name(View)%
8767 /Usage<<%
8768 /Print<<%
8769 /PrintState/OFF%
8770 >>%
8771 /View<<%
8772 /ViewState/ON%
8773 >>%
8774 >>%

```

```

8775     >>%
8776 }%
8777 \edef\OBJ@OCG@view{\the\pdflastobj\space 0 R}%
8778 \immediate\pdfobj{%
8779     <<%
8780     /Type/OCG%
8781     /Name(Print)%
8782     /Usage<<%
8783     /Print<<%
8784     /PrintState/ON%
8785     >>%
8786     /View<<%
8787     /ViewState/OFF%
8788     >>%
8789     >>%
8790     >>%
8791 }%
8792 \edef\OBJ@OCG@print{\the\pdflastobj\space 0 R}%
8793 \immediate\pdfobj{%
8794     [%
8795     \OBJ@OCG@view\space\OBJ@OCG@print
8796     ]%
8797 }%
8798 \edef\OBJ@OCGs{\the\pdflastobj\space 0 R}%
8799 \pdfcatalog{%
8800     /OCProperties<<%
8801     /OCGs \OBJ@OCGs
8802     /D<<%
8803     /OFF[\OBJ@OCG@print]%
8804     /AS[%
8805     <<%
8806     /Event/View%
8807     /OCGs \OBJ@OCGs
8808     /Category[/View]%
8809     >>%
8810     <<%
8811     /Event/Print%
8812     /OCGs \OBJ@OCGs
8813     /Category[/Print]%
8814     >>%
8815     <<%
8816     /Event/Export%
8817     /OCGs \OBJ@OCGs
8818     /Category[/Print]%
8819     >>%
8820     ]%
8821     >>%
8822     >>%
8823 }%
8824 \begingroup
8825 \edef\x{\endgroup
8826 \pdfpageresources{%
8827 \the\pdfpageresources
8828 /Properties<<%

```

```

8829         /OCView \OBJ@OCG@view
8830         /OCPrint \OBJ@OCG@print
8831     >>%
8832 }%
8833 }%
8834 \x
8835 }%
8836 \Hy@AtBeginDocument{%
8837   \def\Hy@colorlink#1{%
8838     \begingroup
8839     \ifHy@ocgcolorlinks
8840       \def\Hy@ocgcolor{#1}%
8841       \setbox0=\hbox\bgroup\color@begingroup
8842     \else
8843       \HyColor@UseColor#1%
8844     \fi
8845   }%
8846   \def\Hy@endcolorlink{%
8847     \ifHy@ocgcolorlinks
8848       \color@endgroup\egroup
8849     \mbox{%
8850       \pdfliteral page{/OC/OCPrint BDC}%
8851       \rlap{\copy0}%
8852       \pdfliteral page{EMC/OC/OCView BDC}%
8853     \begingroup
8854       \expandafter\HyColor@UseColor\Hy@ocgcolor
8855       \box0 %
8856     \endgroup
8857     \pdfliteral page{EMC}%
8858   }%
8859   \fi
8860 \endgroup
8861 }%
8862 }%
8863 \else
8864   \Hy@DisableOption{ocgcolorlinks}%
8865 \fi

```

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

```

8866 \def\setpdfinkmargin#1{%
8867   \begingroup
8868   \setlength{\dimen@}{#1}%
8869   \expandafter\endgroup
8870   \expandafter\pdfinkmargin\the\dimen@\relax
8871 }
8872 \pdfinkmargin1pt %

```

First set up the default linking

```

8873 \providecommand*\@pdfview{XYZ}

```

First define the anchors:

```

8874 \Hy@WrapperDef\new@pdfink#1{%
8875   \ifhmode
8876     \@savsf\spacefactor
8877   \fi

```

```

8878 \Hy@SaveLastskip
8879 \Hy@VerboseAnchor{#1}%
8880 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
8881 \Hy@DestName\Hy@pstringDest\@pdfview
8882 \Hy@RestoreLastskip
8883 \ifhmode
8884   \spacefactor\@savsf
8885 \fi
8886 }
8887 \let\pdf@endanchor\@empty

```

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

```

8888 \def\Hy@DestName#1#2{%
8889   \pdfdest name{#1}#2\relax
8890 }

```

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.

```

8891 \providecommand*\@pdfborder{0 0 1}
8892 \providecommand*\@pdfborderstyle{}
8893 \def\Hy@undefinedname{UNDEFINED}
8894 \def\find@pdflink#1#2{%
8895   \leavevmode
8896   \protected@edef\Hy@testname{#2}%
8897   \ifx\Hy@testname\@empty
8898     \Hy@Warning{%
8899       Empty destination name,\MessageBreak
8900       using '\Hy@undefinedname'%
8901     }%
8902     \let\Hy@testname\Hy@undefinedname
8903   \else
8904     \Hy@pstringdef\Hy@testname{%
8905       \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
8906     }%
8907   \fi
8908   \Hy@StartlinkName{%
8909     \ifHy@pdfa /F 4\fi
8910     \Hy@setpdfborder
8911     \Hy@setpdfhighlight
8912     \ifx\CurrentBorderColor\relax
8913       \else
8914         /C[\CurrentBorderColor]%
8915     \fi
8916   }\Hy@testname
8917   \expandafter\Hy@colorlink\csname @#1color\endcsname
8918 }
8919 \def\Hy@StartlinkName#1#2{%
8920   \pdfstartlink attr{#1}goto name{#2}\relax
8921 }
8922 \def\close@pdflink{%
8923   \Hy@endcolorlink

```

```

8924 \Hy@VerboseLinkStop
8925 \pdfendlink
8926 }
8927 \def\hyper@anchor#1{%
8928 \new@pdfink{#1}\anchor@spot\pdf@endanchor
8929 }
8930 \def\hyper@anchorstart#1{%
8931 \new@pdfink{#1}%
8932 \Hy@activeanchortrue
8933 }
8934 \def\hyper@anchorend{%
8935 \pdf@endanchor
8936 \Hy@activeanchorfalse
8937 }
8938 \def\hyper@linkstart#1#2{%
8939 \Hy@VerboseLinkStart{#1}{#2}%
8940 \ltx@ifundefined{#1bordercolor}{%
8941 \let\CurrentBorderColor\relax
8942 }{%
8943 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8944 }%
8945 \find@pdfink{#1}{#2}%
8946 }
8947 \def\hyper@linkend{\close@pdfink}
8948 \def\hyper@link#1#2#3{%
8949 \Hy@VerboseLinkStart{#1}{#2}%
8950 \ltx@ifundefined{#1bordercolor}{%
8951 \let\CurrentBorderColor\relax
8952 }{%
8953 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8954 }%
8955 \find@pdfink{#1}{#2}#3\Hy@xspace@end
8956 \close@pdfink
8957 }
8958 \let\CurrentBorderColor\@linkbordercolor
8959 \def\hyper@linkurl#1#2{%
8960 \begingroup
8961 \Hy@pstringdef\Hy@pstringURI{#2}%
8962 \hyper@chars
8963 \leavevmode
8964 \pdfstartlink
8965 attr{%
8966 \Hy@setpdfborder
8967 \Hy@setpdfhighlight
8968 \ifx\@urlbordercolor\relax
8969 \else
8970 /C[\@urlbordercolor]%
8971 \fi
8972 }%
8973 user{%
8974 /Subtype/Link%
8975 \ifHy@pdfa /F 4\fi
8976 /A<<%
8977 /Type/Action%

```



```

8978      /S/URI%
8979      /URI(\Hy@pstringURI)%
8980      \ifHy@href@ismap
8981      /IsMap true%
8982      \fi
8983      \Hy@href@nextactionraw
8984      >>%
8985      }%
8986      \relax
8987      \Hy@colorlink\@urlcolor#1\Hy@xspace@end
8988      \close@pdfink
8989      \endgroup
8990  }
8991  \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
8992  \begingroup
8993  \def\Hy@pstringF{#2}%
8994  \Hy@CleanupFile\Hy@pstringF
8995  \Hy@pstringdef\Hy@pstringF\Hy@pstringF
8996  \Hy@pstringdef\Hy@pstringD{#3}%
8997  \Hy@MakeRemoteAction
8998  \leavevmode
8999  \pdfstartlink
9000  attr{%
9001  \Hy@setpdfborder
9002  \Hy@setpdfhighlight
9003  \ifx\@filebordercolor\relax
9004  \else
9005  /C[\@filebordercolor]%
9006  \fi
9007  }%
9008  user {%
9009  /Subtype/Link%
9010  \ifHy@pdfa /F 4\fi
9011  /A<<%
9012  /F(\Hy@pstringF)%
9013  /S/GoToR%
9014  \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}

```

```

9015      \ifx\#3\%
9016      /D[\Hy@href@page\@pdfremotestartview]%
9017      \else
9018      /D(\Hy@pstringD)%
9019      \fi

```

```

9020      \Hy@href@nextactionraw
9021      >>%
9022    }%
9023    \relax
9024    \Hy@colorlink\@filecolor#1\Hy@xspace@end
9025    \close@pdflink
9026  \endgroup
9027 }
9028 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
9029  \begingroup
9030    \Hy@pstringdef\Hy@pstringF{#1}%
9031    \Hy@pstringdef\Hy@pstringP{#3}%
9032    \leavevmode
9033    \pdfstartlink
9034    attr{%
9035      \Hy@setpdfborder
9036      \Hy@setpdfhighlight
9037      \ifx\@runbordercolor\relax
9038        \else
9039        /C[\@runbordercolor]%
9040      \fi
9041    }%
9042    user {%
9043      /Subtype/Link%
9044      \ifHy@pdfa /F 4\fi
9045      /A<<%
9046        /F(\Hy@pstringF)%
9047        /S/Launch%
9048        \Hy@SetNewWindow
9049        \ifx\#3\%
9050        \else
9051        /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
9052      \fi
9053      \Hy@href@nextactionraw
9054      >>%
9055    }%
9056    \relax
9057    \Hy@colorlink\@runcolor#2\Hy@xspace@end
9058    \close@pdflink
9059  \endgroup
9060 }

```

\PDF@SetupDox

```

9061 \def\PDF@SetupDoc{%
9062   \ifx\@pdfpagescrop\@empty
9063   \else
9064     \edef\process@me{%
9065       \pdfpagesattr=%
9066       /CropBox[\@pdfpagescrop]%
9067       \expandafter\ifx\expandafter\the\pdfpagesattr\%
9068       \else
9069       ^^J\the\pdfpagesattr
9070     \fi
9071   }%

```

```

9072 }%
9073 \process@me
9074 \fi
9075 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9076 \pdfcatalog{%
9077 /PageMode/\@pdfpagemode
9078 \ifx\@baseurl\@empty
9079 \else
9080 /URI<</Base(\Hy@pstringB)>>%
9081 \fi
9082 }%
9083 \ifx\@pdfstartpage\@empty
9084 \else
9085 \ifx\@pdfstartview\@empty
9086 \else
9087 openaction goto page\@pdfstartpage{\@pdfstartview}%
9088 \fi
9089 \fi
9090 \edef\Hy@temp{%
9091 \ifHy@pdftoolbar\else /HideToolbar true\fi
9092 \ifHy@pdfmenubar\else /HideMenubar true\fi
9093 \ifHy@pdfwindowui\else /HideWindowUI true\fi
9094 \ifHy@pdffitwindow /FitWindow true\fi
9095 \ifHy@pdfcenterwindow /CenterWindow true\fi
9096 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9097 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9098 \Hy@UseNameKey{Direction}\@pdfdirection
9099 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9100 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9101 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9102 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9103 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9104 \Hy@UseNameKey{Duplex}\@pdfduplex
9105 \ifx\@pdfpicktraybypdfsize\@empty
9106 \else
9107 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9108 \fi
9109 \ifx\@pdfprintpagerange\@empty
9110 \else
9111 /PrintPageRange[\@pdfprintpagerange]%
9112 \fi
9113 \ifx\@pdfnumcopies\@empty
9114 \else
9115 /NumCopies \@pdfnumcopies
9116 \fi
9117 }%
9118 \pdfcatalog{%
9119 \ifx\Hy@temp\@empty
9120 \else
9121 /ViewerPreferences<<\Hy@temp>>%
9122 \fi
9123 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9124 \ifx\@pdflang\relax
9125 \else

```

```

9126     /Lang(\@pdflang)%
9127     \fi
9128 }%
9129 }

```

\PDF@FinishDoc

```

9130 \def\PDF@FinishDoc{%
9131   \pdf@ifdraftmode{}{%
9132     \Hy@UseMaketitleInfos
9133     \HyInfo@GenerateAddons
9134     \pdfinfo{%
9135       /Author(\@pdfauthor)%
9136       /Title(\@pdftitle)%
9137       /Subject(\@pdfsubject)%
9138       /Creator(\@pdfcreator)%
9139       \ifx\@pdfcreationdate\@empty
9140       \else
9141         /CreationDate(\@pdfcreationdate)%
9142       \fi
9143       \ifx\@pdfmoddate\@empty
9144       \else
9145         /ModDate(\@pdfmoddate)%
9146       \fi
9147       \ifx\@pdfproducer\relax
9148       \else
9149         /Producer(\@pdfproducer)%
9150       \fi
9151       /Keywords(\@pdfkeywords)%
9152       \ifx\@pdftrapped\@empty
9153       \else
9154         /Trapped/\@pdftrapped
9155       \fi
9156       \HyInfo@Addons
9157     }%
9158   }%
9159   \Hy@DisableOption{pdfauthor}%
9160   \Hy@DisableOption{pdftitle}%
9161   \Hy@DisableOption{pdfsubject}%
9162   \Hy@DisableOption{pdfcreator}%
9163   \Hy@DisableOption{addtopdfcreator}%
9164   \Hy@DisableOption{pdfcreationdate}%
9165   \Hy@DisableOption{pdfmoddate}%
9166   \Hy@DisableOption{pdfproducer}%
9167   \Hy@DisableOption{pdfkeywords}%
9168   \Hy@DisableOption{pdftrapped}%
9169   \Hy@DisableOption{pdfinfo}%
9170 }

```

\hyper@pagetransition \@pdfpagetransition is initialized with \relax. So it indicates, if option pdfpagetransition is used. First previous /Trans entries are removed. If a new /Trans key exists, it is appended to \pdfpageattr.

```

9171 \def\hyper@pagetransition{%
9172   \ifx\@pdfpagetransition\relax
9173   \else

```

```

9174 \expandafter\Hy@RemoveTransPageAttr
9175 \the\pdfpageattr^^J/Trans{}}>>\END
9176 \ifx\@pdfpagetransition\@empty
9177 \else
9178 \edef\@processme{%
9179 \global\pdfpageattr{%
9180 \the\pdfpageattr
9181 ^^J/Trans << /S /\@pdfpagetransition\space >>%
9182 }%
9183 }%
9184 \@processme
9185 \fi
9186 \fi
9187 }

```

`\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.

```

9188 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
9189 \ifx\#2\%
9190 \global\pdfpageattr{#1}%
9191 \else
9192 \Hy@RemoveTransPageAttr#1#4\END
9193 \fi
9194 }

```

`\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`.

```

9195 \def\hyper@pageduration{%
9196 \ifx\@pdfpageduration\relax
9197 \else
9198 \expandafter
9199 \Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
9200 \ifx\@pdfpageduration\@empty
9201 \else
9202 \edef\@processme{%
9203 \global\pdfpageattr{%
9204 \the\pdfpageattr
9205 ^^J/Dur \@pdfpageduration\space
9206 }%
9207 }%
9208 \@processme
9209 \fi
9210 \fi
9211 }

```

`\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.

```

9212 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
9213   \ifx\#2\%
9214     \global\pdfpageattr{#1}%
9215   \else
9216     \Hy@RemoveDurPageAttr#1#4\END
9217   \fi
9218 }

9219 \pdf@ifdraftmode{}{%
9220   \g@addto@macro\Hy@EveryPageHook{%
9221     \hyper@pagetransition
9222     \hyper@pageduration
9223   }%
9224 }

```

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

```

9225 \pdfifx{pdf}{xetex}
9226 \ifx\pdfifx\pdfifx
9227   \Hy@AtBeginDocument{%
9228     \ifHy@setpagesize
9229       \expandafter\@firstofone
9230     \else
9231       \expandafter\@gobble
9232     \fi
9233   }%
9234   \ifclassloaded{seminar}{%
9235     \pdfifx{pdf}{xetex}
9236     \setlength{\pdfhorigin}{1truein}%
9237     \setlength{\pdfvorigin}{1truein}%
9238   }%
9239   \ifportrait
9240     \ifdim\paperwidth=\z@
9241     \else
9242       \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
9243     \fi
9244     \ifdim\paperheight=\z@
9245     \else
9246       \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
9247     \fi
9248   \else
9249     \ifdim\paperheight=\z@
9250     \else
9251       \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
9252     \fi
9253     \ifdim\paperwidth=\z@
9254     \else
9255       \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
9256     \fi
9257   \fi
9258 }%
9259 \ifnum\mag=\@m
9260   \ifdim\stockwidth>\z@
9261   \ifdim\stockheight>\z@
9262     \setlength{\pdfpagewidth}{\stockwidth}%

```

```

9263     \setlength{\pdfpageheight}{\stockheight}%
9264     \else
9265     \ifdim\paperwidth>\z@
9266     \ifdim\paperheight>\z@
9267     \setlength{\pdfpagewidth}{\paperwidth}%
9268     \setlength{\pdfpageheight}{\paperheight}%
9269     \fi
9270     \fi
9271     \fi
9272     \else
9273     \ifdim\stockwidth=\z@
9274     \ifdim\paperwidth>\z@
9275     \ifdim\paperheight>\z@
9276     \setlength{\pdfpagewidth}{\paperwidth}%
9277     \setlength{\pdfpageheight}{\paperheight}%
9278     \fi
9279     \fi
9280     \fi
9281     \fi
9282     \fi
9283     }%
9284 }%
9285 \Hy@DisableOption{setpagesize}%
9286 }
9287 </pdfTeX | xetex>
9288 <*pdfTeX>
9289 \def\Acrobatmenu#1#2{%
9290 \Hy@Acrobatmenu{#1}{#2}{%
9291 \leavevmode
9292 \EdefEscapeName\Hy@temp@menu{#1}%
9293 \pdfstartlink
9294 attr{%
9295 \Hy@setpdfborder
9296 \Hy@setpdfhighlight
9297 \ifx\@menubordercolor\relax
9298 \else
9299 /C[\@menubordercolor]%
9300 \fi
9301 }%
9302 user{%
9303 /Subtype/Link%
9304 \ifHy@pdfa /F 4\fi
9305 /A<<%
9306 /S/Named%
9307 /N/\Hy@temp@menu
9308 \Hy@href@nextactionraw
9309 >>%
9310 }%
9311 \relax
9312 \Hy@colorlink\@menucolor#2%
9313 \close@pdflink
9314 }%
9315 }

```

### 44.2.1 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.

change 2020-10-01: the code has been removed as outdated.

```
9316 </pdfTeX>
```

## 44.3 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 TeX file — the TeX commands between the two ends of a pair form an *anchor* in the document. In the case of an *href* command, the *anchor* is to be highlighted in the *dvi* viewer, and when clicked on will cause the scene to shift to the destination specified by *href\_string*. The *anchor* associated with a name command represents a possible location to which other hypertext links may refer, either as local references (of the form `href="#name_string"` with the *name\_string* identical to the one in the name command) or as part of a URL (of the form `URL#name_string`). Here *href\_string* is a valid URL or local identifier, while *name\_string* could be any string at all: the only caveat is that “” characters should be escaped with a backslash (\), and if it looks like a URL name it may cause problems.

```
9317 <{*hypertex}>
9318 \providecommand*{\XR@ext}{dvi}
9319 \let\PDF@FinishDoc\ltx@empty
9320 \def\PDF@SetupDoc{%
```



```

9321 \ifx\@baseurl\@empty
9322 \else
9323   \special{html:<base href="\@baseurl">}%
9324 \fi
9325 }
9326 \Hy@WrapperDef\hyper@anchor#1{%
9327   \Hy@SaveLastskip
9328   \Hy@VerboseAnchor{#1}%
9329   \begingroup
9330     \let\protect=\string
9331     \hyper@chars
9332     \special{html:<a name=%
9333       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9334   \endgroup
9335   \Hy@Activeanchortrue
9336   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9337   \special{html:</a>}%
9338   \Hy@Activeanchorfalse
9339   \Hy@RestoreLastskip
9340 }
9341 \Hy@WrapperDef\hyper@anchorstart#1{%
9342   \Hy@SaveLastskip
9343   \Hy@VerboseAnchor{#1}%
9344   \begingroup
9345     \hyper@chars
9346     \special{html:<a name=%
9347       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9348   \endgroup
9349   \Hy@Activeanchortrue
9350 }
9351 \def\hyper@anchorend{%
9352   \special{html:</a>}%
9353   \Hy@Activeanchorfalse
9354   \Hy@RestoreLastskip
9355 }
9356 \def\@urltype{url}
9357 \def\hyper@linkstart#1#2{%
9358   \Hy@VerboseLinkStart{#1}{#2}%
9359   \expandafter\Hy@colorlink\csname @#1color\endcsname
9360   \def\Hy@tempa{#1}%
9361   \ifx\Hy@tempa\@urltype
9362     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9363   \else
9364     \begingroup
9365       \hyper@chars
9366       \special{html:<a href=%
9367         \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
9368     \endgroup
9369   \fi
9370 }
9371 \def\hyper@linkend{%
9372   \special{html:</a>}%
9373   \Hy@endcolorlink
9374 }

```

```

9375 \def\hyper@linkfile#1#2#3{%
9376 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
9377 }
9378 \def\hyper@linkurl#1#2{%

```

If we want to raise up the final link `\special`, we need to get its height; ask me why L<sup>A</sup>T<sub>E</sub>X constructs make this totally foul up, and make us revert to basic T<sub>E</sub>X. I do not know.

```

9379 \leavevmode
9380 \ifHy@raiselinks
9381 \Hy@SaveSpaceFactor
9382 \Hy@SaveSavedSpaceFactor
9383 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9384 \Hy@RestoreSavedSpaceFactor
9385 \@linkdim\dp\@tempboxa
9386 \lower\@linkdim\hbox{%
9387 \hyper@chars
9388 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9389 }%
9390 \Hy@colorlink\@urlcolor
9391 \Hy@RestoreSpaceFactor
9392 #1%
9393 \Hy@SaveSpaceFactor
9394 \@linkdim\ht\@tempboxa

```

Because of the interaction with the dvilhs processor, we have to subtract a little from the height. This is not clean, or checked. Check with Mark Doyle about what gives here. It may not be needed with the new dvips (Jan 1997).

```

9395 \advance\@linkdim by -6.5\p@
9396 \raise\@linkdim\hbox{\special{html:</a>}}%
9397 \Hy@endcolorlink
9398 \Hy@RestoreSpaceFactor
9399 \else
9400 \begingroup
9401 \hyper@chars
9402 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9403 \Hy@colorlink\@urlcolor#1\Hy@xspace@end
9404 \special{html:</a>}%
9405 \Hy@endcolorlink
9406 \endgroup
9407 \fi
9408 }

```

Very poor implementation of `\hyper@link` without considering #1.

```

9409 \def\hyper@link#1#2#3{%
9410 \Hy@VerboseLinkStart{#1}{#2}%
9411 \hyper@linkurl{#3}{\# \Hy@HyperDestNameFilter{#2}}%
9412 }

9413 \def\hyper@image#1#2{%
9414 \begingroup
9415 \hyper@chars
9416 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
9417 \endgroup
9418 }

```

```

9419 </hypertex>
9420 <*dviwindo>

```

## 44.4 dviwindo

[This was developed by David Carlisle]. Within a file dviwindo hyperlinking is used, for external URL's a call to `\wwwbrowser` is made. (You can define this command before or after loading the `hyperref` package if the default `c:/netscape/netscape` is not suitable) Dviwindo could in fact handle external links to dvi files on the same machine without calling a web browser, but that would mean parsing the URL to recognise such, and this is currently not done.

This was more or less blindly copied from the `hypertex` cfg. For dviwindo,  $\text{\LaTeX}$  must specify the size of the active area for links. For some hooks this information is available but for some, the start and end of the link are specified separately in which case a fixed size area of 10000000sp wide by `\baselineskip` high is used.

```

9421 \providecommand*\XR@ext}{dvi}
9422 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
9423 \Hy@WrapperDef\hyper@anchor#1{%
9424   \Hy@SaveLastskip
9425   \Hy@VerboseAnchor{#1}%
9426   \begingroup
9427     \let\protect=\string
9428     \special{mark: #1}%
9429   \endgroup
9430   \Hy@activeanchortrue
9431   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9432   \Hy@activeanchorfalse
9433   \Hy@RestoreLastskip
9434 }
9435 \Hy@WrapperDef\hyper@anchorstart#1{%
9436   \Hy@SaveLastskip
9437   \Hy@VerboseAnchor{#1}%
9438   \special{mark: #1}%
9439   \Hy@activeanchortrue
9440 }
9441 \def\hyper@anchorend{%
9442   \Hy@activeanchorfalse
9443   \Hy@RestoreLastskip
9444 }
9445 \def\hyper@linkstart#1#2{%
9446   \Hy@VerboseLinkStart{#1}{#2}%
9447   \expandafter\Hy@colorlink\csname @#1color\endcsname
9448   \special{button: %
9449     10000000 %
9450     \number\baselineskip\space
9451     #2%
9452   }%
9453 }
9454 \def\hyper@linkend{%
9455   \Hy@endcolorlink
9456 }
9457 \def\hyper@link#1#2#3{%

```

```

9458 \Hy@VerboseLinkStart{#1}{#2}%
9459 \leavevmode
9460 \ifHy@raiselinks
9461   \Hy@SaveSpaceFactor
9462   \Hy@SaveSavedSpaceFactor
9463   \sbox\@tempboxa{\Hy@RestoreSpaceFactor#3}%
9464   \Hy@RestoreSavedSpaceFactor
9465   \@linkdim\dp\@tempboxa
9466   \lower\@linkdim\hbox{%
9467     \special{button: %
9468       \number\wd\@tempboxa\space
9469       \number\ht\@tempboxa\space
9470       #2%
9471     }%
9472     \expandafter\Hy@colorlink\csname @#1color\endcsname
9473     \Hy@RestoreSpaceFactor
9474     #3\Hy@xspace@end
9475     \Hy@SaveSpaceFactor
9476     \Hy@endcolorlink
9477   }%
9478   \@linkdim\ht\@tempboxa
9479   \advance\@linkdim by -6.5\p@
9480   \raise\@linkdim\hbox{}%
9481   \Hy@RestoreSpaceFactor
9482 \else
9483   \special{button: %
9484     \number\wd\@tempboxa\space
9485     \number\ht\@tempboxa\space
9486     #2%
9487   }%
9488   \expandafter\Hy@colorlink\csname @#1color\endcsname
9489   #3\Hy@xspace@end
9490   \Hy@endcolorlink
9491 \fi
9492 }
9493 \def\hyper@linkurl#1#2{%
9494   \begingroup
9495   \hyper@chars
9496   \leavevmode
9497   \ifHy@raiselinks
9498     \Hy@SaveSpaceFactor
9499     \Hy@SaveSavedSpaceFactor
9500     \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9501     \Hy@RestoreSavedSpaceFactor
9502     \@linkdim\dp\@tempboxa
9503     \lower\@linkdim\hbox{%
9504       \special{button: %
9505         \number\wd\@tempboxa\space
9506         \number\ht\@tempboxa\space
9507         launch: \wwwbrowser\space
9508         #2%
9509       }%
9510       \Hy@colorlink\@urlcolor
9511       \Hy@RestoreSpaceFactor

```

```

9512      #1\Hy@xspace@end
9513      \Hy@SaveSpaceFactor
9514      \Hy@endcolorlink
9515    }%
9516    \@linkdim\ht\@tempboxa
9517    \advance\@linkdim by -6.5\p@
9518    \raise\@linkdim\hbox{}%
9519    \Hy@RestoreSpaceFactor
9520  \else
9521    \special{button: %
9522      \number\wd\@tempboxa\space
9523      \number\ht\@tempboxa\space
9524      launch: \wwwbrowser\space
9525      #2%
9526    }%
9527    \Hy@colorlink\@urlcolor
9528    #1\Hy@xspace@end
9529    \Hy@endcolorlink
9530  \fi
9531 \endgroup
9532 }
9533 \def\hyper@linkfile#1#2#3{%
9534 \begingroup
9535 \hyper@chars
9536 \leavevmode
9537 \ifHy@raiselinks
9538   \Hy@SaveSpaceFactor
9539   \Hy@SaveSavedSpaceFactor
9540   \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9541   \Hy@RestoreSavedSpaceFactor
9542   \@linkdim\dp\@tempboxa
9543   \lower\@linkdim\hbox{%
9544     \special{button: %
9545       \number\wd\@tempboxa\space
9546       \number\ht\@tempboxa\space
9547       #3,%
9548       file: #2%
9549     }%
9550     \Hy@colorlink\@filecolor
9551     \Hy@RestoreSpaceFactor
9552     #1\Hy@xspace@end
9553     \Hy@SaveSpaceFactor
9554     \Hy@endcolorlink
9555   }%
9556   \@linkdim\ht\@tempboxa
9557   \advance\@linkdim by -6.5\p@
9558   \raise\@linkdim\hbox{}%
9559   \Hy@RestoreSpaceFactor
9560 \else
9561   \special{button: %
9562     \number\wd\@tempboxa\space
9563     \number\ht\@tempboxa\space
9564     #3,%
9565     file: #2%

```

```

9566     }%
9567     \Hy@colorlink\@filecolor
9568     #1\Hy@xspace@end
9569     \Hy@endcolorlink
9570     \fi
9571 \endgroup
9572 }
9573 \HyInfo@AddonUnsupportedtrue
9574 \def\PDF@FinishDoc{%
9575   \Hy@UseMaketitleInfos
9576   \HyInfo@TrappedUnsupported
9577   \special{PDF: Keywords \@pdfkeywords}%
9578   \special{PDF: Title \@pdftitle}%
9579   \special{PDF: Creator \@pdfcreator}%
9580   \ifx\@pdfcreationdate\@empty
9581   \else
9582     \special{PDF: CreationDate \@pdfcreationdate}%
9583   \fi
9584   \ifx\@pdfmoddate\@empty
9585   \else
9586     \special{PDF: ModDate \@pdfmoddate}%
9587   \fi
9588   \special{PDF: Author \@pdfauthor}%
9589   \ifx\@pdfproducer\relax
9590   \else
9591     \special{PDF: Producer \@pdfproducer}%
9592   \fi
9593   \special{PDF: Subject \@pdfsubject}%
9594   \Hy@DisableOption{pdfauthor}%
9595   \Hy@DisableOption{pdftitle}%
9596   \Hy@DisableOption{pdfsubject}%
9597   \Hy@DisableOption{pdfcreator}%
9598   \Hy@DisableOption{addtopdfcreator}%
9599   \Hy@DisableOption{pdfcreationdate}%
9600   \Hy@DisableOption{pdfcreationdate}%
9601   \Hy@DisableOption{pdfmoddate}%
9602   \Hy@DisableOption{pdfproducer}%
9603   \Hy@DisableOption{pdfkeywords}%
9604   \Hy@DisableOption{pdftrapped}%
9605   \Hy@DisableOption{pdfinfo}%
9606 }
9607 \def\PDF@SetupDoc{%
9608   \ifx\@baseurl\@empty
9609   \else
9610     \special{PDF: Base \@baseurl}%
9611   \fi
9612   \ifx\@pdfpagescrop\@empty\else
9613     \special{PDF: BBox \@pdfpagescrop}%
9614   \fi
9615   \def\Hy@temp{}%
9616   \ifx\@pdfstartpage\@empty
9617   \else
9618     \ifx\@pdfstartview\@empty
9619     \else

```

```

9620 \edef\Hy@temp{%
9621   ,Page=\@pdfstartpage
9622   ,View=\@pdfstartview
9623 }%
9624 \fi
9625 \fi
9626 \edef\Hy@temp{%
9627   \noexpand\pdfmark{%
9628     pdfmark=/DOCVIEW,%
9629     PageMode=/\@pdfpagemode
9630   \Hy@temp
9631 }%
9632 }%
9633 \Hy@temp
9634 \ifx\@pdfpagescrop\@empty
9635 \else
9636   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9637 \fi
9638 \edef\Hy@temp{%
9639   \ifHy@pdftoolbar\else /HideToolbar true\fi
9640   \ifHy@pdfmenubar\else /HideMenubar true\fi
9641   \ifHy@pdfwindowui\else /HideWindowUI true\fi
9642   \ifHy@pdffitwindow /FitWindow true\fi
9643   \ifHy@pdfcenterwindow /CenterWindow true\fi
9644   \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9645   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9646   \Hy@UseNameKey{Direction}\@pdfdirection
9647   \Hy@UseNameKey{ViewArea}\@pdfviewarea
9648   \Hy@UseNameKey{ViewClip}\@pdfviewclip
9649   \Hy@UseNameKey{PrintArea}\@pdfprintarea
9650   \Hy@UseNameKey{PrintClip}\@pdfprintclip
9651   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9652   \Hy@UseNameKey{Duplex}\@pdfduplex
9653   \ifx\@pdfpicktraybypdfsize\@empty
9654   \else
9655     /PickTrayByPDFSize \@pdfpicktraybypdfsize
9656   \fi
9657   \ifx\@pdfprintpagerange\@empty
9658   \else
9659     /PrintPageRange[\@pdfprintpagerange]%
9660   \fi
9661   \ifx\@pdfnumcopies\@empty
9662   \else
9663     /NumCopies \@pdfnumcopies
9664   \fi
9665 }%
9666 \pdfmark{pdfmark=/PUT,%
9667   Raw={%
9668     \string{Catalog\string}<<%
9669     \ifx\Hy@temp\@empty
9670     \else
9671       /ViewerPreferences<<\Hy@temp>>%
9672     \fi
9673     \Hy@UseNameKey{PageLayout}\@pdfpagelayout

```

```

9674     \ifx\@pdflang\relax
9675     \else
9676         /Lang(\@pdflang)%
9677     \fi
9678     >>%
9679 }%
9680 }%
9681 }
9682 </dviwindo>
9683 <*dvipdfm|xetex>

```

## 44.5 dvipdfm/xetex dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

(x)dvipdfmx replaces destination names by numbers. This makes it impossible to link from an external document with xr-hyper, so from version 7.00j on this is suppressed with a config special.

```

9684 \special{dvipdfmx:config C 0x0010}
9685 \providecommand*\XR@ext}{pdf}
9686 \Hy@setbreaklinks{true}
9687 \def\HyPat@ObjRef{%
9688   @[\ ]+}%
9689 }
9690 \newsavebox{\pdfm@box}
9691 \def\@pdfm@mark#1{\special{pdf:#1}}
9692 \Hy@WrapperDef\@pdfm@dest#1{%
9693   \Hy@SaveLastskip
9694   \Hy@VerboseAnchor{#1}%
9695   \begingroup
9696     \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9697     \def\x{XYZ}%
9698     \ifx\x\@pdfview
9699       \def\x{XYZ @xpos @ypos null}%
9700     \else
9701       \def\x{FitH}%
9702       \ifx\x\@pdfview
9703         \def\x{FitH @ypos}%
9704       \else
9705         \def\x{FitBH}%
9706         \ifx\x\@pdfview
9707           \def\x{FitBH @ypos}%
9708         \else
9709           \def\x{FitV}%
9710           \ifx\x\@pdfview
9711             \def\x{FitV @xpos}%
9712           \else
9713             \def\x{FitBV}%
9714             \ifx\x\@pdfview
9715               \def\x{FitBV @xpos}%
9716             \else
9717               \def\x{Fit}%
9718             \ifx\x\@pdfview
9719               \let\x\@pdfview

```



```

9720         \else
9721         \def\x{FitB}%
9722         \ifx\x\@pdfview
9723         \let\x\@pdfview
9724         \else
9725         \def\x{FitR}%
9726         \ifx\x\@pdfview
9727         \Hy@Warning{'pdfview=FitR' is not supported}%
9728         \def\x{XYZ @xpos @ypos null}%
9729         \else
9730         \@onelevel@sanitize\@pdfview
9731         \Hy@Warning{%
9732         Unknown value '\@pdfview' for pdfview%
9733         }%
9734         \def\x{XYZ @xpos @ypos null}%
9735         \fi
9736         \fi
9737         \fi
9738         \fi
9739         \fi
9740         \fi
9741         \fi
9742         \fi
9743         \@pdfm@mark{dest (\Hy@pstringDest) [thispage /\x]}%
9744     \endgroup
9745     \Hy@RestoreLastskip
9746 }
9747 \providecommand*\@pdfview{XYZ}
9748 \providecommand*\@pdfborder{0 0 1}
9749 \providecommand*\@pdfborderstyle{}
9750 \def\hyper@anchor#1{%
9751     \@pdfm@dest{#1}%
9752 }
9753 \def\hyper@anchorstart#1{%
9754     \Hy@activeanchortrue
9755     \@pdfm@dest{#1}%
9756 }
9757 \def\hyper@anchorend{%
9758     \Hy@activeanchorfalse
9759 }
9760 \newcounter{Hy@AnnotLevel}
9761 \ifHy@ocgcolorlinks
9762     \def\OBJ@OCG@view{@OCG@view}%
9763     \@pdfm@mark{%
9764         obj \OBJ@OCG@view <<%
9765         /Type/OCG%
9766         /Name(View)%
9767         /Usage<<%
9768         /Print<<%
9769         /PrintState/OFF%
9770         >>%
9771         /View<<%
9772         /ViewState/ON%

```

```

9773     >>%
9774     >>%
9775     >>%
9776 }%
9777 \@pdfm@mark{close \OBJ@OCG@view}%
9778 \def\OBJ@OCG@print{@OCG@print}%
9779 \@pdfm@mark{%
9780   obj \OBJ@OCG@print <<%
9781     /Type/OCG%
9782     /Name(Print)%
9783     /Usage<<%
9784     /Print<<%
9785     /PrintState/ON%
9786     >>%
9787     /View<<%
9788     /ViewState/OFF%
9789     >>%
9790     >>%
9791     >>%
9792 }%
9793 \@pdfm@mark{close \OBJ@OCG@print}%
9794 \def\OBJ@OCGs{@OCGs}%
9795 \@pdfm@mark{%
9796   obj \OBJ@OCGs [%
9797     \OBJ@OCG@view\space\OBJ@OCG@print
9798   ]%
9799 }%
9800 \@pdfm@mark{close \OBJ@OCGs}%
9801 \@pdfm@mark{%
9802   put @catalog <<%
9803     /OCProperties<<%
9804     /OCGs \OBJ@OCGs
9805     /D<<%
9806     /OFF[\OBJ@OCG@print]%
9807     /AS[%
9808       <<%
9809         /Event/View%
9810         /OCGs \OBJ@OCGs
9811         /Category[/View]%
9812       >>%
9813       <<%
9814         /Event/Print%
9815         /OCGs \OBJ@OCGs
9816         /Category[/Print]%
9817       >>%
9818       <<%
9819         /Event/Export%
9820         /OCGs \OBJ@OCGs
9821         /Category[/Print]%
9822       >>%
9823     ]%
9824     >>%
9825     >>%
9826     >>%

```

```

9827 }%
9828 \AtBeginShipout{%
9829   \setbox\AtBeginShipoutBox=\hbox{%
9830     \copy\AtBeginShipoutBox
9831     \@pdfm@mark{%
9832       put @resources <<%
9833         /Properties<<%
9834         /OCView \OBJ@OCG@view
9835         /OCPrint \OBJ@OCG@print
9836       >>%
9837     >>%
9838   }%
9839 }%
9840 }%
9841 \Hy@AtBeginDocument{%
9842   \def\Hy@colorlink#1{%
9843     \begingroup
9844     \ifHy@ocgcolorlinks
9845       \def\Hy@ocgcolor{#1}%
9846       \setbox0=\hbox\bgroup\color@begingroup
9847     \else
9848       \HyColor@UseColor#1%
9849     \fi
9850   }%
9851   \def\Hy@endcolorlink{%
9852     \ifHy@ocgcolorlinks
9853       \color@endgroup\egroup
9854     \mbox{%
9855       \@pdfm@mark{content /OC/OCPrint BDC}%
9856       \rlap{\copy0}%
9857       \@pdfm@mark{content EMC/OC/OCView BDC}%
9858     \begingroup
9859       \expandafter\HyColor@UseColor\Hy@ocgcolor
9860     \box0 %
9861     \endgroup
9862     \@pdfm@mark{content EMC}%
9863   }%
9864   \fi
9865 \endgroup
9866 }%
9867 }%
9868 \else
9869 \Hy@DisableOption{ocgcolorlinks}%
9870 \fi

```

Use primitive counter arithmetic here to avoid amsmath redefining \stepcounter (github issue/13)

```

9871 \def\Hy@BeginAnnot#1{%
9872   \global\advance\c@Hy@AnnotLevel\@ne
9873   \ifnum\c@Hy@AnnotLevel=\@ne
9874     #1%
9875   \fi
9876 }
9877 \def\Hy@endAnnot{%

```

```

9878 \ifnum\value{Hy@AnnotLevel}=\@ne
9879 \Hy@endcolorlink
9880 \@pdfm@mark{eann}%
9881 \fi
9882 \global\advance\c@Hy@AnnotLevel\m@ne
9883 }

9884 \def\Hy@undefinedname{UNDEFINED}
9885 \def\hyper@linkstart#1#2{%
9886 \Hy@VerboseLinkStart{#1}{#2}%
9887 \leavevmode
9888 \Hy@BeginAnnot{%
9889 \protected@edef\Hy@testname{#2}%
9890 \ifx\Hy@testname\@empty
9891 \Hy@Warning{%
9892 Empty destination name,\MessageBreak
9893 using \Hy@undefinedname'%
9894 }%
9895 \let\Hy@testname\Hy@undefinedname
9896 \else
9897 \Hy@pstringdef\Hy@testname{%
9898 \expandafter\HyperDestNameFilter\expandafter{%
9899 \Hy@testname
9900 }%
9901 }%
9902 \fi
9903 \@pdfm@mark{%
9904 bann<<%
9905 /Type/Annot%
9906 /Subtype/Link%
9907 \ifHy@pdfa /F 4\fi
9908 \Hy@setpdfborder
9909 \Hy@setpdfhighlight
9910 \expandafter\ifx\csname @#1bordercolor\endcsname\relax
9911 \else
9912 /C[\csname @#1bordercolor\endcsname]%
9913 \fi
9914 /A<<%
9915 /S/GoTo%
9916 /D(\Hy@testname)%
9917 \Hy@href@nextactionraw
9918 >>%
9919 >>%
9920 }%
9921 \expandafter\Hy@colorlink\csname @#1color\endcsname
9922 }%
9923 }

9924 \def\hyper@linkend{\Hy@EndAnnot}%
9925 \def\hyper@link#1#2#3{%
9926 \hyper@linkstart{#1}{#2}#3\Hy@xspace@end\hyper@linkend
9927 }
9928 \def\hyper@linkfile#1#2#3{%
9929 \leavevmode
9930 \Hy@BeginAnnot{%
9931 \def\Hy@pstringF{#2}%

```

```

9932 \Hy@CleanupFile\Hy@pstringF
9933 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
9934 \Hy@pstringdef\Hy@pstringD{#3}%
9935 \Hy@MakeRemoteAction
9936 \@pdfm@mark{%
9937     bann<<%
9938     /Type/Annot%
9939     /Subtype/Link%
9940     \ifHy@pdfa /F 4\fi
9941     \Hy@setpdfborder
9942     \Hy@setpdfhighlight
9943     \ifx\@filebordercolor\relax
9944     \else
9945     /C[\@filebordercolor]%
9946     \fi
9947     /A<<%
9948     /S/GoToR%
9949     /F(\Hy@pstringF)%
9950     /D%
9951     \ifx\#3\%
9952     [\Hy@href@page\@pdfremotestartview]%
9953     \else
9954     (\Hy@pstringD)%
9955     \fi
9956     \Hy@SetNewWindow
9957     \Hy@href@nextactionraw
9958     >>%
9959     >>%
9960     }%
9961     \Hy@colorlink\@filecolor
9962     }%
9963     #1\Hy@xspace@end
9964     \Hy@endAnnot
9965 }
9966 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
9967     \leavevmode
9968     \Hy@BeginAnnot{%
9969         \Hy@pstringdef\Hy@pstringF{#1}%
9970         \Hy@pstringdef\Hy@pstringP{#3}%
9971         \@pdfm@mark{%
9972             bann<<%
9973             /Type/Annot%
9974             /Subtype/Link%
9975             \ifHy@pdfa /F 4\fi
9976             \Hy@setpdfborder
9977             \Hy@setpdfhighlight
9978             \ifx\@runbordercolor\relax
9979             \else
9980             /C[\@runbordercolor]%
9981             \fi
9982             /A<<%
9983             /F(\Hy@pstringF)%
9984             /S/Launch%
9985             \Hy@SetNewWindow

```

```

9986         \ifx\|#3\|%
9987         \else
9988             /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
9989         \fi
9990         \Hy@href@nextactionraw
9991     >>%
9992 >>%
9993 }%
9994 \Hy@colorlink\@runcolor
9995 }%
9996 #2\Hy@xspace@end
9997 \Hy@endAnnot
9998 }
9999 \def\hyper@linkurl#1#2{%
10000 \leavevmode
10001 \Hy@BeginAnnot{%
10002     \Hy@pstringdef\Hy@pstringURI{#2}%
10003     \@pdfm@mark{%
10004         bann<<%
10005             /Type/Annot%
10006             /Subtype/Link%
10007             \ifHy@pdfa /F 4\fi
10008             \Hy@setpdfborder
10009             \Hy@setpdfhighlight
10010             \ifx\@urlbordercolor\relax
10011                 \else
10012                 /C[\@urlbordercolor]%
10013             \fi
10014             /A<<%
10015             /S/URI%
10016             /URI(\Hy@pstringURI)%
10017             \ifHy@href@ismap
10018             /IsMap true%
10019             \fi
10020             \Hy@href@nextactionraw
10021         >>%
10022     >>%
10023 }%
10024 \Hy@colorlink\@urlcolor
10025 }%
10026 #1\Hy@xspace@end
10027 \Hy@endAnnot
10028 }
10029 \def\Acrobatmenu#1#2{%
10030 \Hy@Acrobatmenu{#1}{#2}{%
10031     \Hy@BeginAnnot{%
10032         \EdefEscapeName\Hy@temp@menu{#1}%
10033         \@pdfm@mark{%
10034             bann<<%
10035                 /Type/Annot%
10036                 /Subtype/Link%
10037                 \ifHy@pdfa /F 4\fi
10038                 \Hy@setpdfborder
10039                 \Hy@setpdfhighlight

```

```

10040     \ifx\@menubordercolor\relax
10041     \else
10042     /C[\@menubordercolor]%
10043     \fi
10044     /A<<%
10045     /S/Named%
10046     /N/\Hy@temp@menu
10047     \Hy@href@nextactionraw
10048     >>%
10049     >>%
10050     }%
10051     \Hy@colorlink\@menucolor
10052     }%
10053     #2\Hy@xspace@end
10054     \Hy@EndAnnot
10055     }%
10056 }
10057
10058 \def\PDF@FinishDoc{%
10059 \Hy@UseMaketitleInfos
10060 \HyInfo@GenerateAddons
10061 \@pdfm@mark{%
10062 docinfo<<%
10063 /Title(\@pdftitle)%
10064 /Subject(\@pdfsubject)%
10065 /Creator(\@pdfcreator)%
10066 \ifx\@pdfcreationdate\@empty
10067 \else
10068 /CreationDate(\@pdfcreationdate)%
10069 \fi
10070 \ifx\@pdfmoddate\@empty
10071 \else
10072 /ModDate(\@pdfmoddate)%
10073 \fi
10074 /Author(\@pdfauthor)%
10075 \ifx\@pdfproducer\relax
10076 \else
10077 /Producer(\@pdfproducer)%
10078 \fi
10079 /Keywords(\@pdfkeywords)%
10080 \ifx\@pdftrapped\@empty
10081 \else
10082 /Trapped/\@pdftrapped
10083 \fi
10084 \HyInfo@Addons
10085 >>%
10086 }%
10087 \Hy@DisableOption{pdfauthor}%
10088 \Hy@DisableOption{pdftitle}%
10089 \Hy@DisableOption{pdfsubject}%
10090 \Hy@DisableOption{pdfcreator}%
10091 \Hy@DisableOption{addtopdfcreator}%
10092 \Hy@DisableOption{pdfcreationdate}%
10093 \Hy@DisableOption{pdfcreationdate}%

```

```

10094 \Hy@DisableOption{pdfmoddate}%
10095 \Hy@DisableOption{pdfproducer}%
10096 \Hy@DisableOption{pdfkeywords}%
10097 \Hy@DisableOption{pdftrapped}%
10098 \Hy@DisableOption{pdfinfo}%
10099 }

10100 \def\PDF@SetupDoc{%
10101 \edef\Hy@temp{%
10102   \ifHy@pdftoolbar\else /HideToolbar true\fi
10103   \ifHy@pdfmenubar\else /HideMenubar true\fi
10104   \ifHy@pdfwindowui\else /HideWindowUI true\fi
10105   \ifHy@pdfwindow /FitWindow true\fi
10106   \ifHy@pdfcenterwindow /CenterWindow true\fi
10107   \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10108   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10109   \Hy@UseNameKey{Direction}\@pdfdirection
10110   \Hy@UseNameKey{ViewArea}\@pdfviewarea
10111   \Hy@UseNameKey{ViewClip}\@pdfviewclip
10112   \Hy@UseNameKey{PrintArea}\@pdfprintarea
10113   \Hy@UseNameKey{PrintClip}\@pdfprintclip
10114   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10115   \Hy@UseNameKey{Duplex}\@pdfduplex
10116   \ifx\@pdfpicktraybypdfsize\@empty
10117   \else
10118     /PickTrayByPDFSize \@pdfpicktraybypdfsize
10119   \fi
10120   \ifx\@pdfprintpagerange\@empty
10121   \else
10122     /PrintPageRange[\@pdfprintpagerange]%
10123   \fi
10124   \ifx\@pdfnumcopies\@empty
10125   \else
10126     /NumCopies \@pdfnumcopies
10127   \fi
10128 }%
10129 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10130 \@pdfm@mark{%
10131   docview<<%
10132     \ifx\@pdfstartpage\@empty
10133     \else
10134       \ifx\@pdfstartview\@empty
10135       \else
10136         /OpenAction[@page\@pdfstartpage\@pdfstartview]%
10137       \fi
10138     \fi
10139     \ifx\@baseurl\@empty
10140     \else
10141       /URI<</Base(\Hy@pstringB)>>%
10142     \fi
10143     /PageMode/\@pdfpagemode
10144     \ifx\Hy@temp\@empty
10145     \else
10146       /ViewerPreferences<<\Hy@temp>>%
10147     \fi

```



```

10148 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10149 \ifx\@pdflang\relax
10150 \else
10151 /Lang(\@pdflang)%
10152 \fi
10153 >>%
10154 }%
10155 \ifx\@pdfpagescrop\@empty
10156 \else
10157 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}%
10158 \fi
10159 }
10160 </dvipdfm | xetex>
10161 < *dvipdfm | xetex>

```

\hyper@pagetransition

```

10162 \def\hyper@pagetransition{%
10163 \ifx\@pdfpagetransition\relax
10164 \else
10165 \ifx\@pdfpagetransition\@empty
10166 \else
10167 \special{pdf:put @thispage %
10168 <</Trans<</S/\@pdfpagetransition>>>>%
10169 }%
10170 \fi
10171 \fi
10172 }

```

\hyper@pageduration

```

10173 \def\hyper@pageduration{%
10174 \ifx\@pdfpageduration\relax
10175 \else
10176 \ifx\@pdfpageduration\@empty
10177 \else
10178 \special{pdf:put @thispage %
10179 <</Dur \@pdfpageduration>>>>%
10180 }%
10181 \fi
10182 \fi
10183 }

```

```

10184 \g@addto@macro\Hy@EveryPageBoxHook{%
10185 \hyper@pagetransition
10186 \hyper@pageduration
10187 }
10188 </dvipdfm | xetex>

```

XeTeX uses pdfTeX's method \pdfpagewidth and \pdfpageheight for setting the paper size.

```

10189 < *dvipdfm>
10190 \AtBeginShipoutFirst{%
10191 \ifHy@setpagesize
10192 \begingroup

```

```

10193 \ifnum\mag=\@m
10194 \ifdim\stockwidth>\z@
10195 \ifdim\stockheight>\z@
10196 \special{papersize=\the\stockwidth,\the\stockheight}%
10197 \else
10198 \ifdim\paperwidth>\z@
10199 \ifdim\paperheight>\z@
10200 \special{papersize=\the\paperwidth,\the\paperheight}%
10201 \fi
10202 \fi
10203 \fi
10204 \else
10205 \ifdim\stockwidth=\z@
10206 \ifdim\paperwidth>\z@
10207 \ifdim\paperheight>\z@
10208 \special{papersize=\the\paperwidth,\the\paperheight}%
10209 \fi
10210 \fi
10211 \fi
10212 \fi
10213 \fi
10214 \endgroup
10215 \fi
10216 \Hy@DisableOption{setpagesize}%
10217 }
10218 </dvipdfm>

```

## 44.6 VTeX typesetting system

Provided by MicroPress, May 1998. They require VTeX version 6.02 or newer; see <http://www.micropress-inc.com/> for details.

```

10219 <vtxhtml>
10220 \providecommand*\XR@ext}{htm}
10221 \RequirePackage{vtxhtml}
10222 \newif\if@Localurl
10223 \let\PDF@FinishDoc\ltx@empty
10224 \def\PDF@SetupDoc{%
10225 \ifx\@baseurl\@empty
10226 \else
10227 \special{!direct <base href="\@baseurl">}%
10228 \fi
10229 }
10230 \def\@urltype{url}
10231 \def\hyper@link#1#2#3{%
10232 \Hy@VerboseLinkStart{#1}{#2}%
10233 \leavevmode
10234 \special{!direct <a href=%
10235 \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
10236 #3\Hy@xspace@end
10237 \special{!direct </a>}%
10238 }
10239 \def\hyper@linkurl#1#2{%
10240 \begingroup
10241 \hyper@chars

```

```

10242 \leavevmode
10243 \MathBSuppress=1\relax
10244 \special{!direct <a href=%
10245     \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}%
10246 #1\Hy@xspace@end
10247 \MathBSuppress=0\relax
10248 \special{!direct </a>}%
10249 \endgroup
10250 }
10251 \def\hyper@linkfile#1#2#3{%
10252 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
10253 }
10254 \def\hyper@linkstart#1#2{%
10255 \Hy@VerboseLinkStart{#1}{#2}%
10256 \def\Hy@tempa{#1}\ifx\Hy@tempa\@urlltype
10257 \@Localurltrue
10258 \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
10259 \else
10260 \@Localurlfalse
10261 \begingroup
10262 \hyper@chars
10263 \special{!aref \HyperDestNameFilter{#2}}%
10264 \endgroup
10265 \fi
10266 }
10267 \def\hyper@linkend{%
10268 \if@Localurl
10269 \special{!endaref}%
10270 \else
10271 \special{!direct </a>}%
10272 \fi
10273 }
10274 \Hy@WrapperDef\hyper@anchorstart#1{%
10275 \Hy@SaveLastskip
10276 \Hy@VerboseAnchor{#1}%
10277 \begingroup
10278 \hyper@chars
10279 \special{!aname #1}%
10280 \special{!direct <a name=%
10281     \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10282 \endgroup
10283 \Hy@activeanchortrue
10284 }
10285 \def\hyper@anchorend{%
10286 \special{!direct </a>}%
10287 \Hy@activeanchorfalse
10288 \Hy@RestoreLastskip
10289 }
10290 \Hy@WrapperDef\hyper@anchor#1{%
10291 \Hy@SaveLastskip
10292 \Hy@VerboseAnchor{#1}%
10293 \begingroup
10294 \let\protect=\string
10295 \hyper@chars

```

```

10296 \leavevmode
10297 \special{!aname #1}%
10298 \special{!direct <a name=%
10299 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10300 \endgroup
10301 \Hy@activeanchortrue
10302 \bgroup\anchor@spot\egroup
10303 \special{!direct </a>}%
10304 \Hy@activeanchorfalse
10305 \Hy@RestoreLastskip
10306 }
10307 \def\@Form[#1]{%
10308 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10309 }
10310 \let\@endForm\ltx@empty
10311 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10312 \Hy@Message{Sorry, TeXpider does not yet support FORM gauges}%
10313 }
10314 \def\@TextField[#1]#2{% parameters, label
10315 \Hy@Message{Sorry, TeXpider does not yet support FORM text fields}%
10316 }
10317 \def\@CheckBox[#1]#2{% parameters, label
10318 \Hy@Message{Sorry, TeXpider does not yet support FORM checkboxes}%
10319 }
10320 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10321 \Hy@Message{Sorry, TeXpider does not yet support FORM choice menus}%
10322 }
10323 \def\@PushButton[#1]#2{% parameters, label
10324 \Hy@Message{Sorry, TeXpider does not yet support FORM pushbuttons}%
10325 }
10326 \def\@Reset[#1]#2{%
10327 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10328 }
10329 \def\@Submit[#1]#2{%
10330 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10331 }
10332 </vtexhtml>
10333 <*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.

```

10334 \ifcsname mediaheight\endcsname
10335 \ifHy@setpagesize
10336 \providecommand*\VTeXInitMediaSize{%
10337 \ifnum\mag=\@m
10338 \ifdim\stockwidth>\z@
10339 \ifdim\stockheight>\z@
10340 \setlength\mediaheight\stockheight
10341 \setlength\mediawidth\stockwidth
10342 \else
10343 \ifdim\paperwidth>\z@
10344 \ifdim\paperheight>\z@
10345 \setlength\mediaheight\paperheight

```

```

10346         \setlength\mediawidth\paperwidth
10347     \fi
10348 \fi
10349 \fi
10350 \else
10351     \ifdim\stockwidth=\z@
10352     \ifdim\paperwidth>\z@
10353     \ifdim\paperheight>\z@
10354         \setlength\mediaheight\paperheight
10355         \setlength\mediawidth\paperwidth
10356     \fi
10357 \fi
10358 \fi
10359 \fi
10360 \fi
10361 }%
10362 \Hy@AtBeginDocument{\VTeXInitMediaSize}%
10363 \fi
10364 \Hy@DisableOption{setpagesize}%
10365 \fi

Older versions of VTeX require xyz in lower case.
10366 \providecommand*\@pdfview{xyz}
10367 \providecommand*\@pdfborder{0 0 1}
10368 \providecommand*\@pdfborderstyle{}
10369 \let\CurrentBorderColor\@linkbordercolor
10370 \Hy@WrapperDef\hyper@anchor#1{%
10371     \Hy@SaveLastskip
10372     \Hy@VerboseAnchor{#1}%
10373     \begingroup
10374         \let\protect=\string
10375         \hyper@chars
10376         \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10377     \endgroup
10378     \Hy@activeanchortrue
10379     \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
10380     \Hy@activeanchorfalse
10381     \Hy@RestoreLastskip
10382 }
10383 \Hy@WrapperDef\hyper@anchorstart#1{%
10384     \Hy@SaveLastskip
10385     \Hy@VerboseAnchor{#1}%
10386     \begingroup
10387         \hyper@chars
10388         \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10389     \endgroup
10390     \Hy@activeanchortrue
10391 }
10392 \def\hyper@anchorend{%
10393     \Hy@activeanchorfalse
10394     \Hy@RestoreLastskip
10395 }
10396 \def\@urltype{url}
10397 \def\Hy@undefinedname{UNDEFINED}
10398 \def\hyper@linkstart#1#2{%

```

```

10399 \Hy@VerboseLinkStart{#1}{#2}%
10400 \Hy@pstringdef\Hy@pstringURI{#2}%
10401 \expandafter\Hy@colorlink\csname @#1color\endcsname
10402 \ltx@ifundefined{@#1bordercolor}{%
10403   \let\CurrentBorderColor\relax
10404 }{%
10405   \edef\CurrentBorderColor{%
10406     \csname @#1bordercolor\endcsname
10407   }%
10408 }%
10409 \def\Hy@tempa{#1}%
10410 \ifx\Hy@tempa \@urltype
10411   \special{!%
10412     aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10413       \ifHy@href@ismap
10414         /IsMap true%
10415       \fi
10416       \Hy@href@nextactionraw
10417       >;%
10418     a=<%
10419       \ifHy@pdfa /F 4\fi
10420       \Hy@setpdfborder
10421       \ifx\CurrentBorderColor\relax
10422         \else
10423           /C [\CurrentBorderColor]%
10424         \fi
10425       >%
10426     }%
10427   \else
10428     \protected@edef\Hy@testname{#2}%
10429     \ifx\Hy@testname \@empty
10430       \Hy@Warning{%
10431         Empty destination name,\MessageBreak
10432         using ``\Hy@undefinedname'%
10433       }%
10434       \let\Hy@testname\Hy@undefinedname
10435     \fi
10436     \special{!%
10437       aref \expandafter\HyperDestNameFilter
10438         \expandafter{\Hy@testname};%
10439       a=<%
10440         \ifHy@pdfa /F 4\fi
10441         \Hy@setpdfborder
10442         \ifx\CurrentBorderColor\relax
10443           \else
10444             /C [\CurrentBorderColor]%
10445           \fi
10446         >%
10447       }%
10448     \fi
10449   }
10450 \def\hyper@linkend{%
10451   \special{!endaref}%
10452   \Hy@endcolorlink

```

```

10453 }
10454 \def\hyper@linkfile#1#2#3{%
10455   \leavevmode
10456   \def\Hy@pstringF{#2}%
10457   \Hy@CleanupFile\Hy@pstringF
10458   \special{!%
10459     aref <%
10460     \ifnum\Hy@VTeXversion>753 \ifHy@pdfnewwindow n\fi\fi
10461     f=\Hy@pstringF>#3;%
10462     a=<%
10463       \ifHy@pdfa /F 4\fi
10464       \Hy@setpdfborder
10465       \ifx\@filebordercolor\relax
10466         \else
10467           /C [\@filebordercolor]%
10468         \fi
10469       >%
10470     }%
10471     \Hy@colorlink\@filecolor
10472     #1\Hy@xspace@end
10473     \Hy@endcolorlink
10474     \special{!endaref}%
10475   }
10476 \def\hyper@linkurl#1#2{%
10477   \begingroup
10478   \Hy@pstringdef\Hy@pstringURI{#2}%
10479   \hyper@chars
10480   \leavevmode
10481   \special{!%
10482     aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10483     \ifHy@href@ismap
10484       /IsMap true%
10485     \fi
10486     \Hy@href@nextactionraw
10487     >,%
10488     a=<%
10489       \ifHy@pdfa /F 4\fi
10490       \Hy@setpdfborder
10491       \ifx\@urlbordercolor\relax
10492         \else
10493           /C [\@urlbordercolor]%
10494         \fi
10495       >%
10496     }%
10497     \Hy@colorlink\@urlcolor
10498     #1\Hy@xspace@end
10499     \Hy@endcolorlink
10500     \special{!endaref}%
10501   \endgroup
10502 }
10503 \def\hyper@link#1#2#3{%
10504   \Hy@VerboseLinkStart{#1}{#2}%
10505   \ltx@ifundefined{#1bordercolor}{%
10506     \let\CurrentBorderColor\relax

```

```

10507 }{%
10508   \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
10509 }%
10510 \leavevmode
10511 \protected@edef\Hy@testname{#2}%
10512 \ifx\Hy@testname\@empty
10513   \Hy@Warning{%
10514     Empty destination name,\MessageBreak
10515     using ``\Hy@undefinedname'%
10516   }%
10517 \let\Hy@testname\Hy@undefinedname
10518 \fi
10519 \special{!%
10520   aref \expandafter\HyperDestNameFilter
10521     \expandafter{\Hy@testname};%
10522   a=<%
10523     \ifHy@pdfa /F 4\fi
10524     \Hy@setpdfborder
10525     \ifx\CurrentBorderColor\relax
10526       \else
10527         /C [\CurrentBorderColor]%
10528       \fi
10529     >%
10530   }%
10531 \expandafter
10532 \Hy@colorlink\csname @#1color\endcsname
10533   #3\Hy@xspace@end
10534 \Hy@endcolorlink
10535 \special{!endaref}%
10536 }
10537 \def\hyper@image#1#2{%
10538   \hyper@linkurl{#2}{#1}%
10539 }
10540 \def\@hyper@launch run:#1\#2#3{%
10541   \Hy@pstringdef\Hy@pstringF{#1}%
10542   \Hy@pstringdef\Hy@pstringP{#3}%
10543   \leavevmode
10544   \special{!aref %
10545     <u=%
10546       /Type/Action%
10547       /S/Launch%
10548       /F(\Hy@pstringF)%
10549       \Hy@SetNewWindow
10550       \ifx\#3\%
10551         \else
10552           /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>%
10553         \fi
10554       \Hy@href@nextactionraw
10555     >,%
10556     a=<%
10557       \ifHy@pdfa /F 4\fi
10558       \Hy@setpdfborder
10559       \ifx\@runbordercolor\relax
10560         \else

```



```

10561      /C[\@runbordercolor]%
10562      \fi
10563      >%
10564      }%
10565      \Hy@colorlink\@runcolor
10566      #2\Hy@xspace@end
10567      \Hy@endcolorlink
10568      \special{!endaref}%
10569      }
10570      \def\Acrobatmenu#1#2{%
10571      \EdefEscapeName\Hy@temp@menu{#1}%
10572      \Hy@Acrobatmenu{#1}{#2}{%
10573      \special{!%
10574      aref <u=/S /Named /N /\Hy@temp@menu>;%
10575      a=<%
10576      \ifHy@pdfa /F 4\fi
10577      \Hy@setpdfborder
10578      \ifx\@menubordercolor\relax
10579      \else
10580      /C[\@menubordercolor]%
10581      \fi
10582      >%
10583      }%
10584      \Hy@colorlink\@menucolor
10585      #2\Hy@xspace@end
10586      \Hy@endcolorlink
10587      \special{!endaref}%
10588      }%
10589      }

```

The following code (transition effects) is made by Alex Kostin.

The code below makes sense for VTeX 7.02 or later.

Please never use \@ifundefined{VTeXversion}{..}{..} *globally*.

```

10590 \ifnum\Hy@VTeXversion<702 %
10591 \else
10592 \def\hyper@pagetransition{%
10593 \ifx\@pdfpagetransition\relax
10594 \else
10595 \ifx\@pdfpagetransition\@empty

```

Standard incantation.

1. Does an old entry have to be deleted? 2. If 1=yes, how to delete?

```

10596 \else
10597 \hvtex@parse@trans\@pdfpagetransition
10598 \fi
10599 \fi
10600 }%

```

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:

```

10601 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
10602 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
10603 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
10604 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
10605 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
10606 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
10607 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%

```

Optional parameters:

```

10608 \def\hvtex@param@dimension{/Dm}%
10609 \def\hvtex@param@direction{/Di}%
10610 \def\hvtex@param@duration{/D}%
10611 \def\hvtex@param@motion{/M}%

```

Tokenizer:

```

10612 \def\hvtex@gettoken{%
10613   \expandafter\hvtex@gettoken@\hvtex@buffer\@nil
10614 }%

```

Notice that tokens in the input buffer must be space delimited.

```

10615 \def\hvtex@gettoken@#1 #2\@nil{%
10616   \edef\hvtex@token{#1}%
10617   \edef\hvtex@buffer{#2}%
10618 }%
10619 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

10620 \let\hvtex@trans@code\@empty
10621 \let\hvtex@param@dimension\@empty
10622 \let\hvtex@param@direction\@empty
10623 \let\hvtex@param@duration\@empty
10624 \let\hvtex@param@motion\@empty
10625 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

10626 \hvtex@gettoken
10627 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

10628   \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

10629   \else

```

```

10630     \hvtex@gettoken
10631     \fi
10632     \fi
10633     \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```

10634     \hvtex@trans@params
10635 }%

```

Reentrant macro to parse optional parameters.

```

10636 \def\hvtex@trans@params{%
10637   \ifx\hvtex@buffer\@empty
10638   \else
10639     \hvtex@gettoken
10640     \let\hvtex@trans@par\hvtex@token
10641     \ifx\hvtex@buffer\@empty
10642     \else
10643       \hvtex@gettoken
10644       \ifx\hvtex@trans@par\hvtex@par@duration

```

/D is the effect duration in seconds. V<sub>TEX</sub> special takes it in milliseconds.

```

10645       \let\hvtex@param@duration\hvtex@token
10646       \else \ifx\hvtex@trans@par\hvtex@par@motion

```

/M can be either /I or /O

```

10647       \expandafter\edef\expandafter\hvtex@param@motion
10648       \expandafter{\expandafter\@gobble\hvtex@token}%
10649       \else \ifx\hvtex@trans@par\hvtex@par@dimension

```

/Dm can be either /H or /V

```

10650       \expandafter\edef\expandafter\hvtex@param@dimension
10651       \expandafter{\expandafter\@gobble\hvtex@token}%
10652       \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).

```

10653       \let\hvtex@param@direction\hvtex@token
10654       \fi\fi\fi\fi
10655     \fi
10656     \fi
10657     \ifx\hvtex@buffer\@empty
10658     \let\next\hvtex@produce@trans
10659     \else
10660     \let\next\hvtex@trans@params
10661     \fi
10662     \next
10663 }%

```

Merge <transition\_effect> and issue the special when possible. Too lazy to validate optional parameters.

```

10664 \def\hvtex@produce@trans{%
10665   \let\vtex@trans@special\@empty
10666   \if S\hvtex@trans@code
10667     \edef\vtex@trans@special{\hvtex@trans@code
10668       \hvtex@param@dimension\hvtex@param@motion}%
10669   \else\if B\hvtex@trans@code
10670     \edef\vtex@trans@special{%

```

```

10671     \hvtex@trans@code\hvtex@param@dimension
10672   }%
10673   \else\if X\hvtex@trans@code
10674     \edef\vtex@trans@special{%
10675       \hvtex@trans@code\hvtex@param@motion
10676     }%
10677   \else\if W\hvtex@trans@code
10678     \edef\vtex@trans@special{%
10679       \hvtex@trans@code\hvtex@param@direction
10680     }%
10681   \else\if D\hvtex@trans@code
10682     \let\vtex@trans@special\hvtex@trans@code
10683   \else\if R\hvtex@trans@code
10684     \let\vtex@trans@special\hvtex@trans@code
10685   \else\if G\hvtex@trans@code
10686     \edef\vtex@trans@special{%
10687       \hvtex@trans@code\hvtex@param@direction
10688     }%
10689   \fi\fi\fi\fi\fi\fi
10690   \ifx\vtex@trans@special\@empty
10691   \else
10692     \ifx\hvtex@param@duration\@empty
10693     \else
10694       \setlength{\dimen@}{\hvtex@param@duration\p@}%

```

I'm not guilty of possible overflow.

```

10695     \multiply\dimen@\@m
10696     \edef\vtex@trans@special{%
10697       \vtex@trans@special,\strip@pt\dimen@
10698     }%
10699   \fi

```

And all the mess is just for this.

```

10700   \special{!trans \vtex@trans@special}%
10701   \fi
10702 }%
10703 \def\hyper@pageduration{%
10704   \ifx\@pdfpageduration\relax
10705   \else
10706     \ifx\@pdfpageduration\@empty
10707     \special{!duration-}%
10708   \else
10709     \special{!duration \@pdfpageduration}%
10710   \fi
10711   \fi
10712 }%
10713 \g@addto@macro\Hy@EveryPageBoxHook{%
10714   \hyper@pagetransition
10715   \hyper@pageduration
10716 }%
10717 \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

```

10718 \ifx\@pdfproducer\relax
10719 \def\@pdfproducer{VTeX}%
10720 \ifnum\Hy@VTeXversion>\z@
10721 \count@\VTeXversion
10722 \divide\count@ 100 %
10723 \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
10724 \multiply\count@ -100 %
10725 \advance\count@\VTeXversion
10726 \edef\@pdfproducer{%
10727 \@pdfproducer
10728 .\ifnum\count@<10 0\fi\the\count@
10729 \ifx\VTeXOS\@undefined\else
10730 \ifnum\VTeXOS>0 %
10731 \ifnum\VTeXOS<6 %
10732 \space(%
10733 \ifcase\VTeXOS
10734 \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
10735 \fi
10736 )%
10737 \fi
10738 \fi
10739 \fi
10740 ,\space
10741 \ifnum\OpMode=\@ne PDF\else PS\fi
10742 \space backend%
10743 \ifx\gexmode\@undefined\else
10744 \ifnum\gexmode>\z@\space with GeX\fi
10745 \fi
10746 }%
10747 \fi
10748 \fi

```

Current `!pdfinfo` key syntax:

Key	Field	Type
<b>a</b>	<b>Author</b>	String
<b>b</b>	<b>CropBox</b>	String
<b>c</b>	<b>Creator</b>	String
<b>k</b>	<b>Keywords</b>	String
<b>l</b>	<b>PageLayout</b>	PS
<b>p</b>	<b>PageMode</b>	PS
<b>r</b>	<b>Producer</b>	String
<b>s</b>	<b>Subject</b>	String
<b>t</b>	<b>Title</b>	String
<b>u</b>	<b>URI</b>	PS
<b>v</b>	<b>ViewPreferences</b>	PS

Note: PS objects that are dicts are in <<<.>>> (yuck; no choice).

```
10749 \def\PDF@SetupDoc{%
10750   \ifx\@pdfpagescrop\@empty
10751   \else
10752     \special{!pdfinfo b=<\@pdfpagescrop>}%
10753   \fi
10754   \ifx\@pdfstartpage\@empty
10755   \else
10756     \ifx\@pdfstartview\@empty
10757     \else
10758       \special{!onopen Page\@pdfstartpage}%
10759     \fi
10760   \fi
10761   \special{!pdfinfo p=</\@pdfpagemode>}%
10762   \ifx\@baseurl\@empty
10763   \else
10764     \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
10765   \fi
10766   \special{!pdfinfo v=<<<%
10767     \ifHy@pdftoolbar\else /HideToolbar true\fi
10768     \ifHy@pdfmenubar\else /HideMenubar true\fi
10769     \ifHy@pdfwindowui\else /HideWindowUI true\fi
10770     \ifHy@pdffitwindow /FitWindow true\fi
10771     \ifHy@pdfcenterwindow /CenterWindow true\fi
10772     \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10773     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10774     \Hy@UseNameKey{Direction}\@pdfdirection
10775     \Hy@UseNameKey{ViewArea}\@pdfviewarea
10776     \Hy@UseNameKey{ViewClip}\@pdfviewclip
10777     \Hy@UseNameKey{PrintArea}\@pdfprintarea
10778     \Hy@UseNameKey{PrintClip}\@pdfprintclip
10779     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10780     \Hy@UseNameKey{Duplex}\@pdfduplex
10781     \ifx\@pdfpicktraybypdfsize\@empty
10782     \else
10783       /PickTrayByPDFSize \@pdfpicktraybypdfsize
10784     \fi
10785     \ifx\@pdfprintpagerange\@empty
10786     \else
10787       /PrintPageRange[\@pdfprintpagerange]%
10788     \fi
10789     \ifx\@pdfnumcopies\@empty
10790     \else
10791       /NumCopies \@pdfnumcopies
10792     \fi
10793   >>>}%
10794   \ifx\@pdfpagelayout\@empty
10795   \else
10796     \special{!pdfinfo l=</\@pdfpagelayout\space>}%
10797   \fi
10798 }%
10799 \HyInfo@AddonUnsupportedtrue
10800 \define@key{Hyp}{pdfcreationdate}{%
10801   \Hy@Warning{%
```

```

10802   VTeX does not support pdfcreationdate.\MessageBreak
10803   Therefore its setting is ignored%
10804 }%
10805 }
10806 \define@key{Hyp}{pdfmoddate}{%
10807   \Hy@Warning{%
10808     VTeX does not support pdfmoddate.\MessageBreak
10809     Therefore its setting is ignored%
10810   }%
10811 }
10812 \def\PDF@FinishDoc{%
10813   \Hy@UseMaketitleInfos
10814   \HyInfo@TrappedUnsupported
10815   \special{!pdfinfo a=<\@pdfauthor>}%
10816   \special{!pdfinfo t=<\@pdftitle>}%
10817   \special{!pdfinfo s=<\@pdfsubject>}%
10818   \special{!pdfinfo c=<\@pdfcreator>}%
10819   \ifx\@pdfproducer\relax
10820   \else
10821     \special{!pdfinfo r=<\@pdfproducer>}%
10822   \fi
10823   \special{!pdfinfo k=<\@pdfkeywords>}%
10824   \Hy@DisableOption{pdfauthor}%
10825   \Hy@DisableOption{pdftitle}%
10826   \Hy@DisableOption{pdfsubject}%
10827   \Hy@DisableOption{pdfcreator}%
10828   \Hy@DisableOption{addtopdfcreator}%
10829   \Hy@DisableOption{pdfcreationdate}%
10830   \Hy@DisableOption{pdfcreationdate}%
10831   \Hy@DisableOption{pdfmoddate}%
10832   \Hy@DisableOption{pdfproducer}%
10833   \Hy@DisableOption{pdfkeywords}%
10834   \Hy@DisableOption{pdftrapped}%
10835   \Hy@DisableOption{pdfinfo}%
10836 }
10837 \</vtex>

```

## 44.7 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.

```

10838 \dviwindo\def\literalps@out#1{\special{ps:#1}}%
10839 \packageEnd\providecommand*\Hy@DistillerDestFix{}
10840 \*pdfmark | dviwindo)
10841 \def\Hy@DistillerDestFix{%
10842   \begin{group}

```

```
10843 \let\x\literalps@out
```

The fix has to be passed unchanged through GeX, if VTeX in PostScript mode with GeX is used.

```
10844 \ifnum \@ifundefined{OpMode}{0}{%
10845   \@ifundefined{gexmode}{0}{%
10846     \ifnum\gexmode>0 \OpMode\else 0\fi
10847   }>1 %
10848   \def\x##1{%
10849     \immediate\special{!=##1}%
10850   }%
10851 \fi
10852 \x{%
10853   /product where{%
10854     pop %
10855     product(Distiller)search{%
10856       pop pop pop %
10857       version(.)search{%
10858         exch pop exch pop%
10859         (3011)eq{%
10860           gsave %
10861           newpath 0 0 moveto closepath clip%
10862           /Courier findfont 10 scalefont setfont %
10863           72 72 moveto(.)show %
10864           grestore%
10865         }if%
10866       }{pop}ifelse%
10867     }{pop}ifelse%
10868   }if%
10869 }%
10870 \endgroup
10871 }
10872 </pdfmark | dviwindo>
```

## 44.8 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
```

```
10873 <*pdfmark>
10874 \Hy@breaklinks@unsupported
10875 \def\HyPat@ObjRef{%
10876   \{[~{}]+\}%
10877 }
```



```

10878 \Hy@WrapperDef\hyper@anchor#1{%
10879   \Hy@SaveLastskip
10880   \Hy@VerboseAnchor{#1}%
10881   \begingroup
10882     \pdfmark[\anchor@spot]{%
10883       pdfmark=/DEST,%
10884       linktype=anchor,%
10885       View=/\@pdfview \@pdfviewparams,%
10886       DestAnchor={#1}%
10887     }%
10888   \endgroup
10889   \Hy@RestoreLastskip
10890 }
10891 \ltx@ifundefined{hyper@anchorstart}{\endinput}
10892 \Hy@WrapperDef\hyper@anchorstart#1{%
10893   \Hy@SaveLastskip
10894   \Hy@VerboseAnchor{#1}%
10895   \literalps@out{H.S}%
10896   \Hy@AllowHyphens
10897   \xdef\hyper@currentanchor{#1}%
10898   \Hy@Activeanchortrue
10899 }
10900 \def\hyper@anchorend{%
10901   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
10902   \pdfmark{%
10903     pdfmark=/DEST,%
10904     linktype=anchor,%
10905     View=/\@pdfview \@pdfviewparams,%
10906     DestAnchor=\hyper@currentanchor,%
10907   }%
10908   \Hy@Activeanchorfalse
10909   \Hy@RestoreLastskip
10910 }
10911 \def\hyper@linkstart#1#2{%
10912   \Hy@VerboseLinkStart{#1}{#2}%
10913   \ifHy@breaklinks
10914     \else
10915       \leavevmode
10916       \ifmmode
10917         \def\Hy@LinkMath{$}%
10918       \else
10919         \let\Hy@LinkMath\ltx@empty
10920       \fi
10921       \Hy@SaveSpaceFactor
10922       \hbox\bgroup
10923       \Hy@RestoreSpaceFactor
10924       \Hy@LinkMath
10925     \fi
10926     \expandafter\Hy@colorlink\csname @#1color\endcsname
10927     \literalps@out{H.S}%
10928     \Hy@AllowHyphens
10929     \xdef\hyper@currentanchor{#2}%
10930     \gdef\hyper@currentlinktype{#1}%
10931   }

```

```

10932 \def\hyper@linkend{%
10933   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L.}%
10934   \ltx@ifundefined{@\hyper@currentlinktype bordercolor}{%
10935     \let\Hy@tempcolor\relax
10936   }{%
10937     \edef\Hy@tempcolor{%
10938       \csname @\hyper@currentlinktype bordercolor\endcsname
10939     }%
10940   }%
10941   \pdfmark{%
10942     pdfmark=/ANN,%
10943     linktype=link,%
10944     Subtype=/Link,%
10945     PDFAFlags=4,%
10946     Dest=\hyper@currentanchor,%
10947     AcroHighlight=\@pdfhighlight,%
10948     Border=\@pdfborder,%
10949     BorderStyle=\@pdfborderstyle,%
10950     Color=\Hy@tempcolor,%
10951     Raw=H.B%
10952   }%
10953   \Hy@endcolorlink
10954   \ifHy@breaklinks
10955   \else
10956     \Hy@LinkMath
10957     \Hy@SaveSpaceFactor
10958     \egroup
10959     \Hy@RestoreSpaceFactor
10960   \fi
10961 }

```

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.

```

10962 \begingroup
10963   \catcode`P=12 %
10964   \catcode`T=12 %
10965   \lowercase{\endgroup
10966   \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
10967 }
10968 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

`\hyper@pagetransition`

```

10969 \def\hyper@pagetransition{%
10970   \ifx\@pdfpagetransition\relax
10971   \else
10972     \ifx\@pdfpagetransition\@empty
10973       % 1. Does an old entry have to be deleted?
10974       % 2. If 1=yes, how to delete?
10975     \else
10976       \pdfmark{%
10977         pdfmark=/PUT,%
10978         Raw={%
10979           \string{ThisPage\string}%

```

```

10980      <</Trans << /S /\@pdfpagetransition\space >> >>%
10981      }%
10982      }%
10983      \fi
10984      \fi
10985      }

```

\hyper@pageduration

```

10986 \def\hyper@pageduration{%
10987   \ifx\@pdfpageduration\relax
10988   \else
10989     \ifx\@pdfpageduration\@empty
10990       % 1. Does an old entry have to be deleted?
10991       % 2. If 1=yes, how to delete?
10992     \else
10993       \pdfmark{%
10994         pdfmark=/PUT,%
10995         Raw={%
10996           \string{ThisPage\string}%
10997           <</Dur \@pdfpageduration>>%
10998         }%
10999       }%
11000     \fi
11001     \fi
11002   }

11003 \g@addto@macro\Hy@EveryPageBoxHook{%
11004   \hyper@pagetransition
11005   \hyper@pageduration
11006 }

11007 \def\hyper@image#1#2{%
11008   \hyper@linkurl{#2}{#1}%
11009 }
11010 \def\Hy@undefinedname{UNDEFINED}
11011 \def\hyper@link#1#2#3{%
11012   \Hy@VerboseLinkStart{#1}{#2}%
11013   \ltx@ifundefined{#1bordercolor}{%
11014     \let\Hy@tempcolor\relax
11015   }{%
11016     \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
11017   }%
11018   \begingroup
11019     \protected@edef\Hy@testname{#2}%
11020     \ifx\Hy@testname\@empty
11021       \Hy@Warning{%
11022         Empty destination name,\MessageBreak
11023         using ``\Hy@undefinedname'%
11024       }%
11025     \let\Hy@testname\Hy@undefinedname
11026   \fi
11027   \pdfmark[{#3}]{%
11028     Color=\Hy@tempcolor,%
11029     linktype={#1},%
11030     AcroHighlight=\@pdfhighlight,%

```

```

11031     Border=\@pdfborder,%
11032     BorderStyle=\@pdfborderstyle,%
11033     pdfmark=/ANN,%
11034     Subtype=/Link,%
11035     PDFAFlags=4,%
11036     Dest=\Hy@testname
11037 }%
11038 \endgroup
11039 }
11040 \newtoks\pdf@docset
11041 \def\PDF@FinishDoc{%
11042   \Hy@UseMaketitleInfos
11043   \HyInfo@GenerateAddons
11044   \let\Hy@temp@empty
11045   \ifx\@pdfcreationdate\@empty
11046   \else
11047     \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
11048   \fi
11049   \ifx\@pdfmoddate\@empty
11050   \else
11051     \expandafter\def\expandafter\Hy@temp\expandafter{%
11052       \Hy@temp
11053       ModDate=\@pdfmoddate,%
11054     }%
11055   \fi
11056   \ifx\@pdfproducer\relax
11057   \else
11058     \expandafter\def\expandafter\Hy@temp\expandafter{%
11059       \Hy@temp
11060       Producer=\@pdfproducer,%
11061     }%
11062   \fi
11063   \expandafter
11064   \pdfmark\expandafter{%
11065     \Hy@temp
11066     pdfmark=/DOCINFO,%
11067     Title=\@pdftitle,%
11068     Subject=\@pdfsubject,%
11069     Creator=\@pdfcreator,%
11070     Author=\@pdfauthor,%
11071     Keywords=\@pdfkeywords,%
11072     Trapped=\@pdftrapped
11073   }%
11074   \ifx\HyInfo@Addons\@empty
11075   \else
11076     \pdfmark{%
11077       pdfmark=/DOCINFO,%
11078       Raw={\HyInfo@Addons}%
11079     }%
11080   \fi
11081   \Hy@DisableOption{pdfauthor}%
11082   \Hy@DisableOption{pdftitle}%
11083   \Hy@DisableOption{pdfsubject}%
11084   \Hy@DisableOption{pdfcreator}%

```

```

11085 \Hy@DisableOption{addtopdfcreator}%
11086 \Hy@DisableOption{pdfcreationdate}%
11087 \Hy@DisableOption{pdfcreationdate}%
11088 \Hy@DisableOption{pdfmoddate}%
11089 \Hy@DisableOption{pdfproducer}%
11090 \Hy@DisableOption{pdfkeywords}%
11091 \Hy@DisableOption{pdftrapped}%
11092 \Hy@DisableOption{pdfinfo}%
11093 }
11094 \def\PDF@SetupDoc{%
11095 \def\Hy@temp{}%
11096 \ifx\@pdfstartpage\@empty
11097 \else
11098 \ifx\@pdfstartview\@empty
11099 \else
11100 \edef\Hy@temp{%
11101 ,Page=\@pdfstartpage
11102 ,View=\@pdfstartview
11103 }%
11104 \fi
11105 \fi
11106 \edef\Hy@temp{%
11107 \noexpand\pdfmark{%
11108 pdfmark=/DOCVIEW,%
11109 PageMode=/\@pdfpagemode
11110 \Hy@temp
11111 }%
11112 }%
11113 \Hy@temp
11114 \ifx\@pdfpagescrop\@empty
11115 \else
11116 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
11117 \fi
11118 \edef\Hy@temp{%
11119 \ifHy@pdftoolbar\else /HideToolbar true\fi
11120 \ifHy@pdfmenubar\else /HideMenubar true\fi
11121 \ifHy@pdfwindowui\else /HideWindowUI true\fi
11122 \ifHy@pdfwindow /FitWindow true\fi
11123 \ifHy@pdfcenterwindow /CenterWindow true\fi
11124 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
11125 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
11126 \Hy@UseNameKey{Direction}\@pdfdirection
11127 \Hy@UseNameKey{ViewArea}\@pdfviewarea
11128 \Hy@UseNameKey{ViewClip}\@pdfviewclip
11129 \Hy@UseNameKey{PrintArea}\@pdfprintarea
11130 \Hy@UseNameKey{PrintClip}\@pdfprintclip
11131 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
11132 \Hy@UseNameKey{Duplex}\@pdfduplex
11133 \ifx\@pdfpicktraybypdfsize\@empty
11134 \else
11135 /PickTrayByPDFSize \@pdfpicktraybypdfsize
11136 \fi
11137 \ifx\@pdfprintpagerange\@empty
11138 \else

```

```

11139 /PrintPageRange[\@pdfprintpagerange]%
11140 \fi
11141 \ifx\@pdfnumcopies\@empty
11142 \else
11143 /NumCopies \@pdfnumcopies
11144 \fi
11145 }%
11146 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
11147 \pdfmark{%
11148 pdfmark=/PUT,%
11149 Raw={%
11150 \string{Catalog\string}<<%
11151 \ifx\Hy@temp\@empty
11152 \else
11153 /ViewerPreferences<<\Hy@temp>>%
11154 \fi
11155 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
11156 \ifx\@pdflang\relax
11157 \else
11158 /Lang(\@pdflang)%
11159 \fi
11160 \ifx\@baseurl\@empty
11161 \else
11162 /URI<</Base(\Hy@pstringB)>>%
11163 \fi
11164 >>%
11165 }%
11166 }%
11167 }
11168 \pdfmark
11169 \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.

```

11170 \newif\ifHy@pdfmarkerror
11171 \def\pdfmark{\@ifnextchar{\pdfmark@}{\pdfmark@[]}}
11172 \def\pdfmark@[#1]#2{%
11173 \Hy@pdfmarkerrorfalse
11174 \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
11175 \@processme
11176 \let\pdf@type\relax
11177 \let\pdf@objdef\ltx@empty
11178 \kvsetkeys{PDF}{#2}%
11179 \ifHy@pdfmarkerror
11180 \else
11181 \ifx\pdf@type\relax
11182 \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
11183 \ifx\#1\%
11184 \else
11185 \pdf@rect{#1}%

```

```

11186     \fi
11187   \else
11188     \ifx\#1\%
11189       \literalps@out{%
11190         [%
11191         \ifx\pdf@objdef\ltx@empty
11192         \else
11193           /_objdef\string{\pdf@objdef\string}%
11194         \fi
11195         \the\pdf@toks\space\pdf@type\space pdfmark%
11196       }%
11197   \else
11198     \ltx@ifundefined{@\pdf@linktype color}{%
11199       \Hy@colorlink\@linkcolor
11200     }{%
11201       \expandafter\Hy@colorlink
11202         \csname @\pdf@linktype color\endcsname
11203     }%
11204     \pdf@rect{#1}%
11205     \literalps@out{%
11206       [%
11207       \ifx\pdf@objdef\ltx@empty
11208       \else
11209         /_objdef\string{\pdf@objdef\string}%
11210       \fi
11211       \the\pdf@toks\space\pdf@type\space pdfmark%
11212     }%
11213     \Hy@endcolorlink
11214   \fi
11215 \fi
11216 \fi
11217 }

```

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}

```

```

11218 \newsavebox{\pdf@box}
11219 \providecommand*{\Hy@setouterhbox}{\sbox}
11220 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
11221 \def\Hy@DEST{/DEST}
11222 \def\pdf@rect#1{%
11223   \begingroup
11224   \chardef\x=1 %
11225   \def\Hy@temp{#1}%

```

```

11226 \ifx\Hy@temp\ltx@empty
11227 \chardef\x=0 %
11228 \else
11229 \def\y{\anchor@spot}%
11230 \ifx\Hy@temp\y
11231 \def\y{\relax}%
11232 \ifx\anchor@spot\y
11233 \chardef\x=0 %
11234 \fi
11235 \fi
11236 \fi
11237 \expandafter\endgroup
11238 \ifcase\x
11239 \literalps@out{H.S}%
11240 \literalps@out{H.R}%
11241 \else
11242 \leavevmode
11243 \Hy@SaveSpaceFactor
11244 \ifmmode
11245 \def\Hy@LinkMath{$}%
11246 \else
11247 \let\Hy@LinkMath\ltx@empty
11248 \fi
11249 \ifHy@breaklinks
11250 \Hy@setouterhbox\pdf@box{%
11251 \Hy@RestoreSpaceFactor
11252 \Hy@LinkMath
11253 \Hy@AllowHyphens#1\Hy@xspace@end
11254 \Hy@LinkMath
11255 \Hy@SaveSpaceFactor
11256 }%
11257 \else
11258 \sbox\pdf@box{%
11259 \Hy@RestoreSpaceFactor
11260 \Hy@LinkMath
11261 #1\Hy@xspace@end
11262 \Hy@LinkMath
11263 \Hy@SaveSpaceFactor
11264 }%
11265 \fi
11266 \dimen@ht\pdf@box
11267 \ifdim\dp\pdf@box=\z@
11268 \literalps@out{H.S}%
11269 \else
11270 \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
11271 \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...).

```

11272 \ifHy@breaklinks
11273 \ifhmode
11274 \Hy@breaklinksunhbox\pdf@box
11275 \else
11276 \box\pdf@box

```



```

11277 \fi
11278 \else
11279 \expandafter\box\pdf@box
11280 \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

11281 \ifdim\dimen@=\z@
11282 \literalps@out{H.R}%
11283 \else
11284 \raise\dimen@ \hbox{\literalps@out{H.R}}%
11285 \fi
11286 \Hy@RestoreSpaceFactor
11287 \fi
11288 \ifx\pdf@type\Hy@DEST
11289 \else
11290 \pdf@addtoksx{H.B}%
11291 \fi
11292 }

```

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.

```

11293 \newtoks\pdf@toks
11294 \newtoks\pdf@defaulttoks
11295 \pdf@defaulttoks={} %
11296 \def\pdf@addtoks#1#2{%
11297 \edef\@processme{\pdf@toks{\the\pdf@toks/#2 #1}}%
11298 \@processme
11299 }
11300 \def\pdf@addtoksx#1{%
11301 \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
11302 \@processme
11303 }
11304 \def\PDFdefaults#1{%
11305 \pdf@defaulttoks={#1}%
11306 }

```

This is the list of allowed keys. See the Acrobat manual for an explanation.

```

11307 % what is the type of pdfmark?
11308 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
11309 % what is the link type?
11310 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
11311 \def\pdf@linktype{link}
11312 % named object?
11313 \define@key{PDF}{objdef}{\edef\pdf@objdef{#1}}
11314 \let\pdf@objdef\ltx@empty
11315 % parameter is a stream of PDF
11316 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
11317 % parameter is a name
11318 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
11319 % parameter is a array

```

```

11320 \define@key{PDF}{Border}{%
11321   \edef\Hy@temp{#1}%
11322   \ifx\Hy@temp\@empty
11323     \else
11324       \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
11325     \fi
11326 }
11327 \let\Hy@BorderArrayPatch\@empty
11328 % parameter is a dictionary
11329 \define@key{PDF}{BorderStyle}{%
11330   \edef\Hy@temp{#1}%
11331   \ifx\Hy@temp\@empty
11332     \else
11333       \pdf@addtoks{<<#1>>}{BS}%
11334     \fi
11335 }
11336 % parameter is a array
11337 \define@key{PDF}{Color}{%
11338   \ifx\relax#1\relax
11339     \else
11340       \pdf@addtoks{[#1]}{Color}% hash-ok
11341     \fi
11342 }
11343 % parameter is a string
11344 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
11345 % parameter is a integer
11346 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
11347 % parameter is a array
11348 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
11349 % parameter is a string
11350 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
11351 % parameter is a string or file
11352 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
11353 % parameter is a destination
11354 \define@key{PDF}{Dest}{%
11355   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11356   \ifx\Hy@pstringDest\@empty
11357     \Hy@pdfmarkerrortrue
11358     \Hy@Warning{Destination with empty name ignored}%
11359   \else
11360     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11361   \fi
11362 }
11363 \define@key{PDF}{DestAnchor}{%
11364   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11365   \ifx\Hy@pstringDest\@empty
11366     \Hy@pdfmarkerrortrue
11367     \Hy@Warning{Destination with empty name ignored}%
11368   \else
11369     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11370   \fi
11371 }
11372 % parameter is a string
11373 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}

```

```

11374 % parameter is a string
11375 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
11376 % parameter is a int
11377 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
11378 \define@key{PDF}{PDFAFlags}{%
11379   \ifHy@pdfa
11380     \pdf@addtoks{#1}{F}%
11381   \fi
11382 }
11383 % parameter is a name
11384 \define@key{PDF}{AcroHighlight}{%
11385   \begingroup
11386     \edef\x{#1}%
11387     \expandafter\endgroup\ifx\x\@empty
11388       \else
11389         \pdf@addtoks{#1}{H}%
11390       \fi
11391 }
11392 % parameter is a string
11393 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
11394 % parameter is a string
11395 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
11396 % parameter is a string
11397 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11398 % parameter is a string
11399 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
11400 % parameter is a Boolean
11401 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
11402 % parameter is a integer or name
11403 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
11404 % parameter is a name
11405 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
11406 % parameter is a string
11407 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
11408 % parameter is a array
11409 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
11410 % parameter is a integer
11411 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
11412 % parameter is a name
11413 \define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
11414 % parameter is a string
11415 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
11416 % parameter is a string
11417 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
11418 % parameter is a string
11419 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
11420 % parameter is an array
11421 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
11422 % parameter is a string
11423 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

11424 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
11425 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
11426 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}

```

```

11427 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11428 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
11429 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
11430 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
11431 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11432 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
11433 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}
11434 \define@key{PDF}{Trapped}{%
11435   \edef\Hy@temp{#1}%
11436   \ifx\Hy@temp\@empty
11437   \else
11438     \pdf@addtoks{/#1}{Trapped}%
11439   \fi
11440 }
11441
11442 </pdfmarkbase>
11443 <*pdfmark>
11444 \def\Acrobatmenu#1#2{%
11445   \EdefEscapeName\Hy@temp@menu{#1}%
11446   \Hy@Acrobatmenu{#1}{#2}{%
11447     \pdfmark[{#2}]{%
11448       linktype=menu,%
11449       pdfmark=/ANN,%
11450       AcroHighlight=\@pdfhighlight,%
11451       Border=\@pdfborder,%
11452       BorderStyle=\@pdfborderstyle,%
11453       Color=\@menubordercolor,%
11454       Action={<</Subtype/Named/N/\Hy@temp@menu>>},%
11455       Subtype=/Link,%
11456       PDFAFlags=4%
11457     }%
11458   }%
11459 }

```

And now for some useful examples:

```

11460 \def\PDFNextPage{\@ifnextchar{\PDFNextPage@}{\PDFNextPage@[]}}
11461 \def\PDFNextPage@[#1]#2{%
11462   \pdfmark[{#2}]{%
11463     #1,%
11464     Border=\@pdfborder,%
11465     BorderStyle=\@pdfborderstyle,%
11466     Color=.2 .1 .5,%
11467     pdfmark=/ANN,%
11468     Subtype=/Link,%
11469     PDFAFlags=4,%
11470     Page=/Next%
11471   }%
11472 }
11473 \def\PDFPreviousPage{%
11474   \@ifnextchar{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
11475 }
11476 \def\PDFPreviousPage@[#1]#2{%
11477   \pdfmark[{#2}]{%
11478     #1,%
11479     Border=\@pdfborder,%

```

```

11480   BorderStyle=\@pdfborderstyle,%
11481   Color=.4 .4 .1,%
11482   pdfmark=/ANN,%
11483   Subtype=/Link,%
11484   PDFAFlags=4,%
11485   Page=/Prev%
11486 }%
11487 }
11488 \def\PDFOpen#1{%
11489   \pdfmark{#1,pdfmark=/DOCVIEW}%
11490 }

```

This will only work if you use Distiller 2.1 or higher.

```

11491 \def\hyper@linkurl#1#2{%
11492   \begingroup
11493     \Hy@pstringdef\Hy@pstringURI{#2}%
11494     \hyper@chars
11495     \leavevmode
11496     \pdfmark[{#1}]{%
11497       pdfmark=/ANN,%
11498       linktype=url,%
11499       AcroHighlight=\@pdfhighlight,%
11500       Border=\@pdfborder,%
11501       BorderStyle=\@pdfborderstyle,%
11502       Color=\@urlbordercolor,%
11503       Action={<<%
11504         /Subtype/URI%
11505         /URI(\Hy@pstringURI)%
11506         \ifHy@href@ismap
11507         /IsMap true%
11508         \fi
11509       >>},%
11510       Subtype=/Link,%
11511       PDFAFlags=4%
11512     }%
11513   \endgroup
11514 }
11515 \def\hyper@linkfile#1#2#3{%
11516   \begingroup
11517     \def\Hy@pstringF{#2}%
11518     \Hy@CleanupFile\Hy@pstringF
11519     \Hy@pstringdef\Hy@pstringF\Hy@pstringF
11520     \Hy@pstringdef\Hy@pstringD{#3}%
11521     \Hy@MakeRemoteAction
11522     \leavevmode
11523     \pdfmark[{#1}]{%
11524       pdfmark=/ANN,%
11525       Subtype=/Link,%
11526       PDFAFlags=4,%
11527       AcroHighlight=\@pdfhighlight,%
11528       Border=\@pdfborder,%
11529       BorderStyle=\@pdfborderstyle,%
11530       linktype=file,%
11531       Color=\@filebordercolor,%
11532       Action={%

```

```

11533 <<%
11534 /S/GoToR%
11535 \Hy@SetNewWindow
11536 /F(\Hy@pstringF)%
11537 /D%
11538 \ifx\#3\%
11539 [\Hy@href@page\@pdfremotestartview]%
11540 \else
11541 (\Hy@pstringD)cvn%
11542 \fi
11543 \Hy@href@nextactionraw
11544 >>%
11545 }%
11546 }%
11547 \endgroup
11548 }
11549 \def\@hyper@launch run:#1\#2#3{%
11550 \begingroup
11551 \Hy@pstringdef\Hy@pstringF{#1}%
11552 \Hy@pstringdef\Hy@pstringP{#3}%
11553 \leavevmode
11554 \pdfmark[{#2}]{%
11555 pdfmark=/ANN,%
11556 Subtype=/Link,%
11557 PDFAFlags=4,%
11558 AcroHighlight=\@pdfhighlight,%
11559 Border=\@pdfborder,%
11560 BorderStyle=\@pdfborderstyle,%
11561 linktype=run,%
11562 Color=\@runbordercolor,%
11563 Action={%
11564 <<%
11565 /S/Launch%
11566 \Hy@SetNewWindow
11567 /F(\Hy@pstringF)%
11568 \ifx\#3\%
11569 \else
11570 /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
11571 \fi
11572 \Hy@href@nextactionraw
11573 >>%
11574 }%
11575 }%
11576 \endgroup
11577 }
11578 \pdfmark>

```

Unfortunately, some parts of the `pdfmark` PostScript code depend on vagaries of the dvi driver. We isolate here all the problems.

## 44.9 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.

```

11579 <*dvips>
11580 \providecommand*\XR@ext>{pdf}
11581 \let\Hy@raisedlink\ltx@empty
11582 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
11583 \def\headerps@out#1{\special{! #1}}%
11584 \input{pdfmark.def}%
11585 \ifx\@pdfproducer\relax
11586 \def\@pdfproducer{dvips + Distiller}%
11587 \fi
11588 \providecommand*\@pdfborder{0 0 1}
11589 \providecommand*\@pdfborderstyle{}
11590 \providecommand*\@pdfview{XYZ}
11591 \providecommand*\@pdfviewparams{ H.V}
11592 \def\Hy@BorderArrayPatch{BorderArrayPatch}

11593 \g@addto@macro\Hy@FirstPageHook{%
11594 \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.

```

11595 /DvipsToPDF{72.27 mul Resolution div} def%
11596 /PDFToDvips{72.27 div Resolution mul} def%
11597 /BPToDvips{72 div Resolution mul}def

```

The values inside the `/Border` 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.

Note GhostScript changed its behaviour here and later versions do not need this scaling, so test the PostScript interpreter is GhostScript and if so check its version.

If using `gs` and `release > 9.27` no-op, otherwise patch.

```

11598 product (Ghostscript) search {pop pop pop revision 927 gt}%
11599 {pop false} ifelse%
11600 {%
11601 /BorderArrayPatch{} def%
11602 }%
11603 {%
11604 /BorderArrayPatch{%
11605 [exch{%
11606 dup dup type/integertype eq exch type/realtype eq or%
11607 {BPToDvips}if%

```

```

11608     }forall]%
11609   }def%
11610 } ifelse

```

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.

```

11611   /HyperBorder {1 PDFToDvips} def%
11612   /H.V {pdf@hoff pdf@voff null} def%
11613   /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

```

11614   /H.S {%
11615     currentpoint %
11616     HyperBorder add /pdf@lly exch def %
11617     dup DvipsToPDF 72 add /pdf@hoff exch def %
11618     HyperBorder sub /pdf@llx exch def%
11619   } 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

```

11620   /H.L {%
11621     2 sub dup%
11622     /HyperBasePt exch def %
11623     PDFToDvips /HyperBaseDvips exch def %
11624     currentpoint %
11625     HyperBaseDvips sub /pdf@ury exch def%
11626     /pdf@urx exch def%
11627   } def%
11628   /H.A {%
11629     H.L %
11630     % |pdf@voff| = the distance from the top of the page to a point
11631     % |baselineskip| above the current point in PDF coordinates
11632     currentpoint exch pop %
11633     vsize 72 sub exch DvipsToPDF %
11634     HyperBasePt sub % baseline skip
11635     sub /pdf@voff exch def%
11636   } def%
11637   /H.R {%
11638     currentpoint %
11639     HyperBorder sub /pdf@ury exch def %
11640     HyperBorder add /pdf@urx exch def %
11641     % |pdf@voff| = the distance from the top of the page to the current point, in
11642     % PDF coordinates
11643     currentpoint exch pop vsize 72 sub %
11644     exch DvipsToPDF sub /pdf@voff exch def%
11645   } def%
11646 }%
11647 }
11648 \AtBeginShipoutFirst{%

```



```

11649 \ifHy@setpagesize
11650 \begingroup
11651   \ifnum\mag=\@m
11652     \ifdim\stockwidth>\z@
11653       \ifdim\stockheight>\z@
11654         \special{papersize=\the\stockwidth,\the\stockheight}%
11655       \else
11656         \ifdim\paperwidth>\z@
11657           \ifdim\paperheight>\z@
11658             \special{papersize=\the\paperwidth,\the\paperheight}%
11659           \fi
11660         \fi
11661       \fi
11662     \else
11663       \ifdim\stockwidth=\z@
11664         \ifdim\paperwidth>\z@
11665           \ifdim\paperheight>\z@
11666             \special{papersize=\the\paperwidth,\the\paperheight}%
11667           \fi
11668         \fi
11669       \fi
11670     \fi
11671   \fi
11672 \endgroup
11673 \fi
11674 \Hy@DisableOption{setpagesize}%
11675 }

11676 \def\setpdfinkmargin#1{%
11677   \begingroup
11678     \setlength{\dimen@}{#1}%
11679     \literalps@out{%
11680       /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
11681     }%
11682   \endgroup
11683 }

11684 </dvips>

```

## 44.10 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.

```

11685 (*vtexpdfmark)
11686 \providecommand*\XR@ext}{pdf}
11687 \let\Hy@raisedlink\ltx@empty
11688 \def\literalps@out#1{\special{pS:#1}}%
11689 \def\headerps@out#1{\immediate\special{pS:#1}}%
11690 \input{pdfmark.def}%
11691 \ifx\@pdfproducer\relax
11692   \ifnum\OpMode=\@one
11693     \def\@pdfproducer{VTeX}%

```

```

11694 \else
11695   \def\@pdfproducer{VTeX + Distiller}%
11696 \fi
11697 \fi
11698 \providecommand*\@pdfborder{0 0 1}
11699 \providecommand*\@pdfborderstyle{}
11700 \providecommand*\@pdfview{XYZ}
11701 \providecommand*\@pdfviewparams{ H.V}

11702 \g@addto@macro\Hy@FirstPageHook{%
11703   \headerps@out{%
11704     /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.

```

11705   /HyperBorder {1} def%
11706   /H.V {pdf@hoff pdf@voff null} def%
11707   /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:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

11708   /H.S {%
11709     currentpoint %
11710     HyperBorder sub%
11711     /pdf@lly exch def %
11712     dup 72 add /pdf@hoff exch def %
11713     HyperBorder sub%
11714     /pdf@llx exch def%
11715   } def%

```

The  $x$  and  $y$  coordinates of the current point, minus the `\baselineskip`:  $\text{pdf@ury} = Y_c + \text{HyperBasePt} + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

11716   /H.L {%
11717     2 sub%
11718     /HyperBasePt exch def %
11719     currentpoint %
11720     HyperBasePt add HyperBorder add%
11721     /pdf@ury exch def %
11722     HyperBorder add%
11723     /pdf@urx exch def%
11724   } def%
11725   /H.A {%
11726     H.L %
11727     currentpoint exch pop %
11728     vsize 72 sub exch %
11729     HyperBasePt add add%
11730     /pdf@voff exch def%
11731   } def%

```

$\text{pdf@ury} = Y_c + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

11732   /H.R {%
11733     currentpoint %
11734     HyperBorder add%
11735     /pdf@ury exch def %
11736     HyperBorder add%

```

```

11737    /pdf@urx exch def %
11738    currentpoint exch pop vsize 72 sub add%
11739    /pdf@voff exch def%
11740    } def%
11741  }%
11742 }

11743 \def\setpdfinkmargin#1{%
11744   \begingroup
11745   \setlength{\dimen@}{#1}%
11746   \literalps@out{%
11747     /HyperBorder{\strip@pt\dimen@}def%
11748   }%
11749   \endgroup
11750 }

11751 </vtexpdfmark>

```

## 44.11 Textures

```

11752 <*textures>
11753 \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.

```

11754 \begingroup
11755   \obeylines %
11756   \gdef\Hy@ps@CR{\noexpand
11757   }%
11758 \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`.

```

11759 \def\literalps@out#1{%
11760   \special{postscript 0 0 transform}%
11761   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
11762 }%
11763 %

```

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.

```
11764 \def\headerps@out#1{%
11765   \special{%
11766     prepostscript TeXdict begin\Hy@ps@CR
11767     #1\Hy@ps@CR
11768     end%
11769   }%
11770 }%
11771 %
```

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.

```
11772 \g@addto@macro\Hy@FirstPageHook{%
11773   \headerps@out{%
11774     /betterpdfmark {%
11775       systemdict begin %
11776       dup /BP eq%
11777       {cleartomark gsave nulldevice []%
11778       {dup /EP eq%
11779       {cleartomark cleartomark grestore}%
11780       {cleartomark}%
11781       ifelse%
11782       }ifelse %
11783     end%
11784   }def\Hy@ps@CR
11785   ___pdfmark___ not{/pdfmark /betterpdfmark load def}if%
11786 }% end of \headerps@out
11787 }% end of \AtBeginShipoutFirst
11788 %
11789 \input{pdfmark.def}%
11790 %
11791 \ifx\@pdfproducer\relax
11792   \def\@pdfproducer{Textures + Distiller}%
11793 \fi
11794 \providecommand*\@pdfborder{0 0 1}
11795 \providecommand*\@pdfborderstyle{}
11796 \providecommand*\@pdfview{XYZ}
11797 \providecommand*\@pdfviewparams{ H.V}
11798 %
```

These are called at the start and end of unboxed links; their job is to leave available PS variables called `pdf@llx pdf@lly pdf@urx pdf@ury`, which are the coordinates of the bounding rectangle of the link, and `pdf@hoff pdf@voff` which are the PDF page offsets. The Rect pair are called at the LL and UR corners of a box known to `TEX`.

```
11799 \Hy@AtBeginDocument{%
11800   \headerps@out{%
```

Textures lives in normal points, I think. So conversion from one coordinate system to another involves doing nothing.

```

11801 /vsize {\Hy@pageheight} def%
11802 /DvipsToPDF {} def%
11803 /PDFToDvips {} def%
11804 /BPToDvips {} def%
11805 /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
11806 /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
11807 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
11808 /H.S {%
11809     currentpoint %
11810     HyperBorder add /pdf@lly exch def %
11811     dup DvipsToPDF 72 add /pdf@hoff exch def %
11812     HyperBorder sub /pdf@llx exch def%
11813 } def\Hy@ps@CR
11814 /H.L {%
11815     2 sub %
11816     PDFToDvips /HyperBase exch def %
11817     currentpoint %
11818     HyperBase sub /pdf@ury exch def%
11819     /pdf@urx exch def%
11820 } def\Hy@ps@CR
11821 /H.A {%
11822     H.L %
11823     currentpoint exch pop %
11824     vsize 72 sub exch DvipsToPDF %
11825     HyperBase sub % baseline skip
11826     sub /pdf@voff exch def%
11827 } def\Hy@ps@CR
11828 /H.R {%
11829     currentpoint %
11830     HyperBorder sub /pdf@ury exch def %
11831     HyperBorder add /pdf@urx exch def %
11832     currentpoint exch pop vsize 72 sub %
11833     exch DvipsToPDF sub /pdf@voff exch def%
11834 } def\Hy@ps@CR
11835 }%
11836 }

11837 \def\setpdfinkmargin#1{%
11838     \begingroup
11839     \setlength{\dimen@}{#1}%
11840     \literalps@out{%
11841         /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
11842     }%
11843     \endgroup
11844 }

11845 \Hy@AtBeginDocument{%
11846     \ifHy@colorlinks
11847     \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
11848     \fi
11849 }

```

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.

```

11850 \expandafter\let\expandafter\keepPDF@SetupDoc
11851 \csname PDF@SetupDoc\endcsname
11852 \def\PDF@SetupDoc{%
11853 \ifx\@baseurl\@empty
11854 \else
11855 \special{html:<base href="\@baseurl">}%
11856 \fi
11857 \keepPDF@SetupDoc
11858 }
11859 \Hy@WrapperDef\hyper@anchor#1{%
11860 \Hy@SaveLastskip
11861 \Hy@VerboseAnchor{#1}%
11862 \begingroup
11863 \let\protect=\string
11864 \special{html:<a name=%
11865 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11866 \endgroup
11867 \Hy@activeanchortrue
11868 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
11869 \special{html:</a>}%
11870 \Hy@activeanchorfalse
11871 \Hy@RestoreLastskip
11872 }
11873 \Hy@WrapperDef\hyper@anchorstart#1{%
11874 \Hy@SaveLastskip
11875 \Hy@VerboseAnchor{#1}%
11876 \begingroup
11877 \hyper@chars
11878 \special{html:<a name=%
11879 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11880 \endgroup
11881 \Hy@activeanchortrue
11882 }
11883 \def\hyper@anchorend{%
11884 \special{html:</a>}%
11885 \Hy@activeanchorfalse
11886 \Hy@RestoreLastskip
11887 }
11888 \def\@urltype{url}
11889 \def\hyper@linkstart#1#2{%
11890 \Hy@VerboseLinkStart{#1}{#2}%
11891 \expandafter\Hy@colorlink\csname @#1color\endcsname
11892 \def\Hy@tempa{#1}%
11893 \ifx\Hy@tempa\@urltype
11894 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11895 \else
11896 \begingroup
11897 \hyper@chars
11898 \special{%
11899 html:<a href=%
11900 \hyper@quote\# \HyperDestNameFilter{#2}\hyper@quote>%
11901 }%
11902 \endgroup
11903 \fi

```

```

11904 }
11905 \def\hyper@linkend{%
11906   \special{html:</a>}%
11907   \Hy@endcolorlink
11908 }
11909 \def\hyper@linkfile#1#2#3{%
11910   \hyper@linkurl{#1}{%
11911     \Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi
11912   }%
11913 }
11914 \def\hyper@linkurl#1#2{%
11915   \leavevmode
11916   \ifHy@raiselinks
11917     \Hy@SaveSpaceFactor
11918     \Hy@SaveSavedSpaceFactor
11919     \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
11920     \Hy@RestoreSavedSpaceFactor
11921     \@linkdim\dp\@tempboxa
11922     \lower\@linkdim\hbox{%
11923       \hyper@chars
11924       \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11925     }%
11926     \Hy@colorlink\@urlcolor
11927     \Hy@RestoreSpaceFactor
11928     #1\Hy@xspace@end
11929     \Hy@SaveSpaceFactor
11930     \@linkdim\ht\@tempboxa
11931     \advance\@linkdim by -6.5\p@
11932     \raise\@linkdim\hbox{\special{html:</a>}}%
11933     \Hy@endcolorlink
11934     \Hy@RestoreSpaceFactor
11935   \else
11936     \begingroup
11937     \hyper@chars
11938     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11939     \Hy@colorlink\@urlcolor#1\Hy@xspace@end
11940     \special{html:</a>}%
11941     \Hy@endcolorlink
11942   \endgroup
11943   \fi
11944 }

```

Very poor implementation of \hyper@link without considering #1.

```

11945 \def\hyper@link#1#2#3{%
11946   \Hy@VerboseLinkStart{#1}{#2}%
11947   \hyper@linkurl{#3}{\#\Hy@HyperDestNameFilter{#2}}%
11948 }
11949 \def\hyper@image#1#2{%
11950   \begingroup
11951     \hyper@chars
11952     \special{html:<img src=\hyper@quote#1\hyper@quote>}%
11953   \endgroup
11954 }
11955 </textures>

```

## 44.12 dvipsone

```
11956 % \subsection{dvipsone driver}
11957 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
11958 % |\special| commands.
11959 \*dvipsone
11960 \providecommand*\XR@ext{pdf}
11961 \let\Hy@raisedlink\ltx@empty
11962 \providecommand*\@pdfborder{0 0 1}
11963 \providecommand*\@pdfborderstyle{}
11964 \def\literalps@out#1{\special{ps:#1}}%
11965 \def\headerps@out#1{\special{headertext=#1}}%
11966 \input{pdfmark.def}%
11967 \HyInfo@AddonUnsupportedtrue
11968 \def\PDF@FinishDoc{%
11969   \Hy@UseMaketitleInfos
11970   \HyInfo@TrappedUnsupported
11971   \special{PDF: Keywords \@pdfkeywords}%
11972   \special{PDF: Title \@pdftitle}%
11973   \special{PDF: Creator \@pdfcreator}%
11974   \ifx\@pdfcreationdate\@empty
11975     \else
11976     \special{PDF: CreationDate \@pdfcreationdate}%
11977   \fi
11978   \ifx\@pdfmoddate\@empty
11979     \else
11980     \special{PDF: ModDate \@pdfmoddate}%
11981   \fi
11982   \special{PDF: Author \@pdfauthor}%
11983   \ifx\@pdfproducer\relax
11984     \else
11985     \special{PDF: Producer \@pdfproducer}%
11986   \fi
11987   \special{PDF: Subject \@pdfsubject}%
11988   \Hy@DisableOption{pdfauthor}%
11989   \Hy@DisableOption{pdftitle}%
11990   \Hy@DisableOption{pdfsubject}%
11991   \Hy@DisableOption{pdfcreator}%
11992   \Hy@DisableOption{addtopdfcreator}%
11993   \Hy@DisableOption{pdfcreationdate}%
11994   \Hy@DisableOption{pdfcreationdate}%
11995   \Hy@DisableOption{pdfmoddate}%
11996   \Hy@DisableOption{pdfproducer}%
11997   \Hy@DisableOption{pdfkeywords}%
11998   \Hy@DisableOption{pdftrapped}%
11999   \Hy@DisableOption{pdfinfo}%
12000 }
12001 \def\PDF@SetupDoc{%
12002   \def\Hy@temp{}%
12003   \ifx\@pdfstartpage\@empty
12004     \else
12005     \ifx\@pdfstartview\@empty
12006       \else
12007       \edef\Hy@temp{%
```



```

12008     ,Page=\@pdfstartpage
12009     ,View=\@pdfstartview
12010 }%
12011 \fi
12012 \fi
12013 \edef\Hy@temp{%
12014   \noexpand\pdfmark{%
12015     pdfmark=/DOCVIEW,%
12016     PageMode=/\@pdfpagemode
12017   \Hy@temp
12018 }%
12019 }%
12020 \Hy@temp
12021 \ifx\@pdfpagescrop\@empty
12022 \else
12023   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
12024 \fi
12025 \edef\Hy@temp{%
12026   \ifHy@pdftoolbar\else /HideToolbar true\fi
12027   \ifHy@pdfmenubar\else /HideMenubar true\fi
12028   \ifHy@pdfwindowui\else /HideWindowUI true\fi
12029   \ifHy@pdfwindow /FitWindow true\fi
12030   \ifHy@pdfcenterwindow /CenterWindow true\fi
12031   \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
12032   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
12033   \Hy@UseNameKey{Direction}\@pdfdirection
12034   \Hy@UseNameKey{ViewArea}\@pdfviewarea
12035   \Hy@UseNameKey{ViewClip}\@pdfviewclip
12036   \Hy@UseNameKey{PrintArea}\@pdfprintarea
12037   \Hy@UseNameKey{PrintClip}\@pdfprintclip
12038   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
12039   \Hy@UseNameKey{Duplex}\@pdfduplex
12040   \ifx\@pdfpicktraybypdfsize\@empty
12041   \else
12042     /PickTrayByPDFSize \@pdfpicktraybypdfsize
12043   \fi
12044   \ifx\@pdfprintpagerange\@empty
12045   \else
12046     /PrintPageRange[\@pdfprintpagerange]%
12047   \fi
12048   \ifx\@pdfnumcopies\@empty
12049   \else
12050     /NumCopies \@pdfnumcopies
12051   \fi
12052 }%
12053 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
12054 \pdfmark{%
12055   pdfmark=/PUT,%
12056   Raw={%
12057     \string{Catalog\string}<<%
12058     \ifx\Hy@temp\@empty
12059     \else
12060       /ViewerPreferences<<\Hy@temp>>%
12061     \fi

```

```

12062 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
12063 \ifx\@pdflang\relax
12064 \else
12065 /Lang(\@pdflang)%
12066 \fi
12067 \ifx\@baseurl\@empty
12068 \else
12069 /URI<</Base(\Hy@pstringB)>>%
12070 \fi
12071 >>%
12072 }%
12073 }%
12074 }
12075 \providecommand*\@pdfview{XYZ}
12076 \providecommand*\@pdfviewparams{ %
12077 gsave revscl currentpoint grestore %
12078 72 add exch pop null exch null%
12079 }
12080 \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  $\TeX$ .

```

12081 \g@addto@macro\Hy@FirstPageHook{%
12082 \headerps@out{%

```

dvipsone lives in scaled points; does this mean 65536 or 65781?

```

12083 /DvipsToPDF { 65781 div } def%
12084 /PDFToDvips { 65781 mul } def%
12085 /BPToDvips{65781 mul}def%
12086 /HyperBorder { 1 PDFToDvips } def%
12087 /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.

```

12088 /BorderArrayPatch{%
12089 [exch{%
12090 dup dup type/integertype eq exch type/realtype eq or%
12091 {BPToDvips}if%
12092 }forall]%
12093 }def%
12094 /H.S {%
12095 currentpoint %
12096 HyperBorder add /pdf@lly exch def %
12097 dup DvipsToPDF 72 add /pdf@hoff exch def %
12098 HyperBorder sub /pdf@llx exch def%
12099 } def%
12100 /H.L {%
12101 2 sub %
12102 PDFToDvips /HyperBase exch def %
12103 currentpoint %
12104 HyperBase sub /pdf@ury exch def%

```

```

12105    /pdf@urx exch def%
12106    } def%
12107    /H.A {%
12108        H.L %
12109        currentpoint exch pop %
12110        HyperBase sub % baseline skip
12111        DvipsToPDF /pdf@voff exch def%
12112    } def%
12113    /H.R {%
12114        currentpoint %
12115        HyperBorder sub /pdf@ury exch def %
12116        HyperBorder add /pdf@urx exch def %
12117        currentpoint exch pop DvipsToPDF /pdf@voff exch def%
12118    } def%
12119    }%
12120 }

12121 \def\setpdfinkmargin#1{%
12122     \begingroup
12123     \setlength{\dimen@}{#1}%
12124     \literalps@out{%
12125         /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
12126     }%
12127     \endgroup
12128 }

12129 </dvipsone>

```

## 44.13 TeX4ht

```

12130 (*tex4ht)
12131 \providecommand*{\XR@ext}{html}
12132 \let\Hy@raisedlink\ltx@empty
12133 \@ifpackageloaded{tex4ht}{%
12134     \Hy@InfoNoLine{tex4ht is already loaded}%
12135 }{%
12136     \RequirePackage[hTeX4ht]{tex4ht}%
12137 }
12138 \hyperlinkfileprefix{}
12139 \let\PDF@FinishDoc\ltx@empty
12140 \def\PDF@SetupDoc{%
12141     \ifx\@baseurl\@empty
12142     \else
12143         \special{t4ht=<base href="\@baseurl">}%
12144     \fi
12145 }
12146 \Hy@WrapperDef\hyper@anchor#1{%
12147     \Hy@SaveLastskip
12148     \Hy@VerboseAnchor{#1}%
12149     \begingroup
12150         \let\protect=\string
12151         \special{t4ht=<a name=%
12152             \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12153     \endgroup
12154     \Hy@activeanchortrue
12155     \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink

```

```

12156 \special{t4ht=</a>}%
12157 \Hy@activeanchorfalse
12158 \Hy@RestoreLastskip
12159 }
12160 \Hy@WrapperDef\hyper@anchorstart#1{%
12161 \Hy@SaveLastskip
12162 \Hy@VerboseAnchor{#1}%
12163 \begingroup
12164 \hyper@chars\special{t4ht=<a name=%
12165 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12166 \endgroup
12167 \Hy@activeanchortrue
12168 }
12169 \def\hyper@anchorend{%
12170 \special{t4ht=</a>}%
12171 \Hy@activeanchorfalse
12172 \Hy@RestoreLastskip
12173 }
12174 \def\@urltype{url}
12175 \def\hyper@linkstart#1#2{%
12176 \Hy@VerboseLinkStart{#1}{#2}%
12177 \expandafter\Hy@colorlink\csname @#1color\endcsname
12178 \def\Hy@tempa{#1}%
12179 \ifx\Hy@tempa\@urltype
12180 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12181 \else
12182 \begingroup
12183 \hyper@chars
12184 \special{t4ht=<a href=%
12185 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
12186 \endgroup
12187 \fi
12188 }
12189 \def\hyper@linkend{%
12190 \special{t4ht=</a>}%
12191 \Hy@endcolorlink
12192 }
12193 \def\hyper@linkfile#1#2#3{%
12194 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
12195 }
12196 \def\hyper@linkurl#1#2{%
12197 \leavevmode
12198 \ifHy@raiselinks
12199 \Hy@SaveSpaceFactor
12200 \Hy@SaveSavedSpaceFactor
12201 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
12202 \Hy@RestoreSavedSpaceFactor
12203 \@linkdim\dp\@tempboxa
12204 \lower\@linkdim\hbox{%
12205 \begingroup
12206 \hyper@chars
12207 \special{%
12208 t4ht=<a href=\hyper@quote#2\hyper@quote>%
12209 }%

```

```

12210 \endgroup
12211 }%
12212 \Hy@colorlink\@urlcolor
12213 \Hy@RestoreSpaceFactor
12214 #1\Hy@xspace@end
12215 \Hy@SaveSpaceFactor
12216 \Hy@endcolorlink
12217 \@linkdim\ht\@tempboxa
12218 \advance\@linkdim by -6.5\p@
12219 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
12220 \Hy@RestoreSpaceFactor
12221 \else
12222 \begingroup
12223 \hyper@chars
12224 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12225 \Hy@colorlink\@urlcolor
12226 #1\Hy@xspace@end
12227 \Hy@endcolorlink
12228 \special{t4ht=</a>}%
12229 \endgroup
12230 \fi
12231 }

```

Poor implementation of \hyper@link without considering #1.

```

12232 \def\hyper@link#1#2#3{%
12233 \Hy@VerboseLinkStart{#1}{#2}%
12234 \hyper@linkurl{#3}{\# \HyperDestNameFilter{#2}}%
12235 }
12236 \def\hyper@image#1#2{%
12237 \begingroup
12238 \hyper@chars
12239 \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
12240 \endgroup
12241 }
12242 \let\autoref\ref
12243 \ifx \rEFLiNK \UnDef
12244 \def\rEFLiNK #1#2{#2}%
12245 \fi
12246 \let\backref\ltx@gobble

```

Fix for tex4ht.

```

12247 \AtBeginDocument{%
12248 \expandafter
12249 \let\expandafter\Hy@OrgMakeLabel\csname Make:Label\endcsname
12250 \expandafter\def\csname Make:Label\endcsname#1#2{%
12251 \ifhmode
12252 \Hy@SaveSpaceFactor
12253 \else
12254 \global\Hy@SavedSpaceFactor=1000 %
12255 \fi
12256 \Hy@OrgMakeLabel{#1}{%
12257 \Hy@RestoreSpaceFactor
12258 #2\Hy@xspace@end%
12259 \Hy@SaveSpaceFactor
12260 }%

```

```

12261 \Hy@RestoreSpaceFactor
12262 }%
12263 }
12264 </tex4ht>
12265 <*tex4htcfg>
12266 \IfFileExists{\jobname.cfg}{\endinput}{}
12267 \Preamble{html}
12268 \begin{document}%
12269 \EndPreamble
12270 \def\TeX{\TeX}
12271 \def\OMEGA{\Omega}
12272 \def\LaTeX{\LaTeX}
12273 \def\LaTeXe{\LaTeX2e}
12274 \def\eTeX{e-TeX}
12275 \def\MF{Metafont}
12276 \def\MP{MetaPost}
12277 </tex4htcfg>

```

## 45 Driver-specific form support

### 45.1 pdfmarks

change 2020-06-20: added /Euro to encoding

```

12278 <*pdfmark>
12279 \long\def\@Form[#1]{%
12280 \g@addto@macro\Hy@FirstPageHook{%
12281 \headerps@out{%
12282 [%
12283 /_objdef{pdfDocEncoding}%
12284 /type/dict%
12285 /OBJ pdfmark%
12286 [%
12287 {pdfDocEncoding}%
12288 <<%
12289 /Type/Encoding%
12290 /Differences[%
12291 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
12292 /tilde %
12293 39/quotesingle %
12294 96/grave %
12295 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
12296 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
12297 /quotedblbase/quotedblleft/quotedblright/quoteleft%
12298 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%
12299 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
12300 160/Euro %
12301 164/currency %
12302 166/brokenbar %
12303 168/dieresis/copyright/ordfeminine %
12304 172/logicalnot/.notdef/registered/macron/degree/plusminus%
12305 /twosuperior/threesuperior/acute/mu %
12306 183/periodcentered/cedilla/onesuperior/ordmasculine %
12307 188/onequarter/onehalf/threequarters %
12308 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%

```

12309 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%  
 12310 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%  
 12311 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%  
 12312 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%  
 12313 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%  
 12314 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%  
 12315 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%  
 12316 /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%  
 12317 /ucircumflex/udieresis/yacute/thorn/ydieresis%  
 12318 ]%  
 12319 >>%  
 12320 /PUT pdfmark%  
 12321 [%  
 12322 /\_\_objdef{ZaDb}%  
 12323 /type/dict%  
 12324 /OBJ pdfmark%  
 12325 [%  
 12326 {ZaDb}%  
 12327 <<%  
 12328 /Type/Font%  
 12329 /Subtype/Type1%  
 12330 /Name/ZaDb%  
 12331 /BaseFont/ZapfDingbats%  
 12332 >>%  
 12333 /PUT pdfmark%  
 12334 [%  
 12335 /\_\_objdef{Helv}%  
 12336 /type/dict%  
 12337 /OBJ pdfmark%  
 12338 [%  
 12339 {Helv}%  
 12340 <<%  
 12341 /Type/Font%  
 12342 /Subtype/Type1%  
 12343 /Name/Helv%  
 12344 /BaseFont/Helvetica%  
 12345 /Encoding{pdfDocEncoding}%  
 12346 >>%  
 12347 /PUT pdfmark%  
 12348 [%  
 12349 /\_\_objdef{aform}%  
 12350 /type/dict%  
 12351 /OBJ pdfmark%  
 12352 [%  
 12353 /\_\_objdef{afields}%  
 12354 /type/array%  
 12355 /OBJ pdfmark%  
 12356 [%  
 12357 /\_\_objdef{corder}%  
 12358 /type/array%  
 12359 /OBJ pdfmark%  
 12360 {%  
 12361 [%  
 12362 /BBox[0 0 100 100]%

```

12363  /_objdef{Check}%
12364  /BP pdfmark %
12365  1 0 0 setrgbcolor%
12366  /ZapfDingbats 80 selectfont %
12367  20 20 moveto%
12368  (4)show%
12369  [/EP pdfmark%
12370  [%
12371  /BBox[0 0 100 100]%
12372  /_objdef{Cross}%
12373  /BP pdfmark %
12374  1 0 0 setrgbcolor%
12375  /ZapfDingbats 80 selectfont %
12376  20 20 moveto%
12377  (8)show%
12378  [/EP pdfmark%
12379  [%
12380  /BBox[0 0 250 100]%
12381  /_objdef{Submit}%
12382  /BP pdfmark %
12383  0.6 setgray %
12384  0 0 250 100 rectfill %
12385  1 setgray %
12386  2 2 moveto %
12387  2 98 lineto %
12388  248 98 lineto %
12389  246 96 lineto %
12390  4 96 lineto %
12391  4 4 lineto %
12392  fill %
12393  0.34 setgray %
12394  248 98 moveto %
12395  248 2 lineto %
12396  2 2 lineto %
12397  4 4 lineto %
12398  246 4 lineto %
12399  246 96 lineto %
12400  fill%
12401  /Helvetica 76 selectfont %
12402  0 setgray %
12403  8 22.5 moveto%
12404  (Submit)show%
12405  [/EP pdfmark%
12406  [%
12407  /BBox[0 0 250 100]%
12408  /_objdef{SubmitP}%
12409  /BP pdfmark %
12410  0.6 setgray %
12411  0 0 250 100 rectfill %
12412  0.34 setgray %
12413  2 2 moveto %
12414  2 98 lineto %
12415  248 98 lineto %
12416  246 96 lineto %

```



```

12417 4 96 lineto %
12418 4 4 lineto %
12419 fill %
12420 1 setgray %
12421 248 98 moveto %
12422 248 2 lineto %
12423 2 2 lineto %
12424 4 4 lineto %
12425 246 4 lineto %
12426 246 96 lineto %
12427 fill%
12428 /Helvetica 76 selectfont %
12429 0 setgray %
12430 10 20.5 moveto%
12431 (Submit)show%
12432 [/EP pdfmark%
12433 } ?pdfmark%
12434 [%
12435 {aform}%
12436 <<%
12437 /Fields{afields}%
12438 /DR<<%
12439 /Font<<%
12440 /ZaDb{ZaDb}%
12441 /Helv{Helv}%
12442 >>%
12443 >>%
12444 /DA(/Helv 10 Tf 0 g)%
12445 /CO{corder}%
12446 \ifHy@pdfa
12447 \else
12448 \ifHyField@NeedAppearances
12449 /NeedAppearances true%
12450 \fi
12451 \fi
12452 >>%
12453 /PUT pdfmark%
12454 [%
12455 {Catalog}%
12456 <<%
12457 /AcroForm{aform}%
12458 >>%
12459 /PUT pdfmark%
12460 }}%
12461 \kvsetkeys{Form}{#1}%
12462 }
12463 \let\@endForm\ltx@empty
12464 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12465 \Hy@Message{Sorry, pdfmark drivers do not support FORM gauges}%
12466 }

12467 \newcount\HyField@AnnotCount
12468 \HyField@AnnotCount=\z@
12469 \def\HyField@AdvanceAnnotCount{%
12470 \global\advance\HyField@AnnotCount\@ne

```

```

12471 }
12472 \def\HyField@TheAnnotCount{%
12473   \the\HyField@AnnotCount
12474 }

12475 \edef\Fld@pageobjref{/P\string{ThisPage\string}}

12476 \def\HyField@AddToFields#1{%
12477   \pdfmark{%
12478     pdfmark=/APPEND,%
12479     Raw={%
12480       \string{afields\string}%
12481       \string{#1\HyField@TheAnnotCount\string}%
12482     }%
12483   }%
12484   \ifx\Fld@calculate@code\ltx@empty
12485   \else
12486     \pdfmark{%
12487       pdfmark=/APPEND,%
12488       Raw={%
12489         \string{corder\string}%
12490         \string{#1\HyField@TheAnnotCount\string}%
12491       }%
12492     }%
12493   \fi
12494 }

12495 \def\@TextField[#1]#2{% parameters, label
12496   \def\Fld@name{#2}%
12497   \let\Fld@default\ltx@empty
12498   \let\Fld@value\@empty
12499   \def\Fld@width{\DefaultWidthofText}%
12500   \def\Fld@height{%
12501     \ifFld@multiline
12502       \DefaultHeightofTextMultiline
12503     \else
12504       \DefaultHeightofText
12505     \fi
12506   }%
12507   \begingroup
12508     \expandafter\HyField@SetKeys\expandafter{%
12509       \DefaultOptionsofText,#1%
12510     }%
12511     \HyField@FlagsText
12512     \ifFld@hidden\def\Fld@width{1sp}\fi
12513     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12514     \HyField@AdvanceAnnotCount
12515     \LayoutTextField{#2}{%
12516       \leavevmode
12517       \Hy@escapeform\PDFForm@Text
12518       \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
12519         pdfmark=/ANN,%
12520         objdef=text\HyField@TheAnnotCount,%
12521         Raw={\PDFForm@Text}%
12522       }%
12523     }%

```

```

12524 \HyField@AddToFields{text}%
12525 \endgroup
12526 }
12527 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12528 \def\Fld@name{#2}%
12529 \let\Fld@default\relax
12530 \let\Fld@value\relax
12531 \def\Fld@width{\DefaultWidthofChoiceMenu}%
12532 \def\Fld@height{\DefaultHeightofChoiceMenu}%
12533 \begingroup
12534 \Fld@menulength=0 %
12535 \@tempdima\z@
12536 \@for\@curropt:=#3\do{%
12537 \expandafter\Fld@checkequals\@curropt==\%
12538 \Hy@StepCount\Fld@menulength
12539 \settowidth{\@tempdimb}{\@currDisplay}%
12540 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12541 }%
12542 \advance\@tempdima by 15\p@
12543 \begingroup
12544 \HyField@SetKeys{#1}%
12545 \edef\x{\endgroup
12546 \noexpand\expandafter
12547 \noexpand\HyField@SetKeys
12548 \noexpand\expandafter{%
12549 \expandafter\noexpand\csname DefaultOptionsof%
12550 \ifFld@radio
12551 Radio%
12552 \else
12553 \ifFld@combo
12554 \ifFld@popdown
12555 PopdownBox%
12556 \else
12557 ComboBox%
12558 \fi
12559 \else
12560 ListBox%
12561 \fi
12562 \fi
12563 \endcsname
12564 }%
12565 }\x
12566 \HyField@SetKeys{#1}%
12567 \ifFld@hidden\def\Fld@width{1sp}\fi
12568 \ifx\Fld@value\relax
12569 \let\Fld@value\Fld@default
12570 \fi
12571 \LayoutChoiceField{#2}{%
12572 \ifFld@radio
12573 \HyField@FlagsRadioButton
12574 \@@Radio{#3}%
12575 \else
12576 \begingroup
12577 \HyField@FlagsChoice

```

```

12578      \ifdim\Fld@width<\@tempdima
12579      \ifdim\@tempdima<1cm\@tempdima1cm\fi
12580      \edef\Fld@width{\the\@tempdima}%
12581      \fi
12582      \ifFld@combo
12583      \else
12584      \@tempdima=\the\Fld@menulength\Fld@charsize
12585      \advance\@tempdima by \Fld@borderwidth bp %
12586      \advance\@tempdima by \Fld@borderwidth bp %
12587      \edef\Fld@height{\the\@tempdima}%
12588      \fi
12589      \@@ListBox{#3}%
12590      \endgroup
12591      \fi
12592      }%
12593      \endgroup
12594      }
12595      \def\@@Radio#1{%
12596      \Fld@listcount=0 %
12597      \EdefEscapeName\Fld@default{\Fld@default}%
12598      \@for\@curropt:=#1\do{%
12599      \expandafter\Fld@checkequals\@curropt==\%
12600      \EdefEscapeName\@currValue{\@currValue}%
12601      \Hy@StepCount\Fld@listcount
12602      \@currDisplay\space
12603      \Hy@escapeform\PDFForm@Radio
12604      \ifnum\Fld@listcount=1 %
12605      \HyField@AdvanceAnnotCount
12606      \fi
12607      \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
12608      pdfmark=/ANN,%
12609      objdef=\ifnum\Fld@listcount=1 radio\HyField@TheAnnotCount\fi,%
12610      Raw={%
12611      \PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>%
12612      }%
12613      } % deliberate space between radio buttons
12614      \ifnum\Fld@listcount=1 %
12615      \HyField@AddToFields{radio}%
12616      \fi
12617      }%
12618      }
12619      \newcount\Fld@listcount
12620      \def\@@ListBox#1{%
12621      \HyField@PDFChoices{#1}%
12622      \Hy@escapeform\PDFForm@List
12623      \HyField@AdvanceAnnotCount
12624      \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
12625      pdfmark=/ANN,%
12626      objdef=list\HyField@TheAnnotCount,%
12627      Raw={\PDFForm@List}%
12628      }%
12629      \HyField@AddToFields{list}%
12630      }
12631      \def\@PushButton[#1]#2{% parameters, label

```

```

12632 \def\Fld@name{#2}%
12633 \begingroup
12634 \expandafter\HyField@SetKeys\expandafter{%
12635   \DefaultOptionsofPushButton,#1%
12636 }%
12637 \ifHy@pdfa
12638   \Hy@Error{%
12639     PDF/A: Push button with JavaScript is prohibited%
12640   }\@ehc
12641   \LayoutPushButtonField{%
12642     \leavevmode
12643     \MakeButtonField{#2}%
12644   }%
12645 \else
12646   \HyField@FlagsPushButton
12647   \ifFld@hidden\def\Fld@width{1sp}\fi
12648   \HyField@AdvanceAnnotCount
12649   \LayoutPushButtonField{%
12650     \leavevmode
12651     \Hy@escapeform\PDFForm@Push
12652     \pdfmark[\MakeButtonField{#2}]{%
12653       pdfmark=/ANN,%
12654       objdef=push\HyField@TheAnnotCount,%
12655       Raw={\PDFForm@Push}%
12656     }%
12657   }%
12658   \HyField@AddToFields{push}%
12659 \fi
12660 \endgroup
12661 }
12662 \def\@Submit[#1]#2{%
12663   \def\Fld@width{\DefaultWidthofSubmit}%
12664   \def\Fld@height{\DefaultHeightofSubmit}%
12665   \begingroup
12666   \expandafter\HyField@SetKeys\expandafter{%
12667     \DefaultOptionsofSubmit,#1%
12668   }%
12669   \HyField@FlagsPushButton
12670   \HyField@FlagsSubmit
12671   \ifFld@hidden\def\Fld@width{1sp}\fi
12672   \Hy@escapeform\PDFForm@Submit
12673   \HyField@AdvanceAnnotCount
12674   \pdfmark[\MakeButtonField{#2}]{%
12675     pdfmark=/ANN,%
12676     objdef=submit\HyField@TheAnnotCount,%
12677     Raw={\PDFForm@Submit /AP<</N{Submit}/D{SubmitP}>>}%
12678   }%
12679   \HyField@AddToFields{submit}%
12680 \endgroup
12681 }
12682 \def\@Reset[#1]#2{%
12683   \def\Fld@width{\DefaultWidthofReset}%
12684   \def\Fld@height{\DefaultHeightofReset}%
12685   \begingroup

```

```

12686 \expandafter\HyField@SetKeys\expandafter{%
12687 \DefaultOptionsofReset,#1%
12688 }%
12689 \leavevmode
12690 \ifHy@pdfa
12691 \Hy@Error{%
12692 PDF/A: Reset action is prohibited%
12693 }\@ehc
12694 \MakeButtonField{#2}%
12695 \else
12696 \HyField@FlagsPushButton
12697 \ifFld@hidden\def\Fld@width{1sp}\fi
12698 \Hy@escapeform\PDFForm@Reset
12699 \HyField@AdvanceAnnotCount
12700 \pdfmark[\MakeButtonField{#2}]{%
12701 pdfmark=/ANN,%
12702 objdef=reset\HyField@TheAnnotCount,%
12703 Raw={\PDFForm@Reset}%
12704 }%
12705 \HyField@AddToFields{reset}%
12706 \fi
12707 \endgroup
12708 }%
12709 \def\@CheckBox[#1]#2{% parameters, label
12710 \def\Fld@name{#2}%
12711 \def\Fld@default{0}%
12712 \begingroup
12713 \def\Fld@width{\DefaultWidthofCheckBox}%
12714 \def\Fld@height{\DefaultHeightofCheckBox}%
12715 \expandafter\HyField@SetKeys\expandafter{%
12716 \DefaultOptionsofCheckBox,#1%
12717 }%
12718 \HyField@FlagsCheckBox
12719 \ifFld@hidden\def\Fld@width{1sp}\fi
12720 \HyField@AdvanceAnnotCount
12721 \LayoutCheckField{#2}{%
12722 \leavevmode
12723 \Hy@escapeform\PDFForm@Check
12724 \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
12725 pdfmark=/ANN,%
12726 objdef=check\HyField@TheAnnotCount,%
12727 Raw={\PDFForm@Check}%
12728 }%
12729 }%
12730 \HyField@AddToFields{check}%
12731 \endgroup
12732 }
12733 \pdfmark>

```

## 45.2 HyperTeX

```

12734 \hypertex>
12735 \def\@Form[#1]{%
12736 \Hy@Message{Sorry, HyperTeX does not support FORMs}%

```

```

12737 }
12738 \let\@endForm\ltx@empty
12739 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12740   \Hy@Message{Sorry, HyperTeX does not support FORM gauges}%
12741 }
12742 \def\@TextField[#1]#2{% parameters, label
12743   \Hy@Message{Sorry, HyperTeX does not support FORM text fields}%
12744 }
12745 \def\@CheckBox[#1]#2{% parameters, label
12746   \Hy@Message{Sorry, HyperTeX does not support FORM checkboxes}%
12747 }
12748 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12749   \Hy@Message{Sorry, HyperTeX does not support FORM choice menus}%
12750 }
12751 \def\@PushButton[#1]#2{% parameters, label
12752   \Hy@Message{Sorry, HyperTeX does not support FORM pushbuttons}%
12753 }
12754 \def\@Reset[#1]#2{%
12755   \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12756 }
12757 \def\@Submit[#1]#2{%
12758   \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12759 }
12760 \</hypertex>

```

### 45.3 TeX4ht

```

12761 \*tex4ht
12762 \def\@Form[#1]{%
12763   \kvsetkeys{Form}{#1}%
12764   \HCode{<form action="\Form@action" method="\Form@method">}%
12765 }
12766 \def\@endForm{\HCode{</form>}}
12767 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12768   \Hy@Message{Sorry, TeX4ht does not support gauges}%
12769 }
12770 \def\@TextField[#1]#2{% parameters, label
12771   \let\Hy@reserved@a\@empty
12772   \def\Fld@name{#2}%
12773   \let\Fld@default\ltx@empty
12774   \bgroup
12775     \Field@toks={ }%
12776     \kvsetkeys{Field}{#1}%
12777     \HCode{<label for="\Fld@name">#2</label>}%
12778     \ifFld@password
12779       \@@PasswordField
12780     \else
12781       \@@TextField
12782     \fi
12783   \egroup
12784 }
12785 \def\@@PasswordField{%
12786   \HCode{%
12787     <input type="password" %
12788       id="\Fld@name" %

```

```

12789     name="\Fld@name" %
12790     \ifFld@hidden type="hidden" \fi
12791     value="\Fld@default" %
12792     \the\Field@toks
12793     >%
12794 }%
12795 }
12796 \def\@@TextField{%
12797   \ifFld@multiline
12798     \HCode{<textarea %
12799       \ifFld@readonly readonly \fi
12800       id="\Fld@name" %
12801       name="\Fld@name" %
12802       \ifFld@hidden type="hidden" \fi
12803       \the\Field@toks>%
12804   }%
12805   \Fld@default
12806   \HCode{</textarea>}%
12807 \else
12808   \HCode{<input type="textbox" %
12809     \ifFld@readonly readonly \fi
12810     id="\Fld@name" %
12811     name="\Fld@name" %
12812     \ifFld@hidden type="hidden" \fi
12813     value="\Fld@default" %
12814     \the\Field@toks>%
12815   }%
12816 \fi
12817 }
12818 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12819   \def\Fld@name{#2}%
12820   \let\Fld@default\ltx@empty
12821   \let\Hy@reserved@a\relax
12822   \begingroup
12823     \expandafter\Fld@findlength#3\\%
12824     \Field@toks={ }%
12825     \kvsetkeys{Field}{#1}%
12826     #2%
12827     \ifFld@radio
12828       \expandafter\@@Radio#3\\%
12829     \else
12830       \expandafter\@@Menu#3\\%
12831     \fi
12832   \endgroup
12833 }
12834 \def\Fld@findlength#1\\{%
12835   \Fld@menulength=0 %
12836   \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
12837 }
12838 \def\@@Menu#1\\{%
12839   \HCode{<select size="\the\Fld@menulength" %
12840     name="\Fld@name" %
12841     \the\Field@toks>%
12842   }%

```



```

12843 \@for\@curropt:=#1\do{%
12844   \expandafter\Fld@checkequals\@curropt==\\%
12845   \HCode{<option %
12846     \ifx\@curropt\Fld@default selected \fi
12847     value="\@currValue">\@currDisplay</option>%
12848   }%
12849 }%
12850 \HCode{</select>}%
12851 }
12852 \def\@@Radio#1\\{%
12853   \@for\@curropt:=#1\do{%
12854     \expandafter\Fld@checkequals\@curropt==\\%
12855     \HCode{<input type="radio" %
12856       \ifx\@curropt\Fld@default checked \fi
12857       name="\Fld@name" %
12858       value="\@currValue" %
12859       \the\Fld@toks>%
12860     }%
12861     \@currDisplay
12862   }%
12863 }
12864 \def\@PushButton[#1]#2{% parameters, label
12865   \def\Fld@name{#2}%
12866   \bgroup
12867   \Field@toks={ }%
12868   \kvsetkeys{Field}{#1}%
12869   \HCode{<input type="button" %
12870     name="\Fld@name" %
12871     value="#2" %
12872     \the\Fld@toks>%
12873   }%
12874   \HCode{</button>}%
12875   \egroup
12876 }
12877 \def\@Submit[#1]#2{%
12878   \HCode{<button type="submit">#2</button>}%
12879 }
12880 \def\@Reset[#1]#2{%
12881   \HCode{<button type="reset">#2</button>}%
12882 }
12883 \def\@CheckBox[#1]#2{% parameters, label
12884   \let\Hy@reserved@a\@empty
12885   \def\Fld@name{#2}%
12886   \def\Fld@default{0}%
12887   \bgroup
12888   \Field@toks={ }%
12889   \kvsetkeys{Field}{#1}%
12890   \HCode{<input type="checkbox" %
12891     \ifFld@checked checked \fi
12892     \ifFld@disabled disabled \fi
12893     \ifFld@readonly readonly \fi
12894     name="\Fld@name" %
12895     \ifFld@hidden type="hidden" \fi
12896     value="\Fld@default" %

```

```

12897 \the\Field@toks>%
12898 #2%
12899 }%
12900 \egroup
12901 }
12902 \</tex4ht>

```

## 45.4 pdfTeX

```

12903 (*pdfTeX)
12904 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12905 \Hy@Message{Sorry, pdfTeX does not support FORM gauges}%
12906 }
12907 \def\MakeFieldObject#1#2{\sbox0{#1}%
12908 \immediate\pdfxform0 %
12909 \expandafter\edef\csname #2Object\endcsname{%
12910 \the\pdfastxform\space 0 R%
12911 }%
12912 % \hbox to Opt{\hskip-\maxdimen{\pdfrefxform \the\pdfastxform}}}%
12913 }%
12914 \let\HyField@afields\ltx@empty
12915 \let\HyField@cofields\ltx@empty
12916 \@ifundefined{pdfastlink}
12917 {%
12918 \let\HyField@AddToFields\relax
12919 \PackageInfo{hyperref}{%
12920 You need pdfTeX 1.40.0 for setting the /Fields entry.%
12921 \MessageBreak
12922 Adobe Reader/Acrobat accepts an empty /Field array,%
12923 \MessageBreak
12924 but other PDF viewers might complain%
12925 }}%
12926 {%
12927 \let\HyField@AuxAddToFields\ltx@gobble
12928 \let\HyField@AuxAddToCoFields\ltx@gobbletwo
12929 \def\HyField@AfterAuxOpen{\Hy@AtBeginDocument}%

```

Insertion sort for calculation field list. In case of equal sort keys (for example, if ‘calculatesortkey’ is not used at all) the keys keep document calling order.

```

12930 \def\HyField@ABD@AuxAddToCoFields#1#2{%
12931 \begingroup
12932 \Hy@safe@activetrue
12933 \let\ltx@secondoftwo\relax
12934 \ifx\HyField@cofields\ltx@empty
12935 \xdef\HyField@cofields{%
12936 \ltx@secondoftwo{#1}{ #2 0 R}%
12937 }%
12938 \else
12939 \let\ltx@secondoftwo\relax
12940 \def\HyField@AddCoField#1#2#3{%
12941 \ifx#1\ltx@empty
12942 \ltx@secondoftwo{#1}{ #2 0 R}%
12943 \expandafter\ltx@gobble
12944 \else
12945 \ifnum\pdfstrcmp{##2}{#1}>\ltx@zero

```

```

12946         \ltx@secondoftwo{#1}{ #2 0 R}%
12947         \ltx@secondoftwo{##2}{##3}%
12948         \expandafter\expandafter\expandafter\ltx@gobble
12949     \else
12950         \ltx@secondoftwo{##2}{##3}%
12951     \fi
12952 \fi
12953 \HyField@AddCoField
12954 }%
12955 \xdef\HyField@cofields{%
12956     \expandafter\HyField@AddCoField
12957     \HyField@cofields\ltx@empty\ltx@empty\ltx@empty
12958 }%
12959 \fi
12960 \endgroup
12961 }%
12962 \Hy@AtBeginDocument{%
12963     \if@filesw
12964         \immediate\write\@mainaux{%
12965             \string\providecommand\string\HyField@AuxAddToFields[1]{}%
12966         }%
12967         \immediate\write\@mainaux{%
12968             \string\providecommand\string\HyField@AuxAddToCoFields[2]{}%
12969         }%
12970     \fi
12971     \let\HyField@AfterAuxOpen\@firstofone
12972     \def\HyField@AuxAddToFields#1{%
12973         \xdef\HyField@afields{%
12974             \ifx\HyField@afields\@empty
12975             \else
12976                 \HyField@afields
12977             \space
12978             \fi
12979             #1 0 R%
12980         }%
12981     }%
12982     \let\HyField@AuxAddToCoFields\HyField@ABD@AuxAddToCoFields
12983 }%
12984 \def\HyField@AddToFields{%
12985     \expandafter\HyField@@AddToFields\expandafter{%
12986         \the\pdfastlink
12987     }%
12988     \ifx\Fld@calculate@code\ltx@empty
12989     \else
12990         \begingroup
12991         \Hy@safe@activestruer
12992         \edef\Hy@temp{%
12993             \endgroup
12994             \if@filesw
12995                 \write\@mainaux{%
12996                     \string\HyField@AuxAddToCoFields{%
12997                         \Fld@calculate@sortkey
12998                     }{%
12999                         \the\pdfastlink

```

```

13000         }%
13001     }%
13002     \fi
13003 }%
13004     \Hy@temp
13005 \fi
13006 }%
13007 \def\HyField@@AddToFields#1{%
13008     \HyField@AfterAuxOpen{%
13009         \if@filesw
13010             \write\@mainaux{%
13011                 \string\HyField@AuxAddToFields{#1}%
13012             }%
13013         \fi
13014     }%
13015 }%
13016 }
13017 \def\@Form[#1]{%
13018     \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13019     \kvsetkeys{Form}{#1}%
13020     \pdf@ifdraftmode{}{%
13021         \Hy@FormObjects
13022         \ifnum\pdfTeXversion>13 %
13023             \pdfrefobj\OBJ@pdfdocencoding
13024             \pdfrefobj\OBJ@ZaDb
13025             \pdfrefobj\OBJ@Helv
13026         \fi
13027         \AtVeryEndDocument{%
13028             \immediate\pdfobj{%
13029                 <<%
13030                 /Fields[\HyField@afields]%
13031                 \ifx\HyField@cofields\ltx@empty
13032                     \else
13033                     /CO[\romannumeral-`\Q\HyField@cofields]%
13034                 \fi
13035                 /DR<<%
13036                 /Font<<%
13037                 /ZaDb \OBJ@ZaDb\space 0 R%
13038                 /Helv \OBJ@Helv\space 0 R%
13039                 >>%
13040             >>%
13041             /DA(/Helv 10 Tf 0 g)%
13042             \ifHy@pdfa
13043             \else
13044                 \ifHyField@NeedAppearances
13045                 /NeedAppearances true%
13046             \fi
13047             \fi
13048             >>%
13049         }%
13050         \edef\OBJ@acroform{\the\pdflastobj}%
13051         \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
13052     }%
13053 }%

```

```

13054 \MakeFieldObject{%
Same as \ding{123} of package pifont.
13055 \begingroup
13056 \fontfamily{pzd}%
13057 \fontencoding{U}%
13058 \fontseries{m}%
13059 \fontshape{n}%
13060 \selectfont
13061 \char123 %
13062 \endgroup
13063 }{Ding}%
13064 \MakeFieldObject{%
13065 \fbox{\textcolor{yellow}{\textsf{Submit}}}%
13066 }{Submit}%
13067 \MakeFieldObject{%
13068 \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
13069 }{SubmitP}%
13070 }
13071 \let\@endForm\ltx@empty
13072 \let\HyAnn@AbsPageLabel\ltx@empty
13073 \let\Fld@pageobjref\ltx@empty
13074 \ltx@ifundefined{pdfpageref}{%
13075 }{%
13076 \ltx@ifpackageloaded{zref-abspage}{%
13077 \newcount\HyAnn@Count
13078 \HyAnn@Count=\ltx@zero
13079 \def\HyAnn@AbsPageLabel{%
13080 \global\advance\HyAnn@Count by\ltx@one
13081 \zref@labelbyprops{HyAnn@\the\HyAnn@Count}{abspage}%
13082 \zref@refused{HyAnn@\the\HyAnn@Count}%
13083 }%
13084 \def\Fld@pageobjref{%
13085 \zref@ifrefundefined{HyAnn@\the\HyAnn@Count}{%
13086 }{%
13087 \zref@ifrefcontainsprop{HyAnn@\the\HyAnn@Count}{abspage}{%
13088 /P \pdfpageref
13089 \zref@extractdefault{HyAnn@\the\HyAnn@Count}{abspage}{1} %
13090 \space 0 R%
13091 }{%
13092 }%
13093 }%
13094 }%
13095 }{%
13096 }%
13097 }

13098 \def\@TextField[#1]#2{% parameters, label
13099 \def\Fld@name{#2}%
13100 \let\Fld@default\ltx@empty
13101 \let\Fld@value\@empty
13102 \def\Fld@width{\DefaultWidthofText}%
13103 \def\Fld@height{%
13104 \ifFld@multiline
13105 \DefaultHeightofTextMultiline

```

```

13106 \else
13107 \DefaultHeightofText
13108 \fi
13109 }%
13110 \begingroup
13111 \expandafter\HyField@SetKeys\expandafter{%
13112 \DefaultOptionsofText,#1%
13113 }%
13114 \PDFForm@Name
13115 \HyField@FlagsText
13116 \ifFld@hidden\def\Fld@width{1sp}\fi
13117 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13118 \LayoutTextField{#2}{%
13119 \leavevmode
13120 \HyAnn@AbsPageLabel
13121 \Hy@escapeform\PDFForm@Text
13122 \pdfstartlink user {\PDFForm@Text}\relax
13123 \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
13124 \HyField@AddToFields
13125 }%
13126 \endgroup
13127 }
13128 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13129 \def\Fld@name{#2}%
13130 \let\Fld@default\relax
13131 \let\Fld@value\relax
13132 \def\Fld@width{\DefaultWidthofChoiceMenu}%
13133 \def\Fld@height{\DefaultHeightofChoiceMenu}%
13134 \begingroup
13135 \Fld@menulength=0 %
13136 \@tempdima\z@
13137 \@for\@curropt:=#3\do{%
13138 \expandafter\Fld@checkequals\@curropt==\\%
13139 \Hy@StepCount\Fld@menulength
13140 \settowidth{\@tempdimb}{\@currDisplay}%
13141 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13142 }%
13143 \advance\@tempdima by 15\p@
13144 \begingroup
13145 \HyField@SetKeys{#1}%
13146 \edef\x{\endgroup
13147 \noexpand\expandafter
13148 \noexpand\HyField@SetKeys
13149 \noexpand\expandafter{%
13150 \expandafter\noexpand\curname DefaultOptionsof%
13151 \ifFld@radio
13152 Radio%
13153 \else
13154 \ifFld@combo
13155 \ifFld@popdown
13156 PopdownBox%
13157 \else
13158 ComboBox%
13159 \fi

```

```

13160         \else
13161             ListBox%
13162         \fi
13163     \fi
13164     \endcsname
13165 }%
13166 }\x
13167 \HyField@SetKeys{#1}%
13168 \PDFForm@Name
13169 \ifFld@hidden\def\Fld@width{1sp}\fi
13170 \ifx\Fld@value\relax
13171     \let\Fld@value\Fld@default
13172 \fi
13173 \LayoutChoiceField{#2}{%
13174     \ifFld@radio
13175         \HyField@FlagsRadioButton
13176         \@@Radio{#3}%
13177     \else
13178         \begingroup
13179         \HyField@FlagsChoice
13180         \ifdim\Fld@width<\@tempdima
13181             \ifdim\@tempdima<1cm\@tempdima1cm\fi
13182             \edef\Fld@width{\the\@tempdima}%
13183         \fi
13184         \ifFld@combo
13185         \else
13186             \@tempdima=\the\Fld@menulength\Fld@charsize
13187             \advance\@tempdima by \Fld@borderwidth bp %
13188             \advance\@tempdima by \Fld@borderwidth bp %
13189             \edef\Fld@height{\the\@tempdima}%
13190         \fi
13191         \@@Listbox{#3}%
13192     \endgroup
13193 \fi
13194 }%
13195 \endgroup
13196 }
13197 \def\@@Radio#1{%
13198     \Fld@listcount=0 %
13199     \EdefEscapeName\Fld@default{\Fld@default}%
13200     \@for\@curropt:=#1\do{%
13201         \expandafter\Fld@checkequals\@curropt==\%
13202         \EdefEscapeName\@currValue{\@currValue}%
13203         \Hy@StepCount\Fld@listcount
13204         \@currDisplay\space
13205     \leavevmode
13206     \HyAnn@AbsPageLabel
13207     \Hy@escapeform\PDFForm@Radio
13208     \pdfstartlink user {%
13209         \PDFForm@Radio
13210         /AP<<%
13211         /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.

```
13212      /\@currValue\space \DingObject
13213      >>%
13214      >>%
13215      }%
13216      \relax
13217      \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
13218      \ifnum\Fld@listcount=1 %
13219      \HyField@AddToFields
13220      \fi
13221      \space % deliberate space between radio buttons
13222      }%
13223      }
13224      \newcount\Fld@listcount
13225      \def\@@ListBox#1{%
13226      \HyField@PDFChoices{#1}%
13227      \leavevmode
13228      \HyAnn@AbsPageLabel
13229      \Hy@escapeform\PDFForm@List
13230      \pdfstartlink user {\PDFForm@List}\relax
13231      \MakeChoiceField{\Fld@width}{\Fld@height}%
13232      \pdfendlink
13233      \HyField@AddToFields
13234      }
13235      \def\@PushButton[#1]#2{% parameters, label
13236      \def\Fld@name{#2}%
13237      \begingroup
13238      \expandafter\HyField@SetKeys\expandafter{%
13239      \DefaultOptionsofPushButton,#1%
13240      }%
13241      \PDFForm@Name
13242      \ifHy@pdfa
13243      \Hy@Error{%
13244      PDF/A: Push button with JavaScript is prohibited%
13245      }\@ehc
13246      \LayoutPushButtonField{%
13247      \leavevmode
13248      \MakeButtonField{#2}%
13249      }%
13250      \else
13251      \HyField@FlagsPushButton
13252      \ifFld@hidden\def\Fld@width{1sp}\fi
13253      \LayoutPushButtonField{%
13254      \leavevmode
13255      \HyAnn@AbsPageLabel
13256      \Hy@escapeform\PDFForm@Push
13257      \pdfstartlink user {\PDFForm@Push}\relax
13258      \MakeButtonField{#2}%
13259      \pdfendlink
13260      \HyField@AddToFields
13261      }%
13262      \fi
13263      \endgroup
13264      }
```



```

13265 \def\@Submit[#1]#2{%
13266   \def\Fld@width{\DefaultWidthofSubmit}%
13267   \def\Fld@height{\DefaultHeightofSubmit}%
13268   \begingroup
13269     \expandafter\HyField@SetKeys\expandafter{%
13270       \DefaultOptionsofSubmit,#1%
13271     }%
13272     \HyField@FlagsPushButton
13273     \HyField@FlagsSubmit
13274     \ifFld@hidden\def\Fld@width{1sp}\fi
13275     \leavevmode
13276     \HyAnn@AbsPageLabel
13277     \Hy@escapeform\PDFForm@Submit
13278     \pdfstartlink user {%
13279       \PDFForm@Submit
13280       /AP<</N \SubmitObject/D \SubmitPObject>>%
13281     }%
13282     \relax
13283     \MakeButtonField{#2}%
13284     \pdfendlink
13285     \HyField@AddToFields
13286   \endgroup
13287 }
13288 \def\@Reset[#1]#2{%
13289   \def\Fld@width{\DefaultWidthofReset}%
13290   \def\Fld@height{\DefaultHeightofReset}%
13291   \begingroup
13292     \expandafter\HyField@SetKeys\expandafter{%
13293       \DefaultOptionsofReset,#1%
13294     }%
13295     \leavevmode
13296     \ifHy@pdfa
13297       \Hy@Error{%
13298         PDF/A: Reset action is prohibited%
13299       }\@ehc
13300       \MakeButtonField{#2}%
13301     \else
13302       \HyField@FlagsPushButton
13303       \ifFld@hidden\def\Fld@width{1sp}\fi
13304       \HyAnn@AbsPageLabel
13305       \Hy@escapeform\PDFForm@Reset
13306       \pdfstartlink user {\PDFForm@Reset}\relax
13307       \MakeButtonField{#2}%
13308       \pdfendlink
13309       \HyField@AddToFields
13310     \fi
13311   \endgroup
13312 }
13313 \def\@CheckBox[#1]#2{% parameters, label
13314   \def\Fld@name{#2}%
13315   \def\Fld@default{0}%
13316   \begingroup
13317     \def\Fld@width{\DefaultWidthofCheckBox}%
13318     \def\Fld@height{\DefaultHeightofCheckBox}%

```

```

13319 \expandafter\HyField@SetKeys\expandafter{%
13320 \DefaultOptionsofCheckBox,#1%
13321 }%
13322 \PDFForm@Name
13323 \HyField@FlagsCheckBox
13324 \ifFld@hidden\def\Fld@width{1sp}\fi
13325 \LayoutCheckField{#2}{%
13326 \leavevmode
13327 \HyAnn@AbsPageLabel
13328 \Hy@escapeform\PDFForm@Check
13329 \pdfstartlink user {\PDFForm@Check}\relax
13330 \MakeCheckField{\Fld@width}{\Fld@height}%
13331 \pdfendlink
13332 \HyField@AddToFields
13333 }%
13334 \endgroup
13335 }
13336 \def\Hy@FormObjects{%
13337 \pdfobj {%
13338 <<%
13339 /Type/Encoding%
13340 /Differences[%
13341 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
13342 /ring/tilde %
13343 39/quotesingle %
13344 96/grave %
13345 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13346 /fraction/guilsingleft/guilsingright/minus/perthousand%
13347 /quotedblbase/quotedblleft/quotedblright/quoteleft%
13348 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
13349 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13350 160/Euro %
13351 164/currency %
13352 166/brokenbar %
13353 168/dieresis/copyright/ordfeminine %
13354 172/logicalnot/.notdef/registered/macron/degree/plusminus%
13355 /twosuperior/threesuperior/acute/mu %
13356 183/periodcentered/cedilla/onesuperior/ordmasculine %
13357 188/onequarter/onehalf/threequarters %
13358 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13359 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
13360 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
13361 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
13362 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
13363 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
13364 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
13365 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
13366 /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
13367 /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
13368 ]%
13369 >>%
13370 }%
13371 \xdef\OBJ@pdfdocencoding{\the\pdflastobj}%
13372 \pdfobj{%

```

```

13373 <<%
13374 /Type/Font%
13375 /Subtype/Type1%
13376 /Name/ZaDb%
13377 /BaseFont/ZapfDingbats%
13378 >>%
13379 }%
13380 \xdef\OBJ@ZaDb{\the\pdfastobj}%
13381 \pdfobj{%
13382 <<%
13383 /Type/Font%
13384 /Subtype/Type1%
13385 /Name/Helv%
13386 /BaseFont/Helvetica%
13387 /Encoding \OBJ@pdfdocencoding\space 0 R%
13388 >>%
13389 }%
13390 \xdef\OBJ@Helv{\the\pdfastobj}%
13391 \global\let\Hy@FormObjects\relax
13392 }
13393 \</pdfTeX>

```

## 45.5 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.

```
13394 \<dvipdfm | xetex>
```

\@Gauge

```

13395 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
13396 \Hy@Message{Sorry, dvipdfm/XeTeX does not support FORM gauges}%
13397 }

```

\@Form

```

13398 \def\@Form[#1]{%
13399 \ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13400 \kvsetkeys{Form}{#1}%
13401 \Hy@FormObjects
13402 \@pdfm@mark{obj @afields []}%
13403 \@pdfm@mark{obj @corder []}%
13404 \@pdfm@mark{%
13405 obj @aform <<%
13406 /Fields @afields%
13407 /DR<<%
13408 /Font<<%
13409 /ZaDb @OBJZaDb%
13410 /Helv @OBJHelv%
13411 >>%
13412 >>%
13413 /DA(/Helv 10 Tf 0 g)%
13414 /CO @corder%
13415 \ifHy@pdfa
13416 \else
13417 \ifHyField@NeedAppearances

```

```

13418         /NeedAppearances true%
13419         \fi
13420     \fi
13421     >>%
13422 }%
13423 \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
13424 }

\@endForm

13425 \let\@endForm\ltx@empty

\dvipdfm@setdim \dvipdfm@setdim sets dimensions for ann using \pdfm@box.
13426 \def\dvipdfm@setdim{%
13427   height \the\ht\pdfm@box\space
13428   width \the\wd\pdfm@box\space
13429   depth \the\dp\pdfm@box\space
13430 }

\HyField@AnnotCount
13431 \newcount\HyField@AnnotCount
13432 \HyField@AnnotCount=\z@

\HyField@AdvanceAnnotCount
13433 \def\HyField@AdvanceAnnotCount{%
13434   \global\advance\HyField@AnnotCount\@ne
13435 }

\HyField@TheAnnotCount
13436 \def\HyField@TheAnnotCount{%
13437   \the\HyField@AnnotCount
13438 }

\Fld@pageobjref
13439 \def\Fld@pageobjref{/P @thispage}%

\HyField@AddToFields
13440 \def\HyField@AddToFields#1{%
13441   \@pdfm@mark{put @afields @#1\HyField@TheAnnotCount}%
13442   \ifx\Fld@calculate@code\ltx@empty
13443     \else
13444       \@pdfm@mark{put @corder @#1\HyField@TheAnnotCount}%
13445     \fi
13446 }

\@TextField
13447 \def\@TextField[#1]#2{% parameters, label
13448   \def\Fld@name{#2}%
13449   \let\Fld@default\ltx@empty
13450   \let\Fld@value\@empty
13451   \def\Fld@width{\DefaultWidthofText}%
13452   \def\Fld@height{%
13453     \ifFld@multiline
13454       \DefaultHeightofTextMultiline

```

```

13455 \else
13456 \DefaultHeightofText
13457 \fi
13458 }%
13459 \begingroup
13460 \expandafter\HyField@SetKeys\expandafter{%
13461 \DefaultOptionsofText,#1%
13462 }%
13463 \PDFForm@Name
13464 \HyField@FlagsText
13465 \ifFld@hidden\def\Fld@width{1sp}\fi
13466 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13467 \setbox\pdfm@box=\hbox{%
13468 \MakeTextField{\Fld@width}{\Fld@height}%
13469 }%
13470 \HyField@AdvanceAnnotCount
13471 \LayoutTextField{#2}{%
13472 \leavevmode
13473 \Hy@escapeform\PDFForm@Text
13474 \@pdfm@mark{%
13475 ann @text\HyField@TheAnnotCount\space
13476 \dvi pdfm@setdim << \PDFForm@Text >>%
13477 }%
13478 }%
13479 \unhbox\pdfm@box
13480 \HyField@AddToFields{text}%
13481 % record in @afields array
13482 \endgroup
13483 }

```

#### \@ChoiceMenu

```

13484 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13485 \def\Fld@name{#2}%
13486 \let\Fld@default\relax
13487 \let\Fld@value\relax
13488 \def\Fld@width{\DefaultWidthofChoiceMenu}%
13489 \def\Fld@height{\DefaultHeightofChoiceMenu}%
13490 \begingroup
13491 \Fld@menulength=0 %
13492 \@tempdima\z@
13493 \@for\@curropt:=#3\do{%
13494 \expandafter\Fld@checkequals\@curropt==\%
13495 \Hy@StepCount\Fld@menulength
13496 \settowidth{\@tempdimb}{\@currDisplay}%
13497 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13498 }%
13499 \advance\@tempdima by 15\p@
13500 \begingroup
13501 \HyField@SetKeys{#1}%
13502 \edef\x{\endgroup
13503 \noexpand\expandafter
13504 \noexpand\HyField@SetKeys
13505 \noexpand\expandafter{%
13506 \expandafter\noexpand\curname DefaultOptionsof%

```

```

13507      \ifFld@radio
13508      Radio%
13509      \else
13510      \ifFld@combo
13511      \ifFld@popdown
13512      PopdownBox%
13513      \else
13514      ComboBox%
13515      \fi
13516      \else
13517      ListBox%
13518      \fi
13519      \fi
13520      \endcsname
13521      }%
13522  }\x
13523  \HyField@SetKeys{#1}%
13524  \PDFForm@Name
13525  \ifFld@hidden\def\Fld@width{1sp}\fi
13526  \ifx\Fld@value\relax
13527      \let\Fld@value\Fld@default
13528  \fi
13529  \LayoutChoiceField{#2}{%
13530      \ifFld@radio
13531      \HyField@FlagsRadioButton
13532      \@@Radio{#3}%
13533      \else
13534      \begingroup
13535      \HyField@FlagsChoice
13536      \ifdim\Fld@width<\@tempdima
13537          \ifdim\@tempdima<1cm\@tempdima1cm\fi
13538          \edef\Fld@width{\the\@tempdima}%
13539      \fi
13540      \ifFld@combo
13541      \else
13542          \@tempdima=\the\Fld@menulength\Fld@charsize
13543          \advance\@tempdima by \Fld@borderwidth bp %
13544          \advance\@tempdima by \Fld@borderwidth bp %
13545          \edef\Fld@height{\the\@tempdima}%
13546      \fi
13547      \@@ListBox{#3}%
13548      \endgroup
13549      \fi
13550      }%
13551  \endgroup
13552  }

```

\@@Radio

```

13553 \def\@@Radio#1{%
13554     \Fld@listcount=0 %
13555     \EdefEscapeName\Fld@default{\Fld@default}%
13556     \setbox\pdfm@box=\hbox{%
13557         \MakeRadioField{\Fld@width}{\Fld@height}%
13558     }%

```

```

13559 \@for\@curropt:=#1\do{%
13560   \expandafter\Fld@checkequals\@curropt==\\%
13561   \EdefEscapeName\@currValue{\@currValue}%
13562   \Hy@StepCount\Fld@listcount
13563   \@currDisplay\space
13564   \leavevmode
13565   \Hy@escapeform\PDFForm@Radio
13566   \ifnum\Fld@listcount=1 %
13567     \HyField@AdvanceAnnotCount
13568   \fi
13569   \@pdfm@mark{%
13570     ann %
13571     \ifnum\Fld@listcount=1 %
13572       @radio\HyField@TheAnnotCount%
13573     \space
13574   \fi
13575   \dvipdfm@setdim
13576   <<%
13577   \PDFForm@Radio
13578   /AP<</N<</\@currValue /null>>>%
13579   >>%
13580   }%
13581   \unhcopy\pdfm@box\space% deliberate space between radio buttons
13582   \ifnum\Fld@listcount=1 %
13583     \HyField@AddToFields{radio}%
13584   \fi
13585   }%
13586 }

```

\Fld@listcount

```

13587 \newcount\Fld@listcount

```

\@@Listbox

```

13588 \def\@@Listbox#1{%
13589   \HyField@PDFChoices{#1}%
13590   \setbox\pdfm@box=\hbox{%
13591     \MakeChoiceField{\Fld@width}{\Fld@height}%
13592   }%
13593   \leavevmode
13594   \Hy@escapeform\PDFForm@List
13595   \HyField@AdvanceAnnotCount
13596   \@pdfm@mark{%
13597     ann @list\HyField@TheAnnotCount\space
13598     \dvipdfm@setdim
13599     <<\PDFForm@List>>%
13600   }%
13601   \unhbox\pdfm@box
13602   \HyField@AddToFields{list}%
13603 }

```

\@PushButton

```

13604 \def\@PushButton[#1]#2{% parameters, label
13605   \def\Fld@name{#2}%
13606   \begingroup

```

```

13607 \expandafter\HyField@SetKeys\expandafter{%
13608 \DefaultOptionsofPushButton,#1%
13609 }%
13610 \PDFForm@Name
13611 \ifHy@pdfa
13612 \Hy@Error{%
13613 PDF/A: Push button with JavaScript is prohibited%
13614 }\@ehc
13615 \LayoutPushButtonField{%
13616 \leavevmode
13617 \MakeButtonField{#2}%
13618 }%
13619 \else
13620 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13621 \HyField@FlagsPushButton
13622 \ifFld@hidden\def\Fld@width{1sp}\fi
13623 \HyField@AdvanceAnnotCount
13624 \LayoutPushButtonField{%
13625 \leavevmode
13626 \Hy@escapeform\PDFForm@Push
13627 \@pdfm@mark{%
13628 ann @push\HyField@TheAnnotCount\space
13629 \dvipdfm@setdim
13630 <<\PDFForm@Push>>%
13631 }%
13632 }%
13633 \unhbox\pdfm@box
13634 \HyField@AddToFields{push}%
13635 \fi
13636 \endgroup
13637 }

\@Submit
13638 \def\@Submit[#1]#2{%
13639 \def\Fld@width{\DefaultWidthofSubmit}%
13640 \def\Fld@height{\DefaultHeightofSubmit}%
13641 \begingroup
13642 \expandafter\HyField@SetKeys\expandafter{%
13643 \DefaultOptionsofSubmit,#1%
13644 }%
13645 \HyField@FlagsPushButton
13646 \HyField@FlagsSubmit
13647 \ifFld@hidden\def\Fld@width{1sp}\fi
13648 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13649 \leavevmode
13650 \Hy@escapeform\PDFForm@Submit
13651 \HyField@AdvanceAnnotCount
13652 \@pdfm@mark{%
13653 ann @submit\HyField@TheAnnotCount\space
13654 \dvipdfm@setdim
13655 <<\PDFForm@Submit>>%
13656 }%
13657 \unhbox\pdfm@box%
13658 \HyField@AddToFields{submit}%

```



```

13659 \endgroup
13660 }

\@Reset
13661 \def\@Reset[#1]#2{%
13662   \def\Fld@width{\DefaultWidthofReset}%
13663   \def\Fld@height{\DefaultHeightofReset}%
13664   \begingroup
13665     \expandafter\HyField@SetKeys\expandafter{%
13666       \DefaultOptionsofReset,#1%
13667     }%
13668     \leavevmode
13669     \ifHy@pdfa
13670       \Hy@Error{%
13671         PDF/A: Reset action is prohibited%
13672       }\@ehc
13673       \MakeButtonField{#2}%
13674     \else
13675       \HyField@FlagsPushButton
13676       \ifFld@hidden\def\Fld@width{1sp}\fi
13677       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13678       \Hy@escapeform\PDFForm@Reset
13679       \HyField@AdvanceAnnotCount
13680       \@pdfm@mark{%
13681         ann @reset\HyField@TheAnnotCount\space
13682         \dvipdfm@setdim
13683         <<\PDFForm@Reset>>%
13684       }%
13685       \unhbox\pdfm@box
13686       \HyField@AddToFields{reset}%
13687     \fi
13688   \endgroup
13689 }

\@CheckBox
13690 \def\@CheckBox[#1]#2{% parameters, label
13691   \def\Fld@name{#2}%
13692   \def\Fld@default{0}%
13693   \begingroup
13694     \def\Fld@width{\DefaultWidthofCheckBox}%
13695     \def\Fld@height{\DefaultHeightofCheckBox}%
13696     \expandafter\HyField@SetKeys\expandafter{%
13697       \DefaultOptionsofCheckBox,#1%
13698     }%
13699     \PDFForm@Name
13700     \HyField@FlagsCheckBox
13701     \ifFld@hidden\def\Fld@width{1sp}\fi
13702     \setbox\pdfm@box=\hbox{%
13703       \MakeCheckField{\Fld@width}{\Fld@height}%
13704     }%
13705     \HyField@AdvanceAnnotCount
13706     \LayoutCheckField{#2}%
13707     \leavevmode
13708     \Hy@escapeform\PDFForm@Check

```

```

13709 \pdfmark{%
13710   ann @check\HyField@TheAnnotCount\space
13711   \dvipdfm@setdim
13712   <<\PDFForm@Check>>%
13713 }%
13714 \unhbox\pdfm@box
13715 \HyField@AddToFields{check}%
13716 }%
13717 \endgroup
13718 }

13719 \def\Hy@FormObjects{%
13720 \pdfmark{obj @OBJpdfdocencoding%
13721 <<%
13722 /Type/Encoding%
13723 /Differences[%
13724   24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
13725   39/quotesingle %
13726   96/grave %
13727   128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13728   /fraction/guilsingleft/guilsingright/minus/perthousand%
13729   /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
13730   /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
13731   /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13732   160/Euro %
13733   164/currency %
13734   166/brokenbar %
13735   168/dieresis/copyright/ordfeminine %
13736   172/logicalnot/.notdef/registered/macron/degree/plusminus%
13737   /twosuperior/threesuperior/acute/mu %
13738   183/periodcentered/cedilla/onesuperior/ordmasculine %
13739   188/onequarter/onehalf/threequarters %
13740   192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13741   /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
13742   /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
13743   /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
13744   /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
13745   /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
13746   /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
13747   /eth/ntilde/ograde/oacute/ocircumflex/otilde/odieresis%
13748   /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
13749   /thorn/ydieresis%
13750 ]%
13751 >>%
13752 }%
13753 \pdfmark{obj @OBJZaDb%
13754 <<%
13755 /Type/Font%
13756 /Subtype/Type1%
13757 /Name/ZaDb%
13758 /BaseFont/ZapfDingbats%
13759 >>%
13760 }%
13761 \pdfmark{obj @OBJHelv%

```

```

13762 <<%
13763 /Type/Font%
13764 /Subtype/Type1%
13765 /Name/Helv%
13766 /BaseFont/Helvetica%
13767 /Encoding @OBJpdfdocencoding%
13768 >>%
13769 }%
13770 \global\let\Hy@FormObjects\relax
13771 }
13772 </dvipdfm | xetex>

```

## 45.6 Common forms part

```

13773 (*pdfform)

```

\Fld@pageobjref

```

13774 \providecommand*\Fld@pageobjref{}

```

\Hy@escapestring

```

13775 \@ifundefined{pdf@escapestring}
13776 {%
13777 \let\Hy@escapestring\@firstofone
13778 \def\Hy@escapeform#1{%
13779 \ifHy@pdfescapeform
13780 \def\Hy@escapestring##1{%
13781 \noexpand\Hy@escapestring{\noexpand##1}%
13782 }%
13783 \edef\Hy@temp{#1}%
13784 \expandafter\Hy@@escapeform\Hy@temp\Hy@escapestring{}\@nil
13785 \def\Hy@escapestring##1{%
13786 \@ifundefined{Hy@esc@\string##1}{%
13787 ##1%
13788 \ThisShouldNotHappen
13789 }{%
13790 \csname Hy@esc@\string##1\endcsname
13791 }%
13792 }%
13793 \else
13794 \let\Hy@escapestring\@firstofone
13795 \fi
13796 }%
13797 \def\Hy@@escapeform#1\Hy@escapestring#2#3\@nil{%
13798 \ifx\#3\%
13799 \else
13800 \expandafter
13801 \Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
13802 \ltx@ReturnAfterFi{%
13803 \Hy@@escapeform#3\@nil
13804 }%
13805 \fi
13806 }%
13807 }{%
13808 \def\Hy@escapeform#1{%

```

```

13809 \ifHy@pdfescapeform
13810 \let\Hy@escapestring\pdfescapestring
13811 \else
13812 \let\Hy@escapestring\@firstofone
13813 \fi
13814 }%
13815 \Hy@escapeform{}%
13816 }

```

#### \PDFForm@Name

```

13817 \def\PDFForm@Name{%
13818 \PDFForm@@Name\Fld@name
13819 \ifx\Fld@altname\relax
13820 \else
13821 \PDFForm@@Name\Fld@altname
13822 \fi
13823 \ifx\Fld@mappingname\relax
13824 \else
13825 \PDFForm@@Name\Fld@mappingname
13826 \fi
13827 }

```

#### \PDFForm@@Name

```

13828 \def\PDFForm@@Name#1{%
13829 \begingroup
13830 \ifnum\Hy@pdf@major@minor@version<105 % implementation note 117, PDF spec 1.7
13831 \ifHy@unicode
13832 \Hy@unicodedefalse
13833 \fi
13834 \fi
13835 \pdfstringdef\Hy@gtemp#1%
13836 \endgroup
13837 \let#1\Hy@gtemp
13838 }

```

#### \Fld@additionalactions

```

13839 \def\Fld@@additionalactions{%
K input (keystroke) format
13840 \ifx\Fld@keystroke@code\@empty
13841 \else
13842 /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
13843 \fi

F display format
13844 \ifx\Fld@format@code\@empty
13845 \else
13846 /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
13847 \fi

V validation
13848 \ifx\Fld@validate@code\@empty
13849 \else
13850 /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
13851 \fi

```

C calculation

```
13852 \ifx\Fld@calculate@code\@empty
13853 \else
13854 /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
13855 \fi
```

Fo receiving the input focus

```
13856 \ifx\Fld@onfocus@code\@empty
13857 \else
13858 /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
13859 \fi
```

Bl loosing the input focus (blurred)

```
13860 \ifx\Fld@onblur@code\@empty
13861 \else
13862 /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
13863 \fi
```

D pressing the mouse button (down)

```
13864 \ifx\Fld@onmousedown@code\@empty
13865 \else
13866 /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
13867 \fi
```

U releasing the mouse button (up)

```
13868 \ifx\Fld@onmouseup@code\@empty
13869 \else
13870 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
13871 \fi
```

E cursor enters the annotation's active area.

```
13872 \ifx\Fld@onenter@code\@empty
13873 \else
13874 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
13875 \fi
```

X cursor exits the annotation's active area.

```
13876 \ifx\Fld@onexit@code\@empty
13877 \else
13878 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
13879 \fi
```

```
13880 }
```

```
13881 \def\Fld@additionalactions{%
13882 \if-\Fld@@additionalactions-%
13883 \else
13884 \ifHy@pdfa
13885 \else
13886 /AA<<\Fld@@additionalactions>>%
13887 \fi
13888 \fi
13889 }
```

\Fld@annotnames

```
13890 \def\Fld@annotnames{%
13891 /T(\Fld@name)%
13892 \ifx\Fld@altname\relax
```

```

13893 \else
13894 /TU(\Fld@altname)%
13895 \fi
13896 \ifx\Fld@mappingname\relax
13897 \else
13898 /TM(\Fld@mappingname)%
13899 \fi
13900 }

```

#### \PDFForm@Check

```

13901 \def\PDFForm@Check{%
13902 /Subtype/Widget%
13903 \Fld@annotflags
13904 \Fld@pageobjref
13905 \Fld@annotnames
13906 /FT/Btn%
13907 \Fld@flags
13908 /Q \Fld@align
13909 /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
13910 /AP<< /N <</Yes<<>>>> >> %new string /Yes is from below
13911 /MK<<%
13912 \ifnum\Fld@rotation=z@
13913 \else
13914 /R \Fld@rotation
13915 \fi
13916 \ifx\Fld@bordercolor\relax
13917 \else
13918 /BC[\Fld@bordercolor]%
13919 \fi
13920 \ifx\Fld@bcolor\relax
13921 \else
13922 /BG[\Fld@bcolor]%
13923 \fi
13924 /CA(\Hy@escapestring{\Fld@cbsymbol})%
13925 >>%
13926 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13927 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13928 /H/P%
13929 \ifFld@checked /V/Yes/AS/Yes\else /V/Off/AS/Off\fi
13930 \Fld@additionalactions
13931 }

```

#### \PDFForm@Push

```

13932 \ifHy@pdfa
13933 \else
13934 \def\PDFForm@Push{%
13935 /Subtype/Widget%
13936 \Fld@annotflags
13937 \Fld@pageobjref
13938 \Fld@annotnames
13939 /FT/Btn%
13940 \Fld@flags
13941 /H/P%
13942 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%

```

```

13943 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13944 \ifx\Fld@bordercolor\relax\else 1\fi
13945 \space
13946 \else
13947 /MK<<%
13948 \ifnum\Fld@rotation=\z@
13949 \else
13950 /R \Fld@rotation
13951 \fi
13952 \ifx\Fld@bordercolor\relax
13953 \else
13954 /BC[\Fld@bordercolor]%
13955 \fi
13956 >>%
13957 \fi
13958 /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick@code})>>%
13959 \Fld@additionalactions
13960 }%
13961 \fi

```

\PDFForm@List

```

13962 \def\PDFForm@List{%
13963 /Subtype/Widget%
13964 \Fld@annotflags
13965 \Fld@pageobjref
13966 \Fld@annotnames
13967 /FT/Ch%
13968 \Fld@flags
13969 /Q \Fld@align
13970 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13971 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13972 \ifx\Fld@bordercolor\relax\else 1\fi
13973 \ifx\Fld@bcolor\relax \else 1\fi
13974 \space
13975 \else
13976 /MK<<%
13977 \ifnum\Fld@rotation=\z@
13978 \else
13979 /R \Fld@rotation
13980 \fi
13981 \ifx\Fld@bordercolor\relax
13982 \else
13983 /BC[\Fld@bordercolor]%
13984 \fi
13985 \ifx\Fld@bcolor\relax
13986 \else
13987 /BG[\Fld@bcolor]%
13988 \fi
13989 >>%
13990 \fi
13991 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
13992 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13993 \Fld@choices
13994 \Fld@additionalactions

```

13995 }

#### \PDFForm@Radio

```
13996 \def\PDFForm@Radio{%
13997   /Subtype/Widget%
13998   \Fld@annotflags
13999   \Fld@pageobjref
14000   \Fld@annotnames
14001   /FT/Btn%
14002   \Fld@flags
14003   /H/P%
14004   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14005   /MK<<%
14006     \ifnum\Fld@rotation=z@
14007     \else
14008       /R \Fld@rotation
14009     \fi
14010     \ifx\Fld@bordercolor\relax
14011     \else
14012       /BC[\Fld@bordercolor]%
14013     \fi
14014     \ifx\Fld@bcolor\relax
14015     \else
14016       /BG[\Fld@bcolor]%
14017     \fi
14018     /CA(\Hy@escapestring{\Fld@radiosymbol})%
14019   >>%
14020   /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
14021     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
```

New code, the default value is used for all buttons

```
14022   \ifx\Fld@default\@empty
14023     /V/Off%
14024     /DV/Off%
14025   \else
14026     /V/\Fld@default
14027     /DV/\Fld@default
14028   \fi
14029   \Fld@additionalactions
14030 }
```

#### \PDFForm@Text

```
14031 \def\PDFForm@Text{%
14032   /Subtype/Widget%
14033   \Fld@annotflags
14034   \Fld@pageobjref
14035   \Fld@annotnames
14036   /FT/Tx%
14037   \Fld@flags
14038   /Q \Fld@align
14039   /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
14040   \ifcase0\ifnum\Fld@rotation=z@ \else 1\fi
14041     \ifx\Fld@bordercolor\relax\else 1\fi
14042     \ifx\Fld@bcolor\relax \else 1\fi
```



```

14043         \space
14044     \else
14045         /MK<<%
14046         \ifnum\Fld@rotation=\z@
14047         \else
14048             /R \Fld@rotation
14049         \fi
14050         \ifx\Fld@bordercolor\relax
14051         \else
14052             /BC[\Fld@bordercolor]%
14053         \fi
14054         \ifx\Fld@bcolor\relax
14055         \else
14056             /BG[\Fld@bcolor]%
14057         \fi
14058     >>%
14059 \fi
14060 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
14061     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14062 /DV(\Hy@escapestring{\Fld@default})%
14063 /V(\Hy@escapestring{\Fld@value})%
14064 \Fld@additionalactions
14065 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
14066 }

```

\PDFForm@Submit

```

14067 \def\PDFForm@Submit{%
14068     /Subtype/Widget%
14069     \Fld@annotflags
14070     \Fld@pageobjref
14071     \Fld@annotnames
14072     /FT/Btn%
14073     \Fld@flags
14074     /H/P%
14075     /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14076     \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14077         \ifx\Fld@bordercolor\relax\else 1\fi
14078         \space
14079     \else
14080         /MK<<%
14081         \ifnum\Fld@rotation=\z@
14082         \else
14083             /R \Fld@rotation
14084         \fi
14085         \ifx\Fld@bordercolor\relax
14086         \else
14087             /BC[\Fld@bordercolor]%
14088         \fi
14089     >>%
14090 \fi
14091 /A<<%
14092     /S/SubmitForm%
14093     /F<<%
14094     /FS/URL%

```

```

14095      /F(\Hy@escapestring{\Form@action})%
14096      >>%
14097      \Fld@submitflags
14098      >>%
14099      \Fld@additionalactions
14100  }

\PDFForm@Reset

14101 \ifHy@pdfa
14102 \else
14103   \def\PDFForm@Reset{%
14104     /Subtype/Widget%
14105     \Fld@annotflags
14106     \Fld@pageobjref
14107     \Fld@annotnames
14108     /FT/Btn%
14109     \Fld@flags
14110     /H/P%
14111     /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
14112     \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14113         \ifx\Fld@bordercolor\relax\else 1\fi
14114         \space
14115     \else
14116       /MK<<%
14117         \ifnum\Fld@rotation=\z@
14118         \else
14119           /R \Fld@rotation
14120         \fi
14121         \ifx\Fld@bordercolor\relax
14122         \else
14123           /BC[\Fld@bordercolor]%
14124         \fi
14125       %   /CA (Clear)
14126       %   /AC (Done)
14127       >>%
14128       \fi
14129       /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14130       /A<</S/ResetForm>>%
14131       \Fld@additionalactions
14132   }%
14133 \fi

14134 </pdfform>
14135 <*packageEnd>

```

## 46 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  $\text{\LaTeX}$  macros.

To write out the current section title, and its rationalized number, we have to intercept the `\@sect` command, which is rather dangerous. But how else to see the information we need? We do the *same* for `\@ssect`, giving anchors to unnumbered

sections. This allows things like bibliographies to get bookmarks when used with a manual `\addcontentsline`

```
14136 \def\phantomsection{%
14137   \Hy@MakeCurrentHrefAuto{section*}%
14138   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
14139 }
14140 \</packageEnd>
```

## 46.1 Bookmarks

```
14141 \<*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.

```
14142 \def\Hy@writebookmark#1#2#3#4#5{%
14143   % section number, text, label, level, file
14144   \ifx\WriteBookmarks\relax%
14145   \else
14146     \ifnum#4>\Hy@bookmarksdepth\relax
14147     \else
14148       \@@writetorep{#1}{#2}{#3}{#4}{#5}%
14149     \fi
14150   \fi
14151 }
14152 \def\Hy@currentbookmarklevel{0}
14153 \def\Hy@numberline#1{#1 }
14154 \def\@@writetorep#1#2#3#4#5{%
14155   \begingroup
14156   \edef\Hy@tempa{#5}%
14157   \ifx\Hy@tempa\Hy@bookmarkstype
14158     \edef\Hy@level{#4}%
14159     \ifx\Hy@levelcheck Y%
14160       \@tempcnta\Hy@level\relax
14161       \advance\@tempcnta by -1 %
14162       \ifnum\Hy@currentbookmarklevel<\@tempcnta
14163         \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
14164       \advance\@tempcnta by 1 %
14165       \Hy@Warning{%
14166         Difference (\the\@tempcnta) between bookmark levels is %
```

```

14167         greater \MessageBreak than one, level fixed%
14168     }%
14169     \@tempcnta\Hy@currentbookmarklevel
14170     \advance\@tempcnta by 1 %
14171     \edef\Hy@level{\the\@tempcnta}%
14172     \fi
14173 \else
14174     \global\let\Hy@levelcheck Y%
14175     \fi
14176     \global\let\Hy@currentbookmarklevel\Hy@level
14177     \@tempcnta\Hy@level\relax
14178     \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
14179     \advance\@tempcnta by -1 %
14180     \edef\Hy@tempa{#3}%
14181     \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
14182     \ifx\Hy@tempa\Hy@tempb
14183         \Hy@Warning{%
14184             The anchor of a bookmark and its parent's must not%
14185             \MessageBreak be the same. Added a new anchor%
14186         }%
14187     \phantomsection
14188     \fi
14189     \ifHy@bookmarksnumbered
14190         \let\numberline\Hy@numberline
14191         \let\booknumberline\Hy@numberline
14192         \let\partnumberline\Hy@numberline
14193         \let\chapternumberline\Hy@numberline
14194     \else
14195         \let\numberline\@gobble
14196         \let\booknumberline\@gobble
14197         \let\partnumberline\@gobble
14198         \let\chapternumberline\@gobble
14199     \fi
14200     \pdfstringdef\Hy@tempa{#2}%
14201     \HyPsd@SanitizeForOutFile\Hy@tempa
14202     \if@files
14203         \stepcounter{bookmark@seq@number}%
14204         \@ifundefined{@outlinefile}{%
14205             }{%
14206                 \protected@write\@outlinefile{ }{%
14207                     \protect\BOOKMARK
14208                     [\Hy@level][\@bookmarkopenstatus{\Hy@level}]{#3}%
14209                     {\Hy@tempa}{\Hy@tempb}%
14210                     \@percentchar\space\thebookmark@seq@number
14211                 }%
14212             }%
14213         \fi
14214     \fi
14215 \endgroup
14216 }
14217 \newcounter{bookmark@seq@number}
14218 \begingroup
14219 \lccode`=(`{%
14220 \lccode`=)`}%

```

```

14221 \lccode`1=\z@
14222 \lccode`2=\z@
14223 \lccode`3=\z@
14224 \lccode`5=\z@
14225 \lccode`7=\z@
14226 \lccode`\#=\z@
14227 \lccode`\`=\z@
14228 \lccode`\{=\z@
14229 \lccode`\}= \z@
14230 \lowercase{%
14231 \endgroup
14232 \def\HyPsd@SanitizeForOutFile#1{%
14233   \@onelevel@sanitize\Hy@tempa
14234   \escapechar`\\%
14235   \edef\Hy@tempa{%
14236     \expandafter\HyPsd@SanitizeOut@BraceLeft\Hy@tempa(\@nil
14237   }%
14238   \edef\Hy@tempa{%
14239     \expandafter\HyPsd@SanitizeOut@BraceRight\Hy@tempa)\@nil
14240   }%
14241 }%
14242 \def\HyPsd@SanitizeOut@BraceLeft#1(#2\@nil{%
14243   #1%
14244   \ifx\\#2\\%
14245     \expandafter\ltx@gobble
14246   \else
14247     \expandafter\ltx@firstofone
14248   \fi
14249   {%
14250     \string\173%
14251     \HyPsd@SanitizeOut@BraceLeft#2\@nil
14252   }%
14253 }%
14254 \def\HyPsd@SanitizeOut@BraceRight#1)#2\@nil{%
14255   #1%
14256   \ifx\\#2\\%
14257     \expandafter\ltx@gobble
14258   \else
14259     \expandafter\ltx@firstofone
14260   \fi
14261   {%
14262     \string\175%
14263     \HyPsd@SanitizeOut@BraceRight#2\@nil
14264   }%
14265 }%
14266 }

```

In the call of \BOOKMARK the braces around #4 are omitted, because it is not likely, that the level number contains ].

```

14267 \newcommand{\currentpdfbookmark}{%
14268   \pdfbookmark[\Hy@currentbookmarklevel]%
14269 }
14270 \newcommand{\subpdfbookmark}{%
14271   \@tempcnta\Hy@currentbookmarklevel
14272   \Hy@StepCount\@tempcnta

```

```

14273 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
14274 }
14275 \newcommand{\belowpdfbookmark}[2]{%
14276 \@tempcnta\Hy@currentbookmarklevel
14277 \Hy@StepCount\@tempcnta
14278 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
14279 \advance\@tempcnta by -1 %
14280 \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
14281 }

```

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.

```

14282 \renewcommand\pdfbookmark[3][0]{%
14283 \Hy@writebookmark{#2}{#3.#1}{#1}{toc}%
14284 \hyper@anchorstart{#3.#1}\hyper@anchorend
14285 }
14286 \def\BOOKMARK{%
14287 \@ifnextchar{\@BOOKMARK}{\@@BOOKMARK[1][-]}%
14288 }
14289 \def\@BOOKMARK[#1]{%
14290 \@ifnextchar{\@@BOOKMARK[{#1}]}{\@@BOOKMARK[{#1}][-]}%
14291 }

```

The macros for calculating structure of outlines are derived from those by Petr Olsak used in the `texinfo` macros.

#### 46.1.1 Rerun warning

`\Hy@OutlineRerunCheck`

```

14292 \RequirePackage{rerunfilecheck}[2009/12/10]
14293 \def\Hy@OutlineRerunCheck{%
14294 \RerunFileCheck{\jobname.out}{%
14295 \immediate\closeout\@outlinefile
14296 }{%
14297 Rerun to get outlines right\MessageBreak
14298 or use package `bookmark'%
14299 }%
14300 }

```

#### 46.1.2 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.

```

14301 (*vtex)
14302 \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.

```

14303 \begingroup
14304 \catcode'\=12 %

```

```

14305 \ifnum\Hy@VTeXversion<650 %
14306 \catcode`\=12 %
14307 \gdef\hv@pdf@char#1#2#3{%
14308 \char
14309 \ifcase'#1#2#3 %
14310 "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
14311 \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
14312 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
14313 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
14314 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
14315 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
14316 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
14317 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
14318 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
14319 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
14320 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
14321 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
14322 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
14323 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
14324 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
14325 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
14326 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
14327 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
14328 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
14329 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
14330 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
14331 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
14332 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
14333 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
14334 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
14335 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
14336 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
14337 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
14338 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
14339 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
14340 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
14341 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
14342 \fi
14343 }%
14344 \else
14345 \gdef\hv@pdf@char{\char'}%
14346 \fi
14347 \endgroup

```

\@@BOOKMARK

```

14348 \def\@@BOOKMARK[#1][#2]#3#4#5{%
14349 \expandafter\edef\csname @count@#3\endcsname{%
14350 \the\@serial@counter
14351 }%
14352 \edef\@mycount{\the\@serial@counter}%
14353 \Hy@StepCount\@serial@counter
14354 \edef\@parcount{%
14355 \expandafter\ifx\csname @count@#5\endcsname\relax
14356 0%

```

```

14357 \else
14358 \csname @count@#5\endcsname
14359 \fi
14360 }%
14361 \immediate\special{%
14362 !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
14363 s=\ifx#2-c\else o\fi,t=#4%
14364 }%
14365 }%

```

\ReadBookmarks

```

14366 \def\ReadBookmarks{%
14367 \begingroup
14368 \def\0{\hv@pdf@char 0}%
14369 \def\1{\hv@pdf@char 1}%
14370 \def\2{\hv@pdf@char 2}%
14371 \def\3{\hv@pdf@char 3}%
14372 \def\{({}%
14373 \def\)}{)%
14374 \def\do##1{%
14375 \ifnum\catcode`##1=\active
14376 \@makeother##1%
14377 \else
14378 \ifnum\catcode`##1=6 %
14379 \@makeother##1%
14380 \fi
14381 \fi
14382 }%
14383 \dospecials
14384 \Hy@safe@activetrue
14385 \InputIfFileExists{ \jobname.out}{\}{}%
14386 \endgroup
14387 \ifx\WriteBookmarks\relax
14388 \else
14389 \if@files
14390 \newwrite\@outlinefile
14391 \Hy@OutlineRerunCheck
14392 \immediate\openout\@outlinefile=\jobname.out\relax
14393 \fi
14394 \fi
14395 }

```

```

14396 </vtex>
14397 <*\vtex>
14398 \def\ReadBookmarks{%
14399 \pdf@ifdraftmode{\}%
14400 \begingroup
14401 \def\do##1{%
14402 \ifnum\catcode`##1=\active
14403 \@makeother##1%
14404 \else
14405 \ifnum\catcode`##1=6 %
14406 \@makeother##1%
14407 \fi

```



```

14408     \fi
14409 }%
14410 \dospecials
14411 \Hy@safe@activetrue
14412 \escapechar=`\%
14413 \def\@@BOOKMARK[##1][##2]##3##4##5{%
14414     \calc@bm@number{##5}%
14415 }%
14416 \InputIfFileExists{\jobname.out}{-}{-}%
14417 \ifx\WriteBookmarks\relax
14418     \global\let\WriteBookmarks\relax
14419 \fi
14420 \def\@@BOOKMARK[##1][##2]##3##4##5{%
14421     \def\Hy@temp{##4}%
14422 \< *pdftex>
14423     \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14424     \Hy@OutlineName{}\Hy@pstringName{%
14425         ##2\check@bm@number{##3}%
14426     }{%
14427         \expandafter\strip@prefix\meaning\Hy@temp
14428     }%
14429 \< /pdftex>
14430 \< *pdfmark>
14431     \pdfmark{%
14432         pdfmark=/OUT,%
14433         Count={##2\check@bm@number{##3}},%
14434         Dest={##3},%
14435         Title=\expandafter\strip@prefix\meaning\Hy@temp
14436     }%
14437 \< /pdfmark>
14438 \< *dvipdfm | xetex>
14439     \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14440     \@pdfm@mark{%
14441         outline \ifHy@DvipdfmxOutlineOpen
14442             [%
14443             \ifnum##21>\z@
14444             \else
14445             -%
14446             \fi
14447             ] %
14448             \fi
14449             ##1<<%
14450             /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
14451             /A<<%
14452             /S/GoTo%
14453             /D(\Hy@pstringName)%
14454             >>%
14455             >>%
14456         }%
14457 \< /dvipdfm | xetex>
14458 }%
14459 \begingroup
14460     \def\WriteBookmarks{0}%
14461     \InputIfFileExists{\jobname.out}{-}{-}%

```

```

14462 \endgroup
14463 {%\escapechar\m@ne\InputIfFileExists{\jobname.out}{-}{-}}%
14464 \endgroup
14465 }%
14466 \ifx\WriteBookmarks\relax
14467 \else
14468 \if@files
14469 \newwrite\@outlinefile
14470 \Hy@OutlineRerunCheck
14471 \immediate\openout\@outlinefile=\jobname.out\relax
14472 \fi
14473 \fi
14474 }
14475 (*pdfTeX)
14476 \def\Hy@OutlineName#1#2#3#4{%
14477 \pdfoutline goto name{#2}count#3{#4}%
14478 }
14479 \pdfTeX
14480 \def\check@bm@number#1{%
14481 \expandafter\ifx\csname B_#1\endcsname\relax
14482 0%
14483 \else
14484 \csname B_#1\endcsname
14485 \fi
14486 }
14487 \def\calc@bm@number#1{%
14488 \@tempcnta=\check@bm@number{#1}\relax
14489 \advance\@tempcnta by 1 %
14490 \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
14491 }
14492 \!vTeX
14493 \ifHy@implicit
14494 \else
14495 \expandafter\endinput
14496 \fi
14497 \!outlines
14498 (*outlines | hypertex)
14499 \newlength\Hy@SectionHShift
14500 \def\Hy@SectionAnchorHref#1{%
14501 \ifx\protect\@typeset@protect
14502 \Hy@@@SectionAnchor{#1}%
14503 \fi
14504 }
14505 \DeclareRobustCommand*{\Hy@@@SectionAnchor}[1]{%
14506 \leavevmode
14507 \hbox to 0pt{%
14508 \kern-\Hy@SectionHShift
14509 \Hy@raisedlink{%
14510 \hyper@anchorstart{#1}\hyper@anchorend
14511 }%
14512 \hss
14513 }%
14514 }

```

```

14515 \AddToNoCaseChangeList{\Hy@@SectionAnchor}
14516 \ifundefined{hyper@nopatch@sectioning}
14517 {
14518 \let\H@old@ssect\@ssect
14519 \def\@ssect#1#2#3#4#5{%
14520 \Hy@MakeCurrentHrefAuto{section*}%
14521 \setlength{\Hy@SectionHShift}{#1}%
14522 \begingroup
14523 \toks@{\H@old@ssect{#1}{#2}{#3}{#4}}%
14524 \toks\tw@\expandafter{%
14525 \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14526 #5%
14527 }%
14528 \edef\x{\endgroup
14529 \the\toks@{\the\toks\tw@}}%
14530 }\x
14531 }
14532 \let\H@old@schapter\@schapter
14533 \def\@schapter#1{%
14534 \begingroup
14535 \let\@mkboth\@gobbletwo
14536 \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14537 \Hy@raisedlink{%
14538 \hyper@anchorstart{\@currentHref}\hyper@anchorend
14539 }%
14540 \endgroup
14541 \H@old@schapter{#1}%
14542 }

```

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:

```

14543 \ltx@ifundefined{@chapter}{-}{%
14544 \let\Hy@org@chapter\@chapter
14545 \def\@chapter{%
14546 \def\Hy@next{%
14547 \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14548 \Hy@raisedlink{%
14549 \hyper@anchorstart{\@currentHref}\hyper@anchorend
14550 }%
14551 }%
14552 \ifnum\c@secnumdepth>\m@ne
14553 \ltx@ifundefined{if@mainmatter}%
14554 \iftrue{\csname if@mainmatter\endcsname}%
14555 \let\Hy@next\relax
14556 \fi
14557 \fi
14558 \Hy@next
14559 \Hy@org@chapter
14560 }%
14561 }
14562 \let\H@old@part\@part
14563 \ifundefined{chapter}
14564 {\let\Hy@secnum@part\z@}

```

```

14565 {\let\Hy@secnum@part\m@ne}
14566 \def\@part{%
14567   \ifnum\Hy@secnum@part>\c@secnumdepth
14568     \phantomsection
14569   \fi
14570   \H@old@part
14571 }

14572 \let\H@old@spart\@spart
14573 \def\@spart#1{%
14574   \Hy@MakeCurrentHrefAuto{part*}%
14575   \Hy@raisedlink{%
14576     \hyper@anchorstart{\@currentHref}\hyper@anchorend
14577   }%
14578   \H@old@spart{#1}%
14579 }

14580 \let\H@old@sect\@sect
14581 \def\@sect#1#2#3#4#5#6[#7]#8{%
14582   \ifnum #2>\c@secnumdepth
14583     \expandafter\@firstoftwo
14584   \else
14585     \expandafter\@secondoftwo
14586   \fi
14587   {%
14588     \Hy@MakeCurrentHrefAuto{section*}%
14589     \setlength{\Hy@SectionHShift}{#3}%
14590     \begingroup
14591       \toks@{\H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}}%
14592       \toks\tw@\expandafter{%
14593         \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14594         #8%
14595       }%
14596       \edef\x{\endgroup
14597         \the\toks@\the\toks\tw@}%
14598       }\x
14599     }{%
14600       \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}{#8}%
14601     }%
14602 }
14603 }{}

14604 </outlines | hypertex>
14605 <*outlines>

14606 \expandafter\def\csname Parent-4\endcsname{}
14607 \expandafter\def\csname Parent-3\endcsname{}
14608 \expandafter\def\csname Parent-2\endcsname{}
14609 \expandafter\def\csname Parent-1\endcsname{}
14610 \expandafter\def\csname Parent0\endcsname{}
14611 \expandafter\def\csname Parent1\endcsname{}
14612 \expandafter\def\csname Parent2\endcsname{}
14613 \expandafter\def\csname Parent3\endcsname{}
14614 \expandafter\def\csname Parent4\endcsname{}

14615 </outlines>

```

## 47 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek.

### 47.1 PD1 encoding

```
14616 <*pd1enc>
14617 \DeclareFontEncoding{PD1}{}{}

Accents
14618 \DeclareTextAccent{\`}{PD1}{\textasciigrave}
14619 \DeclareTextAccent{\'}{PD1}{\textacute}
14620 \DeclareTextAccent{\~}{PD1}{\textasciicircum}
14621 \DeclareTextAccent{\~}{PD1}{\texttilde}
14622 \DeclareTextAccent{\"}{PD1}{\textasciidieresis}
14623 \DeclareTextAccent{\r}{PD1}{\textring}
14624 \DeclareTextAccent{\v}{PD1}{\textasciicaron}
14625 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
14626 \DeclareTextAccent{\c}{PD1}{\textcedilla}
14627 \DeclareTextAccent{\=}{PD1}{\textasciimacron}
14628 \DeclareTextAccent{\b}{PD1}{\textmacronbelow}
14629 \DeclareTextAccent{\d}{PD1}{\textdotbelow}
14630 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textasciigrave}
14631 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
14632 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\textasciicircum}
14633 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
14634 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textasciidieresis}
14635 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
14636 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textasciicaron}
14637 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
14638 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
14639 \DeclareTextCompositeCommand{\=}{PD1}{\@empty}{\textasciimacron}
14640 \DeclareTextCompositeCommand{\b}{PD1}{\@empty}{\textmacronbelow}
14641 \DeclareTextCompositeCommand{\d}{PD1}{\@empty}{\textdotbelow}
14642 \DeclareTextCompositeCommand{\`}{PD1}{\ }{\textasciigrave}
14643 \DeclareTextCompositeCommand{\'}{PD1}{\ }{\textacute}
14644 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\textasciicircum}
14645 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\texttilde}
14646 \DeclareTextCompositeCommand{\"}{PD1}{\ }{\textasciidieresis}
14647 \DeclareTextCompositeCommand{\r}{PD1}{\ }{\textring}
14648 \DeclareTextCompositeCommand{\v}{PD1}{\ }{\textasciicaron}
14649 \DeclareTextCompositeCommand{\.}{PD1}{\ }{\textdotaccent}
14650 \DeclareTextCompositeCommand{\c}{PD1}{\ }{\textcedilla}
14651 \DeclareTextCompositeCommand{\=}{PD1}{\ }{\textasciimacron}
14652 \DeclareTextCompositeCommand{\b}{PD1}{\ }{\textmacronbelow}
14653 \DeclareTextCompositeCommand{\d}{PD1}{\ }{\textdotbelow}
14654 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}
14655 \DeclareTextCommand{\t}{PD1}[1]{\TextSymbolUnavailable{\t{#1}}#1}
14656 \DeclareTextCommand{\newtie}{PD1}[1]{%
14657 \TextSymbolUnavailable{\newtie{#1}}#1%
14658 }
```

Special white space escape characters not for use in bookmarks but for other PDF strings.

14659 % U+0009 (CHARACTER TABULATION)  
 14660 \DeclareTextCommand{\textHT}{PD1}{\011}% U+0009  
 14661 % U+000A (LINE FEED)  
 14662 \DeclareTextCommand{\textLF}{PD1}{\012}% U+000A  
 14663 % U+000D (CARRIAGE RETURN)  
 14664 \DeclareTextCommand{\textCR}{PD1}{\015}% U+000D  
 Accent glyph names  
 14665 % U+02D8 BREVE; breve  
 14666 \DeclareTextCommand{\textasciibreve}{PD1}{\030}% U+02D8  
 14667 % U+02C7 CARON; caron  
 14668 \DeclareTextCommand{\textasciicaron}{PD1}{\031}% U+02C7  
 14669 % U+02C6 MODIFIER LETTER CIRCUMFLEX ACCENT; circumflex  
 14670 \DeclareTextCommand{\textcircumflex}{PD1}{\032}% U+02C6  
 14671 % U+02D9 DOT ABOVE; dotaccent  
 14672 \DeclareTextCommand{\textdotaccent}{PD1}{\033}% U+02D9  
 14673 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
 14674 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034}% U+02DD  
 14675 % U+02DB OGONEK; ogonek  
 14676 \DeclareTextCommand{\textogonek}{PD1}{\035}% U+02DB  
 14677 % U+02DA RING ABOVE; ring  
 14678 \DeclareTextCommand{\textring}{PD1}{\036}% U+02DA  
 14679 % U+02DC SMALL TILDE; ilde, \*tilde  
 14680 \DeclareTextCommand{\texttilde}{PD1}{\037}% U+02DC  
 \040: U+0020 SPACE; \*space, spacehackarabic  
 \041: U+0021 EXCLAMATION MARK; exclam  
 14681 % U+0022 QUOTATION MARK; quotedbl  
 14682 \DeclareTextCommand{\textquotedbl}{PD1}{"}% \042 U+0022  
 14683 % U+0023 NUMBER SIGN; numbersign  
 14684 \DeclareTextCommand{\textnumbersign}{PD1}{\043}% U+0023  
 14685 % U+0024 DOLLAR SIGN; dollar  
 14686 \DeclareTextCommand{\textdollar}{PD1}{\044}% U+0024  
 14687 % U+0025 PERCENT SIGN; percent  
 14688 \DeclareTextCommand{\textpercent}{PD1}{\045}% U+0025  
 14689 % U+0026 AMPERSAND; ampersand  
 14690 \DeclareTextCommand{\textampersand}{PD1}{\046}% U+0026  
 \047: U+0027 APOSTROPHE; quotesingle  
  
 14691 % U+0028 LEFT PARENTHESIS; parenleft  
 14692 \DeclareTextCommand{\textparenleft}{PD1}{\string\(% \050 U+0028  
 14693 % U+0029 RIGHT PARENTHESIS; parenright  
 14694 \DeclareTextCommand{\textparenright}{PD1}{\string\)% \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  
 14695 % U+002E FULL STOP; period  
 14696 \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  
 14697 % U+003C LESS-THAN SIGN; less  
 14698 \DeclareTextCommand{\textless}{PD1}{<}% \074 U+003C  
 \075: U+003D EQUALS SIGN; equal  
 14699 % U+003E GREATER-THAN SIGN; greater  
 14700 \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  
 14701 % U+005C REVERSE SOLIDUS; backslash  
 14702 \DeclareTextCommand{\textbackslash}{PD1}{\134}% U+005C  
 14703 % "U+2216 SET MINUS" simulated by "U+005C REVERSE SOLIDUS"  
 14704 \DeclareTextCommand{\textsetminus}{PD1}{\textbackslash}  
 \135: U+005D RIGHT SQUARE BRACKET; bracketright  
 14705 % U+005E CIRCUMFLEX ACCENT; asciicircum  
 14706 \DeclareTextCommand{\textasciicircum}{PD1}{\136}% U+005E  
 14707 % U+005F LOW LINE; underscore  
 14708 \DeclareTextCommand{\textunderscore}{PD1}{\137}% U+005F  
 14709 \DeclareTextCommand{\textmacronbelow}{PD1}{\137}% U+005F  
 14710 % U+0060 GRAVE ACCENT; grave  
 14711 \DeclareTextCommand{\textasciigrave}{PD1}{\140}% U+0060  
 \141: U+0061 LATIN SMALL LETTER A; a  
 ...  
 \150: U+0068 LATIN SMALL LETTER H; h  
 14712 % U+0069 LATIN SMALL LETTER I; i  
 14713 \DeclareTextCompositeCommand{\.}{PD1}{i}{i}% \151 U+0069  
 \152: U+006A LATIN SMALL LETTER J; j  
 ...  
 \172: U+007A LATIN SMALL LETTER Z; z  
 14714 % U+007B LEFT CURLY BRACKET; braceleft  
 14715 \DeclareTextCommand{\textbraceleft}{PD1}{\173}% U+007B  
 14716 % U+007C VERTICAL LINE; \*bar, verticalbar  
 14717 \DeclareTextCommand{\textbar}{PD1}{|}% U+007C  
 14718 % U+007D RIGHT CURLY BRACKET; braceright  
 14719 \DeclareTextCommand{\textbraceright}{PD1}{\175}% U+007D  
 14720 % U+007E TILDE; asciitilde  
 14721 \DeclareTextCommand{\textasciitilde}{PD1}{\176}% U+007E  
 Slot \177 (0x7F) is undefined in PDFDocEncoding.  
 14722 % U+2022 BULLET; bullet  
 14723 \DeclareTextCommand{\textbullet}{PD1}{\200}% U+2022  
 14724 % U+2020 DAGGER; dagger  
 14725 \DeclareTextCommand{\textdagger}{PD1}{\201}% U+2020  
 14726 % U+2021 DOUBLE DAGGER; daggerdbl; \ddagger (LaTeX)  
 14727 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202}% U+2021  
 14728 \DeclareTextCommand{\textddagger}{PD1}{\textdaggerdbl}  
 14729 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 14730 \DeclareTextCommand{\textellipsis}{PD1}{\203}% U+2026

14731 % U+2014 EM DASH; emdash  
14732 \DeclareTextCommand{\textemdash}{PD1}{\204}% U+2014  
14733 % U+2013 EN DASH; endash  
14734 \DeclareTextCommand{\textendash}{PD1}{\205}% U+2013  
14735 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
14736 \DeclareTextCommand{\textflorin}{PD1}{\206}% U+0192  
14737 % U+2044 FRACTION SLASH; fraction  
14738 \DeclareTextCommand{\textfractionsolidus}{PD1}{\207}% U+2044  
14739 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
ingleft  
14740 \DeclareTextCommand{\guilsinglleft}{PD1}{\210}% U+2039  
14741 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
ingright  
14742 \DeclareTextCommand{\guilsinglright}{PD1}{\211}% U+203A  
14743 % U+2212 MINUS SIGN; minus  
14744 \DeclareTextCommand{\textminus}{PD1}{\212}% U+2212  
14745 % U+2030 PER MILLE SIGN; perthousand  
14746 \DeclareTextCommand{\textperthousand}{PD1}{\213}% U+2030  
14747 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
14748 \DeclareTextCommand{\quotedblbase}{PD1}{\214}% U+201E  
14749 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
14750 \DeclareTextCommand{\textquotedblleft}{PD1}{\215}% U+201C  
14751 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
14752 \DeclareTextCommand{\textquotedblright}{PD1}{\216}% U+201D  
14753 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
14754 \DeclareTextCommand{\textquoteleft}{PD1}{\217}% U+2018  
14755 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
14756 \DeclareTextCommand{\textquoteright}{PD1}{\220}% U+2019  
14757 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
14758 \DeclareTextCommand{\quotesinglbase}{PD1}{\221}% U+201A  
14759 % U+2122 TRADE MARK SIGN; trademark  
14760 \DeclareTextCommand{\texttrademark}{PD1}{\222}% U+2122  
14761 % U+FB01 LATIN SMALL LIGATURE FI; fi  
14762 \DeclareTextCommand{\textfi}{PD1}{\223}% U+FB01  
14763 % U+FB02 LATIN SMALL LIGATURE FL; fl  
14764 \DeclareTextCommand{\textfl}{PD1}{\224}% U+FB02  
14765 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
14766 \DeclareTextCommand{\L}{PD1}{\225}% U+0141  
14767 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
14768 \DeclareTextCommand{\OE}{PD1}{\226}% U+0152  
14769 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
14770 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227}% U+0160  
14771 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
14772 \DeclareTextCompositeCommand{"}{PD1}{Y}{\230}% U+0178  
14773 \DeclareTextCommand{\IJ}{PD1}{IJ}% ligature U+0049 U+004A  
14774 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
14775 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231}% U+017D  
14776 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
14777 \DeclareTextCommand{\i}{PD1}{\232}% U+0131  
14778 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
14779 \DeclareTextCommand{\l}{PD1}{\233}% U+0142  
14780 % U+0153 LATIN SMALL LIGATURE OE; oe  
14781 \DeclareTextCommand{\oe}{PD1}{\234}% U+0153  
14782 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron



14783 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235}% U+0161  
14784 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
14785 \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.

14786 % U+20AC EURO SIGN; \*Euro, euro  
14787 \DeclareTextCommand{\texteuro}{PD1}{\240}% U+20AC  
14788 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
14789 \DeclareTextCommand{\textexclamdown}{PD1}{\241}% U+00A1  
14790 % U+00A2 CENT SIGN; cent  
14791 \DeclareTextCommand{\textcent}{PD1}{\242}% U+00A2  
14792 % U+00A3 POUND SIGN; sterling  
14793 \DeclareTextCommand{\textsterling}{PD1}{\243}% U+00A3  
14794 % U+00A4 CURRENCY SIGN; currency  
14795 \DeclareTextCommand{\textcurrency}{PD1}{\244}% U+00A4  
14796 % U+00A5 YEN SIGN; yen  
14797 \DeclareTextCommand{\textyen}{PD1}{\245}% U+00A5  
14798 % U+00A6 BROKEN BAR; brokenbar  
14799 \DeclareTextCommand{\textbrokenbar}{PD1}{\246}% U+00A6  
14800 % U+00A7 SECTION SIGN; section  
14801 \DeclareTextCommand{\textsection}{PD1}{\247}% U+00A7  
14802 % U+00A8 DIAERESIS; diaeresis  
14803 \DeclareTextCommand{\textasciidieresis}{PD1}{\250}% U+00A8  
14804 % U+00A9 COPYRIGHT SIGN; copyright  
14805 \DeclareTextCommand{\textcopyright}{PD1}{\251}% U+00A9  
14806 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
14807 \DeclareTextCommand{\textordfeminine}{PD1}{\252}% U+00AA  
14808 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetleft  
14809 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB  
14810 \DeclareTextCommand{\guillemetleft}{PD1}{\253}% U+00AB  
14811 % U+00AC NOT SIGN; logicalnot  
14812 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC  
14813 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not

No glyph \255 in PDFDocEncoding.

14814 % U+00AE REGISTERED SIGN; registered  
14815 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE  
14816 % U+00AF MACRON; \*macron, overscore  
14817 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF  
14818 % U+00B0 DEGREE SIGN; degree  
14819 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0  
14820 % U+00B1 PLUS-MINUS SIGN; plusminus  
14821 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1  
14822 % U+00B2 SUPERSCRIPT TWO; twosuperior  
14823 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}%\* U+00B2  
14824 % U+00B3 SUPERSCRIPT THREE; threesuperior  
14825 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}%\* U+00B3  
14826 % U+00B4 ACUTE ACCENT; acute  
14827 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4  
14828 % U+00B5 MICRO SIGN; mu, mu1  
14829 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5  
14830 % U+00B6 PILCROW SIGN; paragraph  
14831 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6  
14832 % U+00B7 MIDDLE DOT; middot, \*periodcentered

14833 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7  
14834 % U+00B8 CEDILLA; cedilla  
14835 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8  
14836 % U+00B9 SUPERSCRIPT ONE; onesuperior  
14837 \DeclareTextCommand{\textonesuperior}{PD1}{\271}%\* U+00B9  
14838 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
14839 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA  
14840 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetright  
14841 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB  
14842 \DeclareTextCommand{\guillemetright}{PD1}{\273}% U+00BB  
14843 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
14844 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC  
14845 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
14846 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD  
14847 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
14848 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE  
14849 % U+00BF INVERTED QUESTION MARK; questiondown  
14850 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF  
14851 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
14852 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0  
14853 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
14854 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1  
14855 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
14856 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2  
14857 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
14858 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3  
14859 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
14860 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304}% U+00C4  
14861 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
14862 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5  
14863 % U+00C6 LATIN CAPITAL LETTER AE; AE  
14864 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6  
14865 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
14866 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7  
14867 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
14868 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310}% U+00C8  
14869 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
14870 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311}% U+00C9  
14871 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
14872 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312}% U+00CA  
14873 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
14874 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313}% U+00CB  
14875 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
14876 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314}% U+00CC  
14877 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
14878 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315}% U+00CD  
14879 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
14880 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316}% U+00CE  
14881 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
14882 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317}% U+00CF  
14883 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
14884 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0  
14885 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0  
14886 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde

14887 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321}% U+00D1  
14888 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
14889 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322}% U+00D2  
14890 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
14891 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323}% U+00D3  
14892 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
14893 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324}% U+00D4  
14894 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
14895 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325}% U+00D5  
14896 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
14897 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326}% U+00D6  
14898 % U+00D7 MULTIPLICATION SIGN; multiply  
14899 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7  
14900 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
14901 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8  
14902 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
14903 \DeclareTextCompositeCommand{\`}{PD1}{U}{\331}% U+00D9  
14904 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
14905 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332}% U+00DA  
14906 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
14907 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333}% U+00DB  
14908 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
14909 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334}% U+00DC  
14910 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
14911 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335}% U+00DD  
14912 % U+00DE LATIN CAPITAL LETTER THORN; Thorn; \TH, \Thorn (wasysym)  
14913 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE  
14914 \DeclareTextCommand{\textThorn}{PD1}{\336}%\* U+00DE  
14915 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
14916 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF  
14917 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
14918 \DeclareTextCompositeCommand{\`}{PD1}{a}{\340}% U+00E0  
14919 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
14920 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341}% U+00E1  
14921 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
14922 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342}% U+00E2  
14923 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
14924 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343}% U+00E3  
14925 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
14926 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344}% U+00E4  
14927 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
14928 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345}% U+00E5  
14929 % U+00E6 LATIN SMALL LETTER AE; ae  
14930 \DeclareTextCommand{\ae}{PD1}{\346}% U+00E6  
14931 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
14932 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347}% U+00E7  
14933 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
14934 \DeclareTextCompositeCommand{\`}{PD1}{e}{\350}% U+00E8  
14935 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
14936 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351}% U+00E9  
14937 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
14938 \DeclareTextCompositeCommand{\^}{PD1}{e}{\352}% U+00EA  
14939 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
14940 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353}% U+00EB

14941 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
14942 \DeclareTextCompositeCommand{\`}{PD1}{i}{\354}% U+00EC  
14943 \DeclareTextCompositeCommand{\`}{PD1}{i}{\354}% U+00EC  
14944 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
14945 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
14946 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
14947 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
14948 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
14949 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
14950 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
14951 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
14952 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
14953 % U+00F0 LATIN SMALL LETTER ETH; eth  
14954 \DeclareTextCommand{\dh}{PD1}{\360}% U+00F0  
14955 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
14956 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361}% U+00F1  
14957 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
14958 \DeclareTextCompositeCommand{\`}{PD1}{o}{\362}% U+00F2  
14959 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
14960 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363}% U+00F3  
14961 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
14962 \DeclareTextCompositeCommand{\^}{PD1}{o}{\364}% U+00F4  
14963 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
14964 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365}% U+00F5  
14965 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
14966 \DeclareTextCompositeCommand{\"}{PD1}{o}{\366}% U+00F6  
14967 % U+00F7 DIVISION SIGN; divide  
14968 \DeclareTextCommand{\textdivide}{PD1}{\367}% U+00F7  
14969 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
14970 \DeclareTextCommand{\o}{PD1}{\370}% U+00F8  
14971 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
14972 \DeclareTextCompositeCommand{\`}{PD1}{u}{\371}% U+00F9  
14973 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
14974 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372}% U+00FA  
14975 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
14976 \DeclareTextCompositeCommand{\^}{PD1}{u}{\373}% U+00FB  
14977 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
14978 \DeclareTextCompositeCommand{\"}{PD1}{u}{\374}% U+00FC  
14979 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
14980 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375}% U+00FD  
14981 % U+00FE LATIN SMALL LETTER THORN; thorn; \th, \thorn (wasysym)  
14982 \DeclareTextCommand{\th}{PD1}{\376}% U+00FE  
14983 \DeclareTextCommand{\textthorn}{PD1}{\376}%\* U+00FE  
14984 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
14985 \DeclareTextCompositeCommand{\"}{PD1}{y}{\377}% U+00FF  
14986 \DeclareTextCommand{\ij}{PD1}{ij}% ligature U+0069 U+006A  
  
Glyphs that consist of several characters.  
14987 \DeclareTextCommand{\SS}{PD1}{SS}%  
14988 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}%  
  
Aliases (german.sty)  
14989 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}%  
14990 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}%  
14991 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}%

```

14992 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}%
14993 \DeclareTextCommand{\textflqq}{PD1}{\guillemetleft}%
14994 \DeclareTextCommand{\textfrqq}{PD1}{\guillemetright}%
14995 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}%
14996 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}%

Aliases (math names)
14997 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}%
14998 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}%
14999 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}%
15000 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}%
15001 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}%
15002 \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).

```

15003 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek
15004 \DeclareTextCompositeCommand{\'}{PD1}{c}{c}% cacute
15005 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek
15006 \DeclareTextCompositeCommand{\'}{PD1}{n}{n}% nacute
15007 \DeclareTextCompositeCommand{\'}{PD1}{s}{s}% sacute
15008 \DeclareTextCompositeCommand{\'}{PD1}{z}{z}% zacute
15009 \DeclareTextCompositeCommand{\.}{PD1}{z}{z}% zdot
15010 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek
15011 \DeclareTextCompositeCommand{\'}{PD1}{C}{C}% Cacute
15012 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek
15013 \DeclareTextCompositeCommand{\'}{PD1}{N}{N}% Nacute
15014 \DeclareTextCompositeCommand{\'}{PD1}{S}{S}% Sacute
15015 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z}% Zacute
15016 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z}% Zdot
15017 (/pd1enc)

```

## 47.2 PU encoding

```

15018 (*puenc)
15019 \DeclareFontEncoding{PU}{-}{-}

```

### 47.2.1 NFSS2 accents

```

15020 % U+0300 COMBINING GRAVE ACCENT; gravecmb, *gravecomb
15021 \DeclareTextCommand{\`}{PU}[1]{\#1\83\000}% U+0300
15022 % U+0301 COMBINING ACUTE ACCENT; acutecmb, *acutecomb
15023 \DeclareTextCommand{\'}{PU}[1]{\#1\83\001}% U+0301
15024 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb
15025 \DeclareTextCommand{\^}{PU}[1]{\#1\83\002}% U+0302
15026 % U+0303 COMBINING TILDE; tildecmb, *tildecomb
15027 \DeclareTextCommand{\~}{PU}[1]{\#1\83\003}% U+0303
15028 % U+0304 COMBINING MACRON; macroncmb
15029 \DeclareTextCommand{\=}{PU}[1]{\#1\83\004}% U+0304
15030 % U+0306 COMBINING BREVE; brevecmb
15031 \DeclareTextCommand{\u}{PU}[1]{\#1\83\006}% U+0306
15032 \ifx\CYRDZE\@undefined \else
15033 \DeclareTextCommand{\U}{PU}[1]{\#1\83\006}% U+0306
15034 \fi
15035 % U+0307 COMBINING DOT ABOVE; dotaccentcmb

```

```

15036 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307
15037 % U+0308 COMBINING DIAERESIS; dieresiscmb
15038 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308
15039 % U+030A COMBINING RING ABOVE; ringcmb
15040 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A
15041 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb
15042 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B
15043 % U+030C COMBINING CARON; caroncmb
15044 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C
15045 \puenc)
15046 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb
15047 \puextra)\DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F
15048 (*puenc)
15049 \ifx\CYRDZE\@undefined \else
15050 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F
15051 \fi
15052 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb
15053 \DeclareTextCommand{\textinvbreve}{PU}[1]{#1\83\021}% U+0311
15054 \DeclareTextCommand{\newtie}{PU}[1]{#1\83\021}% U+0311
15055 % U+0323 COMBINING DOT BELOW; dotbelowcmb, *dotbelowcmb
15056 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323
15057 % U+0324 COMBINING DIAERESIS BELOW; dieresisbelowcmb; \textsubum-
    laut (tipa)
15058 \DeclareTextCommand{\textsubumlaut}{PU}[1]{#1\83\044}% U+0324
15059 % U+0325 COMBINING RING BELOW; ringbelowcmb; \textsubring (tipa)
15060 \DeclareTextCommand{\textsubring}{PU}[1]{#1\83\045}% U+0325
15061 % U+0327 COMBINING CEDILLA; cedillacmb
15062 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327
15063 % U+0328 COMBINING OGONEK; ogonekcmb
15064 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328
15065 % U+032D COMBINING CIRCUMFLEX ACCENT BELOW;
15066 % \textsubcircum (tipa)
15067 \DeclareTextCommand{\textsubcircum}{PU}[1]{#1\83\055}% U+032D
15068 % U+032E COMBINING BREVE BELOW; brevebelowcmb
15069 \DeclareTextCommand{\textsubbreve}{PU}[1]{#1\83\056}% U+032E
15070 % U+0330 COMBINING TILDE BELOW; tildebelowcmb; \textsubtilde (tipa)
15071 \DeclareTextCommand{\textsubtilde}{PU}[1]{#1\83\060}% U+0330
15072 % U+0331 COMBINING MACRON BELOW; macronbelowcmb
15073 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331
15074 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddou-
    blecmb
15075 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361
15076 % U+20DD COMBINING ENCLOSING CIRCLE
15077 \DeclareTextCommand{\textcircled}{PU}[1]{#1\9040\335}% U+20DD

```

Double accents.

```

15078 \DeclareTextCommand{\textacutemacron}{PU}[1]{#1\83\001\83\004}% U+0301 U+0304
15079 \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.

```

15080 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textasciigrave}%
15081 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}%
15082 \DeclareTextCompositeCommand{\^}{PU}{\@empty}{\textasciicircum}%
15083 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}%

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15084 \DeclareTextCompositeCommand{"}{PU}{\@empty}{\textasciidieresis}%
15085 \DeclareTextCompositeCommand{r}{PU}{\@empty}{\textring}%
15086 \DeclareTextCompositeCommand{v}{PU}{\@empty}{\textasciicaron}%
15087 \DeclareTextCompositeCommand{.}{PU}{\@empty}{\textdotaccent}%
15088 \DeclareTextCompositeCommand{c}{PU}{\@empty}{\textcedilla}%
15089 \DeclareTextCompositeCommand{u}{PU}{\@empty}{\textasciibreve}%
15090 (/puenc)
15091 (puextra)\DeclareTextCompositeCommand{G}{PU}{\@empty}{\textdoublegrave}%
15092 (*puenc)
15093 \DeclareTextCompositeCommand{=}{PU}{\@empty}{\textasciimacron}%
15094 \DeclareTextCompositeCommand{H}{PU}{\@empty}{\texthungarumlaut}%
15095 \DeclareTextCompositeCommand{k}{PU}{\@empty}{\textogonek}%
15096 \DeclareTextCompositeCommand{\textinvbreve}{PU}{\@empty}{\{\ \83\021\}}% U+0311
15097 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{\@empty}{\{\ \83\044\}}% U+0324
15098 \DeclareTextCompositeCommand{\textsubring}{PU}{\@empty}{\textringlow}%
15099 \DeclareTextCompositeCommand{\textsubcircum}{PU}{\@empty}{\textcirc-
low}%
15100 \DeclareTextCompositeCommand{\textsubbreve}{PU}{\@empty}{\{\ \83\056\}}% U+032E
15101 \DeclareTextCompositeCommand{\textsubtilde}{PU}{\@empty}{\texttildelow}%
15102 \DeclareTextCompositeCommand{b}{PU}{\@empty}{\textmacronbelow}%
15103 \DeclareTextCompositeCommand{d}{PU}{\@empty}{\textdotbelow}%
15104 \DeclareTextCompositeCommand{t}{PU}{\@empty}{\texttie}%
15105 \DeclareTextCompositeCommand{newtie}{PU}{\@empty}{\textnewtie}%
15106 \DeclareTextCompositeCommand{\textcircled}{PU}{\@empty}{\textbigcircle}%
15107 \DeclareTextCompositeCommand{\textacutemacron}{PU}{\@empty}{\{\ \83\001\83\004\}}% U+0301 U+0304
15108 \DeclareTextCompositeCommand{\textgravemacron}{PU}{\@empty}{\{\ \83\000\83\004\}}% U+0300 U+0304
15109 \DeclareTextCompositeCommand{`}{PU}{\ }{\textasciigrave}%
15110 \DeclareTextCompositeCommand{'}{PU}{\ }{\textacute}%
15111 \DeclareTextCompositeCommand{~}{PU}{\ }{\textasciicircum}%
15112 \DeclareTextCompositeCommand{~}{PU}{\ }{\texttilde}%
15113 \DeclareTextCompositeCommand{"}{PU}{\ }{\textasciidieresis}%
15114 \DeclareTextCompositeCommand{r}{PU}{\ }{\textring}%
15115 \DeclareTextCompositeCommand{v}{PU}{\ }{\textasciicaron}%
15116 \DeclareTextCompositeCommand{.}{PU}{\ }{\textdotaccent}%
15117 \DeclareTextCompositeCommand{c}{PU}{\ }{\textcedilla}%
15118 \DeclareTextCompositeCommand{u}{PU}{\ }{\textasciibreve}%
15119 (/puenc)
15120 (puextra)\DeclareTextCompositeCommand{G}{PU}{\ }{\textdoublegrave}%
15121 (*puenc)
15122 \DeclareTextCompositeCommand{=}{PU}{\ }{\textasciimacron}%
15123 \DeclareTextCompositeCommand{H}{PU}{\ }{\texthungarumlaut}%
15124 \DeclareTextCompositeCommand{k}{PU}{\ }{\textogonek}%
15125 \DeclareTextCompositeCommand{\textinvbreve}{PU}{\ }{\{\ \83\021\}}% U+0311
15126 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{\ }{\{\ \83\044\}}% U+0324
15127 \DeclareTextCompositeCommand{\textsubring}{PU}{\ }{\textringlow}%
15128 \DeclareTextCompositeCommand{\textsubcircum}{PU}{\ }{\textcirc-
low}%
15129 \DeclareTextCompositeCommand{\textsubbreve}{PU}{\ }{\{\ \83\056\}}% U+032E
15130 \DeclareTextCompositeCommand{\textsubtilde}{PU}{\ }{\texttildelow}%
15131 \DeclareTextCompositeCommand{b}{PU}{\ }{\textmacronbelow}%
15132 \DeclareTextCompositeCommand{d}{PU}{\ }{\textdotbelow}%
15133 \DeclareTextCompositeCommand{t}{PU}{\ }{\texttie}%
15134 \DeclareTextCompositeCommand{newtie}{PU}{\ }{\textnewtie}%
15135 \DeclareTextCompositeCommand{\textcircled}{PU}{\ }{\textbigcircle}%
15136 \DeclareTextCompositeCommand{\textacutemacron}{PU}{\ }{\{\ \83\001\83\004\}}% U+0301 U+0304

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15137 \DeclareTextCompositeCommand{\textgravemacron}{PU}{\ }{\ \83\000\83\004}}% U+0300 U+0304

Accents for capitals (see encoding TS1)

15138 \DeclareTextCommand{\capitalcedilla}{PU}[1]{\c{#1}}%  
 15139 \DeclareTextCommand{\capitalogonek}{PU}[1]{\k{#1}}%  
 15140 \DeclareTextCommand{\capitalgrave}{PU}[1]{\`{#1}}%  
 15141 \DeclareTextCommand{\capitalacute}{PU}[1]{\'{#1}}%  
 15142 \DeclareTextCommand{\capitalcircumflex}{PU}[1]{\^{#1}}%  
 15143 \DeclareTextCommand{\capitaltilde}{PU}[1]{\~{#1}}%  
 15144 \DeclareTextCommand{\capitaldieresis}{PU}[1]{\"{#1}}%  
 15145 \DeclareTextCommand{\capitalhungarumlaut}{PU}[1]{\H{#1}}%  
 15146 \DeclareTextCommand{\capitalring}{PU}[1]{\r{#1}}%  
 15147 \DeclareTextCommand{\capitalcaron}{PU}[1]{\v{#1}}%  
 15148 \DeclareTextCommand{\capitalbreve}{PU}[1]{\u{#1}}%  
 15149 \DeclareTextCommand{\capitalmacron}{PU}[1]{\={#1}}%  
 15150 \DeclareTextCommand{\capitaldotaccent}{PU}[1]{\.{#1}}%  
 15151 \DeclareTextCommand{\capitaltie}{PU}[1]{\t{#1}}%  
 15152 \DeclareTextCommand{\capitalnewtie}{PU}[1]{\newtie{#1}}%

#### 47.2.2 Basic Latin: U+0000 to U+007F

Special white space escape characters.

15153 % U+0009 (CHARACTER TABULATION)  
 15154 \DeclareTextCommand{\textHT}{PU}{\80\011}% U+0009  
 15155 % U+000A (LINE FEED)  
 15156 \DeclareTextCommand{\textLF}{PU}{\80\012}% U+000A  
 15157 % U+000D (CARRIAGE RETURN)  
 15158 \DeclareTextCommand{\textCR}{PU}{\80\015}% U+000D  
 \80\040: U+0020 SPACE; space, spacehackarabic  
 \80\041: U+0021 EXCLAMATION MARK; exclam  
 15159 % U+0022 QUOTATION MARK; quotedbl  
 15160 \DeclareTextCommand{\textquotedbl}{PU}{"}% \80\042 U+0022  
 15161 % U+0023 NUMBER SIGN; numbersign  
 15162 \DeclareTextCommand{\textnumbersign}{PU}{\80\043}% U+0023  
 15163 % U+0024 DOLLAR SIGN; dollar  
 15164 \DeclareTextCommand{\textdollar}{PU}{\80\044}% U+0024  
 15165 %\* \textdollar -> \mathdollar  
 15166 %\* \textdollar -> \EyesDollar (marvosym)  
 15167 % U+0025 PERCENT SIGN; percent  
 15168 \DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025  
 15169 % U+0026 AMPERSAND; ampersand  
 15170 \DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026  
 15171 %\* \textampersand -> \binampersand (stmaryrd)  
 15172 %\* \textampersand -> \with (cml)  
 15173 % U+0027 APOSTROPHE; quotesingle  
 15174 \DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027  
 15175 % U+0028 LEFT PARENTHESIS; parenleft  
 15176 \DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028  
 15177 % U+0029 RIGHT PARENTHESIS; parenright  
 15178 \DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029  
 15179 % U+002A ASTERISK; asterisk; (?)  
 15180 \DeclareTextCommand{\textasteriskcentered}{PU}{\80\052}% U+002A  
 15181 % U+002B PLUS SIGN; plus; \MVPlus (marvosym)  
 15182 \DeclareTextCommand{\textMVPlus}{PU}{\80\053}%\* U+002B  
 15183 % U+002C COMMA; comma; \MVComma (marvosym)



15184 \DeclareTextCommand{\textMVComma}{PU}{\80\054}%\* U+002C  
 15185 % U+002D HYPHEN-MINUS; hyphen; \MVMinus (marvosym)  
 15186 \DeclareTextCommand{\textMVMinus}{PU}{\80\055}%\* U+002D  
 15187 % U+002E FULL STOP; period; \MVPeriod (marvosym)  
 15188 \DeclareTextCommand{\textMVPeriod}{PU}{\80\056}%\* U+002E  
 15189 % U+002F SOLIDUS; slash; \MVDivision (marvosym)  
 15190 \DeclareTextCommand{\textMVDivision}{PU}{\80\057}%\* U+002F  
 15191 % U+0030 DIGIT ZERO; zero; \MVZero (marvosym)  
 15192 \DeclareTextCommand{\textMVZero}{PU}{\80\060}%\* U+0030  
 15193 % U+0031 DIGIT ONE; one; \MVOne (marvosym)  
 15194 \DeclareTextCommand{\textMVOne}{PU}{\80\061}%\* U+0031  
 15195 % U+0032 DIGIT TWO; two; \MVTwo (marvosym)  
 15196 \DeclareTextCommand{\textMVTwo}{PU}{\80\062}%\* U+0032  
 15197 % U+0033 DIGIT THREE; three; \MVThree (marvosym)  
 15198 \DeclareTextCommand{\textMVThree}{PU}{\80\063}%\* U+0033  
 15199 % U+0034 DIGIT FOUR; four; \MVFour (marvosym)  
 15200 \DeclareTextCommand{\textMVFour}{PU}{\80\064}%\* U+0034  
 15201 % U+0035 DIGIT FIVE; five; \MVFive (marvosym)  
 15202 \DeclareTextCommand{\textMVFive}{PU}{\80\065}%\* U+0035  
 15203 % U+0036 DIGIT SIX; six; \MVSix (marvosym)  
 15204 \DeclareTextCommand{\textMVSix}{PU}{\80\066}%\* U+0036  
 15205 % U+0037 DIGIT SEVEN; seven; \MVSeven (marvosym)  
 15206 \DeclareTextCommand{\textMVSeven}{PU}{\80\067}%\* U+0037  
 15207 % U+0038 DIGIT EIGHT; eight; \MVEight (marvosym)  
 15208 \DeclareTextCommand{\textMVEight}{PU}{\80\070}%\* U+0038  
 15209 % U+0039 DIGIT NINE; nine; \MVNine (marvosym)  
 15210 \DeclareTextCommand{\textMVNine}{PU}{\80\071}%\* U+0039  
 \80\072: U+003A COLON; colon  
 \80\073: U+003B SEMICOLON; semicolon  
 15211 % U+003C LESS-THAN SIGN; less  
 15212 \DeclareTextCommand{\textless}{PU}{<}% \80\074 U+003C  
 \80\075: U+003D EQUALS SIGN; equal  
 15213 % U+003E GREATER-THAN SIGN; greater  
 15214 \DeclareTextCommand{\textgreater}{PU}{>}% \80\076 U+003E  
 \80\077: U+003F QUESTION MARK; question  
 15215 % U+0040 COMMERCIAL AT; at; \MVAt (marvosym)  
 15216 \DeclareTextCommand{\textMVAt}{PU}{\80\100}%\* U+0040  
 \80\101: U+0041 LATIN CAPITAL LETTER A; A  
 ...  
 \80\132: U+005A LATIN CAPITAL LETTER Z; Z  
 \80\133: U+005B LEFT SQUARE BRACKET; bracketleft  
 15217 % U+005C REVERSE SOLIDUS; backslash  
 15218 \DeclareTextCommand{\textbackslash}{PU}{\80\134}% U+005C  
 \80\135: U+005D RIGHT SQUARE BRACKET; bracketright  
 15219 % U+005E CIRCUMFLEX ACCENT; asciicircum  
 15220 \DeclareTextCommand{\textasciicircum}{PU}{\80\136}% U+005E  
 15221 % U+005F LOW LINE; underscore  
 15222 \DeclareTextCommand{\textunderscore}{PU}{\80\137}% U+005F  
 15223 %\* \textunderscore -> \mathunderscore (LaTeX)  
 15224 % U+0060 GRAVE ACCENT; grave  
 15225 \DeclareTextCommand{\textasciigrave}{PU}{\80\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  
 15226 % U+0069 LATIN SMALL LETTER I; i  
 15227 \DeclareTextCompositeCommand{\.}{PU}{i}{i}% \80\151 U+0069  
 15228 \DeclareTextCompositeCommand{\.}{PU}{i}{i}% \80\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  
 15229 % U+007B LEFT CURLY BRACKET; braceleft  
 15230 \DeclareTextCommand{\textbraceleft}{PU}{\80\173}% U+007B  
 15231 % U+007C VERTICAL LINE; \*bar, verticalbar  
 15232 \DeclareTextCommand{\textbar}{PU}{|}% \80\174 U+007C  
 15233 %\* \textbar -> \textvertline (tipa)  
 15234 % U+007D RIGHT CURLY BRACKET; braceright  
 15235 \DeclareTextCommand{\textbraceright}{PU}{\80\175}% U+007D  
 15236 % U+007E TILDE; asciitilde  
 15237 \DeclareTextCommand{\textasciitilde}{PU}{\80\176}% U+007E

#### 47.2.3 Latin-1 Supplement: U+0080 to U+00FF

$\backslash 80\backslash 240$ : U+00A0 NO-BREAK SPACE; nbspace, nonbreakingspace  
 15238 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
 15239 \DeclareTextCommand{\textexclamdown}{PU}{\80\241}% U+00A1  
 15240 % U+00A2 CENT SIGN; cent  
 15241 \DeclareTextCommand{\textcent}{PU}{\80\242}% U+00A2  
 15242 % U+00A3 POUND SIGN; sterling  
 15243 \DeclareTextCommand{\textsterling}{PU}{\80\243}% U+00A3  
 15244 %\* \textsterling -> \mathsterling (LaTeX)  
 15245 %\* \textsterling -> \pounds (LaTeX)  
 15246 % U+00A4 CURRENCY SIGN; currency  
 15247 \DeclareTextCommand{\textcurrency}{PU}{\80\244}% U+00A4  
 15248 % U+00A5 YEN SIGN; yen  
 15249 \DeclareTextCommand{\textyen}{PU}{\80\245}% U+00A5  
 15250 % U+00A6 BROKEN BAR; brokenbar  
 15251 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246}% U+00A6  
 15252 %\* \textbrokenbar -> \brokenvert (wasysym)  
 15253 % U+00A7 SECTION SIGN; section  
 15254 \DeclareTextCommand{\textsection}{PU}{\80\247}% U+00A7  
 15255 %\* \textsection -> \mathsection (LaTeX)  
 15256 %\* \textsection -> \S (LaTeX)  
 15257 % U+00A8 DIAERESIS; diaeresis  
 15258 \DeclareTextCommand{\textasciidieresis}{PU}{\80\250}% U+00A8  
 15259 % U+00A9 COPYRIGHT SIGN; copyright  
 15260 \DeclareTextCommand{\textcopyright}{PU}{\80\251}%\* U+00A9  
 15261 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
 15262 \DeclareTextCommand{\textordfeminine}{PU}{\80\252}% U+00AA  
 15263 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetleft  
 15264 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB  
 15265 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB  
 15266 % U+00AC NOT SIGN; logicalnot  
 15267 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254}% U+00AC  
 15268 \DeclareTextCommand{\textlnot}{PU}{\80\254}% U+00AC

$\backslash 80\backslash 255$ : U+00AD SOFT HYPHEN; sftthyphen, softthyphen  
 15269 % U+00AE REGISTERED SIGN; registered  
 15270  $\backslash \text{DeclareTextCommand}\{\backslash \text{textregistered}\}\{\text{PU}\}\{\backslash 80\backslash 256\}$ % U+00AE  
 15271 % U+00AF MACRON; \*macron, overscore  
 15272  $\backslash \text{DeclareTextCommand}\{\backslash \text{textasciimacron}\}\{\text{PU}\}\{\backslash 80\backslash 257\}$ % U+00AF  
 15273 % U+00B0 DEGREE SIGN; degree  
 15274  $\backslash \text{DeclareTextCommand}\{\backslash \text{textdegree}\}\{\text{PU}\}\{\backslash 80\backslash 260\}$ % U+00B0  
 15275 % U+00B1 PLUS-MINUS SIGN; plusminus  
 15276  $\backslash \text{DeclareTextCommand}\{\backslash \text{textplusminus}\}\{\text{PU}\}\{\backslash 80\backslash 261\}$ % U+00B1  
 15277 % U+00B2 SUPERSCRIPT TWO; twosuperior  
 15278  $\backslash \text{DeclareTextCommand}\{\backslash \text{texttwosuperior}\}\{\text{PU}\}\{\backslash 80\backslash 262\}$ %\* U+00B2  
 15279 % U+00B3 SUPERSCRIPT THREE; threesuperior  
 15280  $\backslash \text{DeclareTextCommand}\{\backslash \text{textthreesuperior}\}\{\text{PU}\}\{\backslash 80\backslash 263\}$ %\* U+00B3  
 15281 % U+00B4 ACUTE ACCENT; acute  
 15282  $\backslash \text{DeclareTextCommand}\{\backslash \text{textacute}\}\{\text{PU}\}\{\backslash 80\backslash 264\}$ % U+00B4  
 15283  $\backslash \text{DeclareTextCommand}\{\backslash \text{textasciiacute}\}\{\text{PU}\}\{\backslash 80\backslash 264\}$ % U+00B4  
 15284 % U+00B5 MICRO SIGN; mu, mul  
 15285  $\backslash \text{DeclareTextCommand}\{\backslash \text{textmu}\}\{\text{PU}\}\{\backslash 80\backslash 265\}$ % U+00B5  
 15286 % U+00B6 PILCROW SIGN; paragraph  
 15287  $\backslash \text{DeclareTextCommand}\{\backslash \text{textparagraph}\}\{\text{PU}\}\{\backslash 80\backslash 266\}$ % U+00B6  
 15288 %\*  $\backslash \text{textparagraph} \rightarrow \backslash \text{mathparagraph}$  (LaTeX)  
 15289 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
 15290  $\backslash \text{DeclareTextCommand}\{\backslash \text{textperiodcentered}\}\{\text{PU}\}\{\backslash 80\backslash 267\}$ % U+00B7  
 15291 %\*  $\backslash \text{textperiodcentered} \rightarrow \backslash \text{MultiplicationDot}$  (marvosym)  
 15292 %\*  $\backslash \text{textperiodcentered} \rightarrow \backslash \text{Squaredot}$  (marvosym)  
 15293 % U+00B8 CEDILLA; cedilla  
 15294  $\backslash \text{DeclareTextCommand}\{\backslash \text{textcedilla}\}\{\text{PU}\}\{\backslash 80\backslash 270\}$ % U+00B8  
 15295 % U+00B9 SUPERSCRIPT ONE; onesuperior  
 15296  $\backslash \text{DeclareTextCommand}\{\backslash \text{textonesuperior}\}\{\text{PU}\}\{\backslash 80\backslash 271\}$ %\* U+00B9  
 15297 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
 15298  $\backslash \text{DeclareTextCommand}\{\backslash \text{textordmasculine}\}\{\text{PU}\}\{\backslash 80\backslash 272\}$ % U+00BA  
 15299 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetright  
 15300  $\backslash \text{DeclareTextCommand}\{\backslash \text{guillemotright}\}\{\text{PU}\}\{\backslash 80\backslash 273\}$ % U+00BB  
 15301  $\backslash \text{DeclareTextCommand}\{\backslash \text{guillemetright}\}\{\text{PU}\}\{\backslash 80\backslash 273\}$ % U+00BB  
 15302 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
 15303  $\backslash \text{DeclareTextCommand}\{\backslash \text{textonequarter}\}\{\text{PU}\}\{\backslash 80\backslash 274\}$ % U+00BC  
 15304 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
 15305  $\backslash \text{DeclareTextCommand}\{\backslash \text{textonehalf}\}\{\text{PU}\}\{\backslash 80\backslash 275\}$ % U+00BD  
 15306 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
 15307  $\backslash \text{DeclareTextCommand}\{\backslash \text{textthreequarters}\}\{\text{PU}\}\{\backslash 80\backslash 276\}$ % U+00BE  
 15308 % U+00BF INVERTED QUESTION MARK; questiondown  
 15309  $\backslash \text{DeclareTextCommand}\{\backslash \text{textquestiondown}\}\{\text{PU}\}\{\backslash 80\backslash 277\}$ % U+00BF  
 15310 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
 15311  $\backslash \text{DeclareTextCompositeCommand}\{\backslash \backslash \}\{\text{PU}\}\{\text{A}\}\{\backslash 80\backslash 300\}$ % U+00C0  
 15312 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
 15313  $\backslash \text{DeclareTextCompositeCommand}\{\backslash \backslash \}\{\text{PU}\}\{\text{A}\}\{\backslash 80\backslash 301\}$ % U+00C1  
 15314 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
 15315  $\backslash \text{DeclareTextCompositeCommand}\{\backslash \backslash \}\{\text{PU}\}\{\text{A}\}\{\backslash 80\backslash 302\}$ % U+00C2  
 15316 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
 15317  $\backslash \text{DeclareTextCompositeCommand}\{\backslash \backslash \}\{\text{PU}\}\{\text{A}\}\{\backslash 80\backslash 303\}$ % U+00C3  
 15318 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
 15319  $\backslash \text{DeclareTextCompositeCommand}\{\backslash \backslash \}\{\text{PU}\}\{\text{A}\}\{\backslash 80\backslash 304\}$ % U+00C4  
 15320 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
 15321  $\backslash \text{DeclareTextCompositeCommand}\{\backslash \text{r}\}\{\text{PU}\}\{\text{A}\}\{\backslash 80\backslash 305\}$ % U+00C5

15322 % U+00C6 LATIN CAPITAL LETTER AE; AE  
15323 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6  
15324 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
15325 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7  
15326 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
15327 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
15328 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
15329 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
15330 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
15331 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312}% U+00CA  
15332 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
15333 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313}% U+00CB  
15334 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
15335 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
15336 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
15337 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
15338 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
15339 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316}% U+00CE  
15340 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
15341 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317}% U+00CF  
15342 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
15343 \DeclareTextCommand{\DH}{PU}{\80\320}% U+00D0  
15344 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
15345 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321}% U+00D1  
15346 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
15347 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
15348 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
15349 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
15350 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
15351 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324}% U+00D4  
15352 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
15353 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
15354 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
15355 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326}% U+00D6  
15356 % U+00D7 MULTIPLICATION SIGN; multiply  
15357 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7  
15358 %\* \textmultiply -> \vartimes (stmaryrd)  
15359 %\* \textmultiply -> \MVMultiplication (marvosym)  
15360 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
15361 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8  
15362 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
15363 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9  
15364 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
15365 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA  
15366 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
15367 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333}% U+00DB  
15368 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
15369 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334}% U+00DC  
15370 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
15371 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD  
15372 % U+00DE LATIN CAPITAL LETTER THORN; Thorn; \TH, \Thorn (wasysym)  
15373 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE  
15374 \DeclareTextCommand{\textThorn}{PU}{\80\336}%\* U+00DE  
15375 % U+00DF LATIN SMALL LETTER SHARP S; germandbls

15376 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF  
15377 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
15378 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0  
15379 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
15380 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1  
15381 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
15382 \DeclareTextCompositeCommand{\^}{PU}{a}{\80\342}% U+00E2  
15383 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
15384 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
15385 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
15386 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344}% U+00E4  
15387 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
15388 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5  
15389 % U+00E6 LATIN SMALL LETTER AE; ae  
15390 \DeclareTextCommand{\ae}{PU}{\80\346}% U+00E6  
15391 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
15392 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7  
15393 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
15394 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8  
15395 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
15396 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
15397 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
15398 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA  
15399 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
15400 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353}% U+00EB  
15401 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
15402 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
15403 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC  
15404 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
15405 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
15406 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\355}% U+00ED  
15407 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
15408 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
15409 \DeclareTextCompositeCommand{\~}{PU}{i}{\80\356}% U+00EE  
15410 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
15411 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
15412 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
15413 % U+00F0 LATIN SMALL LETTER ETH; eth  
15414 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0  
15415 %\* \dh -> \eth (wsuipa, phonetic)  
15416 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
15417 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361}% U+00F1  
15418 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
15419 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
15420 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
15421 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
15422 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
15423 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364}% U+00F4  
15424 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
15425 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
15426 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
15427 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366}% U+00F6  
15428 % U+00F7 DIVISION SIGN; divide  
15429 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7

15430 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
 15431 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8  
 15432 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
 15433 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
 15434 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
 15435 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
 15436 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
 15437 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373}% U+00FB  
 15438 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
 15439 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374}% U+00FC  
 15440 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
 15441 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
 15442 % U+00FE LATIN SMALL LETTER THORN; thorn;  
 15443 % \th, \thorn (wasysym), \textthorn (tipa)  
 15444 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE  
 15445 \DeclareTextCommand{\textthorn}{PU}{\80\376}%\* U+00FE  
 15446 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
 15447 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377}% U+00FF

#### 47.2.4 Latin Extended-A: U+0080 to U+017F

15448 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron  
 15449 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% U+0100  
 15450 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron  
 15451 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% U+0101  
 15452 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve  
 15453 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% U+0102  
 15454 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve  
 15455 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% U+0103  
 15456 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek  
 15457 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% U+0104  
 15458 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek  
 15459 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% U+0105  
 15460 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacute  
 15461 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% U+0106  
 15462 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacute  
 15463 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% U+0107  
 15464 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex  
 15465 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% U+0108  
 15466 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex  
 15467 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% U+0109  
 15468 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotac-  
 cent  
 15469 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% U+010A  
 15470 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent  
 15471 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% U+010B  
 15472 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron  
 15473 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% U+010C  
 15474 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron  
 15475 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% U+010D  
 15476 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron  
 15477 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% U+010E  
 15478 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron  
 15479 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% U+010F

15480 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash  
15481 \DeclareTextCommand{\DJ}{PU}{\81\020}% U+0110  
15482 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron;  
15483 % \textcrd (tipa)  
15484 \DeclareTextCommand{\dj}{PU}{\81\021}% U+0111  
15485 \DeclareTextCommand{\textcrd}{PU}{\81\021}% U+0111  
15486 %\* \textcrd -> \crossd (wsuipa)  
15487 % An alternate glyph with the stroke through the bowl:  
15488 %\* \textcrd -> \textbard (tipa)  
15489 %\* \textcrd -> \bard (wsuipa)  
15490 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron  
15491 \DeclareTextCompositeCommand{=} {PU}{E}{\81\022}% U+0112  
15492 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron  
15493 \DeclareTextCompositeCommand{=} {PU}{e}{\81\023}% U+0113  
15494 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve  
15495 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% U+0114  
15496 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve  
15497 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% U+0115  
15498 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent  
15499 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% U+0116  
15500 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent  
15501 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% U+0117  
15502 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek  
15503 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% U+0118  
15504 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek  
15505 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% U+0119  
15506 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron  
15507 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% U+011A  
15508 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron  
15509 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% U+011B  
15510 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex  
15511 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% U+011C  
15512 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex  
15513 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% U+011D  
15514 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve  
15515 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% U+011E  
15516 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve  
15517 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% U+011F  
15518 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotac-  
cent  
15519 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% U+0120  
15520 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent  
15521 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% U+0121  
15522 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcom-  
maaccent  
15523 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% U+0122  
15524 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent  
15525 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% U+0123  
15526 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex  
15527 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% U+0124  
15528 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex  
15529 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% U+0125  
15530 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar  
15531 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126

15532 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar; \hbar (AmS)  
15533 \DeclareTextCommand{\texthbar}{PU}{\81\047}%\* U+0127  
15534 %\* \texthbar -> \textcrh (tipa)  
15535 %\* \texthbar -> \crossh (wsuipa)  
15536 %\* \texthbar -> \planck (phonetic)  
15537 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; Itilde  
15538 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128  
15539 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde  
15540 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
15541 \DeclareTextCompositeCommand{\~}{PU}{\i}{\81\051}% U+0129  
15542 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron  
15543 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% U+012A  
15544 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron  
15545 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
15546 \DeclareTextCompositeCommand{\=}{PU}{\i}{\81\053}% U+012B  
15547 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibreve  
15548 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C  
15549 % U+012D LATIN SMALL LETTER I WITH BREVE; ibreve  
15550 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
15551 \DeclareTextCompositeCommand{\u}{PU}{\i}{\81\055}% U+012D  
15552 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek  
15553 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E  
15554 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek  
15555 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
15556 \DeclareTextCompositeCommand{\k}{PU}{\i}{\81\057}% U+012F  
15557 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent  
15558 \DeclareTextCompositeCommand{.}{PU}{I}{\81\060}% U+0130  
15559 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
15560 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131  
15561 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ  
15562 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132  
15563 % U+0133 LATIN SMALL LIGATURE IJ; ij  
15564 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133  
15565 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex  
15566 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% U+0134  
15567 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex  
15568 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
15569 \DeclareTextCompositeCommand{\^}{PU}{\j}{\81\065}% U+0135  
15570 % U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaaccent  
15571 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136  
15572 % U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent  
15573 \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`.

15574 % U+0138 LATIN SMALL LETTER KRA; kgreenlandic  
15575 \DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138  
15576 % U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute  
15577 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071}% U+0139  
15578 % U+013A LATIN SMALL LETTER L WITH ACUTE; lacute  
15579 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072}% U+013A  
15580 % U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaac-



cent

15581 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B

15582 % U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent

15583 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C

15584 % U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron

15585 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D

15586 % U+013E LATIN SMALL LETTER L WITH CARON; lcaron

15587 \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.

15588 % U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotaccent

cent

15589 \DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F

15590 % U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent

15591 \DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140

15592 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash

15593 \DeclareTextCommand{\L}{PU}{\81\101}% U+0141

15594 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash

15595 \DeclareTextCommand{\l}{PU}{\81\102}% U+0142

15596 % U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute

15597 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103}% U+0143

15598 % U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute

15599 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104}% U+0144

15600 % U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaaccent

cent

15601 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105}% U+0145

15602 % U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent

15603 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106}% U+0146

15604 % U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron

15605 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107}% U+0147

15606 % U+0148 LATIN SMALL LETTER N WITH CARON; ncaron

15607 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110}% U+0148

15608 % U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napostrophe, quoterightn

15609 \DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149

15610 % U+014A LATIN CAPITAL LETTER ENG; Eng

15611 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A

15612 % U+014B LATIN SMALL LETTER ENG; eng

15613 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B

15614 %\* \ng -> \eng (wsuipa)

15615 %\* \ng -> \engma (phonetic)

15616 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron

15617 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114}% U+014C

15618 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron

15619 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115}% U+014D

15620 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve

15621 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116}% U+014E

15622 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve

15623 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117}% U+014F

15624 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odblacut, Ohungarumlaut

15625 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120}% U+0150

15626 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odbla-

cute, ohungarumlaut

15627 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121}% U+0151

15628 % U+0152 LATIN CAPITAL LIGATURE OE; OE

15629 \DeclareTextCommand{\OE}{PU}{\81\122}% U+0152

15630 % U+0153 LATIN SMALL LIGATURE OE; oe

15631 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153

15632 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute

15633 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124}% U+0154

15634 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute

15635 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125}% U+0155

15636 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcommaaccent

15637 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126}% U+0156

15638 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcommaaccent

15639 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127}% U+0157

15640 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron

15641 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130}% U+0158

15642 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron

15643 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131}% U+0159

15644 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute

15645 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132}% U+015A

15646 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute

15647 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133}% U+015B

15648 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex

15649 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134}% U+015C

15650 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex

15651 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135}% U+015D

15652 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla

15653 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136}% U+015E

15654 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla

15655 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137}% U+015F

15656 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron

15657 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140}% U+0160

15658 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron

15659 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141}% U+0161

15660 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcommaaccent

15661 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162

15662 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcommaaccent

15663 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163

15664 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron

15665 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164

15666 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron

15667 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165

15668 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar

15669 \DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166

15670 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar

15671 \DeclareTextCommand{\texttslash}{PU}{\81\147}% U+0167

15672 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde

15673 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168

15674 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde

15675 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169

15676 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron

15677 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152}% U+016A

15678 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron  
 15679 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153}% U+016B  
 15680 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve  
 15681 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154}% U+016C  
 15682 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve  
 15683 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155}% U+016D  
 15684 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring  
 15685 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156}% U+016E  
 15686 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring  
 15687 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157}% U+016F  
 15688 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Udblacute, Uhungarumlaut  
 15689 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160}% U+0170  
 15690 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; udblacute, uhungarumlaut  
 15691 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161}% U+0171  
 15692 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek  
 15693 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162}% U+0172  
 15694 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek  
 15695 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163}% U+0173  
 15696 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex  
 15697 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164}% U+0174  
 15698 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex  
 15699 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165}% U+0175  
 15700 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex  
 15701 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166}% U+0176  
 15702 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex  
 15703 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167}% U+0177  
 15704 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
 15705 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170}% U+0178  
 15706 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute  
 15707 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171}% U+0179  
 15708 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute  
 15709 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172}% U+017A  
 15710 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent  
 15711 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173}% U+017B  
 15712 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent  
 15713 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174}% U+017C  
 15714 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
 15715 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175}% U+017D  
 15716 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
 15717 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176}% U+017E  
 15718 % U+017F LATIN SMALL LETTER LONG S; longs, slong  
 15719 \DeclareTextCommand{\textlongS}{PU}{\81\177}% U+017F

#### 47.2.5 Latin Extended-B: U+0180 to U+024F

15720 % U+0180 LATIN SMALL LETTER B WITH STROKE; bstroke; \textcrb (tipa)  
 15721 \DeclareTextCommand{\textcrb}{PU}{\81\200}% U+0180  
 15722 %\* \textcrb -> \crossb (wsuipa)  
 15723 % An alternate glyph with the stroke through the bowl:  
 15724 %\* \textcrb -> \textbarb (tipa)  
 15725 %\* \textcrb -> \barb (wsuipa)  
 15726 % U+0181 LATIN CAPITAL LETTER B WITH HOOK; Bhook; \hausab (phonetic)

15727 \DeclareTextCommand{\texthausaB}{PU}{\81\201}%\* U+0181  
15728 % U+0188 LATIN SMALL LETTER C WITH HOOK; chook; \texthtc (tipa)  
15729 \DeclareTextCommand{\texthtc}{PU}{\81\210}% U+0188  
15730 % U+018A LATIN CAPITAL LETTER D WITH HOOK; Dhook; \hausaD (pho-  
netic)  
15731 \DeclareTextCommand{\texthausaD}{PU}{\81\212}%\* U+018A  
15732 % U+018E LATIN CAPITAL LETTER REVERSED E; Ereversed  
15733 \DeclareTextCommand{\textEreversed}{PU}{\81\216}% U+018E  
15734 \DeclareTextCommand{\textrevE}{PU}{\81\216}% U+018E  
15735 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
15736 \DeclareTextCommand{\textflorin}{PU}{\81\222}% U+0192  
15737 %\* \textflorin -> \Florin (marvosym)  
15738 % U+0195 LATIN SMALL LETTER HV; hv; \texthvlig (tipa)  
15739 \DeclareTextCommand{\texthvlig}{PU}{\81\225}% U+0195  
15740 %\* \texthvlig -> \hv (wsuipa)  
15741 % U+0198 LATIN CAPITAL LETTER K WITH HOOK; Khook; \hausaK (pho-  
netic)  
15742 \DeclareTextCommand{\texthausaK}{PU}{\81\230}%\* U+0198  
15743 % U+0199 LATIN SMALL LETTER K WITH HOOK; khook; \texthtk (tipa)  
15744 \DeclareTextCommand{\texthtk}{PU}{\81\231}% U+0199  
15745 %\* \texthtk -> \hausak (phonetic)  
15746 % U+019A LATIN SMALL LETTER L WITH BAR; lbar;  
15747 % \textbarl (tipa), \barl (wsuipa)  
15748 \DeclareTextCommand{\textbarl}{PU}{\81\232}%\* U+019A  
15749 % U+019B LATIN SMALL LETTER LAMBDA WITH STROKE/  
15750 % LATIN SMALL LETTER BARRED LAMBDA; lambdastroke;  
15751 % \textcrlambda (tipa)  
15752 \DeclareTextCommand{\textcrlambda}{PU}{\81\233}% U+019B  
15753 %\* \textcrlambda -> \crossnilambda (wsuipa)  
15754 %\* \textcrlambda -> \barlambda (phonetic)  
15755 %\* \textcrlambda -> \lambdabar (txfonts/pxfonts)  
15756 %\* \textcrlambda -> \lambdash (txfonts/pxfonts)  
15757 % U+019E LATIN SMALL LETTER N WITH LONG RIGHT LEG; nlegright-  
long;  
15758 % \textnrleg (tipx)  
15759 \DeclareTextCommand{\textPUnrleg}{PU}{\81\236}% U+019E  
15760 %\* \textPUnrleg -> \textnrleg (tipx)  
15761 % U+01A5 LATIN SMALL LETTER P WITH HOOK; phook; \texthtp (tipa)  
15762 \DeclareTextCommand{\texthtp}{PU}{\81\245}% U+01A5  
15763 % U+01AB LATIN SMALL LETTER T WITH PALATAL HOOK; tpalatalhook;  
15764 % \textlhookt (tipa)  
15765 \DeclareTextCommand{\textlhookt}{PU}{\81\253}% U+01AB  
15766 % U+01AD LATIN SMALL LETTER T WITH HOOK; thook; \texthtt (tipa)  
15767 \DeclareTextCommand{\texthtt}{PU}{\81\255}% U+01AD  
15768 % U+01B9 LATIN SMALL LETTER EZH REVERSED/  
15769 % LATIN SMALL LETTER REVERSED YOGH; \textrevyogh (tipa)  
15770 \DeclareTextCommand{\textrevyogh}{PU}{\81\271}% U+01B9  
15771 % U+01BB LATIN LETTER TWO WITH STROKE; twostroke; \textcrtwo (tipa)  
15772 \DeclareTextCommand{\textcrtwo}{PU}{\81\273}% U+01BB  
15773 % U+01BE LATIN LETTER INVERTED GLOTTAL STOP WITH STROKE;  
15774 % glottalinvertedstroke; \textcrinvglotstop (tipa)  
15775 \DeclareTextCommand{\textcrinvglotstop}{PU}{\81\276}% U+01BE  
15776 % U+01BF LATIN LETTER WYNN; wynn; \textwynn (tipa)  
15777 \DeclareTextCommand{\textwynn}{PU}{\81\277}% U+01BF

15778 % U+01C0 LATIN LETTER DENTAL CLICK/LATIN LETTER PIPE; clickden-  
 tal;  
 15779 % \textpipe (tipa)  
 15780 \DeclareTextCommand{\textpipe}{PU}{\81\300}% U+01C0  
 15781 %\* \textpipe -> \textpipevar (tipx)  
 15782 % U+01C1 LATIN LETTER LATERAL CLICK/LATIN LETTER  
 15783 % DOUBLE PIPE; clicklateral; \textdoublepipe (tipa)  
 15784 \DeclareTextCommand{\textdoublepipe}{PU}{\81\301}% U+01C1  
 15785 %\* \textdoublepipe -> \textdoublepipevar (tipx)  
 15786 % U+01C2 LATIN LETTER ALVEOLAR CLICK/LATIN LETTER PIPE DOU-  
 BLE BAR;  
 15787 % clickalveolar; \textdoublebarpipe (tipa)  
 15788 \DeclareTextCommand{\textdoublebarpipe}{PU}{\81\302}% U+01C2  
 15789 %\* \textdoublebarpipe -> \textdoublebarpipevar (tipx)  
 15790 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron  
 15791 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315}% U+01CD  
 15792 % U+01CE LATIN SMALL LETTER A WITH CARON; acarón  
 15793 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316}% U+01CE  
 15794 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icaron  
 15795 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317}% U+01CF  
 15796 % U+01D0 LATIN SMALL LETTER I WITH CARON; icarón  
 15797 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 15798 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 15799 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocaron  
 15800 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1  
 15801 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocarón  
 15802 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2  
 15803 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucaron  
 15804 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3  
 15805 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucarón  
 15806 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4  
 15807 % U+01DD LATIN SMALL LETTER TURNED E; eturned; \inve (wasysym)  
 15808 \DeclareTextCommand{\textinve}{PU}{\81\335}%\* U+01DD  
 15809 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke  
 15810 \DeclareTextCommand{\textGslash}{PU}{\81\344}% U+01E4  
 15811 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke  
 15812 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5  
 15813 %\* \textgslash -> \textcrg (tipa)  
 15814 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcaron  
 15815 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6  
 15816 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcaron  
 15817 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7  
 15818 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcaron  
 15819 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8  
 15820 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcaron  
 15821 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9  
 15822 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek  
 15823 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA  
 15824 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek  
 15825 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB  
 15826 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcaron  
 15827 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
 15828 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
 15829 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute

15830 \DeclareTextCompositeCommand{\'}{PU}{G}{\81\364}% U+01F4  
15831 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute  
15832 \DeclareTextCompositeCommand{\'}{PU}{g}{\81\365}% U+01F5  
15833 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE  
15834 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\370}% U+01F8  
15835 % U+01F9 LATIN SMALL LETTER N WITH GRAVE  
15836 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\371}% U+01F9  
15837 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute  
15838 \DeclareTextCompositeCommand{\'}{PU}{\AE}{\81\374}% U+01FC  
15839 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute  
15840 \DeclareTextCompositeCommand{\'}{PU}{\ae}{\81\375}% U+01FD  
15841 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE;  
15842 % \*Oslashacute, Ostrokeacut  
15843 \DeclareTextCompositeCommand{\'}{PU}{\O}{\81\376}% U+01FE  
15844 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE;  
15845 % \*oslashacute, ostrokeacute  
15846 \DeclareTextCompositeCommand{\'}{PU}{\o}{\81\377}% U+01FF  
15847 </puenc>  
15848 <\*puextra>  
15849 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave  
15850 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200  
15851 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave  
15852 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201  
15853 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave  
15854 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204  
15855 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave  
15856 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205  
15857 </puextra>  
15858 <\*puenc>  
15859 % U+0206 LATIN CAPITAL LETTER E WITH INVERTED BREVE; Einvert-  
edbreve  
15860 \DeclareTextCompositeCommand{\textinvbreve}{PU}{E}{\82\006}% U+0206  
15861 % U+0207 LATIN SMALL LETTER E WITH INVERTED BREVE; einverted-  
breve  
15862 \DeclareTextCompositeCommand{\textinvbreve}{PU}{e}{\82\007}% U+0207  
15863 </puenc>  
15864 <\*puextra>  
15865 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; Idblgrave  
15866 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208  
15867 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave  
15868 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
15869 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
15870 </puextra>  
15871 <\*puenc>  
15872 % U+020A LATIN CAPITAL LETTER I WITH INVERTED BREVE; Iinverted-  
breve  
15873 \DeclareTextCompositeCommand{\textinvbreve}{PU}{I}{\82\012}% U+020A  
15874 % U+020B LATIN SMALL LETTER I WITH INVERTED BREVE; iinverted-  
breve  
15875 \DeclareTextCompositeCommand{\textinvbreve}{PU}{i}{\82\013}% U+020B  
15876 \DeclareTextCompositeCommand{\textinvbreve}{PU}{i}{\82\013}% U+020B  
15877 </puenc>  
15878 <\*puextra>  
15879 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave

15880 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C  
15881 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave  
15882 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D  
15883 </puextra>  
15884 <\*puenc>  
15885 % U+020E LATIN CAPITAL LETTER O WITH INVERTED BREVE; Oinvert-  
edbreve  
15886 \DeclareTextCompositeCommand{\textinvbreve}{PU}{O}{\82\016}% U+020E  
15887 % U+020F LATIN SMALL LETTER O WITH INVERTED BREVE; oinverted-  
breve  
15888 \DeclareTextCompositeCommand{\textinvbreve}{PU}{o}{\82\017}% U+020F  
15889 </puenc>  
15890 <\*puextra>  
15891 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave  
15892 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210  
15893 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave  
15894 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211  
15895 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave  
15896 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214  
15897 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave  
15898 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215  
15899 </puextra>  
15900 <\*puenc>  
15901 % U+0216 LATIN CAPITAL LETTER U WITH INVERTED BREVE; Uinvert-  
edbreve  
15902 \DeclareTextCompositeCommand{\textinvbreve}{PU}{U}{\82\026}% U+0216  
15903 % U+0217 LATIN SMALL LETTER U WITH INVERTED BREVE; uinverted-  
breve  
15904 \DeclareTextCompositeCommand{\textinvbreve}{PU}{u}{\82\027}% U+0217  
15905 % U+021E LATIN CAPITAL LETTER H WITH CARON  
15906 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E  
15907 % U+021F LATIN SMALL LETTER H WITH CARON  
15908 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F  
15909 % U+0221 LATIN SMALL LETTER D WITH CURL; \textctd (tipa)  
15910 \DeclareTextCommand{\textctd}{PU}{\82\041}% U+0221  
15911 % U+0225 LATIN SMALL LETTER Z WITH HOOK; \textcommatailz (tipa)  
15912 \DeclareTextCommand{\textcommatailz}{PU}{\82\045}% U+0225  
15913 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE  
15914 \DeclareTextCompositeCommand{\.}{PU}{A}{\82\046}% U+0226  
15915 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE  
15916 \DeclareTextCompositeCommand{\.}{PU}{a}{\82\047}% U+0227  
15917 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA  
15918 \DeclareTextCompositeCommand{\c}{PU}{E}{\82\050}% U+0228  
15919 % U+0229 LATIN SMALL LETTER E WITH CEDILLA  
15920 \DeclareTextCompositeCommand{\c}{PU}{e}{\82\051}% U+0229  
15921 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE  
15922 \DeclareTextCompositeCommand{\.}{PU}{O}{\82\056}% U+022E  
15923 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE  
15924 \DeclareTextCompositeCommand{\.}{PU}{o}{\82\057}% U+022F  
15925 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON  
15926 \DeclareTextCompositeCommand{\=}{PU}{Y}{\82\062}% U+0232  
15927 % U+0233 LATIN SMALL LETTER Y WITH MACRON  
15928 \DeclareTextCompositeCommand{\=}{PU}{y}{\82\063}% U+0233  
15929 % U+0235 LATIN SMALL LETTER N WITH CURL; \textctn (tipa)

15930 \DeclareTextCommand{\textctn}{PU}{\82\065}% U+0235  
 15931 % U+0236 LATIN SMALL LETTER T WITH CURL; \textctt (tipa)  
 15932 \DeclareTextCommand{\textctt}{PU}{\82\066}% U+0236  
 15933 % U+0237 LATIN SMALL LETTER DOTLESS J  
 15934 \DeclareTextCommand{\j}{PU}{\82\067}% U+0237  
 15935 % U+0238 LATIN SMALL LETTER DB DIGRAPH; \textdblig (tipx)  
 15936 \DeclareTextCommand{\textPUdblig}{PU}{\82\070}% U+0238  
 15937 %\* \textPUdblig -> \textdblig (tipx)  
 15938 % U+0239 LATIN SMALL LETTER QP DIGRAPH; \textqplig (tipx)  
 15939 \DeclareTextCommand{\textPUqplig}{PU}{\82\071}% U+0239  
 15940 %\* \textPUqplig -> \textqplig (tipx)  
 15941 % U+023C LATIN SMALL LETTER C WITH STROKE; \slashc (wsuipa)  
 15942 \DeclareTextCommand{\textslashc}{PU}{\82\074}%\* U+023C  
 15943 %\* \textslashc -> \textcentoldstyle (textcomp)  
 15944 % With bar instead of stroke:  
 15945 %\* \textslashc -> \textbarc (tipa)

#### 47.2.6 IPA Extensions: U+0250 to U+02AF

15946 % U+0250 LATIN SMALL LETTER TURNED A; aturned; \textturna (tipa)  
 15947 \DeclareTextCommand{\textturna}{PU}{\82\120}% U+0250  
 15948 %\* \textturna -> \inva (wasysym)  
 15949 % U+0251 LATIN SMALL LETTER ALPHA/LATIN SMALL LETTER  
 15950 % SCRIPT A; ascript; \textscripta (tipa), \scripta (wsuipa)  
 15951 \DeclareTextCommand{\textscripta}{PU}{\82\121}%\* U+0251  
 15952 %\* \textscripta -> \vara (phonetic)  
 15953 % U+0252 LATIN SMALL LETTER TURNED ALPHA; ascriptturned;  
 15954 % \textturnscripta (tipa)  
 15955 \DeclareTextCommand{\textturnscripta}{PU}{\82\122}% U+0252  
 15956 %\* \textturnscripta -> \invscripta (wsuipa)  
 15957 %\* \textturnscripta -> \rotvara (phonetic)  
 15958 % U+0253 LATIN CAPITAL LETTER B WITH HOOK; bhook; \texthtb (tipa)  
 15959 \DeclareTextCommand{\texthtb}{PU}{\82\123}% U+0253  
 15960 %\* \texthtb -> \hookb (wsuipa)  
 15961 %\* \texthtb -> \hausab (phonetic)  
 15962 % U+0254 LATIN SMALL LETTER OPEN O; oopen;  
 15963 % \textopeno (tipa), \openo (wasysym)  
 15964 \DeclareTextCommand{\textopeno}{PU}{\82\124}%\* U+0254  
 15965 %\* \textopeno -> \varopeno (phonetic)  
 15966 % U+0255 LATIN SMALL LETTER C WITH CURL; ccurl; \textctc (tipa)  
 15967 \DeclareTextCommand{\textctc}{PU}{\82\125}% U+0255  
 15968 %\* \textctc -> \curlyc (wsuipa)  
 15969 % U+0256 LATIN SMALL LETTER D WITH TAIL; dtail; \textrtaild (tipa)  
 15970 \DeclareTextCommand{\textrtaild}{PU}{\82\126}%\* U+0256  
 15971 %\* \textrtaild -> \taild (wsuipa)  
 15972 % U+0257 LATIN SMALL LETTER D WITH HOOK; dhook; \texthtd (tipa)  
 15973 \DeclareTextCommand{\texthtd}{PU}{\82\127}% U+0257  
 15974 %\* \texthtd -> \hookd (wsuipa)  
 15975 %\* \texthtd -> \hausad (phonetic)  
 15976 % U+0258 LATIN SMALL LETTER REVERSED E; ereversed;  
 15977 % \textreve (tipa), \reve (wsuipa)  
 15978 \DeclareTextCommand{\textreve}{PU}{\82\130}%\* U+0258  
 15979 % U+0259 LATIN SMALL LETTER SCHWA; schwa;  
 15980 % \textschwa (tipa), \schwa (wsuipa, phonetic)  
 15981 \DeclareTextCommand{\textschwa}{PU}{\82\131}%\* U+0259



15982 % U+025A LATIN SMALL LETTER SCHWA WITH HOOK; schwahook;  
 15983 % \textrhookswa (tipa)  
 15984 \DeclareTextCommand{\textrhookswa}{PU}{\82\132}% U+025A  
 15985 %\* \textrhookswa -> \er (wsuipa)  
 15986 % U+025B LATIN SMALL LETTER OPEN E/LATIN SMALL LETTER EP-  
 SILON; eopen;  
 15987 % \niepsilon (wsuipa)  
 15988 \DeclareTextCommand{\textniepsilon}{PU}{\82\133}%\* U+025B  
 15989 %\* \textniepsilon -> \epsi (phonetic)  
 15990 % U+025C LATIN SMALL LETTER REVERSED OPEN E; eopenreversed;  
 15991 % \textrepsilon (tipa), \repsilon (wsuipa)  
 15992 \DeclareTextCommand{\textrepsilon}{PU}{\82\134}%\* U+025C  
 15993 % U+025D LATIN SMALL LETTER REVERSED OPEN E WITH HOOK; eopen-  
 reversedhook;  
 15994 % \textrhookrepsilon (tipa)  
 15995 \DeclareTextCommand{\textrhookrepsilon}{PU}{\82\135}%\* U+025D  
 15996 %\* \textrhookrepsilon -> \hookrepsilon (wsuipa)  
 15997 % U+025E LATIN SMALL LETTER CLOSED REVERSED OPEN E; eopenre-  
 versedclosed;  
 15998 % \textcloseriepsilon (tipa)  
 15999 \DeclareTextCommand{\textcloseriepsilon}{PU}{\82\136}% U+025E  
 16000 %\* \textcloseriepsilon -> \closedrepsilon (wsuipa)  
 16001 % U+025F LATIN SMALL LETTER DOTLESS J WITH STROKE; jdot-  
 lessstroke;  
 16002 % \textbardotlessj (tipa)  
 16003 \DeclareTextCommand{\textbardotlessj}{PU}{\82\137}% U+025F  
 16004 %\* \textbardotlessj -> \barj (phonetic)  
 16005 % U+0260 LATIN SMALL LETTER G WITH HOOK; ghook; \texthtg (tipa)  
 16006 \DeclareTextCommand{\texthtg}{PU}{\82\140}% U+0260  
 16007 %\* \texthtg -> \hookg (wsuipa)  
 16008 % U+0261 LATIN SMALL LETTER SCRIPT G; gscript;  
 16009 % \textscriptg (tipa), \scriptg (wsuipa)  
 16010 \DeclareTextCommand{\textscriptg}{PU}{\82\141}%\* U+0261  
 16011 %\* \textscriptg -> \varg (phonetic)  
 16012 % U+0262 LATIN LETTER SMALL CAPITAL G; \textscg (tipa), \scg (wsuipa)  
 16013 \DeclareTextCommand{\textscg}{PU}{\82\142}%\* U+0262  
 16014 % U+0263 LATIN SMALL LETTER GAMMA; gammalatinsmall;  
 16015 % \ipagamma (wsuipa), \vod (phonetic)  
 16016 \DeclareTextCommand{\textipagamma}{PU}{\82\143}%\* U+0263  
 16017 %\* \textipagamma -> \vod (pnonetic)  
 16018 % U+0264 LATIN SMALL LETTER RAMS HORN; ramshorn;  
 16019 % \babygamma (wsuipa)  
 16020 \DeclareTextCommand{\textbabygamma}{PU}{\82\144}%\* U+0264  
 16021 % U+0265 LATIN SMALL LETTER TURNED H; hturned; \textturnh (tipa)  
 16022 \DeclareTextCommand{\textturnh}{PU}{\82\145}% U+0265  
 16023 %\* \textturnh -> \invh (wsuipa)  
 16024 %\* \textturnh -> \udesc (phonetic)  
 16025 % U+0266 LATIN SMALL LETTER H WITH HOOK; hhook; \texthth (tipa)  
 16026 \DeclareTextCommand{\texthth}{PU}{\82\146}% U+0266  
 16027 %\* \texthth -> \hookh (wsuipa)  
 16028 %\* \texthth -> \voicedh (phonetic)  
 16029 % U+0267 LATIN SMALL LETTER HENG WITH HOOK; henghook; \tex-  
 ththeng (tipa)  
 16030 \DeclareTextCommand{\texththeng}{PU}{\82\147}% U+0267

16031 %\* \texthheng -> \hookheng (wsuipa)  
16032 % U+0268 LATIN SMALL LETTER I WITH STROKE;  
16033 % \textbari (tipa), \bari (wsuipa)  
16034 \DeclareTextCommand{\textbari}{PU}{\82\150}%\* U+0268  
16035 %\* \textbari -> \ibar (phonetic)  
16036 % U+0269 LATIN SMALL LETTER IOTA; iotalatin; \niiota (wsuipa)  
16037 \DeclareTextCommand{\textniiota}{PU}{\82\151}%\* U+0269  
16038 %\* \textniiota -> \vari (phonetic)  
16039 % U+026A LATIN LETTER SMALL CAPITAL I; \textsci (tipa), \sci (wsuipa)  
16040 \DeclareTextCommand{\textsci}{PU}{\82\152}%\* U+026A  
16041 % U+026B LATIN SMALL LETTER L WITH MIDDLE TILDE; lmiddletilde;  
16042 % \textltilde (tipa)  
16043 \DeclareTextCommand{\textltilde}{PU}{\82\153}% U+026B  
16044 %\* \textltilde -> \tildel (wsuipa)  
16045 % U+026C LATIN SMALL LETTER L WITH BELT; lbelt; \textbeltl (tipa)  
16046 \DeclareTextCommand{\textbeltl}{PU}{\82\154}% U+026C  
16047 %\* \textbeltl -> \latfric (wsuipa)  
16048 % U+026D LATIN SMALL LETTER L WITH RETROFLEX HOOK;  
16049 % \hookretroflex; \textrtaill (tipa)  
16050 \DeclareTextCommand{\textrtaill}{PU}{\82\155}% U+026D  
16051 %\* \textrtaill -> \taill (wsuipa)  
16052 % U+026E LATIN SMALL LETTER LEZH; lezh; \textlyoghlig (tipa)  
16053 \DeclareTextCommand{\textlyoghlig}{PU}{\82\156}% U+026E  
16054 %\* \textlyoghlig -> \lz (wsuipa)  
16055 % U+026F LATIN SMALL LETTER TURNED M; mturned; \textturnm (tipa)  
16056 \DeclareTextCommand{\textturnm}{PU}{\82\157}% U+026F  
16057 %\* \textturnm -> \invm (wsuipa)  
16058 %\* \textturnm -> \rotm (phonetic)  
16059 % U+0270 LATIN SMALL LETTER TURNED M WITH LONG LEG; mlongleg-  
turned;  
16060 % \textturnmrleg (tipa)  
16061 \DeclareTextCommand{\textturnmrleg}{PU}{\82\160}% U+0270  
16062 %\* \textturnmrleg -> \legm (wsuipa)  
16063 % U+0271 LATIN SMALL LETTER M WITH HOOK; mhook; \textltailm (tipa)  
16064 \DeclareTextCommand{\textltailm}{PU}{\82\161}% U+0271  
16065 %\* \textltailm -> \labdentainas (wsuipa)  
16066 %\* \textltailm -> \emgma (phonetic)  
16067 % U+0272 LATIN SMALL LETTER N WITH LEFT HOOK; nhookleft; \textl-  
tailn (tipa)  
16068 \DeclareTextCommand{\textltailn}{PU}{\82\162}% U+0272  
16069 %\* \textltailn -> \nj (wsuipa)  
16070 %\* \textltailn -> \enya (phonetic)  
16071 % U+0273 LATIN SMALL LETTER N WITH RETROFLEX HOOK;  
16072 % \nhookretroflex; \textrtailn (tipa)  
16073 \DeclareTextCommand{\textrtailn}{PU}{\82\163}% U+0273  
16074 %\* \textrtailn -> \tailn (wsuipa)  
16075 % U+0274 LATIN LETTER SMALL CAPITAL N; \textscn (tipa), \scn (wsuipa)  
16076 \DeclareTextCommand{\textscn}{PU}{\82\164}%\* U+0274  
16077 % U+0275 LATIN CAPITAL LETTER O WITH MIDDLE TILDE/  
16078 % LATIN CAPITAL LETTER BARRED O; obarred;  
16079 % \textbaro (tipa), \baro (wsuipa)  
16080 % But \baro from stmaryrd is different!  
16081 \DeclareTextCommand{\textbaro}{PU}{\82\165}% U+0275  
16082 % U+0276 LATIN LETTER SMALL CAPITAL OE; \textscoelig (tipa)

16083 \DeclareTextCommand{\textscelig}{PU}{\82\166}% U+0276  
16084 % U+0277 LATIN SMALL LETTER CLOSED OMEGA; omegalatinclined;  
16085 % \textcloseomega (tipa)  
16086 \DeclareTextCommand{\textcloseomega}{PU}{\82\167}% U+0277  
16087 %\* \textcloseomega -> \closedniomega (wsuipa)  
16088 %\* \textcloseomega -> \varomega (phonetic)  
16089 % U+0278 LATIN SMALL LETTER PHI; philatin; \nphi (wsuipa)  
16090 \DeclareTextCommand{\textnphi}{PU}{\82\170}%\* U+0278  
16091 % U+0279 LATIN SMALL LETTER TURNED R; rturned; \textturnr (tipa)  
16092 \DeclareTextCommand{\textturnr}{PU}{\82\171}% U+0279  
16093 %\* \textturnr -> \invr (wsuipa)  
16094 %\* \textturnr -> \rotr (phonetic)  
16095 % U+027A LATIN SMALL LETTER TURNED R WITH LONG LEG;  
16096 % \longlegturned; \textturnlongleg (tipa)  
16097 \DeclareTextCommand{\textturnlongleg}{PU}{\82\172}% U+027A  
16098 %\* \textturnlongleg -> \invleg (wsuipa)  
16099 % U+027B LATIN SMALL LETTER TURNED R WITH HOOK; rhookturned;  
16100 % \textturnrrtail (tipa)  
16101 \DeclareTextCommand{\textturnrrtail}{PU}{\82\173}% U+027B  
16102 %\* \textturnrrtail -> \tailinvr (wsuipa)  
16103 % U+027C LATIN SMALL LETTER R WITH LONG LEG; \longleg; \textlongleg (tipa)  
16104 \DeclareTextCommand{\textlongleg}{PU}{\82\174}%\* U+027C  
16105 %\* \textlongleg -> \leg (wsuipa)  
16106 % U+027D LATIN SMALL LETTER R WITH TAIL; rhook; \textrrtail (tipa)  
16107 \DeclareTextCommand{\textrrtail}{PU}{\82\175}% U+027D  
16108 %\* \textrrtail -> \tailr (wsuipa)  
16109 % U+027E LATIN SMALL LETTER R WITH FISHHOOK; rfishhook;  
16110 % \textfishhook (tipa)  
16111 \DeclareTextCommand{\textfishhook}{PU}{\82\176}% U+027E  
16112 %\* \textfishhook -> \flapr (wsuipa)  
16113 %\* \textfishhook -> \flap (phonetic)  
16114 % U+027F LATIN SMALL LETTER REVERSED R WITH FISHHOOK; rfishhookreversed;  
16115 % \textlhtlongi (tipa)  
16116 \DeclareTextCommand{\textlhtlongi}{PU}{\82\177}% U+027F  
16117 % U+0280 LATIN LETTER SMALL CAPITAL R; \textscr (tipa), \scr (wsuipa)  
16118 \DeclareTextCommand{\textscr}{PU}{\82\200}%\* U+0280  
16119 % U+0281 LATIN LETTER SMALL CAPITAL INVERTED R; Rsmallinverted;  
16120 % \textinvscr (tipa), \invscr (wsuipa)  
16121 \DeclareTextCommand{\textinvscr}{PU}{\82\201}%\* U+0281  
16122 % U+0282 LATIN SMALL LETTER S WITH HOOK; shook; \textrtails (tipa)  
16123 \DeclareTextCommand{\textrtails}{PU}{\82\202}% U+0282  
16124 %\* \textrtails -> \tails (wsuipa)  
16125 % U+0283 LATIN SMALL LETTER ESH; esh; \textesh (tipa), \esh (wsuipa)  
16126 \DeclareTextCommand{\textesh}{PU}{\82\203}%\* U+0283  
16127 % U+0284 LATIN SMALL LETTER DOTLESS J WITH STROKE AND HOOK;  
16128 % \dotlessjstrokehook; \texthtbardotlessj (tipa)  
16129 \DeclareTextCommand{\texthtbardotlessj}{PU}{\82\204}% U+0284  
16130 % U+0285 LATIN SMALL LETTER SQUAT REVERSED ESH; eshsquatreversed;  
16131 % \textvibyi (tipa)  
16132 \DeclareTextCommand{\textvibyi}{PU}{\82\205}% U+0285  
16133 % U+0286 LATIN SMALL LETTER ESH WITH CURL; eshcurl; \textctesh (tipa)

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16134 \DeclareTextCommand{\textctesh}{PU}{\82\206}% U+0286
16135 %* \textctesh -> \curlyesh (wsuipa)
16136 % U+0287 LATIN SMALL LETTER TURNED T; tturned; \textturnt (tipa)
16137 \DeclareTextCommand{\textturnt}{PU}{\82\207}% U+0287
16138 %* \textturnt -> \clickt (wsuipa)
16139 % U+0288 LATIN SMALL LETTER T WITH RETROFLEX HOOK; tetroflex-
hook;
16140 % \textrtailt (tipa)
16141 \DeclareTextCommand{\textrtailt}{PU}{\82\210}% U+0288
16142 %* \textrtailt -> \tailt (wsuipa)
16143 % U+0289 LATIN SMALL LETTER U BAR; ubar;
16144 % \textbaru (tipa), \baru (wsuipa)
16145 \DeclareTextCommand{\textbaru}{PU}{\82\211}%* U+0289
16146 %* \textbaru -> \ubar (phonetic)
16147 % U+028A LATIN SMALL LETTER UPSILON; \niupsilon (wsuipa)
16148 \DeclareTextCommand{\textniupsilon}{PU}{\82\212}%* U+028A
16149 %* \textniupsilon -> \rotOmega (phonetic)
16150 % U+028B LATIN SMALL LETTER V WITH HOOK/LATIN SMALL LET-
TER SCRIPT V;
16151 % vhook; \textscriptv (tipa), \scriptv (wsuipa)
16152 \DeclareTextCommand{\textscriptv}{PU}{\82\213}%* U+028B
16153 % U+028C LATIN SMALL LETTER TURNED V; vturned; \textturnv (tipa)
16154 \DeclareTextCommand{\textturnv}{PU}{\82\214}%* U+028C
16155 %* \textturnv -> \invv (wsuipa)
16156 %* \textturnv -> \pwedge (phonetic)
16157 % U+028D LATIN SMALL LETTER TURNED W; wturned; \textturnw (tipa)
16158 \DeclareTextCommand{\textturnw}{PU}{\82\215}%* U+028D
16159 %* \textturnw -> \invw (wsuipa)
16160 %* \textturnw -> \rotw (phonetic)
16161 % U+028E LATIN SMALL LETTER TURNED Y; yturned; \textturny (tipa)
16162 \DeclareTextCommand{\textturny}{PU}{\82\216}%* U+028E
16163 %* \textturny -> \invy (wsuipa)
16164 %* \textturny -> \roty (phonetic)
16165 % U+028F LATIN LETTER SMALL CAPITAL Y; \textscy (tipa), \scy (wsuipa)
16166 \DeclareTextCommand{\textscy}{PU}{\82\217}%* U+028F
16167 % U+0290 LATIN SMALL LETTER Z WITH RETROFLEX HOOK; zretroflex-
hook;
16168 % \textrtailz (tipa)
16169 \DeclareTextCommand{\textrtailz}{PU}{\82\220}% U+0290
16170 %* \textrtailz -> \tailz (wsuipa)
16171 % U+0291 LATIN SMALL LETTER Z WITH CURL; zcurl; \textctz (tipa)
16172 \DeclareTextCommand{\textctz}{PU}{\82\221}% U+0291
16173 %* \textctz -> \curlyz (wsuipa)
16174 % U+0292 LATIN SMALL LETTER EZH/LATIN SMALL LETTER YOGH; ezh;
16175 % \textyogh (tipa), \yogh (wsuipa)
16176 \DeclareTextCommand{\textyogh}{PU}{\82\222}%* U+0292
16177 % U+0293 LATIN SMALL LETTER EZH WITH CURL/LATIN SMALL LET-
TER YOGH CURL;
16178 % ezhcurl; \textctyogh (tipa)
16179 \DeclareTextCommand{\textctyogh}{PU}{\82\223}% U+0293
16180 %* \textctyogh -> \curlyyogh (wsuipa)
16181 % U+0294 LATIN LETTER GLOTTAL STOP; glottalstop;
16182 % \textglotstop (tipa), \glotstop (wsuipa)
16183 \DeclareTextCommand{\textglotstop}{PU}{\82\224}%* U+0294

```

16184 %\* \textglotstop -> \ejective (wsuipa)  
16185 %\* \textglotstop -> \glottal (phonetic)  
16186 % U+0295 LATIN LETTER PHARYNGEAL VOICED FRICATIVE/  
16187 % LATIN LETTER REVERSED GLOTTAL STOP; glottalstopreversed;  
16188 % \textrevglotstop (tipa), \revglotstop (wsuipa)  
16189 \DeclareTextCommand{\textrevglotstop}{PU}{\82\225}%\* U+0295  
16190 %\* \textrevglotstop -> \reveject (wsuipa)  
16191 % U+0296 LATIN LETTER INVERTED GLOTTAL STOP; glottalstopinverted;  
16192 % \textinvglotstop (tipa), \invglotstop (wsuipa)  
16193 \DeclareTextCommand{\textinvglotstop}{PU}{\82\226}%\* U+0296  
16194 % U+0297 LATIN LETTER STRETCHED C; cstretched; \textstretchc (tipa)  
16195 \DeclareTextCommand{\textstretchc}{PU}{\82\227}% U+0297  
16196 %\* \textstretchc -> \clickc (wsuipa)  
16197 %\* \textstretchc -> \textstretchcvar (tipx)  
16198 % U+0298 LATIN LETTER BILABIAL CLICK; bilabialclick;  
16199 % \textbullseye (tipa)  
16200 \DeclareTextCommand{\textbullseye}{PU}{\82\230}% U+0298  
16201 %\* \textbullseye -> \clickb (wsuipa)  
16202 %\* \textbullseye -> \textObullseye (tipx)  
16203 % U+0299 LATIN LETTER SMALL CAPITAL B; \textscb (tipa)  
16204 \DeclareTextCommand{\textscb}{PU}{\82\231}% U+0299  
16205 % U+029A LATIN SMALL LETTER CLOSED OPEN E; eopenclosed;  
16206 % \textcloseepsilon (tipa)  
16207 \DeclareTextCommand{\textcloseepsilon}{PU}{\82\232}% U+029A  
16208 % U+029B LATIN LETTER SMALL CAPITAL G WITH HOOK; Gsmallhook;  
16209 % \texthtscg (tipa)  
16210 \DeclareTextCommand{\texthtscg}{PU}{\82\233}% U+029B  
16211 % U+029C LATIN LETTER SMALL CAPITAL H; \textsch (tipa)  
16212 \DeclareTextCommand{\textsch}{PU}{\82\234}% U+029C  
16213 % U+029D LATIN SMALL LETTER J WITH CROSSED-TAIL; jcros-  
tail; \textcdj (tipa)  
16214 \DeclareTextCommand{\textctj}{PU}{\82\235}% U+029D  
16215 %\* \textctj -> \textctjvar (tipx)  
16216 % U+029E LATIN SMALL LETTER TURNED K; kturned; \textturnk (tipa)  
16217 \DeclareTextCommand{\textturnk}{PU}{\82\236}% U+029E  
16218 %\* \textturnk -> \textturnsck (tipx)  
16219 % U+029F LATIN LETTER SMALL CAPITAL L; \textsl (tipa)  
16220 \DeclareTextCommand{\textsl}{PU}{\82\237}% U+029F  
16221 % U+02A0 LATIN SMALL LETTER Q WITH HOOK; qhook; \texthtq (tipa)  
16222 \DeclareTextCommand{\texthtq}{PU}{\82\240}% U+02A0  
16223 % U+02A1 LATIN LETTER GLOTTAL STOP WITH STROKE; glottalstop-  
stroke;  
16224 % \textbarglotstop (tipa)  
16225 \DeclareTextCommand{\textbarglotstop}{PU}{\82\241}% U+02A1  
16226 % U+02A2 LATIN LETTER REVERSED GLOTTAL STOP WITH STROKE/  
16227 % LATIN LETTER REVERSED GLOTTAL STOP BAR; glottalstopstrokere-  
versed;  
16228 % \textbarrevglotstop (tipa)  
16229 \DeclareTextCommand{\textbarrevglotstop}{PU}{\82\242}% U+02A2  
16230 % U+02A3 LATIN SMALL LETTER DZ DIGRAPH; dzaltone; \textdzlig (tipa)  
16231 \DeclareTextCommand{\textdzlig}{PU}{\82\243}% U+02A3  
16232 %\* \textdzlig -> \dz (wsuipa)  
16233 % U+02A4 LATIN SMALL LETTER DEZH DIGRAPH; dezh; \textdyogh-  
lig (tipa)

16234 \DeclareTextCommand{\textdyoghlig}{PU}{\82\244}% U+02A4  
 16235 % U+02A5 LATIN SMALL LETTER DZ DIGRAPH WITH CURL; dzcurl;  
 16236 % \textdctzlig (tipa)  
 16237 \DeclareTextCommand{\textdctzlig}{PU}{\82\245}% U+02A5  
 16238 % U+02A6 LATIN SMALL LETTER TS DIGRAPH; ts; \texttslig (tipa)  
 16239 \DeclareTextCommand{\texttslig}{PU}{\82\246}% U+02A6  
 16240 % U+02A7 LATIN SMALL LETTER TESH DIGRAPH; tesh; \textteshlig (tipa)  
 16241 \DeclareTextCommand{\textteshlig}{PU}{\82\247}% U+02A7  
 16242 %\* \textteshlig -> \tesh (wsuipa)  
 16243 % U+02A8 LATIN SMALL LETTER TC DIGRAPH WITH CURL; tccurl;  
 16244 % \texttctclig (tipa)  
 16245 \DeclareTextCommand{\texttctclig}{PU}{\82\250}% U+02A8  
 16246 % U+02AE LATIN SMALL LETTER TURNED H WITH FISHHOOK;  
 16247 % \textlhtlongy (tipa)  
 16248 \DeclareTextCommand{\textlhtlongy}{PU}{\82\256}% U+02AE  
 16249 % U+02AF LATIN SMALL LETTER TURNED H WITH FISHHOOK AND TAIL;  
 16250 % \textvibyy (tipa)  
 16251 \DeclareTextCommand{\textvibyy}{PU}{\82\257}% U+02AF

#### 47.2.7 Spacing Modifier Letters: U+02B0 to U+02FF

16252 % U+02BD MODIFIER LETTER REVERSED COMMA;  
 16253 % commareversedmod, afi64937; \textrevapostrophe (tipa)  
 16254 \DeclareTextCommand{\textrevapostrophe}{PU}{\82\275}% U+02BD  
 16255 % U+02C0 MODIFIER LETTER GLOTTAL STOP; glottalstopmod;  
 16256 % \textraiseglotstop (tipa)  
 16257 \DeclareTextCommand{\textraiseglotstop}{PU}{\82\300}% U+02C0  
 16258 % U+02C2 MODIFIER LETTER LEFT ARROWHEAD; arrowheadleftmod;  
 16259 % \textlptr (tipa)  
 16260 \DeclareTextCommand{\textlptr}{PU}{\82\302}% U+02C2  
 16261 % U+02C3 MODIFIER LETTER RIGHT ARROWHEAD; arrowheadrightmod;  
 16262 % \textrptr (tipa)  
 16263 \DeclareTextCommand{\textrptr}{PU}{\82\303}% U+02C3  
 16264 % U+02C7 CARON; caron  
 16265 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7  
 16266 % U+02C8 MODIFIER LETTER VERTICAL LINE; verticallinemod;  
 16267 % \textprimstress (tipa)  
 16268 \DeclareTextCommand{\textprimstress}{PU}{\82\310}% U+02C8  
 16269 % U+02CC MODIFIER LETTER LOW VERTICAL LINE; verticallinelowmod;  
 16270 % \textsecstress (tipa)  
 16271 \DeclareTextCommand{\textsecstress}{PU}{\82\314}% U+02CC  
 16272 % U+02D0 MODIFIER LETTER TRIANGULAR COLON; colontriangularmod;  
 16273 % \textlengthmark (tipa)  
 16274 \DeclareTextCommand{\textlengthmark}{PU}{\82\320}% U+02D0  
 16275 % U+02D1 MODIFIER LETTER HALF TRIANGULAR COLON; colontriangu-  
 16276 % larhalfmod;  
 16276 % \texthalflength (tipa)  
 16277 \DeclareTextCommand{\texthalflength}{PU}{\82\321}% U+02D1  
 16278 % U+02D8 BREVE; breve  
 16279 \DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8  
 16280 % U+02D9 DOT ABOVE; dotaccent  
 16281 \DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9  
 16282 % U+02DA RING ABOVE; ring  
 16283 \DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA  
 16284 % U+02DB OGONEK; ogonek

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16285 \DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB
16286 % U+02DC SMALL TILDE; ilde, *tilde
16287 \DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC
16288 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut
16289 \DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD
16290 \DeclareTextCommand{\textacutedbl}{PU}{\82\335}% U+02DD
16291 % U+02F3 MODIFIER LETTER LOW RING
16292 \DeclareTextCommand{\textringlow}{PU}{\82\363}% U+02F3
16293 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT
16294 \DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5
16295 % U+02F7 MODIFIER LETTER LOW TILDE
16296 \DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7
16297 % U+02F9 MODIFIER LETTER BEGIN HIGH TONE; \textopencorner (tipa)
16298 \DeclareTextCommand{\textopencorner}{PU}{\82\371}% U+02F9
16299 % U+02FA MODIFIER LETTER END HIGH TONE; \textcorner (tipa)
16300 \DeclareTextCommand{\textcorner}{PU}{\82\372}% U+02FA

```

#### 47.2.8 Combining Diacritical Marks: U+0300 to U+036F

```

16301 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb
16302 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017}% U+030F
16303 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb
16304 \DeclareTextCommand{\textnewtie}{PU}{\83\021}% U+0311
16305 % U+0323 COMBINING DOT BELOW; dotbelowcmb, *dotbelowcomb
16306 \DeclareTextCommand{\textdotbelow}{PU}{\83\043}% U+0323
16307 % U+0331 COMBINING MACRON BELOW; macronbelowcmb
16308 \DeclareTextCommand{\textmacronbelow}{PU}{\83\061}% U+0331
16309 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddou-
    blecmb
16310 \DeclareTextCommand{\texttie}{PU}{\83\141}% U+0361

```

#### 47.2.9 Greek and Coptic: U+0370 to U+03FF

Greek is only loaded if \textBeta is defined.

```

16311 \ifx\textBeta\@undefined \else
16312 \input{puenc-greek.def}
16313 \fi
16314 \</puenc>

```

#### 47.2.10 Cyrillic: U+0400 to U+04FF

Thanks to Vladimir Volovich (vvv@vvv.vsu.ru) for the help with the Cyrillic glyph names. Cyrillic only loaded if \CYRDZE is defined.

```

16315 \<*puenc>
16316 \ifx\CYRDZE\@undefined \else
16317 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE
16318 \DeclareTextCompositeCommand{\`}{PU}{\CYRE}{\84\000}% U+0400
16319 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrillic, *afi10023
16320 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401
16321 \DeclareTextCompositeCommand{\"}{PU}{\CYRE}{\84\001}% U+0401
16322 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, *afi10051
16323 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402
16324 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, *afi10052
16325 \DeclareTextCompositeCommand{\'}{PU}{\CYRG}{\84\003}% U+0403
16326 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrillic, *afi10053

```

16327 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404  
16328 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzeyrillic, \*afii10054  
16329 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405  
16330 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I;  
16331 % Icyrillic, \*afii10055  
16332 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406  
16333 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrillic, \*afii10056  
16334 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407  
16335 \DeclareTextCompositeCommand{"}{PU}{\CYRII}{\84\007}% U+0407  
16336 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, \*afii10057  
16337 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408  
16338 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, \*afii10058  
16339 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409  
16340 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, \*afii10059  
16341 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A  
16342 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, \*afii10060  
16343 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B  
16344 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, \*afii10061  
16345 \DeclareTextCompositeCommand{'}{PU}{\CYRK}{\84\014}% U+040C  
16346 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE  
16347 \DeclareTextCompositeCommand{\`}{PU}{\CYRI}{\84\015}% U+040D  
16348 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrillic, \*afii10062  
16349 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E  
16350 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\016}% U+040E  
16351 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, \*afii10145  
16352 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F  
16353 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, \*afii10017  
16354 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410  
16355 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrillic, \*afii10018  
16356 \DeclareTextCommand{\CYRB}{PU}{\84\021}% U+0411  
16357 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, \*afii10019  
16358 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412  
16359 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, \*afii10020  
16360 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413  
16361 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, \*afii10021  
16362 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414  
16363 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, \*afii10022  
16364 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415  
16365 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, \*afii10024  
16366 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416  
16367 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, \*afii10025  
16368 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417  
16369 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrillic, \*afii10026  
16370 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418  
16371 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; Iishortcyrillic, \*afii10027  
16372 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419  
16373 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}% U+0419  
16374 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, \*afii10028  
16375 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A  
16376 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, \*afii10029  
16377 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B  
16378 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, \*afii10030  
16379 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C  
16380 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, \*afii10031



16381 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D  
16382 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, \*afii10032  
16383 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E  
16384 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, \*afii10033  
16385 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F  
16386 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, \*afii10034  
16387 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420  
16388 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, \*afii10035  
16389 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421  
16390 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, \*afii10036  
16391 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422  
16392 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, \*afii10037  
16393 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423  
16394 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, \*afii10038  
16395 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424  
16396 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, \*afii10039  
16397 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425  
16398 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, \*afii10040  
16399 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426  
16400 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, \*afii10041  
16401 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427  
16402 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, \*afii10042  
16403 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428  
16404 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, \*afii10043  
16405 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429  
16406 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN;  
16407 % Hardsigncyrillic, \*afii10044  
16408 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A  
16409 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, \*afii10045  
16410 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B  
16411 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN;  
16412 % Softsigncyrillic, \*afii10046  
16413 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C  
16414 % U+042D CYRILLIC CAPITAL LETTER E; Eversedcyrillic, \*afii10047  
16415 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D  
16416 % U+042E CYRILLIC CAPITAL LETTER YU; IUcyrillic, \*afii10048  
16417 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E  
16418 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, \*afii10049  
16419 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F  
16420 % U+0430 CYRILLIC SMALL LETTER A; acyrillic, \*afii10065  
16421 \DeclareTextCommand{\cyra}{PU}{\84\060}% U+0430  
16422 % U+0431 CYRILLIC SMALL LETTER BE; \*afii10066, becyrillic  
16423 \DeclareTextCommand{\cyrb}{PU}{\84\061}% U+0431  
16424 % U+0432 CYRILLIC SMALL LETTER VE; \*afii10067, vecyrillic  
16425 \DeclareTextCommand{\cyrv}{PU}{\84\062}% U+0432  
16426 % U+0433 CYRILLIC SMALL LETTER GHE; \*afii10068, gecyrillic  
16427 \DeclareTextCommand{\cyrg}{PU}{\84\063}% U+0433  
16428 % U+0434 CYRILLIC SMALL LETTER DE; \*afii10069, decyrillic  
16429 \DeclareTextCommand{\cyrd}{PU}{\84\064}% U+0434  
16430 % U+0435 CYRILLIC SMALL LETTER IE; \*afii10070, iecyrillic  
16431 \DeclareTextCommand{\cyre}{PU}{\84\065}% U+0435  
16432 % U+0436 CYRILLIC SMALL LETTER ZHE; \*afii10072, zhacyrillic  
16433 \DeclareTextCommand{\cyrzh}{PU}{\84\066}% U+0436  
16434 % U+0437 CYRILLIC SMALL LETTER ZE; \*afii10073, zecyrillic

16435 \DeclareTextCommand{\cyrz}{PU}{\84\067}% U+0437  
16436 % U+0438 CYRILLIC SMALL LETTER I; \*afii10074, iicyrillic  
16437 \DeclareTextCommand{\cyri}{PU}{\84\070}% U+0438  
16438 % U+0439 CYRILLIC SMALL LETTER SHORT I; \*afii10075, iishortcyrillic  
16439 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% U+0439  
16440 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}% U+0439  
16441 % U+043A CYRILLIC SMALL LETTER KA; \*afii10076, kacyrillic  
16442 \DeclareTextCommand{\cyrk}{PU}{\84\072}% U+043A  
16443 % U+043B CYRILLIC SMALL LETTER EL; \*afii10077, elcyrillic  
16444 \DeclareTextCommand{\cyrll}{PU}{\84\073}% U+043B  
16445 % U+043C CYRILLIC SMALL LETTER EM; \*afii10078, emcyrillic  
16446 \DeclareTextCommand{\cyrm}{PU}{\84\074}% U+043C  
16447 % U+043D CYRILLIC SMALL LETTER EN; \*afii10079, encyrillic  
16448 \DeclareTextCommand{\cyrn}{PU}{\84\075}% U+043D  
16449 % U+043E CYRILLIC SMALL LETTER O; \*afii10080, ocyrillic  
16450 \DeclareTextCommand{\cyro}{PU}{\84\076}% U+043E  
16451 % U+043F CYRILLIC SMALL LETTER PE; \*afii10081, pecyrillic  
16452 \DeclareTextCommand{\cyrp}{PU}{\84\077}% U+043F  
16453 % U+0440 CYRILLIC SMALL LETTER ER; \*afii10082, ercyrillic  
16454 \DeclareTextCommand{\cyrr}{PU}{\84\100}% U+0440  
16455 % U+0441 CYRILLIC SMALL LETTER ES; \*afii10083, escyrillic  
16456 \DeclareTextCommand{\cyrs}{PU}{\84\101}% U+0441  
16457 % U+0442 CYRILLIC SMALL LETTER TE; \*afii10084, tecyrillic  
16458 \DeclareTextCommand{\cyrt}{PU}{\84\102}% U+0442  
16459 % U+0443 CYRILLIC SMALL LETTER U; \*afii10085, ucyrillic  
16460 \DeclareTextCommand{\cyru}{PU}{\84\103}% U+0443  
16461 % U+0444 CYRILLIC SMALL LETTER EF; \*afii10086, efcyrillic  
16462 \DeclareTextCommand{\cyrf}{PU}{\84\104}% U+0444  
16463 % U+0445 CYRILLIC SMALL LETTER HA; \*afii10087, khacyrillic  
16464 \DeclareTextCommand{\cyrh}{PU}{\84\105}% U+0445  
16465 % U+0446 CYRILLIC SMALL LETTER TSE; \*afii10088, tsecyrillic  
16466 \DeclareTextCommand{\cyrc}{PU}{\84\106}% U+0446  
16467 % U+0447 CYRILLIC SMALL LETTER CHE; \*afii10089, checyrillic  
16468 \DeclareTextCommand{\cyrch}{PU}{\84\107}% U+0447  
16469 % U+0448 CYRILLIC SMALL LETTER SHA; \*afii10090, shacyrillic  
16470 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% U+0448  
16471 % U+0449 CYRILLIC SMALL LETTER SHCHA; \*afii10091, shchacyrillic  
16472 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% U+0449  
16473 % U+044A CYRILLIC SMALL LETTER HARD SIGN; \*afii10092, hardsigncyril-  
lic  
16474 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% U+044A  
16475 %\* \cyrhrdsn -> \hardsign (tipa)  
16476 % U+044B CYRILLIC SMALL LETTER YERU; \*afii10093, yericyrillic  
16477 \DeclareTextCommand{\cyrry}{PU}{\84\113}% U+044B  
16478 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; \*afii10094, softsigncyrillic  
16479 \DeclareTextCommand{\cyrsftsn}{PU}{\84\114}% U+044C  
16480 %\* \cyrsftsn -> \softsign (tipa)  
16481 % U+044D CYRILLIC SMALL LETTER E; \*afii10095, ereversedcyrillic  
16482 \DeclareTextCommand{\cyrrerev}{PU}{\84\115}% U+044D  
16483 % U+044E CYRILLIC SMALL LETTER YU; \*afii10096, iucyrillic  
16484 \DeclareTextCommand{\cyryu}{PU}{\84\116}% U+044E  
16485 % U+044F CYRILLIC SMALL LETTER YA; \*afii10097, iacyrillic  
16486 \DeclareTextCommand{\cyrya}{PU}{\84\117}% U+044F  
16487 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE

16488 \DeclareTextCompositeCommand{\`}{PU}{\cyre}{\84\120}% U+0450  
16489 % U+0451 CYRILLIC SMALL LETTER IO; \*afii10071, iocyrillic  
16490 \DeclareTextCommand{\cyryo}{PU}{\84\121}% U+0451  
16491 \DeclareTextCompositeCommand{\"}{PU}{\cyre}{\84\121}% U+0451  
16492 % U+0452 CYRILLIC SMALL LETTER DJE; \*afii10099, djecyrillic  
16493 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% U+0452  
16494 % U+0453 CYRILLIC SMALL LETTER GJE; \*afii10100, gjecyrillic  
16495 \DeclareTextCompositeCommand{\'}{PU}{\cyrg}{\84\123}% U+0453  
16496 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; \*afii10101, ecyrillic  
16497 \DeclareTextCommand{\cyrie}{PU}{\84\124}% U+0454  
16498 % U+0455 CYRILLIC SMALL LETTER DZE; \*afii10102, dzecyrillic  
16499 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% U+0455  
16500 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I;  
16501 % \*afii10103, icyrillic  
16502 \DeclareTextCommand{\cyrii}{PU}{\84\126}% U+0456  
16503 % U+0457 CYRILLIC SMALL LETTER YI; \*afii10104, yicyrillic  
16504 \DeclareTextCommand{\cyryi}{PU}{\84\127}% U+0457  
16505 \DeclareTextCompositeCommand{\"}{PU}{\cyrii}{\84\127}% U+0457  
16506 % U+0458 CYRILLIC SMALL LETTER JE; \*afii10105, jecyrillic  
16507 \DeclareTextCommand{\cyrje}{PU}{\84\130}% U+0458  
16508 % U+0459 CYRILLIC SMALL LETTER LJE; \*afii10106, ljecyrillic  
16509 \DeclareTextCommand{\cyrkje}{PU}{\84\131}% U+0459  
16510 % U+045A CYRILLIC SMALL LETTER NJE; \*afii10107, njecyrillic  
16511 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% U+045A  
16512 % U+045B CYRILLIC SMALL LETTER TSHE; \*afii10108, tshecyrillic  
16513 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% U+045B  
16514 % U+045C CYRILLIC SMALL LETTER KJE; \*afii10109, kjecyrillic  
16515 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% U+045C  
16516 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE  
16517 \DeclareTextCompositeCommand{\`}{PU}{\cyri}{\84\135}% U+045D  
16518 % U+045E CYRILLIC SMALL LETTER SHORT U; \*afii10110, ushortcyrillic  
16519 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E  
16520 \DeclareTextCompositeCommand{\U}{PU}{\curu}{\84\136}% U+045E  
16521 % U+045F CYRILLIC SMALL LETTER DZHE; \*afii10193, dzhecyrillic  
16522 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% U+045F  
16523 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic  
16524 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460  
16525 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrillic  
16526 \DeclareTextCommand{\cyromega}{PU}{\84\141}% U+0461  
16527 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, \*afii10146  
16528 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462  
16529 % U+0463 CYRILLIC SMALL LETTER YAT; \*afii10194, yatcyrillic  
16530 \DeclareTextCommand{\cyryat}{PU}{\84\143}% U+0463  
16531 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic  
16532 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464  
16533 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrillic  
16534 \DeclareTextCommand{\cyriote}{PU}{\84\145}% U+0465  
16535 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslitlecyrillic  
16536 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466  
16537 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslitlecyrillic  
16538 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467  
16539 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslitlei-  
otifiedcyrillic  
16540 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468

16541 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslittleioti-  
 fiedcyrillic  
 16542 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469  
 16543 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbigcyrillic  
 16544 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A  
 16545 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbigcyrillic  
 16546 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B  
 16547 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbigiotified-  
 cyrillic  
 16548 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C  
 16549 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbigiotified-  
 cyrillic  
 16550 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D  
 16551 % U+046E CYRILLIC CAPITAL LETTER KSI; Ksicyrillic  
 16552 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% U+046E  
 16553 % U+046F CYRILLIC SMALL LETTER KSI; ksicyrillic  
 16554 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F  
 16555 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psicyrillic  
 16556 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470  
 16557 % U+0471 CYRILLIC SMALL LETTER PSI; psicyrillic  
 16558 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471  
 16559 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, \*afii10147  
 16560 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472  
 16561 % U+0473 CYRILLIC SMALL LETTER FITA; \*afii10195, fitacyrillic  
 16562 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473  
 16563 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, \*afii10148  
 16564 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474  
 16565 % U+0475 CYRILLIC SMALL LETTER IZHITSA; \*afii10196, izhitsacyrillic  
 16566 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475  
 16567 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE  
 16568 % GRAVE ACCENT; Izhitsadblgravecyrillic  
 16569 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% U+0476  
 16570 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE  
 16571 % GRAVE ACCENT; izhitsadblgravecyrillic  
 16572 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477  
 16573 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic  
 16574 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478  
 16575 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic  
 16576 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479  
 16577 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyril-  
 lic  
 16578 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A  
 16579 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic  
 16580 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B  
 16581 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatitlo-  
 cyrillic  
 16582 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C  
 16583 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlo-  
 cyrillic  
 16584 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D  
 16585 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic  
 16586 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E  
 16587 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic  
 16588 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F

16589 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic  
 16590 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480  
 16591 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic  
 16592 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481  
 16593 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic  
 16594 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% U+0482  
 \84\203: U+0483 COMBINING CYRILLIC TITLO; titlocyrilliccmb  
 \84\204: U+0484 COMBINING CYRILLIC PALATALIZATION; palatalization-  
 cyrilliccmb  
 \84\205: U+0485 COMBINING CYRILLIC DASIA PNEUMATA; dasiapneu-  
 matacyrilliccmb  
 \84\206: U+0486 COMBINING CYRILLIC PSILI PNEUMATA; psilipneumat-  
 acyrilliccmb  
 \84\207: U+0487 COMBINING CYRILLIC POKRYTIE  
 \84\210: U+0488 COMBINING CYRILLIC HUNDRED THOUSANDS SIGN  
 \84\211: U+0489 COMBINING CYRILLIC MILLIONS SIGN  
 16595 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL  
 16596 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A  
 16597 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL  
 16598 \DeclareTextCommand{\cyrishrtdsc}{PU}{\84\213}% U+048B  
 16599 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN  
 16600 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C  
 16601 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN  
 16602 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D  
 16603 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK  
 16604 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E  
 16605 % U+048F CYRILLIC SMALL LETTER ER WITH TICK  
 16606 \DeclareTextCommand{\cyrrtick}{PU}{\84\217}% U+048F  
 16607 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturn-  
 cyrillic, \*afii10050  
 16608 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490  
 16609 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; \*afii10098, ghe-  
 upturncyrillic  
 16610 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491  
 16611 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestroke-  
 cyrillic  
 16612 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492  
 16613 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic  
 16614 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% U+0493  
 16615 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK;  
 16616 % Ghemiddlehookcyrillic  
 16617 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494  
 16618 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK;  
 16619 % ghemiddlehookcyrillic  
 16620 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495  
 16621 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER;  
 16622 % Zhedescendercyrillic  
 16623 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496  
 16624 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER;  
 16625 % zhedescendercyrillic  
 16626 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% U+0497  
 16627 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescen-  
 dercyrillic

16628 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498  
16629 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498  
16630 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescender-cyrillic  
16631 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% U+0499  
16632 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499  
16633 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescendercyrillic  
16634 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A  
16635 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kadesendercyrillic  
16636 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% U+049B  
16637 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE;  
16638 % Kavertikalstrokecyrillic  
16639 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C  
16640 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE;  
16641 % kavertikalstrokecyrillic  
16642 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D  
16643 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic  
16644 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E  
16645 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic  
16646 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% U+049F  
16647 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic  
16648 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0  
16649 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic  
16650 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1  
16651 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescendercyrillic  
16652 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2  
16653 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endescendercyrillic  
16654 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3  
16655 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic  
16656 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4  
16657 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic  
16658 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5  
16659 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemiddlehookcyrillic  
16660 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6  
16661 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddlehookcyrillic  
16662 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7  
16663 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyrillic  
16664 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8  
16665 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic  
16666 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% U+04A9  
16667 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescendercyrillic  
16668 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA  
16669 \DeclareTextCompositeCommand{\CYRSDSC}{PU}{\CYRS}{\84\252}% U+04AA  
16670 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescendercyrillic  
16671 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% U+04AB

16672 \DeclareTextCompositeCommand{\k}{PU}{\cyr}{\84\253}% U+04AB  
 16673 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescendercyrillic  
 16674 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC  
 16675 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescendercyrillic  
 16676 \DeclareTextCommand{\cyrt dsc}{PU}{\84\255}% U+04AD  
 16677 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic  
 16678 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE  
 16679 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; ustraightcyrillic  
 16680 \DeclareTextCommand{\cyry}{PU}{\84\257}% U+04AF  
 16681 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Ustraightstrokecyrillic  
 16682 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0  
 16683 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; usstraightstrokecyrillic  
 16684 \DeclareTextCommand{\cyryhcrs}{PU}{\84\261}% U+04B1  
 16685 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hadescendercyrillic  
 16686 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% U+04B2  
 16687 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadescendercyrillic  
 16688 \DeclareTextCommand{\cyrh dsc}{PU}{\84\263}% U+04B3  
 16689 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetsecyrillic  
 16690 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4  
 16691 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetsecyrillic  
 16692 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% U+04B5  
 16693 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER;  
 16694 % Chedescendercyrillic  
 16695 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6  
 16696 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescendercyrillic  
 16697 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% U+04B7  
 16698 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE;  
 16699 % Cheverticalstrokecyrillic  
 16700 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8  
 16701 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE;  
 16702 % cheverticalstrokecyrillic  
 16703 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9  
 16704 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic  
 16705 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA  
 16706 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic  
 16707 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB  
 16708 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasiancyrillic  
 16709 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC  
 16710 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyrillic  
 16711 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% U+04BD  
 16712 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCENDER; Chedescenderabkhasiancyrillic  
 16713 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE  
 16714 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE  
 16715 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCEN-

DER; chedescenderabkhasiancyrillic  
16716 \DeclareTextCommand{\cyrahchdsc}{PU}{\84\277}% U+04BF  
16717 \DeclareTextCompositeCommand{\k}{PU}{\cyrahch}{\84\277}% U+04BF  
16718 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic  
16719 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0  
16720 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic  
16721 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1  
16722 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic  
16723 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% U+04C2  
16724 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic  
16725 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3  
16726 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic  
16727 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% U+04C4  
16728 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL  
16729 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5  
16730 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL  
16731 \DeclareTextCommand{\cyrldsc}{PU}{\84\306}% U+04C6  
16732 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic  
16733 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7  
16734 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic  
16735 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% U+04C8  
16736 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakas-  
siancyrillic  
16737 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB  
16738 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassian-  
cyrillic  
16739 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% U+04CC  
16740 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL  
16741 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD  
16742 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL  
16743 \DeclareTextCommand{\cyrmdsc}{PU}{\84\316}% U+04CE  
\84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA  
16744 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevecyrillic  
16745 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0  
16746 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevecyrillic  
16747 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% U+04D1  
16748 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyrl-  
lic  
16749 \DeclareTextCompositeCommand{\"}{PU}{\CYRA}{\84\322}% U+04D2  
16750 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresiscyrillic  
16751 \DeclareTextCompositeCommand{\"}{PU}{\cyra}{\84\323}% U+04D3  
16752 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aiecyrillic  
16753 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4  
16754 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aiecyrillic  
16755 \DeclareTextCommand{\cyrae}{PU}{\84\325}% U+04D5  
16756 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrevecyrillic  
16757 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6  
16758 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrevecyrillic  
16759 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% U+04D7  
16760 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwacyrillic  
16761 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8  
16762 % U+04D9 CYRILLIC SMALL LETTER SCHWA; \*afi10846, schwacyrillic  
16763 \DeclareTextCommand{\cyrswa}{PU}{\84\331}% U+04D9  
16764 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS;



16765 % Schwadieresis Cyrillic  
 16766 \DeclareTextCompositeCommand{"}{PU}{\CYRSCHWA}{\84\332}% U+04DA  
 16767 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS;  
 16768 % schwadieresis Cyrillic  
 16769 \DeclareTextCompositeCommand{"}{PU}{\cyrschwa}{\84\333}% U+04DB  
 16770 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhedieresis Cyrillic  
 16771 \DeclareTextCompositeCommand{"}{PU}{\CYRZH}{\84\334}% U+04DC  
 16772 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedieresis Cyrillic  
 16773 \DeclareTextCompositeCommand{"}{PU}{\cyrzh}{\84\335}% U+04DD  
 16774 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedieresis Cyrillic  
 16775 \DeclareTextCompositeCommand{"}{PU}{\CYRZ}{\84\336}% U+04DE  
 16776 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedieresis Cyrillic  
 16777 \DeclareTextCompositeCommand{"}{PU}{\cyrz}{\84\337}% U+04DF  
 16778 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasian Cyrillic  
 16779 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0  
 16780 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasian Cyrillic  
 16781 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% U+04E1  
 16782 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Imacron Cyrillic  
 16783 \DeclareTextCompositeCommand{=}{PU}{\CYRI}{\84\342}% U+04E2  
 16784 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacron Cyrillic  
 16785 \DeclareTextCompositeCommand{=}{PU}{\cyri}{\84\343}% U+04E3  
 16786 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresis Cyrillic  
 16787 \DeclareTextCompositeCommand{"}{PU}{\CYRI}{\84\344}% U+04E4  
 16788 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresis Cyrillic  
 16789 \DeclareTextCompositeCommand{"}{PU}{\cyri}{\84\345}% U+04E5  
 16790 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresis Cyrillic  
 16791 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% U+04E6  
 16792 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresis Cyrillic  
 16793 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% U+04E7  
 16794 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarred Cyrillic  
 16795 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8  
 16796 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarred Cyrillic  
 16797 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9  
 16798 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERESIS;  
 16799 % Obarreddieresis Cyrillic  
 16800 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% U+04EA  
 16801 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS;  
 16802 % obarreddieresis Cyrillic  
 16803 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% U+04EB  
 16804 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS  
 16805 \DeclareTextCompositeCommand{"}{PU}{\CYREREV}{\84\354}% U+04EC  
 16806 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS  
 16807 \DeclareTextCompositeCommand{"}{PU}{\cyrerev}{\84\355}% U+04ED  
 16808 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacron Cyrillic  
 16809 \DeclareTextCompositeCommand{=}{PU}{\CYRU}{\84\356}% U+04EE  
 16810 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacron Cyrillic  
 16811 \DeclareTextCompositeCommand{=}{PU}{\cyru}{\84\357}% U+04EF

16812 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udiereiscyrillic  
 16813 \DeclareTextCompositeCommand{\"}{PU}{\CYRU}{\84\360}% U+04F0  
 16814 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udiereiscyrillic  
 16815 \DeclareTextCompositeCommand{\"}{PU}{\cyru}{\84\361}% U+04F1  
 16816 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhun-  
 garumlautcyrillic  
 16817 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U+04F2  
 16818 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhun-  
 garumlautcyrillic  
 16819 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% U+04F3  
 16820 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chediere-  
 siscyrillic  
 16821 \DeclareTextCompositeCommand{\"}{PU}{\CYRCH}{\84\364}% U+04F4  
 16822 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieres-  
 iscyrillic  
 16823 \DeclareTextCompositeCommand{\"}{PU}{\cyrch}{\84\365}% U+04F5  
 16824 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER  
 16825 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6  
 16826 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER  
 16827 \DeclareTextCommand{\cyrgdsc}{PU}{\84\367}% U+04F7  
 16828 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudiere-  
 siscyrillic  
 16829 \DeclareTextCompositeCommand{\"}{PU}{\CYRERY}{\84\370}% U+04F8  
 16830 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudiere-  
 siscyrillic  
 16831 \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  
 16832 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK  
 16833 \DeclareTextCommand{\CYRHHK}{PU}{\84\374}% U+04FC  
 16834 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK  
 16835 \DeclareTextCommand{\cyrhhk}{PU}{\84\375}% U+04FD  
 16836 \fi  
 \84\376: U+04FE CYRILLIC CAPITAL LETTER HA WITH STROKE  
 \84\377: U+04FF CYRILLIC SMALL LETTER HA WITH STROKE

#### 47.2.11 Hebrew: U+0590 to U+05FF

Macro names are taken from `he8enc.def`. `hebrew` is only loaded if `\hebdalet` is defined

16837 \ifx\hebdalet\@undefined\else  
 16838 % U+05C3 HEBREW PUNCTUATION SOF PASUQ  
 16839 \DeclareTextCommand{\sofpasuq}{PU}{\85\303}% U+05C3  
 16840 % U+05D0 HEBREW LETTER ALEF  
 16841 \DeclareTextCommand{\hebalef}{PU}{\85\320}% U+05D0  
 16842 % U+05D1 HEBREW LETTER BET  
 16843 \DeclareTextCommand{\hebbet}{PU}{\85\321}% U+05D1  
 16844 % U+05D2 HEBREW LETTER GIMEL  
 16845 \DeclareTextCommand{\hebgimel}{PU}{\85\322}% U+05D2

16846 % U+05D3 HEBREW LETTER DALET  
16847 \DeclareTextCommand{\hebdalet}{PU}{\85\323}% U+05D3  
16848 % U+05D4 HEBREW LETTER HE  
16849 \DeclareTextCommand{\hebhe}{PU}{\85\324}% U+05D4  
16850 % U+05D5 HEBREW LETTER VAV  
16851 \DeclareTextCommand{\hebvav}{PU}{\85\325}% U+05D5  
16852 % U+05D6 HEBREW LETTER ZAYIN  
16853 \DeclareTextCommand{\hebzayin}{PU}{\85\326}% U+05D6  
16854 % U+05D7 HEBREW LETTER HET  
16855 \DeclareTextCommand{\hebhhet}{PU}{\85\327}% U+05D7  
16856 % U+05D8 HEBREW LETTER TET  
16857 \DeclareTextCommand{\hebtet}{PU}{\85\330}% U+05D8  
16858 % U+05D9 HEBREW LETTER YOD  
16859 \DeclareTextCommand{\hebyod}{PU}{\85\331}% U+05D9  
16860 % U+05DA HEBREW LETTER FINAL KAF  
16861 \DeclareTextCommand{\hebfinalkaf}{PU}{\85\332}% U+05DA  
16862 % U+05DB HEBREW LETTER KAF  
16863 \DeclareTextCommand{\hebkaf}{PU}{\85\333}% U+05DB  
16864 % U+05DC HEBREW LETTER LAMED  
16865 \DeclareTextCommand{\heblamed}{PU}{\85\334}% U+05DC  
16866 % U+05DD HEBREW LETTER FINAL MEM  
16867 \DeclareTextCommand{\hebfinalmem}{PU}{\85\335}% U+05DD  
16868 % U+05DE HEBREW LETTER MEM  
16869 \DeclareTextCommand{\hebmeme}{PU}{\85\336}% U+05DE  
16870 % U+05DF HEBREW LETTER FINAL NUN  
16871 \DeclareTextCommand{\hebfinalnun}{PU}{\85\337}% U+05DF  
16872 % U+05E0 HEBREW LETTER NUN  
16873 \DeclareTextCommand{\hebnun}{PU}{\85\340}% U+05E0  
16874 % U+05E1 HEBREW LETTER SAMEKH  
16875 \DeclareTextCommand{\hebsamekh}{PU}{\85\341}% U+05E1  
16876 % U+05E2 HEBREW LETTER AYIN  
16877 \DeclareTextCommand{\hebayin}{PU}{\85\342}% U+05E2  
16878 % U+05E3 HEBREW LETTER FINAL PE  
16879 \DeclareTextCommand{\hebfinalpe}{PU}{\85\343}% U+05E3  
16880 % U+05E4 HEBREW LETTER PE  
16881 \DeclareTextCommand{\hebpe}{PU}{\85\344}% U+05E4  
16882 % U+05E5 HEBREW LETTER FINAL TSADI  
16883 \DeclareTextCommand{\hebfinaltsadi}{PU}{\85\345}% U+05E5  
16884 % U+05E6 HEBREW LETTER TSADI  
16885 \DeclareTextCommand{\hebtsadi}{PU}{\85\346}% U+05E6  
16886 % U+05E7 HEBREW LETTER QOF  
16887 \DeclareTextCommand{\hebqof}{PU}{\85\347}% U+05E7  
16888 % U+05E8 HEBREW LETTER RESH  
16889 \DeclareTextCommand{\hebresh}{PU}{\85\350}% U+05E8  
16890 % U+05E9 HEBREW LETTER SHIN  
16891 \DeclareTextCommand{\hebshin}{PU}{\85\351}% U+05E9  
16892 %\* \hebshin -> \hebsin (he8)  
16893 % U+05EA HEBREW LETTER TAV  
16894 \DeclareTextCommand{\hebtav}{PU}{\85\352}% U+05EA  
16895 % U+05F0 HEBREW LIGATURE YIDDISH DOUBLE VAV  
16896 \DeclareTextCommand{\doublevav}{PU}{\85\360}% U+05F0  
16897 % U+05F1 HEBREW LIGATURE YIDDISH VAV YOD  
16898 \DeclareTextCommand{\vavyod}{PU}{\85\361}% U+05F1  
16899 % U+05F2 HEBREW LIGATURE YIDDISH DOUBLE YOD

16900 \DeclareTextCommand{\doubleyod}{PU}{\85\362}% U+05F2  
 16901 \fi

#### 47.2.12 Thai: U+0E00 to U+0E7F

16902 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai  
 16903 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

#### 47.2.13 Phonetic Extensions: U+1D00 to U+1D7F

16904 % U+1D00 LATIN LETTER SMALL CAPITAL A; \textscA (tipa)  
 16905 \DeclareTextCommand{\textscA}{PU}{\9035\000}% U+1D00  
 16906 % U+1D05 LATIN LETTER SMALL CAPITAL D; \scD (wsuipa)  
 16907 \DeclareTextCommand{\textscD}{PU}{\9035\005}% U+1D05  
 16908 % U+1D07 LATIN LETTER SMALL CAPITAL E; \textscE (tipa)  
 16909 \DeclareTextCommand{\textscE}{PU}{\9035\007}% U+1D07  
 16910 % U+1D0A LATIN LETTER SMALL CAPITAL J; \textscJ (tipa)  
 16911 \DeclareTextCommand{\textscJ}{PU}{\9035\012}% U+1D0A  
 16912 % U+1D0B LATIN LETTER SMALL CAPITAL K; \textscK (tipx)  
 16913 \DeclareTextCommand{\textscK}{PU}{\9035\013}% U+1D0B  
 16914 %\* \textscK -> \textscK (tipx)  
 16915 % U+1D0D LATIN LETTER SMALL CAPITAL M; \textscM (tipx)  
 16916 \DeclareTextCommand{\textscM}{PU}{\9035\015}% U+1D0D  
 16917 %\* \textscM -> \textscM (tipx)  
 16918 % U+1D18 LATIN LETTER SMALL CAPITAL P; \textscP (tipx)  
 16919 \DeclareTextCommand{\textscP}{PU}{\9035\030}% U+1D18  
 16920 %\* \textscP -> \textscP (tipx)  
 16921 % U+1D19 LATIN LETTER SMALL CAPITAL REVERSED R; \textrevscr (tipx)  
 16922 \DeclareTextCommand{\textrevscr}{PU}{\9035\031}% U+1D19  
 16923 %\* \textrevscr -> \textrevscr (tipx)  
 16924 % U+1D1C LATIN LETTER SMALL CAPITAL U; \textscU (tipa), \scU (wsuipa)  
 16925 \DeclareTextCommand{\textscU}{PU}{\9035\034}% U+1D1C  
 16926 % U+1D62 LATIN SUBSCRIPT SMALL LETTER I  
 16927 \DeclareTextCommand{\textsubscriptI}{PU}{\9035\142}% U+1D62  
 16928 % U+1D63 LATIN SUBSCRIPT SMALL LETTER R  
 16929 \DeclareTextCommand{\textsubscriptR}{PU}{\9035\143}% U+1D63  
 16930 % U+1D64 LATIN SUBSCRIPT SMALL LETTER U  
 16931 \DeclareTextCommand{\textsubscriptU}{PU}{\9035\144}% U+1D64  
 16932 % U+1D65 LATIN SUBSCRIPT SMALL LETTER V  
 16933 \DeclareTextCommand{\textsubscriptV}{PU}{\9035\145}% U+1D65  
 16934 % U+1D66 GREEK SUBSCRIPT SMALL LETTER BETA  
 16935 \DeclareTextCommand{\textbetainferior}{PU}{\9035\146}% U+1D66  
 16936 % U+1D67 GREEK SUBSCRIPT SMALL LETTER GAMMA  
 16937 \DeclareTextCommand{\textgammainferior}{PU}{\9035\147}% U+1D67  
 16938 % U+1D68 GREEK SUBSCRIPT SMALL LETTER RHO  
 16939 \DeclareTextCommand{\textrhoinferior}{PU}{\9035\150}% U+1D68  
 16940 % U+1D69 GREEK SUBSCRIPT SMALL LETTER PHI  
 16941 \DeclareTextCommand{\textphiinferior}{PU}{\9035\151}% U+1D69  
 16942 % U+1D6A GREEK SUBSCRIPT SMALL LETTER CHI  
 16943 \DeclareTextCommand{\textchiinferior}{PU}{\9035\152}% U+1D6A  
 16944 % U+1D7B LATIN SMALL CAPITAL LETTER I WITH STROKE;  
 16945 % \barsci (wsuipa)  
 16946 \DeclareTextCommand{\textbarsci}{PU}{\9035\173}% U+1D7B  
 16947 % U+1D7D LATIN SMALL CAPITAL LETTER P WITH STROKE; \barP (wsuipa)  
 16948 \DeclareTextCommand{\textbarP}{PU}{\9035\175}% U+1D7D

16949 % U+1D7E LATIN SMALL CAPITAL LETTER U WITH STROKE;  
 16950 % \barscu (wsuipa)  
 16951 \DeclareTextCommand{\textbarscu}{PU}{\9035\176}%\* U+1D7E

#### 47.2.14 Phonetic Extensions Supplement: U+1D80 to U+1DBF

16952 % U+1D8F LATIN SMALL LETTER A WITH RETROFLEX HOOK; \tex-  
 trhooka (tipx)  
 16953 \DeclareTextCommand{\textPurhooka}{PU}{\9035\217}% U+1D8F  
 16954 %\* \textPurhooka -> \textrhooka (tipx)  
 16955 % U+1D91 LATIN SMALL LETTER D WITH HOOK AND TAIL; \texthtr-  
 taild (tipa)  
 16956 \DeclareTextCommand{\texthtrtaild}{PU}{\9035\221}%\* U+1D91  
 16957 % U+1D92 LATIN SMALL LETTER E WITH RETROFLEX HOOK; \tex-  
 trhooke (tipx)  
 16958 \DeclareTextCommand{\textPurhooke}{PU}{\9035\222}% U+1D92  
 16959 %\* \textPurhooke -> \textrhooke (tipx)  
 16960 % U+1D93 LATIN SMALL LETTER OPEN E WITH RETROFLEX HOOK;  
 16961 % \textrhookepsilon (tipx)  
 16962 \DeclareTextCommand{\textPurhookepsilon}{PU}{\9035\223}% U+1D93  
 16963 %\* \textPurhookepsilon -> \textrhookepsilon (tipx)  
 16964 % U+1D97 LATIN SMALL LETTER OPEN O WITH RETROFLEX HOOK;  
 16965 % \textrhookopeno (tipx)  
 16966 \DeclareTextCommand{\textPurhookopeno}{PU}{\9035\227}% U+1D97  
 16967 %\* \textPurhookopeno -> \textrhookopeno (tipx)

#### 47.2.15 Latin Extended Additional: U+1E00 to U+1EFF

16968 % U+1E00 LATIN CAPITAL LETTER A WITH RING BELOW; Aringbelow  
 16969 \DeclareTextCompositeCommand{\textsubring}{PU}{A}{\9036\000}% U+1E00  
 16970 % U+1E01 LATIN SMALL LETTER A WITH RING BELOW; aringbelow  
 16971 \DeclareTextCompositeCommand{\textsubring}{PU}{a}{\9036\001}% U+1E01  
 16972 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent  
 16973 \DeclareTextCompositeCommand{\.}{PU}{B}{\9036\002}% U+1E02  
 16974 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent  
 16975 \DeclareTextCompositeCommand{\.}{PU}{b}{\9036\003}% U+1E03  
 16976 % U+1E04 LATIN CAPITAL LETTER B WITH DOT BELOW; Bdotbelow  
 16977 \DeclareTextCompositeCommand{\d}{PU}{B}{\9036\004}% U+1E04  
 16978 % U+1E05 LATIN SMALL LETTER B WITH DOT BELOW; bdotbelow  
 16979 \DeclareTextCompositeCommand{\d}{PU}{b}{\9036\005}% U+1E05  
 16980 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow  
 16981 \DeclareTextCompositeCommand{\b}{PU}{B}{\9036\006}% U+1E06  
 16982 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow  
 16983 \DeclareTextCompositeCommand{\b}{PU}{b}{\9036\007}% U+1E07  
 16984 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent  
 16985 \DeclareTextCompositeCommand{\.}{PU}{D}{\9036\012}% U+1E0A  
 16986 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent  
 16987 \DeclareTextCompositeCommand{\.}{PU}{d}{\9036\013}% U+1E0B  
 16988 % U+1E0C LATIN CAPITAL LETTER D WITH DOT BELOW; Ddotbelow  
 16989 \DeclareTextCompositeCommand{\d}{PU}{D}{\9036\014}% U+1E0C  
 16990 % U+1E0D LATIN SMALL LETTER D WITH DOT BELOW; ddotbelow  
 16991 \DeclareTextCompositeCommand{\d}{PU}{d}{\9036\015}% U+1E0D  
 16992 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow  
 16993 \DeclareTextCompositeCommand{\b}{PU}{D}{\9036\016}% U+1E0E  
 16994 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow  
 16995 \DeclareTextCompositeCommand{\b}{PU}{d}{\9036\017}% U+1E0F

16996 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla  
16997 \DeclareTextCompositeCommand{\c}{PU}{D}{\9036\020}% U+1E10  
16998 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla  
16999 \DeclareTextCompositeCommand{\c}{PU}{d}{\9036\021}% U+1E11  
17000 % U+1E12 LATIN CAPITAL LETTER D WITH CIRCUMFLEX BELOW; Dcir-  
cumflexbelow  
17001 \DeclareTextCompositeCommand{\textsubcircum}{PU}{D}{\9036\022}% U+1E12  
17002 % U+1E13 LATIN SMALL LETTER D WITH CIRCUMFLEX BELOW; dcir-  
cumflexbelow  
17003 \DeclareTextCompositeCommand{\textsubcircum}{PU}{d}{\9036\023}% U+1E13  
17004 % U+1E14 LATIN CAPITAL LETTER E WITH MACRON AND GRAVE;  
17005 % Emacrongrave  
17006 \DeclareTextCompositeCommand{\textgravemacron}{PU}{E}{\9036\024}% U+1E14  
17007 % U+1E15 LATIN SMALL LETTER E WITH MACRON AND GRAVE;  
17008 % emacrongrave  
17009 \DeclareTextCompositeCommand{\textgravemacron}{PU}{e}{\9036\025}% U+1E15  
17010 % U+1E16 LATIN CAPITAL LETTER E WITH MACRON AND ACUTE;  
17011 % Emacronacute  
17012 \DeclareTextCompositeCommand{\textacutemacron}{PU}{E}{\9036\026}% U+1E16  
17013 % U+1E17 LATIN SMALL LETTER E WITH MACRON AND ACUTE;  
17014 % emacronacute  
17015 \DeclareTextCompositeCommand{\textacutemacron}{PU}{e}{\9036\027}% U+1E17  
17016 % U+1E18 LATIN CAPITAL LETTER E WITH CIRCUMFLEX BELOW; Ecir-  
cumflexbelow  
17017 \DeclareTextCompositeCommand{\textsubcircum}{PU}{E}{\9036\030}% U+1E18  
17018 % U+1E19 LATIN SMALL LETTER E WITH CIRCUMFLEX BELOW; ecir-  
cumflexbelow  
17019 \DeclareTextCompositeCommand{\textsubcircum}{PU}{e}{\9036\031}% U+1E19  
17020 % U+1E1A LATIN CAPITAL LETTER E WITH TILDE BELOW; Etildebelow  
17021 \DeclareTextCompositeCommand{\textsubtilde}{PU}{E}{\9036\032}% U+1E1A  
17022 % U+1E1B LATIN SMALL LETTER E WITH TILDE BELOW; etildebelow  
17023 \DeclareTextCompositeCommand{\textsubtilde}{PU}{e}{\9036\033}% U+1E1B  
17024 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent  
17025 \DeclareTextCompositeCommand{\.}{PU}{F}{\9036\036}% U+1E1E  
17026 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent  
17027 \DeclareTextCompositeCommand{\.}{PU}{f}{\9036\037}% U+1E1F  
17028 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron  
17029 \DeclareTextCompositeCommand{=} {PU}{G}{\9036\040}% U+1E20  
17030 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron  
17031 \DeclareTextCompositeCommand{=} {PU}{g}{\9036\041}% U+1E21  
17032 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent  
17033 \DeclareTextCompositeCommand{\.}{PU}{H}{\9036\042}% U+1E22  
17034 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent  
17035 \DeclareTextCompositeCommand{\.}{PU}{h}{\9036\043}% U+1E23  
17036 % U+1E24 LATIN CAPITAL LETTER H WITH DOT BELOW; Hdotbelow  
17037 \DeclareTextCompositeCommand{\d}{PU}{H}{\9036\044}% U+1E24  
17038 % U+1E25 LATIN SMALL LETTER H WITH DOT BELOW; hdotbelow  
17039 \DeclareTextCompositeCommand{\d}{PU}{h}{\9036\045}% U+1E25  
17040 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis  
17041 \DeclareTextCompositeCommand{"}{PU}{H}{\9036\046}% U+1E26  
17042 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis  
17043 \DeclareTextCompositeCommand{"}{PU}{h}{\9036\047}% U+1E27  
17044 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla  
17045 \DeclareTextCompositeCommand{\c}{PU}{H}{\9036\050}% U+1E28

17046 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla  
 17047 \DeclareTextCompositeCommand{\c}{PU}{h}{\9036\051}% U+1E29  
 17048 % U+1E2A LATIN CAPITAL LETTER H WITH BREVE BELOW; Hbrevebelow  
 17049 \DeclareTextCompositeCommand{\textsubbreve}{PU}{H}{\9036\052}% U+1E2A  
 17050 % U+1E2B LATIN SMALL LETTER H WITH BREVE BELOW; hbrevebelow  
 17051 \DeclareTextCompositeCommand{\textsubbreve}{PU}{h}{\9036\053}% U+1E2B  
 17052 % U+1E2C LATIN CAPITAL LETTER I WITH TILDE BELOW; Itildebelow  
 17053 \DeclareTextCompositeCommand{\textsubtilde}{PU}{I}{\9036\054}% U+1E2C  
 17054 % U+1E2D LATIN SMALL LETTER I WITH TILDE BELOW; itildebelow  
 17055 \DeclareTextCompositeCommand{\textsubtilde}{PU}{i}{\9036\055}% U+1E2D  
 17056 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute  
 17057 \DeclareTextCompositeCommand{\'}{PU}{K}{\9036\060}% U+1E30  
 17058 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute  
 17059 \DeclareTextCompositeCommand{\'}{PU}{k}{\9036\061}% U+1E31  
 17060 % U+1E32 LATIN CAPITAL LETTER K WITH DOT BELOW; Kdotbelow  
 17061 \DeclareTextCompositeCommand{\d}{PU}{K}{\9036\062}% U+1E32  
 17062 % U+1E33 LATIN SMALL LETTER K WITH DOT BELOW; kdotbelow  
 17063 \DeclareTextCompositeCommand{\d}{PU}{k}{\9036\063}% U+1E33  
 17064 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow  
 17065 \DeclareTextCompositeCommand{\b}{PU}{K}{\9036\064}% U+1E34  
 17066 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow  
 17067 \DeclareTextCompositeCommand{\b}{PU}{k}{\9036\065}% U+1E35  
 17068 % U+1E36 LATIN CAPITAL LETTER L WITH DOT BELOW; Ldotbelow  
 17069 \DeclareTextCompositeCommand{\d}{PU}{L}{\9036\066}% U+1E36  
 17070 % U+1E37 LATIN SMALL LETTER L WITH DOT BELOW; ldotbelow  
 17071 \DeclareTextCompositeCommand{\d}{PU}{l}{\9036\067}% U+1E37  
 17072 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow  
 17073 \DeclareTextCompositeCommand{\b}{PU}{L}{\9036\072}% U+1E3A  
 17074 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow  
 17075 \DeclareTextCompositeCommand{\b}{PU}{l}{\9036\073}% U+1E3B  
 17076 % U+1E3C LATIN CAPITAL LETTER L WITH CIRCUMFLEX BELOW; Lcir-  
 cumflexbelow  
 17077 \DeclareTextCompositeCommand{\textsubcircum}{PU}{L}{\9036\074}% U+1E3C  
 17078 % U+1E3D LATIN SMALL LETTER L WITH CIRCUMFLEX BELOW; lcir-  
 cumflexbelow  
 17079 \DeclareTextCompositeCommand{\textsubcircum}{PU}{l}{\9036\075}% U+1E3D  
 17080 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute  
 17081 \DeclareTextCompositeCommand{\'}{PU}{M}{\9036\076}% U+1E3E  
 17082 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute  
 17083 \DeclareTextCompositeCommand{\'}{PU}{m}{\9036\077}% U+1E3F  
 17084 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent  
 17085 \DeclareTextCompositeCommand{\.}{PU}{M}{\9036\100}% U+1E40  
 17086 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent  
 17087 \DeclareTextCompositeCommand{\.}{PU}{m}{\9036\101}% U+1E41  
 17088 % U+1E42 LATIN CAPITAL LETTER M WITH DOT BELOW; Mdotbelow  
 17089 \DeclareTextCompositeCommand{\d}{PU}{M}{\9036\102}% U+1E42  
 17090 % U+1E43 LATIN SMALL LETTER M WITH DOT BELOW; mdotbelow  
 17091 \DeclareTextCompositeCommand{\d}{PU}{m}{\9036\103}% U+1E43  
 17092 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent  
 17093 \DeclareTextCompositeCommand{\.}{PU}{N}{\9036\104}% U+1E44  
 17094 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent  
 17095 \DeclareTextCompositeCommand{\.}{PU}{n}{\9036\105}% U+1E45  
 17096 % U+1E46 LATIN CAPITAL LETTER N WITH DOT BELOW; Ndotbelow  
 17097 \DeclareTextCompositeCommand{\d}{PU}{N}{\9036\106}% U+1E46

17098 % U+1E47 LATIN SMALL LETTER N WITH DOT BELOW; ndotbelow  
 17099 \DeclareTextCompositeCommand{\d}{PU}{n}{\9036\107}% U+1E47  
 17100 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow  
 17101 \DeclareTextCompositeCommand{\b}{PU}{N}{\9036\110}% U+1E48  
 17102 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow  
 17103 \DeclareTextCompositeCommand{\b}{PU}{n}{\9036\111}% U+1E49  
 17104 % U+1E4A LATIN CAPITAL LETTER N WITH CIRCUMFLEX BELOW; Ncir-  
 cumflexbelow  
 17105 \DeclareTextCompositeCommand{\textsubcircum}{PU}{N}{\9036\112}% U+1E4A  
 17106 % U+1E4B LATIN SMALL LETTER N WITH CIRCUMFLEX BELOW; ncir-  
 cumflexbelow  
 17107 \DeclareTextCompositeCommand{\textsubcircum}{PU}{n}{\9036\113}% U+1E4B  
 17108 % U+1E50 LATIN CAPITAL LETTER O WITH MACRON AND GRAVE;  
 17109 % Omacrongrave  
 17110 \DeclareTextCompositeCommand{\textgravemacron}{PU}{O}{\9036\120}% U+1E50  
 17111 % U+1E51 LATIN SMALL LETTER O WITH MACRON AND GRAVE;  
 17112 % omacrongrave  
 17113 \DeclareTextCompositeCommand{\textgravemacron}{PU}{o}{\9036\121}% U+1E51  
 17114 % U+1E52 LATIN CAPITAL LETTER O WITH MACRON AND ACUTE;  
 17115 % Omacronacute  
 17116 \DeclareTextCompositeCommand{\textacutemacron}{PU}{O}{\9036\122}% U+1E52  
 17117 % U+1E53 LATIN SMALL LETTER O WITH MACRON AND ACUTE;  
 17118 % omacronacute  
 17119 \DeclareTextCompositeCommand{\textacutemacron}{PU}{o}{\9036\123}% U+1E53  
 17120 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute  
 17121 \DeclareTextCompositeCommand{\'}{PU}{P}{\9036\124}% U+1E54  
 17122 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute  
 17123 \DeclareTextCompositeCommand{\'}{PU}{p}{\9036\125}% U+1E55  
 17124 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent  
 17125 \DeclareTextCompositeCommand{\.}{PU}{P}{\9036\126}% U+1E56  
 17126 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent  
 17127 \DeclareTextCompositeCommand{\.}{PU}{p}{\9036\127}% U+1E57  
 17128 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent  
 17129 \DeclareTextCompositeCommand{\.}{PU}{R}{\9036\130}% U+1E58  
 17130 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent  
 17131 \DeclareTextCompositeCommand{\.}{PU}{r}{\9036\131}% U+1E59  
 17132 % U+1E5A LATIN CAPITAL LETTER R WITH DOT BELOW; Rdotbelow  
 17133 \DeclareTextCompositeCommand{\d}{PU}{R}{\9036\132}% U+1E5A  
 17134 % U+1E5B LATIN SMALL LETTER R WITH DOT BELOW; rdotbelow  
 17135 \DeclareTextCompositeCommand{\d}{PU}{r}{\9036\133}% U+1E5B  
 17136 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow  
 17137 \DeclareTextCompositeCommand{\b}{PU}{R}{\9036\136}% U+1E5E  
 17138 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow  
 17139 \DeclareTextCompositeCommand{\b}{PU}{r}{\9036\137}% U+1E5F  
 17140 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent  
 17141 \DeclareTextCompositeCommand{\.}{PU}{S}{\9036\140}% U+1E60  
 17142 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent  
 17143 \DeclareTextCompositeCommand{\.}{PU}{s}{\9036\141}% U+1E61  
 17144 % U+1E62 LATIN CAPITAL LETTER S WITH DOT BELOW; Sdotbelow  
 17145 \DeclareTextCompositeCommand{\d}{PU}{S}{\9036\142}% U+1E62  
 17146 % U+1E63 LATIN SMALL LETTER S WITH DOT BELOW; sdotbelow  
 17147 \DeclareTextCompositeCommand{\d}{PU}{s}{\9036\143}% U+1E63  
 17148 % U+1E6A LATIN CAPITAL LETTER T WITH DOT ABOVE; Tdotaccent  
 17149 \DeclareTextCompositeCommand{\.}{PU}{T}{\9036\152}% U+1E6A



17150 % U+1E6B LATIN SMALL LETTER T WITH DOT ABOVE; tdotaccent  
17151 \DeclareTextCompositeCommand{\.}{PU}{t}{\9036\153}% U+1E6B  
17152 % U+1E6C LATIN CAPITAL LETTER T WITH DOT BELOW; Tdotbelow  
17153 \DeclareTextCompositeCommand{\d}{PU}{T}{\9036\154}% U+1E6C  
17154 % U+1E6D LATIN SMALL LETTER T WITH DOT BELOW; tdotbelow  
17155 \DeclareTextCompositeCommand{\d}{PU}{t}{\9036\155}% U+1E6D  
17156 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow  
17157 \DeclareTextCompositeCommand{\b}{PU}{T}{\9036\156}% U+1E6E  
17158 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow  
17159 \DeclareTextCompositeCommand{\b}{PU}{t}{\9036\157}% U+1E6F  
17160 % U+1E70 LATIN CAPITAL LETTER T WITH CIRCUMFLEX BELOW; Tcir-  
cumflexbelow  
17161 \DeclareTextCompositeCommand{\textsubcircum}{PU}{T}{\9036\160}% U+1E70  
17162 % U+1E71 LATIN SMALL LETTER T WITH CIRCUMFLEX BELOW; tcir-  
cumflexbelow  
17163 \DeclareTextCompositeCommand{\textsubcircum}{PU}{t}{\9036\161}% U+1E71  
17164 % U+1E72 LATIN CAPITAL LETTER U WITH DIAERESIS BELOW; Udiere-  
sisbelow  
17165 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{U}{\9036\162}% U+1E72  
17166 % U+1E73 LATIN SMALL LETTER U WITH DIAERESIS BELOW; udiere-  
sisbelow  
17167 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{u}{\9036\163}% U+1E73  
17168 % U+1E74 LATIN CAPITAL LETTER U WITH TILDE BELOW; Utildebelow  
17169 \DeclareTextCompositeCommand{\textsubtilde}{PU}{U}{\9036\164}% U+1E74  
17170 % U+1E75 LATIN SMALL LETTER U WITH TILDE BELOW; utildebelow  
17171 \DeclareTextCompositeCommand{\textsubtilde}{PU}{u}{\9036\165}% U+1E75  
17172 % U+1E76 LATIN CAPITAL LETTER U WITH CIRCUMFLEX BELOW; Ucir-  
cumflexbelow  
17173 \DeclareTextCompositeCommand{\textsubcircum}{PU}{U}{\9036\166}% U+1E76  
17174 % U+1E77 LATIN SMALL LETTER U WITH CIRCUMFLEX BELOW; ucir-  
cumflexbelow  
17175 \DeclareTextCompositeCommand{\textsubcircum}{PU}{u}{\9036\167}% U+1E77  
17176 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde  
17177 \DeclareTextCompositeCommand{\~}{PU}{V}{\9036\174}% U+1E7C  
17178 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde  
17179 \DeclareTextCompositeCommand{\~}{PU}{v}{\9036\175}% U+1E7D  
17180 % U+1E7E LATIN CAPITAL LETTER V WITH DOT BELOW; Vdotbelow  
17181 \DeclareTextCompositeCommand{\d}{PU}{V}{\9036\176}% U+1E7E  
17182 % U+1E7F LATIN SMALL LETTER V WITH DOT BELOW; vdotbelow  
17183 \DeclareTextCompositeCommand{\d}{PU}{v}{\9036\177}% U+1E7F  
17184 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave  
17185 \DeclareTextCompositeCommand{\`}{PU}{W}{\9036\200}% U+1E80  
17186 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave  
17187 \DeclareTextCompositeCommand{\`}{PU}{w}{\9036\201}% U+1E81  
17188 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute  
17189 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\202}% U+1E82  
17190 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute  
17191 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\203}% U+1E83  
17192 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis  
17193 \DeclareTextCompositeCommand{\"}{PU}{W}{\9036\204}% U+1E84  
17194 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis  
17195 \DeclareTextCompositeCommand{\"}{PU}{w}{\9036\205}% U+1E85  
17196 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent  
17197 \DeclareTextCompositeCommand{\.}{PU}{W}{\9036\206}% U+1E86

17198 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent  
17199 \DeclareTextCompositeCommand{\.}{PU}{w}{\9036\207}% U+1E87  
17200 % U+1E88 LATIN CAPITAL LETTER W WITH DOT BELOW; wdotbelow  
17201 \DeclareTextCompositeCommand{\d}{PU}{W}{\9036\210}% U+1E88  
17202 % U+1E89 LATIN SMALL LETTER W WITH DOT BELOW; wdotbelow  
17203 \DeclareTextCompositeCommand{\d}{PU}{w}{\9036\211}% U+1E89  
17204 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent  
17205 \DeclareTextCompositeCommand{\.}{PU}{X}{\9036\212}% U+1E8A  
17206 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent  
17207 \DeclareTextCompositeCommand{\.}{PU}{x}{\9036\213}% U+1E8B  
17208 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis  
17209 \DeclareTextCompositeCommand{\"}{PU}{X}{\9036\214}% U+1E8C  
17210 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis  
17211 \DeclareTextCompositeCommand{\"}{PU}{x}{\9036\215}% U+1E8D  
17212 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent  
17213 \DeclareTextCompositeCommand{\.}{PU}{Y}{\9036\216}% U+1E8E  
17214 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent  
17215 \DeclareTextCompositeCommand{\.}{PU}{y}{\9036\217}% U+1E8F  
17216 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex  
17217 \DeclareTextCompositeCommand{\^}{PU}{Z}{\9036\220}% U+1E90  
17218 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex  
17219 \DeclareTextCompositeCommand{\^}{PU}{z}{\9036\221}% U+1E91  
17220 % U+1E92 LATIN CAPITAL LETTER Z WITH DOT BELOW; Zdotbelow  
17221 \DeclareTextCompositeCommand{\d}{PU}{Z}{\9036\222}% U+1E92  
17222 % U+1E93 LATIN SMALL LETTER Z WITH DOT BELOW; zdotbelow  
17223 \DeclareTextCompositeCommand{\d}{PU}{z}{\9036\223}% U+1E93  
17224 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow  
17225 \DeclareTextCompositeCommand{\b}{PU}{Z}{\9036\224}% U+1E94  
17226 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow  
17227 \DeclareTextCompositeCommand{\b}{PU}{z}{\9036\225}% U+1E95  
17228 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow  
17229 \DeclareTextCompositeCommand{\b}{PU}{h}{\9036\226}% U+1E96  
17230 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis  
17231 \DeclareTextCompositeCommand{\"}{PU}{t}{\9036\227}% U+1E97  
17232 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring  
17233 \DeclareTextCompositeCommand{\r}{PU}{w}{\9036\230}% U+1E98  
17234 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring  
17235 \DeclareTextCompositeCommand{\r}{PU}{y}{\9036\231}% U+1E99  
17236 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdo-  
taccent  
17237 \DeclareTextCompositeCommand{\.}{PU}{\textlongs}{\9036\233}% U+1E9B  
17238 % U+1EA0 LATIN CAPITAL LETTER A WITH DOT BELOW; Adotbelow  
17239 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}% U+1EA0  
17240 % U+1EA1 LATIN SMALL LETTER A WITH DOT BELOW; adotbelow  
17241 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}% U+1EA1  
17242 % U+1EB8 LATIN CAPITAL LETTER E WITH DOT BELOW; Edotbelow  
17243 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}% U+1EB8  
17244 % U+1EB9 LATIN SMALL LETTER E WITH DOT BELOW; edotbelow  
17245 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}% U+1EB9  
17246 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde  
17247 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
17248 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde  
17249 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
17250 % U+1ECA LATIN CAPITAL LETTER I WITH DOT BELOW; Idotbelow

17251 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}% U+1ECA  
 17252 % U+1ECB LATIN SMALL LETTER I WITH DOT BELOW; idotbelow  
 17253 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}% U+1ECB  
 17254 % U+1ECC LATIN CAPITAL LETTER O WITH DOT BELOW; Odotbelow  
 17255 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}% U+1ECC  
 17256 % U+1ECD LATIN SMALL LETTER O WITH DOT BELOW; odotbelow  
 17257 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}% U+1ECD  
 17258 % U+1EE4 LATIN CAPITAL LETTER U WITH DOT BELOW; Udotbelow  
 17259 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4  
 17260 % U+1EE5 LATIN SMALL LETTER U WITH DOT BELOW; udotbelow  
 17261 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}% U+1EE5  
 17262 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave  
 17263 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2  
 17264 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave  
 17265 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3  
 17266 % U+1EF4 LATIN CAPITAL LETTER Y WITH DOT BELOW; Ydotbelow  
 17267 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4  
 17268 % U+1EF5 LATIN SMALL LETTER Y WITH DOT BELOW; ydotbelow  
 17269 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}% U+1EF5  
 17270 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde  
 17271 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8  
 17272 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde  
 17273 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9

#### 47.2.16 General Punctuation: U+2000 to U+206F

17274 % U+200C ZERO WIDTH NON-JOINER; \*afii61664, zerowidthnonjoiner  
 17275 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C  
 17276 % U+2013 EN DASH; endash  
 17277 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013  
 17278 % U+2014 EM DASH; emdash  
 17279 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014  
 17280 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar  
 17281 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016  
 17282 %\* \textbardbl -> \textdoublevertline (tipa)  
 17283 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 17284 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018  
 17285 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 17286 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019  
 17287 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 17288 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A  
 17289 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 17290 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034}% U+201C  
 17291 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 17292 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035}% U+201D  
 17293 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 17294 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E  
 17295 % U+2020 DAGGER; dagger  
 17296 \DeclareTextCommand{\textdagger}{PU}{\9040\040}%\* U+2020  
 17297 %\* \textdagger -> \dag (LaTeX)  
 17298 % U+2021 DOUBLE DAGGER; daggerdbl; \ddagger (LaTeX)  
 17299 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021  
 17300 %\* \textdaggerdbl -> \ddagger (LaTeX)  
 17301 %\* \textdaggerdbl -> \ddag (LaTeX)  
 17302 % U+2022 BULLET; bullet

17303 \DeclareTextCommand{\textbullet}{PU}{\9040\042}%\* U+2022  
 17304 % U+2025 TWO DOT LEADER; \hdotfor (MnSymbol)  
 17305 \DeclareTextCommand{\textthdotfor}{PU}{\9040\045}%\* U+2025  
 17306 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 17307 \DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026  
 17308 %\* \textellipsis -> \mathellipsis  
 17309 % U+2030 PER MILLE SIGN; perthousand  
 17310 \DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030  
 17311 % U+2031 PER TEN THOUSAND SIGN  
 17312 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031  
 17313 % U+2032 PRIME; minute; \prime (MnSymbol)  
 17314 \DeclareTextCommand{\textprime}{PU}{\9040\062}%\* U+2032  
 17315 % U+2033 DOUBLE PRIME; \second (mathabx)  
 17316 \DeclareTextCommand{\textsecond}{PU}{\9040\063}%\* U+2033  
 17317 % U+2034 TRIPLE PRIME; \third (mathabx)  
 17318 \DeclareTextCommand{\textthird}{PU}{\9040\064}%\* U+2034  
 17319 % U+2035 REVERSED PRIME; \backprime (AmS)  
 17320 \DeclareTextCommand{\textbackprime}{PU}{\9040\065}%\* U+2035  
 17321 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
 ingleft  
 17322 \DeclareTextCommand{\guilsingleft}{PU}{\9040\071}% U+2039  
 17323 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
 singright  
 17324 \DeclareTextCommand{\guilsingright}{PU}{\9040\072}% U+203A  
 17325 % U+203B REFERENCE MARK; referencemark  
 17326 \DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B  
 17327 % U+203D INTERROBANG  
 17328 \DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D  
 17329 % U+2044 FRACTION SLASH; fraction  
 17330 \DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044  
 17331 % U+2045 LEFT SQUARE BRACKET WITH QUILL  
 17332 \DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045  
 17333 % U+2046 RIGHT SQUARE BRACKET WITH QUILL  
 17334 \DeclareTextCommand{\textrquill}{PU}{\9040\106}% U+2046  
 17335 % U+2052 COMMERCIAL MINUS SIGN  
 17336 \DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052  
 17337 % U+2056 THREE DOT PUNCTUATION; \lefttherefore (MnSymbol)  
 17338 \DeclareTextCommand{\textlefttherefore}{PU}{\9040\126}%\* U+2056  
 17339 % U+2057 QUADRUPLE PRIME; \fourth (mathabx)  
 17340 \DeclareTextCommand{\textfourth}{PU}{\9040\127}%\* U+2057  
 17341 % U+2058 FOUR DOT PUNCTUATION; \diamonddots (MnSymbol)  
 17342 \DeclareTextCommand{\textdiamonddots}{PU}{\9040\130}%\* U+2058

#### 47.2.17 Superscripts and Subscripts: U+2070 to U+209F

17343 % U+2070 SUPERSCRIPT ZERO; zerosuperior  
 17344 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}%\* U+2070  
 17345 % U+2071 SUPERSCRIPT LATIN SMALL LETTER I  
 17346 \DeclareTextCommand{\textisuperior}{PU}{\9040\161}%\* U+2071  
 17347 % U+2074 SUPERSCRIPT FOUR; foursuperior  
 17348 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}%\* U+2074  
 17349 % U+2075 SUPERSCRIPT FIVE; fivesuperior  
 17350 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}%\* U+2075  
 17351 % U+2076 SUPERSCRIPT SIX; sixsuperior  
 17352 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}%\* U+2076

17353 % U+2077 SUPERSCRIPT SEVEN; sevensuperior  
17354 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}%\* U+2077  
17355 % U+2078 SUPERSCRIPT EIGHT; eightsuperior  
17356 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170}%\* U+2078  
17357 % U+2079 SUPERSCRIPT NINE; ninesuperior  
17358 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171}%\* U+2079  
17359 % U+207A SUPERSCRIPT PLUS SIGN; plussuperior  
17360 \DeclareTextCommand{\textplussuperior}{PU}{\9040\172}%\* U+207A  
17361 % U+207B SUPERSCRIPT MINUS  
17362 \DeclareTextCommand{\textminussuperior}{PU}{\9040\173}%\* U+207B  
17363 % U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior  
17364 \DeclareTextCommand{\textequalssuperior}{PU}{\9040\174}%\* U+207C  
17365 % U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftsuperior  
17366 \DeclareTextCommand{\textparenleftsuperior}{PU}{\9040\175}%\* U+207D  
17367 % U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightsuperior  
17368 \DeclareTextCommand{\textparenrightsuperior}{PU}{\9040\176}%\* U+207E  
17369 % U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior  
17370 \DeclareTextCommand{\textnsuperior}{PU}{\9040\177}%\* U+207F  
17371 % U+2080 SUBSCRIPT ZERO; zeroinferior  
17372 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}%\* U+2080  
17373 % U+2081 SUBSCRIPT ONE; oneinferior  
17374 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201}%\* U+2081  
17375 % U+2082 SUBSCRIPT TWO; twoinferior  
17376 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}%\* U+2082  
17377 % U+2083 SUBSCRIPT THREE; threeinferior  
17378 \DeclareTextCommand{\textthreeinferior}{PU}{\9040\203}%\* U+2083  
17379 % U+2084 SUBSCRIPT FOUR; fourinferior  
17380 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204}%\* U+2084  
17381 % U+2085 SUBSCRIPT FIVE; fiveinferior  
17382 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}%\* U+2085  
17383 % U+2086 SUBSCRIPT SIX; sixinferior  
17384 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}%\* U+2086  
17385 % U+2087 SUBSCRIPT SEVEN; seveninferior  
17386 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}%\* U+2087  
17387 % U+2088 SUBSCRIPT EIGHT; eightinferior  
17388 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}%\* U+2088  
17389 % U+2089 SUBSCRIPT NINE; nineinferior  
17390 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}%\* U+2089  
17391 % U+208A SUBSCRIPT PLUS SIGN  
17392 \DeclareTextCommand{\textplusinferior}{PU}{\9040\212}%\* U+208A  
17393 % U+208B SUBSCRIPT MINUS  
17394 \DeclareTextCommand{\textminusinferior}{PU}{\9040\213}%\* U+208B  
17395 % U+208C SUBSCRIPT EQUALS SIGN  
17396 \DeclareTextCommand{\textequalsinferior}{PU}{\9040\214}%\* U+208C  
17397 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior  
17398 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}%\* U+208D  
17399 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior  
17400 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}%\* U+208E  
17401 % U+2090 LATIN SUBSCRIPT SMALL LETTER A  
17402 \DeclareTextCommand{\textainferior}{PU}{\9040\220}%\* U+2090  
17403 % U+2091 LATIN SUBSCRIPT SMALL LETTER E  
17404 \DeclareTextCommand{\texteinferior}{PU}{\9040\221}%\* U+2091  
17405 % U+2092 LATIN SUBSCRIPT SMALL LETTER O  
17406 \DeclareTextCommand{\textoinferior}{PU}{\9040\222}%\* U+2092

17407 % U+2093 LATIN SUBSCRIPT SMALL LETTER X  
 17408 \DeclareTextCommand{\textxinferior}{PU}{\9040\223}%\* U+2093  
 17409 % U+2094 LATIN SUBSCRIPT SMALL LETTER SCHWA  
 17410 \DeclareTextCommand{\textschwainferior}{PU}{\9040\224}%\* U+2094  
 17411 % U+2095 LATIN SUBSCRIPT SMALL LETTER H  
 17412 \DeclareTextCommand{\texthinferior}{PU}{\9040\225}%\* U+2095  
 17413 % U+2096 LATIN SUBSCRIPT SMALL LETTER K  
 17414 \DeclareTextCommand{\textkinferior}{PU}{\9040\226}%\* U+2096  
 17415 % U+2097 LATIN SUBSCRIPT SMALL LETTER L  
 17416 \DeclareTextCommand{\textlinferior}{PU}{\9040\227}%\* U+2097  
 17417 % U+2098 LATIN SUBSCRIPT SMALL LETTER M  
 17418 \DeclareTextCommand{\textminferior}{PU}{\9040\230}%\* U+2098  
 17419 % U+2099 LATIN SUBSCRIPT SMALL LETTER N  
 17420 \DeclareTextCommand{\textninferior}{PU}{\9040\231}%\* U+2099  
 17421 % U+209A LATIN SUBSCRIPT SMALL LETTER P  
 17422 \DeclareTextCommand{\textpinferior}{PU}{\9040\232}%\* U+209A  
 17423 % U+209B LATIN SUBSCRIPT SMALL LETTER S  
 17424 \DeclareTextCommand{\textsinferior}{PU}{\9040\233}%\* U+209B  
 17425 % U+209C LATIN SUBSCRIPT SMALL LETTER T  
 17426 \DeclareTextCommand{\texttinferior}{PU}{\9040\234}%\* U+209C

#### 47.2.18 Currency Symbols: U+20A0 to U+20CF

17427 % U+20A1 COLON SIGN; \*colonmonetary, colonsign  
 17428 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1  
 17429 % U+20A4 LIRA SIGN; afi08941, \*lira  
 17430 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4  
 17431 % U+20A6 NAIRA SIGN  
 17432 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6  
 17433 % U+20A7 PESETA SIGN; peseta  
 17434 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7  
 17435 % U+20A9 WON SIGN; won  
 17436 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9  
 17437 % U+20AB DONG SIGN; dong  
 17438 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB  
 17439 % U+20AC EURO SIGN; \*Euro, euro  
 17440 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC  
 17441 %\* \texteuro -> \EurDig (marvosym)  
 17442 %\* \texteuro -> \EURdig (marvosym)  
 17443 %\* \texteuro -> \EurHv (marvosym)  
 17444 %\* \texteuro -> \EURhv (marvosym)  
 17445 %\* \texteuro -> \EurCr (marvosym)  
 17446 %\* \texteuro -> \EURcr (marvosym)  
 17447 %\* \texteuro -> \EurTm (marvosym)  
 17448 %\* \texteuro -> \EURtm (marvosym)  
 17449 %\* \texteuro -> \Eur (marvosym)  
 17450 % U+20B0 GERMAN PENNY SIGN; \Deleatur (marvosym)  
 17451 \DeclareTextCommand{\textDeleatur}{PU}{\9040\260}%\* U+20B0  
 17452 %\* \textDeleatur -> \Denarius (marvosym)  
 17453 % U+20B1 PESO SIGN  
 17454 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1  
 17455 % U+20B2 GUARANI SIGN  
 17456 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

#### 47.2.19 Letterlike Symbols: U+2100 to U+214F

17457 % U+2103 DEGREE CELSIUS; centigrade  
 17458 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103  
 17459 % U+210F PLANCK CONSTANT OVER TWO PI; \hslash (AmS)  
 17460 \DeclareTextCommand{\texthslash}{PU}{\9041\017}%\* U+210F  
 17461 % U+2111 BLACK-LETTER CAPITAL I (=imaginary part); Ifraktur; \Im (LaTeX)  
 17462 \DeclareTextCommand{\textIm}{PU}{\9041\021}%\* U+2111  
 17463 % U+2113 SCRIPT SMALL L (=ell, liter); afi61289, lsquare; \ell (LaTeX)  
 17464 \DeclareTextCommand{\textell}{PU}{\9041\023}%\* U+2113  
 17465 % U+2116 NUMERO SIGN; \*afi61352, numero  
 17466 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116  
 17467 % U+2117 SOUND RECORDING COPYRIGHT  
 17468 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117  
 17469 % U+2118 SCRIPT CAPITAL P (=Weierstrass elliptic function);  
 17470 % weierstrass; \wp (LaTeX)  
 17471 \DeclareTextCommand{\textwp}{PU}{\9041\030}%\* U+2118  
 17472 % U+211C BLACK-LETTER CAPITAL R (=real part); Rfraktur; \Re (LaTeX)  
 17473 \DeclareTextCommand{\textRe}{PU}{\9041\034}%\* U+211C  
 17474 % U+211E PRESCRIPTION TAKE; prescription  
 17475 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E  
 17476 % U+2120 SERVICE MARK  
 17477 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120  
 17478 % U+2122 TRADE MARK SIGN; trademark  
 17479 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122  
 17480 % U+2126 OHM SIGN; Ohm, Omega  
 17481 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126  
 17482 % U+2127 INVERTED OHM SIGN  
 17483 \DeclareTextCommand{\textmho}{PU}{\9041\047}%\* U+2127  
 17484 %\* \textmho -> \agemO (wasysym)  
 17485 % U+2129 TURNED GREEK SMALL LETTER IOTA; \riota (phonetic)  
 17486 \DeclareTextCommand{\textriota}{PU}{\9041\051}%\* U+2129  
 17487 % U+212B ANGSTROM SIGN; angstrom  
 17488 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B  
 17489 % U+212E ESTIMATED SYMBOL; estimated  
 17490 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E  
 17491 %\* \textestimated -> \EstimatedSign (marvosym)  
 17492 %\* \textestimated -> \Ecommerce (marvosym)  
 17493 % U+2132 TURNED CAPITAL F; \Finv (AmS)  
 17494 \DeclareTextCommand{\textFinv}{PU}{\9041\062}%\* U+2132  
 17495 % U+2135 ALEF SYMBOL; aleph; \aleph (LaTeX)  
 17496 \DeclareTextCommand{\textaleph}{PU}{\9041\065}%\* U+2135  
 17497 % U+2136 BET SYMBOL; \beth (AmS, MnSymbol)  
 17498 \DeclareTextCommand{\textbeth}{PU}{\9041\066}%\* U+2136  
 17499 % U+2137 GIMEL SYMBOL; \gimel (AmS, MnSymbol)  
 17500 \DeclareTextCommand{\textgimel}{PU}{\9041\067}%\* U+2137  
 17501 % U+2138 DALET SYMBOL; \daleth (AmS, MnSymbol)  
 17502 \DeclareTextCommand{\textdaleth}{PU}{\9041\070}%\* U+2138  
 17503 % U+213B FACSIMILE SIGN; \fax (marvosym)  
 17504 \DeclareTextCommand{\textfax}{PU}{\9041\073}%\* U+213B  
 17505 % U+2141 TURNED SANS-SERIF CAPITAL G (=game); \Game  
 17506 \DeclareTextCommand{\textGame}{PU}{\9041\101}%\* U+2141  
 17507 % U+214B TURNED AMPERSAND; \invamp (txfonts/pxfonts)  
 17508 \DeclareTextCommand{\textinvamp}{PU}{\9041\113}% U+214B  
 17509 %\* \textinvamp -> \bindnasrepma (stmaryrd)

17510 %\* \textinvamp -> \parr (cml)

#### 47.2.20 Number Forms: U+2150 to U+218F

17511 % U+2150 VULGAR FRACTION ONE SEVENTH  
17512 \DeclareTextCommand{\textoneseventh}{PU}{\9041\120}% U+2150  
17513 % U+2151 VULGAR FRACTION ONE NINTH  
17514 \DeclareTextCommand{\textoneninth}{PU}{\9041\121}% U+2151  
17515 % U+2152 VULGAR FRACTION ONE TENTH  
17516 \DeclareTextCommand{\textonetenth}{PU}{\9041\122}% U+2152  
17517 % U+2153 VULGAR FRACTION ONE THIRD; onethird  
17518 \DeclareTextCommand{\textonethird}{PU}{\9041\123}% U+2153  
17519 % U+2154 VULGAR FRACTION TWO THIRDS; twothirds  
17520 \DeclareTextCommand{\texttwothirds}{PU}{\9041\124}% U+2154  
17521 % U+2155 VULGAR FRACTION ONE FIFTH  
17522 \DeclareTextCommand{\textonefifth}{PU}{\9041\125}% U+2155  
17523 % U+2156 VULGAR FRACTION TWO FIFTHS  
17524 \DeclareTextCommand{\texttwofifths}{PU}{\9041\126}% U+2156  
17525 % U+2157 VULGAR FRACTION THREE FIFTHS  
17526 \DeclareTextCommand{\textthreefifths}{PU}{\9041\127}% U+2157  
17527 % U+2158 VULGAR FRACTION FOUR FIFTHS  
17528 \DeclareTextCommand{\textfourfifths}{PU}{\9041\130}% U+2158  
17529 % U+2159 VULGAR FRACTION ONE SIXTH  
17530 \DeclareTextCommand{\textonesixth}{PU}{\9041\131}% U+2159  
17531 % U+215A VULGAR FRACTION FIVE SIXTHS  
17532 \DeclareTextCommand{\textfivesixths}{PU}{\9041\132}% U+215A  
17533 % U+215B VULGAR FRACTION ONE EIGHTH; oneeighth  
17534 \DeclareTextCommand{\textoneeighth}{PU}{\9041\133}% U+215B  
17535 % U+215C VULGAR FRACTION THREE EIGHTHS; threeeighths  
17536 \DeclareTextCommand{\textthreeeighths}{PU}{\9041\134}% U+215C  
17537 % U+215D VULGAR FRACTION FIVE EIGHTHS; fiveeighths  
17538 \DeclareTextCommand{\textfiveeighths}{PU}{\9041\135}% U+215D  
17539 % U+215E VULGAR FRACTION SEVEN EIGHTHS; seveneighths  
17540 \DeclareTextCommand{\textseveneighths}{PU}{\9041\136}% U+215E  
17541 % U+2184 LATIN SMALL LETTER REVERSED C  
17542 \DeclareTextCommand{\textrevc}{PU}{\9041\204}% U+2184  
17543 % U+2189 VULGAR FRACTION ZERO THIRDS  
17544 \DeclareTextCommand{\textzerthirds}{PU}{\9041\211}% U+2189

#### 47.2.21 Arrows: U+2190 to U+21FF

17545 % U+2190 LEFTWARDS ARROW; arrowleft  
17546 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}%\* U+2190  
17547 % U+2191 UPWARDS ARROW; arrowup  
17548 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}%\* U+2191  
17549 % U+2192 RIGHTWARDS ARROW; arrowright  
17550 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}%\* U+2192  
17551 %\* \textrightarrow -> \MVRightArrow (marvosym)  
17552 %\* \textrightarrow -> \MVRightarrow (marvosym)  
17553 % U+2193 DOWNWARDS ARROW; arrowdown  
17554 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}%\* U+2193  
17555 %\* \textdownarrow -> \MVAArrowDown (marvosym)  
17556 %\* \textdownarrow -> \Force (marvosym)  
17557 % U+2194 LEFT RIGHT ARROW; arrowboth; \leftrightarrow (LaTeX)  
17558 \DeclareTextCommand{\textleftrightarrow}{PU}{\9041\224}%\* U+2194  
17559 % U+2195 UP DOWN ARROW; arrowupdn; \updownarrow (LaTeX)



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17560 \DeclareTextCommand{\textupdownarrow}{PU}{\9041\225}%* U+2195
17561 % U+2196 NORTH WEST ARROW; arrowupleft; \nwarrow (LaTeX)
17562 \DeclareTextCommand{\textnwarrow}{PU}{\9041\226}%* U+2196
17563 % U+2197 NORTH EAST ARROW; arrowupright; \nearrow (LaTeX)
17564 \DeclareTextCommand{\textnearrow}{PU}{\9041\227}%* U+2197
17565 %* \textnearrow -> \textglobrise (tipa)
17566 % U+2198 SOUTH EAST ARROW; arrowdownright; \searrow (LaTeX)
17567 \DeclareTextCommand{\textsearrow}{PU}{\9041\230}%* U+2198
17568 %* \textsearrow -> \textglobfall (tipa)
17569 % U+2199 SOUTH WEST ARROW; arrowdownleft; \swarrow (LaTeX)
17570 \DeclareTextCommand{\textswarrow}{PU}{\9041\231}%* U+2199
17571 % U+219A LEFTWARDS ARROW WITH STROKE; \leftarrow (AmS)
17572 \DeclareTextCommand{\textnleftarrow}{PU}{\9041\232}%* U+219A
17573 % U+219B RIGHTWARDS ARROW WITH STROKE; \rightarrow (AmS)
17574 \DeclareTextCommand{\textnrightrightarrow}{PU}{\9041\233}%* U+219B
17575 % U+219E LEFTWARDS TWO HEADED ARROW; \twoheadleftarrow (AmS)
17576 \DeclareTextCommand{\texttwoheadleftarrow}{PU}{\9041\236}%* U+219E
17577 % \ntwoheadleftarrow (txfonts/pxfonts)
17578 \DeclareTextCommand{\textntwoheadleftarrow}{PU}{\9041\236\83\070}%* U+219E U+0338
17579 % U+219F UPWARDS TWO HEADED ARROW; \twoheaduparrow (MnSymbol)
17580 \DeclareTextCommand{\texttwoheaduparrow}{PU}{\9041\237}%* U+219F
17581 % U+21A0 RIGHTWARDS TWO HEADED ARROW;
17582 % \twoheadrightarrow (AmS)
17583 \DeclareTextCommand{\texttwoheadrightarrow}{PU}{\9041\240}%* U+21A0
17584 % \ntwoheadrightarrow (txfonts/pxfonts)
17585 \DeclareTextCommand{\textntwoheadrightarrow}{PU}{\9041\240\83\070}%* U+21A0 U+0338
17586 % U+21A1 DOWNWARDS TWO HEADED ARROW; \twoheaddownarrow (Mn-
Symbol)
17587 \DeclareTextCommand{\texttwoheaddownarrow}{PU}{\9041\241}%* U+21A1
17588 % U+21A2 LEFTWARDS ARROW WITH TAIL; \leftarrowtail (AmS)
17589 \DeclareTextCommand{\textleftarrowtail}{PU}{\9041\242}%* U+21A2
17590 % U+21A3 RIGHTWARDS ARROW WITH TAIL; \rightarrowtail (AmS)
17591 \DeclareTextCommand{\textrightarrowtail}{PU}{\9041\243}%* U+21A3
17592 % U+21A6 RIGHTWARDS ARROW FROM BAR; \mapsto (LaTeX)
17593 \DeclareTextCommand{\textmapsto}{PU}{\9041\246}%* U+21A6
17594 % U+21A9 LEFTWARDS ARROW WITH HOOK; \hookleftarrow (LaTeX)
17595 \DeclareTextCommand{\texthookleftarrow}{PU}{\9041\251}%* U+21A9
17596 % U+21AA RIGHTWARDS ARROW WITH HOOK; \hookrightarrow (LaTeX)
17597 \DeclareTextCommand{\texthookrightarrow}{PU}{\9041\252}%* U+21AA
17598 % U+21AB LEFTWARDS ARROW WITH LOOP; \looparrowleft (AmS)
17599 \DeclareTextCommand{\textlooparrowleft}{PU}{\9041\253}%* U+21AB
17600 % U+21AC RIGHTWARDS ARROW WITH LOOP; \looparrowright (AmS)
17601 \DeclareTextCommand{\textlooparrowright}{PU}{\9041\254}%* U+21AC
17602 % U+21AE LEFT RIGHT ARROW WITH STROKE; \leftrightarrow (AmS)
17603 \DeclareTextCommand{\textnleftrightarrow}{PU}{\9041\256}%* U+21AE
17604 % U+21AF DOWNWARDS ZIGZAG ARROW; \lightning (stmaryrd)
17605 \DeclareTextCommand{\textlightning}{PU}{\9041\257}%* U+21AF
17606 %* \textlightning -> \Lightning (marvosym)
17607 % U+21B5 DOWNWARDS ARROW WITH CORNER LEFTWARDS;
17608 % \dls (mathabx)
17609 \DeclareTextCommand{\textdls}{PU}{\9041\265}%* U+21B5
17610 % U+21B6 ANTICLOCKWISE TOP SEMICIRCLE ARROW;
17611 % \curvearrowleft (AmS)
17612 \DeclareTextCommand{\textcurvearrowleft}{PU}{\9041\266}%* U+21B6

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17613 % U+21B7 CLOCKWISE TOP SEMICIRCLE ARROW; \curvearrowright (AmS)
17614 \DeclareTextCommand{\textcurvearrowright}{PU}{\9041\267}%* U+21B7
17615 % U+21BC LEFTWARDS HARPOON WITH BARB UPWARDS; harpoonleft-
    barbup;
17616 % \leftharpoonup (LaTeX)
17617 \DeclareTextCommand{\textleftharpoonup}{PU}{\9041\274}%* U+21BC
17618 % U+21BD LEFTWARDS HARPOON WITH BARB DOWNWARDS;
17619 % \leftharpoondown (LaTeX)
17620 \DeclareTextCommand{\textleftharpoondown}{PU}{\9041\275}%* U+21BD
17621 % U+21BE UPWARDS HARPOON WITH BARB RIGHTWARDS;
17622 % \upharpoonright (AmS)
17623 \DeclareTextCommand{\textupharpoonright}{PU}{\9041\276}%* U+21BE
17624 % U+21BF UPWARDS HARPOON WITH BARB LEFTWARDS;
17625 % \upharpoonleft (AmS)
17626 \DeclareTextCommand{\textupharpoonleft}{PU}{\9041\277}%* U+21BF
17627 % U+21C0 RIGHTWARDS HARPOON WITH BARB UPWARDS; harpoonright-
    barbup
17628 % \rightharpoonup (LaTeX)
17629 \DeclareTextCommand{\textrightharpoonup}{PU}{\9041\300}%* U+21C0
17630 % U+21C1 RIGHTWARDS HARPOON WITH BARB DOWNWARDS;
17631 % \rightharpoondown (LaTeX)
17632 \DeclareTextCommand{\textrightharpoondown}{PU}{\9041\301}%* U+21C1
17633 % U+21C2 DOWNWARDS HARPOON WITH BARB RIGHTWARDS;
17634 % \downharpoonright (AmS)
17635 \DeclareTextCommand{\textdownharpoonright}{PU}{\9041\302}%* U+21C2
17636 % U+21C3 DOWNWARDS HARPOON WITH BARB LEFTWARDS;
17637 % \downharpoonleft (AmS)
17638 \DeclareTextCommand{\textdownharpoonleft}{PU}{\9041\303}%* U+21C3
17639 % U+21C4 RIGHTWARDS ARROW OVER LEFTWARDS ARROW;
17640 % \rightarrowoverleft; \rightleftarrows (MnSymbol)
17641 \DeclareTextCommand{\textrightleftarrows}{PU}{\9041\304}%* U+21C4
17642 % U+21C5 UPWARDS ARROW LEFTWARDS OF DOWNWARDS ARROW; ar-
    rowupleftofdown;
17643 % \updownarrows (MnSymbol)
17644 \DeclareTextCommand{\textupdownarrows}{PU}{\9041\305}%* U+21C5
17645 % U+21C6 LEFTWARDS ARROW OVER RIGHTWARDS ARROW; arrowleft-
    overright;
17646 % \leftrightharpoons (AmS)
17647 \DeclareTextCommand{\textleftrightharpoons}{PU}{\9041\306}%* U+21C6
17648 % U+21C7 LEFTWARDS PAIRED ARROWS; \leftleftarrows (AmS)
17649 \DeclareTextCommand{\textleftleftarrows}{PU}{\9041\307}%* U+21C7
17650 % U+21C8 UPWARDS PAIRED ARROWS; \upuparrows (AmS)
17651 \DeclareTextCommand{\textupuparrows}{PU}{\9041\310}%* U+21C8
17652 % U+21C9 RIGHTWARDS PAIRED ARROWS; \rightrightarrows (AmS)
17653 \DeclareTextCommand{\textrightarrows}{PU}{\9041\311}%* U+21C9
17654 % U+21CA DOWNWARDS PAIRED ARROWS; \downdownarrows (AmS)
17655 \DeclareTextCommand{\textdowndownarrows}{PU}{\9041\312}%* U+21CA
17656 % U+21CB LEFTWARDS HARPOON OVER RIGHTWARDS HARPOON;
17657 % \leftrightharpoons (AmS);
17658 \DeclareTextCommand{\textleftrightharpoons}{PU}{\9041\313}%* U+21CB
17659 % U+21CC RIGHTWARDS HARPOON OVER LEFTWARDS HARPOON;
17660 % \rightleftharpoons (LaTeX, AmS)
17661 \DeclareTextCommand{\textrightleftharpoons}{PU}{\9041\314}%* U+21CC
17662 % U+21CD LEFTWARDS DOUBLE ARROW WITH STROKE; \arrowleft-

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        blstroke;
17663 % \nLeftarrow (AmS)
17664 \DeclareTextCommand{\textnLeftarrow}{PU}{\9041\315}%* U+21CD
17665 % U+21CE LEFT RIGHT DOUBLE ARROW WITH STROKE; \nLeftrightarrow (AmS)
17666 \DeclareTextCommand{\textnLeftrightarrow}{PU}{\9041\316}%* U+21CE
17667 % U+21CF RIGHTWARDS DOUBLE ARROW WITH STROKE; arrowrightdblstroke;
17668 % \nRightarrow (AmS)
17669 \DeclareTextCommand{\textnRightarrow}{PU}{\9041\317}%* U+21CF
17670 % U+21D0 LEFTWARDS DOUBLE ARROW; arrowdblleft, arrowleftdbl;
17671 % \Leftarrow (LaTeX)
17672 \DeclareTextCommand{\textLeftarrow}{PU}{\9041\320}%* U+21D0
17673 % U+21D1 UPWARDS DOUBLE ARROW; arrowdblup; \Uparrow (LaTeX)
17674 \DeclareTextCommand{\textUparrow}{PU}{\9041\321}%* U+21D1
17675 % U+21D2 RIGHTWARDS DOUBLE ARROW; arrowdblright, dblarrowright;
17676 % \Rightarrow (LaTeX)
17677 \DeclareTextCommand{\textRightarrow}{PU}{\9041\322}%* U+21D2
17678 %* \textRightarrow -> \Conclusion (marvosym)
17679 % U+21D3 DOWNWARDS DOUBLE ARROW; arrowdbl down; \Downarrow (LaTeX)
17680 \DeclareTextCommand{\textDownarrow}{PU}{\9041\323}%* U+21D3
17681 % U+21D4 LEFT RIGHT DOUBLE ARROW; arrowdbl both;
17682 % \Leftrightarrow (LaTeX)
17683 \DeclareTextCommand{\textLeftrightarrow}{PU}{\9041\324}%* U+21D4
17684 %* \textLeftrightarrow -> \Equivalence (marvosym)
17685 % U+21D5 UP DOWN DOUBLE ARROW; \Updownarrow (LaTeX)
17686 \DeclareTextCommand{\textUpdownarrow}{PU}{\9041\325}%* U+21D5
17687 % U+21D6 NORTH WEST DOUBLE ARROW; \Nwarrow (MnSymbol)
17688 \DeclareTextCommand{\textNwarrow}{PU}{\9041\326}%* U+21D6
17689 % U+21D7 NORTH EAST DOUBLE ARROW; \Nearrow (MnSymbol)
17690 \DeclareTextCommand{\textNearrow}{PU}{\9041\327}%* U+21D7
17691 % U+21D8 SOUTH EAST DOUBLE ARROW; \Searrow (MnSymbol)
17692 \DeclareTextCommand{\textSearrow}{PU}{\9041\330}%* U+21D8
17693 % U+21D9 SOUTH WEST DOUBLE ARROW; \Swarrow (MnSymbol)
17694 \DeclareTextCommand{\textSwarrow}{PU}{\9041\331}%* U+21D9
17695 % U+21DA LEFTWARDS TRIPLE ARROW; \Leftarrow (AmS)
17696 \DeclareTextCommand{\textLeftarrow}{PU}{\9041\332}%* U+21DA
17697 % U+21DB RIGHTWARDS TRIPLE ARROW; \Rrightarrow (MnSymbol)
17698 \DeclareTextCommand{\textRrightarrow}{PU}{\9041\333}%* U+21DB
17699 % U+21DC LEFTWARDS SQUIGGLE ARROW; \leftsquigarrow (mathabx)
17700 \DeclareTextCommand{\textleftsquigarrow}{PU}{\9041\334}%* U+21DC
17701 % U+21DD RIGHTWARDS SQUIGGLE ARROW; \rightsquigarrow (mathabx)
17702 \DeclareTextCommand{\textright squigarrow}{PU}{\9041\335}%* U+21DD
17703 % U+21E0 LEFTWARDS DASHED ARROW; arrowdashleft;
17704 % \dashleftarrow (AmS)
17705 \DeclareTextCommand{\textdashleftarrow}{PU}{\9041\340}%* U+21E0
17706 %* \textdashleftarrow -> \dashedleftarrow (MnSymbol)
17707 % U+21E1 UPWARDS DASHED ARROW; arrowdashup; \dasheduparrow (MnSymbol)
17708 \DeclareTextCommand{\textdasheduparrow}{PU}{\9041\341}%* U+21E1
17709 % U+21E2 RIGHTWARDS DASHED ARROW; arrowdashright; \dashrightarrow (AmS)
17710 \DeclareTextCommand{\textdashrightarrow}{PU}{\9041\342}%* U+21E2

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17711 %* \textdashrightarrow -> \dashedrightarrow (MnSymbol)
17712 % U+21E3 DOWNWARDS DASHED ARROW; arrowdashdown; \dasheddownar-
row (MnSymbol)
17713 \DeclareTextCommand{\textdasheddownarrow}{PU}{\9041\343}%* U+21E3
17714 % U+21E8 RIGHTWARDS WHITE ARROW; \pointer (wasysym)
17715 \DeclareTextCommand{\textpointer}{PU}{\9041\350}%* U+21E8
17716 % U+21F5 DOWNWARDS ARROW LEFTWARDS OF UPWARDS ARROW;
17717 % \downuparrows (MnSymbol)
17718 \DeclareTextCommand{\textdownuparrows}{PU}{\9041\365}%* U+21F5
17719 % U+21FD LEFTWARDS OPEN-HEADED ARROW; \leftarrowtriangle (stmaryrd)
17720 \DeclareTextCommand{\textleftarrowtriangle}{PU}{\9041\375}%* U+21FD
17721 % U+21FE RIGHTWARDS OPEN-HEADED ARROW; \rightarrowtriangle (stmaryrd)
17722 \DeclareTextCommand{\textrightarrowtriangle}{PU}{\9041\376}%* U+21FE
17723 % U+21FF LEFT RIGHT OPEN-HEADED ARROW; \leftrightarrowtrian-
gle (stmaryrd)
17724 \DeclareTextCommand{\textleftrightarrowtriangle}{PU}{\9041\377}%* U+21FF

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#### 47.2.22 Mathematical Operators: U+2200 to U+22FF

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17725 % U+2200 FOR ALL; forall; \forall (LaTeX)
17726 \DeclareTextCommand{\textforall}{PU}{\9042\000}%* U+2200
17727 % U+2201 COMPLEMENT; \complement (AmS)
17728 \DeclareTextCommand{\textcomplement}{PU}{\9042\001}%* U+2201
17729 % U+2202 PARTIAL DIFFERENTIAL; partialdiff; \partial (LaTeX)
17730 \DeclareTextCommand{\textpartial}{PU}{\9042\002}%* U+2202
17731 % U+2203 THERE EXISTS; existential; \exists (LaTeX)
17732 \DeclareTextCommand{\textexists}{PU}{\9042\003}%* U+2203
17733 % U+2204 THERE DOES NOT EXIST; \nexists (AmS)
17734 \DeclareTextCommand{\textnexists}{PU}{\9042\004}%* U+2204
17735 % U+2205 EMPTY SET; emptyset; \emptyset (LaTeX), \varnothing (AmS)
17736 \DeclareTextCommand{\textemptyset}{PU}{\9042\005}%* U+2205
17737 %* \textemptyset -> \varnothing (AmS)
17738 % U+2206 INCREMENT; increment, Delta; \triangle (LaTeX)
17739 \DeclareTextCommand{\texttriangle}{PU}{\9042\006}%* U+2206
17740 % U+2207 NABLA; nabla, gradient; \nabla (LaTeX)
17741 \DeclareTextCommand{\textnabla}{PU}{\9042\007}%* U+2207
17742 % U+2208 ELEMENT OF; element; \in (LaTeX)
17743 \DeclareTextCommand{\textin}{PU}{\9042\010}%* U+2208
17744 % U+2209 NOT AN ELEMENT OF; notelement, notelementof; \notin (LaTeX)
17745 \DeclareTextCommand{\textnotin}{PU}{\9042\011}%* U+2209
17746 % U+220A SMALL ELEMENT OF; \smallin (mathdesign)
17747 \DeclareTextCommand{\textsmallin}{PU}{\9042\012}%* U+220A
17748 % U+220B CONTAINS AS MEMBER; suchthat; \ni (LaTeX)
17749 \DeclareTextCommand{\textni}{PU}{\9042\013}%* U+220B
17750 %* \textni -> \owns (mathabx)
17751 % U+220C DOES NOT CONTAIN AS MEMBER; \notowner (mathabx)
17752 \DeclareTextCommand{\textnotowner}{PU}{\9042\014}%* U+220C
17753 %* \textnotowner -> \notni (txfonts/pxfonts)
17754 % U+220D SMALL CONTAINS AS MEMBER; \smallowns (mathdesign)
17755 \DeclareTextCommand{\textsmallowns}{PU}{\9042\015}%* U+220D
17756 % U+220F N-ARY PRODUCT; \prod (LaTeX)
17757 \DeclareTextCommand{\textprod}{PU}{\9042\017}%* U+220F
17758 % U+2210 N-ARY COPRODUCT; \amalg (LaTeX)
17759 \DeclareTextCommand{\textamalg}{PU}{\9042\020}%* U+2210
17760 % U+2211 N-ARY SUMMATION; summation; \sum (LaTeX)

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17761 \DeclareTextCommand{\textsum}{PU}{\9042\021}%* U+2211
17762 % U+2212 MINUS SIGN; minus
17763 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212
17764 % U+2213 MINUS-OR-PLUS SIGN; minusplus; \mp (LaTeX)
17765 \DeclareTextCommand{\textmp}{PU}{\9042\023}%* U+2213
17766 % U+2214 DOT PLUS; \dotplus (AmS)
17767 \DeclareTextCommand{\textdotplus}{PU}{\9042\024}%* U+2214
17768 % U+2215 DIVISION SLASH; divisionslash; \Divides (marvosym)
17769 \DeclareTextCommand{\textDivides}{PU}{\9042\025}%* U+2215
17770 % \DividesNot (marvosym)
17771 \DeclareTextCommand{\textDividesNot}{PU}{\9042\025\9040\322}%* U+2215 U+20D2
17772 % U+2216 SET MINUS; \setminus (LaTeX)
17773 \DeclareTextCommand{\textsetminus}{PU}{\9042\026}%* U+2216
17774 % U+2217 ASTERISK OPERATOR; asteriskmath; \ast (LaTeX)
17775 \DeclareTextCommand{\textast}{PU}{\9042\027}%* U+2217
17776 % U+2218 RING OPERATOR; \circ (LaTeX)
17777 \DeclareTextCommand{\textcirc}{PU}{\9042\030}%* U+2218
17778 % U+2219 BULLET OPERATOR; bulletoperator; \bullet (LaTeX)
17779 \DeclareTextCommand{\textbulletoperator}{PU}{\9042\031}% U+2219
17780 % U+221A SQUARE ROOT; radical
17781 \DeclareTextCommand{\textsurd}{PU}{\9042\032}%* U+221A
17782 % U+221D PROPORTIONAL TO; proportional; \propto (LaTeX)
17783 \DeclareTextCommand{\textpropto}{PU}{\9042\035}%* U+221D
17784 %* \textpropto -> \varproport (wasysym)
17785 % U+221E INFINITY; infinity; \infty (LaTeX)
17786 \DeclareTextCommand{\textinfty}{PU}{\9042\036}%* U+221E
17787 % U+2220 ANGLE; angle; \angle (LaTeX)
17788 \DeclareTextCommand{\textangle}{PU}{\9042\040}%* U+2220
17789 % U+2221 MEASURED ANGLE; \measuredangle (mathabx, MnSymbol)
17790 \DeclareTextCommand{\textmeasuredangle}{PU}{\9042\041}%* U+2221
17791 % U+2222 SPHERICAL ANGLE; \sphericalangle (AmS)
17792 \DeclareTextCommand{\textsphericalangle}{PU}{\9042\042}%* U+2222
17793 %* \textsphericalangle -> \varangle (wasysym)
17794 %* \textsphericalangle -> \Anglesign (marvosym)
17795 %* \textsphericalangle -> \AngleSign (marvosym)
17796 % U+2223 DIVIDES; divides; \mid (LaTeX)
17797 \DeclareTextCommand{\textmid}{PU}{\9042\043}%* U+2223
17798 % U+2224 DOES NOT DIVIDE; \nmid (AmS)
17799 \DeclareTextCommand{\textnmid}{PU}{\9042\044}%* U+2224
17800 %* \textnmid -> \notdivides (mathabx)
17801 % U+2225 PARALLEL TO; parallel; \parallel (LaTeX)
17802 \DeclareTextCommand{\textparallel}{PU}{\9042\045}%* U+2225
17803 % U+2226 NOT PARALLEL TO; notparallel; \nparallel (AmS)
17804 \DeclareTextCommand{\textnparallel}{PU}{\9042\046}%* U+2226
17805 %* \textnparallel -> nUpdownline (MnSymbol)
17806 % U+2227 LOGICAL AND; logicaland; \wedge (LaTeX)
17807 \DeclareTextCommand{\textwedge}{PU}{\9042\047}%* U+2227
17808 % \owedge (stmaryrd)
17809 \DeclareTextCommand{\textowedge}{PU}{\9042\047\9040\335}%* U+2227 U+20DD
17810 %* \textowedge -> \varowedge (stmaryrd)
17811 % U+2228 LOGICAL OR; logicalor; \vee (LaTeX)
17812 \DeclareTextCommand{\textvee}{PU}{\9042\050}%* U+2228
17813 % \ovee (stmaryrd)
17814 \DeclareTextCommand{\textovee}{PU}{\9042\050\9040\335}%* U+2228 U+20DD

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17815 %* \textovee -> \varovee (stmaryrd)
17816 % U+2229 INTERSECTION; intersection; \cap (LaTeX)
17817 \DeclareTextCommand{\textcap}{PU}{\9042\051}%* U+2229
17818 % U+222A UNION; union; \cup (LaTeX)
17819 \DeclareTextCommand{\textcup}{PU}{\9042\052}%* U+222A
17820 % U+222B INTEGRAL; integral; \int (LaTeX)
17821 \DeclareTextCommand{\textint}{PU}{\9042\053}%* U+222B
17822 %* \textint -> \varint (wasysym)
17823 % U+222C DOUBLE INTEGRAL; dblintegral; \iint (AmS)
17824 \DeclareTextCommand{\textiint}{PU}{\9042\054}%* U+222C
17825 % U+222D TRIPLE INTEGRAL; \iiint (AmS)
17826 \DeclareTextCommand{\textiiint}{PU}{\9042\055}%* U+222D
17827 % U+222E CONTOUR INTEGRAL; contourintegral; \oint (LaTeX)
17828 \DeclareTextCommand{\textoint}{PU}{\9042\056}%* U+222E
17829 %* \textoint -> \varoint (wasysym)
17830 % U+222F SURFACE INTEGRAL; \oiint (wasysym)
17831 \DeclareTextCommand{\textoiint}{PU}{\9042\057}%* U+222F
17832 % U+2232 CLOCKWISE CONTOUR INTEGRAL;
17833 % \ointclockwise (txfonts/pxfonts)
17834 \DeclareTextCommand{\textointclockwise}{PU}{\9042\062}%* U+2232
17835 % U+2233 ANTICLOCKWISE CONTOUR INTEGRAL; \ointctrclockwise (tx-
    fonts/pxfonts)
17836 \DeclareTextCommand{\textointctrclockwise}{PU}{\9042\063}%* U+2233
17837 % U+2234 THEREFORE; therefore; \therefore (AmS)
17838 \DeclareTextCommand{\texttherefore}{PU}{\9042\064}%* U+2234
17839 %* \texttherefore -> uptherefore (MnSymbol)
17840 % U+2235 BECAUSE; because; \because (AmS)
17841 \DeclareTextCommand{\textbecause}{PU}{\9042\065}%* U+2235
17842 %* \textbecause -> \downtherefore (MnSymbol)
17843 % U+2236 RATIO; \vdotdot (MnSymbol)
17844 \DeclareTextCommand{\textvdotdot}{PU}{\9042\066}%* U+2236
17845 % U+2237 PROPORTION; \squaredots (MnSymbol)
17846 \DeclareTextCommand{\textsquaredots}{PU}{\9042\067}%* U+2237
17847 % U+2238 DOT MINUS; \dotminus (MnSymbol)
17848 \DeclareTextCommand{\textdotminus}{PU}{\9042\070}%* U+2238
17849 %* \textdotminus -> \textdotdiv (mathabx)
17850 % U+2239 EXCESS; \eqcolon (txfonts/pxfonts)
17851 \DeclareTextCommand{\texteqcolon}{PU}{\9042\071}%* U+2239
17852 % U+223C TILDE OPERATOR; similar; \sim (LaTeX)
17853 \DeclareTextCommand{\textsim}{PU}{\9042\074}%* U+223C
17854 %* \textsim -> \AC (wasysym)
17855 % U+223D REVERSED TILDE; reverseditilde; \backsim (AmS)
17856 \DeclareTextCommand{\textbacksim}{PU}{\9042\075}%* U+223D
17857 % \nbacksim (txfonts/pxfonts)
17858 \DeclareTextCommand{\textnbacksim}{PU}{\9042\075\83\070}%* U+223D U+0338
17859 % U+2240 WREATH PRODUCT; \wr (LaTeX)
17860 \DeclareTextCommand{\textwr}{PU}{\9042\100}%* U+2240
17861 %* \textwr -> \wreath (MnSymbol)
17862 % U+2241 NOT TILDE; \nsim (AmS)
17863 \DeclareTextCommand{\textnsim}{PU}{\9042\101}%* U+2241
17864 % U+2242 MINUS TILDE; \eqsim (MnSymbol)
17865 \DeclareTextCommand{\texteqsim}{PU}{\9042\102}%* U+2242
17866 % \neqsim (MnSymbol)
17867 \DeclareTextCommand{\textneqsim}{PU}{\9042\102\83\070}%* U+2242 U+0338

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17868 % U+2243 ASYMPTOTICALLY EQUAL TO; asymptoticallyequal; \simeq (LaTeX)  
17869 \DeclareTextCommand{\textssimeq}{PU}{\9042\103}%\* U+2243  
17870 % U+2244 NOT ASYMPTOTICALLY EQUAL TO; \nsimeq (txfonts/pxfonts)  
17871 \DeclareTextCommand{\textnsimeq}{PU}{\9042\104}%\* U+2244  
17872 % U+2245 APPROXIMATELY EQUAL TO; approximatelyequal; \cong (LaTeX)  
17873 \DeclareTextCommand{\textcong}{PU}{\9042\105}%\* U+2245  
17874 % U+2247 NEITHER APPROXIMATELY NOR ACTUALLY EQUAL TO;  
17875 % \ncong (AmS)  
17876 \DeclareTextCommand{\textncong}{PU}{\9042\107}%\* U+2247  
17877 % U+2248 ALMOST EQUAL TO; approxequal; \approx (LaTeX)  
17878 \DeclareTextCommand{\textapprox}{PU}{\9042\110}%\* U+2248  
17879 % U+2249 NOT ALMOST EQUAL TO; \napprox (txfonts/pxfonts)  
17880 \DeclareTextCommand{\textnapprox}{PU}{\9042\111}%\* U+2249  
17881 %\* \textnapprox -> \nthickapprox (txfonts/pxfonts)  
17882 % U+224A ALMOST EQUAL OR EQUAL TO; \approxeq (AmS)  
17883 \DeclareTextCommand{\textapproxeq}{PU}{\9042\112}%\* U+224A  
17884 % \napproxeq (txfonts/pxfonts)  
17885 \DeclareTextCommand{\textnapproxeq}{PU}{\9042\112\83\070}%\* U+224A U+0338  
17886 % U+224B TRIPLE TILDE; \triplesim (MnSymbol)  
17887 \DeclareTextCommand{\texttriplesim}{PU}{\9042\113}%\* U+224B  
17888 %\* \texttriplesim -> \VHF (wasysym)  
17889 % \ntriplesim (MnSymbol)  
17890 \DeclareTextCommand{\textntriplesim}{PU}{\9042\113\83\070}%\* U+224B U+0338  
17891 % U+224C ALL EQUAL TO; allequal; \backcong (MnSymbol)  
17892 \DeclareTextCommand{\textbackcong}{PU}{\9042\114}%\* U+224C  
17893 % \nbackcong (MnSymbol)  
17894 \DeclareTextCommand{\textnbackcong}{PU}{\9042\114\83\070}%\* U+224C U+0338  
17895 % U+224D EQUIVALENT TO; \asymp (LaTeX)  
17896 \DeclareTextCommand{\textasymp}{PU}{\9042\115}%\* U+224D  
17897 % \nasymp (txfonts/pxfonts)  
17898 \DeclareTextCommand{\textnasymp}{PU}{\9042\115\83\070}%\* U+224D U+0338  
17899 %\* \textnasymp -> \notasym (mathabx)  
17900 % U+224E GEOMETRICALLY EQUIVALENT TO; \Bumpeq (AmS)  
17901 \DeclareTextCommand{\textBumpeq}{PU}{\9042\116}%\* U+224E  
17902 % \nBumpeq (txfonts/pxfonts)  
17903 \DeclareTextCommand{\textnBumpeq}{PU}{\9042\116\83\070}%\* U+224E U+0338  
17904 % U+224F DIFFERENCE BETWEEN; \bumpeq (AmS)  
17905 \DeclareTextCommand{\textbumpeq}{PU}{\9042\117}%\* U+224F  
17906 % \nbumpeq (txfonts/pxfonts)  
17907 \DeclareTextCommand{\textnbumpeq}{PU}{\9042\117\83\070}%\* U+224F U+0338  
17908 % U+2250 APPROACHES THE LIMIT; approaches; \doteq (LaTeX)  
17909 \DeclareTextCommand{\textdoteq}{PU}{\9042\120}%\* U+2250  
17910 % \ndoteq (MnSymbol)  
17911 \DeclareTextCommand{\textndoteq}{PU}{\9042\120\83\070}%\* U+2250 U+0338  
17912 % U+2251 GEOMETRICALLY EQUAL TO; geometricallyequal;  
17913 % \doteqdot (AmS)  
17914 \DeclareTextCommand{\textdoteqdot}{PU}{\9042\121}%\* U+2251  
17915 %\* \textdoteqdot -> \Doteq (MnSymbol)  
17916 % \nDoteq (MnSymbol)  
17917 \DeclareTextCommand{\textnDoteq}{PU}{\9042\121\83\070}%\* U+2251 U+0338  
17918 % U+2252 APPROXIMATELY EQUAL TO OR THE IMAGE OF; approx-  
equalorimage;  
17919 % \fallingdotseq (AmS)

17920 \DeclareTextCommand{\textfallingdotseq}{PU}{\9042\122}%\* U+2252  
17921 % \nfallingdotseq (MnSymbol)  
17922 \DeclareTextCommand{\textnfallingdotseq}{PU}{\9042\122\83\070}%\* U+2252 U+0338  
17923 % U+2253 IMAGE OF OR APPROXIMATELY EQUAL TO; imageorapproximatelyequal;  
17924 % \risingdotseq (AmS)  
17925 \DeclareTextCommand{\textrisingdotseq}{PU}{\9042\123}%\* U+2253  
17926 % \nrisingdotseq (MnSymbol)  
17927 \DeclareTextCommand{\textnrisingdotseq}{PU}{\9042\123\83\070}%\* U+2253 U+0338  
17928 % U+2254 COLON EQUALS; \colonequals (colonequals)  
17929 \DeclareTextCommand{\textcolonequals}{PU}{\9042\124}%\* U+2254  
17930 % U+2255 EQUALS COLON; \equalscolon (colonequals)  
17931 \DeclareTextCommand{\textequalscolon}{PU}{\9042\125}%\* U+2255  
17932 % U+2256 RING IN EQUAL TO; \eqcirc (AmS)  
17933 \DeclareTextCommand{\texteqcirc}{PU}{\9042\126}%\* U+2256  
17934 % \neqcirc (MnSymbol)  
17935 \DeclareTextCommand{\textneqcirc}{PU}{\9042\126\83\070}%\* U+2256 U+0338  
17936 % U+2257 RING EQUAL TO; \circeq (AmS)  
17937 \DeclareTextCommand{\textcirceq}{PU}{\9042\127}%\* U+2257  
17938 % \ncirceq (MnSymbol)  
17939 \DeclareTextCommand{\textncirceq}{PU}{\9042\127\83\070}%\* U+2257 U+0338  
17940 % U+2259 ESTIMATES; \hateq (MnSymbol)  
17941 \DeclareTextCommand{\texthateq}{PU}{\9042\131}%\* U+2259  
17942 %\* \texthateq -> \corresponds (mathabx)  
17943 %\* \texthateq -> \Corresponds (marvosym)  
17944 % \nhateq (MnSymbol)  
17945 \DeclareTextCommand{\textnhateq}{PU}{\9042\131\83\070}%\* U+2259 U+0338  
17946 % U+225C DELTA EQUAL TO; \triangleeq (AmS)  
17947 \DeclareTextCommand{\texttriangleeq}{PU}{\9042\134}%\* U+225C  
17948 % U+2260 NOT EQUAL TO; notequal; \ne (LaTeX), \neq (LaTeX)  
17949 \DeclareTextCommand{\textneq}{PU}{\9042\140}%\* U+2260  
17950 \DeclareTextCommand{\textne}{PU}{\9042\140}%\* U+2260  
17951 %\* \textneq -> \nequal (MnSymbol)  
17952 % U+2261 IDENTICAL TO; equivalence; \equiv (LaTeX)  
17953 \DeclareTextCommand{\textequiv}{PU}{\9042\141}%\* U+2261  
17954 %\* \textequiv -> \Congruent (marvosym)  
17955 % U+2262 NOT IDENTICAL TO; notidentical; \nequiv (txfonts/pxfonts)  
17956 \DeclareTextCommand{\textnequiv}{PU}{\9042\142}%\* U+2262  
17957 %\* \textnequiv -> \NotCongruent (marvosym)  
17958 %\* \textnequiv -> \notequiv (mathabx)  
17959 % U+2264 LESS-THAN OR EQUAL TO; lessequal; \le (LaTeX), \leq (LaTeX)  
17960 \DeclareTextCommand{\textleq}{PU}{\9042\144}%\* U+2264  
17961 \DeclareTextCommand{\textle}{PU}{\9042\144}%\* U+2264  
17962 %\* \textleq -> \LessOrEqual (marvosym)  
17963 % U+2265 GREATER-THAN OR EQUAL TO; greaterequal;  
17964 % \ge (LaTeX), \geq (LaTeX)  
17965 \DeclareTextCommand{\textgeq}{PU}{\9042\145}%\* U+2265  
17966 \DeclareTextCommand{\textge}{PU}{\9042\145}%\* U+2265  
17967 %\* \textgeq -> \LargerOrEqual (marvosym)  
17968 % U+2266 LESS-THAN OVER EQUAL TO; lessoverequal; \leqq (AmS)  
17969 \DeclareTextCommand{\textleqq}{PU}{\9042\146}%\* U+2266  
17970 % \nleqq (txfonts/pxfonts)  
17971 \DeclareTextCommand{\textnleqq}{PU}{\9042\146\83\070}%\* U+2266 U+0338  
17972 % U+2267 GREATER-THAN OVER EQUAL TO; greateroverequal; \geqq (AmS)



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17973 \DeclareTextCommand{\textgeqq}{PU}{\9042\147}%* U+2267
17974 % \ngeqq (txfonts/pxfonts)
17975 \DeclareTextCommand{\textngeqq}{PU}{\9042\147\83\070}%* U+2267 U+0338
17976 % U+2268 LESS-THAN BUT NOT EQUAL TO; \lneqq (AmS)
17977 \DeclareTextCommand{\textlneqq}{PU}{\9042\150}%* U+2268
17978 % U+2269 GREATER-THAN BUT NOT EQUAL TO; \gneqq (AmS)
17979 \DeclareTextCommand{\textgneqq}{PU}{\9042\151}%* U+2269
17980 % U+226A MUCH LESS-THAN; muchless; \ll (LaTeX)
17981 \DeclareTextCommand{\textll}{PU}{\9042\152}%* U+226A
17982 % \nll (txfonts/pxfonts)
17983 \DeclareTextCommand{\textnll}{PU}{\9042\152\83\070}%* U+226A U+0338
17984 % U+226B MUCH GREATER-THAN; muchgreater; \gg (LaTeX)
17985 \DeclareTextCommand{\textgg}{PU}{\9042\153}%* U+226B
17986 % \ngg (txfonts/pxfonts)
17987 \DeclareTextCommand{\textngg}{PU}{\9042\153\83\070}%* U+226B U+0338
17988 % U+226C BETWEEN; \between (AmS)
17989 \DeclareTextCommand{\textbetween}{PU}{\9042\154}%* U+226C
17990 % U+226E NOT LESS-THAN; notless; \nless (AmS)
17991 \DeclareTextCommand{\textnless}{PU}{\9042\156}%* U+226E
17992 % U+226F NOT GREATER-THAN; notgreater; \ngtr (AmS)
17993 \DeclareTextCommand{\textngtr}{PU}{\9042\157}%* U+226F
17994 % U+2270 NEITHER LESS-THAN NOR EQUAL TO; notlessnorequal;
17995 % \nleq (AmS)
17996 \DeclareTextCommand{\textnleq}{PU}{\9042\160}%* U+2270
17997 % U+2271 NEITHER GREATER-THAN NOR EQUAL TO; notgreaternore-
    qual; \ngeq (AmS)
17998 \DeclareTextCommand{\textngeq}{PU}{\9042\161}%* U+2271
17999 % U+2272 LESS-THAN OR EQUIVALENT TO; lessorequivalent; \lessim (AmS)
18000 \DeclareTextCommand{\textlessim}{PU}{\9042\162}%* U+2272
18001 %* \textlessim -> \apprle (wasysym)
18002 % U+2273 GREATER-THAN OR EQUIVALENT TO; greaterorequivalent; \gtr-
    sim (AmS)
18003 \DeclareTextCommand{\textgtrsim}{PU}{\9042\163}%* U+2273
18004 %* \textgtrsim -> \apprge (wasysym)
18005 % U+2274 NEITHER LESS-THAN NOR EQUIVALENT TO; \nlessim (tx-
    fonts/pxfonts)
18006 \DeclareTextCommand{\textnlessim}{PU}{\9042\164}%* U+2274
18007 % U+2275 NEITHER GREATER-THAN NOR EQUIVALENT TO; \ngtrsim (tx-
    fonts/pxfonts)
18008 \DeclareTextCommand{\textngtrsim}{PU}{\9042\165}%* U+2275
18009 % U+2276 LESS-THAN OR GREATER-THAN; lessorgreater; \lessgtr (AmS)
18010 \DeclareTextCommand{\textlessgtr}{PU}{\9042\166}%* U+2276
18011 % U+2277 GREATER-THAN OR LESS-THAN; greaterorless; \gtrless (AmS)
18012 \DeclareTextCommand{\textgtrless}{PU}{\9042\167}%* U+2277
18013 % U+2278 NEITHER LESS-THAN NOR GREATER-THAN; \ngtrless (tx-
    fonts/pxfonts)
18014 \DeclareTextCommand{\textngtrless}{PU}{\9042\170}%* U+2278
18015 % U+2279 NEITHER GREATER-THAN NOR LESS-THAN; \nlessgtr (tx-
    fonts/pxfonts)
18016 \DeclareTextCommand{\textnlessgtr}{PU}{\9042\171}%* U+2279
18017 % U+227A PRECEDES; precedes; \prec (LaTeX)
18018 \DeclareTextCommand{\textprec}{PU}{\9042\172}%* U+227A
18019 % U+227B SUCCEEDS; succeeds; \succ (LaTeX)
18020 \DeclareTextCommand{\textsucc}{PU}{\9042\173}%* U+227B

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18021 % U+227C PRECEDES OR EQUAL TO; \preccurlyeq (AmS)  
18022 \DeclareTextCommand{\textpreccurlyeq}{PU}{\9042\174}%\* U+227C  
18023 % U+227D SUCCEEDS OR EQUAL TO; \succcurlyeq (AmS)  
18024 \DeclareTextCommand{\textsucccurlyeq}{PU}{\9042\175}%\* U+227D  
18025 % U+227E PRECEDES OR EQUIVALENT TO; \precsim (AmS)  
18026 \DeclareTextCommand{\textprecsim}{PU}{\9042\176}%\* U+227E  
18027 % \nprecsim (txfonts/pxfonts)  
18028 \DeclareTextCommand{\textnprecsim}{PU}{\9042\176\83\070}%\* U+227E U+0338  
18029 % U+227F SUCCEEDS OR EQUIVALENT TO; \succsim (AmS)  
18030 \DeclareTextCommand{\textsuccsim}{PU}{\9042\177}%\* U+227F  
18031 % \nsuccsim (txfonts/pxfonts)  
18032 \DeclareTextCommand{\textnsuccsim}{PU}{\9042\177\83\070}%\* U+227F U+0338  
18033 % U+2280 DOES NOT PRECEDE; notprecedes; \nprec (AmS)  
18034 \DeclareTextCommand{\textnprec}{PU}{\9042\200}%\* U+2280  
18035 % U+2281 DOES NOT SUCCEED; notsucceds; \nsucc (AmS)  
18036 \DeclareTextCommand{\textnsucc}{PU}{\9042\201}%\* U+2281  
18037 % U+2282 SUBSET OF; propersubset; \subset (LaTeX)  
18038 \DeclareTextCommand{\textsubset}{PU}{\9042\202}%\* U+2282  
18039 % U+2283 SUPERSET OF; propersuperset; \supset (LaTeX)  
18040 \DeclareTextCommand{\textsupset}{PU}{\9042\203}%\* U+2283  
18041 % U+2284 NOT A SUBSET OF; notsubset; \nsubset (mathabx)  
18042 \DeclareTextCommand{\textnsubset}{PU}{\9042\204}%\* U+2284  
18043 % U+2285 NOT A SUPERSET OF; notsuperset; \nsupset (mathabx)  
18044 \DeclareTextCommand{\textnsupset}{PU}{\9042\205}%\* U+2285  
18045 % U+2286 SUBSET OF OR EQUAL TO; reflexsubset; \subteq (LaTeX)  
18046 \DeclareTextCommand{\textsubteq}{PU}{\9042\206}%\* U+2286  
18047 % U+2287 SUPERSET OF OR EQUAL TO; reflexsuperset; \supseteq (LaTeX)  
18048 \DeclareTextCommand{\textsupseteq}{PU}{\9042\207}%\* U+2287  
18049 % U+2288 NEITHER A SUBSET OF NOR EQUAL TO; \nsubteq (AmS)  
18050 \DeclareTextCommand{\textnsubteq}{PU}{\9042\210}%\* U+2288  
18051 % U+2289 NEITHER A SUPERSET OF NOR EQUAL TO; \nsupseteq (AmS)  
18052 \DeclareTextCommand{\textnsupseteq}{PU}{\9042\211}%\* U+2289  
18053 % U+228A SUBSET OF WITH NOT EQUAL TO; subsetnotequal; \subsetneq (AmS)  
18054 \DeclareTextCommand{\textsubsetneq}{PU}{\9042\212}%\* U+228A  
18055 % U+228B SUPERSET OF WITH NOT EQUAL TO; supersetnotequal; \supsetneq (AmS)  
18056 \DeclareTextCommand{\textsupsetneq}{PU}{\9042\213}%\* U+228B  
18057 % U+228D MULTISSET MULTIPLICATION; \cupdot (MnSymbol)  
18058 \DeclareTextCommand{\textcupdot}{PU}{\9042\215}%\* U+228D  
18059 % U+228E MULTISSET UNION; \cupplus (MnSymbol)  
18060 \DeclareTextCommand{\textcupplus}{PU}{\9042\216}%\* U+228E  
18061 % U+228F SQUARE IMAGE OF; \sqsubset (latexsym, ...)  
18062 \DeclareTextCommand{\textsqsubset}{PU}{\9042\217}%\* U+228F  
18063 % \nsqsubset (txfonts/pxfonts)  
18064 \DeclareTextCommand{\textnsqsubset}{PU}{\9042\217\83\070}%\* U+228F U+0338  
18065 % U+2290 SQUARE ORIGINAL OF; \sqsupset (latexsym, ...)  
18066 \DeclareTextCommand{\textsqsupset}{PU}{\9042\220}%\* U+2290  
18067 % \nsqsupset (txfonts/pxfonts)  
18068 \DeclareTextCommand{\textnsqsupset}{PU}{\9042\220\83\070}%\* U+2290 U+0338  
18069 % U+2291 SQUARE IMAGE OF OR EQUAL TO; \sqsubteq (LaTeX)  
18070 \DeclareTextCommand{\textsqsubteq}{PU}{\9042\221}%\* U+2291  
18071 % \nsqsubteq (txfonts/pxfonts)  
18072 \DeclareTextCommand{\textnsqsubteq}{PU}{\9042\221\83\070}%\* U+2291 U+0338

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18073 % U+2292 SQUARE ORIGINAL OF OR EQUAL TO; \sqsupseteq (LaTeX)
18074 \DeclareTextCommand{\textsqsupseteq}{PU}{\9042\222}%* U+2292
18075 % \nsqsupseteq (txfonts/pxfonts)
18076 \DeclareTextCommand{\textnsqsupseteq}{PU}{\9042\222\83\070}%* U+2292 U+0338
18077 % U+2293 SQUARE CAP; \sqcap (LaTeX)
18078 \DeclareTextCommand{\textsqcap}{PU}{\9042\223}%* U+2293
18079 % U+2294 SQUARE CUP; \sqcup (LaTeX)
18080 \DeclareTextCommand{\textsqcup}{PU}{\9042\224}%* U+2294
18081 % U+2295 CIRCLED PLUS; circleplus; \oplus (LaTeX)
18082 \DeclareTextCommand{\textoplus}{PU}{\9042\225}%* U+2295
18083 %* \textoplus -> \varoplus (stmaryrd)
18084 % U+2296 CIRCLED MINUS; minuscircle; \ominus (LaTeX)
18085 \DeclareTextCommand{\textominus}{PU}{\9042\226}%* U+2296
18086 %* \textominus -> \varominus (stmaryrd)
18087 % U+2297 CIRCLED TIMES; circlemultiply; \otimes (LaTeX)
18088 \DeclareTextCommand{\textotimes}{PU}{\9042\227}%* U+2297
18089 %* \textotimes -> \varotimes (stmaryrd)
18090 % U+2298 CIRCLED DIVISION SLASH; \oslash (LaTeX)
18091 \DeclareTextCommand{\textoslash}{PU}{\9042\230}%* U+2298
18092 %* \textoslash -> \varoslash (stmaryrd)
18093 % U+2299 CIRCLED DOT OPERATOR; circle(d?)ot; \odot (LaTeX)
18094 \DeclareTextCommand{\textodot}{PU}{\9042\231}%* U+2299
18095 %* \textodot -> \varodot (stmaryrd)
18096 % U+229A CIRCLED RING OPERATOR; \circledcirc (AmS)
18097 \DeclareTextCommand{\textcircledcirc}{PU}{\9042\232}%* U+229A
18098 %* \textcircledcirc -> \ocirc (mathabx)
18099 %* \textcircledcirc -> \varocircle (stmaryrd)
18100 % U+229B CIRCLED ASTERISK OPERATOR; \circledast (AmS)
18101 \DeclareTextCommand{\textcircledast}{PU}{\9042\233}%* U+229B
18102 %* \textcircledast -> \varoast (stmaryrd)
18103 %* \textcircledast -> \oasterisk (mathabx)
18104 % U+229D CIRCLED DASH; \circleddash (AmS)
18105 \DeclareTextCommand{\textcircleddash}{PU}{\9042\235}%* U+229D
18106 % U+229E SQUARED PLUS; \boxplus (AmS)
18107 \DeclareTextCommand{\textboxplus}{PU}{\9042\236}%* U+229E
18108 % U+229F SQUARED MINUS; \boxminus (AmS)
18109 \DeclareTextCommand{\textboxminus}{PU}{\9042\237}%* U+229F
18110 % U+22A0 SQUARED TIMES; \boxtimes (AmS)
18111 \DeclareTextCommand{\textboxtimes}{PU}{\9042\240}%* U+22A0
18112 % U+22A1 SQUARED DOT OPERATOR; \boxdot (AmS)
18113 \DeclareTextCommand{\textboxdot}{PU}{\9042\241}%* U+22A1
18114 % U+22A2 RIGHT TACK; \vdash (LaTeX)
18115 \DeclareTextCommand{\textvdash}{PU}{\9042\242}%* U+22A2
18116 %* \textvdash -> \rightvdash (MnSymbol)
18117 % U+22A3 LEFT TACK; tackleft; \dashv (LaTeX)
18118 \DeclareTextCommand{\textdashv}{PU}{\9042\243}%* U+22A3
18119 %* \textdashv -> \leftvdash (MnSymbol)
18120 % \ndashv (mathabx)
18121 \DeclareTextCommand{\textndashv}{PU}{\9042\243\83\070}%* U+22A3 U+0338
18122 %* \textndashv -> \nleftvdash (MnSymbol)
18123 % U+22A4 DOWN TACK (=top); tackdown; \top (LaTeX)
18124 \DeclareTextCommand{\textttop}{PU}{\9042\244}%* U+22A4
18125 %* \textttop -> \downvdash (MnSymbol)
18126 % \ndownvdash (MnSymbol)

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18127 \DeclareTextCommand{\textndownvdash}{PU}{\9042\244\83\070}%* U+22A4 U+0338
18128 % U+22A5 UP TACK (=base, bottom); \bot (LaTeX)
18129 \DeclareTextCommand{\textbot}{PU}{\9042\245}%* U+22A5
18130 %* \textbot -> \upvdash (MnSymbol)
18131 % \nupvdash (MnSymbol)
18132 \DeclareTextCommand{\textnupvdash}{PU}{\9042\245\83\070}%* U+22A5 U+0338
18133 %* \textnupvdash -> \nperp (MnSymbol)
18134 % U+22A8 TRUE; \vDash (AmS)
18135 \DeclareTextCommand{\textvDash}{PU}{\9042\250}%* U+22A8
18136 %* \textvDash -> \models (LaTeX)
18137 %* \textvDash -> \rightmodels (MnSymbol)
18138 % U+22A9 FORCES; \Vdash (AmS)
18139 \DeclareTextCommand{\textVdash}{PU}{\9042\251}%* U+22A9
18140 %* \textVdash -> \rightVdash (MnSymbol)
18141 % U+22AA TRIPLE VERTICAL BAR RIGHT TURNSTILE; \Vvdash (AmS)
18142 \DeclareTextCommand{\textVvdash}{PU}{\9042\252}%* U+22AA
18143 % \nVvdash (mathabx)
18144 \DeclareTextCommand{\textnVvdash}{PU}{\9042\252\83\070}%* U+22AA U+0338
18145 % U+22AB DOUBLE VERTICAL BAR DOUBLE RIGHT TURNSTILE;
18146 % \VDash (mathabx)
18147 \DeclareTextCommand{\textVDash}{PU}{\9042\253}%* U+22AB
18148 %* \textVDash -> \rightModels (MnSymbol)
18149 % U+22AC DOES NOT PROVE; \nvdash (AmS)
18150 \DeclareTextCommand{\textnvdash}{PU}{\9042\254}%* U+22AC
18151 %* \textnvdash -> \nrighvdash (MnSymbol)
18152 % U+22AD NOT TRUE; \nvDash (AmS)
18153 \DeclareTextCommand{\textnvDash}{PU}{\9042\255}%* U+22AD
18154 %* \textnvDash -> \nrighmodels (MnSymbol)
18155 %* \textnvDash -> \nmodels (MnSymbol)
18156 % U+22AE DOES NOT FORCE; \nVdash (txfonts/pxfonts)
18157 \DeclareTextCommand{\textnVdash}{PU}{\9042\256}%* U+22AE
18158 %* \textnVdash -> \nrighVdash (MnSymbol)
18159 % U+22AF NEGATED DOUBLE VERTICAL BAR DOUBLE RIGHT TURN-
      STILE; \nVDash (AmS)
18160 \DeclareTextCommand{\textnVDash}{PU}{\9042\257}%* U+22AF
18161 %* \textnVDash -> \nrighModels (MnSymbol)
18162 % U+22B2 NORMAL SUBGROUP OF; \lhd (latexsym, ...)
18163 \DeclareTextCommand{\textlhd}{PU}{\9042\262}%* U+22B2
18164 %* \textlhd -> \lessclosed (MnSymbol)
18165 % U+22B3 CONTAINS AS NORMAL SUBGROUP; \rhd (latexsym, ...)
18166 \DeclareTextCommand{\textrhd}{PU}{\9042\263}%* U+22B3
18167 %* \textrhd -> \gtrclosed (MnSymbol)
18168 % U+22B4 NORMAL SUBGROUP OF OR EQUAL TO; \unlhd (latexsym, ...)
18169 \DeclareTextCommand{\textunlhd}{PU}{\9042\264}%* U+22B4
18170 %* \textunlhd -> \leqclosed (MnSymbol)
18171 %* \textunlhd -> \trianglelefteq (MnSymbol)
18172 % U+22B5 CONTAINS AS NORMAL SUBGROUP OR EQUAL TO; \unrhd (la-
      texsym, ...)
18173 \DeclareTextCommand{\textunrhd}{PU}{\9042\265}%* U+22B5
18174 %* \textunrhd -> \geqclosed (MnSymbol)
18175 %* \textunrhd -> \trianglerighteq (MnSymbol)
18176 % U+22B6 ORIGINAL OF; \multimapdotbothA (txfonts/pxfonts)
18177 \DeclareTextCommand{\textmultimapdotbothA}{PU}{\9042\266}%* U+22B6
18178 % U+22B7 IMAGE OF; \multimapdotbothB (txfonts/pxfonts)

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18179 \DeclareTextCommand{\textmultimapdotbothB}{PU}{\9042\267}%* U+22B7
18180 % U+22B8 MULTIMAP; \multimap (AmS, txfonts/pxfonts)
18181 \DeclareTextCommand{\textmultimap}{PU}{\9042\270}%* U+22B8
18182 % U+22BB XOR; \veebar (AmS)
18183 \DeclareTextCommand{\textveebar}{PU}{\9042\273}%* U+22BB
18184 % U+22BC NAND; \barwedge (mathabx)
18185 \DeclareTextCommand{\textbarwedge}{PU}{\9042\274}%* U+22BC
18186 % U+22C6 STAR OPERATOR; \star (LaTeX)
18187 \DeclareTextCommand{\textstar}{PU}{\9042\306}%* U+22C6
18188 % U+22C7 DIVISION TIMES; \divideontimes (AmS)
18189 \DeclareTextCommand{\textdivideontimes}{PU}{\9042\307}%* U+22C7
18190 % U+22C8 BOWTIE; \bowtie (LaTeX)
18191 \DeclareTextCommand{\textbowtie}{PU}{\9042\310}%* U+22C8
18192 %* \textbowtie -> \Bowtie (wasysym)
18193 % U+22C9 LEFT NORMAL FACTOR SEMIDIRECT PRODUCT; \ltimes (AmS)
18194 \DeclareTextCommand{\textltimes}{PU}{\9042\311}%* U+22C9
18195 % U+22CA RIGHT NORMAL FACTOR SEMIDIRECT PRODUCT;
18196 % \rtimes (AmS)
18197 \DeclareTextCommand{\textrtimes}{PU}{\9042\312}%* U+22CA
18198 % U+22CB LEFT SEMIDIRECT PRODUCT; \leftthreetimes (AmS)
18199 \DeclareTextCommand{\textleftthreetimes}{PU}{\9042\313}%* U+22CB
18200 % U+22CC RIGHT SEMIDIRECT PRODUCT; \rightthreetimes (AmS)
18201 \DeclareTextCommand{\textrightthreetimes}{PU}{\9042\314}%* U+22CC
18202 % U+22CD REVERSED TILDE EQUALS; \backsimeq (AmS)
18203 \DeclareTextCommand{\textbacksimeq}{PU}{\9042\315}%* U+22CD
18204 % \nbacksimeq (txfonts/pxfonts)
18205 \DeclareTextCommand{\textnbacksimeq}{PU}{\9042\315\83\070}%* U+22CD U+0338
18206 % U+22CE CURLY LOGICAL OR; curlyor; \curlyvee (AmS)
18207 \DeclareTextCommand{\textcurlyvee}{PU}{\9042\316}%* U+22CE
18208 %* \textcurlyvee -> \varcurlyvee (stmaryrd)
18209 % U+22CF CURLY LOGICAL AND; curlyand; \curlywedge (AmS)
18210 \DeclareTextCommand{\textcurlywedge}{PU}{\9042\317}%* U+22CF
18211 %* \textcurlywedge -> \varcurlywedge (stmaryrd)
18212 % U+22D0 DOUBLE SUBSET; \Subset (AmS)
18213 \DeclareTextCommand{\textSubset}{PU}{\9042\320}%* U+22D0
18214 % \nSubset (txfonts/pxfonts)
18215 \DeclareTextCommand{\textnSubset}{PU}{\9042\320\83\070}%* U+22D0 U+0338
18216 % U+22D1 DOUBLE SUPERSET; \Supset (AmS)
18217 \DeclareTextCommand{\textSupset}{PU}{\9042\321}%* U+22D1
18218 % \nSupset (txfonts/pxfonts)
18219 \DeclareTextCommand{\textnSupset}{PU}{\9042\321\83\070}%* U+22D1 U+0338
18220 % U+22D2 DOUBLE INTERSECTION; \Cap (AmS)
18221 \DeclareTextCommand{\textCap}{PU}{\9042\322}%* U+22D2
18222 %* \textCap -> \doublecap (mathabx)
18223 % U+22D3 DOUBLE UNION; \Cup (AmS)
18224 \DeclareTextCommand{\textCup}{PU}{\9042\323}%* U+22D3
18225 %* \textCup -> \doublecup (mathabx)
18226 % U+22D4 PITCHFORK; \pitchfork (mathabx)
18227 \DeclareTextCommand{\textpitchfork}{PU}{\9042\324}%* U+22D4
18228 % U+22D6 LESS-THAN WITH DOT; \lessdot (AmS)
18229 \DeclareTextCommand{\textlessdot}{PU}{\9042\326}%* U+22D6
18230 % U+22D7 GREATER-THAN WITH DOT; \gtrdot (AmS)
18231 \DeclareTextCommand{\textgtrdot}{PU}{\9042\327}%* U+22D7
18232 % U+22D8 VERY MUCH LESS-THAN; \lll (AmS)

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18233 \DeclareTextCommand{\textlll}{PU}{\9042\330}%* U+22D8
18234 % U+22D9 VERY MUCH GREATER-THAN; \ggg (AmS)
18235 \DeclareTextCommand{\textggg}{PU}{\9042\331}%* U+22D9
18236 % U+22DA LESS-THAN EQUAL TO OR GREATER-THAN; lessequalorgreater;
18237 % \lesseqgtr (AmS)
18238 \DeclareTextCommand{\textlesseqgtr}{PU}{\9042\332}%* U+22DA
18239 % U+22DB GREATER-THAN EQUAL TO OR LESS-THAN; greaterequalorless;
18240 % \gtreqless (AmS)
18241 \DeclareTextCommand{\textgtreqless}{PU}{\9042\333}%* U+22DB
18242 % U+22DE EQUAL TO OR PRECEDES; \curlyeqprec (MnSymbol)
18243 \DeclareTextCommand{\textcurlyeqprec}{PU}{\9042\336}%* U+22DE
18244 % \ncurlyeqprec (mathabx)
18245 \DeclareTextCommand{\textncurlyeqprec}{PU}{\9042\336\83\070}%* U+22DE U+0338
18246 % U+22DF EQUAL TO OR SUCCEEDS; \curlyeqsucc (MnSymbol)
18247 \DeclareTextCommand{\textcurlyeqsucc}{PU}{\9042\337}%* U+22DF
18248 % \ncurlyeqsucc (mathabx)
18249 \DeclareTextCommand{\textncurlyeqsucc}{PU}{\9042\337\83\070}%* U+22DF U+0338
18250 % U+22E0 DOES NOT PRECEDE OR EQUAL; \npreccurlyeq (txfonts/pxfonts)
18251 \DeclareTextCommand{\textnpreccurlyeq}{PU}{\9042\340}%* U+22E0
18252 % U+22E1 DOES NOT SUCCEED OR EQUAL; \nsucccurlyeq (txfonts/pxfonts)
18253 \DeclareTextCommand{\textnsucccurlyeq}{PU}{\9042\341}%* U+22E1
18254 % U+22E2 NOT SQUARE IMAGE OF OR EQUAL TO; \nsqsubseteq (tx-
    fonts/pxfonts)
18255 \DeclareTextCommand{\textnqsubseteq}{PU}{\9042\342}%* U+22E2
18256 % U+22E3 NOT SQUARE ORIGINAL OF OR EQUAL TO; \nsqsupseteq (tx-
    fonts/pxfonts)
18257 \DeclareTextCommand{\textnqsupseteq}{PU}{\9042\343}%* U+22E3
18258 % U+22E4 SQUARE IMAGE OF OR NOT EQUAL TO; \sqsubsetneq (mathabx)
18259 \DeclareTextCommand{\textsqsubsetneq}{PU}{\9042\344}%* U+22E4
18260 %* \textsqsubsetneq -> \varsqsubsetneq (mathabx)
18261 % U+22E5 SQUARE ORIGINAL OF OR NOT EQUAL TO; \sqsupsetneq (math-
    abx)
18262 \DeclareTextCommand{\textsqsupsetneq}{PU}{\9042\345}%* U+22E5
18263 %* \textsqsupsetneq -> \varsqsupsetneq (mathabx)
18264 % U+22E6 LESS-THAN BUT NOT EQUIVALENT TO; \lnsim (AmS)
18265 \DeclareTextCommand{\textlnsim}{PU}{\9042\346}%* U+22E6
18266 % U+22E7 GREATER-THAN BUT NOT EQUIVALENT TO; \gnsim (AmS)
18267 \DeclareTextCommand{\textgnsim}{PU}{\9042\347}%* U+22E7
18268 % U+22E8 PRECEDES BUT NOT EQUIVALENT TO; \precnsim (AmS)
18269 \DeclareTextCommand{\textprecnsim}{PU}{\9042\350}%* U+22E8
18270 % U+22E9 SUCCEEDS BUT NOT EQUIVALENT TO; \succnsim (AmS)
18271 \DeclareTextCommand{\textsuccnsim}{PU}{\9042\351}%* U+22E9
18272 % U+22EA NOT NORMAL SUBGROUP OF; \ntriangleleft (AmS)
18273 \DeclareTextCommand{\textntriangleleft}{PU}{\9042\352}%* U+22EA
18274 %* \textntriangleleft -> \nlessclosed (MnSymbol)
18275 % U+22EB DOES NOT CONTAIN AS NORMAL SUBGROUP; \ntriang-
    leright (AmS)
18276 \DeclareTextCommand{\textntriangleright}{PU}{\9042\353}%* U+22EB
18277 %* \textntriangleright -> \ngtrclosed (MnSymbol)
18278 % U+22EC NOT NORMAL SUBGROUP OF OR EQUAL TO;
18279 % \ntrianglelefteq (AmS)
18280 \DeclareTextCommand{\textntrianglelefteq}{PU}{\9042\354}%* U+22EC
18281 % U+22ED DOES NOT CONTAIN AS NORMAL SUBGROUP OR EQUAL;
18282 % \ntrianglerighteq (AmS)

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18283 \DeclareTextCommand{\textntrianglerighteq}{PU}{\9042\355}%* U+22ED
18284 %* \textntrianglerighteq -> textngeqclosed
18285 % U+22EE VERTICAL ELLIPSIS; \vdots (LaTeX)
18286 \DeclareTextCommand{\textvdots}{PU}{\9042\356}%* U+22EE
18287 % U+22EF MIDLINE HORIZONTAL ELLIPSIS; \cdots (LaTeX)
18288 \DeclareTextCommand{\textcdots}{PU}{\9042\357}%* U+22EF
18289 % U+22F0 UP RIGHT DIAGONAL ELLIPSIS; \udots (MnSymbol)
18290 \DeclareTextCommand{\textudots}{PU}{\9042\360}%* U+22F0
18291 % U+22F1 DOWN RIGHT DIAGONAL ELLIPSIS; \ddots (LaTeX)
18292 \DeclareTextCommand{\textddots}{PU}{\9042\361}%* U+22F1
18293 % U+22F6 ELEMENT OF WITH OVERBAR; \barin (mathabx)
18294 \DeclareTextCommand{\textbarin}{PU}{\9042\366}%* U+22F6

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#### 47.2.23 Miscellaneous Technical: U+2300 to U+23FF

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18295 % U+2300 DIAMETER SIGN; \diameter (mathabx,wasysym)
18296 \DeclareTextCommand{\textdiameter}{PU}{\9043\000}%* U+2300
18297 % U+2310 REVERSED NOT SIGN; \backneg (MnSymbol)
18298 \DeclareTextCommand{\textbackneg}{PU}{\9043\020}%* U+2310
18299 % U+2311 SQUARE LOZENGE; \wasylozenge (wasysym)
18300 \DeclareTextCommand{\textwasylozenge}{PU}{\9043\021}%* U+2311
18301 % U+2319 TURNED NOT SIGN; \invbackneg (MnSymbol)
18302 \DeclareTextCommand{\textinvbackneg}{PU}{\9043\031}%* U+2319
18303 % U+231A WATCH; \clock (wasysym)
18304 \DeclareTextCommand{\textclock}{PU}{\9043\032}%* U+231A
18305 %* \textclock -> \Clocklogo (marvosym)
18306 %* \textclock -> \ClockLogo (marvosym)
18307 % U+231C TOP LEFT CORNER; \ulcorner (AmS)
18308 \DeclareTextCommand{\textulcorner}{PU}{\9043\034}%* U+231C
18309 % U+231D TOP RIGHT CORNER; \urcorner (AmS)
18310 \DeclareTextCommand{\texturcorner}{PU}{\9043\035}%* U+231D
18311 % U+231E BOTTOM LEFT CORNER; \llcorner (AmS)
18312 \DeclareTextCommand{\textllcorner}{PU}{\9043\036}%* U+231E
18313 % U+231F BOTTOM RIGHT CORNER; \lrcorner (AmS)
18314 \DeclareTextCommand{\textlrcorner}{PU}{\9043\037}%* U+231F
18315 % U+2322 FROWN; \frown (LaTeX)
18316 \DeclareTextCommand{\textfrown}{PU}{\9043\042}%* U+2322
18317 % U+2323 SMILE; \smile (LaTeX)
18318 \DeclareTextCommand{\textsmile}{PU}{\9043\043}%* U+2323
18319 % U+2328 KEYBOARD; \Keyboard (marvosym)
18320 \DeclareTextCommand{\textKeyboard}{PU}{\9043\050}%* U+2328
18321 % U+2329 LEFT-POINTING ANGLE BRACKET; \angleleft; \langle (LaTeX)
18322 \DeclareTextCommand{\textlangle}{PU}{\9043\051}%* U+2329
18323 % U+232A RIGHT-POINTING ANGLE BRACKET; \angleright; \rangle (LaTeX)
18324 \DeclareTextCommand{\textrangle}{PU}{\9043\052}%* U+232A
18325 % U+2339 APL FUNCTIONAL SYMBOL QUAD DIVIDE; \APLinv (wasysym)
18326 \DeclareTextCommand{\textAPLinv}{PU}{\9043\071}%* U+2339
18327 % U+233C APL FUNCTIONAL SYMBOL QUAD CIRCLE; \Tumbler (marvosym)
18328 \DeclareTextCommand{\textTumbler}{PU}{\9043\074}%* U+233C
18329 % U+233D APL FUNCTIONAL SYMBOL CIRCLE STILE; \baro (stmaryrd)
18330 \DeclareTextCommand{\textstmaryrdbaro}{PU}{\9043\075}%* U+233D
18331 %* \textstmaryrdbaro -> \baro (stmaryrd)
18332 % U+233F APL FUNCTIONAL SYMBOL SLASH BAR; \notslash (wasysym)
18333 \DeclareTextCommand{\textnotslash}{PU}{\9043\077}%* U+233F

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18334 % U+2340 APL FUNCTIONAL SYMBOL BACKSLASH BAR;  
 18335 % \notbackslash (wasysym)  
 18336 \DeclareTextCommand{\textnotbackslash}{PU}{\9043\100}%\* U+2340  
 18337 % U+2342 APL FUNCTIONAL SYMBOL QUAD BACKSLASH; \boxback-  
 slash (mathabx)  
 18338 \DeclareTextCommand{\textboxbackslash}{PU}{\9043\102}%\* U+2342  
 18339 % U+2347 APL FUNCTIONAL SYMBOL QUAD LEFTWARDS ARROW;  
 18340 % \APLleftarrowbox (wasysym)  
 18341 \DeclareTextCommand{\textAPLleftarrowbox}{PU}{\9043\107}%\* U+2347  
 18342 % U+2348 APL FUNCTIONAL SYMBOL QUAD RIGHTWARDS ARROW;  
 18343 % \APLrightarrowbox (wasysym)  
 18344 \DeclareTextCommand{\textAPLrightarrowbox}{PU}{\9043\110}%\* U+2348  
 18345 % U+2350 APL FUNCTIONAL SYMBOL QUAD UPWARDS ARROW; \APLu-  
 parrowbox (wasysym)  
 18346 \DeclareTextCommand{\textAPLuparrowbox}{PU}{\9043\120}%\* U+2350  
 18347 % U+2357 APL FUNCTIONAL SYMBOL QUAD DOWNWARDS ARROW;  
 18348 % \APLdownarrowbox (wasysym)  
 18349 \DeclareTextCommand{\textAPLdownarrowbox}{PU}{\9043\127}%\* U+2357  
 18350 % U+235E APL FUNCTIONAL SYMBOL QUOTE QUAD;  
 18351 % \APLinput (wasysym)  
 18352 \DeclareTextCommand{\textAPLinput}{PU}{\9043\136}%\* U+235E  
 18353 % U+2370 APL FUNCTIONAL SYMBOL QUAD QUESTION; \Request (china2e)  
 18354 \DeclareTextCommand{\textRequest}{PU}{\9043\160}%\* U+2370  
 18355 % U+2393 DIRECT CURRENT SYMBOL FORM TWO; \Beam (marvosym)  
 18356 \DeclareTextCommand{\textBeam}{PU}{\9043\223}%\* U+2393  
 18357 % U+2394 SOFTWARE-FUNCTION SYMBOL; \hexagon (wasysym)  
 18358 \DeclareTextCommand{\texthexagon}{PU}{\9043\224}%\* U+2394  
 18359 % U+2395 APL FUNCTIONAL SYMBOL QUAD; \APLbox (wasysym)  
 18360 \DeclareTextCommand{\textAPLbox}{PU}{\9043\225}%\* U+2395  
 18361 % U+23ED BLACK RIGHT-POINTING DOUBLE TRIANGLE WITH VERTI-  
 CAL BAR;  
 18362 % \ForwardToIndex (marvosym)  
 18363 \DeclareTextCommand{\textForwardToIndex}{PU}{\9043\355}%\* U+23ED  
 18364 % U+23EE BLACK LEFT-POINTING DOUBLE TRIANGLE WITH VERTI-  
 CAL BAR;  
 18365 % \RewindToIndex (marvosym)  
 18366 \DeclareTextCommand{\textRewindToIndex}{PU}{\9043\356}%\* U+23EE

#### 47.2.24 Control Pictures: U+2400 to U+243F

18367 % U+2422 BLANK SYMBOL  
 18368 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422  
 18369 % U+2423 OPEN BOX; blank  
 18370 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

#### 47.2.25 Optical Character Recognition: U+2440 to U+245F

18371 % U+244A OCR DOUBLE BACKSLASH; \bbslash (stmaryrd)  
 18372 \DeclareTextCommand{\textbbslash}{PU}{\9044\112}%\* U+244A  
 18373 %\* \textbbslash -> \varparallelinv (txfonts/pxfonts)

#### 47.2.26 Enclosed Alphanumerics: U+2460 to U+24FF

18374 % U+2460 CIRCLED DIGIT ONE; onecircle  
 18375 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460  
 18376 % U+2461 CIRCLED DIGIT TWO; twocircle  
 18377 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461



18378 % U+2462 CIRCLED DIGIT THREE; threecircle  
 18379 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462  
 18380 % U+2463 CIRCLED DIGIT FOUR; fourcircle  
 18381 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463  
 18382 % U+2464 CIRCLED DIGIT FIVE; fivecircle  
 18383 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464  
 18384 % U+2465 CIRCLED DIGIT SIX; sixcircle  
 18385 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465  
 18386 % U+2466 CIRCLED DIGIT SEVEN; sevenscircle  
 18387 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466  
 18388 % U+2467 CIRCLED DIGIT EIGHT; eightcircle  
 18389 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467  
 18390 % U+2468 CIRCLED DIGIT NINE; ninecircle  
 18391 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468  
 18392 % U+2469 CIRCLED NUMBER TEN; tencircle  
 18393 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469  
 18394 % U+246A CIRCLED NUMBER ELEVEN; elevencircle  
 18395 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A  
 18396 % U+246B CIRCLED NUMBER TWELVE; twelvecircle  
 18397 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B  
 18398 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle  
 18399 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C  
 18400 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle  
 18401 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D  
 18402 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle  
 18403 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E  
 18404 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle  
 18405 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F  
 18406 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle  
 18407 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470  
 18408 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle  
 18409 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471  
 18410 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle  
 18411 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472  
 18412 % U+2473 CIRCLED NUMBER TWENTY; twentycircle  
 18413 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473  
 18414 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle  
 18415 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6  
 18416 % \CircledA (marvosym)  
 18417 \DeclareTextCommand{\textCircledA}{PU}{\9044\266}%\* U+24B6  
 18418 %\* \textCircledA -> \CleaningA  
 18419 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle  
 18420 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7  
 18421 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle  
 18422 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8  
 18423 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle  
 18424 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9  
 18425 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle  
 18426 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA  
 18427 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle  
 18428 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB  
 18429 % \CleaningF (marvosym)  
 18430 \DeclareTextCommand{\textCleaningF}{PU}{\9044\273}%\* U+24BB  
 18431 % \CleaningFF (marvosym)

18432 \DeclareTextCommand{\textCleaningFF}{PU}{\9044\273\83\062}%\* U+24BB U+0332  
 18433 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle  
 18434 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC  
 18435 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle  
 18436 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD  
 18437 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle  
 18438 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE  
 18439 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle  
 18440 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF  
 18441 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle  
 18442 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0  
 18443 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle  
 18444 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1  
 18445 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle  
 18446 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2  
 18447 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle  
 18448 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3  
 18449 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle  
 18450 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4  
 18451 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle  
 18452 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5  
 18453 % \CleaningP (marvosym)  
 18454 \DeclareTextCommand{\textCleaningP}{PU}{\9044\305}%\* U+24C5  
 18455 % \CleaningPP (marvosym)  
 18456 \DeclareTextCommand{\textCleaningPP}{PU}{\9044\305\83\062}%\* U+24C5 U+0332  
 18457 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle  
 18458 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6  
 18459 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle  
 18460 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7  
 18461 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle  
 18462 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8  
 18463 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle  
 18464 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9  
 18465 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle  
 18466 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA  
 18467 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle  
 18468 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB  
 18469 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle  
 18470 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC  
 18471 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle  
 18472 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD  
 18473 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle  
 18474 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE  
 18475 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle  
 18476 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF  
 18477 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle  
 18478 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0  
 18479 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle  
 18480 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1  
 18481 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle  
 18482 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2  
 18483 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle  
 18484 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3  
 18485 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle

18486 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4  
 18487 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle  
 18488 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5  
 18489 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle  
 18490 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6  
 18491 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle  
 18492 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7  
 18493 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle  
 18494 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8  
 18495 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcircle  
 18496 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9  
 18497 % U+24DA CIRCLED LATIN SMALL LETTER K; kcircle  
 18498 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA  
 18499 % U+24DB CIRCLED LATIN SMALL LETTER L; lcircle  
 18500 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB  
 18501 % U+24DC CIRCLED LATIN SMALL LETTER M; mcircle  
 18502 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC  
 18503 % U+24DD CIRCLED LATIN SMALL LETTER N; ncircle  
 18504 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD  
 18505 % U+24DE CIRCLED LATIN SMALL LETTER O; ocircle  
 18506 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE  
 18507 % U+24DF CIRCLED LATIN SMALL LETTER P; pcircle  
 18508 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF  
 18509 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcircle  
 18510 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0  
 18511 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcircle  
 18512 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1  
 18513 % U+24E2 CIRCLED LATIN SMALL LETTER S; scircle  
 18514 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2  
 18515 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcircle  
 18516 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3  
 18517 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucircle  
 18518 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4  
 18519 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcircle  
 18520 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5  
 18521 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcircle  
 18522 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6  
 18523 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcircle  
 18524 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7  
 18525 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycircle  
 18526 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8  
 18527 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcircle  
 18528 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9  
 18529 % U+24EA CIRCLED DIGIT ZERO  
 18530 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

#### 47.2.27 Box Drawing: U+2500 to 257F

18531 % U+2504 BOX DRAWINGS LIGHT TRIPLE DASH HORIZONTAL; \Cutting-  
 Line (marvosym)  
 18532 \DeclareTextCommand{\textCuttingLine}{PU}{\9045\004}%\* U+2504  
 18533 %\* \textCuttingLine -> \Kutline (marvosym)  
 18534 %\* \textCuttingLine -> \CutLine (marvosym)  
 18535 %\* \textCuttingLine -> \Cutline (marvosym)

#### 47.2.28 Geometric Shapes: U+25A0 to U+25FF

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18536 % U+25B2 BLACK UP-POINTING TRIANGLE; \UParrow (wasysym)
18537 \DeclareTextCommand{\textUParrow}{PU}{\9045\262}%* U+25B2
18538 %* \textUParrow -> \MoveUp (marvosym)
18539 % U+25B3 WHITE UP-POINTING TRIANGLE; whiteuppointingtriangle;
18540 % \bigtriangleup (LaTeX)
18541 \DeclareTextCommand{\textbigtriangleup}{PU}{\9045\263}%* U+25B3
18542 %* \textbigtriangleup -> \APLup (wasysym)
18543 %* \textbigtriangleup -> \Bleech (marvosym)
18544 % U+25B6 BLACK RIGHT-POINTING TRIANGLE; \Forward (marvosym)
18545 \DeclareTextCommand{\textForward}{PU}{\9045\266}%* U+25B6
18546 % U+25B7 WHITE RIGHT-POINTING TRIANGLE (= z notation range restric-
tion);
18547 % whiterightpointingtriangle; \triangleright (LaTeX)
18548 \DeclareTextCommand{\texttriangleright}{PU}{\9045\267}%* U+25B7
18549 % U+25BA BLACK RIGHT-POINTING POINTER; \RHD (wasysym)
18550 \DeclareTextCommand{\textRHD}{PU}{\9045\272}%* U+25BA
18551 % U+25BC BLACK DOWN-POINTING TRIANGLE; \DOWNarrow (wasysym)
18552 \DeclareTextCommand{\textDOWNarrow}{PU}{\9045\274}%* U+25BC
18553 %* \textDOWNarrow -> \MoveDown (marvosym)
18554 % U+25BD WHITE DOWN-POINTING TRIANGLE; whitedownpointingtri-
angle;
18555 % \bigtriangledown (LaTeX)
18556 \DeclareTextCommand{\textbigtriangledown}{PU}{\9045\275}%* U+25BD
18557 %* \textbigtriangledown -> \APLdown (wasysym)
18558 % U+25C0 BLACK LEFT-POINTING TRIANGLE; \Rewind (marvosym)
18559 \DeclareTextCommand{\textRewind}{PU}{\9045\300}%* U+25C0
18560 % U+25C1 WHITE RIGHT-POINTING TRIANGLE (= z notation domain re-
striction);
18561 % whiteleftpointingtriangle; \triangleleft (LaTeX)
18562 \DeclareTextCommand{\texttriangleleft}{PU}{\9045\301}%* U+25C1
18563 % U+25C4 BLACK LEFT-POINTING POINTER; \LHD (wasysym)
18564 \DeclareTextCommand{\textLHD}{PU}{\9045\304}%* U+25C4
18565 % U+25C7 WHITE DIAMOND; whitediamond; \diamond (LaTeX)
18566 \DeclareTextCommand{\textdiamond}{PU}{\9045\307}%* U+25C7
18567 %* \textdiamond -> \Diamond (wasysym)
18568 % U+25CA LOZENGE; lozenge; \lozenge (AmS)
18569 \DeclareTextCommand{\textlozenge}{PU}{\9045\312}%* U+25CA
18570 % U+25D6 LEFT HALF BLACK CIRCLE; \LEFTCIRCLE (wasysym)
18571 \DeclareTextCommand{\textLEFTCIRCLE}{PU}{\9045\326}%* U+25D6
18572 % U+25D7 RIGHT HALF BLACK CIRCLE; \RIGHTCIRCLE (wasysym)
18573 \DeclareTextCommand{\textRIGHTCIRCLE}{PU}{\9045\327}%* U+25D7
18574 % U+25E6 WHITE BULLET; *openbullet, whitebullet
18575 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}%* U+25E6
18576 % U+25EB WHITE SQUARE WITH VERTICAL BISECTING LINE;
18577 % \boxbar (stmaryrd)
18578 \DeclareTextCommand{\textboxbar}{PU}{\9045\353}%* U+25EB
18579 % U+25EF LARGE CIRCLE; largecircle
18580 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}%* U+25EF
18581 %* \textbigcircle -> \varbigcirc (stmaryrd)
18582 %

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#### 47.2.29 Miscellaneous Symbols: U+2600 to U+26FF

18583 % U+2601 CLOUD; \Cloud (ifsym)  
18584 \DeclareTextCommand{\textCloud}{PU}{\9046\001}%\* U+2601  
18585 % U+2605 BLACK STAR; \FiveStar (bding)  
18586 \DeclareTextCommand{\textFiveStar}{PU}{\9046\005}%\* U+2605  
18587 % U+2606 WHITE STAR; \FiveStarOpen (bding)  
18588 \DeclareTextCommand{\textFiveStarOpen}{PU}{\9046\006}%\* U+2606  
18589 % U+260E BLACK TELEPHONE; telephoneblack; \Phone (bding)  
18590 \DeclareTextCommand{\textPhone}{PU}{\9046\016}%\* U+260E  
18591 %\* \textPhone -> \Telefon (marvosym)  
18592 % U+2610 BALLOT BOX; \boxempty (stmaryrd)  
18593 \DeclareTextCommand{\textboxempty}{PU}{\9046\020}%\* U+2610  
18594 %\* \textboxempty -> \Box (wasysym)  
18595 % U+2611 BALLOT BOX WITH CHECK; \Checkedbox (marvosym)  
18596 \DeclareTextCommand{\textCheckedbox}{PU}{\9046\021}%\* U+2611  
18597 %\* \textCheckedbox -> \CheckedBox (marvosym)  
18598 % U+2612 BALLOT BOX WITH X; \Crossedbox (marvosym)  
18599 \DeclareTextCommand{\textCrossedbox}{PU}{\9046\022}%\* U+2612  
18600 %\* \textCrossedbox -> \XBox (wasysym)  
18601 %\* \textCrossedbox -> \CrossedBox (marvosym)  
18602 % U+2615 HOT BEVERAGE; \Coffeecup (marvosym)  
18603 \DeclareTextCommand{\textCoffeecup}{PU}{\9046\025}%\* U+2615  
18604 % U+261A BLACK LEFT POINTING INDEX; \HandCuffLeft (bding)  
18605 \DeclareTextCommand{\textHandCuffLeft}{PU}{\9046\032}%\* U+261A  
18606 % U+261B BLACK RIGHT POINTING INDEX; \HandCuffRight (bding)  
18607 \DeclareTextCommand{\textHandCuffRight}{PU}{\9046\033}%\* U+261B  
18608 % U+261C WHITE LEFT POINTING INDEX; \HandLeft (bding)  
18609 \DeclareTextCommand{\textHandLeft}{PU}{\9046\034}%\* U+261C  
18610 %\* \textHandLeft -> \rightpointleft (fourier)  
18611 % U+261E WHITE RIGHT POINTING INDEX; \HandRight (bding)  
18612 \DeclareTextCommand{\textHandRight}{PU}{\9046\036}%\* U+261E  
18613 %\* \textHandRight -> \leftpointright (fourier)  
18614 %\* \textHandRight -> \PointingHand (marvosym)  
18615 %\* \textHandRight -> \Pointinghand (marvosym)  
18616 % U+2622 RADIOACTIVE SIGN; \Radioactivity (marvosym)  
18617 \DeclareTextCommand{\textRadioactivity}{PU}{\9046\042}%\* U+2622  
18618 %\* \textRadioactivity -> \Radiation (ifsym)  
18619 % U+2623 BIOHAZARD SIGN; \Biohazard (marvosym)  
18620 \DeclareTextCommand{\textBiohazard}{PU}{\9046\043}%\* U+2623  
18621 % U+2625 ANKH; \Ankh (marvosym)  
18622 \DeclareTextCommand{\textAnkh}{PU}{\9046\045}%\* U+2625  
18623 % U+262F YIN YANG; \YinYang (marvosym)  
18624 \DeclareTextCommand{\textYinYang}{PU}{\9046\057}%\* U+262F  
18625 %\* \textYinYang -> \Yinyang (marvosym)  
18626 %\* \textYinYang -> \YingYang (marvosym)  
18627 %\* \textYinYang -> \Yingyang (marvosym)  
18628 % U+2639 WHITE FROWNING FACE; \frownie (wasysym)  
18629 \DeclareTextCommand{\textfrownie}{PU}{\9046\071}%\* U+2639  
18630 %\* \textfrownie -> \Frowny (marvosym)  
18631 % U+263A WHITE SMILING FACE; \smiley (wasysym)  
18632 \DeclareTextCommand{\textsmiley}{PU}{\9046\072}%\* U+263A  
18633 %\* \textsmiley -> \Smiley (marvosym)  
18634 % U+263B BLACK SMILING FACE; \blacksmiley (wasysym)  
18635 \DeclareTextCommand{\textblacksmiley}{PU}{\9046\073}%\* U+263B  
18636 % U+263C WHITE SUN WITH RAYS; \sun (wasysym)

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18637 \DeclareTextCommand{\textsun}{PU}{\9046\074}%* U+263C
18638 %* \textsun -> \Sun (marvosym)
18639 % U+263D FIRST QUARTER MOON; \leftmoon (wasysym, mathabx)
18640 \DeclareTextCommand{\textleftmoon}{PU}{\9046\075}%* U+263D
18641 % U+263E LAST QUARTER MOON; \rightmoon (wasysym, mathabx)
18642 \DeclareTextCommand{\textrightmoon}{PU}{\9046\076}%* U+263E
18643 % U+263F MERCURY; \mercury (wasysym)
18644 \DeclareTextCommand{\textmercury}{PU}{\9046\077}%* U+263F
18645 %* \textmercury -> \Mercury (marvosym)
18646 % U+2640 FEMALE SIGN; female; \female (wasysym)
18647 \DeclareTextCommand{\textPUfemale}{PU}{\9046\100}% U+2640
18648 %* \textPUfemale -> \textfemale (tipx)
18649 %* \textPUfemale -> \female (wasysym)
18650 %* \textPUfemale -> \venus (wasysym)
18651 %* \textPUfemale -> \Venus (marvosym)
18652 %* \textPUfemale -> \Female (marvosym)
18653 % U+2641 EARTH; \earth (wasysym)
18654 \DeclareTextCommand{\textearth}{PU}{\9046\101}%* U+2641
18655 %* \textearth -> \Earth (marvosym)
18656 % U+2642 MALE SIGN; male, mars; \male (wasysym)
18657 \DeclareTextCommand{\textmale}{PU}{\9046\102}%* U+2642
18658 %* \textmale -> \mars (wasysym)
18659 %* \textmale -> \Mars (marvosym)
18660 %* \textmale -> \Male (marvosym)
18661 % U+2643 JUPITER; \jupiter (wasysym)
18662 \DeclareTextCommand{\textjupiter}{PU}{\9046\103}%* U+2643
18663 %* \textjupiter -> \Jupiter (marvosym)
18664 % U+2644 SATURN; \saturn (wasysym)
18665 \DeclareTextCommand{\textsaturn}{PU}{\9046\104}%* U+2644
18666 %* \textsaturn -> \Saturn (marvosym)
18667 % U+2645 URANUS; \uranus (wasysym)
18668 \DeclareTextCommand{\texturanus}{PU}{\9046\105}%* U+2645
18669 %* \texturanus -> \Uranus (marvosym)
18670 % U+2646 NEPTUNE; \neptune (wasysym)
18671 \DeclareTextCommand{\textneptune}{PU}{\9046\106}%* U+2646
18672 %* \textneptune -> \Neptune (marvosym)
18673 % U+2647 PLUTO; \pluto (wasysym)
18674 \DeclareTextCommand{\textpluto}{PU}{\9046\107}%* U+2647
18675 %* \textpluto -> \Pluto (marvosym)
18676 % U+2648 ARIES; \aries (wasysym)
18677 \DeclareTextCommand{\textaries}{PU}{\9046\110}%* U+2648
18678 %* \textaries -> \Aries (marvosym)
18679 % U+2649 TAURUS; \taurus (wasysym)
18680 \DeclareTextCommand{\texttaurus}{PU}{\9046\111}%* U+2649
18681 %* \texttaurus -> \Taurus (marvosym)
18682 % U+264A GEMINI; \gemini (wasysym)
18683 \DeclareTextCommand{\textgemini}{PU}{\9046\112}%* U+264A
18684 %* \textgemini -> \Gemini (marvosym)
18685 % U+264B CANCER; \cancer (wasysym)
18686 \DeclareTextCommand{\textcancer}{PU}{\9046\113}%* U+264B
18687 %* \textcancer -> \Cancer (marvosym)
18688 % U+264C LEO; \leo (wasysym)
18689 \DeclareTextCommand{\textleo}{PU}{\9046\114}%* U+264C
18690 %* \textleo -> \Leo (marvosym)

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18691 % U+264D VIRGO; \virgo (wasysym)  
18692 \DeclareTextCommand{\textvirgo}{PU}{\9046\115}%\* U+264D  
18693 %\* \textvirgo -> \Virgo (marvosym)  
18694 % U+264E LIBRA; \libra (wasysym)  
18695 \DeclareTextCommand{\textlibra}{PU}{\9046\116}%\* U+264E  
18696 %\* \textlibra -> \Libra (marvosym)  
18697 % U+264F SCORPIO; \scorpio (wasysym)  
18698 \DeclareTextCommand{\textscorpio}{PU}{\9046\117}%\* U+264F  
18699 %\* \textscorpio -> \Scorpio (marvosym)  
18700 % U+2650 SAGITTARIUS; \sagittarius (wasysym)  
18701 \DeclareTextCommand{\textsagittarius}{PU}{\9046\120}%\* U+2650  
18702 %\* \textsagittarius -> \Sagittarius (marvosym)  
18703 % U+2651 CAPRICORN; \capricornus (wasysym)  
18704 \DeclareTextCommand{\textcapricornus}{PU}{\9046\121}%\* U+2651  
18705 %\* \textcapricornus -> \Capricorn (marvosym)  
18706 % U+2652 AQUARIUS; \aquarius (wasysym)  
18707 \DeclareTextCommand{\textaquarius}{PU}{\9046\122}%\* U+2652  
18708 %\* \textaquarius -> \Aquarius (marvosym)  
18709 % U+2653 PISCES; \pisces (wasysym)  
18710 \DeclareTextCommand{\textpisces}{PU}{\9046\123}%\* U+2653  
18711 %\* \textpisces -> \Pisces (marvosym)  
18712 % U+2660 BLACK SPADE SUIT; spade, spadesuitblack; \spadesuit (LaTeX)  
18713 \DeclareTextCommand{\textspadesuitblack}{PU}{\9046\140}% U+2660  
18714 %\* \textspadesuitblack -> \spadesuit (MnSymbol)  
18715 % U+2661 WHITE HEART SUIT; heartsuitwhite; \heartsuit (LaTeX)  
18716 \DeclareTextCommand{\textheartsuitwhite}{PU}{\9046\141}% U+2661  
18717 %\* \textheartsuitwhite -> \Heart (marvosym)  
18718 %\* \textheartsuitwhite -> \heartsuit (MnSymbol)  
18719 % U+2662 WHITE DIAMOND SUIT; diamondsuitwhite; \diamondsuit (LaTeX)  
18720 \DeclareTextCommand{\textdiamondsuitwhite}{PU}{\9046\142}% U+2662  
18721 %\* \textdiamondsuitwhite -> \diamondsuit (MnSymbol)  
18722 % U+2663 BLACK CLUB SUIT; club, clubsuitblack; \clubsuit (LaTeX)  
18723 \DeclareTextCommand{\textclubsuitblack}{PU}{\9046\143}% U+2663  
18724 %\* \textclubsuitblack -> \clubsuit (MnSymbol)  
18725 % U+2664 WHITE SPADE SUIT; spadesuitwhite  
18726 \DeclareTextCommand{\textspadesuitwhite}{PU}{\9046\144}% U+2664  
18727 % U+2665 BLACK HEART SUIT; heartsuitblack, heart  
18728 \DeclareTextCommand{\textheartsuitblack}{PU}{\9046\145}% U+2665  
18729 % U+2666 BLACK DIAMOND SUIT; diamond  
18730 \DeclareTextCommand{\textdiamondsuitblack}{PU}{\9046\146}% U+2666  
18731 % U+2667 WHITE CLUB SUIT; clubsuitwhite  
18732 \DeclareTextCommand{\textclubsuitwhite}{PU}{\9046\147}% U+2667  
18733 % U+2669 QUARTER NOTE; quarternote; \quarternote (wasysym, arev)  
18734 \DeclareTextCommand{\textquarternote}{PU}{\9046\151}%\* U+2669  
18735 % U+266A EIGHTH NOTE; musicalnote; \textmusicalnote (textcomp)  
18736 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}% U+266A  
18737 %\* \textmusicalnote -> \eighthnote (wasysym, arev)  
18738 % U+266B BEAMED EIGHTH NOTES; eighthnotebeamed; \twonotes (wasysym)  
18739 \DeclareTextCommand{\texttwonotes}{PU}{\9046\153}%\* U+266B  
18740 % U+266C BEAMED SIXTEENTH NOTES; beamedsixteenthnotes; \sixteenth-  
note (arev)  
18741 \DeclareTextCommand{\textsixteenthnote}{PU}{\9046\154}%\* U+266C  
18742 % U+266D MUSIC FLAT SIGN; musicflatsign; \flat (LaTeX)  
18743 \DeclareTextCommand{\textflat}{PU}{\9046\155}%\* U+266D

18744 % U+266E MUSIC NATURAL SIGN; \natural (LaTeX)  
18745 \DeclareTextCommand{\textnatural}{PU}{\9046\156}%\* U+266E  
18746 % U+266F MUSIC SHARP SIGN; musicsharpsign; \sharp (LaTeX)  
18747 \DeclareTextCommand{\textsharp}{PU}{\9046\157}%\* U+266F  
18748 % U+2672 UNIVERSAL RECYCLING SYMBOL; \recycle (recycle)  
18749 \DeclareTextCommand{\textrecycle}{PU}{\9046\162}%\* U+2672  
18750 %\* \textrecycle -> \Recycling (marvosym)  
18751 % U+267F WHEELCHAIR SYMBOL; \Wheelchair (marvosym)  
18752 \DeclareTextCommand{\textWheelchair}{PU}{\9046\177}%\* U+267F  
18753 % U+2691 BLACK FLAG; \Flag (ifsym)  
18754 \DeclareTextCommand{\textFlag}{PU}{\9046\221}%\* U+2691  
18755 %\* \textFlag -> \VarFlag (ifsym)  
18756 % U+2692 HAMMER AND PICK; \MineSign (marvosym)  
18757 \DeclareTextCommand{\textMineSign}{PU}{\9046\222}%\* U+2692  
18758 % U+2694 CROSSED SWORDS; \dsmilitary (dictsym)  
18759 \DeclareTextCommand{\textdsmilitary}{PU}{\9046\224}%\* U+2694  
18760 %\* \textdsmilitary -> \textxswup (fourier)  
18761 % U+2695 STAFF OF AESCULAPIUS; \dsmedical (dictsym)  
18762 \DeclareTextCommand{\textdsmedical}{PU}{\9046\225}%\* U+2695  
18763 % U+2696 SCALES; \dsjuridical (dictsym)  
18764 \DeclareTextCommand{\textdsjuridical}{PU}{\9046\226}%\* U+2696  
18765 % U+2697 ALEMBIC; \dschemical (dictsym)  
18766 \DeclareTextCommand{\textdschemical}{PU}{\9046\227}%\* U+2697  
18767 % U+2698 FLOWER; \dsbiological (dictsym)  
18768 \DeclareTextCommand{\textdsbiological}{PU}{\9046\230}%\* U+2698  
18769 % U+269A STAFF OF HERMES; \dscommercial (dictsym)  
18770 \DeclareTextCommand{\textdscommercial}{PU}{\9046\232}%\* U+269A  
18771 % U+269D OUTLINED WHITE STAR; \manstar (manfnt)  
18772 \DeclareTextCommand{\textmanstar}{PU}{\9046\235}%\* U+269D  
18773 % U+26A0 WARNING SIGN; \danger (fourier)  
18774 \DeclareTextCommand{\textdanger}{PU}{\9046\240}%\* U+26A0  
18775 % U+26A2 DOUBLED FEMALE SIGN; \FemaleFemale (marvosym)  
18776 \DeclareTextCommand{\textFemaleFemale}{PU}{\9046\242}%\* U+26A2  
18777 % U+26A3 DOUBLED MALE SIGN; \MaleMale (marvosym)  
18778 \DeclareTextCommand{\textMaleMale}{PU}{\9046\243}%\* U+26A3  
18779 % U+26A4 INTERLOCKED FEMALE AND MALE SIGN; \FemaleMale (marvosym)  
18780 \DeclareTextCommand{\textFemaleMale}{PU}{\9046\244}%\* U+26A4  
18781 % U+26A5 MALE AND FEMALE SIGN; \Hermaphrodite (marvosym)  
18782 \DeclareTextCommand{\textHermaphrodite}{PU}{\9046\245}%\* U+26A5  
18783 % U+26AA MEDIUM WHITE CIRCLE; \Neural (marvosym)  
18784 \DeclareTextCommand{\textNeutral}{PU}{\9046\252}%\* U+26AA  
18785 % U+26AD MARRIAGE SYMBOL  
18786 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD  
18787 % U+26AE DIVORCE SYMBOL  
18788 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE  
18789 % U+26B2 NEUTER; \textuncrfemale (tipx)  
18790 \DeclareTextCommand{\textPUuncrfemale}{PU}{\9046\262}% U+26B2  
18791 %\* \textPUuncrfemale -> \textuncrfemale (tipx)  
18792 % U+26B9 SEXTILE; \hexstar (wasysym)  
18793 \DeclareTextCommand{\texthexstar}{PU}{\9046\271}%\* U+26B9  
18794 % U+26BD SOCCER BALL; \Football (marvosym)  
18795 \DeclareTextCommand{\textSoccerBall}{PU}{\9046\275}% U+26BD  
18796 %\* \textSoccerBall -> \Football (marvosym)



18797 % U+26C5 SUN BEHIND CLOUD; \SunCloud (ifsym)  
18798 \DeclareTextCommand{\textSunCloud}{PU}{\9046\305}%\* U+26C5  
18799 % U+26C6 RAIN; \Rain (ifsym)  
18800 \DeclareTextCommand{\textRain}{PU}{\9046\306}%\* U+26C6  
18801 % U+26D4 NO ENTRY; \noway (fourier)  
18802 \DeclareTextCommand{\textnoway}{PU}{\9046\324}%\* U+26D4  
18803 % U+26F0 MOUNTAIN; \Mountain (ifsym)  
18804 \DeclareTextCommand{\textMountain}{PU}{\9046\360}%\* U+26F0  
18805 % U+26FA TENT; \Tent (ifsym)  
18806 \DeclareTextCommand{\textTent}{PU}{\9046\372}%\* U+26FA

#### 47.2.30 Dingbats: U+2700 to U+27BF

18807 % U+2701 UPPER BLADE SCISSORS; \ScissorRightBrokenBottom (bding)  
18808 \DeclareTextCommand{\textScissorRightBrokenBottom}{PU}{\9047\001}% U+2701  
18809 %\* \textScissorRightBrokenBottom -> \CutLeft (marvosym)  
18810 %\* \textScissorRightBrokenBottom -> \Cutright (marvosym)  
18811 % U+2702 BLACK SCISSORS; \ScissorRight (bding)  
18812 \DeclareTextCommand{\textScissorRight}{PU}{\9047\002}%\* U+2702  
18813 %\* \textScissorRight -> \RightScissors (marvosym)  
18814 %\* \textScissorRight -> \Leftscissors (marvosym)  
18815 % U+2703 LOWER BLADE SCISSORS; \ScissorRightBrokenTop (bding)  
18816 \DeclareTextCommand{\textScissorRightBrokenTop}{PU}{\9047\003}%\* U+2703  
18817 % U+2704 WHITE SCISSORS; \ScissorHollowRight (bding)  
18818 \DeclareTextCommand{\textScissorHollowRight}{PU}{\9047\004}%\* U+2704  
18819 % U+2706 TELEPHONE LOCATION SIGN; \PhoneHandset (bding)  
18820 \DeclareTextCommand{\textPhoneHandset}{PU}{\9047\006}%\* U+2706  
18821 % U+2707 TAPE DRIVE; \Tape (bding)  
18822 \DeclareTextCommand{\textTape}{PU}{\9047\007}%\* U+2707  
18823 % U+2708 AIRPLANE; \Plane (bding)  
18824 \DeclareTextCommand{\textPlane}{PU}{\9047\010}%\* U+2708  
18825 % U+2709 ENVELOPE; \Envelope (bding),  
18826 \DeclareTextCommand{\textEnvelope}{PU}{\9047\011}%\* U+2709  
18827 %\* \textEnvelope -> \Letter (marvosym)  
18828 % U+270C VICTORY HAND; \Peace (bding)  
18829 \DeclareTextCommand{\textPeace}{PU}{\9047\014}%\* U+270C  
18830 % U+270D WRITING HAND; \WritingHand (marvosym)  
18831 \DeclareTextCommand{\textWritingHand}{PU}{\9047\015}%\* U+270D  
18832 %\* \textWritingHand -> \Writinghand (marvosym)  
18833 % U+270E LOWER RIGHT PENCIL; \PencilRightDown (bding)  
18834 \DeclareTextCommand{\textPencilRightDown}{PU}{\9047\016}%\* U+270E  
18835 % U+270F PENCIL; \PencilRight (bding)  
18836 \DeclareTextCommand{\textPencilRight}{PU}{\9047\017}%\* U+270F  
18837 % U+2710 UPPER RIGHT PENCIL; \PencilRightUp (bding)  
18838 \DeclareTextCommand{\textPencilRightUp}{PU}{\9047\020}%\* U+2710  
18839 % U+2711 WHITE NIB; \NibRight (bding)  
18840 \DeclareTextCommand{\textNibRight}{PU}{\9047\021}%\* U+2711  
18841 % U+2712 BLACK NIB; \NibSolidRight (bding)  
18842 \DeclareTextCommand{\textNibSolidRight}{PU}{\9047\022}%\* U+2712  
18843 % U+2713 CHECK MARK; checkmark; \Checkmark (bding)  
18844 \DeclareTextCommand{\textCheckmark}{PU}{\9047\023}%\* U+2713  
18845 %\* \textCheckmark -> \checkmark (MnSymbol)  
18846 % U+2714 HEAVY CHECK MARK; \CheckmarkBold (bding)  
18847 \DeclareTextCommand{\textCheckmarkBold}{PU}{\9047\024}%\* U+2714  
18848 % U+2715 MULTIPLICATION X; \XSolid (bding)

18849 \DeclareTextCommand{\textXSolid}{PU}{\9047\025}%\* U+2715  
18850 % U+2716 HEAVY MULTIPLICATION X; \XSolidBold (bding)  
18851 \DeclareTextCommand{\textXSolidBold}{PU}{\9047\026}%\* U+2716  
18852 % U+2717 BALLOT X; \XSolidBrush (bding)  
18853 \DeclareTextCommand{\textXSolidBrush}{PU}{\9047\027}%\* U+2717  
18854 % U+2719 OUTLINED GREEK CROSS; \PlusOutline (bding)  
18855 \DeclareTextCommand{\textPlusOutline}{PU}{\9047\031}%\* U+2719  
18856 % U+271A HEAVY GREEK CROSS; \Plus (bding)  
18857 \DeclareTextCommand{\textPlus}{PU}{\9047\032}%\* U+271A  
18858 % U+271B OPEN CENTRE CROSS; \PlusThinCenterOpen (bding)  
18859 \DeclareTextCommand{\textPlusThinCenterOpen}{PU}{\9047\033}%\* U+271B  
18860 % U+271C HEAVY OPEN CENTRE CROSS; \PlusCenterOpen (bding)  
18861 \DeclareTextCommand{\textPlusCenterOpen}{PU}{\9047\034}%\* U+271C  
18862 % U+271D LATIN CROSS; \Cross (bding)  
18863 \DeclareTextCommand{\textCross}{PU}{\9047\035}%\* U+271D  
18864 % U+271E SHADOWED WHITE LATIN CROSS; \CrossOpenShadow (bding)  
18865 \DeclareTextCommand{\textCrossOpenShadow}{PU}{\9047\036}%\* U+271E  
18866 % U+271F OUTLINED LATIN CROSS; \CrossOutline (bding)  
18867 \DeclareTextCommand{\textCrossOutline}{PU}{\9047\037}%\* U+271F  
18868 % U+2720 MALTESE CROSS; \CrossMaltese (bding)  
18869 \DeclareTextCommand{\textCrossMaltese}{PU}{\9047\040}%\* U+2720  
18870 % U+2721 STAR OF DAVID; \DavidStar (bding)  
18871 \DeclareTextCommand{\textDavidStar}{PU}{\9047\041}%\* U+2721  
18872 %\* \textDavidStar -> \davidstar (wasysym)  
18873 % U+2722 FOUR TEARDROP-SPOKED ASTERISK; \FourAsterisk (bding)  
18874 \DeclareTextCommand{\textFourAsterisk}{PU}{\9047\042}%\* U+2722  
18875 % U+2723 FOUR BALLOON-SPOKED ASTERISK; \JackStar (bding)  
18876 \DeclareTextCommand{\textJackStar}{PU}{\9047\043}%\* U+2723  
18877 % U+2724 HEAVY FOUR BALLOON-SPOKED ASTERISK; \JackStarBold (bding)  
18878 \DeclareTextCommand{\textJackStarBold}{PU}{\9047\044}%\* U+2724  
18879 % U+2725 FOUR CLUB-SPOKED ASTERISK; \CrossClowerTips (bding)  
18880 \DeclareTextCommand{\textClowerTips}{PU}{\9047\045}%\* U+2725  
18881 % U+2726 BLACK FOUR POINTED STAR; \FourStar (bding)  
18882 \DeclareTextCommand{\textFourStar}{PU}{\9047\046}%\* U+2726  
18883 % U+2727 WHITE FOUR POINTED STAR; \FourStarOpen (bding)  
18884 \DeclareTextCommand{\textFourStarOpen}{PU}{\9047\047}%\* U+2727  
18885 % U+272A CIRCLED WHITE STAR; \FiveStarOpenCircled (bding)  
18886 \DeclareTextCommand{\textFiveStarOpenCircled}{PU}{\9047\052}%\* U+272A  
18887 % U+272B OPEN CENTRE BLACK STAR; \FiveStarCenterOpen (bding)  
18888 \DeclareTextCommand{\textFiveStarCenterOpen}{PU}{\9047\053}%\* U+272B  
18889 % U+272C BLACK CENTRE WHITE STAR; \FiveStarOpenDotted (bding)  
18890 \DeclareTextCommand{\textFiveStarOpenDotted}{PU}{\9047\054}%\* U+272C  
18891 % U+272D OUTLINED BLACK STAR; \FiveStarOutline (bding)  
18892 \DeclareTextCommand{\textFiveStarOutline}{PU}{\9047\055}%\* U+272D  
18893 % U+272E HEAVY OUTLINED BLACK STAR; \FiveStarOutlineHeavy (bding)  
18894 \DeclareTextCommand{\textFiveStarOutlineHeavy}{PU}{\9047\056}%\* U+272E  
18895 % U+272F PINWHEEL STAR; \FiveStarConvex (bding)  
18896 \DeclareTextCommand{\textFiveStarConvex}{PU}{\9047\057}%\* U+272F  
18897 % U+2730 SHADOWED WHITE STAR; \FiveStarShadow (bding)  
18898 \DeclareTextCommand{\textFiveStarShadow}{PU}{\9047\060}%\* U+2730  
18899 % U+2731 HEAVY ASTERISK; \AsteriskBold (bding)  
18900 \DeclareTextCommand{\textAsteriskBold}{PU}{\9047\061}%\* U+2731  
18901 % U+2732 OPEN CENTRE ASTERISK; \AsteriskCenterOpen (bding)

18902 \DeclareTextCommand{\textAsteriskCenterOpen}{PU}{\9047\062}%\* U+2732  
18903 % U+2734 EIGHT POINTED BLACK STAR; \EightStarTaper (bding)  
18904 \DeclareTextCommand{\textEightStarTaper}{PU}{\9047\064}%\* U+2734  
18905 % U+2735 EIGHT POINTED PINWHEEL STAR; \EightStarConvex (bding)  
18906 \DeclareTextCommand{\textEightStarConvex}{PU}{\9047\065}%\* U+2735  
18907 % U+2736 SIX POINTED BLACK STAR; \SixStar (bding)  
18908 \DeclareTextCommand{\textSixStar}{PU}{\9047\066}%\* U+2736  
18909 % U+2737 EIGHT POINTED RECTILINEAR BLACK STAR; \EightStar (bding)  
18910 \DeclareTextCommand{\textEightStar}{PU}{\9047\067}%\* U+2737  
18911 % U+2738 HEAVY EIGHT POINTED RECTILINEAR BLACK STAR; \EightStarBold (bding)  
18912 \DeclareTextCommand{\textEightStarBold}{PU}{\9047\070}%\* U+2738  
18913 % U+2739 TWELVE POINTED BLACK STAR; \TwelveStar (bding)  
18914 \DeclareTextCommand{\textTwelveStar}{PU}{\9047\071}%\* U+2739  
18915 % U+273A SIXTEEN POINTED ASTERISK; \SixteenStarLight (bding)  
18916 \DeclareTextCommand{\textSixteenStarLight}{PU}{\9047\072}%\* U+273A  
18917 % U+273B TEARDROP-SPOKED ASTERISK; \SixFlowerPetalRemoved (bding)  
18918 \DeclareTextCommand{\textSixFlowerPetalRemoved}{PU}{\9047\073}%\* U+273B  
18919 % U+273C OPEN CENTRE TEARDROP-SPOKED ASTERISK;  
18920 % \SixFlowerOpenCenter (bding)  
18921 \DeclareTextCommand{\textSixFlowerOpenCenter}{PU}{\9047\074}%\* U+273C  
18922 % U+273D HEAVY TEARDROP-SPOKED ASTERISK; \Asterisk (bding)  
18923 \DeclareTextCommand{\textAsterisk}{PU}{\9047\075}%\* U+273D  
18924 % U+273E SIX PETALLED BLACK AND WHITE FLORETTE; \SixFlowerAlternate (bding)  
18925 \DeclareTextCommand{\textSixFlowerAlternate}{PU}{\9047\076}%\* U+273E  
18926 % U+273F BLACK FLORETTE; \FiveFlowerPetal (bding)  
18927 \DeclareTextCommand{\textFiveFlowerPetal}{PU}{\9047\077}%\* U+273F  
18928 % U+2740 WHITE FLORETTE; \FiveFlowerOpen (bding)  
18929 \DeclareTextCommand{\textFiveFlowerOpen}{PU}{\9047\100}%\* U+2740  
18930 % U+2741 EIGHT PETALLED OUTLINED BLACK FLORETTE; \EightFlowerPetal (bding)  
18931 \DeclareTextCommand{\textEightFlowerPetal}{PU}{\9047\101}%\* U+2741  
18932 % U+2742 CIRCLED OPEN CENTRE EIGHT POINTED STAR; \SunshineOpenCircled (bding)  
18933 \DeclareTextCommand{\textSunshineOpenCircled}{PU}{\9047\102}%\* U+2742  
18934 % U+2743 HEAVY TEARDROP-SPOKED PINWHEEL ASTERISK; \SixFlowerAltPetal (bding)  
18935 \DeclareTextCommand{\textSixFlowerAltPetal}{PU}{\9047\103}%\* U+2743  
18936 % U+2744 SNOWFLAKE; \SnowflakeChevron (bding)  
18937 \DeclareTextCommand{\textSnowflakeChevron}{PU}{\9047\104}%\* U+2744  
18938 % U+2745 TIGHT TRIFOLIATE SNOWFLAKE; \Snowflake (bding)  
18939 \DeclareTextCommand{\textSnowflake}{PU}{\9047\105}%\* U+2745  
18940 % U+2746 HEAVY CHEVRON SNOWFLAKE; \SnowflakeChevronBold (bding)  
18941 \DeclareTextCommand{\textSnowflakeChevronBold}{PU}{\9047\106}%\* U+2746  
18942 % U+2747 SPARKLE; \Sparkle (bding)  
18943 \DeclareTextCommand{\textSparkle}{PU}{\9047\107}%\* U+2747  
18944 % U+2748 HEAVY SPARKLE; \SparkleBold (bding)  
18945 \DeclareTextCommand{\textSparkleBold}{PU}{\9047\110}%\* U+2748  
18946 % U+2749 BALLOON-SPOKED ASTERISK; \AsteriskRoundedEnds (bding)  
18947 \DeclareTextCommand{\textAsteriskRoundedEnds}{PU}{\9047\111}%\* U+2749  
18948 % U+274A EIGHT TEARDROP-SPOKED PROPELLER ASTERISK;

18949 % \EightFlowerPetalRemoved (bding)  
 18950 \DeclareTextCommand{\textEightFlowerPetalRemoved}{PU}{\9047\112}%\* U+274A  
 18951 % U+274B HEAVY EIGHT TEARDROP-SPOKED PROPELLER ASTERISK;  
 18952 % \EightAsterisk (bding)  
 18953 \DeclareTextCommand{\textEightAsterisk}{PU}{\9047\113}%\* U+274B  
 18954 % U+274D SHADOWED WHITE CIRCLE; \CircleShadow (bding)  
 18955 \DeclareTextCommand{\textCircleShadow}{PU}{\9047\115}%\* U+274D  
 18956 % U+274F LOWER RIGHT DROP-SHADOWED WHITE SQUARE;  
 18957 % \SquareShadowBottomRight (bding)  
 18958 \DeclareTextCommand{\textSquareShadowBottomRight}{PU}{\9047\117}%\* U+274F  
 18959 % U+2750 UPPER RIGHT DROP-SHADOWED WHITE SQUARE;  
 18960 % \SquareShadowTopRight (bding)  
 18961 \DeclareTextCommand{\textSquareTopRight}{PU}{\9047\120}%\* U+2750  
 18962 % U+2751 LOWER RIGHT SHADOWED WHITE SQUARE;  
 18963 % \SquareCastShadowBottomRight (bding)  
 18964 \DeclareTextCommand{\textSquareCastShadowBottomRight}{PU}{\9047\121}%\* U+2751  
 18965 % U+2752 UPPER RIGHT SHADOWED WHITE SQUARE;  
 18966 % \SquareCastShadowTopRight (bding)  
 18967 \DeclareTextCommand{\textSquareCastShadowTopRight}{PU}{\9047\122}%\* U+2752  
 18968 % U+2756 BLACK DIAMOND MINUS WHITE X; \OrnamentDiamondSolid (bding)  
 18969 \DeclareTextCommand{\textDiamondSolid}{PU}{\9047\126}%\* U+2756  
 18970 % U+2758 LIGHT VERTICAL BAR; \RectangleThin (bding)  
 18971 \DeclareTextCommand{\textRectangleThin}{PU}{\9047\130}%\* U+2758  
 18972 % U+2759 MEDIUM VERTICAL BAR; \Rectangle (bding)  
 18973 \DeclareTextCommand{\textRectangle}{PU}{\9047\131}%\* U+2759  
 18974 % U+275A HEAVY VERTICAL BAR; \RectangleBold (bding)  
 18975 \DeclareTextCommand{\textRectangleBold}{PU}{\9047\132}%\* U+275A

#### 47.2.31 Miscellaneous Mathematical Symbols-A: U+27C0 to U+27EF

18976 % U+27C2 PERPENDICULAR; perpendicular; \perp (LaTeX)  
 18977 \DeclareTextCommand{\textperp}{PU}{\9047\302}%\* U+27C2  
 18978 % \notperp (mathabx)  
 18979 \DeclareTextCommand{\textnotperp}{PU}{\9047\302\83\070}%\* U+27C2 U+0338  
 18980 % U+27C7 OR WITH DOT INSIDE; \veedot (MnSymbol)  
 18981 \DeclareTextCommand{\textveedot}{PU}{\9047\307}%\* U+27C7  
 18982 % U+27D1 AND WITH DOT; \wedgedot (MnSymbol)  
 18983 \DeclareTextCommand{\textwedgedot}{PU}{\9047\321}%\* U+27D1  
 18984 % U+27DC LEFT MULTIMAP; \leftspoon (MnSymbol)  
 18985 \DeclareTextCommand{\textleftspoon}{PU}{\9047\334}%\* U+27DC  
 18986 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET  
 18987 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}%\* U+27E6  
 18988 %\* \textlbrackdbl -> \llbracket (stmaryrd)  
 18989 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET  
 18990 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}%\* U+27E7  
 18991 %\* \textrbrackdbl -> \rrbracket (stmaryrd)

#### 47.2.32 Supplemental Arrows-A: U+27F0 to U+27FF

18992 % U+27F2 ANTICLOCKWISE GAPPED CIRCLE ARROW;  
 18993 % \circlearrowleft (AmS)  
 18994 \DeclareTextCommand{\textcirclearrowleft}{PU}{\9047\362}%\* U+27F2  
 18995 % U+27F3 CLOCKWISE GAPPED CIRCLE ARROW; \circlearrowright (AmS)  
 18996 \DeclareTextCommand{\textcirclearrowright}{PU}{\9047\363}%\* U+27F3  
 18997 % U+27F5 LONG LEFTWARDS ARROW; \longleftarrow (AmS)

18998 \DeclareTextCommand{\textlongleftarrow}{PU}{\9047\365}%\* U+27F5  
 18999 % U+27F6 LONG RIGHTWARDS ARROW; \longrightarrow (AmS)  
 19000 \DeclareTextCommand{\textlongrightarrow}{PU}{\9047\366}%\* U+27F6  
 19001 % U+27F7 LONG LEFT RIGHT ARROW; \longlefttrightarrow (AmS)  
 19002 \DeclareTextCommand{\textlonglefttrightarrow}{PU}{\9047\367}%\* U+27F7  
 19003 % U+27F8 LONG LEFTWARDS DOUBLE ARROW; \Longleftarrow (AmS)  
 19004 \DeclareTextCommand{\textLongleftarrow}{PU}{\9047\370}%\* U+27F8  
 19005 % U+27F9 LONG RIGHTWARDS DOUBLE ARROW; \Longrightarrow (AmS)  
 19006 \DeclareTextCommand{\textLongrightarrow}{PU}{\9047\371}%\* U+27F9  
 19007 % U+27FA LONG LEFT RIGHT DOUBLE ARROW; \Longlefttrightarrow (AmS)  
 19008 \DeclareTextCommand{\textLonglefttrightarrow}{PU}{\9047\372}%\* U+27FA  
 19009 % U+27FC LONG RIGHTWARDS ARROW FROM BAR; \longmapsto (AmS)  
 19010 \DeclareTextCommand{\textlongmapsto}{PU}{\9047\374}%\* U+27FC  
 19011 % U+27FD LONG LEFTWARDS DOUBLE ARROW FROM BAR; \Longmaps-  
 from (stmaryrd)  
 19012 \DeclareTextCommand{\textLongmapsfrom}{PU}{\9047\375}%\* U+27FD  
 19013 % U+27FE LONG RIGHTWARDS DOUBLE ARROW FROM BAR; \Longmap-  
 sto (stmaryrd)  
 19014 \DeclareTextCommand{\textLongmapsto}{PU}{\9047\376}%\* U+27FE

### 47.2.33 Supplemental Arrows-B: U+2900 to U+297F

19015 % U+2921 NORTH WEST AND SOUTH EAST ARROW; \nwsearrow (MnSym-  
 bol)  
 19016 \DeclareTextCommand{\textnwsearrow}{PU}{\9051\041}%\* U+2921  
 19017 % U+2922 NORTH EAST AND SOUTH WEST ARROW; \neswarrow (MnSym-  
 bol)  
 19018 \DeclareTextCommand{\textneswarrow}{PU}{\9051\042}%\* U+2922  
 19019 % U+2923 NORTH WEST ARROW WITH HOOK; \lhooknwarrow (MnSymbol)  
 19020 \DeclareTextCommand{\textlhooknwarrow}{PU}{\9051\043}%\* U+2923  
 19021 % U+2924 NORTH EAST ARROW WITH HOOK; \rhooknearrow (MnSymbol)  
 19022 \DeclareTextCommand{\textrhooknearrow}{PU}{\9051\044}%\* U+2924  
 19023 % U+2925 SOUTH EAST ARROW WITH HOOK; \lhooksearrow (MnSymbol)  
 19024 \DeclareTextCommand{\textlhooksearrow}{PU}{\9051\045}%\* U+2925  
 19025 % U+2926 SOUTH WEST ARROW WITH HOOK; \rhookswarrow (MnSymbol)  
 19026 \DeclareTextCommand{\textrhookswarrow}{PU}{\9051\046}%\* U+2926  
 19027 % U+2933 WAVE ARROW POINTING DIRECTLY RIGHT; \leadsto (wasysym)  
 19028 \DeclareTextCommand{\textleadsto}{PU}{\9051\063}%\* U+2933  
 19029 % U+2934 ARROW POINTING RIGHTWARDS THEN CURVING UPWARDS;  
 19030 % \rcurvearrowne (MnSymbol)  
 19031 \DeclareTextCommand{\textrcurvearrowne}{PU}{\9051\064}%\* U+2934  
 19032 % U+2935 ARROW POINTING RIGHTWARDS THEN CURVING DOWN-  
 WARDS;  
 19033 % \lcurvearrowse (MnSymbol)  
 19034 \DeclareTextCommand{\textlcurvearrowse}{PU}{\9051\065}%\* U+2935  
 19035 % U+2936 ARROW POINTING DOWNWARDS THEN CURVING LEFT-  
 WARDS;  
 19036 % \lcurvearrowsw (MnSymbol)  
 19037 \DeclareTextCommand{\textlcurvearrowsw}{PU}{\9051\066}%\* U+2936  
 19038 % U+2937 ARROW POINTING DOWNWARDS THEN CURVING RIGHT-  
 WARDS;  
 19039 % \rcurvearrowse (MnSymbol)  
 19040 \DeclareTextCommand{\textrcurvearrowse}{PU}{\9051\067}%\* U+2937  
 19041 % U+2938 RIGHT-SIDE ARC CLOCKWISE ARROW; \lcurvearrowdown (Mn-  
 Symbol)

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19042 \DeclareTextCommand{\textlcurvearrowdown}{PU}{\9051\070}%* U+2938
19043 %* \textlcurvearrowdown -> \RightTorque (marvosym)
19044 %* \textlcurvearrowdown -> \Righttorque (marvosym)
19045 % U+2939 LEFT-SIDE ARC ANTICLOCKWISE ARROW;
19046 % \rcurvearrowdown (MnSymbol)
19047 \DeclareTextCommand{\textrcurvearrowdown}{PU}{\9051\071}%* U+2939
19048 %* \textrcurvearrowdown -> \LeftTorque (marvosym)
19049 %* \textrcurvearrowdown -> \Lefttorque (marvosym)
19050 % U+293A TOP ARC ANTICLOCKWISE ARROW; \rcurvearrowleft (MnSymbol)
19051 \DeclareTextCommand{\textrcurvearrowleft}{PU}{\9051\072}%* U+293A
19052 % U+293B BOTTOM ARC ANTICLOCKWISE ARROW;
19053 % \rcurvearrowright (MnSymbol)
19054 \DeclareTextCommand{\textrcurvearrowright}{PU}{\9051\073}%* U+293B
19055 % U+294A LEFT BARB UP RIGHT BARB DOWN HARPOON; \leftrightharpoon (mathabx)
19056 \DeclareTextCommand{\textleftrightharpoon}{PU}{\9051\112}%* U+294A
19057 % U+294B LEFT BARB DOWN RIGHT BARB UP HARPOON; \rightleftharpoon (mathabx)
19058 \DeclareTextCommand{\textrightleftharpoon}{PU}{\9051\113}%* U+294B
19059 % U+294C UP BARB RIGHT DOWN BARB LEFT HARPOON;
19060 % \updownharpoonrightleft (MnSymbol)
19061 \DeclareTextCommand{\textupdownharpoonrightleft}{PU}{\9051\114}%* U+294C
19062 % U+294D UP BARB LEFT DOWN BARB RIGHT HARPOON;
19063 % \updownharpoonleftright (MnSymbol)
19064 \DeclareTextCommand{\textupdownharpoonleftright}{PU}{\9051\115}%* U+294D
19065 % U+2962 LEFTWARDS HARPOON WITH BARB UP ABOVE LEFTWARDS
19066 % HARPOON WITH BARB DOWN; \leftleftharpoons (mathabx)
19067 \DeclareTextCommand{\textleftleftharpoons}{PU}{\9051\142}%* U+2962
19068 % U+2963 UPWARDS HARPOON WITH BARB LEFT BESIDE UPWARDS
19069 % HARPOON WITH BARB RIGHT; \upupharpoons (mathabx)
19070 \DeclareTextCommand{\textupupharpoons}{PU}{\9051\143}%* U+2963
19071 % U+2964 RIGHTWARDS HARPOON WITH BARB UP ABOVE RIGHTWARDS HARPOON
19072 % WITH BARB DOWN; \rightrightarpoons (mathabx)
19073 \DeclareTextCommand{\textrightarpoons}{PU}{\9051\144}%* U+2964
19074 % U+2965 DOWNWARDS HARPOON WITH BARB LEFT BESIDE DOWNWARDS HARPOON
19075 % WITH BARB RIGHT; \downdownharpoons (mathabx)
19076 \DeclareTextCommand{\textdowndownharpoons}{PU}{\9051\145}%* U+2965
19077 % U+296A LEFTWARDS HARPOON WITH BARB UP ABOVE LONG DASH;
19078 % \leftbarharpoon (mathabx)
19079 \DeclareTextCommand{\textleftbarharpoon}{PU}{\9051\152}%* U+296A
19080 % U+296B LEFTWARDS HARPOON WITH BARB DOWN BELOW
19081 % LONG DASH; \barleftharpoon (mathabx)
19082 \DeclareTextCommand{\textbarleftharpoon}{PU}{\9051\153}%* U+296B
19083 % U+296C RIGHTWARDS HARPOON WITH BARB UP ABOVE
19084 % LONG DASH; \rightbarharpoon (mathabx)
19085 \DeclareTextCommand{\textrightbarharpoon}{PU}{\9051\154}%* U+296C
19086 % U+296D RIGHTWARDS HARPOON WITH BARB DOWN BELOW
19087 % LONG DASH; \barrightharpoon (mathabx)
19088 \DeclareTextCommand{\textbarrightharpoon}{PU}{\9051\155}%* U+296D
19089 % U+296E UPWARDS HARPOON WITH BARB LEFT BESIDE DOWNWARDS HARPOON

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19090 % WITH BARB RIGHT; \updownharpoons (mathabx)  
 19091 \DeclareTextCommand{\textupdownharpoons}{PU}{\9051\156}%\* U+296E  
 19092 % U+296F DOWNWARDS HARPOON WITH BARB LEFT BESIDE UP-  
 WARDS HARPOON  
 19093 % WITH BARB RIGHT; \downupharpoons (mathabx)  
 19094 \DeclareTextCommand{\textdownupharpoons}{PU}{\9051\157}%\* U+296F  
 19095 % U+297F DOWN FISH TAIL  
 19096 \DeclareTextCommand{\textmoo}{PU}{\9051\177\83\066}%\* U+297F U+0336

#### 47.2.34 Miscellaneous Mathematical Symbols-B: U+2980 to U+29FF

19097 % U+2987 Z NOTATION LEFT IMAGE BRACKET; \lparenthesis (stmaryrd)  
 19098 \DeclareTextCommand{\textllparenthesis}{PU}{\9051\207}%\* U+2987  
 19099 % U+2988 Z NOTATION RIGHT IMAGE BRACKET; \rrparenthesis (stmaryrd)  
 19100 \DeclareTextCommand{\textrrparenthesis}{PU}{\9051\210}%\* U+2988  
 19101 % U+29B0 REVERSED EMPTY SET; \invdiameter (wasysym)  
 19102 \DeclareTextCommand{\textinvdiameter}{PU}{\9051\260}%\* U+29B0  
 19103 % U+29B6 CIRCLED VERTICAL BAR; \obar (stmaryrd)  
 19104 \DeclareTextCommand{\textobar}{PU}{\9051\266}%\* U+29B6  
 19105 %\* \textobar -> \textvarobar (stmaryrd)  
 19106 % U+29B8 CIRCLED REVERSE SOLIDUS; \obslash (stmaryrd)  
 19107 \DeclareTextCommand{\textobslash}{PU}{\9051\270}%\* U+29B8  
 19108 %\* \textobslash -> \circledbslash (txfonts/pxfonts)  
 19109 %\* \textobslash -> \obackslash (mathabx)  
 19110 %\* \textobslash -> \varobslash (stmaryrd)  
 19111 % U+29BA CIRCLE DIVIDED BY HORIZONTAL BAR AND TOP HALF  
 DIVIDED BY VERTICAL BAR; \obot (mathabx)  
 19112 % U+29BA CIRCLE DIVIDED BY HORIZONTAL BAR AND TOP HALF  
 DIVIDED BY VERTICAL BAR; \obot (mathabx)  
 19113 \DeclareTextCommand{\textobot}{PU}{\9051\272}%\* U+29BA  
 19114 %\* \textobot -> \odplus (ulsy)  
 19115 % U+29BB CIRCLE WITH SUPERIMPOSED X; \NoChemicalCleaning (mar-  
 vosym)  
 19116 \DeclareTextCommand{\textNoChemicalCleaning}{PU}{\9051\273}%\* U+29BB  
 19117 % U+29C0 CIRCLED LESS-THAN; \olessthan (stmaryrd)  
 19118 \DeclareTextCommand{\textolessthan}{PU}{\9051\300}%\* U+29C0  
 19119 %\* \textolessthan -> \varolessthan (stmaryrd)  
 19120 % U+29C1 CIRCLED GREATER-THAN; \ogreaterthan (stmaryrd)  
 19121 \DeclareTextCommand{\textogreaterthan}{PU}{\9051\301}%\* U+29C1  
 19122 %\* \textogreaterthan -> \varogreaterthan (stmaryrd)  
 19123 % U+29C4 SQUARED RISING DIAGONAL SLASH; \boxslash (mathabx, stmaryrd)  
 19124 \DeclareTextCommand{\textboxslash}{PU}{\9051\304}%\* U+29C4  
 19125 % U+29C5 SQUARED FALLING DIAGONAL SLASH; \boxbslash (stmaryrd)  
 19126 \DeclareTextCommand{\textboxbslash}{PU}{\9051\305}%\* U+29C5  
 19127 % U+29C6 SQUARED ASTERISK; \boxast (stmaryrd)  
 19128 \DeclareTextCommand{\textboxast}{PU}{\9051\306}%\* U+29C6  
 19129 % U+29C7 SQUARED SMALL CIRCLE; \boxcircle (stmaryrd)  
 19130 \DeclareTextCommand{\textboxcircle}{PU}{\9051\307}%\* U+29C7  
 19131 % U+29C8 SQUARED SQUARE; \boxbox (stmaryrd)  
 19132 \DeclareTextCommand{\textboxbox}{PU}{\9051\310}%\* U+29C8  
 19133 % U+29D3 BLACK BOWTIE; \Valve (marvosym)  
 19134 \DeclareTextCommand{\textValve}{PU}{\9051\323}%\* U+29D3  
 19135 % U+29DF DOUBLE-ENDED MULTIMAP; \multimapboth (txfonts/pxfonts)  
 19136 \DeclareTextCommand{\textmultimapboth}{PU}{\9051\337}%\* U+29DF  
 19137 % U+29E2 SHUFFLE PRODUCT; \shuffle (shuffle)  
 19138 \DeclareTextCommand{\textshuffle}{PU}{\9051\342}%\* U+29E2

### 47.2.35 Supplemental Mathematical Operators: U+2A00 to U+2AFF

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19139 % U+2A04 N-ARY UNION OPERATOR WITH PLUS; \uplus (LaTeX)
19140 \DeclareTextCommand{\textuplus}{PU}{\9052\004}%* U+2A04
19141 % U+2A07 TWO LOGICAL AND OPERATOR; \bigdoublewedge (MnSymbol)
19142 \DeclareTextCommand{\textbigdoublewedge}{PU}{\9052\007}%* U+2A07
19143 % U+2A08 TWO LOGICAL OR OPERATOR; \bigdoublevee (MnSymbol)
19144 \DeclareTextCommand{\textbigdoublevee}{PU}{\9052\010}%* U+2A08
19145 % U+2A1D JOIN; \Join (latexsym, amsfonts, amssymb, mathabx, txfonts,
19146 %   pxfonts, wasysym)
19147 \DeclareTextCommand{\textJoin}{PU}{\9052\035}%* U+2A1D
19148 % U+2A1F Z NOTATION SCHEMA COMPOSITION; \fatsemi (stmaryrd)
19149 \DeclareTextCommand{\textfatsemi}{PU}{\9052\037}%* U+2A1F
19150 % U+2A22 PLUS SIGN WITH SMALL CIRCLE ABOVE; \circplus (mathabx)
19151 \DeclareTextCommand{\textcircplus}{PU}{\9052\042}%* U+2A22
19152 % U+2A2A MINUS SIGN WITH DOT BELOW; \minusdot (MnSymbol)
19153 \DeclareTextCommand{\textminusdot}{PU}{\9052\052}%* U+2A2A
19154 %* \textminusdot -> \divdot (mathabx)
19155 % U+2A30 MULTIPLICATION SIGN WITH DOT ABOVE; \dottimes (mathabx)
19156 \DeclareTextCommand{\textdottimes}{PU}{\9052\060}%* U+2A30
19157 % U+2A32 SEMIDIRECT PRODUCT WITH BOTTOM CLOSED;
19158 %   \dtimes (mathdesign)
19159 \DeclareTextCommand{\textdtimes}{PU}{\9052\062}%* U+2A32
19160 % U+2A38 CIRCLED DIVISION SIGN; \odiv (mathabx)
19161 \DeclareTextCommand{\textodiv}{PU}{\9052\070}%* U+2A38
19162 % U+2A3C INTERIOR PRODUCT; \invneg (MnSymbol)
19163 \DeclareTextCommand{\textinvneg}{PU}{\9052\074}%* U+2A3C
19164 % U+2A4E DOUBLE SQUARE INTERSECTION; \sqdoublecap (mathabx)
19165 \DeclareTextCommand{\textsqdoublecap}{PU}{\9052\116}%* U+2A4E
19166 %* \textsqdoublecap -> \doublesqcap (MnSymbol)
19167 % U+2A40 INTERSECTION WITH DOT; \capdot (MnSymbol)
19168 \DeclareTextCommand{\textcapdot}{PU}{\9052\100}%* U+2A40
19169 % U+2A4F DOUBLE SQUARE UNION; \sqdoublecup (mathabx)
19170 \DeclareTextCommand{\textsqdoublecup}{PU}{\9052\117}%* U+2A4F
19171 %* \textsqdoublecup -> \doublesqcup (MnSymbol)
19172 % U+2A55 TWO INTERSECTING LOGICAL AND; \doublewedge (MnSymbol)
19173 \DeclareTextCommand{\textdoublewedge}{PU}{\9052\125}%* U+2A55
19174 % U+2A56 TWO INTERSECTING LOGICAL OR; \doublevee (MnSymbol)
19175 \DeclareTextCommand{\textdoublevee}{PU}{\9052\126}%* U+2A56
19176 %* \textdoublevee -> \merge (stmaryrd)
19177 % U+2A5E LOGICAL AND WITH DOUBLE OVERBAR;
19178 %   \doublebarwedge (AmS)
19179 \DeclareTextCommand{\textdoublebarwedge}{PU}{\9052\136}%* U+2A5E
19180 % U+2A63 LOGICAL OR WITH DOUBLE UNDERBAR;
19181 %   \veedoublebar (mahtabx)
19182 \DeclareTextCommand{\textveedoublebar}{PU}{\9052\143}%* U+2A63
19183 % U+2A66 EQUALS SIGN WITH DOT BELOW; \eqdot (MnSymbol)
19184 \DeclareTextCommand{\texteqdot}{PU}{\9052\146}%* U+2A66
19185 % \neqdot (MnSymbol)
19186 \DeclareTextCommand{\textneqdot}{PU}{\9052\146\83\070}%* U+2A66 U+0338
19187 % U+2A74 DOUBLE COLON EQUAL; \coloncolonequals (colonequals)
19188 \DeclareTextCommand{\textcoloncolonequals}{PU}{\9052\164}%* U+2A74
19189 % U+2A7D LESS-THAN OR SLANTED EQUAL TO; \leqslant (AmS)
19190 \DeclareTextCommand{\textleqslant}{PU}{\9052\175}%* U+2A7D

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19191 % \nleqslant (txfonts/pxfonts)  
 19192 \DeclareTextCommand{\textnleqslant}{PU}{\9052\175\83\070}%\* U+2A7D U+0338  
 19193 % U+2A7E GREATER-THAN OR SLANTED EQUAL TO; \geqslant (AmS)  
 19194 \DeclareTextCommand{\textgeqslant}{PU}{\9052\176}%\* U+2A7E  
 19195 % \ngeqslant (txfonts/pxfonts)  
 19196 \DeclareTextCommand{\textngeqslant}{PU}{\9052\176\83\070}%\* U+2A7E U+0338  
 19197 % U+2A85 LESS-THAN OR APPROXIMATE; \lessapprox (AmS)  
 19198 \DeclareTextCommand{\textlessapprox}{PU}{\9052\205}%\* U+2A85  
 19199 % \nlessapprox (txfonts/pxfonts)  
 19200 \DeclareTextCommand{\textnlessapprox}{PU}{\9052\205\83\070}%\* U+2A85 U+0338  
 19201 % U+2A86 GREATER-THAN OR APPROXIMATE; \gtrapprox (AmS)  
 19202 \DeclareTextCommand{\textgtrapprox}{PU}{\9052\206}%\* U+2A86  
 19203 % \ngtrapprox (txfonts/pxfonts)  
 19204 \DeclareTextCommand{\textngtrapprox}{PU}{\9052\206\83\070}%\* U+2A86 U+0338  
 19205 % U+2A87 LESS-THAN AND SINGLE-LINE NOT EQUAL TO; \lneq (AmS)  
 19206 \DeclareTextCommand{\textlneq}{PU}{\9052\207}%\* U+2A87  
 19207 % U+2A88 GREATER-THAN AND SINGLE-LINE NOT EQUAL TO;  
 19208 % \gneq (AmS)  
 19209 \DeclareTextCommand{\textgneq}{PU}{\9052\210}%\* U+2A88  
 19210 % U+2A89 LESS-THAN AND NOT APPROXIMATE; \lnapprox (AmS)  
 19211 \DeclareTextCommand{\textlnapprox}{PU}{\9052\211}%\* U+2A89  
 19212 % U+2A8A GREATER-THAN AND NOT APPROXIMATE; \gnapprox (AmS)  
 19213 \DeclareTextCommand{\textgnapprox}{PU}{\9052\212}%\* U+2A8A  
 19214 % U+2A8B LESS-THAN ABOVE DOUBLE-LINE EQUAL ABOVE GREATER-  
 19215 % \lesseqgtr (AmS)  
 19216 \DeclareTextCommand{\textlesseqgtr}{PU}{\9052\213}%\* U+2A8B  
 19217 % U+2A8C GREATER-THAN ABOVE DOUBLE-LINE EQUAL ABOVE LESS-  
 19218 % \gtreqless (AmS)  
 19219 \DeclareTextCommand{\textgtreqless}{PU}{\9052\214}%\* U+2A8C  
 19220 % U+2A95 SLANTED EQUAL TO OR LESS-THAN; \eqslantless (AmS)  
 19221 \DeclareTextCommand{\texteqslantless}{PU}{\9052\225}%\* U+2A95  
 19222 % U+2A96 SLANTED EQUAL TO OR GREATER-THAN; \eqslantgtr (AmS)  
 19223 \DeclareTextCommand{\texteqslantgtr}{PU}{\9052\226}%\* U+2A96  
 19224 % U+2AA6 LESS-THAN CLOSED BY CURVE; \leftslice (stmaryrd)  
 19225 \DeclareTextCommand{\textleftslice}{PU}{\9052\246}%\* U+2AA6  
 19226 % U+2AA7 GREATER-THAN CLOSED BY CURVE; \rightslice (stmaryrd)  
 19227 \DeclareTextCommand{\textright slice}{PU}{\9052\247}%\* U+2AA7  
 19228 % U+2AAF PRECEDES ABOVE SINGLE-LINE EQUALS SIGN; \preceq (Mn-  
 19229 % Symbol)  
 19229 \DeclareTextCommand{\textpreceq}{PU}{\9052\257}%\* U+2AAF  
 19230 % \npreceq (txfonts/pxfonts)  
 19231 \DeclareTextCommand{\textnpreceq}{PU}{\9052\257\83\070}%\* U+2AAF U+0338  
 19232 % U+2AB0 SUCCEEDS ABOVE SINGLE-LINE EQUALS SIGN; \succeq (Mn-  
 19233 % Symbol)  
 19233 \DeclareTextCommand{\textsucceq}{PU}{\9052\260}%\* U+2AB0  
 19234 % \nsucceq (txfonts/pxfonts)  
 19235 \DeclareTextCommand{\textnsucceq}{PU}{\9052\260\83\070}%\* U+2AB0 U+0338  
 19236 % U+2AB1 PRECEDES ABOVE SINGLE-LINE NOT EQUAL TO; \prec-  
 19237 % neq (mathabx)  
 19237 \DeclareTextCommand{\textprecneq}{PU}{\9052\261}%\* U+2AB1  
 19238 % U+2AB2 SUCCEEDS ABOVE SINGLE-LINE NOT EQUAL TO; \succ-  
 19239 % neq (mathabx)

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19239 \DeclareTextCommand{\textsuccneq}{PU}{\9052\262}%* U+2AB2
19240 % U+2AB3 PRECEDES ABOVE EQUALS SIGN; \preceqq (txfonts/pxfonts)
19241 \DeclareTextCommand{\textpreceqq}{PU}{\9052\263}%* U+2AB3
19242 % \npreceqq (txfonts/pxfonts)
19243 \DeclareTextCommand{\textnpreceqq}{PU}{\9052\263\83\070}%* U+2AB3 U+0338
19244 % U+2AB4 SUCCEEDS ABOVE EQUALS SIGN; \succeqq (txfonts/pxfonts)
19245 \DeclareTextCommand{\textsuccneqq}{PU}{\9052\264}%* U+2AB4
19246 % \nsucceqq (txfonts/pxfonts)
19247 \DeclareTextCommand{\textnsucceqq}{PU}{\9052\264\83\070}%* U+2AB4 U+0338
19248 % U+2AB5 PRECEDES ABOVE NOT EQUAL TO; \precneqq (txfonts/pxfonts)
19249 \DeclareTextCommand{\textprecneqq}{PU}{\9052\265}%* U+2AB5
19250 % U+2AB6 SUCCEEDS ABOVE NOT EQUAL TO; \succneqq (txfonts/pxfonts)
19251 \DeclareTextCommand{\textsuccneqq}{PU}{\9052\266}%* U+2AB6
19252 % U+2AB7 PRECEDES ABOVE ALMOST EQUAL TO; \precapprox (AmS)
19253 \DeclareTextCommand{\textprecapprox}{PU}{\9052\267}%* U+2AB7
19254 % \nprecapprox (txfonts/pxfonts)
19255 \DeclareTextCommand{\textnprecapprox}{PU}{\9052\267\83\070}%* U+2AB7 U+0338
19256 % U+2AB8 SUCCEEDS ABOVE ALMOST EQUAL TO; \succapprox (AmS)
19257 \DeclareTextCommand{\textsuccapprox}{PU}{\9052\270}%* U+2AB8
19258 % \nsuccapprox (txfonts/pxfonts)
19259 \DeclareTextCommand{\textnsuccapprox}{PU}{\9052\270\83\070}%* U+2AB8 U+0338
19260 % U+2AB9 PRECEDES ABOVE NOT ALMOST EQUAL TO; \precnap-
    prox (AmS)
19261 \DeclareTextCommand{\textprecnapprox}{PU}{\9052\271}%* U+2AB9
19262 % U+2ABA SUCCEEDS ABOVE NOT ALMOST EQUAL TO; \succnap-
    prox (AmS)
19263 \DeclareTextCommand{\textsuccnapprox}{PU}{\9052\272}%* U+2ABA
19264 % U+2AC5 SUBSET OF ABOVE EQUALS SIGN; \subseteqq (AmS)
19265 \DeclareTextCommand{\textsubseteqq}{PU}{\9052\305}%* U+2AC5
19266 % \nsubseteqq (txfonts/pxfonts, mathabx)
19267 \DeclareTextCommand{\textnsubseteqq}{PU}{\9052\305\83\070}%* U+2AC5 U+0338
19268 % U+2AC6 SUPERSET OF ABOVE EQUALS SIGN; \supseteqq (AmS)
19269 \DeclareTextCommand{\textsupseteqq}{PU}{\9052\306}%* U+2AC6
19270 % \nsupseteqq (mathabx)
19271 \DeclareTextCommand{\textnsupseteqq}{PU}{\9052\306\83\070}%* U+2AC6 U+0338
19272 % U+2AE3 DOUBLE VERTICAL BAR LEFT TURNSTILE
19273 \DeclareTextCommand{\textdashV}{PU}{\9052\343}%* U+2AE3
19274 %* \textdashV -> \leftVdash (MnSymbol)
19275 % \ndashV (mathabx)
19276 \DeclareTextCommand{\textndashV}{PU}{\9052\343\83\070}%* U+2AE3 U+0338
19277 %* \textndashV -> \nleftVdash (MnSymbol)
19278 % U+2AE4 VERTICAL BAR DOUBLE LEFT TURNSTILE; \Dashv (mathabx)
19279 \DeclareTextCommand{\textDashv}{PU}{\9052\344}%* U+2AE4
19280 %* \textDashv -> \leftmodels (MnSymbol)
19281 % \nDashv (mathabx)
19282 \DeclareTextCommand{\textnDashv}{PU}{\9052\344\83\070}%* U+2AE4 U+0338
19283 %* \textnDashv -> \nleftmodels (MnSymbol)
19284 % U+2AE5 DOUBLE VERTICAL BAR DOUBLE LEFT TURNSTILE;
19285 % \DashV (mathabx)
19286 \DeclareTextCommand{\textDashV}{PU}{\9052\345}%* U+2AE5
19287 %* \textDashV -> \leftModels (MnSymbol)
19288 % \nDashV (mathabx)
19289 \DeclareTextCommand{\textnDashV}{PU}{\9052\345\83\070}%* U+2AE5 U+0338
19290 %* \textnDashV -> \nleftModels (MnSymbol)

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19291 % U+2AEA DOUBLE DOWN TACK; \downmodels (MnSymbol)  
 19292 \DeclareTextCommand{\textdownmodels}{PU}{\9052\352}%\* U+2AEA  
 19293 % \ndownmodels (MnSymbol)  
 19294 \DeclareTextCommand{\textndownmodels}{PU}{\9052\352\83\070}%\* U+2AEA U+0338  
 19295 % U+2AEB DOUBLE UP TACK; \upmodels (MnSymbol)  
 19296 \DeclareTextCommand{\textupmodels}{PU}{\9052\353}%\* U+2AEB  
 19297 % \nupmodels (MnSymbol)  
 19298 \DeclareTextCommand{\textnupmodels}{PU}{\9052\353\83\070}%\* U+2AEB U+0338  
 19299 % U+2AEF VERTICAL LINE WITH CIRCLE ABOVE; \upspoon (MnSymbol)  
 19300 \DeclareTextCommand{\textupspoon}{PU}{\9052\357}%\* U+2AEF  
 19301 % U+2AF4 TRIPLE VERTICAL BAR BINARY RELATION;  
 19302 % \interleave (stmaryrd)  
 19303 \DeclareTextCommand{\textinterleave}{PU}{\9052\364}%\* U+2AF4  
 19304 % U+2AFD DOUBLE SOLIDUS OPERATOR; \sslash (stmaryrd)  
 19305 \DeclareTextCommand{\textsslash}{PU}{\9052\375}%\* U+2AFD  
 19306 %\* \textsslash -> \varparallel (txfonts\pxfonts)

#### 47.2.36 Miscellaneous Symbols and Arrows: U+2B00 to U+2BFF

19307 % U+2B20 WHITE PENTAGON; \pentagon (wasysym)  
 19308 \DeclareTextCommand{\textpentagon}{PU}{\9053\040}%\* U+2B20  
 19309 % U+2B21 WHITE HEXAGON; \varhexagon (wasysym)  
 19310 \DeclareTextCommand{\textvarhexagon}{PU}{\9053\041}%\* U+2B21

#### 47.2.37 Latin Extended-C: U+2C60 to U+2C7F

19311 % U+2C7C LATIN SUBSCRIPT SMALL LETTER J  
 19312 \DeclareTextCommand{\textjinferior}{PU}{\9054\174}%\* U+2C7C

#### 47.2.38 Supplemental Punctuation: U+2E00 to U+2E7F

19313 % U+2E13 DOTTED OBELOS; \slashdiv (MnSymbol)  
 19314 \DeclareTextCommand{\textslashdiv}{PU}{\9056\023}%\* U+2E13  
 19315 % U+2E18 INVERTED INTERROBANG; \textinterrobangdown (textcomp)  
 19316 \DeclareTextCommand{\textinterrobangdown}{PU}{\9056\030}% U+2E18  
 19317 % U+2E2D FIVE DOT MARK; \fivedots (MnSymbol)  
 19318 \DeclareTextCommand{\textfivedots}{PU}{\9056\055}%\* U+2E2D

#### 47.2.39 Modifier Tone Letters: U+A700 to U+A71F

19319 % U+A71B MODIFIER LETTER RAISED UP ARROW; \textupstep (tipa)  
 19320 \DeclareTextCommand{\textupstep}{PU}{\9247\033}% U+A71B  
 19321 % U+A71C MODIFIER LETTER RAISED DOWN ARROW;  
 19322 % \textdownstep (tipa)  
 19323 \DeclareTextCommand{\textdownstep}{PU}{\9247\034}% U+A71C

#### 47.2.40 Latin Extended-D: U+A720 to U+A7FF

19324 % U+A727 LATIN SMALL LETTER HENG; \textheng (tipx)  
 19325 \DeclareTextCommand{\textPUheng}{PU}{\9247\047}% U+A727  
 19326 %\* \textPUheng -> \textheng (tipx)  
 19327 % U+A72C LATIN CAPITAL LETTER CUATRILLO; \textlhookfour (tipx)  
 19328 \DeclareTextCommand{\textPULhookfour}{PU}{\9247\054}% U+A72C  
 19329 %\* \textPULhookfour -> \textlhookfour (tipx)  
 19330 % U+A730 LATIN LETTER SMALL CAPITAL F; \textscf (tipx)  
 19331 \DeclareTextCommand{\textPUScf}{PU}{\9247\060}% U+A730  
 19332 %\* \textPUScf -> \textscf (tipx)  
 19333 % U+A735 LATIN SMALL LETTER AO; \textao (tipx)  
 19334 \DeclareTextCommand{\textPUaolig}{PU}{\9247\065}% U+A735

19335 %\* \textPUaolig -> \textaoilig (tipx)  
 19336 % U+A74F LATIN SMALL LETTER OO; \oo (wsuipa)  
 19337 \DeclareTextCommand{\textoo}{PU}{\9247\117}%\* U+A74F  
 19338 % U+A788 MODIFIER LETTER LOW CIRCUMFLEX ACCENT  
 19339 \DeclareTextCommand{\textcircumlow}{PU}{\9247\210}% U+A788

#### 47.2.41 Alphabetic Presentation Forms: U+FB00 to U+FB4F

19340 % U+FB01 LATIN SMALL LIGATURE FI; fi  
 19341 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01  
 19342 % U+FB02 LATIN SMALL LIGATURE FL; fl  
 19343 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02

#### 47.2.42 Musical Symbols: U+1D100 to U+1D1FF

19344 % U+1D13B MUSICAL SYMBOL WHOLE REST; \GaPa (harmony)  
 19345 \DeclareTextCommand{\textGaPa}{PU}{\9330\064\9335\073}%\* U+1D13B  
 19346 % U+1D13C MUSICAL SYMBOL HALF REST; \HaPa (harmony)  
 19347 \DeclareTextCommand{\textHaPa}{PU}{\9330\064\9335\074}%\* U+1D13C  
 19348 % U+1D13D MUSICAL SYMBOL QUARTER REST; \ViPa (harmony)  
 19349 \DeclareTextCommand{\textViPa}{PU}{\9330\064\9335\075}%\* U+1D13D  
 19350 % U+1D13E MUSICAL SYMBOL EIGHTH REST; \AcPa (harmony)  
 19351 \DeclareTextCommand{\textAcPa}{PU}{\9330\064\9335\076}%\* U+1D13E  
 19352 % U+1D13F MUSICAL SYMBOL SIXTEENTH REST; \SePa (harmony)  
 19353 \DeclareTextCommand{\textSePa}{PU}{\9330\064\9335\077}%\* U+1D13F  
 19354 % U+1D140 MUSICAL SYMBOL THIRTY-SECOND REST; \ZwPa (harmony)  
 19355 \DeclareTextCommand{\textZwPa}{PU}{\9330\064\9335\100}%\* U+1D140  
 19356 % U+1D15D MUSICAL SYMBOL WHOLE NOTE; \fullnote (wasysym)  
 19357 \DeclareTextCommand{\textfullnote}{PU}{\9330\064\9335\135}%\* U+1D15D  
 19358 %\* \textfullnote -> \Ganz (harmony)  
 19359 % U+1D15E MUSICAL SYMBOL HALF NOTE; \halfnote (wasysym)  
 19360 \DeclareTextCommand{\texthalfnote}{PU}{\9330\064\9335\136}%\* U+1D15E  
 19361 %\* \texthalfnote -> \Halb (harmony)  
 19362 % U+1D15F MUSICAL SYMBOL QUARTER NOTE; \Vier (harmony)  
 19363 \DeclareTextCommand{\textVier}{PU}{\9330\064\9335\137}%\* U+1D15F  
 19364 % U+1D160 MUSICAL SYMBOL EIGHTH NOTE; \Acht (harmony)  
 19365 \DeclareTextCommand{\textAcht}{PU}{\9330\064\9335\140}%\* U+1D160  
 19366 % U+1D161 MUSICAL SYMBOL SIXTEENTH NOTE; \Sech (harmony)  
 19367 \DeclareTextCommand{\textSech}{PU}{\9330\064\9335\141}%\* U+1D161  
 19368 % U+1D162 MUSICAL SYMBOL THIRTY-SECOND NOTE; \Zwdr (harmony)  
 19369 \DeclareTextCommand{\textZwdr}{PU}{\9330\064\9335\142}%\* U+1D162

#### 47.2.43 Miscellaneous Symbols and Pictographs: U+1F300 to U+1F5FF

19370 % U+1F30D EARTH GLOBE EUROPE-AFRICA; \Mundus (marvosym)  
 19371 \DeclareTextCommand{\textMundus}{PU}{\9330\074\9337\015}%\* U+1F30D  
 19372 % U+1F319 CRESCENT MOON; \Moon (marvosym)  
 19373 \DeclareTextCommand{\textMoon}{PU}{\9330\074\9337\031}%\* U+1F319  
 19374 % U+1F468 MAN; \ManFace (marvosym)  
 19375 \DeclareTextCommand{\textManFace}{PU}{\9330\075\9334\150}%\* U+1F468  
 19376 % U+1F469 WOMAN; \WomanFace (marvosym)  
 19377 \DeclareTextCommand{\textWomanFace}{PU}{\9330\075\9334\151}%\* U+1F469  
 19378 %\* \textWomanFace -> \Womanface (marvosym)  
 19379 % U+1F4E0 FAX MACHINE; \Fax (marvosym)  
 19380 \DeclareTextCommand{\textFax}{PU}{\9330\075\9334\340}%\* U+1F4E0  
 19381 %\* \textFax -> \Faxmachine (marvosym)  
 19382 % U+1F525 FIRE; \Fire (ifsym)

19383 \DeclareTextCommand{\textFire}{PU}{\9330\075\9335\045}%\* U+1F525

#### 47.2.44 Transport and Map Symbols: U+1F680 to U+1F6FF

19384 % U+1F6B2 BICYCLE; \Bicycle (marvosym)  
 19385 \DeclareTextCommand{\textBicycle}{PU}{\9330\075\9336\262}%\* U+1F6B2  
 19386 % U+1F6B9 MENS SYMBOL; \Gentsroom (marvosym)  
 19387 \DeclareTextCommand{\textGentsroom}{PU}{\9330\075\9336\271}%\* U+1F6B9  
 19388 % U+1F6BA WOMENS SYMBOL; \Ladiesroom (marvosym)  
 19389 \DeclareTextCommand{\textLadiesroom}{PU}{\9330\075\9336\272}%\* U+1F6BA

#### 47.2.45 Miscellaneous

19390 \DeclareTextCommand{\SS}{PU}{SS}%  
 19391 % \textcopyleft (textcomp)  
 19392 \DeclareTextCommand{\textcopyleft}{PU}{\9041\204\9040\335}% U+2184 U+20DD  
 19393 % \ccnc (ccllicenses)  
 19394 \DeclareTextCommand{\textccnc}{PU}{\80\044\9040\340}%\* U+0024 U+20E0  
 19395 % \ccnd (ccllicenses)  
 19396 \DeclareTextCommand{\textccnd}{PU}{=\9040\335}%\* U+003D U+20DD  
 19397 % \ccsa (ccllicenses)  
 19398 \DeclareTextCommand{\textccsa}{PU}{\9047\362\9040\335}%\* U+27F2 U+20DD  
 19399 % \Info (marvosym, china2e)  
 19400 \DeclareTextCommand{\textInfo}{PU}{\9330\065\9334\042\9040\336}%\* U+1D422 U+20DE  
 19401 % \CESign (marvosym)  
 19402 \DeclareTextCommand{\textCESign}{PU}{\80\103\80\105}%\* U+0043 U+0045  
 19403 %\* \textCESign -> \CESign (marvosym)

#### 47.2.46 Aliases

Aliases (german.sty)

19404 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}%  
 19405 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}%  
 19406 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}%  
 19407 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}%  
 19408 \DeclareTextCommand{\textflqq}{PU}{\guillemetleft}%  
 19409 \DeclareTextCommand{\textfrqq}{PU}{\guillemetright}%  
 19410 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}%  
 19411 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}%

Aliases (math names)

19412 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}%\*  
 19413 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}%\*  
 19414 \DeclareTextCommand{\textdiv}{PU}{\textdivide}%\*  
 19415 \DeclareTextCommand{\textpm}{PU}{\textplusminus}%\*  
 19416 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}%\*  
 19417 \langle \puenc \rangle

### 47.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

19418 \langle \*puvnenc \rangle  
 19419 \DeclareTextCommand{\abreve}{PU}{\81\003}% U+0103  
 19420 \DeclareTextCommand{\acircumflex}{PU}{\80\342}% U+00E2  
 19421 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}% U+00EA

19422 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}% U+00F4  
 19423 \DeclareTextCommand{\ohorn}{PU}{\81\241}% U+01A1  
 19424 \DeclareTextCommand{\uhorn}{PU}{\81\260}% U+01B0  
 19425 \DeclareTextCommand{\ABREVE}{PU}{\81\002}% U+0102  
 19426 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}% U+00C2  
 19427 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}% U+00CA  
 19428 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}% U+00D4  
 19429 \DeclareTextCommand{\OHORN}{PU}{\81\240}% U+01A0  
 19430 \DeclareTextCommand{\UHORN}{PU}{\81\257}% U+01AF  
  
 19431 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1  
 19432 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}% U+1EA1  
 19433 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0  
 19434 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}% U+1EA3  
 19435 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
 19436 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}% U+1EAF  
 19437 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}% U+1EB7  
 19438 \DeclareTextCompositeCommand{\`}{PU}{\abreve}{\9036\261}% U+1EB1  
 19439 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}% U+1EB3  
 19440 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}% U+1EB5  
 19441 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}% U+1EA5  
 19442 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}% U+1EAD  
 19443 \DeclareTextCompositeCommand{\`}{PU}{\acircumflex}{\9036\247}% U+1EA7  
 19444 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}% U+1EA9  
 19445 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}% U+1EAB  
 19446 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
 19447 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}% U+1EB9  
 19448 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8  
 19449 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}% U+1EBB  
 19450 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
 19451 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}% U+1EBF  
 19452 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}% U+1EC7  
 19453 \DeclareTextCompositeCommand{\`}{PU}{\ecircumflex}{\9036\301}% U+1EC1  
 19454 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}% U+1EC3  
 19455 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}% U+1EC5  
 19456 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
 19457 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}% U+1ECB  
 19458 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
 19459 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}% U+1EC9  
 19460 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
 19461 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
 19462 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}% U+1ECD  
 19463 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
 19464 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}% U+1ECF  
 19465 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
 19466 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}% U+1ED1  
 19467 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}% U+1ED9  
 19468 \DeclareTextCompositeCommand{\`}{PU}{\ocircumflex}{\9036\323}% U+1ED3  
 19469 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}% U+1ED5  
 19470 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}% U+1ED7  
 19471 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}% U+1EDB  
 19472 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}% U+1EE3  
 19473 \DeclareTextCompositeCommand{\`}{PU}{\ohorn}{\9036\335}% U+1EDD  
 19474 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}% U+1EDF  
 19475 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}% U+1EE1

19476 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
 19477 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}% U+1EE5  
 19478 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
 19479 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}% U+1EE7  
 19480 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
 19481 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}% U+1EE9  
 19482 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}% U+1EF1  
 19483 \DeclareTextCompositeCommand{\`}{PU}{\uhorn}{\9036\353}% U+1EEB  
 19484 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}% U+1EED  
 19485 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}% U+1EEF  
 19486 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
 19487 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}% U+1EF5  
 19488 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3  
 19489 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}% U+1EF7  
 19490 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9  
 19491 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
 19492 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}% U+1EA0  
 19493 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
 19494 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}% U+1EA2  
 19495 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
 19496 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}% U+1EAE  
 19497 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}% U+1EB6  
 19498 \DeclareTextCompositeCommand{\`}{PU}{\ABREVE}{\9036\260}% U+1EB0  
 19499 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}% U+1EB2  
 19500 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}% U+1EB4  
 19501 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}% U+1EA4  
 19502 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}% U+1EAC  
 19503 \DeclareTextCompositeCommand{\`}{PU}{\ACIRCUMFLEX}{\9036\246}% U+1EA6  
 19504 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}% U+1EA8  
 19505 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}% U+1EAA  
 19506 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
 19507 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}% U+1EB8  
 19508 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
 19509 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}% U+1EBA  
 19510 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
 19511 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\276}% U+1EBE  
 19512 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}% U+1EC6  
 19513 \DeclareTextCompositeCommand{\`}{PU}{\ECIRCUMFLEX}{\9036\300}% U+1EC0  
 19514 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}% U+1EC2  
 19515 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}% U+1EC4  
 19516 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
 19517 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}% U+1ECA  
 19518 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
 19519 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}% U+1EC8  
 19520 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128  
 19521 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
 19522 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}% U+1ECC  
 19523 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
 19524 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}% U+1ECE  
 19525 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
 19526 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}% U+1ED0  
 19527 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}% U+1ED8  
 19528 \DeclareTextCompositeCommand{\`}{PU}{\OCIRCUMFLEX}{\9036\322}% U+1ED2  
 19529 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}% U+1ED4

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19530 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}% U+1ED6
19531 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\332}% U+1EDA
19532 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}% U+1EE2
19533 \DeclareTextCompositeCommand{\`}{PU}{\OHORN}{\9036\334}% U+1EDC
19534 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}% U+1EDE
19535 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}% U+1EE0
19536 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA
19537 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4
19538 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9
19539 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}% U+1EE6
19540 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168
19541 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}% U+1EE8
19542 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}% U+1EF0
19543 \DeclareTextCompositeCommand{\`}{PU}{\UHORN}{\9036\352}% U+1EEA
19544 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}% U+1EEC
19545 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}% U+1EEE
19546 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD
19547 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4
19548 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2
19549 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}% U+1EF6
19550 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8
19551 (/puvnenc)

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## 47.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```

19552 (*puarenc)
19553 % U+0621;afii57409;ARABIC LETTER HAMZA
19554 \DeclareTextCommand{\hamza}{PU}{\86\041}% U+0621
19555 % U+0622;afii57410;ARABIC LETTER ALEF WITH MADD A ABOVE
19556 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% U+0622
19557 % U+0623;afii57411;ARABIC LETTER ALEF WITH HAMZA ABOVE
19558 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% U+0623
19559 % U+0624;afii57412;ARABIC LETTER WAW WITH HAMZA ABOVE
19560 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% U+0624
19561 % U+0625;afii57413;ARABIC LETTER ALEF WITH HAMZA BELOW
19562 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% U+0625
19563 % U+0626;afii57414;ARABIC LETTER YEH WITH HAMZA ABOVE
19564 \DeclareTextCommand{\yahamza}{PU}{\86\046}% U+0626
19565 % U+0627;afii57415;ARABIC LETTER ALEF
19566 \DeclareTextCommand{\alef}{PU}{\86\047}% U+0627
19567 % U+0628;afii57416;ARABIC LETTER BEH
19568 \DeclareTextCommand{\baa}{PU}{\86\050}% U+0628
19569 % U+0629;afii57417;ARABIC LETTER TEH MARBUTA
19570 \DeclareTextCommand{\T}{PU}{\86\051}% U+0629
19571 % U+062A;afii57418;ARABIC LETTER TEH
19572 \DeclareTextCommand{\taa}{PU}{\86\052}% U+062A
19573 % U+062B;afii57419;ARABIC LETTER THEH
19574 \DeclareTextCommand{\thaa}{PU}{\86\053}% U+062B
19575 % U+062C;afii57420;ARABIC LETTER JEEM
19576 \DeclareTextCommand{\jeem}{PU}{\86\054}% U+062C
19577 % U+062D;afii57421;ARABIC LETTER HAH
19578 \DeclareTextCommand{\Haa}{PU}{\86\055}% U+062D

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19579 % U+062E;afii57422;ARABIC LETTER KHAH  
 19580 \DeclareTextCommand{\kha}{PU}{\86\056}% U+062E  
 19581 % U+062F;afii57423;ARABIC LETTER DAL  
 19582 \DeclareTextCommand{\dal}{PU}{\86\057}% U+062F  
 19583 % U+0630;afii57424;ARABIC LETTER THAL  
 19584 \DeclareTextCommand{\dhal}{PU}{\86\060}% U+0630  
 19585 % U+0631;afii57425;ARABIC LETTER REH  
 19586 \DeclareTextCommand{\ra}{PU}{\86\061}% U+0631  
 19587 % U+0632;afii57426;ARABIC LETTER ZAIN  
 19588 \DeclareTextCommand{\zay}{PU}{\86\062}% U+0632  
 19589 % U+0633;afii57427;ARABIC LETTER SEEN  
 19590 \DeclareTextCommand{\seen}{PU}{\86\063}% U+0633  
 19591 % U+0634;afii57428;ARABIC LETTER SHEEN  
 19592 \DeclareTextCommand{\sheen}{PU}{\86\064}% U+0634  
 19593 % U+0635;afii57429;ARABIC LETTER SAD  
 19594 \DeclareTextCommand{\sad}{PU}{\86\065}% U+0635  
 19595 % U+0636;afii57430;ARABIC LETTER DAD  
 19596 \DeclareTextCommand{\dad}{PU}{\86\066}% U+0636  
 19597 % U+0637;afii57431;ARABIC LETTER TAH  
 19598 \DeclareTextCommand{\Ta}{PU}{\86\067}% U+0637  
 19599 % U+0638;afii57432;ARABIC LETTER ZAH  
 19600 \DeclareTextCommand{\za}{PU}{\86\070}% U+0638  
 19601 % U+0639;afii57433;ARABIC LETTER AIN  
 19602 \DeclareTextCommand{\ayn}{PU}{\86\071}% U+0639  
 19603 % U+063A;afii57434;ARABIC LETTER GHAIN  
 19604 \DeclareTextCommand{\ghayn}{PU}{\86\072}% U+063A  
 19605 % U+0640;afii57440;ARABIC TATWEEL  
 19606 \DeclareTextCommand{\tatweel}{PU}{\86\100}% U+0640  
 19607 % U+0641;afii57441;ARABIC LETTER FEH  
 19608 \DeclareTextCommand{\fa}{PU}{\86\101}% U+0641  
 19609 % U+0642;afii57442;ARABIC LETTER QAF  
 19610 \DeclareTextCommand{\qaf}{PU}{\86\102}% U+0642  
 19611 % U+0643;afii57443;ARABIC LETTER KAF  
 19612 \DeclareTextCommand{\kaf}{PU}{\86\103}% U+0643  
 19613 % U+0644;afii57444;ARABIC LETTER LAM  
 19614 \DeclareTextCommand{\lam}{PU}{\86\104}% U+0644  
 19615 % U+0645;afii57445;ARABIC LETTER MEEM  
 19616 \DeclareTextCommand{\meem}{PU}{\86\105}% U+0645  
 19617 % U+0646;afii57446;ARABIC LETTER NOON  
 19618 \DeclareTextCommand{\nun}{PU}{\86\106}% U+0646  
 19619 % U+0647;afii57470;ARABIC LETTER HEH  
 19620 \DeclareTextCommand{\ha}{PU}{\86\107}% U+0647  
 19621 % U+0648;afii57448;ARABIC LETTER WAW  
 19622 \DeclareTextCommand{\waw}{PU}{\86\110}% U+0648  
 19623 % U+0649;afii57449;ARABIC LETTER ALEF MAKSURA  
 19624 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% U+0649  
 19625 % U+064A;afii57450;ARABIC LETTER YEH  
 19626 \DeclareTextCommand{\ya}{PU}{\86\112}% U+064A  
 19627 % U+064B;afii57451;ARABIC FATHATAN  
 19628 \DeclareTextCommand{\nasb}{PU}{\86\113}% U+064B  
 19629 % U+064C;afii57452;ARABIC DAMMATAN  
 19630 \DeclareTextCommand{\raff}{PU}{\86\114}% U+064C  
 19631 % U+064D;afii57453;ARABIC KASRATAN  
 19632 \DeclareTextCommand{\jarr}{PU}{\86\115}% U+064D

19633 % U+064E;afii57454;ARABIC FATHA  
 19634 \DeclareTextCommand{\fatha}{PU}{\86\116}% U+064E  
 19635 % U+064F;afii57455;ARABIC DAMMA  
 19636 \DeclareTextCommand{\damma}{PU}{\86\117}% U+064F  
 19637 % U+0650;afii57456;ARABIC KASRA  
 19638 \DeclareTextCommand{\kasra}{PU}{\86\120}% U+0650  
 19639 % U+0651;afii57457;ARABIC SHADDA  
 19640 \DeclareTextCommand{\shadda}{PU}{\86\121}% U+0651  
 19641 % U+0652;afii57458;ARABIC SUKUN  
 19642 \DeclareTextCommand{\sukun}{PU}{\86\122}% U+0652  
  
 Farsi  
 19643 % U+067E ARABIC LETTER PEH; afii57506  
 19644 \DeclareTextCommand{\peh}{PU}{\86\176}% U+067E  
 19645 % U+0686 ARABIC LETTER TCHEH; afii57507  
 19646 \DeclareTextCommand{\tcheh}{PU}{\86\206}% U+0686  
 19647 % U+0698 ARABIC LETTER JEH; afii57508  
 19648 \DeclareTextCommand{\jeh}{PU}{\86\230}% U+0698  
 19649 % U+06A9 ARABIC LETTER KEHEH  
 19650 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% U+06A9  
 19651 % U+06AF ARABIC LETTER GAF; afii57509  
 19652 \DeclareTextCommand{\gaf}{PU}{\86\257}% U+06AF  
 19653 % U+06CC ARABIC LETTER FARSI YEH  
 19654 \DeclareTextCommand{\farsiya}{PU}{\86\314}% U+06CC  
  
 19655 % U+200C ZERO WIDTH NON-JOINER; afii61664  
 19656 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% U+200C  
 19657 % U+200D ZERO WIDTH JOINER; afii301  
 19658 \DeclareTextCommand{\textEncodingNoboundary}{PU}{\9040\015}% U+200D  
 19659 \puarenc)  
  
 19660 \psdextra)  
 19661 \Hy@VersionCheck{psdextra.def}  
 19662 \DeclareTextCommand{\textGamma}{PU}{\83\223}%\* U+0393  
 19663 \DeclareTextCommand{\textDelta}{PU}{\83\224}%\* U+0394  
 19664 \DeclareTextCommand{\textTheta}{PU}{\83\230}%\* U+0398  
 19665 \DeclareTextCommand{\textLambda}{PU}{\83\233}%\* U+039B  
 19666 \DeclareTextCommand{\textXi}{PU}{\83\236}%\* U+039E  
 19667 \DeclareTextCommand{\textPi}{PU}{\83\240}%\* U+03A0  
 19668 \DeclareTextCommand{\textSigma}{PU}{\83\243}%\* U+03A3  
 19669 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}%\* U+03A5  
 19670 \DeclareTextCommand{\textPhi}{PU}{\83\246}%\* U+03A6  
 19671 \DeclareTextCommand{\textChi}{PU}{\83\247}% U+03A7  
 19672 \DeclareTextCommand{\textPsi}{PU}{\83\250}%\* U+03A8  
 19673 \DeclareTextCommand{\textOmega}{PU}{\83\251}%\* U+03A9  
 19674 \DeclareTextCommand{\textalpha}{PU}{\83\261}%\* U+03B1  
 19675 \DeclareTextCommand{\textbeta}{PU}{\83\262}%\* U+03B2  
 19676 \DeclareTextCommand{\textgamma}{PU}{\83\263}%\* U+03B3  
 19677 \DeclareTextCommand{\textdelta}{PU}{\83\264}%\* U+03B4  
 19678 \DeclareTextCommand{\textepsilon}{PU}{\83\265}%\* U+03B5  
 19679 \DeclareTextCommand{\textzeta}{PU}{\83\266}%\* U+03B6  
 19680 \DeclareTextCommand{\texteta}{PU}{\83\267}%\* U+03B7  
 19681 \DeclareTextCommand{\texttheta}{PU}{\83\270}%\* U+03B8  
 19682 \DeclareTextCommand{\textiota}{PU}{\83\271}%\* U+03B9  
 19683 \DeclareTextCommand{\textkappa}{PU}{\83\272}%\* U+03BA

19684 \DeclareTextCommand{\textlambda}{PU}{\83\273}%\* U+03BB  
19685 \DeclareTextCommand{\textmugreek}{PU}{\83\274}%\* U+03BC  
19686 \DeclareTextCommand{\textnu}{PU}{\83\275}%\* U+03BD  
19687 \DeclareTextCommand{\textxi}{PU}{\83\276}%\* U+03BE  
19688 \DeclareTextCommand{\textpi}{PU}{\83\300}%\* U+03C0  
19689 \DeclareTextCommand{\textrho}{PU}{\83\301}%\* U+03C1  
19690 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}%\* U+03C2  
19691 \DeclareTextCommand{\textsigma}{PU}{\83\303}%\* U+03C3  
19692 \DeclareTextCommand{\texttau}{PU}{\83\304}%\* U+03C4  
19693 \DeclareTextCommand{\textupsilon}{PU}{\83\305}%\* U+03C5  
19694 \DeclareTextCommand{\textphi}{PU}{\83\306}%\* U+03C6  
19695 \DeclareTextCommand{\textchi}{PU}{\83\307}%\* U+03C7  
19696 \DeclareTextCommand{\textpsi}{PU}{\83\310}%\* U+03C8  
19697 \DeclareTextCommand{\textomega}{PU}{\83\311}%\* U+03C9  
19698 \newcommand\*\psdmapshortnames{%  
19699 \let\MVPlus\textMVPlus  
19700 \let\MVComma\textMVComma  
19701 \let\MVMinus\textMVMinus  
19702 \let\MVPeriod\textMVPeriod  
19703 \let\MVDivision\textMVDivision  
19704 \let\MVZero\textMVZero  
19705 \let\MVOne\textMVOne  
19706 \let\MVTwo\textMVTwo  
19707 \let\MVThree\textMVThree  
19708 \let\MVFour\textMVFour  
19709 \let\MVFive\textMVFive  
19710 \let\MVSix\textMVSix  
19711 \let\MVSeven\textMVSeven  
19712 \let\MVEight\textMVEight  
19713 \let\MVNine\textMVNine  
19714 \let\MVAt\textMVAt  
19715 \let\copyright\textcopyright  
19716 \let\twosuperior\texttwosuperior  
19717 \let\threesuperior\textthreesuperior  
19718 \let\onesuperior\textonesuperior  
19719 \let\Thorn\textThorn  
19720 \let\thorn\textthorn  
19721 \let\hbar\texthbar  
19722 \let\hausA\texthausA  
19723 \let\hausD\texthausD  
19724 \let\hausK\texthausK  
19725 \let\barl\textbarl  
19726 \let\inve\textinve  
19727 \let\slashc\textslashc  
19728 \let\scripta\textscripta  
19729 \let\openo\textopeno  
19730 \let\rtaild\textrtaild  
19731 \let\reve\textreve  
19732 \let\schwa\textschwa  
19733 \let\niepsilon\textniepsilon  
19734 \let\revepsilon\textrevepsilon  
19735 \let\rhookrevepsilon\texthookrevepsilon  
19736 \let\scriptg\textscriptg  
19737 \let\scg\textscg

19738 \let\ipagamma\textipagamma  
 19739 \let\babygamma\textbabygamma  
 19740 \let\bari\textbari  
 19741 \let\niiota\textniiota  
 19742 \let\sci\textsci  
 19743 \let\scn\textscn  
 19744 \let\niphi\textniphi  
 19745 \let\longlegr\textlonglegr  
 19746 \let\scr\textscr  
 19747 \let\invscr\textinvscr  
 19748 \let\esh\textesh  
 19749 \let\baru\textbaru  
 19750 \let\niupsilon\textniupsilon  
 19751 \let\scriptv\textscriptv  
 19752 \let\turnv\textturnv  
 19753 \let\turnw\textturnw  
 19754 \let\turny\textturny  
 19755 \let\scy\textscy  
 19756 \let\yogh\textyogh  
 19757 \let\glotstop\textglotstop  
 19758 \let\revglotstop\textrevglotstop  
 19759 \let\invglotstop\textinvglotstop  
 19760 \let\Gamma\textGamma  
 19761 \let\Delta\textDelta  
 19762 \let\Theta\textTheta  
 19763 \let\Lambda\textLambda  
 19764 \let\Xi\textXi  
 19765 \let\Pi\textPi  
 19766 \let\Sigma\textSigma  
 19767 \let\Upsilon\textUpsilon  
 19768 \let\Phi\textPhi  
 19769 \let\Psi\textPsi  
 19770 \let\Omega\textOmega  
 19771 \let\alpha\textalpha  
 19772 \let\beta\textbeta  
 19773 \let\gamma\textgamma  
 19774 \let\delta\textdelta  
 19775 \let\epsilon\textepsilon  
 19776 \let\zeta\textzeta  
 19777 \let\eta\texteta  
 19778 \let\theta\texttheta  
 19779 \let\iota\textiota  
 19780 \let\kappa\textkappa  
 19781 \let\lambda\textlambda  
 19782 \let\mu\textmu  
 19783 \let\mugreek\textmugreek  
 19784 \let\nu\textnu  
 19785 \let\xi\textxi  
 19786 \let\pi\textpi  
 19787 \let\rho\textrho  
 19788 \let\varsigma\textvarsigma  
 19789 \let\sigma\textsigma  
 19790 \let\tau\texttau  
 19791 \let\upsilon\textupsilon

19792 \let\phi\textphi  
 19793 \let\chi\textchi  
 19794 \let\psi\textpsi  
 19795 \let\omega\textomega  
 19796 \let\scd\textscd  
 19797 \let\scu\textscu  
 19798 \let\iinferior\textiinferior  
 19799 \let\rinferior\textrinferior  
 19800 \let\uinferior\textuinferior  
 19801 \let\vinferior\textvinferior  
 19802 \let\betainferior\textbetainferior  
 19803 \let\gammainferior\textgammainferior  
 19804 \let\rhoinferior\textrhoinferior  
 19805 \let\phiinferior\textphiinferior  
 19806 \let\chiinferior\textchiinferior  
 19807 \let\barsci\textbarsci  
 19808 \let\barp\textbarp  
 19809 \let\barscu\textbarscu  
 19810 \let\htrtaild\texthtrtaild  
 19811 \let\dagger\textdagger  
 19812 \let\bullet\textbullet  
 19813 \let\hdotfor\texthdotfor  
 19814 \let\prime\textprime  
 19815 \let\second\textsecond  
 19816 \let\third\textthird  
 19817 \let\backprime\textbackprime  
 19818 \let\lefttherefore\textlefttherefore  
 19819 \let\fourth\textfourth  
 19820 \let\diamonddots\textdiamonddots  
 19821 \let\zerosuperior\textzerosuperior  
 19822 \let\isuperior\textisuperior  
 19823 \let\foursuperior\textfoursuperior  
 19824 \let\fivesuperior\textfivesuperior  
 19825 \let\sixsuperior\textsixsuperior  
 19826 \let\sevensuperior\textsevensuperior  
 19827 \let\eightsuperior\texteightsuperior  
 19828 \let\ninesuperior\textninesuperior  
 19829 \let\plussuperior\textplussuperior  
 19830 \let\minussuperior\textminussuperior  
 19831 \let>equalsuperior\textequalsuperior  
 19832 \let\parenleftsuperior\textparenleftsuperior  
 19833 \let\parenrightsuperior\textparenrightsuperior  
 19834 \let\nsuperior\textnsuperior  
 19835 \let\zeroinferior\textzeroinferior  
 19836 \let\oneinferior\textoneinferior  
 19837 \let\twoinferior\texttwoinferior  
 19838 \let\threeinferior\textthreeinferior  
 19839 \let\fourinferior\textfourinferior  
 19840 \let\fiveinferior\textfiveinferior  
 19841 \let\sixinferior\textsixinferior  
 19842 \let\seveninferior\textseveninferior  
 19843 \let\eightinferior\texteightinferior  
 19844 \let\nineinferior\textnineinferior  
 19845 \let\plusinferior\textplusinferior

19846 `\let\minusinferior\textminusinferior`  
 19847 `\let\equalsinferior\textequalsinferior`  
 19848 `\let\parenleftinferior\textparenleftinferior`  
 19849 `\let\parenrightinferior\textparenrightinferior`  
 19850 `\let\ainferior\textainferior`  
 19851 `\let\einferior\texteinferior`  
 19852 `\let\oinferior\textoinferior`  
 19853 `\let\xinferior\textxinferior`  
 19854 `\let\schwainferior\textschwainferior`  
 19855 `\let\hinferior\texthinferior`  
 19856 `\let\kinferior\textkinferior`  
 19857 `\let\linferior\textlinferior`  
 19858 `\let\minferior\textminferior`  
 19859 `\let\ninferior\textninferior`  
 19860 `\let\pinferior\textpinferior`  
 19861 `\let\sinferior\textsinferior`  
 19862 `\let\tinferior\texttinferior`  
 19863 `\let\Deleatur\textDeleatur`  
 19864 `\let\hslash\texthslash`  
 19865 `\let\Im\textIm`  
 19866 `\let\ell\textell`  
 19867 `\let\wp\textwp`  
 19868 `\let\Re\textRe`  
 19869 `\let\mho\textmho`  
 19870 `\let\riota\textriota`  
 19871 `\let\Finv\textFinv`  
 19872 `\let\aleph\textaleph`  
 19873 `\let\beth\textbeth`  
 19874 `\let\gimel\textgimel`  
 19875 `\let\daleth\textdaleth`  
 19876 `\let\xfax\textfax`  
 19877 `\let\Game\textGame`  
 19878 `\let\leftarrow\textleftarrow`  
 19879 `\let\uparrow\textuparrow`  
 19880 `\let\rightarrow\textrightarrow`  
 19881 `\let\downarrow\textdownarrow`  
 19882 `\let\leftrightarrow\textleftrightarrow`  
 19883 `\let\updownarrow\textupdownarrow`  
 19884 `\let\nwarrow\textnwarrow`  
 19885 `\let\nearrow\textnearrow`  
 19886 `\let\searrow\textsearrow`  
 19887 `\let\swarrow\textswarrow`  
 19888 `\let\nleftarrow\textnleftarrow`  
 19889 `\let\nrightarrow\textnrightarrow`  
 19890 `\let\twoheadleftarrow\texttwoheadleftarrow`  
 19891 `\let\ntwoheadleftarrow\textntwoheadleftarrow`  
 19892 `\let\twoheaduparrow\texttwoheaduparrow`  
 19893 `\let\twoheadrightarrow\texttwoheadrightarrow`  
 19894 `\let\ntwoheadrightarrow\textntwoheadrightarrow`  
 19895 `\let\twoheaddownarrow\texttwoheaddownarrow`  
 19896 `\let\leftarrowtail\textleftarrowtail`  
 19897 `\let\rightarrowtail\textrightarrowtail`  
 19898 `\let\mapsto\textmapsto`  
 19899 `\let\hookleftarrow\texthookleftarrow`

19900 `\let\hookrightarrow\texthookrightarrow`  
 19901 `\let\looparrowleft\textlooparrowleft`  
 19902 `\let\looparrowright\textlooparrowright`  
 19903 `\let\leftrightharpoonup\textleftrightharpoonup`  
 19904 `\let\lightning\textlightning`  
 19905 `\let\dlsh\textdlsh`  
 19906 `\let\curvearrowleft\textcurvearrowleft`  
 19907 `\let\curvearrowright\textcurvearrowright`  
 19908 `\let\leftharpoonup\textleftharpoonup`  
 19909 `\let\leftharpoondown\textleftharpoondown`  
 19910 `\let\upharpoonright\textupharpoonright`  
 19911 `\let\upharpoonleft\textupharpoonleft`  
 19912 `\let\upharpoonup\textupharpoonup`  
 19913 `\let\upharpoondown\textupharpoondown`  
 19914 `\let\downharpoonright\textdownharpoonright`  
 19915 `\let\downharpoonleft\textdownharpoonleft`  
 19916 `\let\rightleftarrows\textrightleftarrows`  
 19917 `\let\updownarrows\textupdownarrows`  
 19918 `\let\leftrightarrows\textleftrightarrows`  
 19919 `\let\leftleftarrows\textleftleftarrows`  
 19920 `\let\upuparrows\textupuparrows`  
 19921 `\let\upuparrows\textupuparrows`  
 19922 `\let\downarrows\textdownarrows`  
 19923 `\let\leftrightharpoons\textleftrightharpoons`  
 19924 `\let\rightleftharpoons\textrightleftharpoons`  
 19925 `\let\Leftarrow\textLeftarrow`  
 19926 `\let\Leftarrow\textLeftarrow`  
 19927 `\let\Rightarrow\textRightarrow`  
 19928 `\let\Leftarrow\textLeftarrow`  
 19929 `\let\Uparrow\textUparrow`  
 19930 `\let\Rightarrow\textRightarrow`  
 19931 `\let\Downarrow\textDownarrow`  
 19932 `\let\Leftarrow\textLeftarrow`  
 19933 `\let\Updownarrow\textUpdownarrow`  
 19934 `\let\Narrow\textNarrow`  
 19935 `\let\Nearrow\textNearrow`  
 19936 `\let\searrow\textsearrow`  
 19937 `\let\searrow\textsearrow`  
 19938 `\let\Lleftarrow\textLleftarrow`  
 19939 `\let\Rrightarrow\textRrightarrow`  
 19940 `\let\leftsquigarrow\textleftsquigarrow`  
 19941 `\let\rightsquigarrow\textright squigarrow`  
 19942 `\let\dashleftarrow\textdashleftarrow`  
 19943 `\let\dasheduparrow\textdasheduparrow`  
 19944 `\let\dashrightarrow\textdashrightarrow`  
 19945 `\let\dasheddownarrow\textdasheddownarrow`  
 19946 `\let\pointer\textpointer`  
 19947 `\let\downuparrows\textdownuparrows`  
 19948 `\let\leftarrowtriangle\textleftarrowtriangle`  
 19949 `\let\rightarrowtriangle\textrightarrowtriangle`  
 19950 `\let\leftrightarrowtriangle\textleftrightarrowtriangle`  
 19951 `\let\forall\textforall`  
 19952 `\let\complement\textcomplement`  
 19953 `\let\partial\textpartial`

19954  $\backslash\mathrm{et}\backslash\mathrm{exists}\backslash\mathrm{textexists}$   
 19955  $\backslash\mathrm{et}\backslash\mathrm{nexists}\backslash\mathrm{textnexists}$   
 19956  $\backslash\mathrm{et}\backslash\mathrm{emptyset}\backslash\mathrm{textemptyset}$   
 19957  $\backslash\mathrm{et}\backslash\mathrm{triangle}\backslash\mathrm{texttriangle}$   
 19958  $\backslash\mathrm{et}\backslash\mathrm{nabla}\backslash\mathrm{textnabla}$   
 19959  $\backslash\mathrm{et}\backslash\mathrm{in}\backslash\mathrm{textin}$   
 19960  $\backslash\mathrm{et}\backslash\mathrm{notin}\backslash\mathrm{textnotin}$   
 19961  $\backslash\mathrm{et}\backslash\mathrm{smallin}\backslash\mathrm{textsmallin}$   
 19962  $\backslash\mathrm{et}\backslash\mathrm{ni}\backslash\mathrm{textni}$   
 19963  $\backslash\mathrm{et}\backslash\mathrm{notowner}\backslash\mathrm{textnotowner}$   
 19964  $\backslash\mathrm{et}\backslash\mathrm{smallowns}\backslash\mathrm{textsmallowns}$   
 19965  $\backslash\mathrm{et}\backslash\mathrm{prod}\backslash\mathrm{textprod}$   
 19966  $\backslash\mathrm{et}\backslash\mathrm{amalg}\backslash\mathrm{textamalg}$   
 19967  $\backslash\mathrm{et}\backslash\mathrm{sum}\backslash\mathrm{textsum}$   
 19968  $\backslash\mathrm{et}\backslash\mathrm{mp}\backslash\mathrm{textmp}$   
 19969  $\backslash\mathrm{et}\backslash\mathrm{dotplus}\backslash\mathrm{textdotplus}$   
 19970  $\backslash\mathrm{et}\backslash\mathrm{Divides}\backslash\mathrm{textDivides}$   
 19971  $\backslash\mathrm{et}\backslash\mathrm{DividesNot}\backslash\mathrm{textDividesNot}$   
 19972  $\backslash\mathrm{et}\backslash\mathrm{setminus}\backslash\mathrm{textsetminus}$   
 19973  $\backslash\mathrm{et}\backslash\mathrm{ast}\backslash\mathrm{textast}$   
 19974  $\backslash\mathrm{et}\backslash\mathrm{circ}\backslash\mathrm{textcirc}$   
 19975  $\backslash\mathrm{et}\backslash\mathrm{surd}\backslash\mathrm{textsurd}$   
 19976  $\backslash\mathrm{et}\backslash\mathrm{propto}\backslash\mathrm{textpropto}$   
 19977  $\backslash\mathrm{et}\backslash\mathrm{infty}\backslash\mathrm{textinfty}$   
 19978  $\backslash\mathrm{et}\backslash\mathrm{angle}\backslash\mathrm{textangle}$   
 19979  $\backslash\mathrm{et}\backslash\mathrm{measuredangle}\backslash\mathrm{textmeasuredangle}$   
 19980  $\backslash\mathrm{et}\backslash\mathrm{sphericalangle}\backslash\mathrm{textsphericalangle}$   
 19981  $\backslash\mathrm{et}\backslash\mathrm{mid}\backslash\mathrm{textmid}$   
 19982  $\backslash\mathrm{et}\backslash\mathrm{nmid}\backslash\mathrm{textnmid}$   
 19983  $\backslash\mathrm{et}\backslash\mathrm{parallel}\backslash\mathrm{textparallel}$   
 19984  $\backslash\mathrm{et}\backslash\mathrm{nparallel}\backslash\mathrm{textnparallel}$   
 19985  $\backslash\mathrm{et}\backslash\mathrm{wedge}\backslash\mathrm{textwedge}$   
 19986  $\backslash\mathrm{et}\backslash\mathrm{owedge}\backslash\mathrm{textowedge}$   
 19987  $\backslash\mathrm{et}\backslash\mathrm{vee}\backslash\mathrm{textvee}$   
 19988  $\backslash\mathrm{et}\backslash\mathrm{ovee}\backslash\mathrm{textovee}$   
 19989  $\backslash\mathrm{et}\backslash\mathrm{cap}\backslash\mathrm{textcap}$   
 19990  $\backslash\mathrm{et}\backslash\mathrm{cup}\backslash\mathrm{textcup}$   
 19991  $\backslash\mathrm{et}\backslash\mathrm{int}\backslash\mathrm{textint}$   
 19992  $\backslash\mathrm{et}\backslash\mathrm{iint}\backslash\mathrm{textiint}$   
 19993  $\backslash\mathrm{et}\backslash\mathrm{iiint}\backslash\mathrm{textiiint}$   
 19994  $\backslash\mathrm{et}\backslash\mathrm{ooint}\backslash\mathrm{textoint}$   
 19995  $\backslash\mathrm{et}\backslash\mathrm{oiint}\backslash\mathrm{textoiint}$   
 19996  $\backslash\mathrm{et}\backslash\mathrm{oointclockwise}\backslash\mathrm{textointclockwise}$   
 19997  $\backslash\mathrm{et}\backslash\mathrm{oointctrlockwise}\backslash\mathrm{textointctrlockwise}$   
 19998  $\backslash\mathrm{et}\backslash\mathrm{therefore}\backslash\mathrm{texttherefore}$   
 19999  $\backslash\mathrm{et}\backslash\mathrm{because}\backslash\mathrm{textbecause}$   
 20000  $\backslash\mathrm{et}\backslash\mathrm{vdots}\backslash\mathrm{textvdots}$   
 20001  $\backslash\mathrm{et}\backslash\mathrm{dotted}\backslash\mathrm{textdotted}$   
 20002  $\backslash\mathrm{et}\backslash\mathrm{dotminus}\backslash\mathrm{textdotminus}$   
 20003  $\backslash\mathrm{et}\backslash\mathrm{eqcolon}\backslash\mathrm{texteqcolon}$   
 20004  $\backslash\mathrm{et}\backslash\mathrm{sim}\backslash\mathrm{textsime}$   
 20005  $\backslash\mathrm{et}\backslash\mathrm{backsim}\backslash\mathrm{textbacksim}$   
 20006  $\backslash\mathrm{et}\backslash\mathrm{nbacksim}\backslash\mathrm{textnbacksim}$   
 20007  $\backslash\mathrm{et}\backslash\mathrm{wr}\backslash\mathrm{textwr}$



20008 \let\nsim\textnsim  
 20009 \let\eqsim\texteqsim  
 20010 \let\neqsim\textneqsim  
 20011 \let\simeq\textsimeq  
 20012 \let\nsimeq\textnsimeq  
 20013 \let\cong\textcong  
 20014 \let\ncong\textncong  
 20015 \let\approx\textapprox  
 20016 \let\napprox\textnapprox  
 20017 \let\approxeq\textapproxeq  
 20018 \let\napproxeq\textnapproxeq  
 20019 \let\triplesim\texttriplesim  
 20020 \let\ntriplesim\textntriplesim  
 20021 \let\backcong\textbackcong  
 20022 \let\backcong\textnbackcong  
 20023 \let\asymp\textasymp  
 20024 \let\nasymp\textnasymp  
 20025 \let\Bumpeq\textBumpeq  
 20026 \let\NBumpeq\textNBumpeq  
 20027 \let\bumpeq\textbumpeq  
 20028 \let\bumpeq\textnbumpeq  
 20029 \let\doteq\textdoteq  
 20030 \let\ndoteq\textndoteq  
 20031 \let\doteqdot\textdoteqdot  
 20032 \let\NDoteq\textNDoteq  
 20033 \let\fallingdoteq\textfallingdoteq  
 20034 \let\fallingdoteq\textnfallingdoteq  
 20035 \let\risingdoteq\textrisingdoteq  
 20036 \let\Nrisingdoteq\textNrisingdoteq  
 20037 \let\colonequals\textcolonequals  
 20038 \let\equalscolon\textequalscolon  
 20039 \let\eqcirc\texteqcirc  
 20040 \let\neqcirc\textneqcirc  
 20041 \let\circeq\textcirceq  
 20042 \let\ncirceq\textncirceq  
 20043 \let\hateq\texthateq  
 20044 \let\nhateq\textnhateq  
 20045 \let\triangleq\texttriangleq  
 20046 \let\neq\textneq  
 20047 \let\ne\textne  
 20048 \let\equiv\textequiv  
 20049 \let\nequiv\textnequiv  
 20050 \let\leq\textleq  
 20051 \let\le\textle  
 20052 \let\geq\textgeq  
 20053 \let\ge\textge  
 20054 \let\leqq\textleqq  
 20055 \let\Nleqq\textNleqq  
 20056 \let\geqq\textgeqq  
 20057 \let\Ngeqq\textNgeqq  
 20058 \let\lneqq\textlneqq  
 20059 \let\gneqq\textgneqq  
 20060 \let\ll\textll  
 20061 \let\nll\textnll

20062 \let\gg\textgg  
 20063 \let\ngg\textngg  
 20064 \let\between\textbetween  
 20065 \let\nless\textnless  
 20066 \let\ngtr\textngtr  
 20067 \let\nleq\textnleq  
 20068 \let\ngeq\textngeq  
 20069 \let\lesssim\textlesssim  
 20070 \let\gtrsim\textgtrsim  
 20071 \let\nlesssim\textnlesssim  
 20072 \let\ngtrsim\textngtrsim  
 20073 \let\lessgtr\textlessgtr  
 20074 \let\gtrless\textgtrless  
 20075 \let\ngtrless\textngtrless  
 20076 \let\nlessgtr\textnlessgtr  
 20077 \let\prec\textprec  
 20078 \let\succ\textsucc  
 20079 \let\preccurlyeq\textpreccurlyeq  
 20080 \let\succcurlyeq\textsucccurlyeq  
 20081 \let\precsim\textprecsim  
 20082 \let\nprecsim\textnprecsim  
 20083 \let\succsim\textsuccsim  
 20084 \let\nsuccsim\textnsuccsim  
 20085 \let\nprec\textnprec  
 20086 \let\nsucc\textnsucc  
 20087 \let\subset\textsubset  
 20088 \let\supset\textsupset  
 20089 \let\nsubset\textnssubset  
 20090 \let\nsupset\textnsupset  
 20091 \let\subseteq\textsubseteq  
 20092 \let\supseteq\textsupseteq  
 20093 \let\nsubsubseteq\textnssubseteq  
 20094 \let\nsupseteq\textnsupseteq  
 20095 \let\subsetneq\textsubsetneq  
 20096 \let\supsetneq\textsupsetneq  
 20097 \let\cupdot\textcupdot  
 20098 \let\cupplus\textcupplus  
 20099 \let\sqsubset\textsqsubset  
 20100 \let\nsqsubset\textnsqsubset  
 20101 \let\sqsupset\textsqsupset  
 20102 \let\nsqsupset\textnsqsupset  
 20103 \let\sqsubseteq\textsqsubseteq  
 20104 \let\nsqsubseteq\textnsqsubseteq  
 20105 \let\sqsupseteq\textsqsupseteq  
 20106 \let\nsqsupseteq\textnsqsupseteq  
 20107 \let\sqcap\textsqcap  
 20108 \let\sqcup\textsqcup  
 20109 \let\oplus\textoplus  
 20110 \let\ominus\textominus  
 20111 \let\otimes\textotimes  
 20112 \let\oslash\textoslash  
 20113 \let\odot\textodot  
 20114 \let\circledcirc\textcircledcirc  
 20115 \let\circledast\textcircledast

20116 \let\circleddash\textcircleddash  
 20117 \let\boxplus\textboxplus  
 20118 \let\boxminus\textboxminus  
 20119 \let\boxtimes\textboxtimes  
 20120 \let\boxdot\textboxdot  
 20121 \let\vdash\textvdash  
 20122 \let\dashv\textdashv  
 20123 \let\ndashv\textndashv  
 20124 \let\top\texttop  
 20125 \let\ndownvdash\textndownvdash  
 20126 \let\bot\textbot  
 20127 \let\nupvdash\textnupvdash  
 20128 \let\vdash\textvdash  
 20129 \let\vdash\textvdash  
 20130 \let\vdash\textvdash  
 20131 \let\vdash\textvdash  
 20132 \let\vdash\textvdash  
 20133 \let\vdash\textvdash  
 20134 \let\vdash\textvdash  
 20135 \let\vdash\textvdash  
 20136 \let\vdash\textvdash  
 20137 \let\lhd\textlhd  
 20138 \let\rhd\textrhd  
 20139 \let\unlhd\textunlhd  
 20140 \let\unrhd\textunrhd  
 20141 \let\multimapdotbothA\textmultimapdotbothA  
 20142 \let\multimapdotbothB\textmultimapdotbothB  
 20143 \let\multimap\textmultimap  
 20144 \let\veebar\textveebar  
 20145 \let\barwedge\textbarwedge  
 20146 \let\star\textstar  
 20147 \let\divideontimes\textdivideontimes  
 20148 \let\bowtie\textbowtie  
 20149 \let\ltimes\textltimes  
 20150 \let\rtimes\textrtimes  
 20151 \let\leftthreetimes\textleftthreetimes  
 20152 \let\rightthreetimes\textrightthreetimes  
 20153 \let\backsimeq\textbacksimeq  
 20154 \let\backsimeq\textbacksimeq  
 20155 \let\curlyvee\textcurlyvee  
 20156 \let\curlywedge\textcurlywedge  
 20157 \let\Subset\textSubset  
 20158 \let\Subset\textSubset  
 20159 \let\Supset\textSupset  
 20160 \let\Supset\textSupset  
 20161 \let\Cap\textCap  
 20162 \let\Cup\textCup  
 20163 \let\pitchfork\textpitchfork  
 20164 \let\lessdot\textlessdot  
 20165 \let\gtrdot\textgtrdot  
 20166 \let\lll\textlll  
 20167 \let\ggg\textggg  
 20168 \let\lesseqgtr\textlesseqgtr  
 20169 \let\gtreqless\textgtreqless

20170 \let\curlyeqprec\textcurlyeqprec  
 20171 \let\ncurlyeqprec\textncurlyeqprec  
 20172 \let\curlyeqsucc\textcurlyeqsucc  
 20173 \let\ncurlyeqsucc\textncurlyeqsucc  
 20174 \let\preccurlyeq\textnpreccurlyeq  
 20175 \let\nsucccurlyeq\textnsucccurlyeq  
 20176 \let\subset\textsubset  
 20177 \let\supset\textsupset  
 20178 \let\subsetneq\textsubsetneq  
 20179 \let\supsetneq\textsupsetneq  
 20180 \let\sim\textsim  
 20181 \let\gtrsim\textgtrsim  
 20182 \let\lesssim\textlesssim  
 20183 \let\succsim\textsuccsim  
 20184 \let\triangleleft\texttriangleleft  
 20185 \let\triangleright\texttriangleright  
 20186 \let\trianglelefteq\texttrianglelefteq  
 20187 \let\trianglerighteq\texttrianglerighteq  
 20188 \let\vdots\textvdots  
 20189 \let\cdots\textcdots  
 20190 \let\udots\textudots  
 20191 \let\ddots\textddots  
 20192 \let\bar\textbar  
 20193 \let\diameter\textdiameter  
 20194 \let\backneg\textbackneg  
 20195 \let\wasylozenge\textwasylozenge  
 20196 \let\invbackneg\textinvbackneg  
 20197 \let\clock\textclock  
 20198 \let\ulcorner\textulcorner  
 20199 \let\urcorner\texturcorner  
 20200 \let\llcorner\textllcorner  
 20201 \let\lrcorner\textlrcorner  
 20202 \let\frown\textfrown  
 20203 \let\smile\textsmile  
 20204 \let\Keyboard\textKeyboard  
 20205 \let\angle\textangle  
 20206 \let\rangle\textrangle  
 20207 \let\APLinv\textAPLinv  
 20208 \let\Tumbler\textTumbler  
 20209 \let\slash\textslash  
 20210 \let\notbackslash\textnotbackslash  
 20211 \let\boxbackslash\textboxbackslash  
 20212 \let\APLleftarrowbox\textAPLleftarrowbox  
 20213 \let\APLrightarrowbox\textAPLrightarrowbox  
 20214 \let\APLuparrowbox\textAPLuparrowbox  
 20215 \let\APLdownarrowbox\textAPLdownarrowbox  
 20216 \let\APLinput\textAPLinput  
 20217 \let\Request\textRequest  
 20218 \let\Beam\textBeam  
 20219 \let\hexagon\texthexagon  
 20220 \let\APLbox\textAPLbox  
 20221 \let\ForwardToIndex\textForwardToIndex  
 20222 \let\RewindToIndex\textRewindToIndex  
 20223 \let\bbslash\textbbslash

20224 \let\CircledA\textCircledA  
 20225 \let\CleaningF\textCleaningF  
 20226 \let\CleaningFF\textCleaningFF  
 20227 \let\CleaningP\textCleaningP  
 20228 \let\CleaningPP\textCleaningPP  
 20229 \let\CuttingLine\textCuttingLine  
 20230 \let\UParrow\textUParrow  
 20231 \let\bigtriangleup\textbigtriangleup  
 20232 \let\Forward\textForward  
 20233 \let\triangleright\texttriangleright  
 20234 \let\RHD\textRHD  
 20235 \let\DOWNarrow\textDOWNarrow  
 20236 \let\bigtriangledown\textbigtriangledown  
 20237 \let\Rewind\textRewind  
 20238 \let\triangleleft\texttriangleleft  
 20239 \let\LHD\textLHD  
 20240 \let\diamond\textdiamond  
 20241 \let\lozenge\textlozenge  
 20242 \let\LEFTCIRCLE\textLEFTCIRCLE  
 20243 \let\RIGHTCIRCLE\textRIGHTCIRCLE  
 20244 \let\openbullet\textopenbullet  
 20245 \let\boxbar\textboxbar  
 20246 \let\bigcircle\textbigcircle  
 20247 \let\Cloud\textCloud  
 20248 \let\FiveStar\textFiveStar  
 20249 \let\FiveStarOpen\textFiveStarOpen  
 20250 \let\Phone\textPhone  
 20251 \let\boxempty\textboxempty  
 20252 \let\Checkedbox\textCheckedbox  
 20253 \let\Crossedbox\textCrossedbox  
 20254 \let\Coffeecup\textCoffeecup  
 20255 \let\HandCuffLeft\textHandCuffLeft  
 20256 \let\HandCuffRight\textHandCuffRight  
 20257 \let\HandLeft\textHandLeft  
 20258 \let\HandRight\textHandRight  
 20259 \let\Radioactivity\textRadioactivity  
 20260 \let\Biohazard\textBiohazard  
 20261 \let\Ankh\textAnkh  
 20262 \let\YinYang\textYinYang  
 20263 \let\frownie\textfrownie  
 20264 \let\smiley\textsmiley  
 20265 \let\blacksmiley\textblacksmiley  
 20266 \let\sun\textsun  
 20267 \let\leftmoon\textleftmoon  
 20268 \let\rightmoon\textrightmoon  
 20269 \let\mercury\textmercury  
 20270 \let\earth\textearth  
 20271 \let\male\textmale  
 20272 \let\jupiter\textjupiter  
 20273 \let\saturn\textsaturn  
 20274 \let\uranus\texturanus  
 20275 \let\neptune\textneptune  
 20276 \let\pluto\textpluto  
 20277 \let\aries\textaries

20278 \let\taurus\texttaurus  
 20279 \let\gemini\textgemini  
 20280 \let\cancer\textcancer  
 20281 \let\leo\textleo  
 20282 \let\virgo\textvirgo  
 20283 \let\libra\textlibra  
 20284 \let\scorpio\textscorpio  
 20285 \let\sagittarius\textsagittarius  
 20286 \let\capricornus\textcapricornus  
 20287 \let\aquarius\textaquarius  
 20288 \let\pisces\textpisces  
 20289 \let\quaternote\textquaternote  
 20290 \let\twonotes\texttwonotes  
 20291 \let\sixteenthnote\textsixteenthnote  
 20292 \let\flat\textflat  
 20293 \let\natural\textnatural  
 20294 \let\sharp\textsharp  
 20295 \let\recycle\textrecycle  
 20296 \let\Wheelchair\textWheelchair  
 20297 \let\Flag\textFlag  
 20298 \let\MineSign\textMineSign  
 20299 \let\ds\textds  
 20300 \let\dsmedical\textdsmedical  
 20301 \let\dsjuridical\textdsjuridical  
 20302 \let\dschemical\textdschemical  
 20303 \let\dsbiological\textdsbiological  
 20304 \let\dscommercial\textdscommercial  
 20305 \let\manstar\textmanstar  
 20306 \let\danger\textdanger  
 20307 \let\FemaleFemale\textFemaleFemale  
 20308 \let\MaleMale\textMaleMale  
 20309 \let\FemaleMale\textFemaleMale  
 20310 \let\Hermaphrodite\textHermaphrodite  
 20311 \let\Neutral\textNeutral  
 20312 \let\hexstar\texthexstar  
 20313 \let\SunCloud\textSunCloud  
 20314 \let\Rain\textRain  
 20315 \let\noway\textnoway  
 20316 \let\Mountain\textMountain  
 20317 \let\Tent\textTent  
 20318 \let\ScissorRight\textScissorRight  
 20319 \let\ScissorRightBrokenTop\textScissorRightBrokenTop  
 20320 \let\ScissorHollowRight\textScissorHollowRight  
 20321 \let\PhoneHandset\textPhoneHandset  
 20322 \let\Tape\textTape  
 20323 \let\Plane\textPlane  
 20324 \let\Envelope\textEnvelope  
 20325 \let\Peace\textPeace  
 20326 \let\WritingHand\textWritingHand  
 20327 \let\PencilRightDown\textPencilRightDown  
 20328 \let\PencilRight\textPencilRight  
 20329 \let\PencilRightUp\textPencilRightUp  
 20330 \let\NibRight\textNibRight  
 20331 \let\NibSolidRight\textNibSolidRight

20332 \let\Checkmark\textCheckmark  
 20333 \let\CheckmarkBold\textCheckmarkBold  
 20334 \let\XSolid\textXSolid  
 20335 \let\XSolidBold\textXSolidBold  
 20336 \let\XSolidBrush\textXSolidBrush  
 20337 \let\PlusOutline\textPlusOutline  
 20338 \let\Plus\textPlus  
 20339 \let\PlusThinCenterOpen\textPlusThinCenterOpen  
 20340 \let\PlusCenterOpen\textPlusCenterOpen  
 20341 \let\Cross\textCross  
 20342 \let\CrossOpenShadow\textCrossOpenShadow  
 20343 \let\CrossOutline\textCrossOutline  
 20344 \let\CrossMaltese\textCrossMaltese  
 20345 \let\DavidStar\textDavidStar  
 20346 \let\FourAsterisk\textFourAsterisk  
 20347 \let\JackStar\textJackStar  
 20348 \let\JackStarBold\textJackStarBold  
 20349 \let\ClowerTips\textClowerTips  
 20350 \let\FourStar\textFourStar  
 20351 \let\FourStarOpen\textFourStarOpen  
 20352 \let\FiveStarOpenCircled\textFiveStarOpenCircled  
 20353 \let\FiveStarCenterOpen\textFiveStarCenterOpen  
 20354 \let\FiveStarOpenDotted\textFiveStarOpenDotted  
 20355 \let\FiveStarOutline\textFiveStarOutline  
 20356 \let\FiveStarOutlineHeavy\textFiveStarOutlineHeavy  
 20357 \let\FiveStarConvex\textFiveStarConvex  
 20358 \let\FiveStarShadow\textFiveStarShadow  
 20359 \let\AsteriskBold\textAsteriskBold  
 20360 \let\AsteriskCenterOpen\textAsteriskCenterOpen  
 20361 \let\EightStarTaper\textEightStarTaper  
 20362 \let\EightStarConvex\textEightStarConvex  
 20363 \let\SixStar\textSixStar  
 20364 \let\EightStar\textEightStar  
 20365 \let\EightStarBold\textEightStarBold  
 20366 \let\TwelveStar\textTwelveStar  
 20367 \let\SixteenStarLight\textSixteenStarLight  
 20368 \let\SixFlowerPetalRemoved\textSixFlowerPetalRemoved  
 20369 \let\SixFlowerOpenCenter\textSixFlowerOpenCenter  
 20370 \let\Asterisk\textAsterisk  
 20371 \let\SixFlowerAlternate\textSixFlowerAlternate  
 20372 \let\FiveFlowerPetal\textFiveFlowerPetal  
 20373 \let\FiveFlowerOpen\textFiveFlowerOpen  
 20374 \let\EightFlowerPetal\textEightFlowerPetal  
 20375 \let\SunshineOpenCircled\textSunshineOpenCircled  
 20376 \let\SixFlowerAltPetal\textSixFlowerAltPetal  
 20377 \let\SnowflakeChevron\textSnowflakeChevron  
 20378 \let\Snowflake\textSnowflake  
 20379 \let\SnowflakeChevronBold\textSnowflakeChevronBold  
 20380 \let\Sparkle\textSparkle  
 20381 \let\SparkleBold\textSparkleBold  
 20382 \let\AsteriskRoundedEnds\textAsteriskRoundedEnds  
 20383 \let\EightFlowerPetalRemoved\textEightFlowerPetalRemoved  
 20384 \let\EightAsterisk\textEightAsterisk  
 20385 \let\CircleShadow\textCircleShadow

20386 \let\SquareShadowBottomRight\textSquareShadowBottomRight  
 20387 \let\SquareTopRight\textSquareTopRight  
 20388 \let\SquareCastShadowBottomRight\textSquareCastShadowBottomRight  
 20389 \let\SquareCastShadowTopRight\textSquareCastShadowTopRight  
 20390 \let\DiamondSolid\textDiamondSolid  
 20391 \let\RectangleThin\textRectangleThin  
 20392 \let\Rectangle\textRectangle  
 20393 \let\RectangleBold\textRectangleBold  
 20394 \let\perp\textperp  
 20395 \let\notperp\textnotperp  
 20396 \let\veedot\textveedot  
 20397 \let\wedgedot\textwedgedot  
 20398 \let\leftspoon\textleftspoon  
 20399 \let\lbrackdbl\textlbrackdbl  
 20400 \let\rbrackdbl\textrbrackdbl  
 20401 \let\circlearrowleft\textcirclearrowleft  
 20402 \let\circlearrowright\textcirclearrowright  
 20403 \let\longleftarrow\textlongleftarrow  
 20404 \let\longrightarrow\textlongrightarrow  
 20405 \let\longleftarrow\textlongleftarrow  
 20406 \let\Longleftarrow\textLongleftarrow  
 20407 \let\Longrightarrow\textLongrightarrow  
 20408 \let\Longleftarrow\textLongleftarrow  
 20409 \let\longmapsto\textlongmapsto  
 20410 \let\Longmapsfrom\textLongmapsfrom  
 20411 \let\Longmapsto\textLongmapsto  
 20412 \let\nwsearrow\textnwsearrow  
 20413 \let\neswarrow\textneswarrow  
 20414 \let\hookrightarrow\texthookrightarrow  
 20415 \let\rhookrightarrow\texthookrightarrow  
 20416 \let\hookrightarrow\texthookrightarrow  
 20417 \let\rhookrightarrow\texthookrightarrow  
 20418 \let\leadsto\textleadsto  
 20419 \let\curvearrowright\textcurvearrowright  
 20420 \let\curvearrowleft\textcurvearrowleft  
 20421 \let\curvearrowright\textcurvearrowright  
 20422 \let\curvearrowright\textcurvearrowright  
 20423 \let\curvearrowdown\textcurvearrowdown  
 20424 \let\curvearrowdown\textcurvearrowdown  
 20425 \let\curvearrowleft\textcurvearrowleft  
 20426 \let\curvearrowright\textcurvearrowright  
 20427 \let\leftrightharpoon\textleftrightharpoon  
 20428 \let\rightright\textleftrightharpoon  
 20429 \let\updownharpoonright\textupdownharpoonright  
 20430 \let\updownharpoonleft\textupdownharpoonleft  
 20431 \let\leftleftharpoons\textleftleftharpoons  
 20432 \let\upupharpoons\textupupharpoons  
 20433 \let\rightright\textleftrightharpoons  
 20434 \let\downdownharpoons\textdowndownharpoons  
 20435 \let\leftbarharpoon\textleftbarharpoon  
 20436 \let\barleft\textbarleft  
 20437 \let\rightbarharpoon\textrightbarharpoon  
 20438 \let\barright\textbarright  
 20439 \let\updownharpoons\textupdownharpoons



20440  $\backslash\text{let}\downarrow\text{nupharpoons}\text{downnupharpoons}$   
 20441  $\backslash\text{let}\text{moo}\text{moo}$   
 20442  $\backslash\text{let}\llparenthesis\text{tllparenthesis}$   
 20443  $\backslash\text{let}\rrparenthesis\text{trrparenthesis}$   
 20444  $\backslash\text{let}\text{invdiameter}\text{invdiameter}$   
 20445  $\backslash\text{let}\text{obar}\text{obar}$   
 20446  $\backslash\text{let}\text{obslash}\text{obslash}$   
 20447  $\backslash\text{let}\text{obot}\text{obot}$   
 20448  $\backslash\text{let}\text{NoChemicalCleaning}\text{NoChemicalCleaning}$   
 20449  $\backslash\text{let}\text{olessthan}\text{tolessthan}$   
 20450  $\backslash\text{let}\text{ogreaterthan}\text{togreaterthan}$   
 20451  $\backslash\text{let}\text{boxslash}\text{boxslash}$   
 20452  $\backslash\text{let}\text{boxbslash}\text{boxbslash}$   
 20453  $\backslash\text{let}\text{boxast}\text{boxast}$   
 20454  $\backslash\text{let}\text{boxcircle}\text{boxcircle}$   
 20455  $\backslash\text{let}\text{boxbox}\text{boxbox}$   
 20456  $\backslash\text{let}\text{Valve}\text{Valve}$   
 20457  $\backslash\text{let}\text{multimapboth}\text{multimapboth}$   
 20458  $\backslash\text{let}\text{shuffle}\text{shuffle}$   
 20459  $\backslash\text{let}\text{uplus}\text{uplus}$   
 20460  $\backslash\text{let}\text{bigdoublewedge}\text{bigdoublewedge}$   
 20461  $\backslash\text{let}\text{bigdoublevee}\text{bigdoublevee}$   
 20462  $\backslash\text{let}\text{Join}\text{Join}$   
 20463  $\backslash\text{let}\text{fatsemi}\text{fatsemi}$   
 20464  $\backslash\text{let}\text{circplus}\text{circplus}$   
 20465  $\backslash\text{let}\text{minusdot}\text{minusdot}$   
 20466  $\backslash\text{let}\text{dottimes}\text{dottimes}$   
 20467  $\backslash\text{let}\text{dtimes}\text{dtimes}$   
 20468  $\backslash\text{let}\text{odiv}\text{odiv}$   
 20469  $\backslash\text{let}\text{invneg}\text{invneg}$   
 20470  $\backslash\text{let}\text{sqdoublecap}\text{sqdoublecap}$   
 20471  $\backslash\text{let}\text{capdot}\text{capdot}$   
 20472  $\backslash\text{let}\text{sqdoublecup}\text{sqdoublecup}$   
 20473  $\backslash\text{let}\text{doublewedge}\text{doublewedge}$   
 20474  $\backslash\text{let}\text{doublevee}\text{doublevee}$   
 20475  $\backslash\text{let}\text{doublebarwedge}\text{doublebarwedge}$   
 20476  $\backslash\text{let}\text{veedoublebar}\text{veedoublebar}$   
 20477  $\backslash\text{let}\text{eqdot}\text{eqdot}$   
 20478  $\backslash\text{let}\text{neqdot}\text{neqdot}$   
 20479  $\backslash\text{let}\text{coloncolonequals}\text{coloncolonequals}$   
 20480  $\backslash\text{let}\text{leqslant}\text{leqslant}$   
 20481  $\backslash\text{let}\text{nleqslant}\text{nleqslant}$   
 20482  $\backslash\text{let}\text{geqslant}\text{geqslant}$   
 20483  $\backslash\text{let}\text{ngeqslant}\text{ngeqslant}$   
 20484  $\backslash\text{let}\text{lessapprox}\text{lessapprox}$   
 20485  $\backslash\text{let}\text{nlessapprox}\text{nlessapprox}$   
 20486  $\backslash\text{let}\text{gtrapprox}\text{gtrapprox}$   
 20487  $\backslash\text{let}\text{ngtrapprox}\text{ngtrapprox}$   
 20488  $\backslash\text{let}\text{lneq}\text{lneq}$   
 20489  $\backslash\text{let}\text{gneq}\text{gneq}$   
 20490  $\backslash\text{let}\text{lnapprox}\text{lnapprox}$   
 20491  $\backslash\text{let}\text{gnapprox}\text{gnapprox}$   
 20492  $\backslash\text{let}\text{lesseqqgtr}\text{lesseqqgtr}$   
 20493  $\backslash\text{let}\text{gtreqqlless}\text{gtreqqlless}$

20494 \let\eqslantless\texteqslantless  
 20495 \let\eqslantgtr\texteqslantgtr  
 20496 \let\leftslice\textleftslice  
 20497 \let\rightslice\textrightslice  
 20498 \let\preceq\textpreceq  
 20499 \let\npreceq\textnpreceq  
 20500 \let\succeq\textsucceq  
 20501 \let\nsucceq\textnsucceq  
 20502 \let\precneq\textprecneq  
 20503 \let\succneq\textsuccneq  
 20504 \let\preceqq\textpreceqq  
 20505 \let\npreceqq\textnpreceqq  
 20506 \let\succeqq\textsucceqq  
 20507 \let\nsucceqq\textnsucceqq  
 20508 \let\precneqq\textprecneqq  
 20509 \let\succneqq\textsuccneqq  
 20510 \let\precapprox\textprecapprox  
 20511 \let\nprecapprox\textnprecapprox  
 20512 \let\succapprox\textsuccapprox  
 20513 \let\nsuccapprox\textnsuccapprox  
 20514 \let\precnapprox\textprecnapprox  
 20515 \let\succnapprox\textsuccnapprox  
 20516 \let\subseteqq\textsubseteqq  
 20517 \let\nsubseteqq\textnsubseteqq  
 20518 \let\supseteqq\textsupseteqq  
 20519 \let\nsupseteqq\textnsupseteqq  
 20520 \let\dashV\textdashV  
 20521 \let\ndashV\textndashV  
 20522 \let\Dashv\textDashv  
 20523 \let\ndashv\textndashv  
 20524 \let\DashV\textDashV  
 20525 \let\ndashV\textndashV  
 20526 \let\downmodels\textdownmodels  
 20527 \let\ndownmodels\textndownmodels  
 20528 \let\upmodels\textupmodels  
 20529 \let\nupmodels\textnupmodels  
 20530 \let\upspoon\textupspoon  
 20531 \let\interleave\textinterleave  
 20532 \let\slash\textslash  
 20533 \let\pentagon\textpentagon  
 20534 \let\varhexagon\textvarhexagon  
 20535 \let\jinferior\textjinferior  
 20536 \let\slashdiv\textslashdiv  
 20537 \let\fivedots\textfivedots  
 20538 \let\oo\textoo  
 20539 \let\GaPa\textGaPa  
 20540 \let\HaPa\textHaPa  
 20541 \let\ViPa\textViPa  
 20542 \let\AcPa\textAcPa  
 20543 \let\SePa\textSePa  
 20544 \let\ZwPa\textZwPa  
 20545 \let\fullnote\textfullnote  
 20546 \let\halfnote\texthalfnote  
 20547 \let\Vier\textVier

20548 \let\Acht\textAcht  
 20549 \let\Sech\textSech  
 20550 \let\Zwdr\textZwdr  
 20551 \let\Mundus\textMundus  
 20552 \let\Moon\textMoon  
 20553 \let\ManFace\textManFace  
 20554 \let\WomanFace\textWomanFace  
 20555 \let\Fax\textFax  
 20556 \let\Fire\textFire  
 20557 \let\Bicycle\textBicycle  
 20558 \let\Gentsroom\textGentsroom  
 20559 \let\Ladiesroom\textLadiesroom  
 20560 \let\ccnc\textccnc  
 20561 \let\ccsa\textccsa  
 20562 \let\Info\textInfo  
 20563 \let\CESign\textCESign  
 20564 \let\neg\textneg  
 20565 \let\times\texttimes  
 20566 \let\div\textdiv  
 20567 \let\pm\textpm  
 20568 \let\cdot\textcdot  
 20569 }% \psdmapshortnames  
 20570 \newcommand\*{\psdaliasnames}{%  
 20571 \let\epsdice\HyPsd@DieFace  
 20572 \let\fcdice\HyPsd@DieFace  
 20573 \let\MoonPha\HyPsd@MoonPha  
 20574 \let\mathdollar\textdollar  
 20575 \let\EyesDollar\textdollar  
 20576 \let\binampersand\textampersand  
 20577 \let\with\textampersand  
 20578 \let\mathunderscore\textunderscore  
 20579 \let\textvertline\textbar  
 20580 \let\mathsterling\textsterling  
 20581 \let\pounds\textsterling  
 20582 \let\brokenvert\textbrokenbar  
 20583 \let\mathsection\textsection  
 20584 \let\S\textsection  
 20585 \let\mathparagraph\textparagraph  
 20586 \let\MultiplicationDot\textperiodcentered  
 20587 \let\Squaredot\textperiodcentered  
 20588 \let\var times\textmultiply  
 20589 \let\MVMultiplication\textmultiply  
 20590 \let\eth\dh  
 20591 \let\crossd\textcrd  
 20592 \let\textbard\textcrd  
 20593 \let\bard\textcrd  
 20594 \let\textcrh\texthbar  
 20595 \let\crossh\texthbar  
 20596 \let\planck\texthbar  
 20597 \let\eng\ng  
 20598 \let\engma\ng  
 20599 \let\crossb\textcrb  
 20600 \let\textbarb\textcrb  
 20601 \let\barb\textcrb

20602 \let\Florin\textflorin  
 20603 \let\hv\texthvlig  
 20604 \let\hausak\texthtk  
 20605 \let\crossnilambda\textcrlambda  
 20606 \let\barlambda\textcrlambda  
 20607 \let\lambdabar\textcrlambda  
 20608 \let\lambdaslash\textcrlambda  
 20609 \let\textnrleg\textPUnrleg  
 20610 \let\textpipevar\textpipe  
 20611 \let\textdoublepipevar\textdoublepipe  
 20612 \let\textdoublebarpipevar\textdoublebarpipe  
 20613 \let\textcrg\textgslash  
 20614 \let\textdblig\textPUdblig  
 20615 \let\textqplig\textPUqplig  
 20616 \let\textcentoldstyle\textslashc  
 20617 \let\textbarc\textslashc  
 20618 \let\inva\textturna  
 20619 \let\vara\textscripta  
 20620 \let\invscripta\textturnscripta  
 20621 \let\rotvara\textturnscripta  
 20622 \let\hookb\texthtb  
 20623 \let\hausab\texthtb  
 20624 \let\varopeno\textopeno  
 20625 \let\curlyc\textctc  
 20626 \let\taild\textrtaild  
 20627 \let\hookd\texthtd  
 20628 \let\hausad\texthtd  
 20629 \let\er\textrhooschwa  
 20630 \let\epsi\textniepsilon  
 20631 \let\hookrepsilon\textrhooschwa  
 20632 \let\closedrepsilon\textcloserepsilon  
 20633 \let\barj\textbardotlessj  
 20634 \let\hookg\texthtg  
 20635 \let\varg\textscriptg  
 20636 \let\vod\textipagamma  
 20637 \let\invh\textturnh  
 20638 \let\udesc\textturnh  
 20639 \let\hookh\texthth  
 20640 \let\voicedh\texthth  
 20641 \let\hookheng\texththeng  
 20642 \let\ibar\textbari  
 20643 \let\vari\textniota  
 20644 \let\tildel\textltilde  
 20645 \let\latfric\textbeltl  
 20646 \let\taill\textrtail  
 20647 \let\lz\textlyoghlig  
 20648 \let\invm\textturnm  
 20649 \let\rotm\textturnm  
 20650 \let\legm\textturnmrleg  
 20651 \let\labdentalnas\textltailm  
 20652 \let\emgma\textltailm  
 20653 \let\nj\textltailn  
 20654 \let\enya\textltailn  
 20655 \let\tailn\textrtailn

20656 \let\closedniomega\textcloseomega  
 20657 \let\varomega\textcloseomega  
 20658 \let\invr\textturnr  
 20659 \let\rotr\textturnr  
 20660 \let\invlegr\textturnlonglegr  
 20661 \let\tailinvr\textturnrrtail  
 20662 \let\legr\textlonglegr  
 20663 \let\tailr\textrtailr  
 20664 \let\flapr\textfishhookr  
 20665 \let\flap\textfishhookr  
 20666 \let\tails\textrtails  
 20667 \let\curlyesh\textctesh  
 20668 \let\clickt\textturnt  
 20669 \let\tailt\textrtailt  
 20670 \let\ubar\textbaru  
 20671 \let\rotOmega\textniupsilon  
 20672 \let\invv\textturnv  
 20673 \let\pwedge\textturnv  
 20674 \let\invw\textturnw  
 20675 \let\rotw\textturnw  
 20676 \let\invy\textturny  
 20677 \let\roty\textturny  
 20678 \let\tailz\textrtailz  
 20679 \let\curlyz\textctz  
 20680 \let\curlyyogh\textctyogh  
 20681 \let\ejective\textglotstop  
 20682 \let\glottal\textglotstop  
 20683 \let\reveject\textrevglotstop  
 20684 \let\clickc\textstretchc  
 20685 \let\textstretchcvar\textstretchc  
 20686 \let\clickb\textbullseye  
 20687 \let\textObullseye\textbullseye  
 20688 \let\textctjvar\textctj  
 20689 \let\textturnsk\textturnk  
 20690 \let\dz\textdzlig  
 20691 \let\tesh\textteshlig  
 20692 \let\digamma\textdigammagreek  
 20693 \let\hardsign\cyrrhdsn  
 20694 \let\softsign\cyrsftsn  
 20695 \let\hebsin\hebshin  
 20696 \let\textsck\textPUscck  
 20697 \let\textscm\textPUscm  
 20698 \let\textscp\textPUscp  
 20699 \let\textrevscr\textPUrevscr  
 20700 \let\textrhooca\textPUrhooca  
 20701 \let\textrhooke\textPUrhooke  
 20702 \let\textrhookepsilon\textPUrhookepsilon  
 20703 \let\textrhookeno\textPUrhookeno  
 20704 \let\textdoublevertline\textbardbl  
 20705 \let\dag\textdagger  
 20706 \let\ddagger\textdaggerdbl  
 20707 \let\ddag\textdaggerdbl  
 20708 \let\mathellipsis\textellipsis  
 20709 \let\EurDig\texteuro

20710  $\backslash\text{let}\backslash\text{EURdig}\backslash\text{texteuro}$   
 20711  $\backslash\text{let}\backslash\text{EurHv}\backslash\text{texteuro}$   
 20712  $\backslash\text{let}\backslash\text{EURhv}\backslash\text{texteuro}$   
 20713  $\backslash\text{let}\backslash\text{EurCr}\backslash\text{texteuro}$   
 20714  $\backslash\text{let}\backslash\text{EURcr}\backslash\text{texteuro}$   
 20715  $\backslash\text{let}\backslash\text{EurTm}\backslash\text{texteuro}$   
 20716  $\backslash\text{let}\backslash\text{EURtm}\backslash\text{texteuro}$   
 20717  $\backslash\text{let}\backslash\text{Eur}\backslash\text{texteuro}$   
 20718  $\backslash\text{let}\backslash\text{Denarius}\backslash\text{textDeleatur}$   
 20719  $\backslash\text{let}\backslash\text{agemO}\backslash\text{textmho}$   
 20720  $\backslash\text{let}\backslash\text{EstimatedSign}\backslash\text{textestimated}$   
 20721  $\backslash\text{let}\backslash\text{Ecommerce}\backslash\text{textestimated}$   
 20722  $\backslash\text{let}\backslash\text{bindnasrepma}\backslash\text{textinvamp}$   
 20723  $\backslash\text{let}\backslash\text{parr}\backslash\text{textinvamp}$   
 20724  $\backslash\text{let}\backslash\text{MVRightArrow}\backslash\text{textrightarrow}$   
 20725  $\backslash\text{let}\backslash\text{MVRightarrow}\backslash\text{textrightarrow}$   
 20726  $\backslash\text{let}\backslash\text{MVArrowDown}\backslash\text{textdownarrow}$   
 20727  $\backslash\text{let}\backslash\text{Force}\backslash\text{textdownarrow}$   
 20728  $\backslash\text{let}\backslash\text{textglobrise}\backslash\text{textnearrow}$   
 20729  $\backslash\text{let}\backslash\text{textglobfall}\backslash\text{textsearrow}$   
 20730  $\backslash\text{let}\backslash\text{Lightning}\backslash\text{textlightning}$   
 20731  $\backslash\text{let}\backslash\text{Conclusion}\backslash\text{textRightarrow}$   
 20732  $\backslash\text{let}\backslash\text{dashedleftarrow}\backslash\text{texdashleftarrow}$   
 20733  $\backslash\text{let}\backslash\text{dashedrightarrow}\backslash\text{texdashrightarrow}$   
 20734  $\backslash\text{let}\backslash\text{varnothing}\backslash\text{textemptyset}$   
 20735  $\backslash\text{let}\backslash\text{owns}\backslash\text{textni}$   
 20736  $\backslash\text{let}\backslash\text{notni}\backslash\text{textnotowner}$   
 20737  $\backslash\text{let}\backslash\text{varprop}\backslash\text{textpropto}$   
 20738  $\backslash\text{let}\backslash\text{varangle}\backslash\text{textsphericalangle}$   
 20739  $\backslash\text{let}\backslash\text{Anglesign}\backslash\text{textsphericalangle}$   
 20740  $\backslash\text{let}\backslash\text{AngleSign}\backslash\text{textsphericalangle}$   
 20741  $\backslash\text{let}\backslash\text{notdivides}\backslash\text{textnmid}$   
 20742  $\backslash\text{let}\backslash\text{varowedge}\backslash\text{textowedge}$   
 20743  $\backslash\text{let}\backslash\text{varovee}\backslash\text{textovee}$   
 20744  $\backslash\text{let}\backslash\text{varint}\backslash\text{textint}$   
 20745  $\backslash\text{let}\backslash\text{varoint}\backslash\text{textoint}$   
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 20749  $\backslash\text{let}\backslash\text{wreath}\backslash\text{textwr}$   
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 20755  $\backslash\text{let}\backslash\text{Corresponds}\backslash\text{texthateq}$   
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 20757  $\backslash\text{let}\backslash\text{Congruent}\backslash\text{textequiv}$   
 20758  $\backslash\text{let}\backslash\text{NotCongruent}\backslash\text{textnequiv}$   
 20759  $\backslash\text{let}\backslash\text{notequiv}\backslash\text{textnequiv}$   
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 20761  $\backslash\text{let}\backslash\text{LargerOrEqual}\backslash\text{textgeq}$   
 20762  $\backslash\text{let}\backslash\text{apprle}\backslash\text{textlessmsim}$   
 20763  $\backslash\text{let}\backslash\text{apprge}\backslash\text{textgtrsim}$

20764 `\let\varoplus\textoplus`  
 20765 `\let\varominus\textominus`  
 20766 `\let\varotimes\textotimes`  
 20767 `\let\varoslash\textoslash`  
 20768 `\let\varodot\textodot`  
 20769 `\let\ocirc\textcircledcirc`  
 20770 `\let\varocircle\textcircledcirc`  
 20771 `\let\varoast\textcircledast`  
 20772 `\let\oasterisk\textcircledast`  
 20773 `\let\rightvdash\textvdash`  
 20774 `\let\leftvdash\textdashv`  
 20775 `\let\leftvdash\textndashv`  
 20776 `\let\downvdash\texttop`  
 20777 `\let\upvdash\textbot`  
 20778 `\let\leftvdash\textnupvdash`  
 20779 `\let\models\textvDash`  
 20780 `\let\models\textvDash`  
 20781 `\let\models\textVdash`  
 20782 `\let\models\textVDash`  
 20783 `\let\models\textnvdash`  
 20784 `\let\models\textnvDash`  
 20785 `\let\models\textnvdash`  
 20786 `\let\models\textnVdash`  
 20787 `\let\models\textnVDash`  
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 20789 `\let\gtrclosed\textrhd`  
 20790 `\let\leqclosed\textunlhd`  
 20791 `\let\trianglelefteq\textunlhd`  
 20792 `\let\geqclosed\textunrhd`  
 20793 `\let\trianglerighteq\textunrhd`  
 20794 `\let\Bowtie\textbowtie`  
 20795 `\let\varcurlyvee\textcurlyvee`  
 20796 `\let\varcurlywedge\textcurlywedge`  
 20797 `\let\doublecap\textCap`  
 20798 `\let\doublecup\textCup`  
 20799 `\let\varsubsetneq\textsubsetneq`  
 20800 `\let\varsupsetneq\textsupsetneq`  
 20801 `\let\lessclosed\textntriangleleft`  
 20802 `\let\ngtrclosed\textntriangleright`  
 20803 `\let\Clocklogo\textclock`  
 20804 `\let\ClockLogo\textclock`  
 20805 `\let\baro\textstmaryrdbaro`  
 20806 `\let\varparallel\textbbslash`  
 20807 `\let\CleaningA\textCircledA`  
 20808 `\let\Kutline\textCuttingLine`  
 20809 `\let\CutLine\textCuttingLine`  
 20810 `\let\Cutline\textCuttingLine`  
 20811 `\let\MoveUp\textUParrow`  
 20812 `\let\APLup\textbigtriangleup`  
 20813 `\let\Bleech\textbigtriangleup`  
 20814 `\let\MoveDown\textDOWNarrow`  
 20815 `\let\APLdown\textbigtriangledown`  
 20816 `\let\Diamond\textdiamond`  
 20817 `\let\varbigcirc\textbigcircle`

20818 \let\Telefon\textPhone  
 20819 \let\Box\textboxempty  
 20820 \let\CheckedBox\textCheckedbox  
 20821 \let\XBox\textCrossedbox  
 20822 \let\CrossedBox\textCrossedbox  
 20823 \let\rightpointleft\textHandLeft  
 20824 \let\leftpointright\textHandRight  
 20825 \let\PointingHand\textHandRight  
 20826 \let\Pointinghand\textHandRight  
 20827 \let\Radiation\textRadioactivity  
 20828 \let\Yinyang\textYinYang  
 20829 \let\YingYang\textYinYang  
 20830 \let\Yingyang\textYinYang  
 20831 \let\Frowny\textfrownie  
 20832 \let\Smiley\textsmiley  
 20833 \let\Sun\textsun  
 20834 \let\Mercury\textmercury  
 20835 \let\textfemale\textPUfemale  
 20836 \let\female\textPUfemale  
 20837 \let\venus\textPUfemale  
 20838 \let\Venus\textPUfemale  
 20839 \let\Female\textPUfemale  
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 20841 \let\mars\textmale  
 20842 \let\Mars\textmale  
 20843 \let\Male\textmale  
 20844 \let\Jupiter\textjupiter  
 20845 \let\Saturn\textsaturn  
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 20848 \let\Pluto\textpluto  
 20849 \let\Aries\textaries  
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 20851 \let\Gemini\textgemini  
 20852 \let\Cancer\textcancer  
 20853 \let\Leo\textleo  
 20854 \let\Virgo\textvirgo  
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 20857 \let\Sagittarius\textsagittarius  
 20858 \let\Capricorn\textcapricornus  
 20859 \let\Aquarius\textaquarius  
 20860 \let\Pisces\textpisces  
 20861 \let\spadesuit\textspadesuitblack  
 20862 \let\Heart\textheartsuitwhite  
 20863 \let\heartsuit\textheartsuitwhite  
 20864 \let\diamondsuit\textdiamondsuitwhite  
 20865 \let\clubsuit\textclubsuitblack  
 20866 \let\eighthnote\textmusicalnote  
 20867 \let\Recycling\textrecycle  
 20868 \let\VarFlag\textFlag  
 20869 \let\textxswup\textdsmilitary  
 20870 \let\textuncrfemale\textPUuncrfemale  
 20871 \let\Football\textSoccerBall



```

20872 \let\CutLeft\textScissorRightBrokenBottom
20873 \let\Cutright\textScissorRightBrokenBottom
20874 \let\RightScissors\textScissorRight
20875 \let\Leftscissors\textScissorRight
20876 \let\Letter\textEnvelope
20877 \let\Writinghand\textWritingHand
20878 \let\checkmark\textCheckmark
20879 \let\davidstar\textDavidStar
20880 \let\llbracket\textlbrackdbl
20881 \let\rrbracket\textrrbrackdbl
20882 \let\RightTorque\textlcurvearrowdown
20883 \let\Righttorque\textlcurvearrowdown
20884 \let\LeftTorque\textrcurvearrowdown
20885 \let\Lefttorque\textrcurvearrowdown
20886 \let\textvarobar\textobar
20887 \let\circledbslash\textobslash
20888 \let\obackslash\textobslash
20889 \let\varobslash\textobslash
20890 \let\odplus\textobot
20891 \let\varolessthan\textolessthan
20892 \let\varogreaterthan\textogreaterthan
20893 \let\divdot\textminusdot
20894 \let\doublesqcap\textsqdoublecap
20895 \let\doublesqcup\textsqdoublecup
20896 \let\merge\textdoublevee
20897 \let\leftVdash\textdashV
20898 \let\nleftVdash\textndashV
20899 \let\leftmodels\textDashv
20900 \let\nleftmodels\textnDashv
20901 \let\leftModels\textDashV
20902 \let\nleftModels\textnDashV
20903 \let\varparallel\textsslash
20904 \let\texttheng\textPUheng
20905 \let\textlhookfour\textPUlhookfour
20906 \let\textscf\textPUscf
20907 \let\texttaolig\textPUaolig
20908 \let\Ganz\textfullnote
20909 \let\Halb\texthalfnote
20910 \let\Womanface\textWomanFace
20911 \let\Faxmachine\textFax
20912 \let\CEsign\textCESign
20913 }% \psdaliasnames
20914 </psdextra>

```

## 48 End of file hyccheck.tex

```

20915 <*check>
20916 \typeout{}
20917 \begin{document}
20918 \end{document}
20919 </check>

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