

# 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 hyccheck.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 `LATEX` definition (number of arguments).

```

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

```

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

```

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

```

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

```

114 \def\HyC@DeclareRobustCommand{%
115 \edef\HyC@robustcmd{%

```

```

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

```

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

```

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

```

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

```

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

```

`\HyC@checkItem` A single check.

```

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

```

`\HyC@string` Some shorthands.

```

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

```

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

```

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

```

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

```

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

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

```

## 4 Package options and setup

### 4.1 Save catcodes

There are many packages that change the standard catcodes.

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

```

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

```

\Hy@SetCatcodes

```

181 \def\Hy@SetCatcodes{%
182 \@makeother`\`%
183 \@makeother\`= %
184 \catcode`\$=3 %
185 \catcode`\&=4 %
186 \catcode`\^=7 %
187 \catcode`\_=8 %
188 \@makeother\| %
189 \@makeother\:%
190 \@makeother\(%
191 \@makeother\)%
192 \@makeother\[ %
193 \@makeother\] %
194 \@makeother\/ %
195 \@makeother\! %
196 \@makeother\<%

```

```

197 \@makeother\>%
198 \@makeother\.%
199 \@makeother\;%
200 \@makeother\+%
201 \@makeother\-%
202 \@makeother\"%
203 \@makeother\'%
204 }

```

\Hy@RestoreCatcodes

```

205 \begingroup
206 \def\x#1{\catcode`\noexpand#1=\the\catcode`#1\relax}%
207 \xdef\Hy@RestoreCatcodes{%
208   \the\toks@
209   \x\$$%
210   \x\&%
211   \x\^%
212   \x\_%
213   \x\|%
214   \x\:%
215   \x\(%
216   \x\)%
217   \x\[%
218   \x\]%
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 change 2023-11-26: no longer require pdftexcmds change 2023-11-26: no longer require expl3, we assume kernel is new enough. change 2024-05-23: load stringenc always (for pdfx)

```

232 \RequirePackage{iftex}[2019/10/24]
233 \RequirePackage{keyval}[1997/11/10]
234 \RequirePackage{kvsetkeys}[2007/09/29]
235 \RequirePackage{kvdefinekeys}[2011/04/07]
236 \RequirePackage{pdfescape}[2007/11/11]
237 \RequirePackage{hycolor}
238 \RequirePackage{nameref}[2012/07/28]
239 \RequirePackage{etoolbox}
240 \RequirePackage{stringenc}[2009/12/15]%
241 \def\Hy@Error{\PackageError{hyperref}}
242 \def\Hy@Warning{\PackageWarning{hyperref}}

```

```

243 \def\Hy@WarningNoLine{\PackageWarningNoLine{hyperref}}
244 \def\Hy@Info{\PackageInfo{hyperref}}
245 \def\Hy@InfoNoLine#1{\PackageInfo{hyperref}{#1\@gobble}}
246 \def\Hy@Message#1{%
247   \GenericWarning{%
248     (hyperref)\@spaces\@spaces\@spaces\@spaces
249   }{%
250     Package hyperref Message: #1\@gobble
251   }%
252 }

```

## 4.2 Version check

\Hy@VersionChecked

```
253 \chardef\Hy@VersionChecked=0 %
```

\Hy@VersionCheck

```

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

```

```

291     \fi
292     \fi
293   }%
294 }%
295 \endgroup
296 \chardef\Hy@VersionChecked=1 %
297 }

```

\Hy@@VersionCheck

```

298 \def\Hy@@VersionCheck #1#2 #3 #4\@nil{%
299   \def#1{#2 #3}%
300 }

```

### 4.3 Checks with regular expressions

```

301 \edef\Hy@leftbracechar{\string{ }
302 \edef\Hy@rightbracechar{\string} }
303 \@ifundefined{pdfmatch}{%
304   \def\Hy@Match#1#2#3#4#5{%
305 }{%
306   \def\Hy@Match#1#2#3{%
307     \begingroup
308     \edef\^{\@backslashchar\string^}%
309     \edef\.\{\@backslashchar.}%
310     \edef\[\{\@backslashchar[}%
311     \edef\${\@backslashchar$}%
312     \edef\(\{\@backslashchar(%
313     \edef\)\{\@backslashchar)%
314     \edef\|{\@backslashchar|}%
315     \edef*\{\@backslashchar*}%
316     \edef+\{\@backslashchar+}%
317     \edef?\{\@backslashchar?}%
318     \edef\{\{\@backslashchar\Hy@leftbracechar}%
319     \edef\}\{\Hy@rightbracechar}%
320     \edef\\\{\@backslashchar\@backslashchar}%
321     \let\ \Hy@space
322     \ifcase\pdfmatch#2{#3}{#1} %
323     \endgroup
324     \expandafter\@secondoftwo
325     \or
326     \endgroup
327     \expandafter\@firstoftwo
328     \else
329     \Hy@Warning{%
330       Internal error: Wrong pattern!\MessageBreak
331       --> #3 <--\MessageBreak
332       Pattern check ignored%
333     }%
334     \endgroup
335     \expandafter\@firstoftwo
336     \fi
337 }%
338 }

```

## 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`.

```
339 \@ifundefined{AfterBeginDocument}{%
340   \def\AfterBeginDocument{\AtBeginDocument}%
341 }{}%
```

`\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.

```
342 \ExplSyntaxOn
343 \let\Hy@LocalAppendToMacro\tl_put_right:Nn
344 \let\Hy@GlobalAppendToMacro\tl_gput_right:Nn
345 \let\Hy@ifempty\tl_if_empty:nTF
346 \ExplSyntaxOff
347 \def\Hy@AtBeginDocument{%
348   \Hy@LocalAppendToMacro\Hy@AtBeginDocumentHook
349 }
```

`\Hy@AtEndOfPackage`

```
350 \def\Hy@AtEndOfPackage{%
351   \Hy@LocalAppendToMacro\Hy@AtEndOfPackageHook
352 }
```

`\Hy@AtBeginDocumentHook`

```
353 \let\Hy@AtBeginDocumentHook\@empty
```

`\Hy@AtEndOfPackageHook`

```
354 \let\Hy@AtEndOfPackageHook\@empty
```

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

```
355 \AtEndOfPackage{%
356   \Hy@AtEndOfPackageHook
357   \let\Hy@AtEndOfPackageHook\@undefined
358   \AfterBeginDocument{%
359     \Hy@AtBeginDocumentHook}%
360   \let\Hy@AtBeginDocumentHook\@undefined
361 }%
362 }
```

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

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

## 4.5 Switches

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

Defaults for the switches are now set.

```
414 \Hy@backreffalse
```



```

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

```

## 5 Common help macros

\Hy@StepCount

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

\Hy@GlobalStepCount

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

```
459 \newdimen\@linkdim
```

```
460 \let\Hy@driver\@empty
```

```
461 \let\MaybeStopEarly\relax
```

```

462 \newcount\Hy@linkcounter
463 \newcount\Hy@pagecounter
464 \Hy@linkcounter0
465 \Hy@pagecounter0
466 \def\Hy@space{ }

```

## 5.1 Macros for recursions

```

467 \let\Hy@ReturnEnd\@empty
468 \long\def\Hy@ReturnAfterFi#1\fi{\fi#1}
469 \long\def\Hy@ReturnAfterElseFi#1\else#2\fi{\fi#1}
470 \long\def\Hy@ReturnAfterFiFiEnd#1\fi#2\Hy@ReturnEnd{\fi\fi#1}
471 \long\def\Hy@ReturnAfterElseFiFiEnd#1\else#2\Hy@ReturnEnd{\fi\fi#1}

```

## 5.2 Babel's protection of shorthand characters

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

```

472 \def\Hy@safe@activestru{\csname @safe@activestru\endcsname}
473 \def\Hy@safe@activesfal{\csname @safe@activesfal\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`

```

474 \def\hypercalcbp#1{%
475   \strip@pt\dimexpr 0.99626401\dimexpr(#1)\relax\relax
476 }%
477 \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:
  - `\\` the backslash itself
  - `\), \()` unbalanced parentheses
  - `\n, \r, \t, \b, \f` special white space escape sequences
  - `\ddd` octal character code `ddd`
- 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 T<sub>E</sub>X's view PDF strings are written to a file and are expanded only in its mouth. Stomach commands that cannot be expanded further aren't executed, they are written verbatim. But the PDF reader that reads such a string isn't a T<sub>E</sub>X interpreter!

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

1. Preprocessing. Here the expansion is prepared. The encoding is set and many commands are redefined, so that they work appropriate.
2. Expansion. The T<sub>E</sub>X string is expanded the first time to get a PDF string.
3. Postprocessing. The result of the expansion is checked and converted to the final form.

`\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.

`ppercaseUnsupportedInPdfStrings`  
`owercaseUnsupportedInPdfStrings`

```
478 \providecommand*\BCPdata[1]{}
479 \ExplSyntaxOn
480 \@ifundefined{text_uppercase:n}{}
481 {
482   \def\MakeUppercaseUnsupportedInPdfStrings#1
483     {\use:e
484       {\exp_args:Ne
485         \text_uppercase:nn{\BCPdata { casing }}{#1}
486       }
487     }
```

```

488 \def\MakeLowercaseUnsupportedInPdfStrings#1
489     {\use:e
490      {\exp_args:Ne
491       \text_lowercase:nn{\BCPdata { casing }}{#1}
492      }
493     }
494 }
495 \ExplSyntaxOff

```

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

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

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

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

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

```
497 \begingroup
```

### 6.2.1 Preprocessing

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

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

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

```
498 \escapechar`\\%
```

From the view of  $\TeX$  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 these short commands does not apply.

```

499 \edef\0{\string\0}%
500 \edef\1{\string\1}%
501 \edef\2{\string\2}%
502 \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.

```

503 \ifHy@unicode
504 \edef\8{\string\8}%
505 \edef\9{\string\9}%
506 \fontencoding{PU}%
507 \HyPsd@UTFviii
508 \def\ifpdfstringunicode###1##2{##1}%
509 \else
510 \fontencoding{PD1}%
511 \def\ifpdfstringunicode###1##2{##2}%
512 \fi
513 \let\utf@viii@undeferr\HyPsd@utf@viii@undeferr
514 \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).

```

515 \@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).

```

516 \let\@inmathwarn\HyPsd@inmathwarn

```

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

```

517 \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) <https://github.com/latex3/hyperref/issues/37> No test for PU, if some definition for PD1 is added it will work too.

```

518 \let\{\textbraceleft
519 \let\}\textbraceright
520 \let\\\textbackslash
521 \let#\textnumbersign
522 \let$\textdollar
523 \let%\textpercent
524 \let&\textampersand
525 % \let~\textasciitilde
526 \let\_ \textunderscore

```

```

527 \let\P\textparagraph
528 \let\ldots\textellipsis
529 \let\dots\textellipsis
530 \@ifundefined{textEncodingNoboundary}%
531   {}{\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.

```

532 \def\\\{\pdfstringdefWarn\\}%
533 \def\newline{\pdfstringdefWarn\newline}%

```

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

```

534 \def\TeX{\TeX}%
535 \def\LaTeX{La\TeX}%
536 \def\LaTeXe{%
537   \LaTeX2%
538   \ifHy@unicode\83\265\else e\fi
539 }%
540 \def\eTeX{%
541   \ifHy@unicode\83\265\else e\fi
542   -\TeX%
543 }%
544 \def\SliTeX{Sli\TeX}%
545 \def\MF{Metafont}%
546 \def\MP{Metapost}%

```

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

```

547 \let\fontencoding\@gobble
548 \let\fontfamily\@gobble
549 \let\fontseries\@gobble
550 \let\fontshape\@gobble
551 \let\fontsize\@gobbletwo
552 \let\selectfont\@empty
553 \let\usefont\@gobblefour
554 \let\emph\@firstofone
555 \let\textnormal\@firstofone
556 \let\textrm\@firstofone
557 \let\textsf\@firstofone
558 \let\texttt\@firstofone

```

```

559 \let\textbf\@firstofone
560 \let\textmd\@firstofone
561 \let\textit\@firstofone
562 \let\textsc\@firstofone
563 \let\textsl\@firstofone
564 \let\textup\@firstofone
565 \let\normalfont\@empty
566 \let\rmfamily\@empty
567 \let\sffamily\@empty
568 \let\ttfamily\@empty
569 \let\bfseries\@empty
570 \let\mdseries\@empty
571 \let\itshape\@empty
572 \let\scshape\@empty
573 \let\slshape\@empty
574 \let\upshape\@empty
575 \let\em\@empty
576 \let\rm\@empty
577 \let\Huge\@empty
578 \let\LARGE\@empty
579 \let\Large\@empty
580 \let\footnotesize\@empty
581 \let\huge\@empty
582 \let\large\@empty
583 \let\normalsize\@empty
584 \let\scriptsize\@empty
585 \let\small\@empty
586 \let\tiny\@empty
587 \let\mathversion\@gobble
588 \let\phantom\@gobble
589 \let\vphantom\@gobble
590 \let\hphantom\@gobble

```

#### Package pifont.

```

591 \let\ding\HyPsd@ding
592 \let\Cube\HyPsd@DieFace
593 %* \HyPsd@DieFace -> \epsdice (epsdice)
594 %* \HyPsd@DieFace -> \fcdice (hhcount)

```

#### Environments.

```

595 \def\begin##1{\csname##1\endcsname}%
596 \def\end##1{\csname end##1\endcsname}%

```

#### Package color.

```

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

```

#### Upper- and lowercase.

```

598 \def\MakeUppercase{\MakeUppercaseUnsupportedInPdfStrings}%
599 \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.

```
600 \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.

```
601 \ifHy@psdextra
602 \ifHy@unicode
603 \csname psdmapshortnames\endcsname
604 \csname psdaliasnames\endcsname
605 \fi
606 \fi
```

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

```
607 \let\foreignlanguage\@secondoftwo
608 \let\textlatin\@firstofone
609 \@ifundefined{language@group}{}{%
610 \let\bbl@info\@gobble
611 \csname HyPsd@babel@\language@group\endcsname
612 }%
```

```
613 \let\@safe@activetrue\relax
614 \let\@safe@activesfalse\relax
```

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

```
615 \let\cyr\relax
```

**Package german.**

```
616 \let\glqq\textglqq
617 \let\grqq\textgrqq
618 \let\glq\textglq
619 \let\grq\textgrq
620 \let\flqq\textflqq
621 \let\frqq\textfrqq
622 \let\flq\textflq
623 \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}
```

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

**AMS classes.**

```
625 \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.

```
626 \let\hspace\HyPsd@hspace
```

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

```
627 \let\label\@gobble
628 \let\index\@gobble
629 \let\glossary\@gobble
630 \let\href\HyPsd@href
631 \let\@mkboth\@gobbletwo
```

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

```
632 \let\ref\HyPsd@ref
633 \let\pageref\HyPsd@pageref
634 \let\nameref\HyPsd@nameref
635 \let\autoref\HyPsd@autoref
```

**Miscellaneous commands.**

```
636 \let\leavevmode\@empty
637 \let\mbox\@empty
```

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

```
638 \def\halign{\pdfstringdefWarn\halign\@gobble}%
639 \let\ignorespaces\HyPsd@ignorespaces
640 \let\Hy@SectionAnchorHref\@gobble
641 \let\ensuremath\@firstofone
```

**Patch for `cjk` bookmarks.**

```
642 \HyPsd@CJKhook
```

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

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

```
643 \Hy@pdfstringtrue
644 \pdfstringdefPreHook
```

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

```
645 \HyPsd@LetUnexpandableSpace\space
646 \HyPsd@LetUnexpandableSpace\ %
647 \HyPsd@LetUnexpandableSpace-%
648 \HyPsd@LetUnexpandableSpace\nobreakspace
```

### Package xspace.

```
649 \ifundefined{xspace}{%
650 \let\xspace\HyPsd@ITALCORR
651 }{%
652 \let\xspace\HyPsd@XSPACE
653 }%
654 \let\HyPsd@ITALCORR
655 \let\bgroup\%
656 \let\egroup\%
```

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

```
657 \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:

```
658 \def\@ifnextchar{\HyPsd@ifnextchar\@ifnextchar}%
659 \def\kernel@ifnextchar{\HyPsd@ifnextchar\kernel@ifnextchar}%
660 \def\new@ifnextchar{\HyPsd@ifnextchar\new@ifnextchar}%
661 \let\@protected@testopt\HyPsd@protected@testopt
```

Support for package 'xargs':

```
662 \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 a 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).

```
663 \begingroup
664 \let\GenericError@gobblefour
665 \let\GenericWarning@gobbletwo
666 \let\GenericInfo@gobbletwo
```

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

```
667 \ifx\nofrenchguillemets\@undefined
668 \else
669 \nofrenchguillemets
670 \fi
```

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

```
671 \let\Hy@temp\xdef
672 \let\def\HyPsd@DefCommand
673 \let\gdef\HyPsd@DefCommand
674 \let\edef\HyPsd@DefCommand
675 \let\xdef\HyPsd@DefCommand
676 \let\futurelet\HyPsd@LetCommand
677 \let\let\HyPsd@LetCommand
678 \Hy@temp#1{#2}%
679 \endgroup
```

### 6.2.3 Postprocessing

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

```
680 \ifx#1\@empty
681 \else
```

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

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

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

```
682 \HyPsd@ProtectSpaces#1%
683 \let\HyPsd@String\@empty
684 \expandafter\HyPsd@RemoveBraces\expandafter{#1|}%
685 \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  $\backslash\text{HyPsd@CheckCatcodes}$  the command  $\backslash\text{HyPsd@RemoveMask}$  is reused to remove the group protection character |. This character is needed to ensure that the string at least consists of one token if  $\backslash\text{HyPsd@CheckCatcodes}$  is called.

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

```
686 \let\HyPsd@SPACEOPTI\relax
687 {%
688 \let\HyPsd@String\@empty
689 \expandafter\HyPsd@CheckCatcodes#1\HyPsd@End
690 \global\let#1\HyPsd@String
691 }%
692 \expandafter\HyPsd@RemoveMask\expandafter
693 |\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.

```
694 \expandafter
695 \HyPsd@Subst\expandafter{\HyPsd@GLYPHERR}{\relax}#1%
696 \let\HyPsd@String\@empty
697 \expandafter\HyPsd@GlyphProcess#1\relax\@empty
698 \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.

```
699 \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.

```
700 \ifHy@unicode
701 \expandafter\HyPsd@StringSubst\csname 80\040\endcsname
702 \HyPsd@SPACEOPTI#1%
703 \edef\Hy@temp@A{\HyPsd@SPACEOPTI\HyPsd@SPACEOPTI\80\273}%
704 \expandafter\HyPsd@Subst\expandafter{\Hy@temp@A}%
705 {\HyPsd@SPACEOPTI\80\273}#1%
706 \else
707 \HyPsd@StringSubst{\040}\HyPsd@SPACEOPTI#1%
708 \expandafter\HyPsd@Subst\expandafter{%
709 \expandafter\HyPsd@SPACEOPTI\expandafter\HyPsd@SPACEOPTI
710 \string\273}\HyPsd@SPACEOPTI\273}#1%
711 \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.

```
712 \ifHy@unicode
713 \HyPsd@StringSubst{\)}{\80\051}#1%
714 \HyPsd@Subst){\80\051}#1%
```

```

715     \let\HyPsd@empty\relax
716     \expandafter\HyPsd@StringSubst\csname 80\051\endcsname
717         {\HyPsd@empty\80\051}#1%
718     \else
719     \HyPsd@StringSubst{\}\{051}#1%
720     \HyPsd@Subst{\051}#1%
721     \let\HyPsd@empty\relax
722     \HyPsd@StringSubst{051}{\HyPsd@empty\string\}\}#1%
723     \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`.

```

724     \expandafter\HyPsd@Subst\expandafter{\}\HyPsd@empty#1%
725     \@ifundefined{@xspace}{%
726     }{%
727     \let\HyPsd@xspace\relax
728     \expandafter\HyPsd@Subst\expandafter
729         {\HyPsd@XSPACE}\HyPsd@xspace#1%
730     \let\HyPsd@xspace\HyPsd@doxspace
731     }%
732     \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.

```

733     \HyPsd@Subst{---}\textemdash#1%
734     \HyPsd@Subst{--}\textendash#1%
735 %     \HyPsd@Subst{fi}\textfi#1%
736 %     \HyPsd@Subst{fl}\textfl#1%
737     \HyPsd@Subst{!^}\textexclamdown#1%
738     \HyPsd@Subst{?^}\textquestiondown#1%

```

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

```
739 \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.

```
740 \ifHy@unicode
741 \HyPsd@StringSubst\(\textparenleft#1%
742 \HyPsd@Subst(\textparenleft#1%
743 \else
744 \HyPsd@StringSubst\({\050}#1%
745 \HyPsd@Subst({\050}#1%
746 \HyPsd@StringSubst{\050}{\string\{ }#1%
747 \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.

```
748 \ifHy@unicode
749 \edef\HyPsd@SPACEOPTI{\80\040}%
750 \else
751 \let\HyPsd@SPACEOPTI\HyPsd@spaceopti
752 \fi
753 \xdef#1{#1\@empty}%
754 \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.

```
755 \endgroup
756 \begingroup
757 \ifHy@unicode
758 \HyPsd@ConvertToUnicode#1%
```

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

```
759 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
760 \EdefUnescapeString\HyPsd@temp#1%
761 \iftutex
762 \let\HyPsd@UnescapedString\HyPsd@temp
763 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
764 {utf16be}{ascii-print}{%
765 \EdefEscapeString\HyPsd@temp\HyPsd@temp
766 \global\let#1\HyPsd@temp
767 \HyPsd@EscapeTeX#1%
768 \Hy@unicodefalse
769 }{%
770 \HyPsd@EscapeTeX#1%
771 }%
```

```

772     \else
773     \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
774         {utf16be}{pdfdoc}{%
775     \EdefEscapeString\HyPsd@temp\HyPsd@temp
776     \global\let#1\HyPsd@temp
777     \HyPsd@EscapeTeX#1%
778     \Hy@unicodetfalse
779     }{}}%
780     \fi
781 \fi
782 \fi

```

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

```

783 \pdfstringdefPostHook#1%
784 \endgroup
785 }

```

`\Hy@pdfstringdef`

```

786 \def\Hy@pdfstringdef#1#2{%
787 \pdfstringdef\Hy@gtemp{#2}%
788 \let#1\Hy@gtemp
789 }

```

## 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

```

790 \@ifpackageloaded{linguex}{%
791 \let\HyLinguex@OrgB\b
792 \let\HyLinguex@OrgC\c
793 \let\HyLinguex@OrgD\d
794 \def\HyLinguex@Restore{%
795 \let\b\HyLinguex@OrgB
796 \let\c\HyLinguex@OrgC
797 \let\d\HyLinguex@OrgD
798 }%
799 \Hy@AtEndOfPackage{%
800 \pdfstringdefDisableCommands{%
801 \@ifundefined{oldb}{-}{\let\b\oldb}%
802 \@ifundefined{oldc}{-}{\let\c\oldc}%
803 \@ifundefined{oldd}{-}{\let\d\oldd}%
804 }%
805 }%
806 }{%
807 \let\HyLinguex@Restore\relax
808 }%

```



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

\Hy@SaveCatcodeSettings

```
809 \def\Hy@SaveCatcodeSettings#1{%
810 \expandafter\edef\csname Hy@cat@#1\endcsname{%
811 \endlinechar=\the\endlinechar\relax
812 \catcode32 \the\catcode32\relax % (space)
813 \catcode34 \the\catcode34\relax % "
814 \catcode35 \the\catcode35\relax % #
815 \catcode37 \the\catcode37\relax % (percent)
816 \catcode40 \the\catcode40\relax % (
817 \catcode41 \the\catcode41\relax % )
818 \catcode42 \the\catcode42\relax % *
819 \catcode46 \the\catcode46\relax % .
820 \catcode58 \the\catcode58\relax % :
821 \catcode60 \the\catcode60\relax % <
822 \catcode61 \the\catcode61\relax % =
823 \catcode62 \the\catcode62\relax % >
824 \catcode64 \the\catcode64\relax % @
825 \catcode91 \the\catcode91\relax % [
826 \catcode92 \the\catcode92\relax % (backslash)
827 \catcode93 \the\catcode93\relax % ]
828 \catcode123 \the\catcode123\relax % {
829 \catcode124 \the\catcode124\relax % |
830 \catcode125 \the\catcode125\relax % }
831 }%
832 \endlinechar=-1 %
833 \catcode32 10 % (space)
834 \catcode34 12 % "
835 \catcode35 6 % #
836 \catcode37 14 % (percent)
837 \catcode40 12 % (
838 \catcode41 12 % )
839 \catcode42 12 % *
840 \catcode46 12 % .
841 \catcode58 12 % :
842 \catcode60 12 % <
843 \catcode61 12 % =
844 \catcode62 12 % >
845 \catcode91 12 % [
846 \catcode92 0 % (backslash)
847 \catcode93 12 % ]
848 \catcode123 1 % {
849 \catcode124 12 % |
850 \catcode125 2 % }
851 \makeatletter
852 }
```

\Hy@RestoreCatcodeSettings

```
853 \def\Hy@RestoreCatcodeSettings#1{%
854 \csname Hy@cat@#1\endcsname
855 \expandafter\let\csname Hy@cat@#1\endcsname\relax
856 }
```

### 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.

```
857 \@ifundefined{T@PD1}{%
858   \Hy@SaveCatcodeSettings{pd1}%
859   \input{pd1enc.def}%
860   \Hy@RestoreCatcodeSettings{pd1}%
861   \HyLinguex@Restore
862 }{}
863 \DeclareFontFamily{PD1}{pdf}{}
864 \DeclareFontShape{PD1}{pdf}{m}{n}{ <-> cmr10 }{}
865 \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`.

```
866 \def\HyPsd@LoadUnicode{%
867   \@ifundefined{T@PU}{%
868     \Hy@SaveCatcodeSettings{pu}%
869     \input{puenc.def}%
870     \Hy@RestoreCatcodeSettings{pu}%
871     \HyLinguex@Restore
872   }{}%
873   \DeclareFontFamily{PU}{pdf}{}%
874   \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%
875   \DeclareFontSubstitution{PU}{pdf}{m}{n}%
876   \HyPsd@LoadExtra
877   \let\HyPsd@LoadUnicode\relax
878 }
```

`\HyPsd@LoadExtra`

```
879 \def\Hy@iffileloaded#1{%
880   \@ifundefined{ver@#1}\@secondoftwo\@firstoftwo
881 }
882 \def\HyPsd@LoadExtra{%
883   \ifHy@psdextra
884     \Hy@iffileloaded{puenc.def}{}%
885     \Hy@SaveCatcodeSettings{psdextra}%
886     \input{psdextra.def}%
887     \Hy@RestoreCatcodeSettings{psdextra}%
888 }
```

```

888   \let\HyPsd@LoadExtra\relax
889   }{}%
890   \fi
891 }

```

## 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.

```

892 \def\texorpdfstring{%
893   \ifHy@pdfstring
894     \expandafter\@secondoftwo
895   \else
896     \expandafter\@firstoftwo
897   \fi
898 }

```

### 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`.

```

899 \@ifundefined{pdfstringdefPreHook}{%
900   \let\pdfstringdefPreHook\@empty
901 }{}
902 \@ifundefined{pdfstringdefPostHook}{%
903   \let\pdfstringdefPostHook\@gobble
904 }{}

```

`\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`.

```

905 \def\pdfstringdefDisableCommands{%
906   \begingroup
907   \makeatletter
908   \HyPsd@DisableCommands
909 }

```

`\HyPsd@DisableCommands`

```
910 \long\def\HyPsd@DisableCommands#1{%
911   \Hy@GlobalAppendToMacro\pdfstringdefPreHook{#1}%
912   \endgroup
913 }
```

`\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`.

```
914 \def\pdfstringdefWarn#1{%
915   \expandafter\noexpand\csname<>\string#1\endcsname
916 }
```

## 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.

```
917 \begingroup
918   \catcode0=12 %
919   \def\x{\endgroup
920     \def\HyPsd@ignorespaces{%
921       \romannumeral\expandafter`\expandafter^^@%
922       \romannumeral^^@%
923     }%
924   }%
925 \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.

```
926 \newif\ifHy@next
927 </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.

```
928 <*package>
```

### 6.5.3 CJK patch

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

```
\HyPsd@CJKhook
```

```
930 \def\HyPsd@CJKhook{%
931   \@ifpackageloaded{CJK}{%
932     \let\CJK@kern\relax
933     \let\CJKkern\relax
934     \let\CJK@CJK\relax
935     \ifHy@CJKbookmarks
936       \HyPsd@CJKhook@bookmarks
937     \fi
938     \HyPsd@CJKhook@unicode
939   }{ }%
940 }
```

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

```
941 \begingroup
942 \catcode"7F=\active
943 \toks@{%
944   \let\CJK@ignorespaces\empty
945   \def\CJK@char#1{\@gobbletwo}%
946   \let\CJK@charx\@gobblefour
947   \let\CJK@punctchar\@gobblefour
948   \def\CJK@punctcharx#1{\@gobblefour}%
949   \catcode"7F=\active
950   \def^^7f#1^^7f#2^^7f{%
951     \string #1\HyPsd@DecimalToOctal{#2}%
```

```

952 }%
953 % ... ?
954 \ifHy@unicode
955 \def\Hy@cjku{\80}%
956 \else
957 \let\Hy@cjku\@empty
958 \fi
959 \HyPsd@CJKActiveChars
960 }%
961 \count@=127 %
962 \@whilenum\count@<255 \do{%
963 \advance\count@ by 1 %
964 \lccode\~=\count@
965 \lowercase{%
966 \toks@\expandafter{\the\toks@ ~}%
967 }%
968 }%
969 \toks@\expandafter{\the\toks@ !}%
970 \xdef\HyPsd@CJKhook@bookmarks{%
971 \the\toks@
972 }%
973 \endgroup

```

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

```

974 \def\HyPsd@CJKActiveChars#1{%
975 \ifx#1!%
976 \let\HyPsd@CJKActiveChars\relax
977 \else
978 \edef#1{\noexpand\Hy@cjku\string#1}%
979 \fi
980 \HyPsd@CJKActiveChars
981 }

```

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

```

982 \def\HyPsd@DecimalToOctal#1{%
983 \ifcase #1 %
984 \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
985 \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
986 \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
987 \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
988 \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
989 \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
990 \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
991 \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
992 \or @\or A\or B\or C\or D\or E\or F\or G%
993 \or H\or I\or J\or K\or L\or M\or N\or O%
994 \or P\or Q\or R\or S\or T\or U\or V\or W%
995 \or X\or Y\or Z\or \133\or \134\or \135\or \136\or \137%
996 \or \140\or a\or b\or c\or d\or e\or f\or g%
997 \or h\or i\or j\or k\or l\or m\or n\or o%
998 \or p\or q\or r\or s\or t\or u\or v\or w%
999 \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
1000 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%

```

```

1001 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
1002 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1003 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
1004 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1005 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1006 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1007 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1008 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1009 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1010 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1011 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1012 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1013 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1014 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1015 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1016 \fi
1017 }

```

### 6.5.5 CJK unicode

\HyPsd@CJKhook@unicode

```

1018 \def\HyPsd@CJKhook@unicode{%
1019 \let\Unicode\HyPsd@CJK@Unicode
1020 \let\CJKnumber\HyPsd@CJKnumber
1021 \let\CJKdigits\HyPsd@CJKdigits
1022 }

```

\HyPsd@CJK@Unicode

```

1023 \def\HyPsd@CJK@Unicode#1#2{%
1024 \ifnum#1<256 %
1025 \HyPsd@DecimalToOctalFirst{#1}%
1026 \HyPsd@DecimalToOctalSecond{#2}%
1027 \else
1028 \933%
1029 \expandafter\expandafter\expandafter\HyPsd@HighA
1030 \intcalcDiv{#1}{4}!%
1031 \933%
1032 \ifcase\intcalcMod{#1}{4} %
1033 4\or 5\or 6\or 7%
1034 \fi
1035 \HyPsd@DecimalToOctalSecond{#2}%
1036 \fi
1037 }

1038 \def\HyPsd@HighA#1!{%
1039 \expandafter\expandafter\expandafter\HyPsd@HighB
1040 \IntCalcDiv#1!64!!%
1041 \expandafter\expandafter\expandafter\HyPsd@HighD
1042 \IntCalcMod#1!64!!%
1043 }
1044 \def\HyPsd@HighB#1!{%
1045 \expandafter\expandafter\expandafter\HyPsd@HighC
1046 \IntCalcDec#1!!%
1047 }

```

```

1048 \def\HyPsd@HighC#1!{%
1049 \IntCalcDiv#1!4!%
1050 \@backslashchar
1051 \IntCalcMod#1!4!%
1052 }
1053 \def\HyPsd@HighD#1!{%
1054 \ifcase\IntCalcDiv#1!8! %
1055 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1056 \fi
1057 \ifcase\IntCalcMod#1!8! %
1058 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1059 \fi
1060 }
1061 \def\HyPsd@DecimalToOctalFirst#1{%
1062 \9%
1063 \ifcase#1 %
1064 000\or 001\or 002\or 003\or 004\or 005\or 006\or 007%
1065 \or 010\or 011\or 012\or 013\or 014\or 015\or 016\or 017%
1066 \or 020\or 021\or 022\or 023\or 024\or 025\or 026\or 027%
1067 \or 030\or 031\or 032\or 033\or 034\or 035\or 036\or 037%
1068 \or 040\or 041\or 042\or 043\or 044\or 045\or 046\or 047%
1069 \or 050\or 051\or 052\or 053\or 054\or 055\or 056\or 057%
1070 \or 060\or 061\or 062\or 063\or 064\or 065\or 066\or 067%
1071 \or 070\or 071\or 072\or 073\or 074\or 075\or 076\or 077%
1072 \or 100\or 101\or 102\or 103\or 104\or 105\or 106\or 107%
1073 \or 120\or 111\or 112\or 113\or 114\or 115\or 116\or 117%
1074 \or 120\or 121\or 122\or 123\or 124\or 125\or 126\or 127%
1075 \or 130\or 131\or 132\or 133\or 134\or 135\or 136\or 137%
1076 \or 140\or 141\or 142\or 143\or 144\or 145\or 146\or 147%
1077 \or 150\or 151\or 152\or 153\or 154\or 155\or 156\or 157%
1078 \or 160\or 161\or 162\or 163\or 164\or 165\or 166\or 167%
1079 \or 170\or 171\or 172\or 173\or 174\or 175\or 176\or 177%
1080 \or 200\or 201\or 202\or 203\or 204\or 205\or 206\or 207%
1081 \or 210\or 211\or 212\or 213\or 214\or 215\or 216\or 217%
1082 \or 220\or 221\or 222\or 223\or 224\or 225\or 226\or 227%
1083 \or 230\or 231\or 232\or 233\or 234\or 235\or 236\or 237%
1084 \or 240\or 241\or 242\or 243\or 244\or 245\or 246\or 247%
1085 \or 250\or 251\or 252\or 253\or 254\or 255\or 256\or 257%
1086 \or 260\or 261\or 262\or 263\or 264\or 265\or 266\or 267%
1087 \or 270\or 271\or 272\or 273\or 274\or 275\or 276\or 277%
1088 \or 300\or 301\or 302\or 303\or 304\or 305\or 306\or 307%
1089 \or 310\or 311\or 312\or 313\or 314\or 315\or 316\or 317%
1090 \or 320\or 321\or 322\or 323\or 324\or 325\or 326\or 327%
1091 \or 330\or 331\or 332\or 333\or 334\or 335\or 336\or 337%
1092 \or 340\or 341\or 342\or 343\or 344\or 345\or 346\or 347%
1093 \or 350\or 351\or 352\or 353\or 354\or 355\or 356\or 357%
1094 \or 360\or 361\or 362\or 363\or 364\or 365\or 366\or 367%
1095 \or 370\or 371\or 372\or 373\or 374\or 375\or 376\or 377%
1096 \fi
1097 }
1098 \def\HyPsd@DecimalToOctalSecond#1{%
1099 \ifcase #1 %
1100 \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
1101 \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%

```



```

1102 \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
1103 \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
1104 \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
1105 \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
1106 \or \060\or \061\or \062\or \063\or \064\or \065\or \066\or \067%
1107 \or \070\or \071\or \072\or \073\or \074\or \075\or \076\or \077%
1108 \or \100\or \101\or \102\or \103\or \104\or \105\or \106\or \107%
1109 \or \110\or \111\or \112\or \113\or \114\or \115\or \116\or \117%
1110 \or \120\or \121\or \122\or \123\or \124\or \125\or \126\or \127%
1111 \or \130\or \131\or \132\or \133\or \134\or \135\or \136\or \137%
1112 \or \140\or \141\or \142\or \143\or \144\or \145\or \146\or \147%
1113 \or \150\or \151\or \152\or \153\or \154\or \155\or \156\or \157%
1114 \or \160\or \161\or \162\or \163\or \164\or \165\or \166\or \167%
1115 \or \170\or \171\or \172\or \173\or \174\or \175\or \176\or \177%
1116 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
1117 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
1118 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1119 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
1120 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1121 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1122 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1123 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1124 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1125 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1126 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1127 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1128 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1129 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1130 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1131 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1132 \fi
1133 }

1134 \def\HyPsd@CJKnumber#1{%
1135 \ifnum#1<\z@
1136 \CJK@minus
1137 \expandafter\HyPsd@@CJKnumber\expandafter{\number-\number#1}%
1138 \else
1139 \expandafter\HyPsd@@CJKnumber\expandafter{\number#1}%
1140 \fi
1141 }

1142 \def\HyPsd@@CJKnumber#1{%
1143 \ifcase#1 %
1144 \CJK@zero\or\CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1145 \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine\or
1146 \CJK@ten\or\CJK@ten\CJK@one\or\CJK@ten\CJK@two\or
1147 \CJK@ten\CJK@three\or\CJK@ten\CJK@four\or\CJK@ten\CJK@five\or
1148 \CJK@ten\CJK@six\or\CJK@ten\CJK@seven\or\CJK@ten\CJK@eight\or
1149 \CJK@ten\CJK@nine
1150 \else
1151 \ifnum#1<10000 %
1152 \HyPsd@CJKnumberFour#1!\@empty{20}%
1153 \@empty
1154 \else
1155 \ifnum#1<100000000 %

```

```

1156 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1157 \IntCalcDiv#1!10000!%
1158 !\CJK@zero{20}%
1159 \CJK@tenthousand
1160 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1161 \IntCalcMod#1!10000!%
1162 !\CJK@zero{10}%
1163 \@empty
1164 \else
1165 \expandafter\HyPsd@CJKnumberLarge
1166 \number\IntCalcDiv#1!100000000!\expandafter!%
1167 \number\IntCalcMod#1!100000000!!%
1168 \fi
1169 \fi
1170 \fi
1171 }
1172 \def\HyPsd@CJKnumberLarge#1!#2!{%
1173 \HyPsd@CJKnumberFour#1!\CJK@zero{20}%
1174 \CJK@hundredmillion
1175 \ifnum#2=\z@
1176 \else
1177 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1178 \IntCalcDiv#2!10000!%
1179 !\CJK@zero{10}%
1180 \CJK@tenthousand
1181 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1182 \IntCalcMod#2!10000!%
1183 !\CJK@zero{10}%
1184 \@empty
1185 \fi
1186 }
1187 \def\HyPsd@CJKnumberFour#1!#2#3{%
1188 \ifnum#1=\z@
1189 \expandafter\@gobble
1190 \else
1191 \ifnum#1<1000 %
1192 #2%
1193 \HyPsd@CJKnumberThree#1!\CJK@zero{#3}%
1194 \else
1195 \HyPsd@@@CJKnumber{\IntCalcDiv#1!1000!}%
1196 \CJK@thousand
1197 \expandafter\expandafter\expandafter\HyPsd@CJKnumberThree
1198 \IntCalcMod#1!1000!%
1199 !\CJK@zero{10}%
1200 \fi
1201 \fi
1202 }
1203 \def\HyPsd@CJKnumberThree#1!#2#3{%
1204 \ifnum#1=\z@
1205 \else
1206 \ifnum#1<100 %
1207 #2%
1208 \HyPsd@CJKnumberTwo#1!\CJK@zero{#3}%
1209 \else

```

```

1210 \HyPsd@@CJKnumber{\IntCalcDiv#1!100!}%
1211 \CJK@hundred
1212 \expandafter\expandafter\expandafter\HyPsd@CJKnumberTwo
1213 \IntCalcMod#1!100!%
1214 !\CJK@zero{10}%
1215 \fi
1216 \fi
1217 }
1218 \def\HyPsd@CJKnumberTwo#1!#2#3{%
1219 \ifnum#1=\z@
1220 \else
1221 \ifnum#1<#3 %
1222 #2%
1223 \HyPsd@@CJKnumber{#1}%
1224 \else
1225 \HyPsd@@CJKnumber{\IntCalcDiv#1!10!}%
1226 \CJK@ten
1227 \ifnum\IntCalcMod#1!10!=\z@
1228 \else
1229 \HyPsd@@CJKnumber{\IntCalcMod#1!10!}%
1230 \fi
1231 \fi
1232 }
1233 }

1234 \def\HyPsd@CJKdigits#1{%
1235 \ifx*#1\relax
1236 \expandafter\HyPsd@@CJKdigits\expandafter\CJK@zero
1237 \else
1238 \HyPsd@@CJKdigits\CJK@null{#1}%
1239 \fi
1240 }
1241 \def\HyPsd@@CJKdigits#1#2{%
1242 \ifx\#2\%
1243 \else
1244 \HyPsd@@@CJKdigits#1#2\@nil
1245 \fi
1246 }%
1247 \def\HyPsd@@@CJKdigits#1#2#3\@nil{%
1248 \HyPsd@CJKdigit#1{#2}%
1249 \ifx\#3\%
1250 \expandafter\@gobble
1251 \else
1252 \expandafter\@firstofone
1253 \fi
1254 {%
1255 \HyPsd@@@CJKdigits#1#3\@nil
1256 }%
1257 }
1258 \def\HyPsd@CJKdigit#1#2{%
1259 \ifcase#2 %
1260 #1\or
1261 \CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1262 \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine
1263 \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 `\@typeset-protect (= \relax)`.

```

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

1265 \def\HyPsd@inmathwarn#1#2{%
1266   \ifx#2\expandafter
1267     \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
1268       \HyPsd@GLYPHERR
1269       \expandafter\@gobble\string#1%
1270     >%
1271     \expandafter\expandafter\expandafter\HyPsd@EndWithElse

```

```

1272 \else
1273 \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
1274 \fi
1275 \else
1276 \expandafter#2%
1277 \fi
1278 }
1279 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
1280 \def\HyPsd@EndWithElse#1\else{\else}

```

`\HyPsd@add@accent`

```

1281 \def\HyPsd@add@accent#1#2{%
1282 \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
1283 #2%
1284 }%

```

### 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`.

```

1285 \def\HyPsd@LetUnexpandableSpace#1{%
1286 \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
1287 }

```

`\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.

```

1288 \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.

```

1289 \edef\HyPsd@XSPACE{\string#\string X}
1290 \edef\HyPsd@ITALCORR{\string#\string I}
1291 \edef\HyPsd@GLYPHERR{\string#\string G}

```

### 6.5.9 `\hspace` fix

`\HyPsd@hspace`

```

1292 \def\HyPsd@hspace#1{\HyPsd@@hspace#1*END}

```

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

```

1293 \def\HyPsd@@hspace#1*#2END{%
1294 \ifx\#2\%

```

```

1295 \HyPsd@hspacetest{#1}%
1296 \else
1297 \expandafter\HyPsd@hspacetest
1298 \fi
1299 }

```

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

```

1300 \def\HyPsd@hspacetest#1{\ifdim\dimexpr#1\relax>\z@\space\fi}

```

### 6.5.10 Fix for AMS classes

```

1301 \@ifundefined{tocsection}{%
1302 \let\HyPsd@AMSclassfix\relax
1303 }{%
1304 \def\HyPsd@AMSclassfix{%
1305 \let\tocpart\HyPsd@tocsection
1306 \let\tocchapter\HyPsd@tocsection
1307 \let\tocappendix\HyPsd@tocsection
1308 \let\tocsection\HyPsd@tocsection
1309 \let\tocsubsection\HyPsd@tocsection
1310 \let\tocsubsubsection\HyPsd@tocsection
1311 \let\tocparagraph\HyPsd@tocsection
1312 }%
1313 \def\HyPsd@tocsection#1#2#3{%
1314 \if @#2@\else\if @#1@\else#1 \fi#2. \fi
1315 #3%
1316 }%
1317 }

```

### 6.5.11 Reference commands

`\HyPsd@href`

```

1318 \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.

```

1319 \def\HyPsd@ref#1{\HyPsd@@ref#1*\END}%

```

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

```

1320 \def\HyPsd@@ref#1*#2\END{%
1321 \ifx\#2\%
1322 \HyPsd@@@ref{#1}%
1323 \else
1324 \expandafter\HyPsd@@@ref
1325 \fi
1326 }%

```

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

```

1327 \def\HyPsd@@@ref#1{%
1328 \expandafter\ifx\csname r@#1\endcsname\relax
1329 ??%
1330 \else
1331 \expandafter\expandafter\expandafter

```

```

1332 \car\csname r@#1\endcsname\@nil
1333 \fi
1334 }

```

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

```

1335 \def\HyPsd@pageref#1{\HyPsd@@pageref#1*\END}

```

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

```

1336 \def\HyPsd@@pageref#1*#2\END{%
1337 \ifx\#2\%
1338 \HyPsd@@@pageref{#1}%
1339 \else
1340 \expandafter\HyPsd@@@pageref
1341 \fi
1342 }

```

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

```

1343 \def\HyPsd@@@pageref#1{%
1344 \expandafter\ifx\csname r@#1\endcsname\relax
1345 ??%
1346 \else
1347 \expandafter\expandafter\expandafter\expandafter
1348 \expandafter\expandafter\expandafter\@car
1349 \expandafter\expandafter\expandafter\@gobble
1350 \csname r@#1\endcsname{}\@nil
1351 \fi
1352 }

```

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

```

1353 \def\HyPsd@nameref#1{\HyPsd@@nameref#1*\END}

```

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

```

1354 \def\HyPsd@@nameref#1*#2\END{%
1355 \ifx\#2\%
1356 \HyPsd@@@nameref{#1}%
1357 \else
1358 \expandafter\HyPsd@@@nameref
1359 \fi
1360 }

```

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

```

1361 \def\HyPsd@@@nameref#1{%
1362 \expandafter\ifx\csname r@#1\endcsname\relax
1363 ??%
1364 \else
1365 \expandafter\expandafter\expandafter\expandafter
1366 \expandafter\expandafter\expandafter\@car
1367 \expandafter\expandafter\expandafter\@gobbletwo
1368 \csname r@#1\endcsname{}\@nil
1369 \fi
1370 }

```

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

```
1371 \def\HyPsd@autoref#1{\HyPsd@@autoref#1*\END}
```

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

```
1372 \def\HyPsd@@autoref#1*#2\END{%
1373   \ifx\#2\%
1374     \HyPsd@@@autoref{#1}%
1375   \else
1376     \expandafter\HyPsd@@@autoref
1377   \fi
1378 }
```

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

```
1379 \def\HyPsd@@@autoref#1{%
1380   \expandafter\ifx\csname r@#1\endcsname\relax
1381     ??%
1382   \else
1383     \expandafter\expandafter\expandafter\HyPsd@autorefname
1384       \csname r@#1\endcsname{}{}{}{}\@nil
1385     \expandafter\expandafter\expandafter
1386       \@car\csname r@#1\endcsname\@nil
1387   \fi
1388 }
```

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

```
1389 \def\HyPsd@autorefname#1#2#3#4#5\@nil{%
1390   \ifx\#4\%
1391   \else
1392     \HyPsd@@autorefname#4.\@nil
1393   \fi
1394 }
```

`\HyPsd@@@autorefname`

```
1395 \def\HyPsd@@@autorefname#1.#2\@nil{%
1396   \@ifundefined{#1autorefname}{%
1397     \@ifundefined{#1name}{%
1398       }{%
1399         \csname#1name\endcsname\space
1400       }%
1401     }{%
1402       \csname#1autorefname\endcsname\space
1403     }%
1404 }
```

### 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 unmathed `\if...` tokens, the cases `\let\if...\iftrue` and `\let\if...\iffalse` are checked and ignored.

```

\HyPsd@DefCommand
\HyPsd@LetCommand 1405 \begingroup
1406 \def\x#1#2{%
1407 \endgroup
1408 \let#1\def
1409 \def\HyPsd@DefCommand##1##2###{%
1410 #1%
1411 \expandafter\noexpand
1412 \csname\expandafter\@gobble\string##1\@empty\endcsname
1413 \@gobble
1414 }%
1415 \let#2\let
1416 \def\HyPsd@LetCommand##1{%
1417 \expandafter\ifx\csname##1\expandafter\endcsname
1418 \csname iftrue\endcsname
1419 \pdfstringdefWarn\let
1420 \expandafter\@gobble
1421 \else
1422 \expandafter\ifx\csname##1\expandafter\endcsname
1423 \csname iffalse\endcsname
1424 \pdfstringdefWarn\let
1425 \expandafter\expandafter\expandafter\@gobble
1426 \else
1427 #2%
1428 \expandafter\noexpand
1429 \csname##1\expandafter\expandafter\expandafter\endcsname
1430 \fi
1431 \fi
1432 }%
1433 }%

```

```

1434 \expandafter\x\csname <def>-command\expandafter\endcsname
1435         \csname <let>-command\endcsname
1436 \def\HyPsd@LetCommand#1{%
1437 \expandafter\expandafter\expandafter\HyPsd@@LetCommand
1438 \expandafter\expandafter\expandafter{%
1439 \expandafter\@gobble\string#1\@empty
1440 }%
1441 }

```

### 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).

```

1442 \def\HyPsd@ifnextchar#1{%
1443 \pdfstringdefWarn#1%
1444 \expandafter\@gobbletwo\@gobble
1445 }

```

### 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`.

```

1446 \def\HyPsd@protected@testopt#1{%
1447 \pdfstringdefWarn#1%
1448 \@gobbletwo
1449 }

```

## 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:

```

1450 \def\HyPsd@Warning#1{%
1451 \begingroup
1452 \let\space\Hy@space
1453 \Hy@Warning{#1}%
1454 \endgroup
1455 }

```

## 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`.

```
1456 \let\HyPsd@fi\fi
1457 \def\HyPsd@ProtectSpaces#1{%
1458   \xdef#1{%
1459     \iftrue
1460       \expandafter\HyPsd@@ProtectSpacesFi
1461       \expandafter|\expandafter\@empty#1| %
1462     \HyPsd@fi
1463   }%
1464   \expandafter\HyPsd@RemoveMask#1\HyPsd@End#1%
1465 }%
```

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

```
1466 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@fi{%
1467   \fi
1468   \unexpanded{#1}%
1469   \ifx\scrollmode#2\scrollmode
1470   \else
1471     \HyPsd@@ProtectSpacesFi\HyPsd@UnexpandableSpace#2%
1472   \HyPsd@fi
1473 }%
```

### 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.

```
1474 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1475   \xdef#2{\unexpanded\expandafter{#1}}%
1476 }%
```

## 6.6.3 Remove grouping braces

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

```
1477 \def\HyPsd@RemoveBraces#1{%
1478   \ifx\scrollmode#1\scrollmode
1479   \else
1480     \HyPsd@@RemoveBracesFi#1\HyPsd@End{#1}%
1481   \fi
1482 }
```

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

token or a group. To avoid the case that #2 is a group, the string is extended by a | before.

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

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

```

1483 \def\HyPsd@@RemoveBracesFi#1#2\HyPsd@End#3\fi{%
1484 \fi
1485 \def\Hy@temp@A{#1#2}%
1486 \def\Hy@temp@B{#3}%
1487 \ifx\Hy@temp@A\Hy@temp@B
1488 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1489 \HyPsd@String#1%
1490 }%
1491 \ifx\scrollmode#2\scrollmode
1492 \else
1493 \Hy@ReturnAfterFiFiEnd{%
1494 \HyPsd@RemoveBraces{#2}%
1495 }%
1496 \fi
1497 \else
1498 \def\Hy@temp@A{#1}%
1499 \HyPsd@AppendItalcorr\HyPsd@String
1500 \ifx\Hy@temp@A\@empty
1501 \Hy@ReturnAfterElseFiFiEnd{%
1502 \HyPsd@RemoveBraces{#2}%
1503 }%
1504 \else
1505 \HyPsd@ProtectSpaces\Hy@temp@A
1506 \HyPsd@AppendItalcorr\Hy@temp@A
1507 \Hy@ReturnAfterFiFiEnd{%
1508 \expandafter\HyPsd@RemoveBraces\expandafter
1509 {\Hy@temp@A#2}%
1510 }%
1511 \fi
1512 \fi
1513 \Hy@ReturnEnd
1514 }

```

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

```

1515 \def\HyPsd@AppendItalcorr#1{%
1516 \expandafter\HyPsd@@AppendItalcorr\expandafter{\}/#1%
1517 }
1518 \def\HyPsd@@AppendItalcorr#1#2{%
1519 \expandafter\def\expandafter#2\expandafter{#2#1}%
1520 }

```

#### 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.luatex.org/view.php?id=773>.

```

1521 \@ifundefined{directlua}{%
1522 }{%
1523   \expandafter\ifx\csname\endcsname\relax\fi
1524 }

```

### 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`.

```

1525 \begingroup
1526   \catcode`\Q=\active
1527   \let Q\@empty
1528   \gdef\HyPsd@CheckCatcodes#1#2\HyPsd@End{%
1529     \global\let\HyPsd@Rest\relax
1530     \ifcat\relax\noexpand#1\relax
1531       \ifx#1\protect
1532         \else
1533           \ifx#1\penalty
1534             \setbox\z@=\hbox{%
1535               \afterassignment\HyPsd@AfterCountRemove
1536               \count@=#2\HyPsd@End
1537             }%
1538           \else
1539             \ifx#1\kern
1540               \setbox\z@=\hbox{%
1541                 \afterassignment\HyPsd@AfterDimenRemove
1542                 \dimen@=#2\HyPsd@End
1543               }%
1544             \else
1545               \ifx#1\hskip
1546                 \setbox\z@=\hbox{%
1547                   \afterassignment\HyPsd@AfterSkipRemove
1548                   \skip@=#2\HyPsd@End
1549                 }%
1550             \else
1551               \HyPsd@CatcodeWarning{#1}%
1552             \fi
1553           \fi
1554         \fi
1555       \fi
1556     \else
1557       \ifcat\noexpand#1\noexpandQ% active character
1558       \expandafter\expandafter\expandafter\def

```

```

1559     \expandafter\expandafter\expandafter\HyPsd@String
1560     \expandafter\expandafter\expandafter{%
1561     \expandafter\HyPsd@String\string#1%
1562     }%
1563 \else
1564 \ifcat#1A% letter
1565     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1566     \HyPsd@String#1%
1567     }%
1568 \else
1569 \ifcat#1 % SPACE
1570     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1571     \HyPsd@String\HyPsd@SPACEOPTI
1572     }%
1573 \else
1574 \ifcat$#1%
1575     \HyPsd@CatcodeWarning{math shift}%
1576 \else
1577 \ifcat&#1%
1578     \HyPsd@CatcodeWarning{alignment tab}%
1579 \else
1580 \ifcat^#1%
1581     \HyPsd@CatcodeWarning{superscript}%
1582 \else
1583 \ifcat_#1%
1584     \HyPsd@CatcodeWarning{subscript}%
1585 \else
1586     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1587     \HyPsd@String#1%
1588     }%
1589     \fi
1590     \fi
1591     \fi
1592     \fi
1593     \fi
1594     \fi
1595     \fi
1596 \fi
1597 \ifx\HyPsd@Rest\relax
1598     \ifx\scrollmode#2\scrollmode
1599     \else
1600     \Hy@ReturnAfterFiFiEnd{%
1601     \HyPsd@CheckCatcodes#2\HyPsd@End
1602     }%
1603     \fi
1604 \else
1605     \ifx\HyPsd@Rest\@empty
1606     \else
1607     \Hy@ReturnAfterFiFiEnd{%
1608     \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@End
1609     }%
1610     \fi
1611 \fi
1612 \Hy@ReturnEnd

```

```

1613 }%
1614 \endgroup

```

### Remove counts, dimens, skips.

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

```

1615 \def\HyPsd@AfterCountRemove#1\HyPsd@End{%
1616   \gdef\HyPsd@Rest{#1}%
1617 }

```

`\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.

```

1618 \def\HyPsd@AfterDimenRemove#1\HyPsd@End{%
1619   \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@\fi>1ex %
1620   \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1621   \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1622   \else
1623     \ifdim\dimen@=\z@
1624     \else
1625       \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1626     \fi
1627   \gdef\HyPsd@Rest{#1}%
1628   \fi
1629 }

```

`\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).

```

1630 \def\HyPsd@AfterSkipRemove#1\HyPsd@End{%
1631   \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@\fi>1ex %
1632   \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1633   \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1634   \else
1635     \ifdim\skip@=\z@
1636     \else
1637       \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1638     \fi
1639   \gdef\HyPsd@Rest{#1}%
1640   \fi
1641 }

```

### Catcode warnings.

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

```

1642 \def\HyPsd@CatcodeWarning#1{%
1643   \HyPsd@Warning{%
1644     Token not allowed in a PDF string (%
1645     \ifHy@unicode
1646       Unicode%
1647     \else
1648       PDFDocEncoding%
1649     \fi

```

```

1650 ):%
1651 \MessageBreak removing `\'HyPsd@RemoveCmdPrefix#1'%
1652 }%
1653 }
1654 \begingroup
1655 \catcode`\|=0 %
1656 \catcode`\|=12 %
1657 |gdef|HyPsd@RemoveCmdPrefix#1{%
1658 |expandafter|HyPsd@@RemoveCmdPrefix
1659 |string#1|@empty\<>-|@empty|@empty
1660 }%
1661 |gdef|HyPsd@@RemoveCmdPrefix#1\<>-#2|@empty#3|@empty{#1#2}%
1662 |endgroup

```

\HyPsd@RemoveSpaceWarning

```

1663 \def\HyPsd@RemoveSpaceWarning#1{%
1664 \HyPsd@Warning{%
1665 Token not allowed in a PDF string (%
1666 \ifHy@unicode
1667 Unicode%
1668 \else
1669 PDFDocEncoding%
1670 \fi
1671 ):%
1672 \MessageBreak #1\MessageBreak
1673 removed%
1674 }%
1675 }

```

\HyPsd@ReplaceSpaceWarning

```

1676 \def\HyPsd@ReplaceSpaceWarning#1{%
1677 \HyPsd@Warning{%
1678 Token not allowed in a PDF string (%
1679 \ifHy@unicode
1680 Unicode%
1681 \else
1682 PDFDocEncoding%
1683 \fi
1684 ):%
1685 \MessageBreak #1\MessageBreak
1686 replaced by space%
1687 }%
1688 }

```

### 6.6.5 Check for wrong glyphs

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

```

1689 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
1690 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1691 \HyPsd@String#1%
1692 }%
1693 \ifx\|#2\%
1694 \else

```



```

1695 \Hy@ReturnAfterFi{%
1696 \HyPsd@GlyphProcessWarning#2\@empty
1697 }%
1698 \fi
1699 }
1700 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
1701 \HyPsd@@GlyphProcessWarning#1++>%
1702 \HyPsd@GlyphProcess#2\@empty
1703 }
1704 \def\HyPsd@@GlyphProcessWarning#1+#2+#3>{%
1705 \ifx\#2\%
1706 \HyPsd@Warning{%
1707 Glyph not defined in %
1708 P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
1709 removing \@backslashchar#1'%
1710 }%
1711 \else
1712 \HyPsd@Warning{%
1713 Composite letter \@backslashchar#1+#2'\MessageBreak
1714 not defined in P\ifHy@unicode U\else D1\fi\space encoding,%
1715 \MessageBreak
1716 removing \@backslashchar#1'%
1717 }%
1718 \fi
1719 }

```

## 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`.

```

1720 \def\HyPsd@spaceopti#1{ % first space
1721 \ifx\HyPsd@spaceopti#1%
1722 \040%
1723 \else
1724 #1%
1725 \fi
1726 }%

```

### 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.
1727 \def\HyPsd@Subst#1#2#3{%
1728 \def\HyPsd@@ReplaceFi##1##1##2\END\fi{%
1729 \fi
1730 ##1%
1731 \ifx\scrollmode##2\scrollmode

```

```

1732 \else
1733 #2%
1734 \HyPsd@@ReplaceFi##2\END
1735 \fi
1736 }%
1737 \xdef#3{%
1738 \iftrue
1739 \expandafter\HyPsd@@ReplaceFi#3#1\END
1740 \fi
1741 }%
1742 }

```

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

```

1743 \def\HyPsd@StringSubst#1{%
1744 \expandafter\HyPsd@Subst\expandafter{\string#1}%
1745 }

```

`\HyPsd@EscapeTeX`

```

1746 \begingroup
1747 \lccode`!\!=`\%%
1748 \lccode`||=\%%
1749 \lccode`\(=\{
1750 \lccode`\)=`\}
1751 \lccode`0=\z@
1752 \lccode`1=\z@
1753 \lccode`3=\z@
1754 \lccode`4=\z@
1755 \lccode`5=\z@
1756 \lccode`7=\z@
1757 \lowercase{\endgroup
1758 \def\HyPsd@EscapeTeX#1{%
1759 \HyPsd@Subst!{|045}#1%
1760 \HyPsd@Subst({|173}#1%
1761 \HyPsd@Subst){|175}#1%
1762 }%
1763 }

```

### 6.6.7 Support for package `xspace`

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

```

1764 \def\HyPsd@doxspace#1{%
1765 \ifx#1\relax\else
1766 \ifx#1.\else
1767 \ifx#1:\else
1768 \ifx#1,\else
1769 \ifx#1;\else
1770 \ifx#1!\else
1771 \ifx#1?\else
1772 \ifx#1/\else

```

```

1773     \ifx#1-\else
1774     \ifx#1'\else
1775         \HyPsd@SPACEOPTI
1776     \fi
1777     \fi
1778     \fi
1779     \fi
1780     \fi
1781     \fi
1782     \fi
1783     \fi
1784     \fi
1785     \fi
1786     #1%
1787 }%

```

### 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.

```

1788 \begingroup
1789 \catcode`\|=0 %
1790 \catcode`\|=12 %

```

\HyPsd@ConvertToUnicode

```

1791 |gdef|HyPsd@ConvertToUnicode#1{%
1792 |xdef#1{%
1793 |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
1794 }%
1795 |ifx#1|@empty
1796 |else
1797 |xdef#1{%
1798     \376\377%
1799     #1%
1800 }%
1801 |fi
1802 }%

```

\HyPsd@DoConvert

```

1803 |gdef|HyPsd@DoConvert#1{%
1804 |ifx#1|@empty
1805 |else
1806 |Hy@ReturnAfterFi{%
1807 |ifx#1\%%
1808     \%%
1809 |expandafter|HyPsd@DoEscape
1810 |else
1811 |HyPsd@Char{#1}%
1812 |expandafter|HyPsd@DoConvert
1813 |fi
1814 }%
1815 |fi
1816 }%

```

\HyPsd@DoEscape

```
1817 |gdef|HyPsd@DoEscape#1{%
1818   |ifx#19%
1819   |expandafter|HyPsd@GetTwoBytes
1820   |else
1821   |Hy@ReturnAfterFi{%
1822     |ifx#18%
1823       00%
1824     |expandafter|HyPsd@GetTwoBytes
1825     |else
1826       #1%
1827     |expandafter|HyPsd@GetOneByte
1828     |fi
1829   }%
1830   |fi
1831 }%
```

\HyPsd@GetTwoBytes

```
1832 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
1833   #1\#2#3#4%
1834   |HyPsd@DoConvert
1835 }%
```

\HyPsd@GetOneByte

```
1836 |gdef|HyPsd@GetOneByte#1#2{%
1837   #1#2%
1838   |HyPsd@DoConvert
1839 }%
1840 |endgroup
```

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

```
1841 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
1842   \xdef#4{#4#1#2}%
1843   \HyPsd@@ConvertToUnicode#3\END#4%
1844 }
```

\HyPsd@Char

```
1845 \begingroup
1846   \catcode0=9 %
1847   \catcode`\^=7 %
1848   \catcode`\^^=12 %
1849   \def\x{^^^0000}%
1850   \expandafter\endgroup
1851   \ifx\x\@empty
1852     \def\HyPsd@Char#1{%
1853       \ifnum`#1<128 %
1854         \@backslashchar 000#1%
1855       \else
1856         \ifnum`#1<65536 %
1857           \expandafter\HyPsd@CharTwoByte\number`#1!%
1858         \else
1859           \expandafter\expandafter\expandafter\HyPsd@CharSurrogate
```

```

1860     \intcalcSub{`#1}{65536}!%
1861     \fi
1862 \fi
1863 }%
1864 \def\HyPsd@CharTwoByte#1!{%
1865   \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1866   \IntCalcDiv#1!256!!%
1867   \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1868   \IntCalcMod#1!256!!%
1869 }%
1870 \def\HyPsd@CharOctByte#1!{%
1871   \@backslashchar
1872   \IntCalcDiv#1!64!%
1873   \intcalcDiv{\IntCalcMod#1!64!}{8}%
1874   \IntCalcMod#1!8!%
1875 }%
1876 \def\HyPsd@CharSurrogate#1!{%
1877   \@backslashchar 33%
1878   \IntCalcDiv#1!262144!%
1879   \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1880   \intcalcDiv{\IntCalcMod#1!262144!}{1024}!%
1881   \@backslashchar 33%
1882   \expandafter\expandafter\expandafter\IntCalcAdd
1883   \intcalcDiv{\IntCalcMod#1!1024!}{256}!4!%
1884   \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1885   \IntCalcMod#1!256!!%
1886 }%
1887 \else
1888 \def\HyPsd@Char#1{%
1889   \@backslashchar 000#1%
1890 }%
1891 \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.

```

1892 \ifcsname UTFviii@loop\endcsname
1893 \def\HyPsd@expand@utfviii {%
1894   \count@"C2
1895   \@tempcnta"F5
1896   \def\UTFviii@tmp{\expandafter\def\expandafter~\expandafter{~}}%
1897   \UTFviii@loop
1898 }
1899 \else
1900 \def\HyPsd@expand@utfviii {}
1901 \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

1902 \begingroup
1903   \lccode`~=`^^f4\relax
1904 \lowercase{\endgroup
1905   \def\HyPsd@UTFviii{%
1906     \HyPsd@expand@utfviii
1907     \let\UTFviii@two@octets\HyPsd@UTFviii@two
1908     \let\UTFviii@three@octets\HyPsd@UTFviii@three
1909     \let\UTFviii@four@octets\HyPsd@UTFviii@four
1910     \ifx~\HyPsd@UTFviii@cccxiv@undef
1911       \let~\HyPsd@UTFviii@cccxiv@def
1912     \fi
1913     \let\unichar\HyPsd@unichar
1914   }%
1915 }%
1916 \def\HyPsd@UTFviii@cccxiv@undef{\@inpenc@undefined@{utf8}}%
1917 \edef\HyPsd@UTFviii@cccxiv@def{%
1918   \noexpand\UTFviii@four@octets\string ^^f4%
1919 }%

```

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

$$a := A/4 - 48 \tag{1}$$

$$b := A - 4 * (A/4) \tag{2}$$

$$c := B/8 - 8 * ((8 * (B/8))/8) \tag{3}$$

$$d := B - 8 * (B/8) \tag{4}$$

$$\tag{5}$$

```

1920 \def\HyPsd@UTFviii@two#1#2{%
1921   \expandafter\HyPsd@UTFviii@two
1922   \number\dimexpr.25\dimexpr`#1sp\expandafter\relax\expandafter| %
1923   \number`#1\expandafter| %
1924   \number\dimexpr.125\dimexpr`#2sp\expandafter\relax\expandafter| %
1925   \number`#2 \@nil
1926 }%
1927 \def\HyPsd@UTFviii@two#1|#2|#3|#4\@nil{%
1928   \expandafter\8%
1929   \number\numexpr #1-48\expandafter\relax
1930   \csname\number\numexpr #2-4*#1\relax\expandafter\endcsname
1931   \number\numexpr #3-8*%
1932   \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
1933   \number\numexpr #4-8*#3\relax
1934 }%

```

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

$$a := A/4 - 56 \tag{6}$$

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

```

1935 \def\HyPsd@UTFviii@three#1#2#3{%
1936   \expandafter\HyPsd@UTFviii@@three
1937   \number\dimexpr.25\dimexpr`#1sp\expandafter\relax\expandafter| %
1938   \number`#1\expandafter| %
1939   \number\ifnum\numexpr`#2-128\relax <32 0\else 1\fi\expandafter| %
1940   \number\dimexpr.25\dimexpr`#2sp\expandafter\relax\expandafter| %
1941   \number`#2\expandafter| %
1942   \number\dimexpr.125\dimexpr`#3sp\expandafter\relax\expandafter| %
1943   \number`#3 \@nil
1944 }%
1945 \def\HyPsd@UTFviii@@three#1|#2|#3|#4|#5|#6|#7\@nil{%
1946   \expandafter\9%
1947   \number\numexpr #1-56\expandafter\relax
1948   \number\numexpr 2*(#2-4*#1)+#3\expandafter\relax
1949   \number\numexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax
1950   \csname\number\numexpr #5-4*#4\relax\expandafter\endcsname
1951   \number\numexpr #6-16\expandafter\relax
1952   \number\numexpr #7-8*#6\relax
1953 }%

```

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 = uuuuu - 1
UTF-16: 110110ww wwzzzzyy 110111yy yyxxxxxx
octal: 011 011 0ww 0ww zzz zyy 011 011 1yy 0yy xxx xxx

```

```

1954 \def\HyPsd@UTFviii@four#1#2{%
1955   \expandafter\HyPsd@@UTFviii@four\number
1956   \numexpr-1+(\`#1-240)*4+\dimexpr.0625\dimexpr`#2sp-128sp%
1957   \expandafter|\number
1958   \numexpr`#2-16*\dimexpr.0625\dimexpr`#2sp| %
1959 }%
1960 \def\HyPsd@@UTFviii@four#1|#2|#3{%
1961   \933\number\dimexpr.25\dimexpr#1sp\relax\relax
1962   \csname\number\numexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1963   \ifodd#2 %
1964     \number\numexpr(#2-1)/2\relax
1965   \else
1966     \number\numexpr#2/2\relax
1967   \fi
1968   \number\numexpr\ifodd#2 4+\fi
1969   \dimexpr.0625\dimexpr`#3sp-128sp\relax\relax\relax
1970   \933%
1971   \expandafter\HyPsd@@@UTFviii@four\number
1972   \numexpr`#3-16*\dimexpr.0625\dimexpr`#3sp| %

```

```

1973 }%
1974 \def\HyPsd@@@UTFviii@four#1|#2{%
1975   \number\numexpr4+\dimexpr.25\dimexpr#1sp\relax\relax\relax
1976   \csname\number\numexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1977   \number\dimexpr.125\dimexpr`#2sp-128sp\relax\relax
1978   \number\numexpr`#2-8*\dimexpr.125\dimexpr`#2sp\relax\relax\relax
1979 }%

```

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

```

1980 \def\HyPsd@unichar#1{%
1981   \ifHy@unicode
1982     \ifnum#1>"10FFFF %
1983     \HyPsd@UnicodeReplacementCharacter % illegal
1984   \else
1985     \ifnum#1>"FFFF %

```

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

```

1986   \expandafter\HyPsd@unichar\expandafter{%
1987     \number\numexpr 55296+%
1988     \dimexpr.0009765625\dimexpr\number#1sp-\p@
1989     \relax\relax\relax
1990   }%

```

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

```

1991   \expandafter\HyPsd@unichar\expandafter{%
1992     \number\numexpr#1-9216%
1993     -1024*\dimexpr.0009765625\dimexpr\number#1sp-\p@
1994     \relax\relax\relax
1995   }%
1996   \else
1997     \ifnum#1>"7FF %
1998     \9%
1999     \expandafter\HyPsd@unichar@first@byte\expandafter{%
2000       \number
2001       \dimexpr.00390625\dimexpr\number#1sp\relax\relax
2002     }%
2003     \else
2004       \8%
2005       \number\dimexpr.00390625\dimexpr\number#1sp\relax\relax
2006     \fi
2007     \expandafter\HyPsd@unichar@second@byte\expandafter{%
2008       \number
2009       \numexpr#1-256*\number
2010       \dimexpr.00390625\dimexpr\number#1sp\relax\relax\relax
2011     }%
2012     \fi
2013   \fi
2014   \else
2015     .% unsupported (Unicode -> PDF Doc Encoding)
2016   \fi
2017 }%
2018 \def\HyPsd@UnicodeReplacementCharacter{\9377\375}%
2019 \def\HyPsd@unichar@first@byte#1{%
2020   \number\dimexpr.015625\dimexpr#1sp\relax\relax

```



```

2021 \expandafter\HyPsd@unichar@octtwo\expandafter{%
2022 \number
2023 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2024 \relax\relax\relax
2025 }%
2026 }%
2027 \def\HyPsd@unichar@second@byte#1{%
2028 \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
2029 \expandafter\HyPsd@unichar@octtwo\expandafter{%
2030 \number
2031 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2032 \relax\relax\relax
2033 }%
2034 }%
2035 \def\HyPsd@unichar@octtwo#1{%
2036 \number\dimexpr.125\dimexpr#1sp\relax\relax
2037 \number\numexpr#1-8*\number\dimexpr.125\dimexpr#1sp%
2038 \relax\relax\relax
2039 }%

```

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

```

2040 \def\HyPsd@utf@viii@undeferr#1#2#3#4#5#6{%
2041 \ifx\@gobble#1%
2042 \else
2043 [Please insert \textbackslash PrerenderUnicode%
2044 \textbraceleft#1\textbraceright\space
2045 into preamble]%
2046 \fi
2047 }%

```

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

`\HyPsd@DieFace` Die faces are provided by

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

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

```

2048 \def\HyPsd@DieFace#1{%
2049 \ifHy@unicode
2050 \ifnum#1<1 %
2051 \HyPsd@UnicodeReplacementCharacter
2052 \else
2053 \ifnum#1>6 %
2054 \9046\205%
2055 \expandafter\expandafter\expandafter
2056 \HyPsd@DieFaceLarge\intcalcSub{#1}{6}!%
2057 \else
2058 \9046\20\intcalcDec{#1}%
2059 \fi

```

```

2060 \fi
2061 \else
2062 .% Die faces are not part of PDFDocEncoding
2063 \fi
2064 }

```

`\HyPsd@DieFaceLarge`

```

2065 \def\HyPsd@DieFaceLarge#1{%
2066 \ifnum#1>6 %
2067 \expandafter\@firstoftwo
2068 \else
2069 \expandafter\@secondoftwo
2070 \fi
2071 {%
2072 \9046\205%
2073 \expandafter\expandafter\expandafter
2074 \HyPsd@DieFaceLarge\IntCalcSub#1!6!!%
2075 }{%
2076 \9046\20\IntCalcDec#1!%
2077 }%
2078 }

```

### 6.6.11 Support for moon phases of package china2e

```

2079 \def\HyPsd@MoonPha#1{%
2080 \ifcase\intcalcNum{#1} %
2081 \HyPsd@UnicodeReplacementCharacter
2082 \or % 1
2083 % U+1F31A NEW MOON WITH FACE; \MoonPha{1} (china2e)
2084 \9330\074\9337\032%
2085 \or % 2
2086 \HyPsd@UnicodeReplacementCharacter
2087 \or % 3
2088 % U+1F31D FULL MOON WITH FACE; \MoonPha{3} (china2e)
2089 \9330\074\9337\035%
2090 \or % 4
2091 % U+1F31C LAST QUARTER MOON WITH FACE; \MoonPha{4} (china2e)
2092 \9330\074\9337\034%
2093 \else
2094 \HyPsd@UnicodeReplacementCharacter
2095 \fi
2096 }
2097 %* \HyPsd@MoonPha -> \MoonPha

```

### 6.6.12 Support for package pifont

`\HyPsd@ding`

```

2098 \def\HyPsd@ding#1{%
2099 \ifHy@unicode
2100 \ifnum#1<32 %
2101 \HyPsd@UnicodeReplacementCharacter
2102 \else
2103 \ifnum#1>254 %
2104 \HyPsd@UnicodeReplacementCharacter
2105 \else

```

```

2106     \ifnum#1<127 %
2107     \expandafter\expandafter\expandafter
2108     \HyPsd@@ding\intcalcNum{#1}!%
2109     \else
2110     \ifnum#1>160 %
2111     \expandafter\expandafter\expandafter
2112     \HyPsd@@ding\intcalcNum{#1}!%
2113     \else
2114     \HyPsd@UnicodeReplacementCharacter
2115     \fi
2116     \fi
2117     \fi
2118     \fi
2119     \else
2120     .% Dingbats are not part of PDFDocEncoding
2121     \fi
2122 }

```

\HyPsd@@ding

```

2123 \def\HyPsd@@ding#1!{%
2124 \@ifundefined{HyPsd@ding@#1}{%
2125 \ifnum#1<127 %
2126 \9047%
2127 \HyPsd@DecimalToOctalSecond{\IntCalcSub#1!32!}%
2128 \else
2129 \ifnum#1<168 %
2130 \9047\14\IntCalcSub#1!160!%
2131 \else
2132 \ifnum#1>181 %
2133 \9047\HyPsd@DecimalToOctalSecond{\IntCalcSub#1!64!}%
2134 \else
2135 % 172..181 -> U+2460..U+2469
2136 \9044\HyPsd@DecimalToOctalSecond{\IntCalcSub#1!76!}%
2137 \fi
2138 \fi
2139 \fi
2140 }{%
2141 \csname HyPsd@ding@#1\endcsname
2142 }%
2143 }

2144 \@namedef{HyPsd@ding@32}{\space}
2145 % U+260E BLACK TELEPHONE
2146 \@namedef{HyPsd@ding@37}{\9046\016}% U+260E
2147 % U+261B BLACK RIGHT POINTING INDEX
2148 \@namedef{HyPsd@ding@42}{\9046\033}% U+261B
2149 % U+261E WHITE RIGHT POINTING INDEX
2150 \@namedef{HyPsd@ding@43}{\9046\036}% U+261E
2151 % U+2605 BLACK STAR
2152 \@namedef{HyPsd@ding@72}{\9046\005}% U+2605
2153 % U+25CF BLACK CIRCLE
2154 \@namedef{HyPsd@ding@108}{\9045\317}% U+25CF
2155 % U+25A0 BLACK SQUARE
2156 \@namedef{HyPsd@ding@110}{\9045\240}% U+25A0

```

```

2157 % U+25B2 BLACK UP-POINTING TRIANGLE
2158 \@namedef{HyPsd@ding@115}{\9045\262}% U+25B2
2159 % U+25BC BLACK DOWN-POINTING TRIANGLE
2160 \@namedef{HyPsd@ding@116}{\9045\274}% U+25BC
2161 % U+25C6 BLACK DIAMOND
2162 \@namedef{HyPsd@ding@117}{\9045\306}% U+25C6
2163 % U+25D7 RIGHT HALF BLACK CIRCLE
2164 \@namedef{HyPsd@ding@119}{\9045\327}% U+25D7
2165 \@namedef{HyPsd@ding@168}{\textclubsuitblack}%
2166 \@namedef{HyPsd@ding@169}{\textdiamondsuitblack}%
2167 \@namedef{HyPsd@ding@170}{\textheartsuitblack}%
2168 \@namedef{HyPsd@ding@171}{\textspadesuitblack}%
2169 \@namedef{HyPsd@ding@213}{\textrightarrow}%
2170 \@namedef{HyPsd@ding@214}{\textleftarrow}%
2171 \@namedef{HyPsd@ding@215}{\textupdownarrow}%
2172 \@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.

```

2173 \@ifpackageloaded{subfigure}{%
2174   \@ifundefined{sub@label}{%
2175     \Hy@hypertexnamesfalse
2176   }{%
2177     \renewcommand*{\sub@label}[1]{%
2178       \@bspack
2179       \subfig@oldlabel{#1}%
2180       \if@filesw
2181         \begingroup
2182           \edef\@currentlabstr{%
2183             \expandafter\strip@prefix\meaning\@currentlabelname
2184           }%
2185           \protected@write\@auxout{}{%
2186             \string\newlabel{sub@#1}{%
2187               {\@nameuse{@@thesub\@capttype}}%
2188               {\thepage}%
2189             }%
2190             \expandafter\strip@period\@currentlabstr
2191             \relax.\relax\@@@%
2192           }%
2193           {\@currentHref}%
2194           {}%
2195         }%
2196       }%
2197     \endgroup
2198   \fi
2199   \@espack
2200 }%
2201 }%
2202 }{}

```

## 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.

```
2203 \def\Hy@true{true}
2204 \def\Hy@false{false}

    Providing dummy definitions.
2205 \let\literalps@out\@gobble
2206 \newcommand\pdfbookmark[3][]{ }
2207 \def\Acrobatmenu#1#2{\leavevmode#2}
2208 \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

```
2209 \let\HyperRaiseLinkHook\@empty
2210 \def\HyperRaiseLinkDefault{\baselineskip}
```

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

```
2211 \newcount\Hy@SavedSpaceFactor
2212 \def\Hy@SaveSpaceFactor{%
2213   \global\Hy@SavedSpaceFactor=\ifhmode\spacefactor\else\z@\fi
2214 }
2215 \def\Hy@RestoreSpaceFactor{%
2216   \relax
2217   \ifhmode
2218     \ifnum\Hy@SavedSpaceFactor>\z@
2219       \spacefactor=\Hy@SavedSpaceFactor
2220     \fi
2221   \fi
2222 }
2223 \def\Hy@SaveSavedSpaceFactor{%
2224   \edef\Hy@RestoreSavedSpaceFactor{%
2225     \global\Hy@SavedSpaceFactor=\the\Hy@SavedSpaceFactor\relax
2226   }%
2227 }
```

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

```

2228 \@ift@t@r\fmtversion{2023-11-01}
2229 {\NewSocket{hyp/raisedlink}{1}}
2230 {\providecommand\UseSocket[2]{#2}}
2231 \def\Hy@raisedlink#1{%
2232   \ifvmode
2233     \UseSocket{hyp/raisedlink}{#1}%
2234   \else
2235     \Hy@SaveSpaceFactor
2236     \penalty\@M
2237     \smash{%
2238       \begingroup
2239         \let\HyperRaiseLinkLength\@tempdima
2240         \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
2241         \HyperRaiseLinkHook
2242         \expandafter\endgroup
2243         \expandafter\raise\the\HyperRaiseLinkLength\hbox{%
2244           \Hy@RestoreSpaceFactor
2245           #1%
2246           \Hy@SaveSpaceFactor
2247         }%
2248       }%
2249     \Hy@RestoreSpaceFactor
2250   \fi
2251 }

```

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

```

\Hy@RestoreLastskip 2252 \def\Hy@SaveLastskip{%
2253   \let\Hy@RestoreLastskip\relax
2254   \ifvmode
2255     \ifdim\lastskip=\z@
2256       \ifnum\lastnodetype=1 %
2257         \let\Hy@RestoreLastskip\relax
2258       \else
2259         \let\Hy@RestoreLastskip\nobreak
2260       \fi
2261     \else
2262       \begingroup
2263         \skip@=-\lastskip
2264         \edef\x{%
2265           \endgroup
2266           \def\noexpand\Hy@RestoreLastskip{%
2267             \noexpand\ifvmode
2268             \noexpand\nobreak
2269             \vskip\the\skip@
2270             \vskip\the\lastskip\relax
2271           \noexpand\fi
2272           }%
2273         }%
2274       \x
2275     \fi
2276   \else
2277     \ifhmode
2278       \ifdim\lastskip=\z@
2279       \let\Hy@RestoreLastskip\nobreak

```

```

2280 \else
2281 \begingroup
2282 \skip@=-\lastskip
2283 \edef\x{%
2284 \endgroup
2285 \def\noexpand\Hy@RestoreLastskip{%
2286 \noexpand\ifhmode
2287 \noexpand\nobreak
2288 \hskip\the\skip@
2289 \hskip\the\lastskip\relax
2290 \noexpand\fi
2291 }%
2292 }%
2293 \x
2294 \fi
2295 \fi
2296 \fi
2297 }%

```

## 9 Options

```

2298 \SetupKeyvalOptions{%
2299 family=Hyp,%
2300 prefix=HyOpt%
2301 }

```

### 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/ltdocinit if it doesn't exist.

```

\AddToDocumentProperties
\GetDocumentProperties 2302 \ExplSyntaxOn
2303 \@ifundefined{AddToDocumentProperties}
2304 {
2305 \prop_new:N \g__hyp_documentproperties_prop
2306 \NewDocumentCommand\AddToDocumentProperties{O{\@currname}mm}
2307 {
2308 \exp_args:NNx
2309 \prop_gput:Nnn \g__hyp_documentproperties_prop
2310 {
2311 \tl_if_blank:eTF {#1}{top-level/}{#1/} #2
2312 }
2313 { #3}
2314 }
2315 \NewExpandableDocumentCommand\GetDocumentProperties{m}
2316 {
2317 \prop_item:Nn \g__hyp_documentproperties_prop {#1}
2318 }
2319 }{}
2320 \ExplSyntaxOff

\IfHyperBooleanExists

```

```

2321 \def\IfHyperBooleanExists#1{%
2322   \@ifundefined{Hy@#1false}\@secondoftwo{%
2323     \@ifundefined{KV@Hyp@#1@default}\@secondoftwo\@firstoftwo
2324   }%
2325 }

2326 \@namedef{KV@Hyp@stoppedearly@default}{ }

```

#### \IfHyperBoolean

```

2327 \def\IfHyperBoolean#1{%
2328   \IfHyperBooleanExists{#1}{%
2329     \csname ifHy@#1\endcsname
2330     \expandafter\@firstoftwo
2331   \else
2332     \expandafter\@secondoftwo
2333   \fi
2334 } \@secondoftwo
2335 }

```

#### \Hy@boolkey

```

2336 \def\Hy@boolkey#1#2{%
2337   \edef\Hy@tempa{#2}%
2338   \lowercase\expandafter{%
2339     \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
2340   }%
2341   \ifx\Hy@tempa\@empty
2342     \let\Hy@tempa\Hy@true
2343   \fi
2344   \ifx\Hy@tempa\Hy@true
2345   \else
2346     \ifx\Hy@tempa\Hy@false
2347     \else
2348       \let\Hy@tempa\relax
2349     \fi
2350   \fi
2351   \ifx\Hy@tempa\relax
2352     \Hy@WarnOptionValue{#2}{#1}{`true' or `false'}%
2353   \else
2354     \Hy@Info{Option `#1' set `\Hy@tempa'}%
2355     \csname Hy@#1\Hy@tempa\endcsname
2356   \fi
2357 }

```

#### \Hy@WarnOptionValue

```

2358 \def\Hy@WarnOptionValue#1#2#3{%
2359   \Hy@Warning{%
2360     Unexpected value `#1'\MessageBreak
2361     of option `#2' instead of\MessageBreak
2362     #3%
2363   }%
2364 }

```

#### \Hy@DisableOption

```

2365 \def\Hy@DisableOption#1{%

```



```

2366 \@ifundefined{KV@Hyp@#1@default}{%
2367   \define@key{Hyp}{#1}%
2368 }{%
2369   \define@key{Hyp}{#1}[]%
2370 }%
2371 {\Hy@WarnOptionDisabled{#1}}%
2372 }
2373

```

`\Hy@WarnOptionDisabled`

```

2374 \def\Hy@WarnOptionDisabled#1{%
2375   \Hy@Warning{%
2376     Option `#1' has already been used,\MessageBreak
2377     setting the option has no effect%
2378   }%
2379 }

```

`\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`.

```

2380 \def\Hy@CheckOptionValue#1#2#3{%
2381   \begingroup
2382   \edef\x{#1}%
2383   \@onelevel@sanitize\x
2384   \let\y=y%
2385   \def\do##1##2{%
2386     \def\z{##1}%
2387     \@onelevel@sanitize\z
2388     \ifx\x\z
2389       \let\y=n%
2390       \let\do\@gobbletwo
2391     \fi
2392   }%
2393   #3%
2394   \ifx\y y%
2395     \def\do##1##2{%
2396       * `##1'%
2397       \ifx\##2\else\space(##2)\fi
2398     \MessageBreak
2399   }%
2400   \Hy@Warning{%
2401     Values of option `#2':\MessageBreak
2402     #3%
2403     * An empty value disables the option.\MessageBreak
2404     Unknown value `x'%
2405   }%
2406   \fi
2407 \endgroup
2408 }

```

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

```

2409 \def\Hy@DefNameKey#1{%
2410 \expandafter\Hy@@DefNameKey\csname @#1\endcsname{#1}%
2411 }

```

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

```

2412 \def\Hy@@DefNameKey#1#2#3{%
2413 \define@key{Hyp}{#2}{%
2414 \edef#1{##1}%
2415 \ifx#1\@empty
2416 \else
2417 \Hy@CheckOptionValue{##1}{#2}{#3}%
2418 \fi
2419 }%
2420 \let#1\@empty
2421 }

```

\Hy@UseNameKey

```

2422 \def\Hy@UseNameKey#1#2{%
2423 \ifx#2\@empty
2424 \else
2425 /#1/#2%
2426 \fi
2427 }

```

## 9.2 Defining the options

```

2428 \define@key{Hyp}{implicit}[true]{%
2429 \Hy@boolkey{implicit}{#1}%
2430 }
2431 \define@key{Hyp}{draft}[true]{%
2432 \Hy@boolkey{draft}{#1}%
2433 }
2434 \define@key{Hyp}{final}[true]{%
2435 \Hy@boolkey{final}{#1}%
2436 }
2437 \let\KV@Hyp@nolinks\KV@Hyp@draft
2438 \def\Hy@ObsoletePaperOption#1{%
2439 \Hy@WarningNoLine{%
2440 Option `#1' is no longer used%
2441 }%
2442 \define@key{Hyp}{#1}[true]{}%
2443 }
2444 \def\Hy@temp#1{%
2445 \define@key{Hyp}{#1}[true]{%
2446 \Hy@ObsoletePaperOption{#1}%
2447 }%
2448 }
2449 \Hy@temp{a4paper}
2450 \Hy@temp{a5paper}
2451 \Hy@temp{b5paper}
2452 \Hy@temp{letterpaper}

```

```

2453 \Hy@temp{legalpaper}
2454 \Hy@temp{executivepaper}

2455 \define@key{Hyp}{setpagesize}[true]{%
2456   \Hy@boolkey{setpagesize}{#1}%
2457 }
2458 \define@key{Hyp}{debug}[true]{%
2459   \Hy@boolkey{debug}{#1}%
2460 }
2461 \define@key{Hyp}{linktopage}[true]{%
2462   \Hy@boolkey{linktopage}{#1}%
2463   \ifHy@linktopage
2464     \let\Hy@linktoc\Hy@linktoc@page
2465   \else
2466     \let\Hy@linktoc\Hy@linktoc@section
2467   \fi
2468 }
2469 \chardef\Hy@linktoc@none=0 %
2470 \chardef\Hy@linktoc@section=1 %
2471 \chardef\Hy@linktoc@page=2 %
2472 \chardef\Hy@linktoc@all=3 %
2473 \ifHy@linktopage
2474   \let\Hy@linktoc\Hy@linktoc@page
2475 \else
2476   \let\Hy@linktoc\Hy@linktoc@section
2477 \fi
2478 \define@key{Hyp}{linktoc}{%
2479   \@ifundefined{Hy@linktoc@#1}{%
2480     \Hy@Warning{%
2481       Unexpected value `#1' of\MessageBreak
2482       option `linktoc' instead of `none',\MessageBreak
2483       `section', `page' or `all'%
2484     }%
2485   }{%
2486     \expandafter\let\expandafter\Hy@linktoc
2487     \csname Hy@linktoc@#1\endcsname
2488   }%
2489 }
2490 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
2491 \let\XR@ext\relax
2492 \define@key{Hyp}{verbose}[true]{%
2493   \Hy@boolkey{verbose}{#1}%
2494 }

```

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.

```

2495 \define@key{Hyp}{raiselinks}[true]{%
2496   \Hy@boolkey{raiselinks}{#1}%
2497 }

```

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

```

2498 \def\Hy@setbreaklinks#1{%
2499   \csname breaklinks#1\endcsname
2500 }

```

```

2501 \def\Hy@breaklinks@unsupported{%
2502   \ifx\Hy@setbreaklinks@gobble
2503     \ifHy@breaklinks
2504       \Hy@WarningNoLine{%
2505         You have enabled option `breaklinks'.\MessageBreak
2506         But driver ``\Hy@driver.def' does not support this.\MessageBreak
2507         Expect trouble with the link areas of broken links%
2508       }%
2509     \fi
2510   \fi
2511 }

2512 \define@key{Hyp}{breaklinks}[true]{%
2513   \Hy@boolkey{breaklinks}{#1}%
2514   \let\Hy@setbreaklinks@gobble
2515 }

2516 \define@key{Hyp}{localanchorname}[true]{%
2517   \Hy@WarningNoLine{%
2518     Option `localanchorname' is deprecated%
2519   }%
2520   \Hy@boolkey{localanchorname}{#1}%
2521 }

Determines whether an automatic anchor is put on each page
2522 \define@key{Hyp}{pageanchor}[true]{%
2523   \Hy@boolkey{pageanchor}{#1}%
2524 }

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.
2525 \define@key{Hyp}{plainpages}[true]{%
2526   \Hy@boolkey{plainpages}{#1}%
2527 }

Are the names for anchors made as per the HyperTeX system, or do they simply
use what LATEX provides?
2528 \define@key{Hyp}{naturalnames}[true]{%
2529   \Hy@boolkey{naturalnames}{#1}%
2530 }

Completely ignore the names as per the HyperTeX system, and use unique coun-
ters.
2531 \define@key{Hyp}{hypertexnames}[true]{%
2532   \Hy@boolkey{hypertexnames}{#1}%
2533 }

Currently, dvips doesn't allow anchors nested within targets, so this option tries
to stop that happening. Other processors may be able to cope.
2534 \define@key{Hyp}{nesting}[true]{%
2535   \Hy@boolkey{nesting}{#1}%
2536 }

2537 \define@key{Hyp}{destlabel}[true]{%
2538   \Hy@boolkey{destlabel}{#1}%
2539 }

2540 \define@key{Hyp}{unicode}[true]{%
2541   \Hy@boolkey{unicode}{#1}%

```

```

2542 \ifHy@unicode
2543   \def\HyPsd@pdfencoding{unicode}%
2544   \HyPsd@LoadUnicode
2545 \else
2546   \def\HyPsd@pdfencoding{pdfdoc}%
2547 \fi
2548 }
2549 \Hy@AtBeginDocument{%
2550 \ifx\HyPsd@LoadUnicode\relax
2551 \else
2552   \def\HyPsd@LoadUnicode{%
2553     \Hy@Error{%
2554       Unicode support for bookmarks is not available.\MessageBreak
2555       Activate unicode support by using one of the options\MessageBreak
2556       `unicode', `pdfencoding=unicode', `pdfencoding=auto'\MessageBreak
2557       in the preamble%
2558     }\@ehc
2559     \global\let\HyPsd@LoadUnicode\relax
2560     \global\Hy@unicodedefalse
2561     \global\let\Hy@unicodetrue\Hy@unicodedefalse
2562   }%
2563 \fi
2564 }

2565 \define@key{Hyp}{pdfencoding}{%
2566   \edef\HyPsd@temp{#1}%
2567   \ifx\HyPsd@temp\HyPsd@pdfencoding@pdfdoc
2568     \let\HyPsd@pdfencoding\HyPsd@temp
2569     \Hy@unicodedefalse
2570   \else
2571     \ifcase\ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
2572       \z@
2573     \else
2574       \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
2575         \z@
2576       \else
2577         \@ne
2578       \fi
2579     \fi
2580     \let\HyPsd@pdfencoding\HyPsd@temp
2581     \hypersetup{unicode}%
2582     \ifHy@unicode
2583       \def\HyPsd@pdfencoding{#1}%
2584     \else
2585       \Hy@Warning{Cannot switch to unicode bookmarks}%
2586       \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
2587     \fi
2588   \else
2589     \@onelevel@sanitize\HyPsd@temp
2590     \Hy@Warning{%
2591       Values of option `pdfencoding':\MessageBreak
2592       `pdfdoc', `unicode', `auto'.\MessageBreak
2593       Ignoring unknown value ``\HyPsd@temp'%
2594     }%
2595   \fi

```

```

2596 \fi
2597 }
2598 \def\HyPsd@pdfencoding@auto{auto}
2599 \def\HyPsd@pdfencoding@pdfdoc{pdfdoc}
2600 \def\HyPsd@pdfencoding@unicode{unicode}

```

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

```

2601 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
2602 \HyPsd@LoadUnicode
2603 \define@key{Hyp}{psdextra}[true]{%
2604   \Hy@boolkey{psdextra}{#1}%
2605   \HyPsd@LoadExtra
2606 }
2607 \def\hypersetup{\kvsetkeys{Hyp}}
2608 \newif\ifHy@setpdfversion
2609 \define@key{Hyp}{pdfversion}{%
2610   \@ifundefined{Hy@pdfversion@#1}{%
2611     \PackageWarning{hyperref}{%
2612       Unsupported PDF version `#1'.\MessageBreak
2613       Valid values: 1.2-1.7, 2.0%
2614     }%
2615   }%
2616   \Hy@setpdfversiontrue
2617   \@nameuse{Hy@pdfversion@#1}%
2618 }%
2619 }

```

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

```

2620 \@namedef{Hy@pdfversion@1.2}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
  norversion{2}}%
2621 \@namedef{Hy@pdfversion@1.3}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
  norversion{3}}%
2622 \@namedef{Hy@pdfversion@1.4}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
  norversion{4}}%
2623 \@namedef{Hy@pdfversion@1.5}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
  norversion{5}}%
2624 \@namedef{Hy@pdfversion@1.6}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
  norversion{6}}%
2625 \@namedef{Hy@pdfversion@1.7}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
  norversion{7}}%
2626 \@namedef{Hy@pdfversion@2.0}{\def\Hy@pdf@majorversion{2}\def\Hy@pdf@mi-
  norversion{0}}%
2627 \def\Hy@pdf@majorversion{1}\def\Hy@pdf@minorversion{5}

```

Legacy name, earlier releases assumed 1.x

```

2628 \let\Hy@pdfversion\Hy@pdf@minorversion
2629 \def\Hy@pdf@majorminor@version{\numexpr100*\Hy@pdf@majorversion+\Hy@pdf@mi-
  norversion\relax}
2630 \def\Hy@pdfmajorminor@version{\numexpr100*\Hy@pdfmajorversion+\Hy@pdfmi-
  norversion\relax}

```

if pdfminorversion is defined, make sure pdfmajorversion is too.

```

2631 \@ifundefined{pdfminorversion}{}{%
2632 \@ifundefined{pdfmajorversion}{}%

```

```

2633 \newcount\pdfmajorversion
2634 \pdfmajorversion=1
2635 }-{}%
2636 }
2637 \ifx\pdfmajorversion\@undefined\else
2638 \def\Hy@pdfmajorversion{\pdfmajorversion}
2639 \fi

```

## 10 Options for different drivers

```

2640 \newif\ifHy@DviMode
2641 \let\Hy@DviErrMsg\@empty
2642 \ifpdf
2643   \def\Hy@DviErrMsg{pdfTeX or LuaTeX is running in PDF mode}%
2644 \else
2645   \ifxetex
2646     \def\Hy@DviErrMsg{XeTeX is running}%
2647   \else
2648     \ifvtex
2649       \ifnum\OpMode=\z@
2650         \Hy@DviModetrue
2651       \else
2652         \def\Hy@DviErrMsg{VTeX is running, but not in DVI mode}%
2653       \fi
2654     \else
2655       \Hy@DviModetrue
2656     \fi
2657   \fi
2658 \fi
2659 \def\HyOpt@CheckDvi#1{%
2660   \ifHy@DviMode
2661     \expandafter\@firstofone
2662   \else
2663     \Hy@Error{%
2664       Wrong DVI mode driver option `#1',\MessageBreak
2665       because \Hy@DviErrMsg
2666     }\@ehc
2667     \expandafter\@gobble
2668   \fi
2669 }
2670 \DeclareVoidOption{tex4ht}{%
2671   \Hy@texhttrue
2672   \kvsetkeys{Hyp}{colorlinks=true}%
2673   \def\BeforeTeXIVht{\RequirePackage{color}}%
2674   \def\Hy@driver{htex4ht}%
2675   \def\MaybeStopEarly{%
2676     \Hy@Message{Stopped early}%
2677     \Hy@AtBeginDocument{%
2678       \PDF@FinishDoc
2679     }\gdef\PDF@FinishDoc{}}%
2680   }%
2681   \endinput
2682 }%
2683 }

```

```

2684 \DeclareVoidOption{pdftex}{%
2685   \ifpdf
2686   \def\Hy@driver{hpdftex}%
2687   \PassOptionsToPackage{pdftex}{color}%
2688   \else
2689   \Hy@Error{%
2690     Wrong driver option `pdftex',\MessageBreak
2691     because pdfTeX in PDF mode is not detected%
2692   }\@ehc
2693   \fi
2694 }
2695 \DeclareVoidOption{luatex}{%
2696   \ifpdf
2697   \ifx\pdfextension\@undefined
2698   \def\Hy@driver{hpdftex}%
2699   \PassOptionsToPackage{pdftex}{color}%
2700   \else
2701   \def\Hy@driver{hluatex}%
2702   \PassOptionsToPackage{luatex}{color}%
2703   \fi
2704   \else
2705   \Hy@Error{%
2706     Wrong driver option `luatex',\MessageBreak
2707     because luaTeX in PDF mode is not detected%
2708   }\@ehc
2709   \fi
2710 }
2711 \DeclareVoidOption{nativepdf}{%
2712   \HyOpt@CheckDvi{nativepdf}{%
2713     \def\Hy@driver{hdvips}%
2714     \PassOptionsToPackage{dvips}{color}%
2715   }%
2716 }
2717 \DeclareVoidOption{dvipdfm}{%
2718   \HyOpt@CheckDvi{dvipdfm}{%
2719     \def\Hy@driver{hdvipdfm}%
2720   }%
2721 }
2722 \DeclareVoidOption{dvipdfmx}{%
2723   \HyOpt@CheckDvi{dvipdfmx}{%
2724     \def\Hy@driver{hdvipdfm}%
2725     \PassOptionsToPackage{dvipdfmx}{color}%
2726   }%
2727 }
2728 \define@key{Hyp}{dvipdfmx-outline-open}[true]{%
2729   \expandafter\ifx\csname if#1\expandafter\endcsname
2730     \csname iftrue\endcsname
2731   \chardef\SpecialDvipdfmxOutlineOpen\@ne
2732   \else
2733   \chardef\SpecialDvipdfmxOutlineOpen\z@
2734   \fi
2735 }
2736 \DeclareVoidOption{xetex}{%
2737   \ifxetex

```



```

2738 \def\Hy@driver{hxtex}%
2739 \else
2740 \Hy@Error{%
2741   Wrong driver option `xetex',\MessageBreak
2742   because XeTeX is not detected%
2743 } \@ehc
2744 \fi
2745 }
2746 \DeclareVoidOption{pdfmark}{%
2747 \HyOpt@CheckDvi{pdfmark}{%
2748 \def\Hy@driver{hdvips}%
2749 }%
2750 }
2751 \DeclareVoidOption{dvips}{%
2752 \HyOpt@CheckDvi{dvips}{%
2753 \def\Hy@driver{hdvips}%
2754 \PassOptionsToPackage{dvips}{color}%
2755 }%
2756 }
2757 \DeclareVoidOption{hypertex}{%
2758 \HyOpt@CheckDvi{hypertex}{%
2759 \def\Hy@driver{hypertex}%
2760 }%
2761 }
2762 \let\Hy@MaybeStopNow\relax
2763 \DeclareVoidOption{vtex}{%
2764 \ifvtex
2765 \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2766 \def\Hy@driver{hvtex}%
2767 \else
2768 \ifnum\OpMode=10\relax
2769 \def\Hy@driver{hvtexhtm}%
2770 \def\MaybeStopEarly{%
2771 \Hy@Message{Stopped early}%
2772 \Hy@AtBeginDocument{%
2773 \PDF@FinishDoc
2774 \gdef\PDF@FinishDoc{}}%
2775 }%
2776 \endinput
2777 }%
2778 \else
2779 \Hy@Error{%
2780   Wrong driver option `vtex',\MessageBreak
2781   because of wrong OpMode (\the\OpMode)%
2782 } \@ehc
2783 \fi
2784 \fi
2785 \else
2786 \Hy@Error{%
2787   Wrong driver option `vtex',\MessageBreak
2788   because VTeX is not running%
2789 } \@ehc
2790 \fi
2791 }

```

```

2792 \DeclareVoidOption{vtxpdfmark}{%
2793   \ifvtex
2794     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2795     \def\Hy@driver{hvtexmrk}%
2796   \else
2797     \Hy@Error{%
2798       Wrong driver option `vtxpdfmark',\MessageBreak
2799       because of wrong OpMode (\the\OpMode)%
2800     }\@ehc
2801   \fi
2802 \else
2803   \Hy@Error{%
2804     Wrong driver option `vtxpdfmark',\MessageBreak
2805     because VTeX is not running%
2806   }\@ehc
2807 \fi
2808 }
2809 \DeclareVoidOption{dviwindo}{%
2810   \HyOpt@CheckDvi{dviwindo}{%
2811     \def\Hy@driver{hdvwind}%
2812     \kvsetkeys{Hyp}{colorlinks}%
2813     \PassOptionsToPackage{dviwindo}{color}%
2814   }%
2815 }
2816 \DeclareVoidOption{dvipsone}{%
2817   \HyOpt@CheckDvi{dvipsone}{%
2818     \def\Hy@driver{hdvipson}%
2819     \PassOptionsToPackage{dvipsone}{color}%
2820   }%
2821 }
2822 \DeclareVoidOption{textures}{%
2823   \HyOpt@CheckDvi{textures}{%
2824     \def\Hy@driver{htexture}%
2825   }%
2826 }
2827 \DeclareVoidOption{latex2html}{%
2828   \Hy@Warning{Option `latex2html` is obsolete. \MessageBreak
2829   A current html.sty will do all necessary (re)definitions%
2830 }%
2831 }
2832 \DeclareVoidOption{hitex}{%
2833   \ifhint
2834     \IfFileExists{hhitex.def}
2835     {\def\Hy@driver{hhitex}}%
2836     {\Hy@Warning{%
2837       Missing driver file `hhitex.def',\MessageBreak
2838       ignoring hitex driver%
2839     }}%
2840   \else
2841     \Hy@Error{%
2842       Wrong driver option `hitex',\MessageBreak
2843       because HiTeX is not detected%
2844     }\@ehc
2845   \fi

```

```

2846 }

No more special treatment for ps2pdf. Let it sink or swim.
2847 \DeclareVoidOption{ps2pdf}{%
2848   \HyOpt@CheckDvi{ps2pdf}{%
2849     \def\Hy@driver{hdvips}%
2850     \PassOptionsToPackage{dvips}{color}%
2851   }%
2852 }

2853 \let\HyOpt@DriverFallback\@empty
2854 \define@key{Hyp}{driverfallback}{%
2855   \ifHy@DviMode
2856     \def\HyOpt@DriverFallback{#1}%
2857     \Hy@Match\HyOpt@DriverFallback{}{%
2858       ~(|dvipdfm|dvipdfmx|dvips|dvipsone|dviwindo|hypertex|ps2pdf|%
2859         latex2html|tex4ht)$%
2860     }{}{%
2861       \Hy@Warning{%
2862         Invalid driver `#1' for option\MessageBreak
2863         `driverfallback'%
2864       }%
2865       \let\HyOpt@DriverFallback\@empty
2866     }%
2867   \fi
2868 }

2869 \let\HyOpt@CustomDriver\@empty
2870 \define@key{Hyp}{customdriver}{%
2871   \IfFileExists{#1.def}{%
2872     \def\HyOpt@CustomDriver{#1}%
2873   }{%
2874     \Hy@Warning{%
2875       Missing driver file `#1.def',\MessageBreak
2876       ignoring custom driver%
2877     }%
2878   }%
2879 }

```

## 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.

```

2880 \define@key{Hyp}{hyperfigures}[true]{%
2881   \Hy@boolkey{hyperfigures}{#1}%
2882 }

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

2883 \define@key{Hyp}{hyperfootnotes}[true]{%
2884   \Hy@boolkey{hyperfootnotes}{#1}%
2885 }

```

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

```

2886 \def\back@none{none}
2887 \def\back@section{section}
2888 \def\back@page{page}

```

```

2889 \def\back@slide{slide}
2890 \define@key{Hyp}{backref}[section]{%
2891 \lowercase{\def\Hy@tempa{#1}}%
2892 \ifx\Hy@tempa\@empty
2893 \let\Hy@tempa\back@section
2894 \fi
2895 \ifx\Hy@tempa\Hy@false
2896 \let\Hy@tempa\back@none
2897 \fi
2898 \ifx\Hy@tempa\back@slide
2899 \let\Hy@tempa\back@section
2900 \fi
2901 \ifx\Hy@tempa\back@page
2902 \PassOptionsToPackage{hyperpageref}{backref}%
2903 \Hy@backreftrue
2904 \else
2905 \ifx\Hy@tempa\back@section
2906 \PassOptionsToPackage{hyperref}{backref}%
2907 \Hy@backreftrue
2908 \else
2909 \ifx\Hy@tempa\back@none
2910 \Hy@backreffalse
2911 \else
2912 \Hy@WarnOptionValue{#1}{backref}{%
2913 `section', `slide', `page', `none',\MessageBreak
2914 or `false'}%
2915 \fi
2916 \fi
2917 \fi
2918 }
2919 \define@key{Hyp}{pagebackref}[true]{%
2920 \edef\Hy@tempa{#1}%
2921 \lowercase\expandafter{%
2922 \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
2923 }%
2924 \ifx\Hy@tempa\@empty
2925 \let\Hy@tempa\Hy@true
2926 \fi
2927 \ifx\Hy@tempa\Hy@true
2928 \PassOptionsToPackage{hyperpageref}{backref}%
2929 \Hy@backreftrue
2930 \else
2931 \ifx\Hy@tempa\Hy@false
2932 \Hy@backreffalse
2933 \else
2934 \Hy@WarnOptionValue{#1}{pagebackref}{`true' or `false'}%
2935 \fi
2936 \fi
2937 }

```

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

```

2938 \define@key{Hyp}{hyperindex}[true]{%
2939 \Hy@boolkey{hyperindex}{#1}%

```

```

2940 }
Configuration of encap char.
2941 \define@key{Hyp}{encap}{\|}{%
2942 \def\HyInd@EncapChar{#1}%
2943 }

```

## 12 Language options

The \autoref feature depends on the language.

```

2944 \def\HyLang@afrikaans{%
2945 \def\equationautorefname{Vergelyking}%
2946 \def\footnoteautorefname{Voetnota}%
2947 \def\itemautorefname{Item}%
2948 \def\figureautorefname{Figuur}%
2949 \def\tableautorefname{Tabel}%
2950 \def\partautorefname{Deel}%
2951 \def\appendixautorefname{Bylae}%
2952 \def\chapterautorefname{Hoofstuk}%
2953 \def\sectionautorefname{Afdeling}%
2954 \def\subsectionautorefname{Subafdeling}%
2955 \def\subsubsectionautorefname{Subsubafdeling}%
2956 \def\paragraphautorefname{Paragraaf}%
2957 \def\subparagraphautorefname{Subparagraaf}%
2958 \def\FancyVerbLineautorefname{Lyn}%
2959 \def\theoremautorefname{Teorema}%
2960 \def\pageautorefname{Bladsy}%
2961 }
2962 \def\HyLang@english{%
2963 \def\equationautorefname{Equation}%
2964 \def\footnoteautorefname{footnote}%
2965 \def\itemautorefname{item}%
2966 \def\figureautorefname{Figure}%
2967 \def\tableautorefname{Table}%
2968 \def\partautorefname{Part}%
2969 \def\appendixautorefname{Appendix}%
2970 \def\chapterautorefname{chapter}%
2971 \def\sectionautorefname{section}%
2972 \def\subsectionautorefname{subsection}%
2973 \def\subsubsectionautorefname{subsubsection}%
2974 \def\paragraphautorefname{paragraph}%
2975 \def\subparagraphautorefname{subparagraph}%
2976 \def\FancyVerbLineautorefname{line}%
2977 \def\theoremautorefname{Theorem}%
2978 \def\pageautorefname{page}%
2979 }
2980 \def\HyLang@french{%
2981 \def\equationautorefname{\'equation}%
2982 \def\footnoteautorefname{note}%
2983 \def\itemautorefname{item}%
2984 \def\figureautorefname{figure}%
2985 \def\tableautorefname{tableau}%
2986 \def\partautorefname{partie}%

```

```

2987 \def\appendixautorefname{annexe}%
2988 \def\chapterautorefname{chapitre}%
2989 \def\sectionautorefname{section}%
2990 \def\subsectionautorefname{sous-section}%
2991 \def\subsubsectionautorefname{sous-sous-section}%
2992 \def\paragraphautorefname{paragraphe}%
2993 \def\subparagraphautorefname{sous-paragraphe}%
2994 \def\FancyVerbLineautorefname{ligne}%
2995 \def\theoremautorefname{th\`eor\`eme}%
2996 \def\pageautorefname{page}%
2997 }
2998 \def\HyLang@german{%
2999 \def\equationautorefname{Gleichung}%
3000 \def\footnoteautorefname{Fu\`uss note}%
3001 \def\itemautorefname{Punkt}%
3002 \def\figureautorefname{Abbildung}%
3003 \def\tableautorefname{Tabelle}%
3004 \def\partautorefname{Teil}%
3005 \def\appendixautorefname{Anhang}%
3006 \def\chapterautorefname{Kapitel}%
3007 \def\sectionautorefname{Abschnitt}%
3008 \def\subsectionautorefname{Unterabschnitt}%
3009 \def\subsubsectionautorefname{Unterunterabschnitt}%
3010 \def\paragraphautorefname{Absatz}%
3011 \def\subparagraphautorefname{Unterabsatz}%
3012 \def\FancyVerbLineautorefname{Zeile}%
3013 \def\theoremautorefname{Theorem}%
3014 \def\pageautorefname{Seite}%
3015 }
3016 \def\HyLang@italian{%
3017 \def\equationautorefname{Equazione}%
3018 \def\footnoteautorefname{nota}%
3019 \def\itemautorefname{punto}%
3020 \def\figureautorefname{Figura}%
3021 \def\tableautorefname{Tabella}%
3022 \def\partautorefname{Parte}%
3023 \def\appendixautorefname{Appendice}%
3024 \def\chapterautorefname{Capitolo}%
3025 \def\sectionautorefname{sezione}%
3026 \def\subsectionautorefname{sottosezione}%
3027 \def\subsubsectionautorefname{sottosottosezione}%
3028 \def\paragraphautorefname{paragrafo}%
3029 \def\subparagraphautorefname{sottoparagrafo}%
3030 \def\FancyVerbLineautorefname{linea}%
3031 \def\theoremautorefname{Teorema}%
3032 \def\pageautorefname{Pag.\@}%
3033 }
3034 \def\HyLang@magyar{%
3035 \def\equationautorefname{Egyenlet}%
3036 \def\footnoteautorefname{1\`abjegyzet}%
3037 \def\itemautorefname{Elem}%
3038 \def\figureautorefname{\`Abra}%
3039 \def\tableautorefname{T\`abl\`azat}%
3040 \def\partautorefname{R\`esz}%

```

```

3041 \def\appendixautorefname{F\"uggel\'ek}%
3042 \def\chapterautorefname{fejezet}%
3043 \def\sectionautorefname{szakasz}%
3044 \def\subsectionautorefname{alszakasz}%
3045 \def\subsubsectionautorefname{alalszakasz}%
3046 \def\paragraphautorefname{bekezd\'es}%
3047 \def\subparagraphautorefname{albekezd\'es}%
3048 \def\FancyVerbLineautorefname{sor}%
3049 \def\theoremautorefname{T\'etel}%
3050 \def\pageautorefname{oldal}%
3051 }
3052 \def\HyLang@portuges{%
3053 \def\equationautorefname{Equa\c c\~ao}%
3054 \def\footnoteautorefname{Nota de rodap\'e}%
3055 \def\itemautorefname{Item}%
3056 \def\figureautorefname{Figura}%
3057 \def\tableautorefname{Tabela}%
3058 \def\partautorefname{Parte}%
3059 \def\appendixautorefname{Ap\^endice}%
3060 \def\chapterautorefname{Cap\'itulo}%
3061 \def\sectionautorefname{Se\c c\~ao}%
3062 \def\subsectionautorefname{Subse\c c\~ao}%
3063 \def\subsubsectionautorefname{Subsubse\c c\~ao}%
3064 \def\paragraphautorefname{par\'agrafo}%
3065 \def\subparagraphautorefname{subpar\'agrafo}%
3066 \def\FancyVerbLineautorefname{linha}%
3067 \def\theoremautorefname{Teorema}%
3068 \def\pageautorefname{P\'agina}%
3069 }

```

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`.

```
3070 \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`?

```
3071 \def\equationautorefname{\cyr\cyrv\cyrry\cyrr.}%
```

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

```
3072 % \def\equationautorefname{%
3073 % \cyr\cyrv\cyrry\cyrr\cyra\cyrzh\cyre\cyrn\cyri\cyre
3074 % }%
```

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

```
3075 \def\footnoteautorefname{%
```

```

3076 \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr.\ \cyrp\cyrr\cyri\cyrm.%
3077 }%

```

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}”

```

3078 % \def\footnoteautorefname{%
3079 % \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr\cyro\cyrch\cyrn\cyro\cyre\ %
3080 % \cyrp\cyrr\cyri\cyrm\cyre\cyrch\cyra\cyrn\cyri\cyre
3081 % }%

```

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

```

3082 % \def\Nomfootnoteautorefname{\cyr\cyrs\cyrn\cyro\cyrs\cyrk\cyra}%
3083 % \def\Accfootnoteautorefname{\cyr\cyrs\cyrn\cyro\cyrs\cyrk\cyru}%

```

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

```

3084 \def\itemautorefname{\cyr\cyrp.}%
3085 % \def\itemautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyrt}%

```

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

```

3086 \def\figureautorefname{\cyr\cyrr\cyri\cyrs.}%
3087 \def\tableautorefname{\cyr\cyrt\cyra\cyrb\cyrl.}%

```

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

```

3088 \def\partautorefname{\cyr\cyrch.}%
3089 \def\chapterautorefname{\cyr\cyrg\cyrl.}%
3090 \def\sectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%

```

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

```

3091 \def\appendixautorefname{\cyr\cyrp\cyrr\cyri\cyrl.}%
3092 % \def\appendixautorefname{%
3093 % \cyr\cyrp\cyrr\cyri\cyrl\cyro\cyrz\cyre\cyrn\cyri\cyre
3094 % }%

```

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.

```

3095 \def\subsectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
3096 \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.

```

3097 \def\paragraphautorefname{\cyr\cyrp.}%
3098 \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.



```

3099 % \def\paragraphautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyrt}%
3100 % \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.

```

3101 \def\FancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr.}%

```

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

```

3102 % \def\NomFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyra}%
3103 % \def\AccFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyru}%

```

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

```

3104 % \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 ...

```

3105 \def\theoremautorefname{\cyr\cyrt\cyre\cyro\cyrr.}%

```

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

```

3106 % \def\Nomtheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyra}%
3107 % \def\Acctheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyru}%

```

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

```

3108 \def\pageautorefname{\cyr\cyrs.}%
3109 }

```

```

3110 \def\HyLang@spanish{%
3111 \def\equationautorefname{Ecuaci\`on}%
3112 \def\footnoteautorefname{Nota a pie de p\`agina}%
3113 \def\itemautorefname{Elemento}%
3114 \def\figureautorefname{Figura}%
3115 \def\tableautorefname{Tabla}%
3116 \def\partautorefname{Parte}%
3117 \def\appendixautorefname{Ap\`endice}%
3118 \def\chapterautorefname{Cap\`itulo}%
3119 \def\sectionautorefname{Secci\`on}%
3120 \def\subsectionautorefname{Subsecci\`on}%
3121 \def\subsubsectionautorefname{Subsubsecci\`on}%
3122 \def\paragraphautorefname{P\`arrafo}%
3123 \def\subparagraphautorefname{Subp\`arrafo}%
3124 \def\FancyVerbLineautorefname{L\`inea}%
3125 \def\theoremautorefname{Teorema}%
3126 \def\pageautorefname{P\`agina}%
3127 }

```

```

3128 \def\HyLang@catalan{%
3129 \def\equationautorefname{Equaci\`o}%
3130 \def\footnoteautorefname{Nota al peu de p\`agina}%
3131 \def\itemautorefname{Element}%
3132 \def\figureautorefname{Figura}%
3133 \def\tableautorefname{Taula}%
3134 \def\partautorefname{Part}%

```

```

3135 \def\appendixautorefname{Ap\`endix}%
3136 \def\chapterautorefname{Cap\`itol}%
3137 \def\sectionautorefname{Secci\`o}%
3138 \def\subsectionautorefname{Subsecci\`o}%
3139 \def\subsubsectionautorefname{Subsubsecci\`o}%
3140 \def\paragraphautorefname{Par\`agraf}%
3141 \def\subparagraphautorefname{Subpar\`agraf}%
3142 \def\FancyVerbLineautorefname{L\`inia}%
3143 \def\theoremautorefname{Teorema}%
3144 \def\pageautorefname{P\`agina}%
3145 }

3146 \def\HyLang@vietnamese{%
3147   \def\equationautorefname{Ph\`uhorn}\ohorn{}ng tr\`inh}%
3148   \def\footnoteautorefname{Ch\`u th\`ich}%
3149   \def\itemautorefname{m\`d{u}c}%
3150   \def\figureautorefname{H\`inh}%
3151   \def\tableautorefname{B\`h{a}ng}%
3152   \def\partautorefname{Ph\`acircumflex{}n}%
3153   \def\appendixautorefname{Ph\`d{u}l\`d{u}c}%
3154   \def\chapterautorefname{ch\`uhorn}\ohorn{}ng}%
3155   \def\sectionautorefname{m\`d{u}c}%
3156   \def\subsectionautorefname{m\`d{u}c}%
3157   \def\subsubsectionautorefname{m\`d{u}c}%
3158   \def\paragraphautorefname{\`dj{o}d{a}n}%
3159   \def\subparagraphautorefname{\`dj{o}d{a}n}%
3160   \def\FancyVerbLineautorefname{d\`ong}%
3161   \def\theoremautorefname{\`DJ}\`d{i}nh l\`y}%
3162   \def\pageautorefname{Trang}%
3163 }

```

Greek, see github issue 52

```

3164 \def\HyLang@greek{%
3165   \def\equationautorefname{\textEpsilon\textxi\acconos\textiota\textsigma\textomega\textsigma\texteta}%
3166     \def\footnoteautorefname{\textupsilon\textpi\textomicron\textsigma\texteta\textmu\textepsilon\acconos\textiota\textomega\textsigma\texteta}%
3167     \def\itemautorefname{\textalpha\textnu\texttau\textiota\textkappa\textepsilon\acconos\textiota\textmu\textepsilon\textnu\textomicron}%
3168     \def\figureautorefname{\textSigma\textchi\acconos\texteta\textmu\textalpha}%
3169     \def\tableautorefname{\textPi\acconos\textiota\textnu\textalpha\textkappa\textalpha}%
3170     \def\partautorefname{\textMu\acconos\textepsilon\textrho\textomicron\textvarsigma}%
3171     \def\appendixautorefname{\textPi\textalpha\textrho\acconos\textalpha\textrho\texttau\texteta\textmu\textalpha}%
3172     \def\chapterautorefname{\textkappa\textepsilon\textphi\acconos\textalpha\textlambda\textalpha\textiota\textomicron}%
3173     \def\sectionautorefname{\textepsilon\textnu\acconos\textomicron\texttau\texteta\texttau\textalpha}%
3174     \def\subsectionautorefname{\textupsilon\textpi\textomicron\textepsilon\textnu\acconos\textomicron\texttau\texteta\texttau\textalpha}%
3175     \def\subsubsectionautorefname{\textupsilon\textpi\textomicron-\textupsilon\textpi\textomicron\texteta\texttau\textalpha}%
3176     \def\paragraphautorefname{\textpi\textalpha\textrho\acconos\textalpha\textgamma\texteta-

```

```

trho\textalpha\textphi\textomicron\textvarsigma}%
3177 \def\subparagraphautorefname{\textupsilon\textpi\textomicron\textpi\textalpha\textrho\acctonos\textalpha\textgamma\textrho\textalpha\textphi\textomicron\textvarsigma}%
3178 \def\FancyVerbLineautorefname{\textgamma\textrho\textalpha\textmu\textmu\acctonos\texteta}%
3179 \def\theoremautorefname{\textTheta\textepsilon\acctonos\textomega\textrho\texteta\textmu\textalpha}%
3180 \def\pageautorefname{\textsigma\textepsilon\textlambda\acctonos\textiota\textdelta\textalpha}%
3181 }

3182 \def\HyLang@dutch{%
3183 \def\equationautorefname{Vergelijking}%
3184 \def\footnoteautorefname{voetnoot}%
3185 \def\itemautorefname{punt}%
3186 \def\figureautorefname{Figuur}%
3187 \def\tableautorefname{Tabel}%
3188 \def\partautorefname{Deel}%
3189 \def\appendixautorefname{Bijlage}%
3190 \def\chapterautorefname{hoofdstuk}%
3191 \def\sectionautorefname{paragraaf}%
3192 \def\subsectionautorefname{deelparagraaf}%
3193 \def\subsubsectionautorefname{deel-deelparagraaf}%
3194 \def\paragraphautorefname{alinea}%
3195 \def\subparagraphautorefname{deelalinea}%
3196 \def\FancyVerbLineautorefname{regel}%
3197 \def\theoremautorefname{Stelling}%
3198 \def\pageautorefname{pagina}%
3199 }

3200 \def\HyLang@norsk{%
3201 \def\equationautorefname{Ligning}%
3202 \def\footnoteautorefname{fotnote}%
3203 \def\itemautorefname{element}%
3204 \def\figureautorefname{Figur}%
3205 \def\tableautorefname{Tabell}%
3206 \def\partautorefname{Del}%
3207 \def\appendixautorefname{Tillegg}%
3208 \def\chapterautorefname{kapittel}%
3209 \def\sectionautorefname{seksjon}%
3210 \def\subsectionautorefname{underseksjon}%
3211 \def\subsubsectionautorefname{under-underseksjon}%
3212 \def\paragraphautorefname{avsnitt}%
3213 \def\subparagraphautorefname{underavsnitt}%
3214 \def\FancyVerbLineautorefname{Linje}%
3215 \def\theoremautorefname{Teorem}%
3216 \def\pageautorefname{side}%
3217 }

3218 \def\HyLang@danish{%
3219 \def\equationautorefname{Ligning}%
3220 \def\footnoteautorefname{fodnote}%
3221 \def\itemautorefname{element}%
3222 \def\figureautorefname{Figur}%
3223 \def\tableautorefname{Tabel}%
3224 \def\partautorefname{Del}%

```

```

3225 \def\appendixautorefname{Bilag}%
3226 \def\chapterautorefname{kapitel}%
3227 \def\sectionautorefname{sektion}%
3228 \def\subsectionautorefname{under-sektion}%
3229 \def\subsubsectionautorefname{under-under-sektion}%
3230 \def\paragraphautorefname{afsnit}%
3231 \def\subparagraphautorefname{underafsnit}%
3232 \def\FancyVerbLineautorefname{linje}%
3233 \def\theoremautorefname{Teorem}%
3234 \def\pageautorefname{side}%
3235 }
3236 \def\HyLang@swedish{%
3237 \def\equationautorefname{Ekvation}%
3238 \def\footnoteautorefname{fotnot}%
3239 \def\itemautorefname{punkt}%
3240 \def\figureautorefname{Figur}%
3241 \def\tableautorefname{Tabell}%
3242 \def\partautorefname{Del}%
3243 \def\appendixautorefname{Bilaga}%
3244 \def\chapterautorefname{kapitel}%
3245 \def\sectionautorefname{avsnitt}%
3246 \def\subsectionautorefname{underavsnitt}%
3247 \def\subsubsectionautorefname{under-underavsnitt}%
3248 \def\paragraphautorefname{paragraf}%
3249 \def\subparagraphautorefname{underparagraf}%
3250 \def\FancyVerbLineautorefname{linje}%
3251 \def\theoremautorefname{Teorem}%
3252 \def\pageautorefname{sida}%
3253 }

```

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

```

3254 \def\HyLang@addto#1#2{%
3255 #2%
3256 \@temptokena{#2}%
3257 \ifx#1\relax
3258 \let#1\@empty
3259 \fi
3260 \ifx#1\@undefined
3261 \edef#1{\the\@temptokena}%
3262 \else
3263 \toks@\expandafter{#1}%
3264 \edef#1{\the\toks@\the\@temptokena}%
3265 \fi
3266 \@temptokena{\toks@\@temptokena}
3267 }
3268 \def\HyLang@DeclareLang#1#2#3{%
3269 \ifcsname extras#1\endcsname
3270 \expandafter\HyLang@addto
3271 \csname extras#1\expandafter\endcsname
3272 \csname HyLang@#2\endcsname
3273 \begingroup
3274 \edef\x{\endgroup
3275 #3%

```

```

3276 }%
3277 \x
3278 \@namedef{HyLang@#1@done}{}%
3279 \fi
3280 \begingroup
3281 \edef\x##1##2{%
3282 \noexpand\ifx##2\relax
3283 \errmessage{No definitions for language #2' found!}%
3284 \noexpand\fi
3285 \endgroup
3286 \noexpand\define@key{Hyp}{#1}[]{}%
3287 \noexpand\@ifundefined{HyLang@#1@done}{}%
3288 \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
3289 #3%
3290 \noexpand\@namedef{HyLang@#1@done}{}%
3291 }{}%
3292 }%
3293 }%
3294 \expandafter\x\csname extras#1\expandafter\endcsname
3295 \csname HyLang@#2\endcsname
3296 }
3297 \HyLang@DeclareLang{english}{english}{}
3298 \HyLang@DeclareLang{UKenglish}{english}{}
3299 \HyLang@DeclareLang{british}{english}{}
3300 \HyLang@DeclareLang{USenglish}{english}{}
3301 \HyLang@DeclareLang{american}{english}{}
3302 \HyLang@DeclareLang{german}{german}{}
3303 \HyLang@DeclareLang{austrian}{german}{}
3304 \HyLang@DeclareLang{ngerman}{german}{}
3305 \HyLang@DeclareLang{naustrian}{german}{}
3306 \HyLang@DeclareLang{nswissgerman}{german}{}
3307 \HyLang@DeclareLang{swissgerman}{german}{}
3308 \HyLang@DeclareLang{russian}{russian}{\noexpand\hypersetup{unicode}}
3309 \HyLang@DeclareLang{brazil}{portuges}{}
3310 \HyLang@DeclareLang{brazilian}{portuges}{}
3311 \HyLang@DeclareLang{portuguese}{portuges}{}
3312 \HyLang@DeclareLang{spanish}{spanish}{}
3313 \HyLang@DeclareLang{catalan}{catalan}{}
3314 \HyLang@DeclareLang{afrikaans}{afrikaans}{}
3315 \HyLang@DeclareLang{french}{french}{}
3316 \HyLang@DeclareLang{frenchb}{french}{}
3317 \HyLang@DeclareLang{français}{french}{}
3318 \HyLang@DeclareLang{acadian}{french}{}
3319 \HyLang@DeclareLang{canadien}{french}{}
3320 \HyLang@DeclareLang{italian}{italian}{}
3321 \HyLang@DeclareLang{magyar}{magyar}{}
3322 \HyLang@DeclareLang{hungarian}{magyar}{}
3323 \HyLang@DeclareLang{greek}{greek}{}
3324 \HyLang@DeclareLang{dutch}{dutch}{}
3325 \HyLang@DeclareLang{norsk}{norsk}{}
3326 \HyLang@DeclareLang{norwegian}{norsk}{}
3327 \HyLang@DeclareLang{danish}{danish}{}
3328 \HyLang@DeclareLang{swedish}{swedish}{}

```

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

```

3329 \DeclareVoidOption{vietnamese}{%
3330   \HyLang@addto\extrasvietnamese\HyLang@vietnamese
3331   \Hy@AtEndOfPackage{%
3332     \@ifundefined{T@PU}{}{%
3333       \input{puvnenc.def}%
3334     }%
3335   }%
3336 }
3337 \DeclareVoidOption{vietnam}{%
3338   \HyLang@addto\extrasvietnam\HyLang@vietnamese
3339   \Hy@AtEndOfPackage{%
3340     \@ifundefined{T@PU}{}{%
3341       \input{puvnenc.def}%
3342     }%
3343   }%
3344 }

```

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

```

3345 \DeclareVoidOption{arabic}{%
3346   \Hy@AtEndOfPackage{%
3347     \@ifundefined{T@PU}{}{%
3348       \input{puarenc.def}%
3349     }%
3350   }%
3351 }

```

## 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.

```

3352 \define@key{Hyp}{colorlinks}[true]{%
3353   \Hy@boolkey{colorlinks}{#1}%
3354 }
3355 \DeclareVoidOption{hidelinks}{%
3356   \Hy@colorlinksfalse
3357   \Hy@ocgcolorlinksfalse
3358   \Hy@frenchlinksfalse
3359   \def\Hy@colorlink##1{\begingroup}%
3360   \def\Hy@endcolorlink{\endgroup}%
3361   \def\@pdfborder{0 0 0}%
3362   \let\@pdfborderstyle\@empty
3363 }
3364 \define@key{Hyp}{ocgcolorlinks}[true]{%
3365   \Hy@boolkey{ocgcolorlinks}{#1}%
3366 }
3367 \Hy@AtBeginDocument{%
3368   \begingroup
3369   \@ifundefined{OBJ@OCG@view}{%
3370     \ifHy@ocgcolorlinks
3371     \Hy@Warning{%
3372       Driver does not support `ocgcolorlinks',\MessageBreak
3373       using `colorlinks' instead%
3374     }%

```

```

3375     \fi
3376   }{}%
3377 \endgroup
3378 }
3379 \define@key{Hyp}{frenchlinks}[true]{%
3380   \Hy@boolkey{frenchlinks}{#1}%
3381 }

```

## 14 Bookmarking

```

3382 \begingroup\expandafter\expandafter\expandafter\endgroup
3383 \expandafter\ifx\csname chapter\endcsname\relax
3384   \def\toclevel@part{0}%
3385 \else
3386   \def\toclevel@part{-1}%
3387 \fi
3388 \def\toclevel@chapter{0}
3389 \def\toclevel@section{1}
3390 \def\toclevel@subsection{2}
3391 \def\toclevel@subsubsection{3}
3392 \def\toclevel@paragraph{4}
3393 \def\toclevel@subparagraph{5}
3394 \def\toclevel@figure{0}
3395 \def\toclevel@table{0}

3396 \define@key{Hyp}{bookmarks}[true]{%
3397   \Hy@boolkey{bookmarks}{#1}%
3398 }

3399 \define@key{Hyp}{bookmarksopen}[true]{%
3400   \Hy@boolkey{bookmarksopen}{#1}%
3401 }

```

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.

```

3402 \let\Hy@bookmarksdepth\c@tocdepth
3403 \define@key{Hyp}{bookmarksdepth}[]{}%
3404 \begingroup
3405   \edef\x{#1}%
3406   \ifx\x\empty
3407     \global\let\Hy@bookmarksdepth\c@tocdepth
3408   \else
3409     \@ifundefined{toclevel@\x}{%
3410       \@onelevel@sanitize\x
3411       \edef\y{\expandafter\@car\x\@nil}%
3412       \ifcase 0\expandafter\ifx\y-1\fi

```

```

3413         \expandafter\ifnum\expandafter`\y>47 %
3414         \expandafter\ifnum\expandafter`\y<58 1\fi\fi\relax
3415     \Hy@Warning{Unknown document division name (\x)}%
3416 \else
3417     \setbox\z@=\hbox{%
3418         \count@=\x
3419         \xdef\Hy@bookmarksdepth{\the\count@}%
3420     }%
3421 \fi
3422 }{%
3423     \setbox\z@=\hbox{%
3424         \count@=\csname toplevel@\x\endcsname
3425         \xdef\Hy@bookmarksdepth{\the\count@}%
3426     }%
3427 }%
3428 \fi
3429 \endgroup
3430 }

```

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

```

3431 \define@key{Hyp}{bookmarksopenlevel}{%
3432 \def\@bookmarksopenlevel{#1}%
3433 }
3434 \def\@bookmarksopenlevel{\maxdimen}
3435 % `bookmarkstype' to specify which `toc' file to mimic
3436 \define@key{Hyp}{bookmarkstype}{%
3437 \def\Hy@bookmarkstype{#1}%
3438 }
3439 \def\Hy@bookmarkstype{toc}

```

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

```

3440 \define@key{Hyp}{bookmarksnumbered}[true]{%
3441 \Hy@boolkey{bookmarksnumbered}{#1}%
3442 }

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

3443 \define@key{Hyp}{CJKbookmarks}[true]{%
3444 \Hy@boolkey{CJKbookmarks}{#1}%
3445 }

3446 \def\Hy@temp#1{%
3447 \expandafter\Hy@@temp\csname @#1color\endcsname{#1}%
3448 }
3449 \def\Hy@@temp#1#2#3{%
3450 \define@key{Hyp}{#2color}{%
3451 \HyColor@HyperrefColor{##1}#1%
3452 }%
3453 \def##1{#3}%
3454 }
3455 \Hy@temp{link}{red}
3456 \Hy@temp{anchor}{black}
3457 \Hy@temp{cite}{green}
3458 \Hy@temp{file}{cyan}
3459 \Hy@temp{url}{magenta}
3460 \Hy@temp{menu}{red}

```



```

3461 \Hy@temp{run}{\@filecolor}
3462 \define@key{Hyp}{pagecolor}{%
3463   \Hy@WarningPageColor
3464 }
3465 \def\Hy@WarningPageColor{%
3466   \Hy@WarningNoLine{Option `pagecolor' is not available anymore}%
3467   \global\let\Hy@WarningPageColor\relax
3468 }
3469 \define@key{Hyp}{allcolors}{%
3470   \HyColor@HyperrefColor{#1}\@linkcolor
3471   \HyColor@HyperrefColor{#1}\@anchorcolor
3472   \HyColor@HyperrefColor{#1}\@citecolor
3473   \HyColor@HyperrefColor{#1}\@filecolor
3474   \HyColor@HyperrefColor{#1}\@urlcolor
3475   \HyColor@HyperrefColor{#1}\@menucolor
3476   \HyColor@HyperrefColor{#1}\@runcolor
3477 }

3478 \def\hyperbaseurl#1{\def\@baseurl{#1}}
3479 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
3480 \let\@baseurl\@empty
3481 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
3482 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
3483 \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.

```

3484 \let\@pdfpagetransition\relax
3485 \define@key{Hyp}{pdfpagetransition}{%
3486   \def\@pdfpagetransition{#1}%
3487 }

```

`\@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.

```

3488 \let\@pdfpageduration\relax
3489 \define@key{Hyp}{pdfpageduration}{%
3490   \def\@pdfpageduration{#1}%
3491   \Hy@Match\@pdfpageduration{}{%
3492     ^(|[0-9]+\.[0-9]*|[0-9]*\.[0-9]+)$%
3493   }{}{%
3494     \Hy@Warning{%
3495       Invalid value `'\@pdfpageduration'\MessageBreak
3496       of option `pdfpageduration'\MessageBreak
3497       is replaced by an empty value%
3498     }%
3499     \let\@pdfpageduration\@empty
3500   }%
3501 }

```

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).

```

3502 \def\Hy@ColorList{cite,file,link,menu,run,url}
3503 \@for\Hy@temp:=\Hy@ColorList\do{%
3504   \edef\Hy@temp{%
3505     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
3506       \noexpand\HyColor@HyperrefBorderColor
3507         {##1}%
3508         \expandafter\noexpand\csname @\Hy@temp bordercolor\endcsname
3509         {hyperref}%
3510         {\Hy@temp bordercolor}%
3511     }%
3512 }%
3513 \Hy@temp
3514 }
3515 \define@key{Hyp}{pagebordercolor}{%
3516   \Hy@WarningPageBorderColor
3517 }
3518 \def\Hy@WarningPageBorderColor{%
3519   \Hy@WarningNoLine{Option `pagebordercolor' is not available anymore}%
3520   \global\let\Hy@WarningPageBorderColor\relax
3521 }
3522 \define@key{Hyp}{allbordercolors}{%
3523   \def\Hy@temp##1##2{%
3524     \HyColor@HyperrefBorderColor{##1}##1{hyperref}{##2bordercolor}%
3525   }%
3526   \Hy@temp\@citebordercolor{cite}%
3527   \Hy@temp\@filebordercolor{file}%
3528   \Hy@temp\@linkbordercolor{link}%
3529   \Hy@temp\@menubordercolor{menu}%
3530   \Hy@temp\@runbordercolor{run}%
3531   \Hy@temp\@urlbordercolor{url}%
3532 }
3533 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{##1}}
3534 \Hy@DefNameKey{pdfhighlight}{%
3535   \do{/I}{Invert}%
3536   \do{/N}{None}%
3537   \do{/O}{Outline}%
3538   \do{/P}{Push}%
3539 }
3540 \def\Hy@setpdfhighlight{%
3541   \ifx\@pdfhighlight\@empty
3542     \else
3543       /H\@pdfhighlight
3544     \fi
3545 }
3546 \define@key{Hyp}{pdfborder}{%

```

```

3547 \let\Hy@temp\@pdfborder
3548 \def\@pdfborder{#1}%
3549 \Hy@Match\@pdfborder{ }{%
3550   ^\HyPat@NonNegativeReal/ %
3551   \HyPat@NonNegativeReal/ %
3552   \HyPat@NonNegativeReal/%
3553   ( ?\[\HyPat@NonNegativeReal/( \HyPat@NonNegativeReal/)*]?$%
3554   }{ }{%
3555   \Hy@Warning{%
3556     Invalid value ` \@pdfborder'\MessageBreak
3557     for option `pdfborder'.\MessageBreak
3558     Option setting is ignored%
3559   }%
3560   \let\@pdfborder\Hy@temp
3561 }%
3562 }
3563 \define@key{Hyp}{pdfborderstyle}{%
3564 \let\Hy@temp\@pdfborderstyle
3565 \def\@pdfborderstyle{#1}%
3566 \Hy@Match\@pdfborderstyle{ }{%
3567   ^%
3568   ( */Type */Border%
3569   | */W +\HyPat@NonNegativeReal/%
3570   | */S */[SDBIU]%
3571   | */D *\[ *(\HyPat@NonNegativeReal/( \HyPat@NonNegativeReal/)?)?%
3572   )* *$%
3573   }{ }{%
3574   \Hy@Warning{%
3575     Invalid value ` \@pdfborderstyle'\MessageBreak
3576     for option `pdfborderstyle'.\MessageBreak
3577     Option setting is ignored%
3578   }%
3579   \let\@pdfborderstyle\Hy@temp
3580 }%
3581 }
3582 \def\Hy@setpdfborder{%
3583 \ifx\@pdfborder\@empty
3584 \else
3585   /Border[\@pdfborder]%
3586 \fi
3587 \ifx\@pdfborderstyle\@empty
3588 \else
3589   /BS<<\@pdfborderstyle>>%
3590 \fi
3591 }
3592 \Hy@DefNameKey{pdfpagemode}{%
3593 \do{UseNone}{ }%
3594 \do{UseOutlines}{ }%
3595 \do{UseThumbs}{ }%
3596 \do{FullScreen}{ }%
3597 \do{UseOC}{PDF 1.5}%
3598 \do{UseAttachments}{PDF 1.6}%
3599 }
3600 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%

```

```

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

```

```

3655 }
3656 \Hy@DefNameKey{pdfnumcopies}{%
3657   \do{2}{two copies}%
3658   \do{3}{three copies}%
3659   \do{4}{four copies}%
3660   \do{5}{five copies}%
3661 }

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

```

```

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

```

```

3763     \def\@pdftrapped{}%
3764     \fi
3765     \fi
3766     \fi
3767 }
3768 \def\HyInfo@trapped@true{true}
3769 \def\HyInfo@trapped@false{false}
3770 \def\HyInfo@trapped@unknown{unknown}
3771 \def\HyInfo@TrappedUnsupported{%
3772     \ifx\@pdftrapped\@empty
3773     \else
3774     \Hy@WarningNoLine{\pdftrapped' is not supported by this driver}%
3775     \gdef\HyInfo@TrappedUnsupported{}%
3776     \fi
3777 }
3778 \define@key{Hyp}{pdfinfo}{%
3779     \kvsetkeys{pdfinfo}{#1}%
3780 }
3781 \def\Hy@temp#1{%
3782     \lowercase{\Hy@temp@A{#1}}{#1}%
3783 }
3784 \def\Hy@temp@A#1#2{%
3785     \define@key{pdfinfo}{#2}{%
3786         \hypersetup{pdf#1={##1}}%
3787     }%
3788 }
3789 \Hy@temp{Title}
3790 \Hy@temp{Author}
3791 \Hy@temp{Keywords}
3792 \Hy@temp{Subject}
3793 \Hy@temp{Creator}
3794 \Hy@temp{Producer}
3795 \Hy@temp{CreationDate}
3796 \Hy@temp{ModDate}
3797 \Hy@temp{Trapped}
3798 \newif\ifHyInfo@AddonUnsupported
3799 \kv@set@family@handler{pdfinfo}{%
3800     \HyInfo@AddonHandler{#1}{#2}%
3801 }
3802 \let\HyInfo@do\relax
3803 \def\HyInfo@AddonHandler#1#2{%
3804     \ifx\kv@value\relax
3805     \Hy@Warning{%
3806         Option `pdfinfo': ignoring key `\'kv@key' without value%
3807     }%
3808     \else
3809     \EdefEscapeName\HyInfo@KeyEscaped{\kv@key}%
3810     \EdefUnescapeName\HyInfo@Key{\HyInfo@KeyEscaped}%
3811     \expandafter\ifx\csname KV@pdfinfo@\HyInfo@Key\endcsname\relax
3812     \ifHyInfo@AddonUnsupported
3813     \Hy@Warning{%
3814         This driver does not support additional\MessageBreak
3815         information entries, therefore\MessageBreak
3816         `\'kv@key' is ignored%

```

```

3817 }%
3818 \else
3819 \def\HyInfo@tmp###1{%
3820 \kv@define@key{pdfinfo}{##1}{%
3821 \HyXeTeX@CheckUnicode
3822 \HyPsd@PrerenderUnicode{###1}%
3823 \pdfstringdef\HyInfo@Value{###1}%
3824 \global\expandafter
3825 \let\csname HyInfo@Value@##1\endcsname
3826 \HyInfo@Value
3827 }%
3828 }%
3829 \expandafter\HyInfo@tmp\expandafter{\HyInfo@Key}%
3830 \global\expandafter
3831 \let\csname KV@pdfinfo@\HyInfo@Key\expandafter\endcsname
3832 \csname KV@pdfinfo@\HyInfo@Key\endcsname
3833 \xdef\HyInfo@AddonList{%
3834 \HyInfo@AddonList
3835 \HyInfo@do{\HyInfo@Key}%
3836 }%
3837 \expandafter\kv@parse@normalized\expandafter{%
3838 \HyInfo@Key={#2}%
3839 }{%
3840 \kv@processor@default{pdfinfo}%
3841 }%
3842 \fi
3843 \else
3844 \expandafter\kv@parse@normalized\expandafter{%
3845 \HyInfo@Key={#2}%
3846 }{%
3847 \kv@processor@default{pdfinfo}%
3848 }%
3849 \fi
3850 \fi
3851 }
3852 \def\HyInfo@GenerateAddons{%
3853 \ifHyInfo@AddonUnsupported
3854 \def\HyInfo@Addons{}%
3855 \else
3856 \begingroup
3857 \toks@{}%
3858 \def\HyInfo@do##1{%
3859 \EdefEscapeName\HyInfo@Key{##1}%
3860 \edef\x{%
3861 \toks@{%
3862 \the\toks@
3863 /\HyInfo@Key(\csname HyInfo@Value@##1\endcsname)%
3864 }%
3865 }%
3866 \x
3867 }%
3868 \HyInfo@AddonList
3869 \edef\x{\endgroup
3870 \def\noexpand\HyInfo@Addons{\the\toks@}%

```



```

3871 }%
3872 \x
3873 \fi
3874 }
3875 \global\let\HyInfo@AddonList\@empty

3876 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \}
3877 \define@key{Hyp}{pdflinkmargin}{\setpdflinkmargin{#1}}
3878 \let\setpdflinkmargin\@gobble
3879 \def\calculate@pdfview#1 #2\{%
3880 \def\@pdfview{#1}%
3881 \ifx\#2\%
3882 \def\@pdfviewparams{-32768}%
3883 \else
3884 \def\@pdfviewparams{#2}%
3885 \fi
3886 }
3887 \def\Hy@number#1{%
3888 \the\numexpr#1\relax
3889 }%
3890 \define@key{Hyp}{pdfstartpage}{%
3891 \ifx\#1\%
3892 \let\@pdfstartpage\@empty
3893 \else
3894 \edef\@pdfstartpage{\Hy@number{#1}}%
3895 \fi
3896 }%
3897 \define@key{Hyp}{pdfstartview}{%
3898 \ifx\#1\%
3899 \let\@pdfstartview\@empty
3900 \else
3901 \def\@pdfstartview{/#1}%
3902 \fi
3903 }
3904 \def\HyPat@NonNegativeReal/{%
3905 \ *([0-9]+\.[0-9]*|[0-9]*\.[0-9]+) *%
3906 }
3907 \define@key{Hyp}{pdfremotestartview}{%
3908 \ifx\#1\%
3909 \def\@pdfremotestartview{/Fit}%
3910 \else
3911 \edef\@pdfremotestartview{#1}%
3912 \Hy@Match\@pdfremotestartview}{%
3913 ^{XYZ(%
3914   ()| %
3915   (null|-?\HyPat@NonNegativeReal/) %
3916   (null|-?\HyPat@NonNegativeReal/) %
3917   (null|\HyPat@NonNegativeReal/)%
3918   )| % end of "XYZ"
3919   Fit(%
3920     ()| %
3921     B| %
3922     (H|V|BH|BV)(%
3923       ()| %
3924       (null|\HyPat@NonNegativeReal/)%

```

```

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

```

```

3979 \def\Hy@SetNewWindow{%
3980   \ifHy@pdfnewwindowset
3981     /NewWindow %
3982     \ifHy@pdfnewwindow true\else false\fi
3983   \fi
3984 }
3985 \Hy@DefNameKey{pdfpagelayout}{%
3986   \do{SinglePage}{}%
3987   \do{OneColumn}{}%
3988   \do{TwoColumnLeft}{}%
3989   \do{TwoColumnRight}{}%
3990   \do{TwoPageLeft}{PDF 1.5}%
3991   \do{TwoPageRight}{PDF 1.5}%
3992 }
3993 \define@key{Hyp}{pdflang}{%
3994   \edef\@pdflang{#1}%
3995   \def\Hy@temp{\relax}%
3996   \ifx\@pdflang\Hy@temp
3997     \let\@pdflang\relax
3998   \fi
3999   \ifx\@pdflang\relax
4000     \else
4001       \ifx\@pdflang\@empty
4002         \else

```

Test according to ABNF of RFC 3066.

```

4003   \Hy@Match\@pdflang{icase}{%
4004     ^%
4005     [a-z]{1,8}%
4006     (-[a-z0-9]{1,8})*%
4007     $%
4008   }%

```

Test according to ABNF of RFC 5646.

```

4009   \Hy@Match\@pdflang{icase}{%
4010     ^%
4011     (%
4012     % langtag
4013     (% language
4014       [a-z]{2,3}%
4015       ([a-z]{3}(-[a-z]{3}){0,2})?% extlang
4016       |[a-z]{4}% reserved for future use
4017       |[a-z]{5,8}% registered language subtag
4018     )%
4019     (-[a-z]{4})?% script
4020     (-([a-z]{2}|[0-9]{3}))?% region
4021     (-([a-z]{5,8}|[0-9][a-z0-9]{3}))?% variant
4022     (-[0-9a-wyz](-[a-z0-9]{2,8})+)% extension
4023     (-x(-[a-z0-9]{1,8})+)?% privateuse
4024     % privateuse
4025     |x(-[a-z0-9]{1,8})+%
4026     % grandfathered/irregular
4027     |en-GB-oed%
4028     |i-(ami|bnn|default|enochian|hak|klinton|lux|%
4029       mingo|navajo|pwn|tao|tay|tsu)%

```

```

4030     |sgn-(BE-FR|BE-NL|CH-DE)%
4031     % grandfathered/regular
4032     |art-lojban%
4033     |cel-gaulish%
4034     |no-(bok|nyn)%
4035     |zh-(guoyu|hakka|min|min-nan|xiang)%
4036     )%
4037     $%
4038     }{%

```

Test for unique extensions.

```

4039     \Hy@Match{-\@pdflang}{icase}{-[a-wyz0-9]-}{%
4040     \Hy@Match\@pdflang{icase}{~x-}{}{%
4041     % remove privateuse
4042     \edef\Hy@temp{-\@pdflang}%
4043     \Hy@Match\Hy@temp{icase}{%
4044     ~%
4045     (%
4046     (-[a-wyz0-9]|-[a-z0-9]{2,8})*%
4047     )%
4048     -x-%
4049     }{%
4050     \edef\Hy@temp{%
4051     \expandafter\strip@prefix\pdfastmatch1%
4052     }%
4053     }{}%
4054     \Hy@Match\Hy@temp{icase}{%
4055     (-[a-wyz0-9]-).*\@backslashchar1%
4056     }{%
4057     \Hy@Warning{%
4058     Invalid language identifier `#1'\MessageBreak
4059     for option `pdflang', because it violates\MessageBreak
4060     well-formedness defined in RFC 4646\MessageBreak
4061     by duplicate singleton subtags%
4062     }%
4063     \let\@pdflang\relax
4064     }{}%
4065     }%
4066     }{}%

```

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

```

4067     \ifx\@pdflang\relax
4068     \else
4069     \Hy@Match\@pdflang{icase}{%
4070     ~%
4071     [a-zA-Z]{2}-%
4072     (%
4073     aa|AA|%
4074     [qQ][m-zM-Z]|%
4075     [xX][a-zA-Z]|%
4076     zz|ZZ%
4077     )%
4078     (-|)$)%
4079     }{%
4080     \Hy@Warning{%

```

```

4081         Invalid language identifier `#1'\MessageBreak
4082         for option `pdflang' because of invalid country code%
4083         \MessageBreak
4084         in second subtag (RFC 3066)%
4085     }%
4086     \let\@pdflang\relax
4087 }{%
4088 \fi
4089 }{%
4090 \Hy@Warning{%
4091     Invalid language identifier `#1'\MessageBreak
4092     for option `pdflang', because it violates\MessageBreak
4093     well-formedness defined in RFC 5646%
4094 }%
4095 \let\@pdflang\relax
4096 }%
4097 }{%
4098 \Hy@Warning{%
4099     Invalid language identifier `#1'\MessageBreak
4100     for option `pdflang' (RFC 3066)%
4101 }%
4102 \let\@pdflang\relax
4103 }%
4104 \fi
4105 \fi
4106 }
4107 \define@key{Hyp}{pdfpagelabels}[true]{%
4108 \Hy@boolkey{pdfpagelabels}{#1}%
4109 }
4110 \define@key{Hyp}{pdfescapeform}[true]{%
4111 \Hy@boolkey{pdfescapeform}{#1}%
4112 }

```

Default values:

```

4113 \def\@linkbordercolor{1 0 0}
4114 \def\@urlbordercolor{0 1 1}
4115 \def\@menubordercolor{1 0 0}
4116 \def\@filebordercolor{0 .5 .5}
4117 \def\@runbordercolor{0 .7 .7}
4118 \def\@citebordercolor{0 1 0}
4119 \def\@pdfhighlight{/I}
4120 \let\@pdftitle\@empty
4121 \let\@pdfauthor\@empty
4122 \let\@pdfproducer\relax
4123 \def\@pdfcreator{LaTeX with hyperref}
4124 \let\@pdfcreationdate\@empty
4125 \let\@pdfmoddate\@empty
4126 \let\@pdfsubject\@empty
4127 \let\@pdfkeywords\@empty
4128 \let\@pdftrapped\@empty
4129 \let\@pdfpagescrop\@empty
4130 \def\@pdfstartview{/Fit}
4131 \def\@pdfremotestartview{/Fit}
4132 \def\@pdfstartpage{1}
4133 \let\@pdfprintpagerange\@empty

```

```

4134 \let\@pdfdiag\relax
4135 \let\PDF@SetupDoc\@empty
4136 \let\PDF@FinishDoc\@empty
4137 \let\phantomsection\@empty
4138 \let\special@paper\@empty
4139 \def\HyperDestNameFilter#1{#1}
4140 \Hy@AtBeginDocument{%
4141   \begingroup
4142     \edef\x{\ifdim\stockheight>z@ \stockheight\else\paperheight\fi}%
4143     \dimen@=\x\relax
4144     \ifdim\dimen@>z@
4145       \else
4146         \dimen@=11in\relax
4147         \Hy@WarningNoLine{%
4148           Height of page (\expandafter\string\x) %
4149           is invalid (\the\x),\MessageBreak
4150           using 11in%
4151         }%
4152       \fi
4153       \dimen@=0.99626401\dimen@
4154       \xdef\Hy@pageheight{\strip@pt\dimen@}%
4155     \endgroup
4156 }
4157 \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.

```

4158 \let\hyper@normalise\ExecuteOptions
4159 \let\ExecuteOptions\hypersetup
4160 \Hy@RestoreCatcodes
4161 \InputIfFileExists{hyperref.cfg}{-}{-}
4162 \Hy@SetCatcodes
4163 \let\ExecuteOptions\hyper@normalise
4164 \ifx\Hy@MaybeStopNow\relax
4165 \else
4166   \Hy@stoppedearlytrue
4167   \expandafter\Hy@MaybeStopNow
4168 \fi
4169 \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.

```

4170 \SetupKeyvalOptions{family=Hyp}
4171 \DeclareLocalOptions{%
4172   a4paper,a5paper,b5paper,letterpaper,legalpaper,executivepaper%
4173 }

```

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

```

4174 \@ifpackagewith{hyperref}{tex4ht}{%
4175 }{%
4176   \@ifpackageloaded{tex4ht}{%
4177     \PassOptionsToPackage{tex4ht}{hyperref}%
4178   }{%
4179     \@ifundefined{HCode}{%

```

```

4180 }{%
4181 \begingroup
4182 \def\Hy@pkg{tex4ht}%
4183 \def\Hy@temp@A#1\RequirePackage[#2]#3#4\Hy@NIL{%
4184 \def\Hy@param{#2#3}%
4185 \ifx\Hy@param\@empty
4186 \expandafter\@gobble
4187 \else
4188 \def\Hy@param{#3}%
4189 \ifx\Hy@param\Hy@pkg
4190 \PassOptionsToPackage{#2}{tex4ht}%
4191 \expandafter\expandafter\expandafter\@gobble
4192 \else
4193 \expandafter\expandafter\expandafter\@firstofone
4194 \fi
4195 \fi
4196 {\Hy@temp@A#4\Hy@NIL}%
4197 }%
4198 \expandafter
4199 \Hy@temp@A\@documentclasshook\RequirePackage[]{\Hy@NIL
4200 \endgroup
4201 \PassOptionsToPackage{tex4ht}{hyperref}%
4202 }%
4203 }%
4204 }

4205 \let\ReadBookmarks\relax
4206 \ProcessKeyvalOptions{Hyp}

```

After processing options.

## 15.1 Package xspace support

```

4207 \def\Hy@xspace@end{}
4208 \@ifundefined{xspaceaddexceptions}{%
4209 \Hy@AtBeginDocument{%
4210 \@ifundefined{xspaceaddexceptions}{%
4211 }{%
4212 \def\Hy@xspace@end{%
4213 \@gobble{end for xspace}%
4214 }%
4215 \xspaceaddexceptions{%
4216 \Hy@xspace@end,\hyper@linkend,\hyper@anchorend
4217 }%
4218 }%
4219 }%
4220 }{%
4221 \def\Hy@xspace@end{%
4222 \@gobble{end for xspace}%
4223 }%
4224 \xspaceaddexceptions{\Hy@xspace@end,\hyper@linkend,\hyper@anchorend}%
4225 }

```

## 15.2 Option draft

```

4226 \Hy@AtBeginDocument{%

```

```

4227 \ifHy@draft
4228   \let\hyper@@anchor\@gobble
4229   \gdef\hyper@link#1#2#3{#3\Hy@xspace@end}%
4230   \def\hyper@anchorstart#1#2{#2\Hy@xspace@end}%
4231   \def\hyper@anchorend{\Hy@xspace@end}%
4232   \let\hyper@linkstart\@gobbletwo
4233   \def\hyper@linkend{\Hy@xspace@end}%
4234   \def\hyper@linkurl#1#2{#1\Hy@xspace@end}%
4235   \def\hyper@linkfile#1#2#3{#1\Hy@xspace@end}%
4236   \def\hyper@link@[#1]#2#3#4{#4\Hy@xspace@end}%
4237   \def\Acrobatmenu#1#2{\leavevmode#2\Hy@xspace@end}%
4238   \let\PDF@SetupDoc\@empty
4239   \let\PDF@FinishDoc\@empty
4240   \let\ReadBookmarks\relax
4241   \let\WriteBookmarks\relax
4242   \Hy@WarningNoLine{Draft mode on}%
4243 \fi
4244 \Hy@DisableOption{draft}%
4245 \Hy@DisableOption{nolinks}%
4246 \Hy@DisableOption{final}%
4247 }

```

### 15.3 PDF/A

```

4248 \Hy@DisableOption{pdfa}
4249 \ifHy@pdfa
4250   \ifnum \Hy@pdf@majorminor@version < 104
4251     \kvsetkeys{Hyp}{pdfversion=1.4}%
4252     \fi
4253     \Hy@DisableOption{pdfversion}%
4254     \def\Hy@Acrobatmenu#1#2{%
4255       \leavevmode
4256       \begingroup
4257         \edef\x{#1}%
4258         \@onelevel@sanitize\x
4259         \ifx\x\Hy@NextPage
4260           \let\y=Y%
4261         \else
4262           \ifx\x\Hy@PrevPage
4263             \let\y=Y%
4264           \else
4265             \ifx\x\Hy@FirstPage
4266               \let\y=Y%
4267             \else
4268               \ifx\x\Hy@LastPage
4269                 \let\y=Y%
4270               \else
4271                 \let\y=N%
4272             \fi
4273           \fi
4274         \fi
4275       \fi
4276     \expandafter\endgroup
4277     \ifx\y Y%
4278     \else

```



```

4279 \Hy@Error{%
4280 PDF/A: Named action `#1' is not permitted%
4281 }\@ehc
4282 {#2}%
4283 \expandafter\@gobble
4284 \fi
4285 }%
4286 \def\Hy@temp#1{%
4287 \expandafter\def\csname Hy@#1\endcsname{#1}%
4288 \expandafter\@onelevel@sanitize\csname Hy@#1\endcsname
4289 }%
4290 \Hy@temp{NextPage}%
4291 \Hy@temp{PrevPage}%
4292 \Hy@temp{FirstPage}%
4293 \Hy@temp{LastPage}%
4294 \else
4295 \def\Hy@Acrobatmenu#1#2{\leavevmode}%
4296 \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.

```

4297 \def\Hy@wrapper@babel#1#2{%
4298 \begingroup
4299 \Hy@safe@activetrue
4300 \set@display@protect
4301 \edef\x{#2}%
4302 \@onelevel@sanitize\x
4303 \toks@{#1}%
4304 \edef\x{\endgroup\the\toks@{\x}}%
4305 \x
4306 }
4307 \def\Hy@WrapperDef#1{%
4308 \begingroup
4309 \escapechar=\m@ne
4310 \xdef\Hy@gtemp{%
4311 \expandafter\noexpand\csname HyWrap@string#1\endcsname
4312 }%
4313 \endgroup
4314 \edef#1{%
4315 \noexpand\Hy@wrapper@babel
4316 \expandafter\noexpand\Hy@gtemp
4317 }%
4318 \expandafter\def\Hy@gtemp
4319 }
4320 \ifHy@hyperfigures
4321 \Hy@Info{Hyper figures ON}%
4322 \else
4323 \Hy@Info{Hyper figures OFF}%
4324 \fi

```

```

4325 \ifHy@nesting
4326 \Hy@Info{Link nesting ON}%
4327 \else
4328 \Hy@Info{Link nesting OFF}%
4329 \fi
4330 \ifHy@hyperindex
4331 \Hy@Info{Hyper index ON}%
4332 \else
4333 \Hy@Info{Hyper index OFF}%
4334 \fi
4335 \ifHy@plainpages
4336 \Hy@Info{Plain pages ON}%
4337 \else
4338 \Hy@Info{Plain pages OFF}%
4339 \fi
4340 \ifHy@backref
4341 \Hy@Info{Backreferencing ON}%
4342 \else
4343 \Hy@Info{Backreferencing OFF}%
4344 \fi
4345 \ifHy@implicit
4346 \Hy@InfoNoLine{Implicit mode ON; LaTeX internals redefined}%
4347 \else
4348 \Hy@InfoNoLine{Implicit mode OFF; no redefinition of LaTeX internals}%
4349 \def\MaybeStopEarly{%
4350 \Hy@Message{Stopped early}%
4351 \Hy@AtBeginDocument{%
4352 \PDF@FinishDoc
4353 \gdef\PDF@FinishDoc{}%
4354 }%
4355 \endinput
4356 }%
4357 \Hy@AtBeginDocument{%
4358 \let\autoref\ref
4359 \let\autopageref\pageref
4360 \ifx\@pdfpagemode\@empty
4361 \gdef\@pdfpagemode{UseNone}%
4362 \fi
4363 \global\Hy@backreffalse
4364 }%
4365 \Hy@AtEndOfPackage{%
4366 \global\let\ReadBookmarks\relax
4367 \global\let\WriteBookmarks\relax
4368 }%
4369 \fi
4370 \Hy@DisableOption{implicit}

```

#### 15.4.1 Driver loading

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

```

4371 \@ifundefined{stockwidth}{\newdimen\stockwidth}{}
4372 \@ifundefined{stockheight}{\newdimen\stockheight}{}
4373 \Hy@AtEndOfPackage{%

```

```

4374 \@ifpackageloaded{tex4ht}{%
4375   \def\Hy@driver{htex4ht}%
4376   \Hy@texhttrue
4377 }{%

```

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.

```

4378 \ifx\Hy@driver\@empty
4379 \else
4380   \ifx\pdfextension\@undefined
4381   \def\Hy@temp{hpdfTeX}%
4382   \else
4383   \def\Hy@temp{hluatex}%
4384   \fi
4385 \ifpdf
4386   \ifx\Hy@driver\Hy@temp
4387   \else
4388   \Hy@WarningNoLine{%
4389     Wrong driver `\'Hy@driver.def';\MessageBreak
4390     pdfTeX is running in PDF mode.\MessageBreak
4391     Forcing driver `\'Hy@temp.def'%
4392   }%
4393   \let\Hy@driver\Hy@temp
4394   \fi
4395 \else
4396   \ifx\Hy@driver\Hy@temp
4397   \Hy@WarningNoLine{%
4398     Wrong driver `\'Hy@driver.def';\MessageBreak
4399     pdfTeX is not running in PDF mode.\MessageBreak
4400     Using default driver%
4401   }%
4402   \let\Hy@driver\@empty
4403   \fi
4404 \fi
4405 \fi
4406 \ifHy@texht
4407 \else
4408   \ifx\Hy@driver\@empty
4409   \else
4410   \def\Hy@temp{hxetex}%
4411   \ifxetex
4412   \ifx\Hy@driver\Hy@temp
4413   \else
4414   \Hy@WarningNoLine{%
4415     Wrong driver `\'Hy@driver.def';\MessageBreak
4416     XeTeX is running.\MessageBreak
4417     Forcing driver `\'Hy@temp.def' for XeTeX%
4418   }%
4419   \let\Hy@driver\Hy@temp
4420   \fi
4421   \fi
4422 \fi
4423 \fi
4424 \ifx\Hy@driver\@empty

```

```

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

```

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

```

4463 \let\HyOpt@DriverType\@empty
4464 \ifx\HyOpt@CustomDriver\@empty
4465 \ifx\Hy@driver\@empty
4466 \def\HyOpt@DriverType{ (autodetected)}%
4467 \providecommand*{\Hy@defaultdriver}{hdvips}%
4468 \ifpdf
4469 \ifx\pdfextension\@undefined
4470 \def\Hy@driver{hpdfetex}%
4471 \else
4472 \def\Hy@driver{hluatex}%
4473 \fi
4474 \else
4475 \ifxetex
4476 \def\Hy@driver{hxetex}%
4477 \else

```

```

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

```

```

4532 \fi
4533 \Hy@InfoNoLine{Driver\HyOpt@DriverType: \Hy@driver}%
4534 \chardef\Hy@VersionChecked=0 %
4535 \input{\Hy@driver.def}%
4536 \ifcase\Hy@VersionChecked
4537   \Hy@VersionCheck{\Hy@driver.def}%
4538 \fi
4539 \let\@unprocessedoptions\relax
4540 \Hy@RestoreCatcodes
4541 \Hy@DisableOption{tex4ht}%
4542 \Hy@DisableOption{pdftex}%
4543 \Hy@DisableOption{nativepdf}%
4544 \Hy@DisableOption{dviPDFm}%
4545 \Hy@DisableOption{dviPDFmx}%
4546 \Hy@DisableOption{dviPDFmx-outline-open}%
4547 \Hy@DisableOption{pdfmark}%
4548 \Hy@DisableOption{dvips}%
4549 \Hy@DisableOption{hypertext}%
4550 \Hy@DisableOption{vtex}%
4551 \Hy@DisableOption{vtexpdfmark}%
4552 \Hy@DisableOption{dviwindow}%
4553 \Hy@DisableOption{dvipsone}%
4554 \Hy@DisableOption{textures}%
4555 \Hy@DisableOption{latex2html}%
4556 \Hy@DisableOption{ps2pdf}%
4557 \Hy@DisableOption{xetex}%
4558 \Hy@DisableOption{driverfallback}%
4559 \Hy@DisableOption{customdriver}%
4560 \Hy@DisableOption{pdfversion}%
4561 }

```

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.

```

4562 \newif\ifHy@dviPDFmxOutlineOpen
4563 \ifxetex
4564   \ifdim\number\XeTeXversion\XeTeXrevision in<0.9995in %
4565   \else
4566     \chardef\SpecialDviPDFmxOutlineOpen\@ne
4567     \Hy@dviPDFmxOutlineOpen>true
4568   \fi
4569 \fi
4570 \begingroup\expandafter\expandafter\expandafter\endgroup
4571 \expandafter\ifx\csname SpecialDviPDFmxOutlineOpen\endcsname\relax
4572 \else
4573   \ifnum\SpecialDviPDFmxOutlineOpen>\z@
4574     \Hy@dviPDFmxOutlineOpen>true
4575   \fi
4576 \fi

```

#### 15.4.2 Bookmarks

```

4577 \def\WriteBookmarks{0}
4578 \def\@bookmarkopenstatus#1{%

```

```
4579 \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:

```
4580 \ifnum#1<\expandafter\@firstofone\expandafter
4581     {\number\@bookmarksopenlevel} % explicit space
4582 \else
4583     -%
4584 \fi
4585 \else
4586     -%
4587 \fi
4588 }
4589 \ifHy@bookmarks
4590 \Hy@Info{Bookmarks ON}%
4591 \ifx\@pdfpagemode\@empty
4592 \def\@pdfpagemode{UseOutlines}%
4593 \fi
4594 \else
4595 \let\@bookmarkopenstatus\@gobble
4596 \Hy@Info{Bookmarks OFF}%
4597 \Hy@AtEndOfPackage{%
4598 \global\let\ReadBookmarks\relax
4599 \global\let\WriteBookmarks\relax
4600 }%
4601 \ifx\@pdfpagemode\@empty
4602 \def\@pdfpagemode{UseNone}%
4603 \fi
4604 \fi
4605 \Hy@DisableOption{bookmarks}
```

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

```
4606 \def\Hy@CatcodeWrapper#1{%
4607 \let\Hy@endWrap\@empty
4608 \def\TMP@EnsureCode##1##2{%
4609 \edef\Hy@endWrap{%
4610 \Hy@endWrap
4611 \catcode##1 \the\catcode##1\relax
4612 }%
4613 \catcode##1 ##2\relax
4614 }%
4615 \TMP@EnsureCode{10}{12}% ^^J
4616 \TMP@EnsureCode{33}{12}% !
4617 \TMP@EnsureCode{34}{12}% "
4618 \TMP@EnsureCode{36}{3}% $ (math)
4619 \TMP@EnsureCode{38}{4}% & (alignment)
4620 \TMP@EnsureCode{39}{12}% '
4621 \TMP@EnsureCode{40}{12}% (
4622 \TMP@EnsureCode{41}{12}% )
4623 \TMP@EnsureCode{42}{12}% *
4624 \TMP@EnsureCode{43}{12}% +
4625 \TMP@EnsureCode{44}{12}% ,
4626 \TMP@EnsureCode{45}{12}% -
4627 \TMP@EnsureCode{46}{12}% .
4628 \TMP@EnsureCode{47}{12}% /
```

```

4629 \TMP@EnsureCode{58}{12}% :
4630 \TMP@EnsureCode{59}{12}% ;
4631 \TMP@EnsureCode{60}{12}% <
4632 \TMP@EnsureCode{61}{12}% =
4633 \TMP@EnsureCode{62}{12}% >
4634 \TMP@EnsureCode{63}{12}% ?
4635 \TMP@EnsureCode{91}{12}% [
4636 \TMP@EnsureCode{93}{12}% ]
4637 \TMP@EnsureCode{94}{7}% ^ (superscript)
4638 \TMP@EnsureCode{95}{8}% _ (subscript)
4639 \TMP@EnsureCode{96}{12}% `
4640 \TMP@EnsureCode{124}{12}% |
4641 \TMP@EnsureCode{126}{13}% ~ (active)
4642 #1\relax
4643 \Hy@EndWrap
4644 }

```

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

```

4645 \Hy@AtBeginDocument{%
4646   \ifHy@ocgcolorlinks
4647     \kvsetkeys{Hyp}{colorlinks}%
4648     \ifHy@pdfa
4649       \Hy@Warning{%
4650         PDF/A: Optional Content Groups are prohibited,\MessageBreak
4651         using `colorlinks' instead of `ocgcolorlinks'%
4652       }%
4653     \Hy@ocgcolorlinksfalse
4654   \fi
4655 \fi
4656 \ifHy@ocgcolorlinks
4657 \else
4658   \Hy@DisableOption{ocgcolorlinks}%
4659 \fi
4660 \ifHy@colorlinks
4661   \def\@pdfborder{0 0 0}%
4662   \let\@pdfborderstyle\@empty
4663   \Hy@CatcodeWrapper{%
4664     \RequirePackage{color}%
4665   }%
4666   \def\Hy@colorlink#1{%
4667     \begingroup
4668     \HyColor@UseColor#1%
4669   }%
4670   \def\Hy@endcolorlink{\endgroup}%
4671   \Hy@Info{Link coloring ON}%
4672 \else
4673   \ifHy@frenchlinks
4674     \def\Hy@colorlink#1{\begingroup\fontshape{\scdefault}\selectfont}%
4675     \def\Hy@endcolorlink{\endgroup}%
4676     \Hy@Info{French linking ON}%
4677   \else
4678     \def\Hy@colorlink#1{\begingroup}%

```



```

4679 \def\Hy@endcolorlink{\endgroup}%
4680 \Hy@Info{Link coloring OFF}%
4681 \fi
4682 \fi
4683 \Hy@DisableOption{colorlinks}%
4684 \Hy@DisableOption{frenchlinks}%
4685 \ifHy@texht
4686 \else

```

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

```

4687 \ifHy@implicit
4688 \let \T@Ref\HyRef@Ref
4689 \def\@refstar#1{%
4690 \NR@ref@showkeys{#1}%
4691 \HyRef@StarSetRef{#1}\@firstoffive
4692 }
4693 \def\@pagerefstar#1{%
4694 \NR@ref@showkeys{#1}%
4695 \HyRef@StarSetRef{#1}\@secondoffive
4696 }
4697 \def\@namerefstar#1{%
4698 \NR@ref@showkeys{#1}%
4699 \HyRef@StarSetRef{#1}\@thirdoffive
4700 }
4701 \def\@Refstar#1{%
4702 \NR@ref@showkeys{#1}%
4703 \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
4704 }%
4705 \else
4706 \fi
4707 \fi
4708 }
4709 \Hy@AtBeginDocument{%
4710 \ifx\ReadBookmarks\relax
4711 \else
4712 \Hy@CatcodeWrapper\ReadBookmarks
4713 \fi
4714 }
4715 \ifHy@backref
4716 \RequirePackage{backref}%
4717 \else
4718 \let\Hy@backout\@gobble
4719 \fi
4720 \Hy@DisableOption{backref}
4721 \Hy@DisableOption{pagebackref}
4722 \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. The catcode : is set to other to avoid problems with expl3 syntax.

```

4723 \begingroup
4724 \endlinechar=-1 %
4725 \catcode\^^A=14 %
4726 \catcode\^^M\active
4727 \catcode\%\active
4728 \catcode\#\active
4729 \catcode\_ \active
4730 \catcode\$\active
4731 \catcode\&\active
4732 \gdef\hyper@normalise{^^A
4733 \begingroup
4734 \@makeother{:}^^A
4735 \catcode\^^M\active
4736 \def^^M{ }^^A
4737 \catcode\%\active
4738 \let%\@percentchar
4739 \let%\@percentchar
4740 \catcode\#\active
4741 \def#{\hyper@hash}^^A
4742 \def#\{\hyper@hash}^^A
4743 \@makeother\&^^A
4744 \edef&{\string&}^^A
4745 \edef\&{\string&}^^A
4746 \edef\textunderscore{\string_}^^A
4747 \let\_ \textunderscore
4748 \catcode\_ \active
4749 \let\_ \textunderscore
4750 \let~\hyper@tilde
4751 \let\~\hyper@tilde
4752 \let\textasciitilde\hyper@tilde
4753 \let\\\@backslashchar
4754 \edef$\{\string$}^^A
4755 \Hy@safe@activestrue
4756 \hyper@n@rmalise
4757 }^^A
4758 \catcode\#=6 ^^A
4759 \gdef\Hy@ActiveCarriageReturn{^^M}^^A
4760 \gdef\hyper@n@rmalise#1#2{^^A
4761 \def\Hy@tempa{#2}^^A
4762 \ifx\Hy@tempa\Hy@ActiveCarriageReturn
4763 \Hy@ReturnAfterElseFi{^^A
4764 \hyper@@normalise{#1}^^A
4765 }^^A
4766 \else
4767 \Hy@ReturnAfterFi{^^A
4768 \hyper@@normalise{#1}{#2}^^A
4769 }^^A
4770 \fi
4771 }^^A
4772 \gdef\hyper@@normalise#1#2{^^A
4773 \edef\Hy@tempa{^^A

```

```

4774 \endgroup
4775 \noexpand#1{\Hy@RemovePercentCr#2%^^M\@nil}^^A
4776 }^^A
4777 \Hy@tempa
4778 }^^A
4779 \gdef\Hy@RemovePercentCr#1%^^M#2\@nil{^^A
4780 #1^^A
4781 \ifx\limits#2\limits
4782 \else
4783 \Hy@ReturnAfterFi{^^A
4784 \Hy@RemovePercentCr #2\@nil
4785 }^^A
4786 \fi
4787 }^^A
4788 \endgroup
4789 \providecommand*\hyper@chars{%
4790 \let\#\hyper@hash
4791 \let\%\@percentchar
4792 \Hy@safe@activestrue
4793 }

4794 \def\hyperlink#1#2{%
4795 \hyper@@link{#1}{#2}%
4796 }

4797 \def\Hy@VerboseLinkStart#1#2{%
4798 \ifHy@verbose
4799 \begingroup
4800 \Hy@safe@activestrue
4801 \xdef\Hy@VerboseGlobalTemp{(#1) `#2'}%
4802 \Hy@Info{Reference \Hy@VerboseGlobalTemp}%
4803 \xdef\Hy@VerboseGlobalTemp{%
4804 \Hy@VerboseGlobalTemp, %
4805 line \the\inputlineno
4806 }%
4807 \endgroup
4808 \let\Hy@VerboseLinkInfo\Hy@VerboseGlobalTemp
4809 \@onelevel@sanitize\Hy@VerboseLinkInfo
4810 \fi
4811 }

4812 \def\Hy@VerboseLinkInfo{<VerboseLinkInfo>}
4813 \def\Hy@VerboseLinkStop{%
4814 \ifHy@verbose
4815 \begingroup
4816 \edef\x{\endgroup
4817 \write\m@ne{%
4818 Package `hyperref' Info: %
4819 End of reference \Hy@VerboseLinkInfo.%
4820 }%
4821 }%
4822 \x
4823 \fi
4824 }

4825 \def\Hy@VerboseAnchor#1{%
4826 \ifHy@verbose

```

```

4827 \begingroup
4828 \Hy@safe@activestruer
4829 \Hy@Info{Anchor ``\HyperDestNameFilter{#1}'}%
4830 \endgroup
4831 \fi
4832 }

4833 \def\Hy@AllowHyphens{%
4834 \relax
4835 \ifhmode
4836 \penalty\@M
4837 \hskip\z@skip
4838 \fi
4839 }

4840 \DeclareRobustCommand*\href[1][]{%
4841 \begingroup
4842 \setkeys{href}{#1}%
4843 \@ifnextchar\bgroup\Hy@href{\hyper@normalise\href@}%
4844 }
4845 \def\Hy@href#{%
4846 \hyper@normalise\href@
4847 }
4848 \begingroup
4849 \catcode`\$=6 %
4850 \catcode`\#=12 %
4851 \gdef\href$1{\expandafter\href@split$1##\}%
4852 \gdef\href@split$1##$2##$3\\\4{%
4853 \hyper@@link{$1}{$2}{$4}%
4854 \endgroup
4855 }%
4856 \endgroup

Option 'page'.
4857 \define@key{href}{page}{%
4858 \def\Hy@href@page{#1}%
4859 }
4860 \let\Hy@href@page\@empty
4861 \newcount\c@Hy@tempcnt
4862 \def\theHy@tempcnt{\the\c@Hy@tempcnt}
4863 \def\Hy@MakeRemoteAction{%
4864 \ifx\Hy@href@page\@empty
4865 \def\Hy@href@page{0}%
4866 \else
4867 \setcounter{Hy@tempcnt}{\Hy@href@page}%
4868 \ifnum\c@Hy@tempcnt<\@ne
4869 \Hy@Warning{%
4870 Invalid page number (\theHy@tempcnt)\MessageBreak
4871 for remote PDF file.\MessageBreak
4872 Using page 1%
4873 }%
4874 \def\Hy@href@page{0}%
4875 \else
4876 \global\advance\c@Hy@tempcnt\m@ne
4877 \edef\Hy@href@page{\theHy@tempcnt}%
4878 \fi

```

4879 \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.

```
4880 \ifx\Hy@href@nextactionraw\@empty
4881 \else
4882 \Hy@pdfnewwindowsettrue
4883 \Hy@pdfnewwindowtrue
4884 \fi
4885 }
```

Option ‘pdfremotestartview’.

```
4886 \define@key{href}{pdfremotestartview}{%
4887 \setkeys{Hyp}{pdfremotestartview={#1}}%
4888 }
```

Option ‘pdfnewwindow’.

```
4889 \let\KV@href@pdfnewwindow\KV@Hyp@pdfnewwindow
4890 \let\KV@href@pdfnewwindow@default\KV@Hyp@pdfnewwindow@default
```

Option ‘ismap’.

```
4891 \newif\ifHy@href@ismap
4892 \define@key{href}{ismap}[true]{%
4893 \@ifundefined{Hy@href@ismap#1}{%
4894 \Hy@Error{%
4895 Invalid value (#1) for key `ismap'.\MessageBreak
4896 Permitted values are `true' or `false'.\MessageBreak
4897 Ignoring `ismap'%
4898 } \@ehc
4899 }{%
4900 \csname Hy@href@ismap#1\endcsname
4901 }%
4902 }
```

Option ‘nextactionraw’.

```
4903 \let\Hy@href@nextactionraw\@empty
4904 \define@key{href}{nextactionraw}{%
4905 \edef\Hy@href@nextactionraw{#1}%
4906 \ifx\Hy@href@nextactionraw\@empty
4907 \else
4908 \Hy@Match\Hy@href@nextactionraw{}%
4909 ^(\HyPat@ObjRef/|<<.*[/S[/].+>>|)%
4910 \[( ?\HyPat@ObjRef/|<<.*[/S[/].+>>)+ ?)]$%
4911 }{ }{%
4912 \Hy@Warning{Invalid value for `nextactionraw':\MessageBreak
4913 \Hy@href@nextactionraw\MessageBreak
4914 The action is discarded%
4915 }%
4916 }%
4917 \ifx\Hy@href@nextactionraw\@empty
4918 \else
4919 \edef\Hy@href@nextactionraw{/Next \Hy@href@nextactionraw}%
4920 \fi
4921 \fi
4922 }
4923 \def\HyPat@ObjRef/{.+}
```

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

```

4924 \RequirePackage{url}
4925 \let\HyOrg@url\url
4926 \def\Hurl{\begingroup \Url}
4927 \DeclareRobustCommand*\nolinkurl{\hyper@normalise\nolinkurl@}
4928 \def\nolinkurl@#1{\Hurl{#1}}
4929 \DeclareRobustCommand*\url{\hyper@normalise\url@}
4930 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}

4931 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
4932 \providecommand\hyper@image[2]{#2}

4933 \def\hypertarget#1#2{%
4934   \ifHy@nesting
4935     \hyper@@anchor{#1}{#2}%
4936   \else
4937     \hyper@@anchor{#1}{\relax}#2%
4938   \fi
4939 }

```

`\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.

```

4940 \DeclareRobustCommand*\hyperref{%
4941   \@ifnextchar[{\Hy@babelnormalise\label@hyperref}\@hyperref
4942 }
4943 \def\Hy@babelnormalise#1[#2]{%
4944   \begingroup
4945     \Hy@safe@activestrue
4946     \let\protect\@unexpandable@protect
4947     \edef\Hy@tempa{%
4948       \endgroup
4949       \noexpand#1[#2]}%
4950   }%
4951   \Hy@tempa
4952 }
4953 \def\@hyperref{\hyper@normalise\@hyperref}
4954 \def\@hyperref#1#2#3{%
4955   \edef\ref@one{\ifx\#2\#2\else#2.\fi#3}%
4956   \expandafter\tryhyper@link\ref@one\{#1}%
4957 }
4958 \def\tryhyper@link#1\#2{%
4959   \hyper@@link{#2}{#1}%
4960 }

4961 \def\hyperdef{\@ifnextchar[{\label@hyperdef}\@hyperdef]}
4962 \def\@hyperdef#1#2#3{%, category, name, text
4963   \ifx\#1\#1\%
4964     \def\Hy@AnchorName{#2}%
4965   \else
4966     \def\Hy@AnchorName{#1.#2}%

```

```

4967 \fi
4968 \ifHy@nesting
4969 \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#3}%
4970 \else
4971 \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#3%
4972 \fi
4973 }

```

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.

```

4974 \let\hyperrefundefinedlink\@firstofone
4975 \def\label@hyperref[#1]{%
4976 \expandafter\label@@hyperref\csname r@#1\endcsname{#1}%
4977 }%
4978 \def\label@@hyperref#1#2#3{%
4979 \ifx#1\relax
4980 \protect\G@refundefinedtrue
4981 \@latex@warning{%
4982 Hyper reference `#2' on page \thepage \space undefined%
4983 }%
4984 \begingroup
4985 \hyperrefundefinedlink{#3}%
4986 \endgroup
4987 \else
4988 \hyper@@link{\expandafter\@fifthoffive#1}%
4989 {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
4990 \fi
4991 }
4992 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
4993 % anchor text
4994 \@bsphack
4995 \ifx\#2\%
4996 \def\Hy@AnchorName{#3}%
4997 \else
4998 \def\Hy@AnchorName{#2.#3}%
4999 \fi
5000 \if@filesw
5001 \protected@write\@auxout{}{%
5002 \string\newlabel{#1}{\{#\}\}\{\Hy@AnchorName\}}%
5003 }%
5004 \fi
5005 \@esphack
5006 \ifHy@nesting
5007 \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#4}%
5008 \else
5009 \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#4%
5010 \fi
5011 }

```

`\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`

```
5012 \ExplSyntaxOn
5013 \cs_new:Npn \hyperget #1 #2
5014 {
5015   \use:c { ___hyp_get_#1:n } { #2}
5016 }
5017
5018 \cs_new:Npn \___hyp_get_anchor:n #1
5019 {
5020   \HyperDestNameFilter
5021   {
5022     \cs_if_exist:cTF {r@#1}
5023     {
5024       \tl_item:cn {r@#1}{4}
5025     }
5026     {
5027       Doc-Start
5028     }
5029   }
5030 }
5031 \cs_new:Npn \___hyp_get_pageanchor:n #1
5032 {
5033   \HyperDestNameFilter
5034   {
5035     \cs_if_exist:cTF {r@#1}
5036     {
5037       page. \tl_item:cn {r@#1}{2}
5038     }
5039     {
5040       Doc-Start
5041     }
5042   }
5043 }
5044 \cs_new:Npn \___hyp_get_currentanchor:n #1
5045 {
5046   \HyperDestNameFilter { \@currentHref }
5047 }
5048 \ExplSyntaxOff
```

## 16.1 Link box support for XeTeX

```
5049 \newdimen\XeTeXLinkMargin
5050 \setlength{\XeTeXLinkMargin}{2pt}
5051 \ifxetex
5052   \font\XeTeXLink@font=pzdr at 1sp\relax
5053   \newcommand*{\XeTeXLink@space}{%
5054     \begingroup
5055       \XeTeXLink@font
5056       \@xxxii
5057     \endgroup
5058   }%
5059   \newcommand{\XeTeXLinkBox}[1]{%
```



```

5060 \begingroup
5061 \leavevmode
5062 \sbox\z@{#1}%
5063 \begingroup
5064 \dimen@=\dp\z@
5065 \advance\dimen@\XeTeXLinkMargin
5066 \setbox\tw@=\llap{%
5067 \hb@xt@\XeTeXLinkMargin{%
5068 \lower\dimen@\hbox{\XeTeXLink@space}%
5069 \hss
5070 }%
5071 }%
5072 \dp\tw@=\dp\z@
5073 \ht\tw@=\ht\z@
5074 \copy\tw@
5075 \endgroup
5076 \copy\z@
5077 \dimen@=\ht\z@
5078 \advance\dimen@\XeTeXLinkMargin
5079 \setbox\tw@=\rlap{%
5080 \hb@xt@\XeTeXLinkMargin{%
5081 \hss
5082 \raise\dimen@\hbox{\XeTeXLink@space}%
5083 }%
5084 }%
5085 \dp\tw@=\dp\z@
5086 \ht\tw@=\ht\z@
5087 \copy\tw@
5088 \endgroup
5089 }%
5090 \else
5091 \newcommand*\XeTeXLinkBox}[1]{%
5092 \begingroup
5093 \leavevmode
5094 \sbox\z@{#1}%
5095 \copy\z@
5096 \endgroup
5097 }%
5098 \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.

```

5099 \def\hyper@link{\let\Hy@reserved@a\relax
5100 \@ifnextchar{\hyper@link@}{\hyper@link@[link]}%
5101 }
5102 % #1: type
5103 % #2: URL
5104 % #3: destination name
5105 % #4: text
5106 \def\hyper@link@[#1]#2#3#4{%

```

```

5107 \Hy@ifempty{#4}{% link text
5108   \Hy@Warning{Suppressing empty link}%
5109 }{%
5110   \begingroup
5111     \protected@edef\Hy@tempa{#2}%
5112     \edef\Hy@tempb{#3}%
5113     \ifx\Hy@tempa\@empty
5114       \ifx\Hy@tempb\@empty
5115         \Hy@Warning{Suppressing link with empty target}%
5116         \toks@{%
5117           \endgroup
5118           \@secondoftwo
5119         }%
5120       \else
5121         \toks@{%
5122           \endgroup
5123           \hyper@link{#1}%
5124         }%
5125       \fi
5126     \else
5127       \toks@{%
5128         \endgroup
5129         \expandafter\hyper@readexternallink#2\{\#1}%
5130       }%
5131     \fi
5132     \Hy@safe@activesfalse
5133     \toks@\expandafter{%
5134       \the\expandafter\toks@
5135       \expandafter{\Hy@tempb}{#4}%
5136     }%
5137     \the\toks@
5138   }%
5139 }

```

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.

```

5140 \def\hyper@readexternallink#1\#2#3#4{%
5141   \begingroup
5142   \let\\\relax
5143   \expandafter\endgroup
5144   \expandafter\@chyper@\@readexternallink#1\{#2}{#3}{#4}%
5145 }
5146 \def\@chyper@\@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.

```
5147 \@hyper@readexternallink{#2}{#3}{#4}#1::\{#1}%
5148 }
```

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

```
5149 \def\@pdftempwordfile{file}%
5150 \def\@pdftempwordrun{run}%
5151 \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:

```
5152 \ifx\#6\%
5153   \@hyper@linkfile file:#7\{#3}{#2}{#7}%
5154 \else
5155   \ifx\#4\%
5156     \@hyper@linkfile file:#7\{#3}{#2}{#7}%
5157   \else
```

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

```
5158   \def\@pdftempa{#4}%
5159   \ifx\@pdftempa\@pdftempwordfile
5160     \@hyper@linkfile#7\{#3}{#2}{#7}%
5161   \else
```

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

```
5162   \ifx\@pdftempa\@pdftempwordrun
5163     \ifHy@pdfa
5164       \Hy@Error{%
5165         PDF/A: Launch action is prohibited%
5166       }\@ehc
5167     \begingroup
5168       \leavevmode
5169       #2%
5170     \endgroup
5171   \else
5172     \@hyper@launch#7\{#3}{#2}%
5173   \fi
5174 \else
```

otherwise its a URL

```
5175     \hyper@linkurl{#3}{#7\ifx\#2\% \else\hyper@hash#2\fi}%
5176   \fi
5177 \fi
5178 \fi
5179 \fi
5180 }
```

By default, turn run: into file:

```
5181 \def\@hyper@launch run:#1\#2#3{% filename, anchor text, linkname
5182   \hyper@linkurl{#2}%
5183   \Hy@linkfileprefix
```

```

5184 #1%
5185 \ifx\\#3\\%
5186 \else
5187 \hyper@hash
5188 #3%
5189 \fi
5190 }%
5191 }

```

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

```

5192 \def\@hyper@linkfile file:#1\\#2#3#4{%
5193 %file url,link string, name, original uri
5194 \filename@parse{#1}%
5195 \ifx\filename@ext\relax
5196 \edef\filename@ext{\XR@ext}%
5197 \fi
5198 \def\use@file{\filename@area\filename@base.\filename@ext}%
5199 \Hy@ifStringEndsWith\filename@ext\XR@ext{%
5200 \hyper@linkfile{#2}{\use@file}{#3}%
5201 }{%
5202 \ifx\@baseurl\@empty
5203 \hyper@linkurl{#2}{%
5204 #4\ifx\\#3\\%
5205 }%
5206 \else
5207 \hyper@linkurl{#2}{\use@file\ifx\\#3\\%
5208 \fi
5209 }%
5210 }

5211 \def\Hy@ifStringEndsWith#1#2{%
5212 \begingroup
5213 \edef\x{#1}%
5214 \@onelevel@sanitize\x
5215 \edef\x{.x$}%
5216 \edef\y{#2}%
5217 \@onelevel@sanitize\y
5218 \edef\y{.y$}%
5219 \expandafter\def\expandafter\z\expandafter##\expandafter1\y##2\@nil{%
5220 \endgroup
5221 \ifx\relax##2\relax
5222 \expandafter\@secondoftwo
5223 \else
5224 \expandafter\@firstoftwo
5225 \fi
5226 }%
5227 \expandafter\expandafter\expandafter\z\expandafter\x\y\@nil
5228 }

5229 \def\Hy@StringLocalhost{localhost}
5230 \@onelevel@sanitize\Hy@StringLocalhost
5231 \def\Hy@CleanupFile#1{%
5232 \edef#1{#1}%
5233 \expandafter\Hy@@CleanupFile#1\hbox{//\hbox\@nil{#1}%
5234 }

```

```

5235 \def\Hy@@CleanupFile#1//#2/#3\hbox#4\@nil#5{%
5236 \begingroup
5237 \toks@{\endgroup}%
5238 \def\x{#1}%
5239 \ifx\x\@empty
5240 \def\x{#2}%
5241 \ifx\x\@empty
5242 \toks@{\endgroup\def#5{/#3}}%
5243 \else
5244 \@onelevel@sanitize\x
5245 \ifx\x\Hy@StringLocalhost
5246 \toks@{\endgroup\def#5{/#3}}%
5247 \fi
5248 \fi
5249 \fi
5250 \the\toks@
5251 }

```

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.

```

5252 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
5253 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
5254 \ifx\#1\%
5255 #2\Hy@Warning{Ignoring empty anchor}%
5256 \else
5257 \def\anchor@spot{#2#3}%
5258 \let\put@me@back\@empty
5259 \ifx\relax#2\relax
5260 \else
5261 \ifHy@nesting
5262 \else
5263 \ifcat a\noexpand#2\relax
5264 \else
5265 \ifcat 0\noexpand#2 \relax
5266 \else
5267 % \typeout{Anchor start is not alphanumeric %
5268 % on input line\the\inputlineno%
5269 % }%
5270 \let\anchor@spot\@empty
5271 \def\put@me@back{#2#3}%
5272 \fi
5273 \fi
5274 \fi
5275 \fi
5276 \ifHy@activeanchor
5277 \anchor@spot
5278 \else
5279 \hyper@anchor{#1}%
5280 \fi

```

```

5281 \expandafter\put@me@back
5282 \fi
5283 \let\anchor@spot\@empty
5284 }
5285 \let\anchor@spot\@empty

```

## 18 Option ‘destlabel’

```

5286 \ifHy@destlabel

```

\hyper@newdestlabel

```

5287 \def\hyper@newdestlabel#1#2{%
5288 \begingroup
5289 \Hy@safe@activetrue
5290 \edef\x{\endgroup
5291 \noexpand\@newl@bel{HyDL}{#1}{#2}%
5292 }%
5293 \x
5294 }%

```

\hyper@destlabel@hook

```

5295 \providecommand*\hyper@destlabel@hook{}%

```

\Hy@DestRename

```

5296 \newcommand*\Hy@DestRename}[2]{%
5297 \@ifundefined{HyDL!#1}{%
5298 \begingroup
5299 \Hy@safe@activetrue
5300 \edef\dest@name{#1}%
5301 \edef\label@name{#2}%
5302 \hyper@destlabel@hook
5303 \Hy@IsNotEmpty{dest@name}{%
5304 \Hy@IsNotEmpty{label@name}{%
5305 \global\expandafter
5306 \let\csname HyDL!#1\endcsname\@empty
5307 \if@filesw
5308 \protected@write\@auxout{}{%
5309 \string\hyper@newdestlabel
5310 {#1}%
5311 {\label@name}%
5312 }%
5313 \fi
5314 }%
5315 }%
5316 \endgroup
5317 }{}%
5318 }%

```

\HyperDestRename

```

5319 \newcommand*\HyperDestRename}[2]{%
5320 \AtBeginDocument{%
5321 \Hy@DestRename{#1}{#2}%
5322 }%

```

```

5323 }%
5324 \AtBeginDocument{%
5325   \let\HyperDestRename\Hy@DestRename
5326 }%

```

\Hy@IsNotEmpty

```

5327 \def\Hy@IsNotEmpty#1{%
5328   \@ifundefined{#1}\@gobble{%
5329     \expandafter\ifx\csname#1\endcsname\@empty
5330     \expandafter\@gobble
5331   \else
5332     \expandafter\@firstofone
5333   \fi
5334 }%
5335 }%

5336 \Hy@GlobalAppendToMacro\label@hook{%
5337   \HyperDestRename\@currentHref\label@name
5338 }%

```

\HyperDestLabelReplace

```

5339 \def\HyperDestLabelReplace#1{%
5340   \@ifundefined{HyDL@#1}{%
5341     #1%
5342   }{%
5343     \csname HyDL@#1\endcsname
5344   }%
5345 }%

```

\HyperDestNameFilter

```

5346 \let\HyperDestNameFilter\HyperDestLabelReplace

5347 \else

```

\hyper@newdestlabel

```

5348 \let\hyper@newdestlabel\@gobbletwo

```

\HyperDestLabelReplace

```

5349 \let\HyperDestLabelReplace\@firstofone

```

\HyperDestRename

```

5350 \let\HyperDestRename\@gobbletwo

5351 \fi

5352 \Hy@DisableOption{destlabel}

```

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

```

5353 \AddToHook{include/before}
5354 {\immediate\write\@partaux{\string\providecommand\string\hyper@newdest-
5355   label[2]{}}
5355 \AddToHook{begindocument}
5356 {\immediate\write\@mainaux{\string\providecommand\string\hyper@newdest-
5357   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.

```
5357 \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
```

```
5358 \def\HyField@NewFlag#1#2{%
5359   \lowercase{\HyField@NewOption{#2}}%
5360   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5361 }
```

```
\HyField@NewFlagOnly
```

```
5362 \def\HyField@NewFlagOnly#1#2{%
5363   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5364 }
```

```
\HyField@NewOption #1: option name
```

```
5365 \def\HyField@NewOption#1{%
5366   \expandafter\newif\csname ifFld@#1\endcsname
5367   \define@key{Field}{#1}[true]{%
5368     \lowercase{\Field@boolkey{##1}}{#1}%
5369   }%
5370 }
```

```
\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
```

```
5371 \def\HyField@NewBitsetFlag#1#2#3#4{%
5372   \begingroup
5373   \count@=#4\relax
5374   \advance\count@\m@ne
5375   \def\x###1{%
5376     \endgroup
5377     \expandafter\def\csname HyField@#3@#1\endcsname{##1}%
5378     \expandafter\ifx\csname HyField@#3@##1\endcsname\relax
```



```

5379     \expandafter\edef\csname HyField@#3@##1\endcsname{%
5380       (\number#4) #2%
5381     }%
5382   \else
5383     \expandafter\edef\csname HyField@#3@##1\endcsname{%
5384       \csname HyField@#3@##1\endcsname
5385       /#2%
5386     }%
5387   \fi
5388 }%
5389 \expandafter\x\expandafter{\the\count@}%
5390 }

```

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

```

5391 \def\HyField@UseFlag#1#2{%
5392   \lowercase{\HyField@@UseFlag{#2}}{#1}%
5393 }

```

\HyField@@UseFlag

```

5394 \def\HyField@@UseFlag#1#2{%
5395   \bitsetSetValue{HyField@#2}{%
5396     \csname HyField@#2@#1\endcsname
5397   }{%
5398     \csname ifFld@#1\endcsname 1\else 0\fi
5399   }%
5400 }

```

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

```

5401 \def\HyField@SetFlag#1#2{%
5402   \lowercase{\HyField@@SetFlag{#2}}{#1}%
5403 }

```

\HyField@@SetFlag

```

5404 \def\HyField@@SetFlag#1#2{%
5405   \bitsetSetValue{HyField@#2}{%
5406     \csname HyField@#2@#1\endcsname
5407   }{1}%
5408 }

```

\HyField@PrintFlags

```

5409 \def\HyField@PrintFlags#1#2{%
5410   \ifHy@verbose
5411     \begingroup
5412       \let\Hy@temp\@empty
5413       \let\MessageBreak\relax
5414       \expandafter\@for\expandafter\x\expandafter:\expandafter=%
5415       \bitsetGetSetBitList{HyField@#1}\do{%
5416         \edef\Hy@temp{%
5417           \Hy@temp
5418           \csname HyField@#1@\x\endcsname\MessageBreak
5419         }%
5420       }%
5421     \edef\x{\endgroup

```

```

5422 \noexpand\Hy@Info{%
5423   Field flags: %
5424   \expandafter\ifx\@car#1\@nil S\else/\fi
5425   #1 %
5426   \bitsetGetDec{HyField@#1} %
5427   (0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
5428   \Hy@temp
5429   for #2%
5430   }%
5431 } \x
5432 \fi
5433 }

```

### 19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```

5434 \HyField@NewFlag{Ff}{ReadOnly}{1}
5435 \HyField@NewFlag{Ff}{Required}{2}
5436 \HyField@NewFlag{Ff}{NoExport}{3}

```

“Table 8.75 Field flags specific to button fields”

```

5437 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
5438 \HyField@NewFlag{Ff}{Radio}{16}
5439 \HyField@NewFlag{Ff}{Pushbutton}{17}
5440 \HyField@NewFlag{Ff}{RadiosInUnison}{26}

```

“Table 8.77 Field flags specific to text fields”

```

5441 \HyField@NewFlag{Ff}{Multiline}{13}
5442 \HyField@NewFlag{Ff}{Password}{14}
5443 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
5444 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5445 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4
5446 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4
5447 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5

```

“Table 8.79 field flags specific to choice fields”

```

5448 \HyField@NewFlag{Ff}{Combo}{18}
5449 \HyField@NewFlag{Ff}{Edit}{19}
5450 \HyField@NewFlag{Ff}{Sort}{20}
5451 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4
5452 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5453 \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.

```

5454 \newif\ifFld@popdown
5455 \define@key{Field}{popdown}{true}{%
5456   \lowercase{\Field@boolkey{#1}}{popdown}%
5457 }

```

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.

```

5458 \HyField@NewFlag{F}{Invisible}{1}
5459 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2
5460 \HyField@NewFlag{F}{Print}{3}% PDF 1.2
5461 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2
5462 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3
5463 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3
5464 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4
5465 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5
5466 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7

5467 \ifHy@pdfa
5468 \def\HyField@PDFAFIWarning#1#2{%
5469 \Hy@Warning{%
5470 PDF/A: Annotation flag `#1' must\MessageBreak
5471 be set to `#2'%
5472 }%
5473 }%
5474 \Fld@invisiblefalse
5475 \def\Fld@invisibletrue{%
5476 \HyField@PDFAFIWarning{invisible}{false}%
5477 }%
5478 \Fld@hiddenfalse
5479 \def\Fld@hiddentrue{%
5480 \HyField@PDFAFIWarning{hidden}{false}%
5481 }%
5482 \Fld@printtrue
5483 \def\Fld@printfalse{%
5484 \HyField@PDFAFIWarning{print}{true}%
5485 }%
5486 \Fld@nozoomtrue
5487 \def\Fld@nozoomfalse{%
5488 \HyField@PDFAFIWarning{nozoom}{true}%
5489 }%
5490 \Fld@norotatetrue
5491 \def\Fld@norotatefalse{%
5492 \HyField@PDFAFIWarning{norotate}{true}%
5493 }%
5494 \Fld@noviewfalse
5495 \def\Fld@noviewtrue{%
5496 \HyField@PDFAFIWarning{noview}{false}%
5497 }%
5498 \fi

```

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

```

5499 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
5500 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
5501 \HyField@NewFlag{Submit}{GetMethod}{4}
5502 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
5503 \HyField@NewFlagOnly{Submit}{XFDF}{6}
5504 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}
5505 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
5506 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}

```

```

5507 \HyField@NewFlag{Submit}{CanonicalFormat}{10}
5508 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
5509 \HyField@NewFlag{Submit}{ExclFKey}{12}
5510 \HyField@NewFlag{Submit}{EmbedForm}{14}

5511 \define@key{Field}{export}{%
5512   \lowercase{\def\Hy@temp{#1}}%
5513   \@ifundefined{Fld@export@\Hy@temp}{%
5514     \@onelevel@sanitize\Hy@temp
5515     \Hy@Error{%
5516       Unknown export format `'\Hy@temp'.\MessageBreak
5517       Known formats are `FDF', `HTML', `XFDF', and `PDF'%
5518     } \@ehc
5519   }{%
5520     \let\Fld@export\Hy@temp
5521   }%
5522 }
5523 \def\Fld@export{fdf}
5524 \@namedef{Fld@export@fdf}{0}%
5525 \@namedef{Fld@export@html}{1}%
5526 \@namedef{Fld@export@xfdf}{2}%
5527 \@namedef{Fld@export@pdf}{3}%

```

### 19.1.2 Set submit flags

\HyField@FlagsSubmit

```

5528 \def\HyField@FlagsSubmit{%
5529   \bitsetReset{HyField@Submit}%
5530   \ifcase\@nameuse{Fld@export@\Fld@export} %
5531     % FDF
5532     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5533     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5534     \HyField@UseFlag{Submit}{IncludeAppendSaves}%
5535     \HyField@UseFlag{Submit}{IncludeAnnotations}%
5536     \HyField@UseFlag{Submit}{CanonicalFormat}%
5537     \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
5538     \HyField@UseFlag{Submit}{ExclFKey}%
5539     \HyField@UseFlag{Submit}{EmbedForm}%
5540   \or % HTML
5541     \HyField@SetFlag{Submit}{ExportFormat}%
5542     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5543     \HyField@UseFlag{Submit}{GetMethod}%
5544     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5545     \HyField@UseFlag{Submit}{CanonicalFormat}%
5546   \or % XFDF
5547     \HyField@SetFlag{Submit}{XFDF}%
5548     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5549     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5550     \HyField@UseFlag{Submit}{CanonicalFormat}%
5551   \or % PDF
5552     \HyField@SetFlag{Submit}{SubmitPDF}%
5553     \HyField@UseFlag{Submit}{GetMethod}%
5554   \fi
5555   \HyField@PrintFlags{Submit}{submit button field}%

```

```

5556 \bitsetIsEmpty{HyField@Submit}{%
5557   \let\Fld@submitflags\@empty
5558 }{%
5559   \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}%
5560 }%
5561 }

```

### 19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

5562 \def\HyField@FlagsAnnot#1{%
5563   \bitsetReset{HyField@F}%
5564   \HyField@UseFlag{F}{Invisible}%
5565   \HyField@UseFlag{F}{Hidden}%
5566   \HyField@UseFlag{F}{Print}%
5567   \HyField@UseFlag{F}{NoZoom}%
5568   \HyField@UseFlag{F}{NoRotate}%
5569   \HyField@UseFlag{F}{NoView}%
5570   \HyField@UseFlag{F}{Locked}%
5571   \HyField@UseFlag{F}{ToggleNoView}%
5572   \HyField@UseFlag{F}{LockedContents}%
5573   \HyField@PrintFlags{F}{#1}%
5574   \bitsetIsEmpty{HyField@F}{%
5575     \let\Fld@annotflags\@empty
5576   }{%
5577     \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}%
5578   }%
5579 }

```

### 19.1.4 Pushbutton field

\HyField@FlagsPushButton

```

5580 \def\HyField@FlagsPushButton{%
5581   \HyField@FlagsAnnot{push button field}%
5582   \bitsetReset{HyField@Ff}%
5583   \HyField@UseFlag{Ff}{ReadOnly}%
5584   \HyField@UseFlag{Ff}{Required}%
5585   \HyField@UseFlag{Ff}{NoExport}%
5586   \HyField@SetFlag{Ff}{PushButton}%
5587   \HyField@PrintFlags{Ff}{push button field}%
5588   \bitsetIsEmpty{HyField@Ff}{%
5589     \let\Fld@flags\@empty
5590   }{%
5591     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5592   }%
5593 }

```

### 19.1.5 Check box field

\HyField@FlagsCheckBox

```

5594 \def\HyField@FlagsCheckBox{%
5595   \HyField@FlagsAnnot{check box field}%
5596   \bitsetReset{HyField@Ff}%

```

```

5597 \HyField@UseFlag{Ff}{ReadOnly}%
5598 \HyField@UseFlag{Ff}{Required}%
5599 \HyField@UseFlag{Ff}{NoExport}%
5600 \HyField@PrintFlags{Ff}{checkbox field}%
5601 \bitsetIsEmpty{HyField@Ff}{%
5602   \let\Fld@flags\@empty
5603 }{%
5604   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5605 }%
5606 }

```

### 19.1.6 Radio button field

\HyField@FlagsRadioButton

```

5607 \def\HyField@FlagsRadioButton{%
5608   \HyField@FlagsAnnot{radio button field}%
5609   \bitsetReset{HyField@Ff}%
5610   \HyField@UseFlag{Ff}{ReadOnly}%
5611   \HyField@UseFlag{Ff}{Required}%
5612   \HyField@UseFlag{Ff}{NoExport}%
5613   \HyField@UseFlag{Ff}{NoToggleToOff}%
5614   \HyField@SetFlag{Ff}{Radio}%
5615   \HyField@UseFlag{Ff}{RadiosInUnison}%
5616   \HyField@PrintFlags{Ff}{radio button field}%
5617   \bitsetIsEmpty{HyField@Ff}{%
5618     \let\Fld@flags\@empty
5619   }{%
5620     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5621   }%
5622 }

```

### 19.1.7 Text fields

\HyField@FlagsText

```

5623 \def\HyField@FlagsText{%
5624   \HyField@FlagsAnnot{text field}%
5625   \bitsetReset{HyField@Ff}%
5626   \HyField@UseFlag{Ff}{ReadOnly}%
5627   \HyField@UseFlag{Ff}{Required}%
5628   \HyField@UseFlag{Ff}{NoExport}%
5629   \HyField@UseFlag{Ff}{Multiline}%
5630   \HyField@UseFlag{Ff}{Password}%
5631   \HyField@UseFlag{Ff}{FileSelect}%
5632   \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5633   \HyField@UseFlag{Ff}{DoNotScroll}%
5634   \ifFld@comb
5635     \ifcase0\ifFld@multiline
5636       \else\ifFld@password
5637       \else\ifFld@fileselect
5638       \else 1\fi\fi\fi\relax
5639   \Hy@Error{%
5640     Field option `comb' cannot be used together with\MessageBreak
5641     `multiline', `password', or `fileselect'%

```

```

5642     }\@ehc
5643     \else
5644     \HyField@UseFlag{Ff}{Comb}%
5645     \fi
5646 \fi
5647 \HyField@UseFlag{Ff}{RichText}%
5648 \HyField@PrintFlags{Ff}{text field}%
5649 \bitsetIsEmpty{HyField@Ff}{%
5650   \let\Fld@flags\@empty
5651 }{%
5652   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5653 }%
5654 }

```

### 19.1.8 Choice fields

\HyField@FlagsChoice

```

5655 \def\HyField@FlagsChoice{%
5656   \HyField@FlagsAnnot{choice field}%
5657   \bitsetReset{HyField@Ff}%
5658   \HyField@UseFlag{Ff}{ReadOnly}%
5659   \HyField@UseFlag{Ff}{Required}%
5660   \HyField@UseFlag{Ff}{NoExport}%
5661   \HyField@UseFlag{Ff}{Combo}%
5662   \ifFld@combo
5663     \HyField@UseFlag{Ff}{Edit}%
5664   \fi
5665   \HyField@UseFlag{Ff}{Sort}%
5666   \HyField@UseFlag{Ff}{MultiSelect}%
5667   \ifFld@combo
5668     \ifFld@edit
5669       \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5670     \fi
5671   \fi
5672   \HyField@UseFlag{Ff}{CommitOnSelChange}%
5673   \HyField@PrintFlags{Ff}{choice field}%
5674   \bitsetIsEmpty{HyField@Ff}{%
5675     \let\Fld@flags\@empty
5676   }{%
5677     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5678   }%
5679 }

```

## 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.

```

5680 \def\HyField@PDFChoices#1{%
5681   \begingroup
5682   \global\let\Fld@choices\@empty
5683   \let\HyTmp@optlist\@empty

```

```

5684 \let\HyTmp@optitem\relax
5685 \count@=0 %
5686 \kv@parse{#1}{%
5687   \Hy@pdfstringdef\kv@key\kv@key
5688   \ifx\kv@value\relax
5689   \ifnum\Hy@pdf@majorminor@version<103 % implementation note 122, PDF spec 1.7
5690     \xdef\Fld@choices{\Fld@choices(\kv@key)(\kv@key)}%
5691   \else
5692     \xdef\Fld@choices{\Fld@choices(\kv@key)}%
5693   \fi
5694 \else
5695   \Hy@pdfstringdef\kv@value\kv@value
5696   \xdef\Fld@choices{\Fld@choices(\kv@value)(\kv@key)}%
5697 \fi
5698 \edef\HyTmp@optlist{%
5699   \HyTmp@optlist
5700   \HyTmp@optitem{\the\count@}{\kv@key}0%
5701 }%
5702 \advance\count@ by 1 %
5703 \@gobbletwo
5704 }%
5705 \xdef\Fld@choices{/Opt[\Fld@choices]}%
5706 \ifFld@multiselect
5707   \HyField@@PDFChoices{DV}\Fld@default
5708   \HyField@@PDFChoices{V}\Fld@value
5709 \else
5710   \ifx\Fld@default\relax
5711   \else
5712     \pdfstringdef\Hy@gtemp\Fld@default
5713     \xdef\Fld@choices{\Fld@choices/DV(\Hy@gtemp)}%
5714   \fi
5715   \ifx\Fld@value\relax
5716   \else
5717     \pdfstringdef\Hy@gtemp\Fld@value
5718     \xdef\Fld@choices{\Fld@choices/V(\Hy@gtemp)}%
5719   \fi
5720 \fi
5721 \endgroup
5722 }

```

\HyField@@PDFChoices

```

5723 \def\HyField@@PDFChoices#1#2{%
5724   \ifx#2\relax
5725   \else
5726     \count@=0 %
5727     \def\HyTmp@optitem##1##2##3{%
5728       \def\HyTmp@key{##2}%
5729       \ifx\HyTmp@key\Hy@gtemp
5730         \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5731           \HyTmp@optlist
5732           \HyTmp@optitem{##1}{##2}1%
5733         }%
5734       \let\HyTmp@found=Y%
5735     \else

```



```

5736 \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5737 \HyTmp@optlist
5738 \HyTmp@optitem{##1}{##2}##3%
5739 }%
5740 \fi
5741 }%
5742 \expandafter\comma@parse\expandafter{#2}{%
5743 \pdfstringdef\Hy@gtemp\comma@entry
5744 \let\HyTmp@found=N %
5745 \expandafter\let\expandafter\HyTmp@optlist\expandafter\@empty
5746 \HyTmp@optlist
5747 \ifx\HyTmp@found Y%
5748 \advance\count@ by 1 %
5749 \else
5750 \@onelevel@sanitize\comma@entry
5751 \PackageWarning{hyperref}{%
5752 \string\ChoiceBox: Ignoring value `\'comma@entry',%
5753 \MessageBreak
5754 it cannot be found in the choices%
5755 }%
5756 \fi
5757 \@gobble
5758 }%
5759 \def\HyTmp@optitem##1##2##3{%
5760 \ifnum##3=1 %
5761 (##2)%
5762 \fi
5763 }%
5764 \ifcase\count@
5765 \or
5766 \xdef\Fld@choices{\Fld@choices/#1\HyTmp@optlist}%
5767 \else
5768 \xdef\Fld@choices{\Fld@choices/#1[\HyTmp@optlist]}%
5769 \ifx#1V%
5770 \def\HyTmp@optitem##1##2##3{%
5771 \ifnum##3=1 %
5772 \@firstofone{ ##1}%
5773 \fi
5774 }%
5775 \edef\HyTmp@optlist{\HyTmp@optlist}%
5776 \xdef\Fld@choices{%
5777 \Fld@choices
5778 /I[\expandafter\@firstofone\HyTmp@optlist]}%
5779 }%
5780 \fi
5781 \fi
5782 \fi
5783 }

```

### 19.3 Forms

\HyField@SetKeys

```

5784 \def\HyField@SetKeys{%
5785 \kvsetkeys{Field}%

```

```

5786 }

5787 \newif\ifFld@checked
5788 \newif\ifFld@disabled
5789 \Fld@checkedfalse
5790 \Fld@disabledfalse
5791 \newcount\Fld@menulength
5792 \newdimen\Fld@Width
5793 \newdimen\Fld@charsize
5794 \Fld@charsize=10\p@
5795 \def\Fld@maxlen{0}
5796 \def\Fld@align{0}
5797 \def\Fld@color{0 0 0 rg}
5798 \def\Fld@bcolor{1 1 1}
5799 \def\Fld@bordercolor{1 0 0}
5800 \def\Fld@bordersep{1\p@}
5801 \def\Fld@borderwidth{1}
5802 \def\Fld@borderstyle{S}
5803 \def\Fld@cbsymbol{4}
5804 \def\Fld@radiosymbol{H}
5805 \def\Fld@rotation{0}
5806 \def\Fld@ifnextchar[{\@Form}{\@Form[]}]
5807 \def\Fld@endForm{\endForm}
5808 \newif\ifForm@html
5809 \Form@htmlfalse
5810 \def\Fld@boolkey#1#2{%
5811   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5812 }
5813 \define@key{Form}{action}{%
5814   \hyper@normalise\Hy@DefFormAction{#1}%
5815 }
5816 \def\Hy@DefFormAction{\def\Fld@action}
5817 \def\enc@html{html}
5818 \define@key{Form}{encoding}{%
5819   \def\Hy@tempa{#1}%
5820   \ifx\Hy@tempa\enc@html
5821     \Form@htmltrue
5822     \def\Fld@export{html}%
5823   \else
5824     \Hy@Warning{%
5825       Form `encoding' key with \MessageBreak
5826       unknown value `#1'%
5827     }%
5828   \Form@htmlfalse
5829   \fi
5830 }
5831 \define@key{Form}{method}{%
5832   \lowercase{\def\Hy@temp{#1}}%
5833   \@ifundefined{Form@method@\Hy@temp}{%
5834     \@onelevel@sanitize\Hy@temp
5835     \Hy@Error{%
5836       Unknown method ``\Hy@temp'.\MessageBreak
5837       Known values are `post' and `get'%
5838     }\@ehc

```

```

5839 }{%
5840 \let\Form@method\Hy@temp
5841 \ifcase\@nameuse{Form@method@\Hy@temp} %
5842 \Fld@getmethodfalse
5843 \else
5844 \Fld@getmethodtrue
5845 \fi
5846 }%
5847 }
5848 \def\Form@method{}
5849 \@namedef{Form@method@post}{0}
5850 \@namedef{Form@method@get}{1}

5851 \newif\ifHyField@NeedAppearances
5852 \def\HyField@NeedAppearancesfalse{%
5853 \global\let\ifHyField@NeedAppearances\iffalse
5854 }
5855 \def\HyField@NeedAppearancetrue{%
5856 \global\let\ifHyField@NeedAppearances\iftrue
5857 }
5858 \HyField@NeedAppearancetrue
5859 \define@key{Form}{NeedAppearances}[true]{%
5860 \edef\Hy@tempa{#1}%
5861 \ifx\Hy@tempa\Hy@true
5862 \HyField@NeedAppearancetrue
5863 \else
5864 \ifx\Hy@tempa\Hy@false
5865 \HyField@NeedAppearancesfalse
5866 \else
5867 \Hy@Error{%
5868 Unexpected value ``\Hy@tempa'\MessageBreak
5869 of option `NeedAppearances' instead of\MessageBreak
5870 `true' or `false'%
5871 } \@ehc
5872 \fi
5873 \fi
5874 }
5875 \def\Field@boolkey#1#2{%
5876 \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5877 }
5878 \ifHy@texht
5879 \newtoks\Field@toks
5880 \Field@toks={ }%
5881 \def\Field@addtoks#1#2{%
5882 \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}%
5883 \@processme
5884 }%
5885 \else
5886 \def\Hy@WarnHTMLFieldOption#1{%
5887 \Hy@Warning{%
5888 HTML field option `#1'\MessageBreak
5889 is ignored%
5890 }%
5891 }%
5892 \fi

```

```

5893 \def\Fld@checkequals#1=#2=#3\{\%
5894 \def\@currDisplay{#1}%
5895 \ifx\#2\%
5896 \def\@currValue{#1}%
5897 \else
5898 \def\@currValue{#2}%
5899 \fi
5900 \expandafter\Hy@pdfstringdef\expandafter\@currValue\expandafter{\@currValue}%
5901 }
5902 \define@key{Field}{loc}{%
5903 \def\Fld@loc{#1}%
5904 }
5905 \define@key{Field}{checked}[true]{%
5906 \lowercase{\Field@boolkey{#1}}{checked}%
5907 }
5908 \define@key{Field}{disabled}[true]{%
5909 \lowercase{\Field@boolkey{#1}}{disabled}%
5910 }
5911 \ifHy@texht
5912 \define@key{Field}{accesskey}{%
5913 \Field@addtoks{accesskey}{#1}%
5914 }%
5915 \define@key{Field}{tabkey}{%
5916 \Field@addtoks{tabkey}{#1}%
5917 }%
5918 \else
5919 \define@key{Field}{accesskey}{%
5920 \Hy@WarnHTMLFieldOption{accesskey}%
5921 }%
5922 \define@key{Field}{tabkey}{%
5923 \Hy@WarnHTMLFieldOption{tabkey}%
5924 }%
5925 \fi
5926 \define@key{Field}{name}{%
5927 \def\Fld@name{#1}%
5928 }
5929 \let\Fld@altname\relax
5930 \define@key{Field}{altname}{%
5931 \def\Fld@altname{#1}%
5932 }
5933 \let\Fld@mappingname\relax
5934 \define@key{Field}{mappingname}{%
5935 \def\Fld@mappingname{#1}%
5936 }
5937 \define@key{Field}{width}{%
5938 \def\Fld@width{#1}%
5939 \Field@Width#1\setbox0=\hbox{m}%
5940 }
5941 \define@key{Field}{maxlen}{%
5942 \def\Fld@maxlen{#1}%
5943 }
5944 \define@key{Field}{menulength}{%
5945 \Fld@menulength=#1\relax
5946 }

```

```

5947 \define@key{Field}{height}{%
5948   \def\Fld@height{#1}%
5949 }
5950 \define@key{Field}{charsize}{%
5951   \setlength{\Fld@charsize}{#1}%
5952 }
5953 \define@key{Field}{borderwidth}{%
5954   \Hy@defaultbp\Fld@borderwidth{#1}%
5955 }
5956 \def\Hy@defaultbp#1#2{%
5957   \begingroup
5958   \afterassignment\Hy@defaultbpAux
5959   \dimen@=#2bp\relax{#1}{#2}%
5960 }
5961 \def\Hy@defaultbpAux#1\relax#2#3{%
5962   \ifx!#1!%
5963     \endgroup
5964     \def#2{#3}%
5965   \else
5966     \edef\x{\endgroup
5967       \def\noexpand#2{%
5968         \strip@pt\dimexpr\dimen@*800/803\relax
5969       }%
5970     }\x
5971   \fi
5972 }%
5973 \define@key{Field}{borderstyle}{%
5974   \let\Hy@temp\Fld@borderstyle
5975   \def\Fld@borderstyle{#1}%
5976   \Hy@Match\Fld@borderstyle{}{%
5977     ~[SDBIU]$%
5978   }-}{%
5979   \Hy@Warning{%
5980     Invalid value `~@pdfborderstyle'\MessageBreak
5981     for option `pdfborderstyle'. Valid values:\MessageBreak
5982     \space\space S (Solid), D (Dashed), B (Beveled),\MessageBreak
5983     \space\space I (Inset), U (Underline)\MessageBreak
5984     Option setting is ignored%
5985   }%
5986   \let\Fld@borderstyle\Hy@temp
5987 }%
5988 }
5989 \define@key{Field}{bordersep}{%
5990   \def\Fld@bordersep{#1}%
5991 }
5992 \define@key{Field}{default}{%
5993   \Hy@pdfstringdef\Fld@default{#1}%
5994 }
5995 \define@key{Field}{align}{%
5996   \def\Fld@align{#1}%
5997 }
5998 \define@key{Field}{value}{%
5999   \Hy@pdfstringdef\Fld@value{#1}%
6000 }

```

```

6001 \define@key{Field}{checkboxsymbol}{%
6002   \Fld@DingDef\Fld@cbsymbol{#1}%
6003 }
6004 \define@key{Field}{radiosymbol}{%
6005   \Fld@DingDef\Fld@radiosymbol{#1}%
6006 }
6007 \def\Fld@DingDef#1#2{%
6008   \let\Fld@temp\@empty
6009   \Fld@@DingDef#2\ding{ }\@nil
6010   \let#1\Fld@temp
6011 }
6012 \def\Fld@@DingDef#1\ding#2#3\@nil{%
6013   \expandafter\def\expandafter\Fld@temp\expandafter{%
6014     \Fld@temp
6015     #1%
6016   }%
6017   \ifx\#3\%
6018     \expandafter\@gobble
6019   \else
6020     \begingroup
6021     \lccode`0=#2\relax
6022     \lowercase{\endgroup
6023     \expandafter\def\expandafter\Fld@temp\expandafter{%
6024       \Fld@temp
6025       0%
6026     }%
6027   }%
6028   \expandafter\@firstofone
6029   \fi
6030   {%
6031     \Fld@@DingDef#3\@nil
6032   }%
6033 }

6034 \define@key{Field}{rotation}{%
6035   \def\Fld@rotation{#1}%
6036 }

6037 \define@key{Field}{backgroundcolor}{%
6038   \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
6039 }
6040 \define@key{Field}{bordercolor}{%
6041   \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
6042 }
6043 \define@key{Field}{color}{%
6044   \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
6045 }

6046 \let\Fld@onclick@code\@empty
6047 \let\Fld@format@code\@empty
6048 \let\Fld@validate@code\@empty
6049 \let\Fld@calculate@code\@empty
6050 \let\Fld@keystroke@code\@empty
6051 \let\Fld@onfocus@code\@empty
6052 \let\Fld@onblur@code\@empty
6053 \let\Fld@onmousedown@code\@empty

```

```

6054 \let\Fld@onmouseup@code\@empty
6055 \let\Fld@onenter@code\@empty
6056 \let\Fld@onexit@code\@empty
6057 \def\Hy@temp#1{%
6058   \expandafter\Hy@@temp\csname Fld@#1@code\endcsname{#1}%
6059 }
6060 \def\Hy@@temp#1#2{%
6061   \ifHy@pdfa
6062     \define@key{Field}{#2}{%
6063       \Hy@Error{%
6064         PDF/A: Additional action `#2' is prohibited%
6065       } \@ehc
6066     }%
6067   \else
6068     \define@key{Field}{#2}{%
6069       \def#1{##1}%
6070     }%
6071   \fi
6072 }
6073 \Hy@temp{keystroke}
6074 \Hy@temp{format}
6075 \Hy@temp{validate}
6076 \Hy@temp{calculate}
6077 \Hy@temp{onfocus}
6078 \Hy@temp{onblur}
6079 \Hy@temp{onmousedown}
6080 \Hy@temp{onmouseup}
6081 \Hy@temp{onenter}
6082 \Hy@temp{onexit}

6083 \let\Fld@calculate@sortkey\@empty
6084 \define@key{Field}{calculatesortkey}[1]{%
6085   \def\Fld@calculate@sortkey{#1}%
6086 }

6087 \ifHy@texht
6088   \def\Hy@temp#1{%
6089     \define@key{Field}{#1}{%
6090       \Field@addtoks{#1}{##1}%
6091     }%
6092   }%
6093 \else
6094   \def\Hy@temp#1{%
6095     \define@key{Field}{#1}{%
6096       \Hy@WarnHTMLFieldOption{#1}%
6097     }%
6098   }%
6099 \fi
6100 \Hy@temp{ondblclick}
6101 \Hy@temp{onmouseover}
6102 \Hy@temp{onmousemove}
6103 \Hy@temp{onmouseout}
6104 \Hy@temp{onkeydown}
6105 \Hy@temp{onkeyup}
6106 \Hy@temp{onselect}

```

```

6107 \Hy@temp{onchange}
6108 \Hy@temp{onkeypress}
6109 \ifHy@texht
6110 \define@key{Field}{onclick}{%
6111   \Field@addtoks{onclick}{#1}%
6112 }%
6113 \else
6114 \ifHy@pdfa
6115 \define@key{Field}{onclick}{%
6116   \Hy@Error{%
6117     PDF/A: Action `onclick' is prohibited%
6118   } \@ehc
6119 }%
6120 \else
6121 \define@key{Field}{onclick}{%
6122   \def\Fld@onclick@code{#1}%
6123 }%
6124 \fi
6125 \fi

6126 \DeclareRobustCommand\TextField{%
6127   \@ifnextchar[{\@TextField}{\@TextField[]}%
6128 }
6129 \DeclareRobustCommand\ChoiceMenu{%
6130   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
6131 }
6132 \DeclareRobustCommand\CheckBox{%
6133   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
6134 }
6135 \DeclareRobustCommand\PushButton{%
6136   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
6137 }
6138 \DeclareRobustCommand\Gauge{%
6139   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
6140 }
6141 \DeclareRobustCommand\Submit{%
6142   \@ifnextchar[{\@Submit}{\@Submit[]}%
6143 }
6144 \DeclareRobustCommand\Reset{%
6145   \@ifnextchar[{\@Reset}{\@Reset[]}%
6146 }
6147 \def\LayoutTextField#1#2{% label, field
6148   \def\Hy@temp{#1}%
6149   \ifx\Hy@temp\@empty
6150     #2%
6151   \else
6152     #1 #2%
6153   \fi
6154 }
6155 \def\LayoutChoiceField#1#2{% label, field
6156   \def\Hy@temp{#1}%
6157   \ifx\Hy@temp\@empty
6158     #2%
6159   \else
6160     #1 #2%

```



```

6161 \fi
6162 }
6163 \def\LayoutCheckField#1#2{% label, field
6164 \def\Hy@temp{#1}%
6165 \ifx\Hy@temp\@empty
6166 #2%
6167 \else
6168 #1 #2%
6169 \fi
6170 }
6171 \def\LayoutPushButtonField#1{% button
6172 #1%
6173 }
6174 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6175 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6176 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6177 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6178 \def\MakeButtonField#1{%
6179 \sbox0{%
6180 \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
6181 }%
6182 \@tempdima\ht0 %
6183 \advance\@tempdima by \Fld@borderwidth bp %
6184 \advance\@tempdima by \Fld@borderwidth bp %
6185 \ht0\@tempdima
6186 \@tempdima\dp0 %
6187 \advance\@tempdima by \Fld@borderwidth bp %
6188 \advance\@tempdima by \Fld@borderwidth bp %
6189 \dp0\@tempdima
6190 \box0\relax
6191 }
6192 \def\DefaultHeightofSubmit{14pt}
6193 \def\DefaultWidthofSubmit{2cm}
6194 \def\DefaultHeightofReset{14pt}
6195 \def\DefaultWidthofReset{2cm}
6196 \def\DefaultHeightofCheckBox{\normalbaselineskip}
6197 \def\DefaultWidthofCheckBox{\normalbaselineskip}
6198 \def\DefaultHeightofChoiceMenu{\normalbaselineskip}
6199 \def\DefaultWidthofChoiceMenu{\normalbaselineskip}
6200 \def\DefaultHeightofText{\normalbaselineskip}
6201 \def\DefaultHeightofTextMultiline{4\normalbaselineskip}
6202 \def\DefaultWidthofText{3cm}
6203 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
6204 \def\DefaultOptionsofReset{print,name=Reset,noexport}
6205 \def\DefaultOptionsofPushButton{print}
6206 \def\DefaultOptionsofCheckBox{print}
6207 \def\DefaultOptionsofText{print}

```

Default options for the types of \ChoiceMenu.

```

6208 \def\DefaultOptionsofListBox{print}
6209 \def\DefaultOptionsofComboBox{print,edit,sort}
6210 \def\DefaultOptionsofPopdownBox{print}
6211 \def\DefaultOptionsofRadio{print,notoggletooff}

```

## 20 Setup

```
6212 \ifHy@hyperfigures
6213 \Hy@Info{Hyper figures ON}%
6214 \else
6215 \Hy@Info{Hyper figures OFF}%
6216 \fi
6217 \ifHy@nesting
6218 \Hy@Info{Link nesting ON}%
6219 \else
6220 \Hy@Info{Link nesting OFF}%
6221 \fi
6222 \ifHy@hyperindex
6223 \Hy@Info{Hyper index ON}%
6224 \else
6225 \Hy@Info{Hyper index OFF}%
6226 \fi
6227 \ifHy@backref
6228 \Hy@Info{backreferencing ON}%
6229 \else
6230 \Hy@Info{backreferencing OFF}%
6231 \fi
6232 \ifHy@colorlinks
6233 \Hy@Info{Link coloring ON}%
6234 \else
6235 \Hy@Info{Link coloring OFF}%
6236 \fi
6237 \ifHy@ocgcolorlinks
6238 \Hy@Info{Link coloring with OCG ON}%
6239 \else
6240 \Hy@Info{Link coloring with OCG OFF}%
6241 \fi
6242 \ifHy@pdfa
6243 \Hy@Info{PDF/A mode ON}%
6244 \else
6245 \Hy@Info{PDF/A mode OFF}%
6246 \fi
```

## 21 Low-level utility macros

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

```
6247 \edef\hyper@hash{\string#}
6248 \edef\hyper@tilde{\string~}
6249 \edef\hyper@quote{\string"}
```

Support \label before \begin{document}.

```
6250 \def\@currentHref{Doc-Start}
6251 \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.

```
6252 \Hy@AtBeginDocument{%
6253 \Hy@pdfstringtrue
6254 \PDF@SetupDoc
```

```

6255 \let\PDF@SetupDoc\@empty
6256 \Hy@DisableOption{pdfpagescrop}%
6257 \Hy@DisableOption{pdfpagemode}%
6258 \Hy@DisableOption{pdfnonfullscreenpagemode}%
6259 \Hy@DisableOption{pdfdirection}%
6260 \Hy@DisableOption{pdfviewarea}%
6261 \Hy@DisableOption{pdfviewclip}%
6262 \Hy@DisableOption{pdfprintarea}%
6263 \Hy@DisableOption{pdfprintclip}%
6264 \Hy@DisableOption{pdfprintscaling}%
6265 \Hy@DisableOption{pdfduplex}%
6266 \Hy@DisableOption{pdfpicktraybypdfsize}%
6267 \Hy@DisableOption{pdfprintpagerange}%
6268 \Hy@DisableOption{pdfnumcopies}%
6269 \Hy@DisableOption{pdfstartview}%
6270 \Hy@DisableOption{pdfstartpage}%
6271 \Hy@DisableOption{pdftoolbar}%
6272 \Hy@DisableOption{pdfmenubar}%
6273 \Hy@DisableOption{pdfwindowui}%
6274 \Hy@DisableOption{pdfitwindow}%
6275 \Hy@DisableOption{pdfcenterwindow}%
6276 \Hy@DisableOption{pdfdisplaydoctitle}%
6277 \Hy@DisableOption{pdfpagelayout}%
6278 \Hy@DisableOption{pdflang}%
6279 \Hy@DisableOption{baseurl}%
6280 \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
6281 \Hy@pdfstringfalse
6282 }

```

## 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.

```

6283 \def\NoHyper{%
6284 \def\hyper@link@[##1]##2##3##4{##4\Hy@xspace@end}%
6285 \def\hyper@@anchor##1##2{##2\Hy@xspace@end}%
6286 \global\let\hyper@livelink\hyper@link
6287 \gdef\hyper@link##1##2##3{##3\Hy@xspace@end}%
6288 \let\hyper@anchor\@gobble
6289 \let\hyper@anchorstart\@gobble
6290 \def\hyper@anchorend{\Hy@xspace@end}%
6291 \let\hyper@linkstart\@gobbletwo
6292 \def\hyper@linkend{\Hy@xspace@end}%
6293 \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%
6294 \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
6295 \let\Hy@backout\@gobble
6296 }
6297 \def\stop@hyper{%
6298 \def\hyper@link@[##1]##2##3##4{##4\Hy@xspace@end}%
6299 \let\Hy@backout\@gobble
6300 \let\hyper@@anchor\@gobble

```

```

6301 \def\hyper@link##1##2##3{##3\Hy@xspace@end}%
6302 \let\hyper@anchor@gobble
6303 \let\hyper@anchorstart@gobble
6304 \def\hyper@anchorend{\Hy@xspace@end}%
6305 \let\hyper@linkstart@gobbletwo
6306 \def\hyper@linkend{\Hy@xspace@end}%
6307 \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%
6308 \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
6309 }
6310 \def\endNoHyper{%
6311 \global\let\hyper@link\hyper@livelink
6312 }
6313 \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:

```

6314 (*nohyperref)
6315 \let\hyper@@anchor@gobble
6316 \def\hyper@link#1#2#3{#3}%
6317 \let\hyper@anchorstart@gobble
6318 \let\hyper@anchorend@empty
6319 \let\hyper@linkstart@gobbletwo
6320 \let\hyper@linkend@empty
6321 \def\hyper@linkurl#1#2{#1}%
6322 \def\hyper@linkfile#1#2#3{#1}%
6323 \def\hyper@link@[#1]#2#3{#1}%
6324 \let\PDF@SetupDoc@empty
6325 \let\PDF@FinishDoc@empty
6326 \def\nohyperpage#1{#1}

```

Some top-level commands:

```

6327 \def\Acrobatmenu#1#2{\leavevmode#2}
6328 \let\pdfstringdefDisableCommands@gobbletwo
6329 \let\texorpdfstring@firstoftwo
6330 \let\pdfbookmark@undefined
6331 \newcommand\pdfbookmark[3]{}
6332 \let\phantomsection@empty
6333 \let\hypersetup@gobble
6334 \let\hyperbaseurl@gobble
6335 \newcommand*{\href}[3]{}
6336 \let\hyperdef@gobbletwo
6337 \let\hyperlink@gobble
6338 \let\hypertarget@gobble
6339 \protected\def\hyperref{%
6340 \ifnextchar{\@gobbleopt{\expandafter@gobbletwo@gobble}%
6341 }
6342 \long\def@gobbleopt[#1]{}

```

```
6343 \let\hyperpage\@empty
6344 \</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.

```
6345 (*package)
6346 \@if@t@r\fmtversion{2023-06-01}{-}
6347 {
6348   \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.

```
6349   \if@filesw
6350     \immediate\write\@auxout{%
6351       \string\providecommand\string\HyperFirstAtBeginDocument{%
6352         \string\AtBeginDocument}^^J%
6353       \string\HyperFirstAtBeginDocument{%
6354         \string\ifx\string\hyper@anchor\string\@undefined^^J%
6355         \string\global\string\let\string\oldnewlabel\string\newlabel^^J%
6356         \string\gdef\string\newlabel\string#1\string#2{%
6357           \string\newlabelxx{\string#1}\string#2}^^J%
6358         \string\gdef\string\newlabelxx%
6359           \string#1\string#2\string#3\string#4\string#5\string#6{%
6360           \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.

```
6361       \string\AtEndDocument{%
6362         \string\ifx\string\hyper@anchor\string\@undefined^^J%
6363         \string\let\string\newlabel\string\oldnewlabel^^J%
6364         \string\fi%
6365       }^^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.

```
6366       \string\fi%
6367     }^^J%
6368     \string\global\string\let\string\hyper@last\relax^^J%
6369     \string\gdef\string\HyperFirstAtBeginDocument\string#1{\string#1}%
6370   }%
6371 \fi
6372 \let\HyperFirstAtBeginDocument\@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.

```

6373 \ifx\hyper@last\@undefined
6374 \def\newlabel#1#2{\@newlabel{#1}{#2}{-}{-}}%
6375 \fi
6376 }
6377 }

```

## 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.

```

6378 \ifHy@pdfusetitle
6379 \let\HyOrg@title\title
6380 \let\HyOrg@author\author
6381 \def\title{\@ifnextchar{\Hy@scanopttitle}{\Hy@scantitle}}%
6382 \def\Hy@scanopttitle[#1]{%
6383 \gdef\Hy@title{#1}%
6384 \HyOrg@title{#1}%
6385 }%
6386 \def\Hy@scantitle#1{%
6387 \gdef\Hy@title{#1}%
6388 \HyOrg@title{#1}%
6389 }%
6390 \def\author{\@ifnextchar{\Hy@scanoptauthor}{\Hy@scanauthor}}%
6391 \def\Hy@scanoptauthor[#1]{%
6392 \gdef\Hy@author{#1}%
6393 \HyOrg@author{#1}%
6394 }%
6395 \def\Hy@scanauthor#1{%
6396 \gdef\Hy@author{#1}%
6397 \HyOrg@author{#1}%
6398 }%

```

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.

```

6399 \begingroup
6400 \def\process@me#1\@nil#2{%
6401 \expandafter\let\expandafter\x\csname @#2\endcsname
6402 \edef\y{\expandafter\strip@prefix\meaning\x}%
6403 \def\c##1##2\@nil{%
6404 \ifx\##1\%
6405 \else
6406 \expandafter\gdef\csname Hy@#2\expandafter\endcsname
6407 \expandafter{\x}%
6408 \fi
6409 }%
6410 \expandafter\c\y\relax#1\@nil
6411 }%
6412 \expandafter\process@me\string\@latex@\@nil{title}%
6413 \expandafter\process@me\string\@latex@\@nil{author}%
6414 \endgroup

```

```
6415 \fi
6416 \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.

```
6417 \def\Hy@UseMaketitleString#1{%
6418   \@ifundefined{Hy@#1}{}{}%
6419   \begingroup
6420     \let\Hy@saved@hook\pdfstringdefPreHook
6421     \pdfstringdefDisableCommands{%
6422       \expandafter\let\expandafter\\\csname Hy@newline@#1\endcsname
6423       \let\newline\\}%
6424     \def\and{; }%
6425     \let\thanks\@gobble%
6426   }%
6427   \expandafter\ifx\csname @pdf#1\endcsname\@empty
6428     \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
6429       \csname Hy@#1\endcsname\@empty
6430     }%
6431   \fi
6432   \global\let\pdfstringdefPreHook\Hy@saved@hook
6433 \endgroup
6434 }%
6435 }
6436 \def\Hy@newline@title#1{ #1}
6437 \def\Hy@newline@author#1{, #1}
6438 \def\Hy@UseMaketitleInfos{%
6439   \Hy@UseMaketitleString{title}%
6440   \Hy@UseMaketitleString{author}%
6441 }
```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.

## 27 Every page

```
6442 \RequirePackage{atbegshi}[2007/09/09]
6443 \let\Hy@EveryPageHook\@empty
6444 \let\Hy@EveryPageBoxHook\@empty
6445 \let\Hy@FirstPageHook\@empty
6446 \AddToHook{shipout/before}{%
6447   \Hy@EveryPageHook
6448   \ifx\Hy@EveryPageBoxHook\@empty
```

```

6449 \else
6450   \setbox\ShipoutBox=\vbox{%
6451     \offinterlineskip
6452     \Hy@EveryPageBoxHook
6453     \box\ShipoutBox
6454   }%
6455 \fi
6456 }
6457 \Hy@iffileloaded{hpdftex.def}{-%
6458   \AddToHook{shipout/before}{-%
6459     \Hy@FirstPageHook
6460     \global\let\Hy@FirstPageHook\@empty
6461   }%
6462 }-%
6463 \AtBeginShipoutFirst{%
6464   \Hy@FirstPageHook
6465 }%
6466 }
6467 \g@addto@macro\Hy@FirstPageHook{%
6468   \PDF@FinishDoc
6469   \global\let\PDF@FinishDoc\@empty
6470 }

```

## 27.1 PDF /PageLabels

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

```

6471 \ifHy@pdfpagelabels
6472   \begingroup\expandafter\expandafter\expandafter\endgroup
6473   \expandafter\ifx\csname thepage\endcsname\relax
6474     \Hy@pdfpagelabelsfalse
6475     \Hy@WarningNoLine{%
6476       Option `pdfpagelabels' is turned off\MessageBreak
6477       because \string\thepage\space is undefined%
6478     }%
6479     \csname fi\endcsname
6480     \csname iffalse\expandafter\endcsname
6481   \fi

```

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

```

6482 \def\thispdfpagelabel#1{%
6483   \gdef\HyPL@thisLabel{#1}%
6484 }%
6485 \global\let\HyPL@thisLabel\relax

```

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

```

6486 \let\HyPL@Labels\@empty

```

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

```

6487 \newcount\Hy@abspage
6488 \Hy@abspage=0 %

```



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

```
6489 \def\HyPL@LastType{init}%
6490 \def\HyPL@LastNumber{0}%
6491 \let\HyPL@LastPrefix\@empty
```

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

```
6492 \def\HyPL@arabic{D}%
6493 \def\HyPL@Roman{R}%
6494 \def\HyPL@roman{r}%
6495 \def\HyPL@Alph{A}%
6496 \def\HyPL@alph{a}%

6497 \let\HyPL@SlidesSetPage\@empty
6498 \@ifclassloaded{slides}{%
6499   \def\HyPL@SlidesSetPage{%
6500     \advance\c@page\@ne
6501     \ifnum\value{page}>\@ne
6502       \protected@edef\HyPL@SlidesOptionalPage{%
6503         \Hy@SlidesFormatOptionalPage{\thepage}%
6504       }%
6505     \else
6506       \let\HyPL@SlidesOptionalPage\@empty
6507     \fi
6508     \advance\c@page-\@ne
6509     \def\HyPL@page{%
6510       \csname the\Hy@SlidesPage\endcsname
6511       \HyPL@SlidesOptionalPage
6512     }%
6513   }%
6514 }{}
```

`\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.

```
6515 \def\HyPL@EveryPage{%
6516   \begingroup
6517   \ifx\HyPL@thisLabel\relax
6518     \let\HyPL@page\thepage
6519     \HyPL@SlidesSetPage
6520   \else
6521     \let\HyPL@page\HyPL@thisLabel
6522     \global\let\HyPL@thisLabel\relax
6523   \fi
6524   \let\HyPL@Type\relax
6525   \ifnum\c@page>0 %
6526     \ifx\HyPL@SlidesSetPage\@empty
6527       \expandafter\HyPL@CheckThePage\HyPL@page\@nil
6528     \fi
6529   \fi
6530   \let\Hy@temp Y%
6531   \ifx\HyPL@Type\HyPL@LastType
6532   \else
6533     \let\Hy@temp N%
6534   \fi
6535   \ifx\HyPL@Type\relax
6536     \pdfstringdef\HyPL@Prefix{\HyPL@page}%

```

```

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

```

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

```

6575 \def\HyPL@CheckThePage#1\@nil{%
6576 \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
6577 }%

```

`\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`.

```

6578 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
6579 \def\Hy@tempa{#4}%
6580 \def\Hy@tempb{\csname\endcsname\c@page}%
6581 \ifx\Hy@tempa\Hy@tempb
6582 \expandafter\ifx\csname HyPL#3\endcsname\relax
6583 \else

```

```

6584     \def\HyPL@Type{#3}%
6585     \def\HyPL@Prefix{#2}%
6586     \fi
6587   \else
6588     \begingroup
6589     \let\Hy@next\endgroup
6590     \let\HyPL@found\@undefined
6591     \def\arabic{\HyPL@Format{arabic}}%
6592     \def\Roman{\HyPL@Format{Roman}}%
6593     \def\roman{\HyPL@Format{roman}}%
6594     \def\Alph{\HyPL@Format{Alph}}%
6595     \def\alph{\HyPL@Format{alph}}%
6596     \protected@edef\Hy@temp{#1}%
6597     \ifx\HyPL@found\relax
6598       \toks@\expandafter{\Hy@temp}%
6599       \edef\Hy@next{\endgroup
6600         \noexpand\HyPL@@@CheckThePage\the\toks@
6601         \noexpand\HyPL@found\relax\noexpand\@nil
6602       }%
6603     \fi
6604     \Hy@next
6605   \fi
6606 }%

```

`\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`.

```

6607 \def\HyPL@Format#1#2{%
6608   \ifx\HyPL@found\@undefined
6609     \expandafter\ifx\csname c@#2\endcsname\c@page
6610       \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
6611     \else
6612       \expandafter\noexpand\csname#1\endcsname{#2}%
6613     \fi
6614   \else
6615     \expandafter\noexpand\csname#1\endcsname{#2}%
6616   \fi
6617 }%

```

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

```

6618 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
6619   \def\Hy@tempa{#3}%
6620   \def\Hy@tempb{\HyPL@found\relax}%
6621   \ifx\Hy@tempa\Hy@tempb
6622     \def\HyPL@Type{#2}%
6623     \def\HyPL@Prefix{#1}%
6624   \fi
6625 }%

```

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

```

6626 \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`.

```
6627 \def\HyPL@Useless{0<</S/D>>}%
6628 \@onelevel@sanitize\HyPL@Useless
```

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

```
6629 \def\HyPL@SetPageLabels{%
6630   \@onelevel@sanitize\HyPL@Labels
6631   \ifx\HyPL@Labels\@empty
6632     \else
6633     \ifx\HyPL@Labels\HyPL@Useless
6634     \else
6635     \Hy@PutCatalog{/PageLabels<</Nums{\HyPL@Labels}>>}%
6636     \fi
6637   \fi
6638 }%
```

```
6639 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
6640 \fi
```

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

```
6641 \Hy@DisableOption{pdfpagelabels}
6642 </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`

```
6643 <*pdfTeX>
6644 \pdf@ifdraftmode{%
6645   \let\Hy@PutCatalog\@gobble
6646 }{%
6647   \let\Hy@PutCatalog\pdfcatalog
6648 }
6649 </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.

```
6650 <*vTeX>
6651 \providecommand*\XR@ext}{pdf}
6652 \edef\VTeXversion{%
6653   \ifx\VTeXversion\@undefined
6654     \z@
6655   \else
6656     \ifx\VTeXversion\relax
6657     \z@
```

```

6658 \else
6659 \VTeXversion
6660 \fi
6661 \fi
6662 }
6663 \begingroup
6664 \ifnum\Hy@VTeXversion<660 %
6665 \gdef\Hy@PutCatalog#1{%
6666 \Hy@WarningNoLine{%
6667 VTeX 6.59g or above required for pdfpagelabels%
6668 }%
6669 }%
6670 \else
6671 \gdef\Hy@PutCatalog#1{%
6672 \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
6673 }%
6674 \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
6675 \ifx\#2\%
6676 \else
6677 \immediate\special{!pdfpagelabels #2}%
6678 \fi
6679 }%
6680 \fi
6681 \endgroup
6682 </vtx>

6683 (*pdfTeX | vtx)

```

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

```

6684 \ifHy@pdfpagelabels
6685 \def\HyPL@StorePageLabel#1{%
6686 \toks@\expandafter{\HyPL@Labels}%
6687 \xdef\HyPL@Labels{%
6688 \the\toks@
6689 \the\Hy@abspage<<#1>>%
6690 }%
6691 }%

```

The `enddocument/afteraux` hook is used to get behind the final `\clearpage` and to avoid a `\clearpage` in `\AtEndDocument`. Then the PDF catalog entry for `\PageLabels` is set.

```

6692 \AddToHook{enddocument/afteraux}{%
6693 \HyPL@SetPageLabels
6694 }%

6695 \fi
6696 </pdfTeX | vtx>

```

### 27.1.2 xetex

```

6697 (*xetex)
6698 \HyPsd@LoadUnicode
6699 \Hy@unicodetrue
6700 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
6701 \else

```

```

6702 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
6703 \fi
6704 \define@key{Hyp}{unicode}[true]{%
6705 \Hy@boolkey{unicode}{#1}%
6706 \ifHy@unicode
6707 \else
6708 \Hy@Warning{%
6709 XeTeX driver only supports `unicode=true'. Ignoring\MessageBreak
6710 option setting `unicode=false'%
6711 }%
6712 \Hy@unicodetrue
6713 \fi
6714 }
6715 \define@key{Hyp}{pdfencoding}{%
6716 \edef\HyPsd@temp{#1}%
6717 \ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
6718 \let\HyPsd@pdfencoding\HyPsd@temp
6719 \else
6720 \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
6721 \let\HyPsd@pdfencoding\HyPsd@temp
6722 \else
6723 \Hy@Warning{%
6724 XeTeX driver only supports\MessageBreak
6725 `pdfencoding=unicode|auto'. Ignoring option\MessageBreak
6726 setting `pdfencoding=\HyPsd@temp'%
6727 }%
6728 \fi
6729 \fi
6730 }
6731 \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:

```

6732 \def\setpdfinkmargin#1{%
6733 \begingroup
6734 \setlength{\dimen@}{#1}%
6735 \special{dvipdfmx:config g \strip@pt\dimen@}%
6736 \endgroup}
6737 </xetex>

```

set the pdf version

```

6738 (*dvipdfm | xetex)
6739 \special{pdf:majorversion \Hy@pdf@majorversion}
6740 \special{pdf:minorversion \Hy@pdf@minorversion}
6741 </dvipdfm | xetex>

```

### 27.1.3 pdfmarkbase, dvipdfm, xetex

```

6742 (*pdfmarkbase)
6743 \begingroup
6744 \@ifundefined{headerps@out}{-}{%
6745 \toks@\expandafter{\Hy@FirstPageHook}%
6746 \xdef\Hy@FirstPageHook{%
6747 \noexpand\headerps@out{%
6748 systemdict /pdfmark known%
6749 {%

```

```

6750     userdict /?pdfmark systemdict /exec get put%
6751     }{%
6752     userdict /?pdfmark systemdict /pop get put %
6753     userdict /pdfmark systemdict /cleartomark get put%
6754     }%
6755     ifelse%
6756     }%
6757     \the\toks@
6758     }%
6759     }%
6760 \endgroup
6761 \pdfmarkbase)

```

\Hy@PutCatalog

```

6762 \dvi\pdfm | xetex)\def\Hy@PutCatalog#1{\@pdfm@mark{docview <<#1>>}}
6763 (*pdfmarkbase)
6764 \def\Hy@PutCatalog#1{%
6765   \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} <<#1>>}}%
6766 }
6767 \pdfmarkbase)

6768 (*pdfmarkbase | dvi\pdfm | xetex)
6769 \ifHy@pdfpagelabels

```

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

```

6770 \def\HyPL@StorePageLabel#1{%
6771   \if@filesw
6772   \begin{group}
6773     \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
6774     \immediate\write\@mainaux{%
6775       \string\HyPL@Entry{\Hy@tempa}%
6776     }%
6777   \end{group}
6778   \fi
6779 }%

```

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.

```

6780 \Hy@AtBeginDocument{%
6781   \if@filesw
6782     \immediate\write\@mainaux{%
6783       \string\providecommand\string*\string\HyPL@Entry[1]{}%
6784     }%
6785   \fi
6786   \ifx\HyPL@Labels\@empty
6787     \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
6788   \else
6789     \HyPL@SetPageLabels
6790   \fi
6791   \let\HyPL@Entry\@gobble
6792 }%

```

\HyPL@Entry

```

6793 \def\HyPL@Entry#1{%
6794   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
6795     \HyPL@Labels
6796     #1%
6797   }%
6798 }%

6799 \fi
6800 </pdfmarkbase | dvipdfm | xetex>
6801 (*packageEnd)

6802 \ifx\MaybeStopEarly\relax
6803 \else
6804   \Hy@stoppedearlytrue
6805   \expandafter\MaybeStopEarly
6806 \fi
6807 \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

```

6808 \def\Hy@CounterExists#1{%
6809   \begingroup\expandafter\expandafter\expandafter\endgroup
6810   \expandafter\ifx\csname c@#1\endcsname\relax
6811     \expandafter\@gobble
6812   \else
6813     \begingroup\expandafter\expandafter\expandafter\endgroup
6814     \expandafter\ifx\csname the#1\endcsname\relax
6815       \expandafter\expandafter\expandafter\@gobble
6816     \else
6817       \expandafter\expandafter\expandafter\@firstofone
6818     \fi
6819   \fi
6820 }

```



change 2024-10-13: do not define if format is new enough.

```

6821 \IfFormatAtLeastTF{2024-11-01}{-}
6822 {
6823   \Hy@CounterExists{section}{%
6824     \providecommand\theHequation{\theHsection.\arabic{equation}}%
6825   }
6826   \providecommand\theHequation{\arabic{equation}}%
6827   \Hy@CounterExists{part}{%
6828     \providecommand\theHpart{\arabic{part}}%
6829   }
6830   \@ifundefined{thechapter}{%
6831     \providecommand\theHsection  {\arabic{section}}%
6832     \providecommand\theHfigure   {\arabic{figure}}%
6833     \providecommand\theHtable    {\arabic{table}}%
6834   }{%
6835     \providecommand\theHchapter  {\arabic{chapter}}%
6836     \providecommand\theHfigure   {\theHchapter.\arabic{figure}}%
6837     \providecommand\theHtable    {\theHchapter.\arabic{table}}%
6838     \providecommand\theHsection  {\theHchapter.\arabic{section}}%
6839   }
6840   \providecommand\theHsubsection {\theHsection.\arabic{subsection}}
6841   \providecommand\theHsubsubsection{\theHsubsection.\arabic{subsubsec-
tion}}
6842   \providecommand\theHparagraph  {\theHsubsubsection.\arabic{paragraph}}
6843   \providecommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
6844   \providecommand\theHtheorem    {\theHsection.\arabic{theorem}}
6845   \providecommand\theHthm        {\theHsection.\arabic{thm}}
6846 }

```

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.

```

6847 \let\H@item\item
6848 \newcounter{Item}
6849 \IfFormatAtLeastTF{2024-11-01}{-}
6850 {\def\theHItem{\arabic{Item}}}
6851 \def\item{%
6852   \@hyper@itemfalse
6853   \if@nmbriest\@hyper@itemtrue\fi
6854   \H@item
6855 }

6856 \IfFormatAtLeastTF{2024-11-01}{-}
6857 {
6858   \providecommand\theHenumi    {\theHItem}
6859   \providecommand\theHenumii   {\theHItem}
6860   \providecommand\theHenumiii  {\theHItem}
6861   \providecommand\theHenumiv   {\theHItem}
6862   \providecommand\theHHfootnote {\arabic{Hfootnote}}
6863   \providecommand\theHmpfootnote{\arabic{mpfootnote}}
6864 }

```

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.

```
6865 \let\H@refstepcounter\@kernel@refstepcounter
6866 \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`

```
6867 \newif\if@hyper@item
6868 \newif\if@skiphyperref
6869 \@hyper@itemfalse
6870 \@skiphyperreffalse
6871 \ExplSyntaxOn
6872 \IfFormatAtLeastTF{2024-11-01}
6873 {
6874   \NewSocketPlug{refstepcounter}{hyperref}{\ifHy@pdfstring\else#1\fi}
6875   \AssignSocketPlug{refstepcounter}{hyperref}
```

change 2024-11-05: `cleveref` relies on `refstepcounter` to update its data.

```
6876 \AddToHook{package/cleveref/after}
6877 {
6878   \IfPackagelater{cleveref}{2018/03/28}{
6879     {
6880       \NewSocketPlug{refstepcounter}{hyperref/fixcleveref}
6881       {\ifHy@pdfstring\else
6882        #1%
6883        {\firstaid@cref@updatelabeldata{\@currentcounter}}%
6884        \fi}
6885       \AssignSocketPlug{refstepcounter}{hyperref/fixcleveref}
6886     }
6887   }
6888   \NewSocketPlug{refstepcounter/target}{hyperref}
6889   {
6890     \bool_lazy_and:nnT
6891     { \l__hyp_target_create_bool }
6892     { ! \legacy_if_p:n{@skiphyperref} }
6893     {
6894       \legacy_if:nTF {@hyper@item}
6895       {
6896         \stepcounter{Item}%
6897         \hyper@refstepcounter{Item}%
6898         \@hyper@itemfalse
6899       }
6900     }
6901     \hyper@refstepcounter{\@currentcounter}%
6902   }
6903 }
6904 }
6905 \AssignSocketPlug{refstepcounter/target}{hyperref}
6906 }
6907 {
6908   \def\refstepcounter#1{%
6909     \legacy_if:nF {Hy@pdfstring}
```

```

6910 {
6911   \H@refstepcounter{#1}%
6912   \bool_lazy_and:nnT
6913     { \l__hyp_target_create_bool }
6914     { ! \legacy_if_p:n{@skiphyperref} }
6915   {
6916     \legacy_if:nTF {@hyper@item}
6917     {
6918       \stepcounter{Item}%
6919       \hyper@refstepcounter{Item}%
6920       \@hyper@itemfalse
6921     }
6922     {
6923       \hyper@refstepcounter{#1}%
6924     }
6925   }
6926 }
6927 }
6928 }
6929 \ExplSyntaxOff
6930 \let\Hy@saved@refstepcounter\refstepcounter

```

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

```

6931 \newif\ifmeasuring@\measuring@false
6932 \newcommand\Hy@ifnotmeasuring[1]{#1}
6933 \AddToHook{package/amsmath/after}
6934 {
6935   \renewcommand\Hy@ifnotmeasuring[1]
6936     {\ifmeasuring@ \else #1\fi}
6937 }

```

`\hyper@refstepcounter`

```

6938 \def\hyper@refstepcounter#1{%
6939   \HyCnt@ProvideTheHCounter{#1}%
6940   \hyper@makecurrent{#1}%
6941   \Hy@ifnotmeasuring
6942     {\Hy@raisedlink{%
6943       \hyper@anchorstart{\@currentHref}\hyper@anchorend
6944     }}%
6945 }

```

`\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`,  $\LaTeX$  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  $\LaTeX$ , substring search `\in@` can be used.

```

6946 \def\HyCnt@ProvideTheHCounter#1{%
6947   \@ifundefined{theH#1}{%
6948     \expandafter\def\csname theH#1\endcsname{}%
6949     \def\Hy@temp{\@elt{#1}}%

```

```

6950 \@onelevel@sanitize\Hy@temp
6951 \let\HyOrg@elt\@elt
6952 \edef\@elt{%
6953   \noexpand\HyCnt@LookForParentCounter
6954   \expandafter\noexpand\csname theH#1\endcsname
6955 }%
6956 \cl@@ckpt
6957 \let\@elt\HyOrg@elt
6958 \expandafter
6959 \Hy@LocalAppendToMacro\csname theH#1\expandafter\endcsname
6960 \expandafter{%
6961   \expandafter\@arabic\csname c@#1\endcsname
6962 }%
6963 }{}%
6964 }

```

\Hy@LookForParentCounter

```

6965 \def\HyCnt@LookForParentCounter#1#2{%
6966   \expandafter\let\expandafter\Hy@temp@A\csname cl@#2\endcsname
6967   \@ifundefined{cl@#2}{%
6968   }{%
6969     \@onelevel@sanitize\Hy@temp@A
6970     \edef\Hy@temp@A{%
6971       \noexpand\in@{\Hy@temp}{\Hy@temp@A}%
6972     }\Hy@temp@A
6973     \ifin@
6974       \@ifundefined{theH#2}{%
6975         \expandafter\Hy@LocalAppendToMacro\expandafter#1%
6976         \expandafter{%
6977           \expandafter\@arabic\csname c@#2\endcsname.%
6978         }%
6979       }{%
6980         \expandafter\Hy@LocalAppendToMacro\expandafter#1%
6981         \expandafter{%
6982           \csname theH#2\endcsname.%
6983         }%
6984       }%
6985     \fi
6986   }%
6987 }

```

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`.

```

6988 \begingroup\expandafter\expandafter\expandafter\endgroup
6989 \expandafter\ifx\csname chapter\endcsname\relax
6990   \def\Hy@chapterstring{section}%
6991 \else
6992   \def\Hy@chapterstring{chapter}%
6993 \fi
6994 \def\Hy@appendixstring{appendix}

```

```

6995 \def\Hy@chapapp{\Hy@chapterstring}
6996 \@ifundefined{appendix}{%
6997 }{%
6998 \let\HyOrg@appendix\appendix
6999 \def\Hy@AlphNoErr#1{%
7000 \ifnum\value{#1}>26 %
7001   Alph\number\value{#1}%
7002 \else
7003 \ifnum\value{#1}<1 %
7004   Alph\number\value{#1}%
7005 \else
7006   \Alph{#1}%
7007 \fi
7008 \fi
7009 }%
7010 \def\appendix{%
7011 \@ifundefined{chapter}{%
7012 \gdef\theHsection{\Hy@AlphNoErr{section}}%
7013 }{%
7014 \gdef\theHchapter{\Hy@AlphNoErr{chapter}}%
7015 }%
7016 \xdef\Hy@chapapp{\Hy@appendixstring}%
7017 \HyOrg@appendix
7018 }%
7019 }

```

\Hy@Test@alph

```

7020 \def\Hy@Test@alph#1{%
7021 \ifcase#1\or
7022 a\or b\or c\or d\or e\or f\or g\or h\or i\or j\or
7023 k\or l\or m\or n\or o\or p\or q\or r\or s\or t\or
7024 u\or v\or w\or x\or y\or z%
7025 \else
7026 \@ctrerr
7027 \fi
7028 }

```

\Hy@Test@Alph

```

7029 \def\Hy@Test@Alph#1{%
7030 \ifcase#1\or
7031 A\or B\or C\or D\or E\or F\or G\or H\or I\or J\or
7032 K\or L\or M\or N\or O\or P\or Q\or R\or S\or T\or
7033 U\or V\or W\or X\or Y\or Z%
7034 \else
7035 \@ctrerr
7036 \fi
7037 }

```

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

```

7038 \NewHook{__hyp/target/setname }
7039 \define@key{Hyp}{next-anchor}{%
7040 \AddToHookNext{__hyp/target/setname}%
7041 {\Hy@MakeCurrentHref{#1}}%
7042 }

```

`\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.

```

7043 \def\hyper@makecurrent#1{%
7044   \begingroup
7045   \Hy@safe@activestrue
7046   \edef\Hy@param{#1}%
7047   \ifx\Hy@param\Hy@chapterstring
7048     \let\Hy@param\Hy@chapapp
7049   \fi
7050   \ifHy@hypertextnames
7051     \let\@number\@firstofone
7052     \def\@fnsymbol##1{fnsymbol\number##1}%
7053     \def\@arabic##1{\number##1}%
7054     \ifx\@alph\Hy@Test@alph
7055       \else
7056         \def\@alph{alph\number}%
7057       \fi
7058     \ifx\@Alph\Hy@Test@Alph
7059       \else
7060         \def\@Alph{Alph\number}%
7061       \fi
7062     \ifHy@naturalnames
7063       \let\textlatin\@firstofone
7064       \xdef\HyperGlobalCurrentHref{\csname the#1\endcsname}%
7065     \else
7066       \xdef\HyperGlobalCurrentHref{%
7067         \csname
7068           the%
7069           \expandafter\ifx\csname theH#1\endcsname\relax\else H\fi
7070           #1%
7071         \endcsname
7072       }%
7073     \fi
7074     \xdef\HyperGlobalCurrentHref{%
7075       \Hy@param.\expandafter\strip@prefix\meaning\HyperGlobalCurrentHref
7076     }%
7077   \else
7078     \Hy@GlobalStepCount\Hy@linkcounter
7079     \xdef\HyperGlobalCurrentHref{\Hy@param.\the\Hy@linkcounter}%
7080   \fi
7081 \endgroup
7082 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
7083 \ifHy@localanchorname
7084   \let\@currentHref\HyperLocalCurrentHref
7085 \else
7086   \global\let\@currentHref\HyperGlobalCurrentHref
7087 \fi
7088 \UseHook{__hyp/target/setname}%
7089 }

```

`\Hy@MakeCurrentHref`

```

7090 \def\Hy@MakeCurrentHref#1{%
7091   \edef\HyperLocalCurrentHref{#1}%

```

```

7092 \@onelevel@sanitize\HyperLocalCurrentHref
7093 \global\let\HyperGlobalCurrentHref\HyperLocalCurrentHref
7094 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
7095 \ifHy@localanchorname
7096   \let\@currentHref\HyperLocalCurrentHref
7097 \else
7098   \global\let\@currentHref\HyperGlobalCurrentHref
7099 \fi
7100 }

```

`\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.

```

7101 \def\Hy@MakeCurrentHrefAuto#1{%
7102 \Hy@GlobalStepCount\Hy@linkcounter
7103 \Hy@MakeCurrentHref{#1.\the\Hy@linkcounter}%
7104 \UseHook{__hyp/target/setname}}

```

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

```

7105 \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.

```

7106 \def\hypergetref#1{\getrefbykeydefault{#1}{}}{??}}
7107 \def\hypergetpageref#1{\getrefbykeydefault{#1}{page}{0}}

```

## 30 Package varwidth support

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

```

7108 \@if@t@r\fmtversion{2023-11-01}
7109 {
7110   \AddToHook{package/varwidth/after}
7111   {
7112     \NewSocketPlug{hyp/raisedlink}{varwidth}{\@vwid@wrap{#1}}
7113     \appto\@vwid@setup{\AssignSocketPlug{hyp/raisedlink}{varwidth}}
7114   }
7115 }{}

```

## 31 Package titlesec and titletoc support

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

Package `titlesec` support:

```

7116 \@ifpackageloaded{titlesec}{%
7117 \def\ttl@Hy@steplink#1{%
7118   \Hy@MakeCurrentHrefAuto{#1*}%

```

```

7119 \edef\ttl@Hy@saveanchor{%
7120 \noexpand\Hy@raisedlink{%
7121 \noexpand\hyper@anchorstart{\@currentHref}%
7122 \noexpand\hyper@anchorend
7123 \def\noexpand\ttl@Hy@SavedCurrentHref{\@currentHref}%
7124 \noexpand\ttl@Hy@PatchSaveWrite
7125 }%
7126 }%
7127 }%
7128 \def\ttl@Hy@PatchSaveWrite{%
7129 \begingroup
7130 \toks@\expandafter{\ttl@savewrite}%
7131 \edef\x{\endgroup
7132 \def\noexpand\ttl@savewrite{%
7133 \let\noexpand\@currentHref
7134 \noexpand\ttl@Hy@SavedCurrentHref
7135 \the\toks@
7136 }%
7137 }%
7138 \x
7139 }%
7140 \def\ttl@Hy@refstepcounter#1{%
7141 \let\ttl@b\Hy@raisedlink
7142 \def\Hy@raisedlink##1{%
7143 \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
7144 }%
7145 \refstepcounter{#1}%
7146 \let\Hy@raisedlink\ttl@b
7147 }%
7148 }{}

```

## 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

```

7149 \@ifpackageloaded{longtable}{%
7150 \@ifundefined{hyper@nopatch@longtable}{%
7151 \begingroup
7152 \def\y{\LT@array}%
7153 \@ifundefined{scr@LT@array}{%
7154 \@ifundefined{adl@LT@array}{\def\y{\adl@LT@array}}%
7155 }{\def\y{\scr@LT@array}}%
7156 \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
7157 \expandafter\endgroup
7158 \expandafter\def\y[##1]##2{%
7159 \H@refstepcounter{#1}%
7160 \hyper@makecurrent{table}%
7161 \let\Hy@LT@currentHref\@currentHref
7162 #2\@sharp###4%

```



```

7163 }%
7164 }%
7165 \expandafter\expandafter\expandafter\x\y[#{#1}]{#2}\@nil
Patch of \LT@start: add anchor before first line after \vskip\LTpre
7166 \begingroup
7167 \def\x#1\ifvoid\LT@foot#2\fi#3\@nil{%
7168 \endgroup
7169 \def\LT@start{%
7170 #1%
7171 \ifvoid\LT@foot#2\fi
7172 \let\@currentHref\Hy@LT@currentHref
7173 \Hy@raisedlink{%
7174 \hyper@anchorstart{\@currentHref}\hyper@anchorend
7175 }%
7176 #3%
7177 }%
7178 }%
7179 \expandafter\x\LT@start\@nil
7180 }{}
7181 }{}

```

### 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`

```

7182 \let\new@refstepcounter\refstepcounter
7183 \let\H@equation\equation
7184 \let\H@endequation\endequation
7185 \@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.

```

7186 \@ifpackageloaded{amsmath}{}{}%
7187 \def\equation{%
7188 \let\refstepcounter\H@refstepcounter
7189 \H@equation
7190 \hyper@makecurrent{equation}%

```

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

```

7191 \mathopen{%
7192 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
7193 }%
7194 \let\refstepcounter\new@refstepcounter
7195 }%
7196 \def\endequation{%

```

```

7197 \ifx\Hy@raisedlink\@empty
7198 \hyper@anchorend
7199 \else
7200 \mathclose{\Hy@raisedlink{\hyper@anchorend}}%
7201 \fi
7202 \H@endequation
7203 }%
7204 }
7205 }-{}

```

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.

```

7206 \newif\if@eqnstar
7207 \@eqnstarfalse
7208 \let\H@eqnarray\eqnarray
7209 \let\H@endeqnarray\endeqnarray
7210 \@ifundefined{hyper@nopatch@mathenv}{%
7211 \def\eqnarray{%
7212 \let\Hy@reserved@a\relax
7213 \def\@currentHref{}}%
7214 \H@eqnarray
7215 \if@eqnstar
7216 \else
7217 \ifx\\\@currentHref\\%
7218 \else
7219 \hyper@makecurrent{equation}%
7220 \mathopen{%
7221 \Hy@raisedlink{%
7222 \hyper@anchorstart{\@currentHref}\hyper@anchorend
7223 }%
7224 }%
7225 \fi
7226 \fi
7227 }
7228 \def\endeqnarray{%
7229 \H@endeqnarray
7230 }
7231 }-{}

```

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.

```

7232 \@namedef{eqnarray*}{%
7233 \protected\def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
7234 }
7235 \@namedef{endeqnarray*}{%
7236 \nonumber\endeqnarray\@eqnstarfalse
7237 }

```

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

```

7238 \@ifundefined{subeqnarray}{-}{%

```

```

7239 \let\H@subeqnarray\subeqnarray
7240 \let\H@endsubeqnarray\endsubeqnarray
7241 \def\subeqnarray{%
7242   \let\Hy@reserved@a\relax
7243   \H@subeqnarray
7244   \hyper@makecurrent{equation}%
7245   \hyper@anchorstart{\@currentHref}{\hyper@anchorend
7246   }%
7247   \def\endsubeqnarray{%
7248     \H@endsubeqnarray
7249   }%
7250 \providecommand\theHsubequation{\theHequation\alph{subequation}}%
7251 }

```

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

```

7252 \def\make@stripped@name#1{%
7253   \begingroup
7254   \escapechar\m@ne
7255   \global\let\newname\@empty
7256   \protected@edef\Hy@tempa{#1}%
7257   \edef\@tempb{%
7258     \noexpand\@tfor\noexpand\Hy@tempa:=%
7259     \expandafter\strip@prefix\meaning\Hy@tempa
7260   }%
7261   \@tempb\do{%
7262     \if\Hy@tempa\else
7263     \if\Hy@tempa\else
7264       \xdef\newname{\newname\Hy@tempa}%
7265     \fi
7266     \fi
7267   }%
7268   \endgroup
7269 }

```

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.

```

7270 \AddToHook{cmd/subequations/before}
7271 {%
7272   \stepcounter{equation}%
7273   \protected@edef\theHparentequation{\theHequation}%
7274   \addtocounter{equation}{-1}%
7275 }
7276
7277 \AddToHook{cmd/subequations/after}
7278 {%
7279   \def\theHequation{\theHparentequation\alph{equation}}%
7280   \ignorespaces
7281 }

```

## 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 page break. The next item hook doesn't work for the same reason, also not every theorem environment actually use `\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).

```

7282 \newcommand\Hy@theorem@refstepcounter[1]
7283  {%
7284   \H@refstepcounter{#1}%
7285   \hyper@makecurrent{#1}%
7286   \global\let\Hy@dth@currentHref\@currentHref
7287   \Hy@theorem@makelinktarget{\Hy@dth@currentHref}%
7288  }
7289 \newcommand\Hy@theorem@makelinktarget[1]
7290  {
7291   \AddToHookNext{cmd/item/before}
7292   {\AddToHookNext{para/begin}
7293    {\let\Hy@tempa\@currentHref
7294     \MakeLinkTarget*{#1}% \Hy@dth@currentHref
7295     \global\let\@currentHref\Hy@tempa
7296    }%
7297   }%
7298  }

```

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.

```

7299 \AddToHook{begindocument}
7300 {%
7301 \ifundefined{deferred@thm@head}{%
7302   {%
7303     \let\Hy@deferred@thm@head\deferred@thm@head
7304     \def\deferred@thm@head#1{\Hy@deferred@thm@head{#1}}%
7305     \renewcommand\Hy@theorem@makelinktarget[1]
7306       {%
7307         \AddToHookNext{cmd/deferred@thm@head/before}
7308           {\AddToHookNext{para/begin}
7309             {\let\Hy@tempa\@currentHref
7310               \MakeLinkTarget*{#1}}%
7311             \global\let\@currentHref\Hy@tempa
7312             }%
7313           }%
7314         }%
7315       }%
7316   }
7317 \ifundefined{hyper@nopatch@thm}{%
7318 \AtBeginDocument{%
7319 \ifpackageloaded{cleveref}
7320   {\AddToHook{cmd/@thm/before}{\ifhmode\unskip\fi}}
7321   {%
7322     \ifpatchable\@thm{\refstepcounter}
7323       {\patchcmd\@thm{\refstepcounter}{\Hy@theorem@refstepcounter}{}}
7324       {}%
7325     }}}{}

```

## 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@nopatch@footnote` is defined we don't patch but assume that addings links to footnotes is handled elsewhere.

```

7326 \ifundefined{hyper@nopatch@footnote}{%
7327 \ifHy@hyperfootnotes
7328 \ifundefined{theHfootnote}
7329   {\newcounter{Hfootnote}}
7330   {\let\H@@theHfootnote\theHfootnote
7331     \let\theHfootnote\undefined
7332     \newcounter{Hfootnote}
7333     \let\theHfootnote\H@@theHfootnote
7334   }%

```

where is this used?

```

7335 \ifundefined{theHHmpfootnote}{%
7336 \let\theHHmpfootnote\theHHfootnote
7337 }{}

```

```

7338 \let\H@@footnotetext\@footnotetext
7339 \let\H@@footnotemark\@footnotemark
7340 \def\@xfootnotenext[#1]{%
7341   \begingroup
7342     \csname c@\@mpfn\endcsname #1\relax
7343     \unrestored@protected@xdef\@thefnmark{\thempfn}%
7344   \endgroup
7345   \ifx\@footnotetext\@mpfootnotetext
7346     \expandafter\H@\@mpfootnotetext
7347   \else
7348     \expandafter\H@@@footnotetext
7349   \fi
7350 }%
7351 \def\@xfootnotemark[#1]{%
7352   \begingroup
7353     \c@footnote #1\relax
7354     \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7355   \endgroup
7356   \H@@@footnotemark
7357 }%
7358 \let\H@\@mpfootnotetext\@mpfootnotetext
7359 \long\def\@mpfootnotetext#1{%
7360   \H@\@mpfootnotetext{%
7361     \ifHy@nesting
7362       \expandafter\@firstoftwo
7363     \else
7364       \expandafter\@secondoftwo
7365     \fi
7366     {%
7367       \expandafter\hyper@@anchor\expandafter{%
7368         \Hy@footnote@currentHref
7369       }\ignorespaces #1}%
7370   }{%
7371     \Hy@raisedlink{%
7372       \expandafter\hyper@@anchor\expandafter{%
7373         \Hy@footnote@currentHref
7374       }\relax}%
7375     }\ignorespaces #1%
7376   }%
7377 }%
7378 }%
7379 \long\def\@footnotetext#1{%
7380   \H@@@footnotetext{%
7381     \ifHy@nesting
7382       \expandafter\@firstoftwo
7383     \else
7384       \expandafter\@secondoftwo
7385     \fi
7386     {%
7387       \expandafter\hyper@@anchor\expandafter{%
7388         \Hy@footnote@currentHref
7389       }\ignorespaces #1}%
7390   }{%
7391     \Hy@raisedlink{%

```

```

7392     \expandafter\hyper@@anchor\expandafter{%
7393       \Hy@footnote@currentHref
7394     }{\relax}%
7395   }%
7396   \let\@currentHref\Hy@footnote@currentHref
7397   \let\@currentlabelname\@empty
7398   \ignorespaces #1%
7399   }%
7400 }%
7401 }%

```

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.

```

7402 \def\@footnotemark{%
7403   \leavevmode
7404   \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7405   \stepcounter{Hfootnote}%
7406   \global\let\Hy@saved@currentHref\@currentHref
7407   \hyper@makecurrent{Hfootnote}%
7408   \global\let\Hy@footnote@currentHref\@currentHref
7409   \global\let\@currentHref\Hy@saved@currentHref
7410   \hyper@linkstart{link}{\Hy@footnote@currentHref}%
7411   \@makefnmark
7412   \hyper@linkend
7413   \ifhmode\spacefactor\@x@sf\fi
7414   \relax
7415 }%

```

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

```

7416 \@ifpackageloaded{tabularx}{%
7417   \let\HyOrg@TX@endtabularx\TX@endtabularx
7418   \def\Hy@tabularx@hook{%
7419     \let\@footnotetext\H@@footnotetext
7420     \let\@footnotemark\H@@footnotemark
7421     \let\@mpfootnotetext\H@@mpfootnotetext
7422   }%
7423   \begingroup
7424     \toks@\expandafter{\TX@endtabularx}%
7425     \xdef\Hy@gtemp{%
7426       \noexpand\Hy@tabularx@hook
7427       \the\toks@
7428     }%
7429   \endgroup
7430   \let\TX@endtabularx\Hy@gtemp
7431 }{}%

```

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

```

7432 \@ifpackageloaded{longtable}{%

```

```

7433 \CheckCommand{\LT@p@ftntext}[1]{%
7434 \edef\@tempa{%
7435 \the\LT@p@ftn
7436 \noexpand\footnotetext[\the\c@footnote]%
7437 }%
7438 \global\LT@p@ftn\expandafter{\@tempa{#1}}%
7439 }%
7440 \long\def\LT@p@ftntext#1{%
7441 \edef\@tempa{%
7442 \the\LT@p@ftn
7443 \begingroup
7444 \noexpand\c@footnote=\the\c@footnote\relax
7445 \noexpand\protected@xdef\noexpand\@thefnmark{%
7446 \noexpand\thempfn
7447 }%
7448 \noexpand\Hy@LT@footnotetext{%
7449 \Hy@footnote@currentHref
7450 }%
7451 }%
7452 \global\LT@p@ftn\expandafter{%
7453 \@tempa{#1}}%
7454 \endgroup
7455 }%
7456 }%
7457 \long\def\Hy@LT@footnotetext#1#2{%
7458 \H@C@footnotetext{%
7459 \ifHy@nesting
7460 \hyper@@anchor{#1}{#2}%
7461 \else
7462 \Hy@raisedlink{%
7463 \hyper@@anchor{#1}{\relax}}%
7464 }%
7465 \def\@currentHref{#1}%
7466 \let\@currentlabelname\@empty
7467 #2%
7468 \fi
7469 }%
7470 }%
7471 }{}%

```

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

```

7472 \@ifpackageloaded{fancyvrb}{%
7473 \def\V@C@footnotetext{%
7474 \insert\footins\bgroup
7475 \csname reset@font\endcsname
7476 \footnotesize
7477 \interlinepenalty\interfootnotelinepenalty
7478 \splittopskip\footnotesep
7479 \splitmaxdepth\dp\strutbox
7480 \floatingpenalty \@MM
7481 \hsize\columnwidth
7482 \@parboxrestore
7483 \def\@currentcounter{footnote}%
7484 \protected@edef\@currentlabel{\csname p@footnote\endcsname\@thefn-
mark}%

```



```

7485 \makefnintext{}%
7486 \rule{\z@}{\footnotesep}%
7487 \bgroup
7488 \aftergroup\V@@@footnotetext
7489 \Hy@raisedlink{%
7490 \expandafter\hyper@@anchor\expandafter{%
7491 \Hy@footnote@currentHref
7492 }\relax}%
7493 }%
7494 \let\@currentHref\Hy@footnote@currentHref
7495 \let\@currentlabelname\@empty
7496 \ignorespaces
7497 }%
7498 }{}%

```

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

```

7499 \def\Hy@temp#1{%
7500 \begingroup
7501 \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7502 \endgroup
7503 \@footnotemark
7504 }%
7505 \ifx\Hy@temp\footref
7506 \def\footref#1{%
7507 \begingroup
7508 \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7509 \endgroup
7510 \H@@@footnotemark
7511 }%
7512 \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.

```

7513 \let\HyOrg@maketitle\maketitle
7514 \def\maketitle{%
7515 \let\Hy@saved@footnotemark\@footnotemark
7516 \let\Hy@saved@footnotetext\@footnotetext
7517 \let\@footnotemark\H@@@footnotemark
7518 \let\@footnotetext\H@@@footnotetext
7519 \@ifnextchar[\Hy@maketitle@optarg{% ]
7520 \HyOrg@maketitle
7521 \Hy@maketitle@end
7522 }%
7523 }%
7524 \def\Hy@maketitle@optarg[#1]{%
7525 \HyOrg@maketitle[#1]}%
7526 \Hy@maketitle@end
7527 }%
7528 \def\Hy@maketitle@end{%
7529 \ifx\@footnotemark\H@@@footnotemark
7530 \let\@footnotemark\Hy@saved@footnotemark
7531 \fi
7532 \ifx\@footnotetext\H@@@footnotetext

```

```

7533 \let\@footnotetext\Hy@saved@footnotetext
7534 \fi
7535 }%

```

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

```

7536 \def\realfootnote{%
7537 \@ifnextchar[\@xfootnote%]
7538 {\stepcounter{\@mpfn}%
7539 \protected@xdef\@thefnmark{\thempfn}%
7540 \H@\@footnotemark\H@\@footnotetext
7541 }%
7542 }%

7543 \fi
7544 }{}
7545 \Hy@DisableOption{hyperfootnotes}

7546 \</packageEnd>
7547 \< *check>
7548 \checklatex
7549 \checkcommand\def\@xfootnotenext[#1]{%
7550 \begingroup
7551 \csname c@\@mpfn\endcsname #1\relax
7552 \unrestored@protected@xdef\@thefnmark{\thempfn}%
7553 \endgroup
7554 \@footnotetext
7555 }
7556 \checkcommand\def\@xfootnotemark[#1]{%
7557 \begingroup
7558 \c@footnote #1\relax
7559 \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7560 \endgroup
7561 \@footnotemark
7562 }
7563 \checkcommand\def\@footnotemark{%
7564 \leavevmode
7565 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7566 \@makefnmark
7567 \ifhmode\spacefactor\@x@sf\fi
7568 \relax
7569 }
7570 \</check>
7571 \< *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.

```

7572 \@ifundefined{hyper@nopatch@caption}{%
7573 \def\caption{%
7574 \ifx\@capttype\@undefined
7575 \<@latex@error{\noexpand\caption outside float}\@ehd
7576 \expandafter\@gobble

```

```

7577 \else
7578 \H@refstepcounter\@capttype
7579 \let\Hy@tempa\@caption
7580 \@ifundefined{float@caption}{%
7581 }{%
7582 \expandafter\ifx\csname @float@c@\@capttype\endcsname
7583 \float@caption
7584 \let\Hy@tempa\Hy@float@caption
7585 \fi
7586 }%
7587 \expandafter\@firstofone
7588 \fi
7589 {\@dblarg{\Hy@tempa\@capttype}}%
7590 }
7591 \long\def\@caption#1[#2]#3{%
7592 \expandafter\ifx\csname if@capstart\expandafter\endcsname
7593 \csname iftrue\endcsname
7594 \global\let\@currentHref\hc@currentHref
7595 \else
7596 \hyper@makecurrent{\@capttype}%
7597 \fi
7598 \@ifundefined{NR@gettitle}{%
7599 \def\@currentlabelname{#2}%
7600 }{%
7601 \NR@gettitle{#2}%
7602 }%
7603 \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
7604 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7605 }%
7606 \begingroup
7607 \@parboxrestore
7608 \if@minipage
7609 \@setminipage
7610 \fi
7611 \normalsize
7612 \expandafter\ifx\csname if@capstart\expandafter\endcsname
7613 \csname iftrue\endcsname
7614 \global\@capstartfalse
7615 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
7616 \else
7617 \@makecaption{\csname fnum@#1\endcsname}{%
7618 \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

7619 \ifHy@nesting
7620 \expandafter\hyper@@anchor\expandafter{\@currentHref}{#3}%
7621 \else
7622 \Hy@raisedlink{%
7623 \expandafter\hyper@@anchor\expandafter{%
7624 \@currentHref
7625 }{\relax}%
7626 }%
7627 #3%
7628 \fi

```

as the anchor are set manually here, we have to update the tagging info. For now we test for the format but this should go again in 2025.

```

7629     \IfFormatAtLeastTF{2024-11-01}{\UseTaggingSocket{recordtarget}}{}%
7630     }%
7631     \fi
7632     \par
7633 \endgroup
7634 }-{}%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’.

```

7635 \let\Hy@float@caption\@caption
7636 \newcommand{\HyNew@float@makebox}[1]{%
7637   \HyOrg@float@makebox{%
7638     #1\relax
7639     \ifx\Hy@float@currentHref\@undefined
7640       \else
7641         \expandafter\hyper@@anchor\expandafter{%
7642           \Hy@float@currentHref
7643         }\relax}%
7644       \global\let\Hy@float@currentHref\@undefined
7645     \fi
7646   }%
7647 }%
7648 \@ifpackageloaded{float}{%
7649   \def\Hy@float@caption{%
7650     \ifx\Hy@float@currentHref\@undefined
7651       \hyper@makecurrent{\@capttype}%
7652       \global\let\Hy@float@currentHref\@currentHref
7653     \else
7654       \let\@currentHref\Hy@float@currentHref
7655     \fi
7656     \float@caption
7657   }%
7658   \let\HyOrg@float@makebox\float@makebox
7659   \let\float@makebox\HyNew@float@makebox
7660 }-{}

7661 \</packageEnd>
7662 \*check>
7663 \checklatex[1999/06/01 - 2000/06/01]
7664 \checkcommand\def\caption{%
7665   \ifx\@capttype\@undefined
7666     \@latex@error{\noexpand\caption outside float}\@ehd
7667     \expandafter\@gobble
7668   \else
7669     \refstepcounter\@capttype
7670     \expandafter\@firstofone
7671   \fi
7672   {\@dblarg{\@caption\@capttype}}%
7673 }

```

```

7674 \checkcommand\long\def\@caption#1[#2]#3{%
7675 \par
7676 \addcontentsline{\csname ext@#1\endcsname}{#1}{%
7677 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7678 }%
7679 \begingroup
7680 \@parboxrestore
7681 \if@minipage
7682 \@setminipage
7683 \fi
7684 \normalsize
7685 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
7686 \endgroup
7687 }
7688 </check>
7689 <*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 `\bibcite`; this still breaks some citation packages so we have to work around them. But this remains extremely dangerous. Any or all of *achemso* and *drftcite* may break.

However, lets make an attempt to get *natbib* right, because 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.

```

7690 \def\hyper@natlinkstart#1{%
7691 \Hy@backout{#1}%
7692 \hyper@linkstart{cite}{cite.#1}%
7693 \def\hyper@nat@current{#1}%
7694 }
7695 \def\hyper@natlinkend{%
7696 \hyper@linkend
7697 }
7698 \def\hyper@natlinkbreak#1#2{%
7699 \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
7700 }
7701 \def\hyper@natanchorstart#1{%
7702 \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
7703 }
7704 \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.

```

7705 \@ifundefined{hyper@nopatch@bib}
7706 {%
7707 \@ifundefined{NAT@parse}{%
7708 \providecommand*\@extra@binfo{}%
7709 \providecommand*\@extra@b@citeb{}}%

```

```

7710 \def\bibcite#1#2{%
7711   \@newl@bel{b}{#1\@extra@binfo}{%
7712     \hyper@link[cite]{cite.#1\@extra@b@citeb}{#2}%
7713   }%
7714 }%
7715 \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.”.

```

7716 \let\Hy@bibcite\bibcite
7717 \begingroup
7718 \@ifundefined{bbl@cite@choice}{}{%
7719   \g@addto@macro\bbl@cite@choice{%
7720     \let\bibcite\Hy@bibcite
7721   }%
7722 }%
7723 \endgroup

```

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

```

7724 \providecommand*\@BIBLABEL{\@biblabel}%
7725 \def\@bibitem[#1]#2{%
7726   \@skiphyperreftrue
7727   \H@item[%
7728     \ifx\Hy@raisedlink\@empty
7729       \hyper@anchorstart{cite.#2\@extra@b@citeb}%
7730       \@BIBLABEL{#1}%
7731     \hyper@anchorend
7732   \else
7733     \Hy@raisedlink{%
7734       \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
7735     }%
7736     \@BIBLABEL{#1}%
7737   \fi
7738   \hfill
7739 }%
7740 \@skiphyperreffalse
7741 \if@filesw
7742   \begingroup
7743     \let\protect\noexpand
7744     \immediate\write\@auxout{%
7745       \string\bibcite{#2}{#1}%
7746     }%
7747   \endgroup
7748 \fi
7749 \ignorespaces
7750 }%

```

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

```

7751 \def\@bibitem#1{%
7752   \@skiphyperreftrue\H@item\@skiphyperreffalse
7753   \Hy@raisedlink{%
7754     \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
7755   }%
7756   \if@filesw

```

```

7757     \begingroup
7758     \let\protect\noexpand
7759     \immediate\write\@auxout{%
7760       \string\bibcite{#1}{\the\value{\@listctr}}%
7761     }%
7762   \endgroup
7763   \fi
7764   \ignorespaces
7765 }%
7766 }-}%
7767 }-}

7768 </packageEnd>
7769 <*check>
7770 \checklatex
7771 \checkcommand\def\@bibitem[#1]#2{%
7772   \item[\@biblabel{#1}\hfill]%
7773   \if@filesw
7774     {%
7775       \let\protect\noexpand
7776       \immediate\write\@auxout{%
7777         \string\bibcite{#2}{#1}%
7778       }%
7779     }%
7780   \fi
7781   \ignorespaces
7782 }
7783 \checkcommand\def\@bibitem#1{%
7784   \item
7785   \if@filesw
7786     \immediate\write\@auxout{%
7787       \string\bibcite{#1}{\the\value{\@listctr}}%
7788     }%
7789   \fi
7790   \ignorespaces
7791 }
7792 </check>
7793 <*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 `pdfTeX`, then `hyperref` is already loaded at the begin of `harvard.sty`, and the `\newcommand` macros causes error messages.

```

7794 \ifpackageloaded{harvard}{%
7795   \Hy@AtBeginDocument{%
7796     \Hy@Info{*** compatibility with harvard **** }%
7797     \Hy@raiselinksfalse
7798     \def\harvardcite#1#2#3#4{%
7799       \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{cite.#1}{#2}}%

```

```

7800 \global\@namedef{HAR@an@#1}{\hyper@@link[cite]{}{cite.#1}{#3}}%
7801 \global\@namedef{HAR@yr@#1}{\hyper@@link[cite]{}{cite.#1}{#4}}%
7802 \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
7803 }%
7804 \def\HAR@citetoaux#1{%
7805 \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
7806 \ifHy@backref
7807 \ifx\@empty\@currentlabel
7808 \else
7809 \@bsphack
7810 \if@filesw
7811 \protected@write\@auxout{}{%
7812 \string\@writefile{brf}{%
7813 \string\backcite{#1}{%
7814 {\thepage}{\@currentlabel}{\@currentHref}%
7815 }%
7816 }%
7817 }%
7818 \fi
7819 \@esphack
7820 \fi
7821 \fi
7822 }%
7823 \def\harvarditem{%
7824 \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
7825 }%
7826 \def\@harvarditem[#1]#2#3#4#5\par{%
7827 \item[]%
7828 \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
7829 \if@filesw
7830 \begingroup
7831 \def\protect##1{\string ##1\space}%
7832 \ifthenelse{\equal{#1}{\null}}%
7833 {\def\next{{#4}{#2}{#2}{#3}}}%
7834 {\def\next{{#4}{#2}{#1}{#3}}}%
7835 \immediate\write\@auxout{\string\harvardcite\codeof\next}%
7836 \endgroup
7837 \fi
7838 \protect\hspace*{-\labelwidth}%
7839 \protect\hspace*{-\labelsep}%
7840 \ignorespaces
7841 #5%
7842 \ifHy@backref
7843 \newblock
7844 \backref{\csname br@#4\endcsname}%
7845 \fi
7846 \par
7847 }%

```

\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:

```

7848 \long\def\HAR@checkcitations#1#2#3#4{%
7849 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%

```



```

7850 \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
7851 \def\HAR@tempa{\hyper@link[cite]{cite.#1}{#3}}%
7852 \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
7853 \def\HAR@tempa{\hyper@link[cite]{cite.#1}{#4}}%
7854 \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
7855 \else
7856 \@tempwatruue
7857 \fi
7858 \else
7859 \@tempwatruue
7860 \fi
7861 \else
7862 \@tempwatruue
7863 \fi
7864 }%
7865 }%

7866 }{}

```

## 37.2 Package chicago

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

```

7867 \@ifpackageloaded{chicago}{%

\citeN
7868 \def\citeN{%
7869 \def\@citesep{-1000}%
7870 \def\@cite##1##2{##1}%
7871 \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
7872 \@citedata@opt
7873 }%

\shortciteN
7874 \def\shortciteN{%
7875 \def\@citesep{-1000}%
7876 \def\@cite##1##2{##1}%
7877 \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
7878 \@citedata@opt
7879 }%

\@citedata@opt
7880 \def\@citedata@opt{%
7881 \let\@cite@opt\@empty
7882 \@ifnextchar [{%
7883 \@tempwatruue
7884 \@citedatax@opt
7885 }{%
7886 \@tempwafalse
7887 \@citedatax[]%
7888 }%
7889 }%

\@citedatax@opt

```

```

7890 \def\@citedatax@opt[#1]{%
7891 \def\@cite@opt{, #1}%
7892 \@citedatax[#1]}%
7893 }%

7894 }{}

```

## 38 Page numbers

The last page should not contain a /Dur key, because there is no page after the last page. Therefore at the last page there should be a command `\hypersetup{pdfpageduration={}}`. This can be set with `\AtEndDocument`, but it can be too late, if the last page is already finished, or too early, if lots of float pages will follow. Therefore currently nothing is done by hyperref.

This where we supply a destination for each page.

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.

```

7895 \def\@currentHpage{Doc-Start}

7896 \@ifclassloaded{slides}{%
7897 \def\Hy@SlidesFormatOptionalPage#1{(#1)}%
7898 \def\Hy@PageAnchorSlidesPlain{%
7899 \advance\c@page\@ne
7900 \xdef\@currentHpage{page.\the\c@slide.\the\c@overlay.\the\c@note%
7901 \ifnum\c@page=\@ne
7902 \else
7903 \the\c@page
7904 \fi}%
7905 \edef\Hy@TempPageAnchor{%
7906 \noexpand\hyper@@anchor{%
7907 \@currentHpage
7908 }%
7909 }%
7910 \advance\c@page-\@ne
7911 }%
7912 \def\Hy@PageAnchorSlide{%
7913 \advance\c@page\@ne
7914 \ifnum\c@page>\@ne
7915 \@ifundefined{theHpage}{%
7916 \protected@edef\Hy@TheSlideOptionalPage{%
7917 \Hy@SlidesFormatOptionalPage{\thepage}%
7918 }%
7919 }{}%
7920 \protected@edef\Hy@TheSlideOptionalPage{%
7921 \Hy@SlidesFormatOptionalPage{\theHpage}%
7922 }%
7923 }%
7924 \else
7925 \def\Hy@TheSlideOptionalPage{}%
7926 \fi
7927 \advance\c@page-\@ne
7928 \pdfstringdef\@the@H@page{%

```

Experimental!

```

7929 \csname
7930 the%
7931 \@ifundefined{theH\Hy@SlidesPage}{H}%
7932 \Hy@SlidesPage
7933 \endcsname
7934 \Hy@TheSlideOptionalPage
7935 }%
7936 \@gobblethree
7937 }%
7938 \def\Hy@SlidesPage{slide}%
7939 \g@addto@macro\slide{%
7940 \def\Hy@SlidesPage{slide}%
7941 }%
7942 \g@addto@macro\overlay{%
7943 \def\Hy@SlidesPage{overlay}%
7944 }%
7945 \g@addto@macro\note{%
7946 \def\Hy@SlidesPage{note}%
7947 }%
7948 }-%
7949 \def\Hy@PageAnchorSlidesPlain{}%
7950 \def\Hy@PageAnchorSlide{}%
7951 }
7952 \def\Hy@EveryPageAnchor{%
7953 \Hy@DistillerDestFix
7954 \ifHy@pageanchor
7955 \ifHy@hypertextnames
7956 \ifHy@plainpages
7957 \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
7958 \xdef\@currentHpage{page.\the\c@page}%
7959 \Hy@PageAnchorSlidesPlain
7960 \else
7961 \begingroup
7962 \let\@number\@firstofone
7963 \Hy@unicodedefalse
7964 \Hy@PageAnchorSlide
7965 \pdfstringdef\@the@H@page{\thepage}%
7966 \endgroup
7967 \EdefUnescapeString\@the@H@page{\@the@H@page}%
7968 \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
7969 \xdef\@currentHpage{page.\@the@H@page}%
7970 \fi
7971 \else
7972 \Hy@GlobalStepCount\Hy@pagecounter
7973 \def\Hy@TempPageAnchor{%
7974 \hyper@@anchor{page.\the\Hy@pagecounter}%
7975 }%
7976 \xdef\@currentHpage{page.\the\Hy@pagecounter}%
7977 \fi
7978 \vbox to 0pt{%
7979 \kern\voffset
7980 \kern\topmargin
7981 \kern-1bp\relax
7982 \hbox to 0pt{%

```

```

7983     \kern\hoffset
7984     \kern\ifodd\value{page}%
7985         \oddsidemargin
7986     \else
7987         \evensidemargin
7988     \fi
7989     \kern-1bp\relax
7990     \Hy@TempPageAnchor\relax
7991     \hss
7992 }%
7993 \vss
7994 }%
7995 \fi
7996 }
7997 \g@addto@macro\Hy@EveryPageBoxHook{%
7998 \Hy@EveryPageAnchor
7999 }

```

## 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 tocf file.

```

8000 \providecommand\protected@file@percent{}
8001 \ifundefined{hyper@nopatch@toc}{%
8002 \def\addcontentsline#1#2#3{% toc extension, type, tag
8003 \begingroup
8004 \let\label\@gobble
8005 \ifx\@currentHref\@empty
8006 \Hy@Warning{%
8007 No destination for bookmark of \string\addcontentsline,%
8008 \MessageBreak destination is added%
8009 }%
8010 \phantomsection
8011 \fi
8012 \expandafter\ifx\csname toplevel@#2\endcsname\relax
8013 \begingroup
8014 \def\Hy@tempa{#1}%
8015 \ifx\Hy@tempa\Hy@bookmarkstype
8016 \Hy@WarningNoLine{%
8017 bookmark level for unknown #2 defaults to 0%
8018 }%
8019 \else
8020 \Hy@Info{bookmark level for unknown #2 defaults to 0}%
8021 \fi
8022 \endgroup
8023 \expandafter\gdef\csname toplevel@#2\endcsname{0}%
8024 \fi
8025 \edef\Hy@toplevel{\csname toplevel@#2\endcsname}%
8026 \Hy@writebookmark{\csname the#2\endcsname}%

```

```

8027     {#3}%
8028     {\@currentHref}%
8029     {\Hy@toclevel}%
8030     {#1}%
8031     \ifHy@verbose
8032     \begingroup
8033     \def\Hy@tempa{#3}%
8034     \@onelevel@sanitize\Hy@tempa
8035     \let\temp@online\on@line
8036     \let\on@line\@empty
8037     \Hy@Info{%
8038     bookmark\temp@online:\MessageBreak
8039     thecounter {\csname the#2\endcsname}\MessageBreak
8040     text {\Hy@tempa}\MessageBreak
8041     reference {\@currentHref}\MessageBreak
8042     toclevel {\Hy@toclevel}\MessageBreak
8043     type {#1}%
8044     }%
8045     \endgroup
8046     \fi
8047     \addtocontents{#1}{%
8048     \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}\protected@file@per-
cent
8049     }%
8050     \endgroup
8051     }
8052 }{}

```

`\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:

```

8053 \protected\def\Hy@toclinkstart{\hyper@linkstart{link}{\Hy@tocdestname}}
8054 \protected\def\Hy@toclinkend{\hyper@linkend}
8055
8056 \@ifundefined{hyper@nopatch@toc}{%
8057 \def\contentsline#1#2#3#4{%
8058 \begingroup
8059 \Hy@safe@activestrue
8060 \edef\x{\endgroup
8061 \def\noexpand\Hy@tocdestname{#4}%
8062 }\x
8063 \ifx\Hy@tocdestname\@empty
8064 \csname l@#1\endcsname{#2}{#3}%
8065 \else
8066 \ifcase\Hy@linktoc % none
8067 \csname l@#1\endcsname{#2}{#3}%
8068 \or % section
8069 \csname l@#1\endcsname{%
8070 \Hy@toclinkstart{#2}\Hy@toclinkend
8071 }{#3}%
8072 \or % page
8073 \def\Hy@temp{#3}%
8074 \ifx\Hy@temp\@empty

```

```

8075     \csname l@#1\endcsname{#2}{#3}%
8076     \else
8077     \csname l@#1\endcsname{#2}{%
8078     \Hy@toclinkstart{#3}\Hy@toclinkend
8079     }%
8080     \fi
8081 \else % all
8082 \def\Hy@temp{#3}%
8083 \ifx\Hy@temp\@empty
8084 \csname l@#1\endcsname{%
8085 \Hy@toclinkstart{#2}\Hy@toclinkend
8086 }{}%
8087 \else
8088 \csname l@#1\endcsname{%
8089 \Hy@toclinkstart{#2}\Hy@toclinkend
8090 }{%
8091 \Hy@toclinkstart{#3}\Hy@toclinkend
8092 }%
8093 \fi
8094 \fi
8095 \fi
8096 }
8097 }{}

8098 </packageEnd>
8099 <*check>
8100 \checklatex
8101 \checkcommand\def\addcontentsline#1#2#3{%
8102 \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
8103 }
8104 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
8105 </check>
8106 <*packageEnd>

```

## 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. change 2024-02-14: use a csname to handle counter names with commands, see issue #330 change 2024-10-13: disable patches in new format 2024-11-01.

```

8107 \IfFormatAtLeastTF{2024-11-01}{\def\hyper@nopatch@counter{}}{}
8108 \@ifundefined{hyper@nopatch@counter}
8109 {
8110 \let\H@definecounter\@definecounter
8111 \def\@definecounter#1{%
8112 \H@definecounter{#1}%
8113 \expandafter
8114 \gdef\csname theH#1\expandafter\endcsname\expandafter
8115 {\expandafter\@arabic\csname c@#1\endcsname}}%
8116 }{}

```

But what if they have used the optional argument to e.g. `\newtheorem` to determine when the numbering is reset? OK, we'll trap that too.

```

8117 \@ifundefined{hyper@nopatch@counter}
8118 {
8119   \let\H@newctr\@newctr
8120   \def\@newctr#1[#2]{%
8121     \H@newctr#1[#2]}%
8122   \expandafter\gdef\csname theH#1\endcsname{%
8123     \csname the\@ifundefined{theH#2}{H}#2\endcsname.\arabic{#1}%
8124   }%
8125 }
8126 }{}

```

## 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.

```

8127 \@ifundefined{hyper@nopatch@amsmath@tag}
8128 {%
8129   \AddToHook{package/amsmath/after}{%
8130     \def\Hy@make@anchor{%
8131       \Hy@MakeCurrentHrefAuto{AMS}%
8132       \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
8133     }%
8134     \def\Hy@make@df@tag@@#1{%
8135       \gdef\df@tag{%
8136         \maketag@@@{\Hy@make@anchor#1}%
8137         \def\@currentlabel{#1}%
8138       }%
8139     }%
8140     \def\Hy@make@df@tag@@@#1{%
8141       \gdef\df@tag{%
8142         \tagform@{\Hy@make@anchor#1}%
8143         \toks@\@xp{\p@equation{#1}}%
8144         \edef\@currentlabel{\the\toks@}%
8145       }%
8146     }%
8147     \let\HyOrg@make@df@tag@@\make@df@tag@@
8148     \let\HyOrg@make@df@tag@@@\make@df@tag@@@
8149     \let\make@df@tag@@\Hy@make@df@tag@@
8150     \let\make@df@tag@@@\Hy@make@df@tag@@@
8151   }{}
8152 }{}

```

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. change 2024-07-10: define \HyOrg@addtoreset always for cleveref compability with tagging code, see <https://github.com/latex3/tagging-project/issues/2>

```

8153 \def\HyOrg@addtoreset#1#2{\expandafter\@cons\csname cl@#2\endcsname {{#1}}}
8154 \@ifundefined{hyper@nopatch@counter}
8155 {
8156   \let\HyOrg@addtoreset\@addtoreset
8157   \def\@addtoreset#1#2{%
8158     \HyOrg@addtoreset{#1}{#2}%
8159     \expandafter\xdef\csname theH#1\endcsname{%
8160       \expandafter\noexpand
8161       \csname the\@ifundefined{theH#2}{}H#2\endcsname
8162       .\noexpand\the\noexpand\value{#1}%
8163     }%
8164   }
8165 }{}

```

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

```

8166 \endpackage
8167 \check
8168 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
8169 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
8170   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
8171     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
8172       \@addtoreset{#2}{#3}%
8173       \@xp\xdef\csname the#2\endcsname{%
8174         \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8175       }%
8176     }%
8177   }%
8178 }%
8179 \endcheck

```

change 2023-06-14: use hook to make independent of loading order

```

8180 \endpackage
8181 \@ifundefined{hyper@nopatch@counter}
8182 {
8183   \AddToHook{package/amsmath/after}{%
8184     \renewcommand*\numberwithin}[3][\arabic]{%
8185       \@ifundefined{c@#2}{\@nocounterr{#2}}{%
8186         \@ifundefined{c@#3}{\@nocnterr{#3}}{%

```



```

8187     \HyOrg@addtoreset{#2}{#3}%
8188     \@xp\xdef\csname the#2\endcsname{%
8189       \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8190     }%
8191     \@xp\xdef\csname theH#2\endcsname{%
8192       \@xp\@nx
8193       \csname the\@ifundefined{theH#3}{}H#3\endcsname
8194       .\@nx#1{#2}%
8195     }%
8196   }%
8197 }%
8198 }%
8199 }{}
8200 }{}

```

## 42 Included figures

Simply intercept the low level graphics package macro.

```

8201 \ifHy@hyperfigures
8202   \let\Hy@Gin@setfile\Gin@setfile
8203   \def\Gin@setfile#1#2#3{%
8204     \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
8205   }%
8206 \fi
8207 \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.

```

8208 \ifHy@hyperindex
8209   \def\HyInd@ParenLeft{()}%
8210   \def\HyInd@ParenRight{}}%
8211   \def\hyperindexformat#1#2{%
8212     \let\HyOrg@hyperpage\hyperpage
8213     \let\hyperpage\@firstofone
8214     #1{\HyOrg@hyperpage{#2}}%
8215     \let\hyperpage\HyOrg@hyperpage
8216   }%
8217   \Hy@nextfalse
8218   \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
8219   \@ifpackageloaded{index}{\Hy@nexttrue}{}%
8220   \@ifpackageloaded{amsmidx}{\Hy@nexttrue}{}%
8221   \begingroup

```

```

8222 \lccode`|= \expandafter` \HyInd@EncapChar\relax
8223 \lccode`\/=` \relax
8224 \lowercase{\endgroup
8225 \ifHy@next
8226 \let\HyInd@org@wrindex\@wrindex
8227 \def\@wrindex#1#2{\HyInd@@wrindex{#1}#2||\}%
8228 \def\HyInd@@wrindex#1#2|#3|#4\{\%
8229 \ifx\|#3\%
8230 \HyInd@org@wrindex{#1}{#2|hyperpage}%
8231 \else
8232 \HyInd@@@wrindex{#1}{#2}#3\%
8233 \fi
8234 }%
8235 \def\HyInd@@@wrindex#1#2#3#4\{\%
8236 \def\Hy@temp@A{#3}%
8237 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8238 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8239 \relax
8240 \HyInd@org@wrindex{#1}{%
8241 #2|hyperindexformat{/#3#4}%
8242 }%
8243 \else
8244 \ifx\|#4\%
8245 \ifx\Hy@temp@A\HyInd@ParenRight
8246 \HyInd@org@wrindex{#1}{#2|#3}%
8247 \else
8248 \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
8249 \fi
8250 \else
8251 \HyInd@org@wrindex{#1}{%
8252 #2|#3hyperindexformat{/#4}%
8253 }%
8254 \fi
8255 \fi
8256 }%
8257 \else
8258 \def\@wrindex#1{\@wrindex#1||\}%
8259 \def\@wrindex#1|#2|#3\{\%
8260 \if@filesw
8261 \ifx\|#2\%
8262 \protected@write\@indexfile{ }{%
8263 \string\indexentry{#1|hyperpage}{\thepage}%
8264 }%
8265 \else
8266 \HyInd@@@wrindex{#1}#2\%
8267 \fi
8268 \fi
8269 \endgroup
8270 \@esphack
8271 }%
8272 \def\HyInd@@@wrindex#1#2#3\{\%
8273 \def\Hy@temp@A{#2}%
8274 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8275 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi

```

```

8276         \relax
8277     \protected@write\@indexfile{}{%
8278         \string\indexentry{%
8279             #1|hyperindexformat{/#2#3}%
8280         }\thepage}%
8281     }%
8282 \else
8283 \ifx\#3\%
8284     \ifx\Hy@temp@A\HyInd@ParenRight
8285         \HyInd@DefKey{#1}%
8286         \@ifundefined{HyInd@(\HyInd@key)}{%
8287             \let\Hy@temp\@empty
8288         }{%
8289             \expandafter\let\expandafter\Hy@temp
8290                 \csname HyInd@(\HyInd@key)\endcsname
8291         }%
8292         \protected@write\@indexfile{}{%
8293             \string\indexentry{#1|#2\Hy@temp}\thepage}%
8294         }%
8295     \else
8296         \protected@write\@indexfile{}{%
8297             \string\indexentry{#1|#2hyperpage}\thepage}%
8298         }%
8299         \HyInd@DefKey{#1}%
8300         \expandafter
8301         \gdef\csname HyInd@(\HyInd@key)\endcsname{%
8302             hyperpage%
8303         }%
8304     \fi
8305 \else
8306     \protected@write\@indexfile{}{%
8307         \string\indexentry{%
8308             #1|#2hyperindexformat{/#3}%
8309         }\thepage}%
8310     }%
8311     \ifx\Hy@temp@A\HyInd@ParenLeft
8312         \HyInd@DefKey{#1}%
8313         \expandafter
8314         \gdef\csname HyInd@(\HyInd@key)\endcsname{%
8315             hyperindexformat{/#3}%
8316         }%
8317     \fi
8318 \fi
8319 \fi
8320 }%
8321 \def\HyInd@DefKey#1{%
8322     \begingroup
8323     \let\protect\@unexpandable@protect
8324     \edef\Hy@temp{#1}%
8325     \@onelevel@sanitize\Hy@temp
8326     \global\let\HyInd@key\Hy@temp
8327 \endgroup
8328 }%
8329 \fi

```

```

8330 }%
8331 \fi
8332 \Hy@DisableOption{hyperindex}
8333 \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.

```
8334 \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.

```

8335 \def\hyperpage#1{%
8336   \HyInd@hyperpage#1\nohyperpage{ }\@nil
8337 }
8338 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{%
8339   \HyInd@@hyperpage{#1}%
8340   #2%
8341   \def\Hy@temp{#3}%
8342   \ifx\Hy@temp\@empty
8343     \else
8344       \Hy@ReturnAfterFi{%
8345         \HyInd@hyperpage#3\@nil
8346       }%
8347   \fi
8348 }
8349 \def\HyInd@@hyperpage#1{\@hyperpage#1----\}
8350 \def\@hyperpage#1--#2--#3\{\%
8351   \ifx\#2\%
8352     \@commahyperpage{#1}%
8353   \else
8354     \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
8355   \fi
8356 }
8357 \def\@commahyperpage#1{\@commahyperpage#1, \}
8358 \def\@commahyperpage#1, #2,#3\{\%
8359   \ifx\#2\%
8360     \HyInd@pagelink{#1}%
8361   \else
8362     \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
8363   \fi
8364 }

```

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

```

8365 \def\HyInd@pagelink#1{%
8366   \begingroup
8367   \toks@={}%
8368   \HyInd@removespaces#1 \@nil
8369   \endgroup
8370 }
8371 \def\HyInd@removespaces#1 #2\@nil{%
8372   \toks@=\expandafter{\the\toks@#1}%
8373   \ifx\#2\%
8374     \edef\x{\the\toks@}%

```

```

8375 \ifx\x\@empty
8376 \else
8377 \hyperlink{page.\the\toks@}{\the\toks@}%
8378 \fi
8379 \else
8380 \Hy@ReturnAfterFi{%
8381 \HyInd@removespaces#2\@nil
8382 }%
8383 \fi
8384 }

```

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.

```

8385 \ifHy@texht
8386 \expandafter\endinput
8387 \fi
8388 \let\real@setref\@setref
8389 \def\@setref#1#2#3{% csname, extract group, refname
8390 \ifx#1\relax
8391 \protect\G@refundefinedtrue
8392 \nfss@text{\reset@font\bfseries ??}%
8393 \@latex@warning{%
8394 Reference `#3' on page \thepage \space undefined%
8395 }%
8396 \else
8397 \expandafter\Hy@setref@link#1\@empty\@empty\@empty\@nil{#2}%
8398 \fi
8399 }

```

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

```

8400 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
8401 \begingroup
8402 \toks0={\hyper@@link{#5}{#4}}%
8403 \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
8404 \edef\x{\endgroup
8405 \the\toks0 {\the\toks1 }%
8406 }%
8407 \x
8408 }
8409 \def\@pagesetref#1#2#3{% csname, extract macro, ref
8410 \ifx#1\relax
8411 \protect\G@refundefinedtrue
8412 \nfss@text{\reset@font\bfseries ??}%
8413 \@latex@warning{%
8414 Reference `#3' on page \thepage \space undefined%
8415 }%
8416 \else
8417 \protect\hyper@@link
8418 {\expandafter\@fifthoffive#1}%
8419 {page.\expandafter\@secondoffive#1}%
8420 {\expandafter\@secondoffive#1}%
8421 \fi

```

```

8422 }
8423 </packageEnd>
8424 <*check>
8425 \checklatex
8426 \checkcommand\def\@setref#1#2#3{%
8427 \ifx#1\relax
8428 \protect\G@refundefinedtrue
8429 \nfss@text{\reset@font\bfseries ??}%
8430 \@latex@warning{%
8431 Reference `#3' on page \thepage\space undefined%
8432 }%
8433 \else
8434 \expandafter#2#1\null
8435 \fi
8436 }
8437 </check>
8438 <*packageEnd>

```

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

```

8439 \def\HyRef@StarSetRef#1{%
8440 \begingroup
8441 \Hy@safe@activestru
8442 \let\protect\@unexpandable@protect
8443 \edef\x{#1}%
8444 \@onelevel@sanitize\x
8445 \edef\x{\endgroup
8446 \noexpand\HyRef@@StarSetRef
8447 \expandafter\noexpand\csname r@\x\endcsname{\x}}%
8448 }%
8449 \x
8450 }
8451 \def\HyRef@@StarSetRef#1#2#3{%
8452 \ifx#1\@undefined
8453 \let#1\relax
8454 \fi
8455 \real@setref#1#3{#2}%
8456 }
8457 \def\@refstar#1{%
8458 \HyRef@StarSetRef{#1}\@firstoffive
8459 }
8460 \def\@pagerefstar#1{%
8461 \HyRef@StarSetRef{#1}\@secondoffive
8462 }
8463 \def\@namerefstar#1{%
8464 \HyRef@StarSetRef{#1}\@thirdoffive
8465 }
8466 \def\@Refstar#1{%
8467 \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
8468 }%
8469 \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
8470 \MakeUppercase#1%
8471 }%
8472 \def\HyRef@Ref#1{%

```

```

8473 \hyperref[ $\#1$ ]{\Ref* $\#1$ }%
8474 }%
8475 \Hy@AtBeginDocument{%
8476 \@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.

```

8477 \@ifundefined{hyper@nopatch@varioref}
8478 {
8479 \renewcommand\Vref@star[2][]{%
8480 \begingroup
8481 \let\T@pageref\@pagerefstar
8482 \Ref* $\#2$ }
8483 \vpageref $\#1$ { $\#2$ }%
8484 \endgroup
8485 }%
8486 \renewcommand\Vr@f[2][]{%
8487 \begingroup
8488 \let\T@pageref\@pagerefstar
8489 \hyperref[ $\#2$ ]{%
8490 \Ref* $\#2$ }
8491 \vpageref $\#1$ { $\#2$ }%
8492 }%
8493 \endgroup
8494 }%
8495 \renewcommand\vr@f[2][]{%
8496 \begingroup
8497 \let\T@pageref\@pagerefstar
8498 \hyperref[ $\#2$ ]{%
8499 \ref* $\#2$ }
8500 \vpageref $\#1$ { $\#2$ }%
8501 }%
8502 \endgroup
8503 }%
8504 \renewcommand\vref@star[2][]{%
8505 \begingroup
8506 \let\T@pageref\@pagerefstar
8507 \ref* $\#2$ }
8508 \vpageref $\#1$ { $\#2$ }%
8509 \endgroup
8510 }%
8511 }{}%
8512 }{}%
8513 }

8514 \DeclareRobustCommand*\autopageref}{%
8515 \@ifstar{%
8516 \HyRef@autopagerefname\pageref*%
8517 }\HyRef@autopageref
8518 }
8519 \def\HyRef@autopageref#1{%
8520 \hyperref[ $\#1$ ]{\HyRef@autopagerefname\pageref* $\#1$ }%
8521 }
8522 \def\HyRef@autopagerefname{%

```

```

8523 \@ifundefined{pageautorefname}{%
8524   \@ifundefined{pagename}{%
8525     \Hy@Warning{No autoref name for `page'}%
8526   }{%
8527     \pagename\nobreakspace
8528   }%
8529 }{%
8530   \pageautorefname\nobreakspace
8531 }%
8532 }

```

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

```

8533 \NewDocumentCommand\autoref{s}
8534   {\leavevmode
8535   \IfBooleanTF{#1}{\HyRef@autoref@gobbletwo}{\HyRef@autoref@hyper@@link}}
8536 \def\HyRef@autoref#1#2{%
8537   \begingroup
8538   \Hy@safe@activestrue
8539   \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
8540   \endgroup
8541 }
8542 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
8543   \HyRef@ShowKeysRef{#2}%
8544   \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
8545   \edef\HyRef@thisref{%
8546     \expandafter\@fourthoffive#1\@empty\@empty\@empty
8547   }%
8548   \expandafter\HyRef@testreftype\HyRef@thisref.\.%
8549   \Hy@safe@activesfalse
8550   #3{%
8551     \expandafter\@fifthoffive#1\@empty\@empty\@empty
8552   }{%
8553     \expandafter\@fourthoffive#1\@empty\@empty\@empty
8554   }{%
8555     \HyRef@currentHtag
8556     \expandafter\@firstoffive#1\@empty\@empty\@empty
8557     \null
8558   }%
8559   \else
8560     \protect\G@refundefinedtrue
8561     \nfss@text{\reset@font\bfseries ??}%
8562     \@latex@warning{%
8563       Reference `#2' on page \thepage\space undefined%
8564     }%
8565     \fi
8566 }
8567 \def\HyRef@testreftype#1.#2\{\%
8568   \@ifundefined{#1autorefname}{%
8569     \@ifundefined{#1name}{%
8570       \HyRef@StripStar#1\*\@nil{#1}%
8571     \@ifundefined{\HyRef@name autorefname}{%
8572       \@ifundefined{\HyRef@name name}{%
8573         \def\HyRef@currentHtag{}}%

```



```

8574     \Hy@Warning{No autoref name for `#1'}%
8575   }{%
8576     \edef\HyRef@currentHtag{%
8577       \expandafter\noexpand\csname\HyRef@name name\endcsname
8578       \noexpand~%
8579     }%
8580   }%
8581 }{%
8582   \edef\HyRef@currentHtag{%
8583     \expandafter\noexpand
8584     \csname\HyRef@name autorefname\endcsname
8585     \noexpand~%
8586   }%
8587 }%
8588 }{%
8589   \edef\HyRef@currentHtag{%
8590     \expandafter\noexpand\csname#1name\endcsname
8591     \noexpand~%
8592   }%
8593 }%
8594 }{%
8595   \edef\HyRef@currentHtag{%
8596     \expandafter\noexpand\csname#1autorefname\endcsname
8597     \noexpand~%
8598   }%
8599 }%
8600 }
8601 \def\HyRef@StripStar#1*\#2\@nil#3{%
8602   \def\HyRef@name{#2}%
8603   \ifx\HyRef@name\HyRef@CaseStar
8604     \def\HyRef@name{#1}%
8605   \else
8606     \def\HyRef@name{#3}%
8607   \fi
8608 }
8609 \def\HyRef@CaseStar{*\\}
8610 \def\HyRef@currentHtag{}

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

8611 \let\HyRef@ShowKeysRef@gobble
8612 \def\HyRef@ShowKeysInit{%
8613   \@ifundefined{SK@@label}{}
8614   {%
8615     \ifx\SK@ref\@empty
8616     \else
8617       \def\HyRef@ShowKeysRef{%
8618         \SK@\SK@@ref
8619       }%
8620     \fi
8621   }%
8622 }
8623 \AddToHook{package/showkeys/after}{\HyRef@ShowKeysInit}

```

Defaults for the names that `\autoref` uses.

```

8624 \providecommand*\AMSautorefname{\equationautorefname}
8625 \providecommand*\Hfootnoteautorefname{\footnoteautorefname}
8626 \providecommand*\Itemautorefname{\itemautorefname}
8627 \providecommand*\itemautorefname{item}
8628 \providecommand*\equationautorefname{Equation}
8629 \providecommand*\footnoteautorefname{footnote}
8630 \providecommand*\itemautorefname{item}
8631 \providecommand*\figureautorefname{Figure}
8632 \providecommand*\tableautorefname{Table}
8633 \providecommand*\partautorefname{Part}
8634 \providecommand*\appendixautorefname{Appendix}
8635 \providecommand*\chapterautorefname{chapter}
8636 \providecommand*\sectionautorefname{section}
8637 \providecommand*\subsectionautorefname{subsection}
8638 \providecommand*\subsubsectionautorefname{subsubsection}
8639 \providecommand*\paragraphautorefname{paragraph}
8640 \providecommand*\subparagraphautorefname{subparagraph}
8641 \providecommand*\FancyVerbLineautorefname{line}
8642 \providecommand*\theoremautorefname{Theorem}
8643 \providecommand*\pageautorefname{page}
8644 </packageEnd>

```

## 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`.

```

8645 (*pdfTEX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo)
8646 \begingroup\expandafter\expandafter\expandafter\endgroup
8647 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
8648   \begingroup
8649     \catcode`\|=0 %
8650     \@makeother\|%
8651     |\@firstofone{ \endgroup
8652     |def|Hy@pstringdef#1#2{%
8653       |begingroup
8654         |edef~{|string~}%
8655         |xdef|Hy@gtemp{#2}%
8656         |endgroup
8657         |let#1|Hy@gtemp
8658         |@onelevel@sanitize#1%
8659         |edef#1{|expandafter|Hy@ExchangeBackslash#1\|@nil}%
8660         |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
8661         |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
8662       }%

```

```

8663 |def|Hy@ExchangeBackslash#1\#2|@nil{%
8664 #1%
8665 |ifx|\#2|\%%
8666 |else
8667 \\\%
8668 |Hy@ReturnAfterFi{%
8669 |Hy@ExchangeBackslash#2|@nil
8670 }%
8671 |fi
8672 }%
8673 }%
8674 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
8675 #1%
8676 \ifx\#2\%%
8677 \else
8678 \@backslashchar(%
8679 \Hy@ReturnAfterFi{%
8680 \Hy@ExchangeLeftParenthesis#2\@nil
8681 }%
8682 \fi
8683 }%
8684 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
8685 #1%
8686 \ifx\#2\%%
8687 \else
8688 \@backslashchar)%
8689 \Hy@ReturnAfterFi{%
8690 \Hy@ExchangeRightParenthesis#2\@nil
8691 }%
8692 \fi
8693 }%
8694 \else
8695 \def\Hy@pstringdef#1#2{%
8696 \begingroup
8697 \edef~{\string~}%
8698 \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
8699 \endgroup
8700 \let#1\Hy@gtemp
8701 }%
8702 \fi
8703 </pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo)

```

## 44.2 pdfTeX

```

8704 (*pdfTeX)
8705 \providecommand*\XR@ext}{pdf}
8706 \Hy@setbreaklinks{true}
8707 \def\HyPat@ObjRef{%
8708 [0-9]*[1-9][0-9]* 0 R%
8709 }

```

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

Set PDF version if requested by option pdfversion.

- pdfT<sub>E</sub>X 1.10a, 2003-01-16: \pdfoptionpdfminorversion
- pdfT<sub>E</sub>X 1.30, 2005-08-081: \pdfminorversion

```
8710 \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
8711 \def\Hy@pdfminorversion{\pdfminorversion}%
8712 \ifHy@ocgcolorlinks
8713 \ifnum\Hy@pdfmajorminor@version<105 %
8714   \kvsetkeys{Hyp}{pdfversion=1.5}%
8715 \fi
8716 \fi
8717 \ifHy@setpdfversion
8718 \ifnum\Hy@pdf@majorminor@version<105 %
8719   \@ifundefined{pdfobjcompresslevel}{%
8720     }{%
8721     \ifHy@verbose
8722       \Hy@InfoNoLine{%
8723         PDF object streams are disabled, because they are%
8724         \MessageBreak
8725         not supported in requested PDF version %
8726         \Hy@pdf@majorversion.\Hy@pdf@minorversion
8727       }%
8728       \fi
8729       \pdfobjcompresslevel=\z@
8730     }%
8731     \fi
8732 \ifnum\Hy@pdfmajorminor@version=\Hy@pdf@majorminor@version\relax
8733 \else
8734   \let\Hy@temp\@empty
8735   \def\Hy@temp@A#1#2{%
8736     \ifnum#1>\z@
8737       \edef\Hy@temp{%
8738         \Hy@temp
8739         \space\space
8740         \the#1\space #2%
8741         \ifnum#1=\@one\else s\fi
8742         \MessageBreak
8743       }%
8744       \fi
8745     }%
8746     \Hy@temp@A\pdflastobj{PDF object}%
8747     \Hy@temp@A\pdflastxform{form XObject}%
8748     \Hy@temp@A\pdflastximage{image XObject}%
8749     \Hy@temp@A\pdflastannot{annotation}%
8750     \@ifundefined{pdflastlink}{%
8751       }{%
8752       \Hy@temp@A\pdflastlink{link}%
8753     }%
8754     \ifx\Hy@temp\@empty
8755       \Hy@pdfmajorversion=\Hy@pdf@majorversion\relax
8756       \Hy@pdfminorversion=\Hy@pdf@minorversion\relax
8757     \else
8758       \let\Hy@temp@A\@empty
8759       \ifnum\Hy@pdf@majorminor@version=104 %
```

```

8760 \IfFileExists{pdf14.sty}{%
8761 \def\Hy@temp@A{%
8762 \MessageBreak
8763 Or \string\RequirePackage{pdf14} can be used%
8764 \MessageBreak
8765 before \string\documentclass\space as shortcut%
8766 }%
8767 }{}%
8768 \fi
8769 \Hy@WarningNoLine{%
8770 The PDF version number could not be set,\MessageBreak
8771 because some PDF objects are already written:%
8772 \MessageBreak
8773 \Hy@temp
8774 The version should be set as early as possible:%
8775 \MessageBreak
8776 \space\space
8777 \expandafter\string\Hy@pdfmajorversion=\Hy@pdf@majorversion, %
8778 \expandafter\string\Hy@pdfminorversion=\Hy@pdf@minorversion
8779 \string\relax
8780 \ifnum\Hy@pdf@majorminor@version<105 %
8781 \@ifundefined{pdfobjcompresslevel}{%
8782 }{%
8783 \MessageBreak
8784 \space\space
8785 \string\pdfobjcompresslevel=0\string\relax
8786 }%
8787 \fi
8788 \Hy@temp@A
8789 }%
8790 \fi
8791 \fi
8792 \PackageInfo{hyperref}{%
8793 \expandafter\string\Hy@pdfmajorversion.%
8794 \expandafter\string\Hy@pdfminorversion
8795 :=\number\Hy@pdf@majorversion.\number\Hy@pdf@minorversion\space
8796 }%
8797 \fi
8798 \edef\Hy@pdf@majorversion{\number\Hy@pdfmajorversion}%
8799 \edef\Hy@pdf@minorversion{\number\Hy@pdfminorversion}%
8800 \Hy@DisableOption{pdfversion}%

8801 \ifHy@ocgcolorlinks
8802 \pdf@ifdraftmode{}{%
8803 \immediate\pdfobj{%
8804 <<%
8805 /Type/OCG%
8806 /Name(View)%
8807 /Usage<<%
8808 /Print<<%
8809 /PrintState/OFF%
8810 >>%
8811 /View<<%
8812 /ViewState/ON%
8813 >>%

```

```

8814     >>%
8815     >>%
8816   }%
8817   \edef\OBJ@OCG@view{\the\pdflastobj\space 0 R}%
8818   \immediate\pdfobj{%
8819     <<%
8820     /Type/OCG%
8821     /Name(Print)%
8822     /Usage<<%
8823     /Print<<%
8824     /PrintState/ON%
8825     >>%
8826     /View<<%
8827     /ViewState/OFF%
8828     >>%
8829     >>%
8830     >>%
8831   }%
8832   \edef\OBJ@OCG@print{\the\pdflastobj\space 0 R}%
8833   \immediate\pdfobj{%
8834     [%
8835     \OBJ@OCG@view\space\OBJ@OCG@print
8836     ]%
8837   }%
8838   \edef\OBJ@OCGs{\the\pdflastobj\space 0 R}%
8839   \pdfcatalog{%
8840     /OCProperties<<%
8841     /OCGs \OBJ@OCGs
8842     /D<<%
8843     /OFF[\OBJ@OCG@print]%
8844     /AS[%
8845     <<%
8846     /Event/View%
8847     /OCGs \OBJ@OCGs
8848     /Category[/View]%
8849     >>%
8850     <<%
8851     /Event/Print%
8852     /OCGs \OBJ@OCGs
8853     /Category[/Print]%
8854     >>%
8855     <<%
8856     /Event/Export%
8857     /OCGs \OBJ@OCGs
8858     /Category[/Print]%
8859     >>%
8860     ]%
8861     >>%
8862     >>%
8863   }%
8864   \begingroup
8865   \edef\x{\endgroup
8866   \pdfpageresources{%
8867     \the\pdfpageresources

```

```

8868     /Properties<<%
8869     /OCView \OBJ@OCG@view
8870     /OCPrint \OBJ@OCG@print
8871     >>%
8872   }%
8873 }%
8874 \x
8875 }%
8876 \Hy@AtBeginDocument{%
8877   \def\Hy@colorlink#1{%
8878     \begingroup
8879     \ifHy@ocgcolorlinks
8880     \def\Hy@ocgcolor{#1}%
8881     \setbox0=\hbox\bgroup\color@begingroup
8882     \else
8883     \HyColor@UseColor#1%
8884     \fi
8885   }%
8886   \def\Hy@endcolorlink{%
8887     \ifHy@ocgcolorlinks
8888     \color@endgroup\egroup
8889     \mbox{%
8890       \pdfiternal page{/OC/OCPrint BDC}%
8891       \rlap{\copy0}%
8892       \pdfiternal page{EMC/OC/OCView BDC}%
8893       \begingroup
8894         \expandafter\HyColor@UseColor\Hy@ocgcolor
8895         \box0 %
8896       \endgroup
8897       \pdfiternal page{EMC}%
8898     }%
8899     \fi
8900   \endgroup
8901 }%
8902 }%
8903 \else
8904 \Hy@DisableOption{ocgcolorlinks}%
8905 \fi

```

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

```

8906 \def\setpdfinkmargin#1{%
8907   \begingroup
8908   \setlength{\dimen@}{#1}%
8909   \expandafter\endgroup
8910   \expandafter\pdfinkmargin\the\dimen@\relax
8911 }
8912 \pdfinkmargin1pt %

```

First set up the default linking

```

8913 \providecommand*\pdfview{XYZ}

```

First define the anchors:

```

8914 \Hy@WrapperDef\new@pdfink#1{%
8915   \ifhmode
8916   \@savsf\spacefactor

```

```

8917 \fi
8918 \Hy@SaveLastskip
8919 \Hy@VerboseAnchor{#1}%
8920 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
8921 \Hy@DestName\Hy@pstringDest\@pdfview
8922 \Hy@RestoreLastskip
8923 \ifhmode
8924 \spacefactor\@savs
8925 \fi
8926 }
8927 \let\pdf@endanchor\@empty

```

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

```

8928 \def\Hy@DestName#1#2{%
8929 \pdfdest name{#1}#2\relax
8930 }

```

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.

```

8931 \providecommand*\@pdfborder{0 0 1}
8932 \providecommand*\@pdfborderstyle{}
8933 \def\Hy@undefinedname{UNDEFINED}
8934 \def\find@pdfink#1#2{%
8935 \leavevmode
8936 \protected@edef\Hy@testname{#2}%
8937 \ifx\Hy@testname\@empty
8938 \Hy@Warning{%
8939 Empty destination name,\MessageBreak
8940 using ``\Hy@undefinedname'%
8941 }%
8942 \let\Hy@testname\Hy@undefinedname
8943 \else
8944 \Hy@pstringdef\Hy@testname{%
8945 \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
8946 }%
8947 \fi
8948 \Hy@StartlinkName{%
8949 \ifHy@pdfa /F 4\fi
8950 \Hy@setpdfborder
8951 \Hy@setpdfhighlight
8952 \ifx\CurrentBorderColor\relax
8953 \else
8954 /C[\CurrentBorderColor]%
8955 \fi
8956 }\Hy@testname
8957 \expandafter\Hy@colorlink\csname @#1color\endcsname
8958 }
8959 \def\Hy@StartlinkName#1#2{%
8960 \pdfstartlink attr{#1}goto name{#2}\relax
8961 }
8962 \def\close@pdfink{%

```



```

8963 \Hy@endcolorlink
8964 \Hy@VerboseLinkStop
8965 \pdfendlink
8966 }
8967 \def\hyper@anchor#1{%
8968 \new@pdfink{#1}\anchor@spot\pdf@endanchor
8969 }
8970 \def\hyper@anchorstart#1{%
8971 \new@pdfink{#1}%
8972 \Hy@activeanchortrue
8973 }
8974 \def\hyper@anchorend{%
8975 \pdf@endanchor
8976 \Hy@activeanchorfalse
8977 }
8978 \def\hyper@linkstart#1#2{%
8979 \Hy@VerboseLinkStart{#1}{#2}%
8980 \@ifundefined{@#1bordercolor}{%
8981 \let\CurrentBorderColor\relax
8982 }{%
8983 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8984 }%
8985 \find@pdfink{#1}{#2}%
8986 }
8987 \def\hyper@linkend{\close@pdfink}
8988 \def\hyper@link#1#2#3{%
8989 \Hy@VerboseLinkStart{#1}{#2}%
8990 \@ifundefined{@#1bordercolor}{%
8991 \let\CurrentBorderColor\relax
8992 }{%
8993 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8994 }%
8995 \find@pdfink{#1}{#2}#3\Hy@xspace@end
8996 \close@pdfink
8997 }
8998 \let\CurrentBorderColor\@linkbordercolor
8999 \def\hyper@linkurl#1#2{%
9000 \begingroup
9001 \Hy@pstringdef\Hy@pstringURI{#2}%
9002 \hyper@chars
9003 \leavevmode
9004 \pdfstartlink
9005 attr{%
9006 \Hy@setpdfborder
9007 \Hy@setpdfhighlight
9008 \ifx\@urlbordercolor\relax
9009 \else
9010 /C[\@urlbordercolor]%
9011 \fi
9012 }%
9013 user{%
9014 /Subtype/Link%
9015 \ifHy@pdfa /F 4\fi
9016 /A<<%

```

```

9017     /Type/Action%
9018     /S/URI%
9019     /URI(\Hy@pstringURI)%
9020     \ifHy@href@ismap
9021         /IsMap true%
9022     \fi
9023     \Hy@href@nextactionraw
9024     >>%
9025     }%
9026     \relax
9027     \Hy@colorlink\@urlcolor#1\Hy@xspace@end
9028     \close@pdfink
9029 \endgroup
9030 }
9031 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
9032 \begingroup
9033   \def\Hy@pstringF{#2}%
9034   \Hy@CleanupFile\Hy@pstringF
9035   \Hy@pstringdef\Hy@pstringF\Hy@pstringF
9036   \Hy@pstringdef\Hy@pstringD{#3}%
9037   \Hy@MakeRemoteAction
9038   \leavevmode
9039   \pdfstartlink
9040   attr{%
9041     \Hy@setpdfborder
9042     \Hy@setpdfhighlight
9043     \ifx\@filebordercolor\relax
9044       \else
9045         /C[\@filebordercolor]%
9046       \fi
9047     }%
9048   user {%
9049     /Subtype/Link%
9050     \ifHy@pdfa /F 4\fi
9051     /A<<%
9052     /F(\Hy@pstringF)%
9053     /S/GoToR%
9054     \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}

```

```

9055     \ifx\#3\%
9056     /D[\Hy@href@page\@pdfremotestartview]%
9057     \else
9058     /D(\Hy@pstringD)%

```

```

9059     \fi
9060     \Hy@href@nextactionraw
9061     >>%
9062   }%
9063   \relax
9064   \Hy@colorlink\@filecolor#1\Hy@xspace@end
9065   \close@pdfink
9066 \endgroup
9067 }
9068 \def\@hyper@launch run:#1\|#2#3{% filename, anchor text linkname
9069 \begingroup
9070   \Hy@pstringdef\Hy@pstringF{#1}%
9071   \Hy@pstringdef\Hy@pstringP{#3}%
9072   \leavevmode
9073   \pdfstartlink
9074   attr{%
9075     \Hy@setpdfborder
9076     \Hy@setpdfhighlight
9077     \ifx\@runbordercolor\relax
9078     \else
9079     /C[\@runbordercolor]%
9080     \fi
9081   }%
9082   user {%
9083     /Subtype/Link%
9084     \ifHy@pdfa /F 4\fi
9085     /A<<%
9086     /F(\Hy@pstringF)%
9087     /S/Launch%
9088     \Hy@SetNewWindow
9089     \ifx\|#3\|
9090     \else
9091     /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
9092     \fi
9093     \Hy@href@nextactionraw
9094     >>%
9095   }%
9096   \relax
9097   \Hy@colorlink\@runcolor#2\Hy@xspace@end
9098   \close@pdfink
9099 \endgroup
9100 }

```

\PDF@SetupDox

```

9101 \def\PDF@SetupDoc{%
9102   \ifx\@pdfpagescrop\@empty
9103   \else
9104     \edef\process@me{%
9105       \pdfpagesattr={%
9106         /CropBox[\@pdfpagescrop]%
9107         \expandafter\ifx\expandafter\|the\pdfpagesattr\|
9108         \else
9109         ^^J\the\pdfpagesattr
9110       \fi

```

```

9111 }%
9112 }%
9113 \process@me
9114 \fi
9115 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9116 \pdfcatalog{%
9117 /PageMode/\@pdfpagemode
9118 \ifx\@baseurl\@empty
9119 \else
9120 /URI<</Base(\Hy@pstringB)>>%
9121 \fi
9122 }%
9123 \ifx\@pdfstartpage\@empty
9124 \else
9125 \ifx\@pdfstartview\@empty
9126 \else
9127 openaction goto page\@pdfstartpage{\@pdfstartview}%
9128 \fi
9129 \fi
9130 \edef\Hy@temp{%
9131 \ifHy@pdftoolbar\else /HideToolbar true\fi
9132 \ifHy@pdfmenubar\else /HideMenubar true\fi
9133 \ifHy@pdfwindowui\else /HideWindowUI true\fi
9134 \ifHy@pdffitwindow /FitWindow true\fi
9135 \ifHy@pdfcenterwindow /CenterWindow true\fi
9136 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9137 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9138 \Hy@UseNameKey{Direction}\@pdfdirection
9139 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9140 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9141 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9142 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9143 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9144 \Hy@UseNameKey{Duplex}\@pdfduplex
9145 \ifx\@pdfpicktraybypdfsize\@empty
9146 \else
9147 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9148 \fi
9149 \ifx\@pdfprintpagerange\@empty
9150 \else
9151 /PrintPageRange[\@pdfprintpagerange]%
9152 \fi
9153 \ifx\@pdfnumcopies\@empty
9154 \else
9155 /NumCopies \@pdfnumcopies
9156 \fi
9157 }%
9158 \pdfcatalog{%
9159 \ifx\Hy@temp\@empty
9160 \else
9161 /ViewerPreferences<<\Hy@temp>>%
9162 \fi
9163 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9164 \ifx\@pdflang\relax

```

```

9165 \else
9166 /Lang(\@pdflang)%
9167 \fi
9168 }%
9169 }

\PDF@FinishDoc

9170 \def\PDF@FinishDoc{%
9171 \pdf@ifdraftmode{}{%
9172 \Hy@UseMaketitleInfos
9173 \HyInfo@GenerateAddons
9174 \pdfinfo{%
9175 /Author(\@pdfauthor)%
9176 /Title(\@pdftitle)%
9177 /Subject(\@pdfsubject)%
9178 /Creator(\@pdfcreator)%
9179 \ifx\@pdfcreationdate\@empty
9180 \else
9181 /CreationDate(\@pdfcreationdate)%
9182 \fi
9183 \ifx\@pdfmoddate\@empty
9184 \else
9185 /ModDate(\@pdfmoddate)%
9186 \fi
9187 \ifx\@pdfproducer\relax
9188 \else
9189 /Producer(\@pdfproducer)%
9190 \fi
9191 /Keywords(\@pdfkeywords)%
9192 \ifx\@pdftrapped\@empty
9193 \else
9194 /Trapped/\@pdftrapped
9195 \fi
9196 \HyInfo@Addons
9197 }%
9198 }%
9199 \Hy@DisableOption{pdfauthor}%
9200 \Hy@DisableOption{pdftitle}%
9201 \Hy@DisableOption{pdfsubject}%
9202 \Hy@DisableOption{pdfcreator}%
9203 \Hy@DisableOption{addtopdfcreator}%
9204 \Hy@DisableOption{pdfcreationdate}%
9205 \Hy@DisableOption{pdfmoddate}%
9206 \Hy@DisableOption{pdfproducer}%
9207 \Hy@DisableOption{pdfkeywords}%
9208 \Hy@DisableOption{pdftrapped}%
9209 \Hy@DisableOption{pdfinfo}%
9210 }

```

`\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`.

```

9211 \def\hyper@pagetransition{%
9212 \ifx\@pdfpagetransition\relax

```

```

9213 \else
9214 \expandafter\Hy@RemoveTransPageAttr
9215 \the\pdfpageattr^^J/Trans{}}>>\END
9216 \ifx\@pdfpagetransition\@empty
9217 \else
9218 \edef\@processme{%
9219 \global\pdfpageattr{%
9220 \the\pdfpageattr
9221 ^^J/Trans << /S /\@pdfpagetransition\space >>%
9222 }%
9223 }%
9224 \@processme
9225 \fi
9226 \fi
9227 }

```

`\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.

```

9228 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
9229 \ifx\#2\%
9230 \global\pdfpageattr{#1}%
9231 \else
9232 \Hy@RemoveTransPageAttr#1#4\END
9233 \fi
9234 }

```

`\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`.

```

9235 \def\hyper@pageduration{%
9236 \ifx\@pdfpageduration\relax
9237 \else
9238 \expandafter
9239 \Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
9240 \ifx\@pdfpageduration\@empty
9241 \else
9242 \edef\@processme{%
9243 \global\pdfpageattr{%
9244 \the\pdfpageattr
9245 ^^J/Dur \@pdfpageduration\space
9246 }%
9247 }%
9248 \@processme
9249 \fi
9250 \fi
9251 }

```

`\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.

```

9252 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
9253   \ifx\|#2\|
9254     \global\pdfpageattr{#1}%
9255   \else
9256     \Hy@RemoveDurPageAttr#1#4\END
9257   \fi
9258 }

9259 \pdf@ifdraftmode{}{%
9260   \g@addto@macro\Hy@EveryPageHook{%
9261     \hyper@pagetransition
9262     \hyper@pageduration
9263   }%
9264 }

```

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

```

9265 </pdfTeX>
9266 <*pdfTeX | xetex>
9267 \Hy@AtBeginDocument{%
9268   \ifHy@setpagesize
9269     \expandafter\@firstofone
9270   \else
9271     \expandafter\@gobble
9272   \fi
9273 }%
9274 \@ifclassloaded{seminar}{%
9275 *pdfTeX)
9276   \setlength{\pdfhorigin}{1truein}%
9277   \setlength{\pdfvorigin}{1truein}%
9278 </pdfTeX)
9279   \ifportrait
9280     \ifdim\paperwidth=\z@
9281       \else
9282         \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
9283       \fi
9284     \ifdim\paperheight=\z@
9285       \else
9286         \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
9287       \fi
9288     \else
9289       \ifdim\paperheight=\z@
9290         \else
9291           \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
9292         \fi
9293       \ifdim\paperwidth=\z@
9294         \else
9295           \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
9296         \fi
9297       \fi
9298     }{%
9299     \ifnum\mag=\@m

```

```

9300 \ifdim\stockwidth>\z@
9301 \ifdim\stockheight>\z@
9302 \setlength{\pdfpagewidth}{\stockwidth}%
9303 \setlength{\pdfpageheight}{\stockheight}%
9304 \else
9305 \ifdim\paperwidth>\z@
9306 \ifdim\paperheight>\z@
9307 \setlength{\pdfpagewidth}{\paperwidth}%
9308 \setlength{\pdfpageheight}{\paperheight}%
9309 \fi
9310 \fi
9311 \fi
9312 \else
9313 \ifdim\stockwidth=\z@
9314 \ifdim\paperwidth>\z@
9315 \ifdim\paperheight>\z@
9316 \setlength{\pdfpagewidth}{\paperwidth}%
9317 \setlength{\pdfpageheight}{\paperheight}%
9318 \fi
9319 \fi
9320 \fi
9321 \fi
9322 \fi
9323 }%
9324 }%
9325 \Hy@DisableOption{setpagesize}%
9326 }
9327 </pdfTeX | xetex>
9328 <*pdfTeX>
9329 \def\Acrobatmenu#1#2{%
9330 \Hy@Acrobatmenu{#1}{#2}{%
9331 \leavevmode
9332 \EdefEscapeName\Hy@temp@menu{#1}%
9333 \pdfstartlink
9334 attr{%
9335 \Hy@setpdfborder
9336 \Hy@setpdfhighlight
9337 \ifx\@menubordercolor\relax
9338 \else
9339 /C[\@menubordercolor]%
9340 \fi
9341 }%
9342 user{%
9343 /Subtype/Link%
9344 \ifHy@pdfa /F 4\fi
9345 /A<<%
9346 /S/Named%
9347 /N/\Hy@temp@menu
9348 \Hy@href@nextactionraw
9349 >>%
9350 }%
9351 \relax
9352 \Hy@colorlink\@menucolor#2%
9353 \close@pdflink

```



```
9354 }%
9355 }
```

#### 44.2.1 Fix for problem with different nesting levels

`\AtBeginShipoutFirst` adds an additional box layer around the first output page. This disturbs pdf $\TeX$ 's low level link commands `\pdfstartlink` and `\pdfendlink`, if a link is broken across the first and second output page.

The problem could be fixed by replacing `\AtBeginShipoutFirst`, because the box layer is not necessary for pdf $\TeX$ —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.

```
9356 </pdfTeX>
```

### 44.3 `hypertex`

The Hyper $\TeX$  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 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.

```
9357 <{*hypertex}>
```

```

9358 \providecommand*\XR@ext}{dvi}
9359 \let\PDF@FinishDoc\@empty
9360 \def\PDF@SetupDoc{%
9361   \ifx\@baseurl\@empty
9362     \else
9363       \special{html:<base href="\@baseurl">}%
9364     \fi
9365 }
9366 \Hy@WrapperDef\hyper@anchor#1{%
9367   \Hy@SaveLastskip
9368   \Hy@VerboseAnchor{#1}%
9369   \begingroup
9370     \let\protect=\string
9371     \hyper@chars
9372     \special{html:<a name=%
9373       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9374   \endgroup
9375   \Hy@activeanchortrue
9376   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9377   \special{html:</a>}%
9378   \Hy@activeanchorfalse
9379   \Hy@RestoreLastskip
9380 }
9381 \Hy@WrapperDef\hyper@anchorstart#1{%
9382   \Hy@SaveLastskip
9383   \Hy@VerboseAnchor{#1}%
9384   \begingroup
9385     \hyper@chars
9386     \special{html:<a name=%
9387       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9388   \endgroup
9389   \Hy@activeanchortrue
9390 }
9391 \def\hyper@anchorend{%
9392   \special{html:</a>}%
9393   \Hy@activeanchorfalse
9394   \Hy@RestoreLastskip
9395 }
9396 \def\@urltype{url}
9397 \def\hyper@linkstart#1#2{%
9398   \Hy@VerboseLinkStart{#1}{#2}%
9399   \expandafter\Hy@colorlink\csname @#1color\endcsname
9400   \def\Hy@tempa{#1}%
9401   \ifx\Hy@tempa\@urltype
9402     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9403   \else
9404     \begingroup
9405       \hyper@chars
9406       \special{html:<a href=%
9407         \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
9408     \endgroup
9409   \fi
9410 }
9411 \def\hyper@linkend{%

```

```

9412 \special{html:</a>}%
9413 \Hy@endcolorlink
9414 }
9415 \def\hyper@linkfile#1#2#3{%
9416 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
9417 }
9418 \def\hyper@linkurl#1#2{%

```

If we want to raise up the final link `\special`, we need to get its height; ask me why  $\LaTeX$  constructs make this totally foul up, and make us revert to basic  $\TeX$ . I do not know.

```

9419 \leavevmode
9420 \ifHy@raiselinks
9421 \Hy@SaveSpaceFactor
9422 \Hy@SaveSavedSpaceFactor
9423 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9424 \Hy@RestoreSavedSpaceFactor
9425 \@linkdim\dp\@tempboxa
9426 \lower\@linkdim\hbox{%
9427 \hyper@chars
9428 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9429 }%
9430 \Hy@colorlink\@urlcolor
9431 \Hy@RestoreSpaceFactor
9432 #1%
9433 \Hy@SaveSpaceFactor
9434 \@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).

```

9435 \advance\@linkdim by -6.5\p@
9436 \raise\@linkdim\hbox{\special{html:</a>}}%
9437 \Hy@endcolorlink
9438 \Hy@RestoreSpaceFactor
9439 \else
9440 \begingroup
9441 \hyper@chars
9442 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9443 \Hy@colorlink\@urlcolor#1\Hy@xspace@end
9444 \special{html:</a>}%
9445 \Hy@endcolorlink
9446 \endgroup
9447 \fi
9448 }

```

Very poor implementation of `\hyper@link` without considering `#1`.

```

9449 \def\hyper@link#1#2#3{%
9450 \Hy@VerboseLinkStart{#1}{#2}%
9451 \hyper@linkurl{#3}{\##\Hy@HyperDestNameFilter{#2}}%
9452 }
9453 \def\hyper@image#1#2{%
9454 \begingroup
9455 \hyper@chars

```

```

9456 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
9457 \endgroup
9458 }
9459 </hypertex>
9460 <*\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,  $\LaTeX$  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.

```

9461 \providecommand*\XR@ext}{dvi}
9462 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
9463 \Hy@WrapperDef\hyper@anchor#1{%
9464 \Hy@SaveLastskip
9465 \Hy@VerboseAnchor{#1}%
9466 \begingroup
9467 \let\protect=\string
9468 \special{mark: #1}%
9469 \endgroup
9470 \Hy@activeanchortrue
9471 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9472 \Hy@activeanchorfalse
9473 \Hy@RestoreLastskip
9474 }
9475 \Hy@WrapperDef\hyper@anchorstart#1{%
9476 \Hy@SaveLastskip
9477 \Hy@VerboseAnchor{#1}%
9478 \special{mark: #1}%
9479 \Hy@activeanchortrue
9480 }
9481 \def\hyper@anchorend{%
9482 \Hy@activeanchorfalse
9483 \Hy@RestoreLastskip
9484 }
9485 \def\hyper@linkstart#1#2{%
9486 \Hy@VerboseLinkStart{#1}{#2}%
9487 \expandafter\Hy@colorlink\csname @#1color\endcsname
9488 \special{button: %
9489 10000000 %
9490 \number\baselineskip\space
9491 #2%
9492 }%
9493 }
9494 \def\hyper@linkend{%

```

```

9495 \Hy@endcolorlink
9496 }
9497 \def\hyper@link#1#2#3{%
9498 \Hy@VerboseLinkStart{#1}{#2}%
9499 \leavevmode
9500 \ifHy@raiselinks
9501 \Hy@SaveSpaceFactor
9502 \Hy@SaveSavedSpaceFactor
9503 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#3}%
9504 \Hy@RestoreSavedSpaceFactor
9505 \@linkdim\dp\@tempboxa
9506 \lower\@linkdim\hbox{%
9507 \special{button: %
9508 \number\wd\@tempboxa\space
9509 \number\ht\@tempboxa\space
9510 #2%
9511 }%
9512 \expandafter\Hy@colorlink\csname @#1color\endcsname
9513 \Hy@RestoreSpaceFactor
9514 #3\Hy@xspace@end
9515 \Hy@SaveSpaceFactor
9516 \Hy@endcolorlink
9517 }%
9518 \@linkdim\ht\@tempboxa
9519 \advance\@linkdim by -6.5\p@
9520 \raise\@linkdim\hbox{%
9521 \Hy@RestoreSpaceFactor
9522 \else
9523 \special{button: %
9524 \number\wd\@tempboxa\space
9525 \number\ht\@tempboxa\space
9526 #2%
9527 }%
9528 \expandafter\Hy@colorlink\csname @#1color\endcsname
9529 #3\Hy@xspace@end
9530 \Hy@endcolorlink
9531 \fi
9532 }
9533 \def\hyper@linkurl#1#2{%
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 launch: \wwwbrowser\space
9548 #2%

```

```

9549     }%
9550     \Hy@colorlink \@urlcolor
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     launch: \wwwbrowser\space
9565     #2%
9566     }%
9567     \Hy@colorlink \@urlcolor
9568     #1\Hy@xspace@end
9569     \Hy@endcolorlink
9570     \fi
9571     \endgroup
9572 }
9573 \def\hyper@linkfile#1#2#3{%
9574     \begingroup
9575     \hyper@chars
9576     \leavevmode
9577     \ifHy@raiselinks
9578     \Hy@SaveSpaceFactor
9579     \Hy@SaveSavedSpaceFactor
9580     \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9581     \Hy@RestoreSavedSpaceFactor
9582     \@linkdim\dp\@tempboxa
9583     \lower\@linkdim\hbox{ }%
9584     \special{button: %
9585     \number\wd\@tempboxa\space
9586     \number\ht\@tempboxa\space
9587     #3,%
9588     file: #2%
9589     }%
9590     \Hy@colorlink \@filecolor
9591     \Hy@RestoreSpaceFactor
9592     #1\Hy@xspace@end
9593     \Hy@SaveSpaceFactor
9594     \Hy@endcolorlink
9595     }%
9596     \@linkdim\ht\@tempboxa
9597     \advance\@linkdim by -6.5\p@
9598     \raise\@linkdim\hbox{ }%
9599     \Hy@RestoreSpaceFactor
9600     \else
9601     \special{button: %
9602     \number\wd\@tempboxa\space

```

```

9603     \number\ht\@tempboxa\space
9604     #3,%
9605     file: #2%
9606   }%
9607   \Hy@colorlink\@filecolor
9608     #1\Hy@xspace@end
9609   \Hy@endcolorlink
9610   \fi
9611 \endgroup
9612 }
9613 \HyInfo@AddonUnsupportedtrue
9614 \def\PDF@FinishDoc{%
9615   \Hy@UseMaketitleInfos
9616   \HyInfo@TrappedUnsupported
9617   \special{PDF: Keywords \@pdfkeywords}%
9618   \special{PDF: Title \@pdftitle}%
9619   \special{PDF: Creator \@pdfcreator}%
9620   \ifx\@pdfcreationdate\@empty
9621   \else
9622     \special{PDF: CreationDate \@pdfcreationdate}%
9623   \fi
9624   \ifx\@pdfmoddate\@empty
9625   \else
9626     \special{PDF: ModDate \@pdfmoddate}%
9627   \fi
9628   \special{PDF: Author \@pdfauthor}%
9629   \ifx\@pdfproducer\relax
9630   \else
9631     \special{PDF: Producer \@pdfproducer}%
9632   \fi
9633   \special{PDF: Subject \@pdfsubject}%
9634   \Hy@DisableOption{pdfauthor}%
9635   \Hy@DisableOption{pdftitle}%
9636   \Hy@DisableOption{pdfsubject}%
9637   \Hy@DisableOption{pdfcreator}%
9638   \Hy@DisableOption{addtopdfcreator}%
9639   \Hy@DisableOption{pdfcreationdate}%
9640   \Hy@DisableOption{pdfcreationdate}%
9641   \Hy@DisableOption{pdfmoddate}%
9642   \Hy@DisableOption{pdfproducer}%
9643   \Hy@DisableOption{pdfkeywords}%
9644   \Hy@DisableOption{pdftrapped}%
9645   \Hy@DisableOption{pdfinfo}%
9646 }
9647 \def\PDF@SetupDoc{%
9648   \ifx\@baseurl\@empty
9649   \else
9650     \special{PDF: Base \@baseurl}%
9651   \fi
9652   \ifx\@pdfpagescrop\@empty\else
9653     \special{PDF: BBox \@pdfpagescrop}%
9654   \fi
9655   \def\Hy@temp{ }%
9656   \ifx\@pdfstartpage\@empty

```

```

9657 \else
9658 \ifx\@pdfstartview\@empty
9659 \else
9660 \edef\Hy@temp{%
9661   ,Page=\@pdfstartpage
9662   ,View=\@pdfstartview
9663 }%
9664 \fi
9665 \fi
9666 \edef\Hy@temp{%
9667 \noexpand\pdfmark{%
9668   pdfmark=/DOCVIEW,%
9669   PageMode=/\@pdfpagemode
9670   \Hy@temp
9671 }%
9672 }%
9673 \Hy@temp
9674 \ifx\@pdfpagescrop\@empty
9675 \else
9676 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9677 \fi
9678 \edef\Hy@temp{%
9679 \ifHy@pdftoolbar\else /HideToolbar true\fi
9680 \ifHy@pdfmenubar\else /HideMenubar true\fi
9681 \ifHy@pdfwindowui\else /HideWindowUI true\fi
9682 \ifHy@pdffitwindow /FitWindow true\fi
9683 \ifHy@pdfcenterwindow /CenterWindow true\fi
9684 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9685 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9686 \Hy@UseNameKey{Direction}\@pdfdirection
9687 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9688 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9689 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9690 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9691 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9692 \Hy@UseNameKey{Duplex}\@pdfduplex
9693 \ifx\@pdfpicktraybypdfsize\@empty
9694 \else
9695   /PickTrayByPDFSize \@pdfpicktraybypdfsize
9696 \fi
9697 \ifx\@pdfprintpagerange\@empty
9698 \else
9699   /PrintPageRange[\@pdfprintpagerange]%
9700 \fi
9701 \ifx\@pdfnumcopies\@empty
9702 \else
9703   /NumCopies \@pdfnumcopies
9704 \fi
9705 }%
9706 \pdfmark{pdfmark=/PUT,%
9707   Raw={%
9708     \string{Catalog\string}<<%
9709     \ifx\Hy@temp\@empty
9710     \else

```



```

9711     /ViewerPreferences<<\Hy@temp>>%
9712     \fi
9713     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9714     \ifx\@pdflang\relax
9715     \else
9716     /Lang(\@pdflang)%
9717     \fi
9718     >>%
9719     }%
9720 }%
9721 }
9722 </dviwindo>
9723 <*\dviptfm | 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.

```

9724 \special{dvipdfmx:config C 0x0010}
9725 \providecommand*\XR@ext}{pdf}
9726 \Hy@setbreaklinks{true}
9727 \def\HyPat@ObjRef{%
9728   @[\ ]+%
9729 }
9730 \newsavebox{\pdfm@box}
9731 \def\@pdfm@mark#1{\special{pdf:#1}}
9732 \Hy@WrapperDef\@pdfm@dest#1{%
9733   \Hy@SaveLastskip
9734   \Hy@VerboseAnchor{#1}%
9735   \begingroup
9736   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9737   \def\x{XYZ}%
9738   \ifx\x\@pdfview
9739     \def\x{XYZ @xpos @ypos null}%
9740   \else
9741     \def\x{FitH}%
9742     \ifx\x\@pdfview
9743       \def\x{FitH @ypos}%
9744     \else
9745       \def\x{FitBH}%
9746       \ifx\x\@pdfview
9747         \def\x{FitBH @ypos}%
9748       \else
9749         \def\x{FitV}%
9750         \ifx\x\@pdfview
9751           \def\x{FitV @xpos}%
9752         \else
9753           \def\x{FitBV}%
9754           \ifx\x\@pdfview
9755             \def\x{FitBV @xpos}%
9756           \else

```

```

9757     \def\x{Fit}%
9758     \ifx\x\@pdfview
9759         \let\x\@pdfview
9760     \else
9761         \def\x{FitB}%
9762         \ifx\x\@pdfview
9763             \let\x\@pdfview
9764         \else
9765             \def\x{FitR}%
9766             \ifx\x\@pdfview
9767                 \Hy@Warning{\`pdfview=FitR' is not supported}%
9768             \def\x{XYZ @xpos @ypos null}%
9769         \else
9770             \@onelevel@sanitize\@pdfview
9771             \Hy@Warning{%
9772                 Unknown value `\'@pdfview' for pdfview%
9773             }%
9774             \def\x{XYZ @xpos @ypos null}%
9775         \fi
9776     \fi
9777 \fi
9778 \fi
9779 \fi
9780 \fi
9781 \fi
9782 \fi
9783 \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
9784 \endgroup
9785 \Hy@RestoreLastskip
9786 }
9787 \providecommand*\@pdfview{XYZ}
9788 \providecommand*\@pdfborder{0 0 1}
9789 \providecommand*\@pdfborderstyle{}
9790 \def\hyper@anchor#1{%
9791     \@pdfm@dest{#1}%
9792 }
9793 \def\hyper@anchorstart#1{%
9794     \Hy@activeanchortrue
9795     \@pdfm@dest{#1}%
9796 }
9797 \def\hyper@anchorend{%
9798     \Hy@activeanchorfalse
9799 }
9800 \newcounter{Hy@AnnotLevel}
9801 \ifHy@ocgcolorlinks
9802     \def\OBJ@OCG@view{@OCG@view}%
9803     \@pdfm@mark{%
9804         obj \OBJ@OCG@view <<%
9805         /Type/OCG%
9806         /Name(View)%
9807         /Usage<<%
9808         /Print<<%
9809         /PrintState/OFF%

```

```

9810     >>%
9811     /View<<%
9812     /ViewState/ON%
9813     >>%
9814     >>%
9815     >>%
9816     }%
9817     \@pdfm@mark{close \OBJ@OCG@view}%
9818     \def\OBJ@OCG@print{@OCG@print}%
9819     \@pdfm@mark{%
9820     obj \OBJ@OCG@print <<%
9821     /Type/OCG%
9822     /Name(Print)%
9823     /Usage<<%
9824     /Print<<%
9825     /PrintState/ON%
9826     >>%
9827     /View<<%
9828     /ViewState/OFF%
9829     >>%
9830     >>%
9831     >>%
9832     }%
9833     \@pdfm@mark{close \OBJ@OCG@print}%
9834     \def\OBJ@OCGs{@OCGs}%
9835     \@pdfm@mark{%
9836     obj \OBJ@OCGs [%
9837     \OBJ@OCG@view\space\OBJ@OCG@print
9838     ]%
9839     }%
9840     \@pdfm@mark{close \OBJ@OCGs}%
9841     \@pdfm@mark{%
9842     put @catalog <<%
9843     /OCProperties<<%
9844     /OCGs \OBJ@OCGs
9845     /D<<%
9846     /OFF[\OBJ@OCG@print]%
9847     /AS[%
9848     <<%
9849     /Event/View%
9850     /OCGs \OBJ@OCGs
9851     /Category[/View]%
9852     >>%
9853     <<%
9854     /Event/Print%
9855     /OCGs \OBJ@OCGs
9856     /Category[/Print]%
9857     >>%
9858     <<%
9859     /Event/Export%
9860     /OCGs \OBJ@OCGs
9861     /Category[/Print]%
9862     >>%
9863     ]%

```

```

9864     >>%
9865     >>%
9866     >>%
9867 }%
9868 \AddToHook{shipout/before}{%
9869   \setbox\ShipoutBox=\hbox{%
9870     \copy\ShipoutBox
9871     \@pdfm@mark{%
9872       put @resources <<%
9873         /Properties<<%
9874         /OCView \OBJ@OCG@view
9875         /OCPrint \OBJ@OCG@print
9876       >>%
9877     >>%
9878   }%
9879 }%
9880 }%
9881 \Hy@AtBeginDocument{%
9882   \def\Hy@colorlink#1{%
9883     \begingroup
9884     \ifHy@ocgcolorlinks
9885       \def\Hy@ocgcolor{#1}%
9886       \setbox0=\hbox\bgroup\color@begingroup
9887     \else
9888       \HyColor@UseColor#1%
9889     \fi
9890   }%
9891   \def\Hy@endcolorlink{%
9892     \ifHy@ocgcolorlinks
9893       \color@endgroup\egroup
9894       \mbox{%
9895         \@pdfm@mark{content /OC/OCPrint BDC}%
9896         \rlap{\copy0}%
9897         \@pdfm@mark{content EMC/OC/OCView BDC}%
9898       \begingroup
9899         \expandafter\HyColor@UseColor\Hy@ocgcolor
9900         \box0 %
9901       \endgroup
9902       \@pdfm@mark{content EMC}%
9903     }%
9904     \fi
9905   \endgroup
9906 }%
9907 }%
9908 \else
9909 \Hy@DisableOption{ocgcolorlinks}%
9910 \fi

```

Use primitive counter arithmetic here to avoid amsmath redefining `\stepcounter` (github issue/13)

```

9911 \def\Hy@BeginAnnot#1{%
9912   \global\advance\c@Hy@AnnotLevel\@ne
9913   \ifnum\c@Hy@AnnotLevel=\@ne
9914     #1%

```

```

9915 \fi
9916 }
9917 \def\Hy@EndAnnot{%
9918 \ifnum\value{Hy@AnnotLevel}=\@ne
9919 \Hy@endcolorlink
9920 \@pdfm@mark{eann}%
9921 \fi
9922 \global\advance\c@Hy@AnnotLevel\m@ne
9923 }

9924 \def\Hy@undefinedname{UNDEFINED}
9925 \def\hyper@linkstart#1#2{%
9926 \Hy@VerboseLinkStart{#1}{#2}%
9927 \leavevmode
9928 \Hy@BeginAnnot{%
9929 \protected@edef\Hy@testname{#2}%
9930 \ifx\Hy@testname\@empty
9931 \Hy@Warning{%
9932 Empty destination name,\MessageBreak
9933 using \Hy@undefinedname'
9934 }%
9935 \let\Hy@testname\Hy@undefinedname
9936 \else
9937 \Hy@pstringdef\Hy@testname{%
9938 \expandafter\HyperDestNameFilter\expandafter{%
9939 \Hy@testname
9940 }%
9941 }%
9942 \fi
9943 \@pdfm@mark{%
9944 bann<<%
9945 /Type/Annot%
9946 /Subtype/Link%
9947 \ifHy@pdfa /F 4\fi
9948 \Hy@setpdfborder
9949 \Hy@setpdfhighlight
9950 \expandafter\ifx\csname @#1bordercolor\endcsname\relax
9951 \else
9952 /C[\csname @#1bordercolor\endcsname]%
9953 \fi
9954 /A<<%
9955 /S/GoTo%
9956 /D(\Hy@testname)%
9957 \Hy@href@nextactionraw
9958 >>%
9959 >>%
9960 }%
9961 \expandafter\Hy@colorlink\csname @#1color\endcsname
9962 }%
9963 }
9964 \def\hyper@linkend{\Hy@EndAnnot}%
9965 \def\hyper@link#1#2#3{%
9966 \hyper@linkstart{#1}{#2}#3\Hy@xspace@end\hyper@linkend
9967 }

```

2025-05-20 added a group for issue #380

```
9968 \def\hyper@linkfile#1#2#3{%
9969 \leavevmode
9970 \begingroup
9971 \Hy@BeginAnnot{%
9972 \def\Hy@pstringF{#2}%
9973 \Hy@CleanupFile\Hy@pstringF
9974 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
9975 \Hy@pstringdef\Hy@pstringD{#3}%
9976 \Hy@MakeRemoteAction
9977 \@pdfm@mark{%
9978 bann<<%
9979 /Type/Annot%
9980 /Subtype/Link%
9981 \ifHy@pdfa /F 4\fi
9982 \Hy@setpdfborder
9983 \Hy@setpdfhighlight
9984 \ifx\@filebordercolor\relax
9985 \else
9986 /C[\@filebordercolor]%
9987 \fi
9988 /A<<%
9989 /S/GoToR%
9990 /F(\Hy@pstringF)%
9991 /D%
9992 \ifx\#3\%
9993 [\Hy@href@page\@pdfremotestartview]%
9994 \else
9995 (\Hy@pstringD)%
9996 \fi
9997 \Hy@SetNewWindow
9998 \Hy@href@nextactionraw
9999 >>%
10000 >>%
10001 }%
10002 \Hy@colorlink\@filecolor
10003 }%
10004 #1\Hy@xspace@end
10005 \Hy@endAnnot
10006 \endgroup
10007 }
10008 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
10009 \leavevmode
10010 \Hy@BeginAnnot{%
10011 \Hy@pstringdef\Hy@pstringF{#1}%
10012 \Hy@pstringdef\Hy@pstringP{#3}%
10013 \@pdfm@mark{%
10014 bann<<%
10015 /Type/Annot%
10016 /Subtype/Link%
10017 \ifHy@pdfa /F 4\fi
10018 \Hy@setpdfborder
10019 \Hy@setpdfhighlight
10020 \ifx\@runbordercolor\relax
```

```

10021     \else
10022         /C[\@runbordercolor]%
10023     \fi
10024     /A<<%
10025         /F(\Hy@pstringF)%
10026         /S/Launch%
10027         \Hy@SetNewWindow
10028         \ifx\#3\%
10029     \else
10030         /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
10031     \fi
10032     \Hy@href@nextactionraw
10033     >>%
10034     >>%
10035     }%
10036     \Hy@colorlink\@runcolor
10037 }%
10038 #2\Hy@xspace@end
10039 \Hy@EndAnnot
10040 }
10041 \def\hyper@linkurl#1#2{%
10042     \leavevmode
10043     \Hy@BeginAnnot{%
10044         \Hy@pstringdef\Hy@pstringURI{#2}%
10045         \@pdfm@mark{%
10046             bann<<%
10047                 /Type/Annot%
10048                 /Subtype/Link%
10049                 \ifHy@pdfa /F 4\fi
10050                 \Hy@setpdfborder
10051                 \Hy@setpdfhighlight
10052                 \ifx\@urlbordercolor\relax
10053                     \else
10054                         /C[\@urlbordercolor]%
10055                     \fi
10056                 /A<<%
10057                 /S/URI%
10058                 /URI(\Hy@pstringURI)%
10059                 \ifHy@href@ismap
10060                     /IsMap true%
10061                 \fi
10062                 \Hy@href@nextactionraw
10063             >>%
10064             >>%
10065         }%
10066         \Hy@colorlink\@urlcolor
10067     }%
10068     #1\Hy@xspace@end
10069     \Hy@EndAnnot
10070 }
10071 \def\Acrobatmenu#1#2{%
10072     \Hy@Acrobatmenu{#1}{#2}{%
10073         \Hy@BeginAnnot{%
10074             \EdefEscapeName\Hy@temp@menu{#1}%

```

```

10075 \@pdfm@mark{%
10076   bann<<%
10077   /Type/Annot%
10078   /Subtype/Link%
10079   \ifHy@pdfa /F 4\fi
10080   \Hy@setpdfborder
10081   \Hy@setpdfhighlight
10082   \ifx\@menubordercolor\relax
10083   \else
10084     /C[\@menubordercolor]%
10085   \fi
10086   /A<<%
10087   /S/Named%
10088   /N/\Hy@temp@menu
10089   \Hy@href@nextactionraw
10090   >>%
10091   >>%
10092   }%
10093   \Hy@colorlink\@menucolor
10094   }%
10095   #2\Hy@xspace@end
10096   \Hy@endannot
10097   }%
10098 }
10099
10100 \def\PDF@FinishDoc{%
10101   \Hy@UseMaketitleInfos
10102   \HyInfo@GenerateAddons
10103   \@pdfm@mark{%
10104     docinfo<<%
10105     /Title(\@pdftitle)%
10106     /Subject(\@pdfsubject)%
10107     /Creator(\@pdfcreator)%
10108     \ifx\@pdfcreationdate\@empty
10109     \else
10110       /CreationDate(\@pdfcreationdate)%
10111     \fi
10112     \ifx\@pdfmoddate\@empty
10113     \else
10114       /ModDate(\@pdfmoddate)%
10115     \fi
10116     /Author(\@pdfauthor)%
10117     \ifx\@pdfproducer\relax
10118     \else
10119       /Producer(\@pdfproducer)%
10120     \fi
10121     /Keywords(\@pdfkeywords)%
10122     \ifx\@pdftrapped\@empty
10123     \else
10124       /Trapped/\@pdftrapped
10125     \fi
10126     \HyInfo@Addons
10127     >>%
10128   }%

```



```

10129 \Hy@DisableOption{pdfauthor}%
10130 \Hy@DisableOption{pdftitle}%
10131 \Hy@DisableOption{pdfsubject}%
10132 \Hy@DisableOption{pdfcreator}%
10133 \Hy@DisableOption{addtopdfcreator}%
10134 \Hy@DisableOption{pdfcreationdate}%
10135 \Hy@DisableOption{pdfcreationdate}%
10136 \Hy@DisableOption{pdfmoddate}%
10137 \Hy@DisableOption{pdfproducer}%
10138 \Hy@DisableOption{pdfkeywords}%
10139 \Hy@DisableOption{pdftrapped}%
10140 \Hy@DisableOption{pdfinfo}%
10141 }

10142 \def\PDF@SetupDoc{%
10143 \edef\Hy@temp{%
10144 \ifHy@pdftoolbar\else /HideToolbar true\fi
10145 \ifHy@pdfmenubar\else /HideMenubar true\fi
10146 \ifHy@pdfwindowui\else /HideWindowUI true\fi
10147 \ifHy@pdffitwindow /FitWindow true\fi
10148 \ifHy@pdfcenterwindow /CenterWindow true\fi
10149 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10150 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10151 \Hy@UseNameKey{Direction}\@pdfdirection
10152 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10153 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10154 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10155 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10156 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10157 \Hy@UseNameKey{Duplex}\@pdfduplex
10158 \ifx\@pdfpicktraybypdfsize\@empty
10159 \else
10160 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10161 \fi
10162 \ifx\@pdfprintpagerange\@empty
10163 \else
10164 /PrintPageRange[\@pdfprintpagerange]%
10165 \fi
10166 \ifx\@pdfnumcopies\@empty
10167 \else
10168 /NumCopies \@pdfnumcopies
10169 \fi
10170 }%
10171 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10172 \@pdfm@mark{%
10173 docview<<%
10174 \ifx\@pdfstartpage\@empty
10175 \else
10176 \ifx\@pdfstartview\@empty
10177 \else
10178 /OpenAction[<@page\@pdfstartpage\@pdfstartview]%
10179 \fi
10180 \fi
10181 \ifx\@baseurl\@empty
10182 \else

```

```

10183     /URI<</Base(\Hy@pstringB)>>%
10184     \fi
10185     /PageMode/\@pdfpagemode
10186     \ifx\Hy@temp\@empty
10187     \else
10188     /ViewerPreferences<<\Hy@temp>>%
10189     \fi
10190     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10191     \ifx\@pdflang\relax
10192     \else
10193     /Lang(\@pdflang)%
10194     \fi
10195     >>%
10196   }%
10197 \ifx\@pdfpagescrop\@empty
10198 \else
10199   \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}}%
10200 \fi
10201 }
10202 </dviPDFM | xetex>
10203 < *dviPDFM | xetex>

```

\hyper@pagetransition

```

10204 \def\hyper@pagetransition{%
10205   \ifx\@pdfpagetransition\relax
10206   \else
10207   \ifx\@pdfpagetransition\@empty
10208   \else
10209   \special{pdf:put @thispage %
10210     <</Trans<</S/\@pdfpagetransition>>>>%
10211   }%
10212   \fi
10213 \fi
10214 }

```

\hyper@pageduration

```

10215 \def\hyper@pageduration{%
10216   \ifx\@pdfpageduration\relax
10217   \else
10218   \ifx\@pdfpageduration\@empty
10219   \else
10220   \special{pdf:put @thispage %
10221     <</Dur \@pdfpageduration>>>>%
10222   }%
10223   \fi
10224 \fi
10225 }

10226 \g@addto@macro\Hy@EveryPageBoxHook{%
10227   \hyper@pagetransition
10228   \hyper@pageduration
10229 }
10230 </dviPDFM | xetex>

```

XeTeX uses pdfTeX's method `\pdfpagewidth` and `\pdfpageheight` for setting the paper size.

```

10231 ⟨*dvipdfm⟩
10232 \AtBeginShipoutFirst{%
10233   \ifHy@setpagesize
10234     \begingroup
10235     \ifnum\mag=\@m
10236       \ifdim\stockwidth>\z@
10237         \ifdim\stockheight>\z@
10238           \special{papersize=\the\stockwidth,\the\stockheight}%
10239         \else
10240           \ifdim\paperwidth>\z@
10241             \ifdim\paperheight>\z@
10242               \special{papersize=\the\paperwidth,\the\paperheight}%
10243             \fi
10244           \fi
10245         \fi
10246       \else
10247         \ifdim\stockwidth=\z@
10248           \ifdim\paperwidth>\z@
10249             \ifdim\paperheight>\z@
10250               \special{papersize=\the\paperwidth,\the\paperheight}%
10251             \fi
10252           \fi
10253         \fi
10254       \fi
10255     \fi
10256   \endgroup
10257 \fi
10258 \Hy@DisableOption{setpagesize}%
10259 }
10260 ⟨/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.

```

10261 ⟨*vtexhtml⟩
10262 \providecommand*\XR@ext}{htm}
10263 \RequirePackage{vtexhtml}
10264 \newif\if@Localurl
10265 \let\PDF@FinishDoc\@empty
10266 \def\PDF@SetupDoc{%
10267   \ifx\@baseurl\@empty
10268     \else
10269       \special{!direct <base href="\@baseurl">}%
10270     \fi
10271 }
10272 \def\@urltype{url}
10273 \def\hyper@link#1#2#3{%
10274   \Hy@VerboseLinkStart{#1}{#2}%
10275   \leavevmode
10276   \special{!direct <a href=%

```

```

10277 \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
10278 #3\Hy@xspace@end
10279 \special{!direct </a>}%
10280 }
10281 \def\hyper@linkurl#1#2{%
10282 \begingroup
10283 \hyper@chars
10284 \leavevmode
10285 \MathBSuppress=1\relax
10286 \special{!direct <a href=%
10287 \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}%
10288 #1\Hy@xspace@end
10289 \MathBSuppress=0\relax
10290 \special{!direct </a>}%
10291 \endgroup
10292 }
10293 \def\hyper@linkfile#1#2#3{%
10294 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
10295 }
10296 \def\hyper@linkstart#1#2{%
10297 \Hy@VerboseLinkStart{#1}{#2}%
10298 \def\Hy@tempa{#1}\ifx\Hy@tempa \@urlytype
10299 \@Localurltrue
10300 \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
10301 \else
10302 \@Localurlfalse
10303 \begingroup
10304 \hyper@chars
10305 \special{!aref \HyperDestNameFilter{#2}}%
10306 \endgroup
10307 \fi
10308 }
10309 \def\hyper@linkend{%
10310 \if@Localurl
10311 \special{!endaref}%
10312 \else
10313 \special{!direct </a>}%
10314 \fi
10315 }
10316 \Hy@WrapperDef\hyper@anchorstart#1{%
10317 \Hy@SaveLastskip
10318 \Hy@VerboseAnchor{#1}%
10319 \begingroup
10320 \hyper@chars
10321 \special{!aname #1}%
10322 \special{!direct <a name=%
10323 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10324 \endgroup
10325 \Hy@activeanchortrue
10326 }
10327 \def\hyper@anchorend{%
10328 \special{!direct </a>}%
10329 \Hy@activeanchorfalse
10330 \Hy@RestoreLastskip

```

```

10331 }
10332 \Hy@WrapperDef\hyper@anchor#1{%
10333 \Hy@SaveLastskip
10334 \Hy@VerboseAnchor{#1}%
10335 \begingroup
10336 \let\protect=\string
10337 \hyper@chars
10338 \leavevmode
10339 \special{!aname #1}%
10340 \special{!direct <a name=%
10341 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10342 \endgroup
10343 \Hy@activeanchortrue
10344 \bgroup\anchor@spot\egroup
10345 \special{!direct </a>}%
10346 \Hy@activeanchorfalse
10347 \Hy@RestoreLastskip
10348 }
10349 \def\@Form[#1]{%
10350 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10351 }
10352 \let\@endForm\@empty
10353 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10354 \Hy@Message{Sorry, TeXpider does not yet support FORM gauges}%
10355 }
10356 \def\@TextField[#1]#2{% parameters, label
10357 \Hy@Message{Sorry, TeXpider does not yet support FORM text fields}%
10358 }
10359 \def\@CheckBox[#1]#2{% parameters, label
10360 \Hy@Message{Sorry, TeXpider does not yet support FORM checkboxes}%
10361 }
10362 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10363 \Hy@Message{Sorry, TeXpider does not yet support FORM choice menus}%
10364 }
10365 \def\@PushButton[#1]#2{% parameters, label
10366 \Hy@Message{Sorry, TeXpider does not yet support FORM pushbuttons}%
10367 }
10368 \def\@Reset[#1]#2{%
10369 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10370 }
10371 \def\@Submit[#1]#2{%
10372 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10373 }
10374 </vtexhtml>
10375 <*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.

```

10376 \ifcsname mediaheight\endcsname
10377 \ifHy@setpagesize
10378 \providecommand*\VTeXInitMediaSize{%
10379 \ifnum\mag=\@m
10380 \ifdim\stockwidth>\z@

```

```

10381 \ifdim\stockheight>\z@
10382 \setlength\mediaheight\stockheight
10383 \setlength\mediawidth\stockwidth
10384 \else
10385 \ifdim\paperwidth>\z@
10386 \ifdim\paperheight>\z@
10387 \setlength\mediaheight\paperheight
10388 \setlength\mediawidth\paperwidth
10389 \fi
10390 \fi
10391 \fi
10392 \else
10393 \ifdim\stockwidth=\z@
10394 \ifdim\paperwidth>\z@
10395 \ifdim\paperheight>\z@
10396 \setlength\mediaheight\paperheight
10397 \setlength\mediawidth\paperwidth
10398 \fi
10399 \fi
10400 \fi
10401 \fi
10402 \fi
10403 }%
10404 \Hy@AtBeginDocument{\VTeXInitMediaSize}%
10405 \fi
10406 \Hy@DisableOption{setpagesize}%
10407 \fi

```

Older versions of VTeX require xyz in lower case.

```

10408 \providecommand*\@pdfview{xyz}
10409 \providecommand*\@pdfborder{0 0 1}
10410 \providecommand*\@pdfborderstyle{}
10411 \let\CurrentBorderColor\@linkbordercolor
10412 \Hy@WrapperDef\hyper@anchor#1{%
10413 \Hy@SaveLastskip
10414 \Hy@VerboseAnchor{#1}%
10415 \begingroup
10416 \let\protect=\string
10417 \hyper@chars
10418 \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10419 \endgroup
10420 \Hy@activeanchortrue
10421 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
10422 \Hy@activeanchorfalse
10423 \Hy@RestoreLastskip
10424 }
10425 \Hy@WrapperDef\hyper@anchorstart#1{%
10426 \Hy@SaveLastskip
10427 \Hy@VerboseAnchor{#1}%
10428 \begingroup
10429 \hyper@chars
10430 \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10431 \endgroup
10432 \Hy@activeanchortrue
10433 }

```

```

10434 \def\hyper@anchorend{%
10435 \Hy@activeanchorfalse
10436 \Hy@RestoreLastskip
10437 }
10438 \def\@urltype{url}
10439 \def\Hy@undefinedname{UNDEFINED}
10440 \def\hyper@linkstart#1#2{%
10441 \Hy@VerboseLinkStart{#1}{#2}%
10442 \Hy@pstringdef\Hy@pstringURI{#2}%
10443 \expandafter\Hy@colorlink\csname @#1color\endcsname
10444 \@ifundefined{#@#1bordercolor}{%
10445 \let\CurrentBorderColor\relax
10446 }{%
10447 \edef\CurrentBorderColor{%
10448 \csname @#1bordercolor\endcsname
10449 }%
10450 }%
10451 \def\Hy@tempa{#1}%
10452 \ifx\Hy@tempa\@urltype
10453 \special{!%
10454 aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10455 \ifHy@href@ismap
10456 /IsMap true%
10457 \fi
10458 \Hy@href@nextactionraw
10459 >,%
10460 a=<%
10461 \ifHy@pdfa /F 4\fi
10462 \Hy@setpdfborder
10463 \ifx\CurrentBorderColor\relax
10464 \else
10465 /C [\CurrentBorderColor]%
10466 \fi
10467 >%
10468 }%
10469 \else
10470 \protected@edef\Hy@testname{#2}%
10471 \ifx\Hy@testname\@empty
10472 \Hy@Warning{%
10473 Empty destination name,\MessageBreak
10474 using '\Hy@undefinedname'%
10475 }%
10476 \let\Hy@testname\Hy@undefinedname
10477 \fi
10478 \special{!%
10479 aref \expandafter\HyperDestNameFilter
10480 \expandafter{\Hy@testname};%
10481 a=<%
10482 \ifHy@pdfa /F 4\fi
10483 \Hy@setpdfborder
10484 \ifx\CurrentBorderColor\relax
10485 \else
10486 /C [\CurrentBorderColor]%
10487 \fi

```

```

10488 >%
10489 }%
10490 \fi
10491 }
10492 \def\hyper@linkend{%
10493 \special{!endaref}%
10494 \Hy@endcolorlink
10495 }
10496 \def\hyper@linkfile#1#2#3{%
10497 \leavevmode
10498 \def\Hy@pstringF{#2}%
10499 \Hy@CleanupFile\Hy@pstringF
10500 \special{!%
10501   aref <%
10502   \ifnum\Hy@VTeXversion>753 \ifHy@pdfnewwindow n\fi\fi
10503   f=\Hy@pstringF>#3;%
10504   a=<%
10505   \ifHy@pdfa /F 4\fi
10506   \Hy@setpdfborder
10507   \ifx\@filebordercolor\relax
10508   \else
10509   /C [\@filebordercolor]%
10510   \fi
10511   >%
10512   }%
10513   \Hy@colorlink\@filecolor
10514   #1\Hy@xspace@end
10515   \Hy@endcolorlink
10516   \special{!endaref}%
10517   }
10518 \def\hyper@linkurl#1#2{%
10519 \begingroup
10520 \Hy@pstringdef\Hy@pstringURI{#2}%
10521 \hyper@chars
10522 \leavevmode
10523 \special{!%
10524   aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10525   \ifHy@href@ismap
10526   /IsMap true%
10527   \fi
10528   \Hy@href@nextactionraw
10529   >;%
10530   a=<%
10531   \ifHy@pdfa /F 4\fi
10532   \Hy@setpdfborder
10533   \ifx\@urlbordercolor\relax
10534   \else
10535   /C [\@urlbordercolor]%
10536   \fi
10537   >%
10538   }%
10539   \Hy@colorlink\@urlcolor
10540   #1\Hy@xspace@end
10541   \Hy@endcolorlink

```



```

10542 \special{!endaref}%
10543 \endgroup
10544 }
10545 \def\hyper@link#1#2#3{%
10546 \Hy@VerboseLinkStart{#1}{#2}%
10547 \@ifundefined{#@#1bordercolor}{%
10548 \let\CurrentBorderColor\relax
10549 }{%
10550 \edef\CurrentBorderColor{\csname #@#1bordercolor\endcsname}%
10551 }%
10552 \leavevmode
10553 \protected@edef\Hy@testname{#2}%
10554 \ifx\Hy@testname\@empty
10555 \Hy@Warning{%
10556 Empty destination name,\MessageBreak
10557 using \Hy@undefinedname'%
10558 }%
10559 \let\Hy@testname\Hy@undefinedname
10560 \fi
10561 \special{!%
10562 aref \expandafter\HyperDestNameFilter
10563 \expandafter{\Hy@testname};%
10564 a=<%
10565 \ifHy@pdfa /F 4\fi
10566 \Hy@setpdfborder
10567 \ifx\CurrentBorderColor\relax
10568 \else
10569 /C [\CurrentBorderColor]%
10570 \fi
10571 >%
10572 }%
10573 \expandafter
10574 \Hy@colorlink\csname #@#1color\endcsname
10575 #3\Hy@xspace@end
10576 \Hy@endcolorlink
10577 \special{!endaref}%
10578 }
10579 \def\hyper@image#1#2{%
10580 \hyper@linkurl{#2}{#1}%
10581 }
10582 \def\@hyper@launch run:#1\#2#3{%
10583 \Hy@pstringdef\Hy@pstringF{#1}%
10584 \Hy@pstringdef\Hy@pstringP{#3}%
10585 \leavevmode
10586 \special{!aref %
10587 <u=%
10588 /Type/Action%
10589 /S/Launch%
10590 /F(\Hy@pstringF)%
10591 \Hy@SetNewWindow
10592 \ifx\#3\%
10593 \else
10594 /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>%
10595 \fi

```

```

10596 \Hy@href@nextactionraw
10597 >:%
10598 a=<%
10599 \ifHy@pdfa /F 4\fi
10600 \Hy@setpdfborder
10601 \ifx\@runbordercolor\relax
10602 \else
10603 /C[\@runbordercolor]%
10604 \fi
10605 >%
10606 }%
10607 \Hy@colorlink\@runcolor
10608 #2\Hy@xspace@end
10609 \Hy@endcolorlink
10610 \special{!endaref}%
10611 }
10612 \def\Acrobatmenu#1#2{%
10613 \EdefEscapeName\Hy@temp@menu{#1}%
10614 \Hy@Acrobatmenu{#1}{#2}{%
10615 \special{!%
10616 aref <u=/S /Named /N /\Hy@temp@menu>;%
10617 a=<%
10618 \ifHy@pdfa /F 4\fi
10619 \Hy@setpdfborder
10620 \ifx\@menubordercolor\relax
10621 \else
10622 /C[\@menubordercolor]%
10623 \fi
10624 >%
10625 }%
10626 \Hy@colorlink\@menucolor
10627 #2\Hy@xspace@end
10628 \Hy@endcolorlink
10629 \special{!endaref}%
10630 }%
10631 }

```

The following code (transition effects) is made by Alex Kostin.

The code below makes sense for V<sub>T</sub>E<sub>X</sub> 7.02 or later.

Please never use `\@ifundefined{VTeXversion}{..}{..}` *globally*.

```

10632 \ifnum\Hy@VTeXversion<702 %
10633 \else
10634 \def\hyper@pagetransition{%
10635 \ifx\@pdfpagetransition\relax
10636 \else
10637 \ifx\@pdfpagetransition\@empty

```

Standard incantation.

1. Does an old entry have to be deleted? 2. If 1=yes, how to delete?

```

10638 \else
10639 \hvtex@parse@trans\@pdfpagetransition
10640 \fi
10641 \fi
10642 }%

```

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:

```

10643 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
10644 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
10645 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
10646 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
10647 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
10648 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
10649 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%

```

Optional parameters:

```

10650 \def\hvtex@par@dimension{/Dm}%
10651 \def\hvtex@par@direction{/Di}%
10652 \def\hvtex@par@duration{/D}%
10653 \def\hvtex@par@motion{/M}%

```

Tokenizer:

```

10654 \def\hvtex@gettoken{%
10655 \expandafter\hvtex@gettoken@\hvtex@buffer\@nil
10656 }%

```

Notice that tokens in the input buffer must be space delimited.

```

10657 \def\hvtex@gettoken@#1 #2\@nil{%
10658 \edef\hvtex@token{#1}%
10659 \edef\hvtex@buffer{#2}%
10660 }%
10661 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

10662 \let\hvtex@trans@code\@empty
10663 \let\hvtex@param@dimension\@empty
10664 \let\hvtex@param@direction\@empty
10665 \let\hvtex@param@duration\@empty
10666 \let\hvtex@param@motion\@empty
10667 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```
10668 \hvtex@gettoken
10669 \ifx\hvtex@token\@empty
```

Leading space(s)?

```
10670 \ifx\hvtex@buffer\@empty
```

The buffer is empty, nothing to do.

```
10671 \else
10672 \hvtex@gettoken
10673 \fi
10674 \fi
10675 \csname hvtex@trans@effect@\hvtex@token\endcsname
```

Now is time to parse optional parameters.

```
10676 \hvtex@trans@params
10677 }%
```

Reentrant macro to parse optional parameters.

```
10678 \def\hvtex@trans@params{%
10679 \ifx\hvtex@buffer\@empty
10680 \else
10681 \hvtex@gettoken
10682 \let\hvtex@trans@par\hvtex@token
10683 \ifx\hvtex@buffer\@empty
10684 \else
10685 \hvtex@gettoken
10686 \ifx\hvtex@trans@par\hvtex@par@duration
```

/D is the effect duration in seconds.  $\text{\TeX}$  special takes it in milliseconds.

```
10687 \let\hvtex@param@duration\hvtex@token
10688 \else \ifx\hvtex@trans@par\hvtex@par@motion
```

/M can be either /I or /O

```
10689 \expandafter\edef\expandafter\hvtex@param@motion
10690 \expandafter{\expandafter\@gobble\hvtex@token}%
10691 \else \ifx\hvtex@trans@par\hvtex@par@dimension
```

/Dm can be either /H or /V

```
10692 \expandafter\edef\expandafter\hvtex@param@dimension
10693 \expandafter{\expandafter\@gobble\hvtex@token}%
10694 \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).

```
10695 \let\hvtex@param@direction\hvtex@token
10696 \fi\fi\fi\fi
10697 \fi
10698 \fi
10699 \ifx\hvtex@buffer\@empty
10700 \let\next\hvtex@produce@trans
10701 \else
10702 \let\next\hvtex@trans@params
10703 \fi
10704 \next
10705 }%
```

Merge <transition\_effect> and issue the special when possible. Too lazy to validate optional parameters.

```

10706 \def\hvtex@produce@trans{%
10707 \let\vtex@trans@special\@empty
10708 \if S\hvtex@trans@code
10709 \edef\vtex@trans@special{\hvtex@trans@code
10710 \hvtex@param@dimension\hvtex@param@motion}%
10711 \else\if B\hvtex@trans@code
10712 \edef\vtex@trans@special{%
10713 \hvtex@trans@code\hvtex@param@dimension
10714 }%
10715 \else\if X\hvtex@trans@code
10716 \edef\vtex@trans@special{%
10717 \hvtex@trans@code\hvtex@param@motion
10718 }%
10719 \else\if W\hvtex@trans@code
10720 \edef\vtex@trans@special{%
10721 \hvtex@trans@code\hvtex@param@direction
10722 }%
10723 \else\if D\hvtex@trans@code
10724 \let\vtex@trans@special\hvtex@trans@code
10725 \else\if R\hvtex@trans@code
10726 \let\vtex@trans@special\hvtex@trans@code
10727 \else\if G\hvtex@trans@code
10728 \edef\vtex@trans@special{%
10729 \hvtex@trans@code\hvtex@param@direction
10730 }%
10731 \fi\fi\fi\fi\fi\fi
10732 \ifx\vtex@trans@special\@empty
10733 \else
10734 \ifx\hvtex@param@duration\@empty
10735 \else
10736 \setlength{\dimen@}{\hvtex@param@duration\p@}%

```

I'm not guilty of possible overflow.

```

10737 \multiply\dimen@\@m
10738 \edef\vtex@trans@special{%
10739 \vtex@trans@special,\strip@pt\dimen@
10740 }%
10741 \fi

```

And all the mess is just for this.

```

10742 \special{!trans \vtex@trans@special}%
10743 \fi
10744 }%
10745 \def\hyper@pageduration{%
10746 \ifx\@pdfpageduration\relax
10747 \else
10748 \ifx\@pdfpageduration\@empty
10749 \special{!duration-}%
10750 \else
10751 \special{!duration \@pdfpageduration}%
10752 \fi
10753 \fi

```

```

10754 }%
10755 \g@addto@macro\Hy@EveryPageBoxHook{%
10756   \hyper@pagetransition
10757   \hyper@pageduration
10758 }%
10759 \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

```

10760 \ifx\@pdfproducer\relax
10761   \def\@pdfproducer{VTeX}%
10762   \ifnum\Hy@VTeXversion>\z@
10763     \count@\VTeXversion
10764     \divide\count@ 100 %
10765     \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
10766     \multiply\count@ -100 %
10767     \advance\count@\VTeXversion
10768     \edef\@pdfproducer{%
10769       \@pdfproducer
10770       .\ifnum\count@<10 0\fi\the\count@
10771       \ifx\VTeXOS\@undefined\else
10772         \ifnum\VTeXOS>0 %
10773           \ifnum\VTeXOS<6 %
10774             \space(%
10775             \ifcase\VTeXOS
10776               \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
10777             \fi
10778             )%
10779           \fi
10780         \fi
10781       ,\space
10782       \ifnum\OpMode=\@ne PDF\else PS\fi
10783       \space backend%
10784       \ifx\gexmode\@undefined\else
10785         \ifnum\gexmode>\z@\space with GeX\fi
10786       \fi
10787     }%
10788   \fi
10789 \fi
10790 \fi

```

Current `!pdfinfo` key syntax:

Key	Field	Type
a	<b>Author</b>	String
b	<b>CropBox</b>	String
c	<b>Creator</b>	String
k	<b>Keywords</b>	String
l	<b>PageLayout</b>	PS
p	<b>PageMode</b>	PS
r	<b>Producer</b>	String
s	<b>Subject</b>	String
t	<b>Title</b>	String
u	<b>URI</b>	PS
v	<b>ViewPreferences</b>	PS

Note: PS objects that are dicts are in <<<.>>> (yuck; no choice).

```

10791 \def\PDF@SetupDoc{%
10792   \ifx\@pdfpagescrop\@empty
10793   \else
10794     \special{!pdfinfo b=<\@pdfpagescrop>}%
10795   \fi
10796   \ifx\@pdfstartpage\@empty
10797   \else
10798     \ifx\@pdfstartview\@empty
10799     \else
10800       \special{!onopen Page\@pdfstartpage}%
10801     \fi
10802   \fi
10803   \special{!pdfinfo p=</\@pdfpagemode>}%
10804   \ifx\@baseurl\@empty
10805   \else
10806     \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
10807   \fi
10808   \special{!pdfinfo v=<<<%
10809     \ifHy@pdftoolbar\else /HideToolbar true\fi
10810     \ifHy@pdfmenubar\else /HideMenubar true\fi
10811     \ifHy@pdfwindowui\else /HideWindowUI true\fi
10812     \ifHy@pdfwindow /FitWindow true\fi
10813     \ifHy@pdfcenterwindow /CenterWindow true\fi
10814     \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10815     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10816     \Hy@UseNameKey{Direction}\@pdfdirection
10817     \Hy@UseNameKey{ViewArea}\@pdfviewarea
10818     \Hy@UseNameKey{ViewClip}\@pdfviewclip
10819     \Hy@UseNameKey{PrintArea}\@pdfprintarea
10820     \Hy@UseNameKey{PrintClip}\@pdfprintclip
10821     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10822     \Hy@UseNameKey{Duplex}\@pdfduplex
10823     \ifx\@pdfpicktraybypdfsize\@empty
10824     \else
10825       /PickTrayByPDFSize \@pdfpicktraybypdfsize
10826     \fi
10827     \ifx\@pdfprintpagerange\@empty
10828     \else
10829       /PrintPageRange[\@pdfprintpagerange]%
10830     \fi

```

```

10831 \ifx\@pdfnumcopies\@empty
10832 \else
10833 /NumCopies \@pdfnumcopies
10834 \fi
10835 >>>}%
10836 \ifx\@pdfpagelayout\@empty
10837 \else
10838 \special{!pdffinfo l=</\@pdfpagelayout\space>}%
10839 \fi
10840 }%
10841 \HyInfo@AddonUnsupportedtrue
10842 \define@key{Hyp}{pdfcreationdate}{%
10843 \Hy@Warning{%
10844 VTeX does not support pdfcreationdate.\MessageBreak
10845 Therefore its setting is ignored%
10846 }%
10847 }
10848 \define@key{Hyp}{pdfmoddate}{%
10849 \Hy@Warning{%
10850 VTeX does not support pdfmoddate.\MessageBreak
10851 Therefore its setting is ignored%
10852 }%
10853 }
10854 \def\PDF@FinishDoc{%
10855 \Hy@UseMaketitleInfos
10856 \HyInfo@TrappedUnsupported
10857 \special{!pdffinfo a=<\@pdfauthor>}%
10858 \special{!pdffinfo t=<\@pdftitle>}%
10859 \special{!pdffinfo s=<\@pdfsubject>}%
10860 \special{!pdffinfo c=<\@pdfcreator>}%
10861 \ifx\@pdfproducer\relax
10862 \else
10863 \special{!pdffinfo r=<\@pdfproducer>}%
10864 \fi
10865 \special{!pdffinfo k=<\@pdfkeywords>}%
10866 \Hy@DisableOption{pdfauthor}%
10867 \Hy@DisableOption{pdftitle}%
10868 \Hy@DisableOption{pdfsubject}%
10869 \Hy@DisableOption{pdfcreator}%
10870 \Hy@DisableOption{addtopdfcreator}%
10871 \Hy@DisableOption{pdfcreationdate}%
10872 \Hy@DisableOption{pdfcreationdate}%
10873 \Hy@DisableOption{pdfmoddate}%
10874 \Hy@DisableOption{pdfproducer}%
10875 \Hy@DisableOption{pdfkeywords}%
10876 \Hy@DisableOption{pdftrapped}%
10877 \Hy@DisableOption{pdffinfo}%
10878 }
10879 </vtx>

```



## 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.

```
10880 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%  
10881 <packageEnd>\providecommand*\Hy@DistillerDestFix{}  
10882 <*pdfmark | dviwindo>  
10883 \def\Hy@DistillerDestFix{%  
10884   \begingroup  
10885     \let\x\literalps@out
```

The fix has to be passed unchanged through GeX, if VTeX in PostScript mode with GeX is used.

```
10886   \ifnum \@ifundefined{OpMode}{0}{%  
10887     \@ifundefined{gexmode}{0}{%  
10888       \ifnum\gexmode>0 \OpMode\else 0\fi  
10889     }>1 %  
10890   \def\x##1{%  
10891     \immediate\special{!=##1}}%  
10892   }%  
10893   \fi  
10894   \x{%  
10895     /product where{%  
10896       pop %  
10897       product(Distiller)search{%  
10898         pop pop pop %  
10899         version(.)search{%  
10900           exch pop exch pop%  
10901           (3011)eq{%  
10902             gsave %  
10903             newpath 0 0 moveto closepath clip%  
10904             /Courier findfont 10 scalefont setfont %  
10905             72 72 moveto(.)show %  
10906             grestore%  
10907           }if%  
10908         }{pop}ifelse%  
10909       }{pop}ifelse%  
10910     }if%  
10911   }%  
10912 \endgroup  
10913 }  
10914 </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

```

10915 (*pdfmark)
10916 \Hy@breaklinks@unsupported
10917 \def\HyPat@ObjRef{%
10918   \[~{}]+\}%
10919 }
10920 \Hy@WrapperDef\hyper@anchor#1{%
10921   \Hy@SaveLastskip
10922   \Hy@VerboseAnchor{#1}%
10923   \begingroup
10924     \pdfmark[\anchor@spot]{%
10925       pdfmark=/DEST,%
10926       linktype=anchor,%
10927       View=/\@pdfview \@pdfviewparams,%
10928       DestAnchor={#1}%
10929     }%
10930   \endgroup
10931   \Hy@RestoreLastskip
10932 }
10933 \ifundefined{hyper@anchorstart}{\endinput}
10934 \Hy@WrapperDef\hyper@anchorstart#1{%
10935   \Hy@SaveLastskip
10936   \Hy@VerboseAnchor{#1}%
10937   \literalps@out{H.S}%
10938   \Hy@AllowHyphens
10939   \xdef\hyper@currentanchor{#1}%
10940   \Hy@activeanchortrue
10941 }
10942 \def\hyper@anchorend{%
10943   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
10944   \pdfmark{%
10945     pdfmark=/DEST,%
10946     linktype=anchor,%
10947     View=/\@pdfview \@pdfviewparams,%
10948     DestAnchor=\hyper@currentanchor,%
10949   }%
10950   \Hy@activeanchorfalsetrue
10951   \Hy@RestoreLastskip
10952 }
10953 \def\hyper@linkstart#1#2{%
10954   \Hy@VerboseLinkStart{#1}{#2}%
10955   \ifHy@breaklinks
10956     \else
10957     \leavevmode

```

```

10958 \ifmmode
10959   \def\Hy@LinkMath{${}%
10960 \else
10961   \let\Hy@LinkMath\@empty
10962 \fi
10963 \Hy@SaveSpaceFactor
10964 \hbox\bgroup
10965 \Hy@RestoreSpaceFactor
10966 \Hy@LinkMath
10967 \fi
10968 \expandafter\Hy@colorlink\csname @#1color\endcsname
10969 \literalps@out{H.S}%
10970 \Hy@AllowHyphens
10971 \xdef\hyper@currentanchor{#2}%
10972 \gdef\hyper@currentlinktype{#1}%
10973 }
10974 \def\hyper@linkend{%
10975 \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
10976 \@ifundefined{@\hyper@currentlinktype bordercolor}{%
10977   \let\Hy@tempcolor\relax
10978 }{%
10979   \edef\Hy@tempcolor{%
10980     \csname @\hyper@currentlinktype bordercolor\endcsname
10981   }%
10982 }%
10983 \pdfmark{%
10984   pdfmark=/ANN,%
10985   linktype=link,%
10986   Subtype=/Link,%
10987   PDFAFflags=4,%
10988   Dest=\hyper@currentanchor,%
10989   AcroHighlight=\@pdfhighlight,%
10990   Border=\@pdfborder,%
10991   BorderStyle=\@pdfborderstyle,%
10992   Color=\Hy@tempcolor,%
10993   Raw=H.B%
10994 }%
10995 \Hy@endcolorlink
10996 \ifHy@breaklinks
10997 \else
10998   \Hy@LinkMath
10999   \Hy@SaveSpaceFactor
11000 \egroup
11001 \Hy@RestoreSpaceFactor
11002 \fi
11003 }

```

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.

```

11004 \begingroup
11005 \catcode`P=12 %
11006 \catcode`T=12 %
11007 \lowercase{\endgroup

```

```

11008 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
11009 }
11010 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

#### \hyper@pagetransition

```

11011 \def\hyper@pagetransition{%
11012 \ifx\@pdfpagetransition\relax
11013 \else
11014 \ifx\@pdfpagetransition\@empty
11015 % 1. Does an old entry have to be deleted?
11016 % 2. If 1=yes, how to delete?
11017 \else
11018 \pdfmark{%
11019 pdfmark=/PUT,%
11020 Raw={%
11021 \string{ThisPage\string}%
11022 <</Trans << /S /\@pdfpagetransition\space >> >>%
11023 }%
11024 }%
11025 \fi
11026 \fi
11027 }

```

#### \hyper@pageduration

```

11028 \def\hyper@pageduration{%
11029 \ifx\@pdfpageduration\relax
11030 \else
11031 \ifx\@pdfpageduration\@empty
11032 % 1. Does an old entry have to be deleted?
11033 % 2. If 1=yes, how to delete?
11034 \else
11035 \pdfmark{%
11036 pdfmark=/PUT,%
11037 Raw={%
11038 \string{ThisPage\string}%
11039 <</Dur \@pdfpageduration>>%
11040 }%
11041 }%
11042 \fi
11043 \fi
11044 }

11045 \g@addto@macro\Hy@EveryPageBoxHook{%
11046 \hyper@pagetransition
11047 \hyper@pageduration
11048 }

11049 \def\hyper@image#1#2{%
11050 \hyper@linkurl{#2}{#1}%
11051 }
11052 \def\Hy@undefinedname{UNDEFINED}
11053 \def\hyper@link#1#2#3{%
11054 \Hy@VerboseLinkStart{#1}{#2}%
11055 \@ifundefined{@#1bordercolor}{%
11056 \let\Hy@tempcolor\relax

```

```

11057 }{%
11058   \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
11059 }%
11060 \begingroup
11061   \protected@edef\Hy@testname{#2}%
11062   \ifx\Hy@testname\@empty
11063     \Hy@Warning{%
11064       Empty destination name,\MessageBreak
11065       using '\Hy@undefinedname'%
11066     }%
11067     \let\Hy@testname\Hy@undefinedname
11068   \fi
11069   \pdfmark[#{#3}]{%
11070     Color=\Hy@tempcolor,%
11071     linktype={#1},%
11072     AcroHighlight=\@pdfhighlight,%
11073     Border=\@pdfborder,%
11074     BorderStyle=\@pdfborderstyle,%
11075     pdfmark=/ANN,%
11076     Subtype=/Link,%
11077     PDFAFlags=4,%
11078     Dest=\Hy@testname
11079   }%
11080 \endgroup
11081 }
11082 \newtoks\pdf@docset
11083 \def\PDF@FinishDoc{%
11084   \Hy@UseMaketitleInfos
11085   \Hy@Info@GenerateAddons
11086   \let\Hy@temp\@empty
11087   \ifx\@pdfcreationdate\@empty
11088     \else
11089     \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
11090   \fi
11091   \ifx\@pdfmoddate\@empty
11092     \else
11093     \expandafter\def\expandafter\Hy@temp\expandafter{%
11094       \Hy@temp
11095       ModDate=\@pdfmoddate,%
11096     }%
11097   \fi
11098   \ifx\@pdfproducer\relax
11099     \else
11100     \expandafter\def\expandafter\Hy@temp\expandafter{%
11101       \Hy@temp
11102       Producer=\@pdfproducer,%
11103     }%
11104   \fi
11105   \expandafter
11106   \pdfmark\expandafter{%
11107     \Hy@temp
11108     pdfmark=/DOCINFO,%
11109     Title=\@pdftitle,%
11110     Subject=\@pdfsubject,%

```

```

11111 Creator=\@pdfcreator,%
11112 Author=\@pdfauthor,%
11113 Keywords=\@pdfkeywords,%
11114 Trapped=\@pdftrapped
11115 }%
11116 \ifx\HyInfo@Addons\@empty
11117 \else
11118 \pdfmark{%
11119 pdfmark=/DOCINFO,%
11120 Raw={\HyInfo@Addons}%
11121 }%
11122 \fi
11123 \Hy@DisableOption{pdfauthor}%
11124 \Hy@DisableOption{pdftitle}%
11125 \Hy@DisableOption{pdfsubject}%
11126 \Hy@DisableOption{pdfcreator}%
11127 \Hy@DisableOption{addtopdfcreator}%
11128 \Hy@DisableOption{pdfcreationdate}%
11129 \Hy@DisableOption{pdfcreationdate}%
11130 \Hy@DisableOption{pdfmoddate}%
11131 \Hy@DisableOption{pdfproducer}%
11132 \Hy@DisableOption{pdfkeywords}%
11133 \Hy@DisableOption{pdftrapped}%
11134 \Hy@DisableOption{pdfinfo}%
11135 }
11136 \def\PDF@SetupDoc{%
11137 \def\Hy@temp{}%
11138 \ifx\@pdfstartpage\@empty
11139 \else
11140 \ifx\@pdfstartview\@empty
11141 \else
11142 \edef\Hy@temp{%
11143 ,Page=\@pdfstartpage
11144 ,View=\@pdfstartview
11145 }%
11146 \fi
11147 \fi
11148 \edef\Hy@temp{%
11149 \noexpand\pdfmark{%
11150 pdfmark=/DOCVIEW,%
11151 PageMode=/\@pdfpagemode
11152 \Hy@temp
11153 }%
11154 }%
11155 \Hy@temp
11156 \ifx\@pdfpagescrop\@empty
11157 \else
11158 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
11159 \fi
11160 \edef\Hy@temp{%
11161 \ifHy@pdftoolbar\else /HideToolbar true\fi
11162 \ifHy@pdfmenubar\else /HideMenubar true\fi
11163 \ifHy@pdfwindowui\else /HideWindowUI true\fi
11164 \ifHy@pdffitwindow /FitWindow true\fi

```

```

11165 \ifHy@pdfcenterwindow /CenterWindow true\fi
11166 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
11167 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
11168 \Hy@UseNameKey{Direction}\@pdfdirection
11169 \Hy@UseNameKey{ViewArea}\@pdfviewarea
11170 \Hy@UseNameKey{ViewClip}\@pdfviewclip
11171 \Hy@UseNameKey{PrintArea}\@pdfprintarea
11172 \Hy@UseNameKey{PrintClip}\@pdfprintclip
11173 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
11174 \Hy@UseNameKey{Duplex}\@pdfduplex
11175 \ifx\@pdfpicktraybypdfsize\@empty
11176 \else
11177 /PickTrayByPDFSize \@pdfpicktraybypdfsize
11178 \fi
11179 \ifx\@pdfprintpagerange\@empty
11180 \else
11181 /PrintPageRange[\@pdfprintpagerange]%
11182 \fi
11183 \ifx\@pdfnumcopies\@empty
11184 \else
11185 /NumCopies \@pdfnumcopies
11186 \fi
11187 }%
11188 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
11189 \pdfmark{%
11190 pdfmark=/PUT,%
11191 Raw={%
11192 \string{Catalog\string}<<%
11193 \ifx\Hy@temp\@empty
11194 \else
11195 /ViewerPreferences<<\Hy@temp>>%
11196 \fi
11197 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
11198 \ifx\@pdflang\relax
11199 \else
11200 /Lang(\@pdflang)%
11201 \fi
11202 \ifx\@baseurl\@empty
11203 \else
11204 /URI<</Base(\Hy@pstringB)>>%
11205 \fi
11206 >>%
11207 }%
11208 }%
11209 }
11210 </pdfmark>
11211 (*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.

```

11212 \newif\ifHy@pdfmarkerror
11213 \def\pdfmark{\@ifnextchar[{\pdfmark@}{\pdfmark@[]}}
11214 \def\pdfmark@[#1]#2{%
11215   \Hy@pdfmarkerrorfalse
11216   \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
11217   \@processme
11218   \let\pdf@type\relax
11219   \let\pdf@objdef\@empty
11220   \kvsetkeys{PDF}{#2}%
11221   \ifHy@pdfmarkerror
11222   \else
11223     \ifx\pdf@type\relax
11224       \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
11225       \ifx\#1\%
11226         \else
11227           \pdf@rect{#1}%
11228           \fi
11229         \else
11230           \ifx\#1\%
11231             \literalps@out{%
11232               [%
11233               \ifx\pdf@objdef\@empty
11234               \else
11235                 /_objdef\string{\pdf@objdef\string}%
11236               \fi
11237               \the\pdf@toks\space\pdf@type\space pdfmark%
11238             ]%
11239             \else
11240             \@ifundefined{@\pdf@linktype color}{%
11241               \Hy@colorlink\@linkcolor
11242             }{%
11243               \expandafter\Hy@colorlink
11244                 \csname @\pdf@linktype color\endcsname
11245             }%
11246             \pdf@rect{#1}%
11247             \literalps@out{%
11248               [%
11249               \ifx\pdf@objdef\@empty
11250               \else
11251                 /_objdef\string{\pdf@objdef\string}%
11252               \fi
11253               \the\pdf@toks\space\pdf@type\space pdfmark%
11254             ]%
11255             \Hy@endcolorlink
11256           \fi
11257         \fi
11258       \fi
11259 }

```

The complicated bit is working out the right enclosing rectangle of some piece of  $\TeX$  text, needed by the `/Rect` key. This solution originates with Toby Thain ([toby@netspace.net.au](mailto:toby@netspace.net.au)).

For the case `breaklinks` is enabled, I have added two hooks, the first one for package `setouterhbox`, it provides a hopefully better method without setting the



text twice.

```
\usepackage[hyperref]{setouterhbox}
```

With the second hook, also you can set the text twice, e.g.:

```
\long\def\Hy@setouterhbox#1#2{\long\def\my@temp{#2}}  
\def\Hy@breaklinksunhbox#1{\my@temp}
```

```
11260 \newsavebox{\pdf@box}  
11261 \providecommand*\Hy@setouterhbox{\sbox}  
11262 \providecommand*\Hy@breaklinksunhbox{\unhbox}  
11263 \def\Hy@DEST{/DEST}  
11264 \def\pdf@rect#1{%  
11265   \begingroup  
11266     \chardef\x=1 %  
11267     \def\Hy@temp{#1}%  
11268     \ifx\Hy@temp\@empty  
11269       \chardef\x=0 %  
11270     \else  
11271       \def\y{\anchor@spot}%  
11272       \ifx\Hy@temp\y  
11273         \def\y{\relax}%  
11274         \ifx\anchor@spot\y  
11275           \chardef\x=0 %  
11276         \fi  
11277       \fi  
11278     \fi  
11279   \expandafter\endgroup  
11280   \ifcase\x  
11281     \literalps@out{H.S}%  
11282     \literalps@out{H.R}%  
11283   \else  
11284     \leavevmode  
11285     \Hy@SaveSpaceFactor  
11286     \ifmmode  
11287       \def\Hy@LinkMath{$}%  
11288     \else  
11289       \let\Hy@LinkMath\@empty  
11290     \fi  
11291     \ifHy@breaklinks  
11292       \Hy@setouterhbox\pdf@box{%  
11293         \Hy@RestoreSpaceFactor  
11294         \Hy@LinkMath  
11295         \Hy@AllowHyphens#1\Hy@xspace@end  
11296         \Hy@LinkMath  
11297         \Hy@SaveSpaceFactor  
11298       }%  
11299     \else  
11300       \sbox\pdf@box{%  
11301         \Hy@RestoreSpaceFactor  
11302         \Hy@LinkMath  
11303         #1\Hy@xspace@end  
11304         \Hy@LinkMath  
11305         \Hy@SaveSpaceFactor
```

```

11306 }%
11307 \fi
11308 \dimen@\ht\pdf@box
11309 \ifdim\dp\pdf@box=\z@
11310 \literalps@out{H.S}%
11311 \else
11312 \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
11313 \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...).

```

11314 \ifHy@breaklinks
11315 \ifhmode
11316 \Hy@breaklinksunhbox\pdf@box
11317 \else
11318 \box\pdf@box
11319 \fi
11320 \else
11321 \expandafter\box\pdf@box
11322 \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

11323 \ifdim\dimen@=\z@
11324 \literalps@out{H.R}%
11325 \else
11326 \raise\dimen@\hbox{\literalps@out{H.R}}%
11327 \fi
11328 \Hy@RestoreSpaceFactor
11329 \fi
11330 \ifx\pdf@type\Hy@DEST
11331 \else
11332 \pdf@addtoksx{H.B}%
11333 \fi
11334 }

```

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.

```

11335 \newtoks\pdf@toks
11336 \newtoks\pdf@defaulttoks
11337 \pdf@defaulttoks={}%
11338 \def\pdf@addtoks#1#2{%
11339 \edef\@processme{\pdf@toks{\the\pdf@toks/#2 #1}}%
11340 \@processme
11341 }
11342 \def\pdf@addtoksx#1{%
11343 \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
11344 \@processme
11345 }
11346 \def\PDFdefaults#1{%

```

```

11347 \pdf@defaulttoks={#1}%
11348 }
This is the list of allowed keys. See the Acrobat manual for an explanation.
11349 % what is the type of pdfmark?
11350 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
11351 % what is the link type?
11352 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
11353 \def\pdf@linktype{link}
11354 % named object?
11355 \define@key{PDF}{objdef}{\edef\pdf@objdef{#1}}
11356 \let\pdf@objdef\@empty
11357 % parameter is a stream of PDF
11358 \define@key{PDF}{Raw}{\pdf@addtoks{#1}}
11359 % parameter is a name
11360 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
11361 % parameter is a array
11362 \define@key{PDF}{Border}{%
11363 \edef\Hy@temp{#1}%
11364 \ifx\Hy@temp\@empty
11365 \else
11366 \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
11367 \fi
11368 }
11369 \let\Hy@BorderArrayPatch\@empty
11370 % parameter is a dictionary
11371 \define@key{PDF}{BorderStyle}{%
11372 \edef\Hy@temp{#1}%
11373 \ifx\Hy@temp\@empty
11374 \else
11375 \pdf@addtoks{<<#1>>}{BS}%
11376 \fi
11377 }
11378 % parameter is a array
11379 \define@key{PDF}{Color}{%
11380 \ifx\relax#1\relax
11381 \else
11382 \pdf@addtoks{[#1]}{Color}% hash-ok
11383 \fi
11384 }
11385 % parameter is a string
11386 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
11387 % parameter is a integer
11388 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
11389 % parameter is a array
11390 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
11391 % parameter is a string
11392 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
11393 % parameter is a string or file
11394 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
11395 % parameter is a destination
11396 \define@key{PDF}{Dest}{%
11397 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11398 \ifx\Hy@pstringDest\@empty
11399 \Hy@pdfmarkerrortrue

```

```

11400 \Hy@Warning{Destination with empty name ignored}%
11401 \else
11402 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11403 \fi
11404 }
11405 \define@key{PDF}{DestAnchor}{%
11406 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11407 \ifx\Hy@pstringDest\@empty
11408 \Hy@pdfmarkerrortrue
11409 \Hy@Warning{Destination with empty name ignored}%
11410 \else
11411 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11412 \fi
11413 }
11414 % parameter is a string
11415 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
11416 % parameter is a string
11417 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
11418 % parameter is a int
11419 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
11420 \define@key{PDF}{PDFAFlags}{%
11421 \ifHy@pdfa
11422 \pdf@addtoks{#1}{F}%
11423 \fi
11424 }
11425 % parameter is a name
11426 \define@key{PDF}{AcroHighlight}{%
11427 \begingroup
11428 \edef\x{#1}%
11429 \expandafter\endgroup\ifx\x\@empty
11430 \else
11431 \pdf@addtoks{#1}{H}%
11432 \fi
11433 }
11434 % parameter is a string
11435 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
11436 % parameter is a string
11437 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
11438 % parameter is a string
11439 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11440 % parameter is a string
11441 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
11442 % parameter is a Boolean
11443 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
11444 % parameter is a integer or name
11445 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
11446 % parameter is a name
11447 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
11448 % parameter is a string
11449 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
11450 % parameter is a array
11451 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
11452 % parameter is a integer
11453 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}

```

```

11454 % parameter is a name
11455 \define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
11456 % parameter is a string
11457 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
11458 % parameter is a string
11459 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
11460 % parameter is a string
11461 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
11462 % parameter is an array
11463 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
11464 % parameter is a string
11465 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

11466 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
11467 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
11468 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
11469 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11470 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
11471 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
11472 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
11473 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11474 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
11475 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}
11476 \define@key{PDF}{Trapped}{%
11477   \edef\Hy@temp{#1}%
11478   \ifx\Hy@temp\@empty
11479     \else
11480       \pdf@addtoks{/#1}{Trapped}%
11481     \fi
11482 }
11483
11484 </pdfmarkbase>
11485 (*pdfmark)
11486 \def\Acrobatmenu#1#2{%
11487   \EdefEscapeName\Hy@temp@menu{#1}%
11488   \Hy@Acrobatmenu{#1}{#2}{%
11489     \pdfmark{#2}{%
11490       linktype=menu,%
11491       pdfmark=/ANN,%
11492       AcroHighlight=\@pdfhighlight,%
11493       Border=\@pdfborder,%
11494       BorderStyle=\@pdfborderstyle,%
11495       Color=\@menubordercolor,%
11496       Action={<</Subtype/Named/N/\Hy@temp@menu>>},%
11497       Subtype=/Link,%
11498       PDFAMFlags=4%
11499     }%
11500   }%
11501 }

```

And now for some useful examples:

```

11502 \def\PDFNextPage{\@ifnextchar{\PDFNextPage@}{\PDFNextPage@{}}
11503 \def\PDFNextPage@[#1]#2{%
11504   \pdfmark{#2}{%

```

```

11505   #1,%
11506   Border=\@pdfborder,%
11507   BorderStyle=\@pdfborderstyle,%
11508   Color=.2 .1 .5,%
11509   pdfmark=/ANN,%
11510   Subtype=/Link,%
11511   PDFAFlags=4,%
11512   Page=/Next%
11513 }%
11514 }
11515 \def\PDFPreviousPage{%
11516   \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
11517 }
11518 \def\PDFPreviousPage@[#1]#2{%
11519   \pdfmark[#{#2}]{%
11520     #1,%
11521     Border=\@pdfborder,%
11522     BorderStyle=\@pdfborderstyle,%
11523     Color=.4 .4 .1,%
11524     pdfmark=/ANN,%
11525     Subtype=/Link,%
11526     PDFAFlags=4,%
11527     Page=/Prev%
11528   }%
11529 }
11530 \def\PDFOpen#1{%
11531   \pdfmark{#1,pdfmark=/DOCVIEW}%
11532 }
This will only work if you use Distiller 2.1 or higher.
11533 \def\hyper@linkurl#1#2{%
11534   \begingroup
11535   \Hy@pstringdef\Hy@pstringURI{#2}%
11536   \hyper@chars
11537   \leavevmode
11538   \pdfmark[#{#1}]{%
11539     pdfmark=/ANN,%
11540     linktype=url,%
11541     AcroHighlight=\@pdfhighlight,%
11542     Border=\@pdfborder,%
11543     BorderStyle=\@pdfborderstyle,%
11544     Color=\@urlbordercolor,%
11545     Action={<<%
11546       /Subtype/URI%
11547       /URI(\Hy@pstringURI)%
11548       \ifHy@href@ismap
11549         /IsMap true%
11550     \fi
11551     >>},%
11552     Subtype=/Link,%
11553     PDFAFlags=4%
11554   }%
11555   \endgroup
11556 }
11557 \def\hyper@linkfile#1#2#3{%

```

```

11558 \begingroup
11559 \def\Hy@pstringF{#2}%
11560 \Hy@CleanupFile\Hy@pstringF
11561 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
11562 \Hy@pstringdef\Hy@pstringD{#3}%
11563 \Hy@MakeRemoteAction
11564 \leavevmode
11565 \pdfmark[#{#1}]{%
11566 pdfmark=/ANN,%
11567 Subtype=/Link,%
11568 PDFAFlags=4,%
11569 AcroHighlight=\@pdfhighlight,%
11570 Border=\@pdfborder,%
11571 BorderStyle=\@pdfborderstyle,%
11572 linktype=file,%
11573 Color=\@filebordercolor,%
11574 Action={%
11575 <<%
11576 /S/GoToR%
11577 \Hy@SetNewWindow
11578 /F(\Hy@pstringF)%
11579 /D%
11580 \ifx\#3\%
11581 [\Hy@href@page\@pdfremotestartview]%
11582 \else
11583 (\Hy@pstringD)cvn%
11584 \fi
11585 \Hy@href@nextactionraw
11586 >>%
11587 }%
11588 }%
11589 \endgroup
11590 }
11591 \def\@hyper@launch run:#{1}\#2#3{%
11592 \begingroup
11593 \Hy@pstringdef\Hy@pstringF{#1}%
11594 \Hy@pstringdef\Hy@pstringP{#3}%
11595 \leavevmode
11596 \pdfmark[#{#2}]{%
11597 pdfmark=/ANN,%
11598 Subtype=/Link,%
11599 PDFAFlags=4,%
11600 AcroHighlight=\@pdfhighlight,%
11601 Border=\@pdfborder,%
11602 BorderStyle=\@pdfborderstyle,%
11603 linktype=run,%
11604 Color=\@runbordercolor,%
11605 Action={%
11606 <<%
11607 /S/Launch%
11608 \Hy@SetNewWindow
11609 /F(\Hy@pstringF)%
11610 \ifx\#3\%
11611 \else

```

```

11612      /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
11613      \fi
11614      \Hy@href@nextactionraw
11615      >>%
11616      }%
11617      }%
11618      \endgroup
11619      }
11620      </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.

```

11621 (*dvips)
11622 \providecommand*\XR@ext}{pdf}
11623 \let\Hy@raisedlink\@empty
11624 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
11625 \def\headerps@out#1{\special{! #1}}%
11626 \input{pdfmark.def}%
11627 \ifx\@pdfproducer\relax
11628   \def\@pdfproducer{dvips + Distiller}%
11629 \fi
11630 \providecommand*\@pdfborder{0 0 1}
11631 \providecommand*\@pdfborderstyle{}
11632 \providecommand*\@pdfview{XYZ}
11633 \providecommand*\@pdfviewparams{ H.V}
11634 \def\Hy@BorderArrayPatch{BorderArrayPatch}
11635 \g@addto@macro\Hy@FirstPageHook{%
11636   \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.

```

11637 /DvipsToPDF{72.27 mul Resolution div} def%
11638 /PDFToDvips{72.27 div Resolution mul} def%
11639 /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.

```

11640 product (Ghostsript) search {pop pop pop revision 927 gt}%
11641 {pop false} ifelse%
11642 {%
11643   /BorderArrayPatch{} def%
11644 }%
11645 {%
11646   /BorderArrayPatch{%
11647     [exch{%
11648       dup dup type/integertype eq exch type/realttype eq or%
11649       {BPToDvips}if%
11650     }forall]%
11651   }def%
11652 } 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.

```

11653 /HyperBorder {1 PDFToDvips} def%
11654 /H.V {pdf@hoff pdf@voff null} def%
11655 /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

```

11656 /H.S {%
11657   currentpoint %
11658   HyperBorder add /pdf@lly exch def %
11659   dup DvipsToPDF 72 add /pdf@hoff exch def %
11660   HyperBorder sub /pdf@llx exch def%
11661 } 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

```

11662 /H.L {%
11663   2 sub dup%
11664   /HyperBasePt exch def %
11665   PDFToDvips /HyperBaseDvips exch def %
11666   currentpoint %
11667   HyperBaseDvips sub /pdf@ury exch def%
11668   /pdf@urx exch def%
11669 } def%
11670 /H.A {%
11671   H.L %
11672 % |pdf@voff| = the distance from the top of the page to a point

```

```

11673 % |\baselineskip| above the current point in PDF coordinates
11674     currentpoint exch pop %
11675     vsize 72 sub exch DvipsToPDF %
11676     HyperBasePt sub % baseline skip
11677     sub /pdf@voff exch def%
11678 } def%
11679 /H.R {%
11680     currentpoint %
11681     HyperBorder sub /pdf@ury exch def %
11682     HyperBorder add /pdf@urx exch def %
11683 % |/pdf@voff| = the distance from the top of the page to the current point, in
11684 % PDF coordinates
11685     currentpoint exch pop vsize 72 sub %
11686     exch DvipsToPDF sub /pdf@voff exch def%
11687 } def%
11688 }%
11689 }
11690 \AtBeginShipoutFirst{%
11691     \ifHy@setpagesize
11692     \begingroup
11693         \ifnum\mag=\@m
11694             \ifdim\stockwidth>\z@
11695                 \ifdim\stockheight>\z@
11696                     \special{papersize=\the\stockwidth,\the\stockheight}%
11697                 \else
11698                     \ifdim\paperwidth>\z@
11699                         \ifdim\paperheight>\z@
11700                             \special{papersize=\the\paperwidth,\the\paperheight}%
11701                         \fi
11702                     \fi
11703                 \fi
11704             \else
11705                 \ifdim\stockwidth=\z@
11706                     \ifdim\paperwidth>\z@
11707                         \ifdim\paperheight>\z@
11708                             \special{papersize=\the\paperwidth,\the\paperheight}%
11709                         \fi
11710                     \fi
11711                 \fi
11712             \fi
11713         \endgroup
11714     \fi
11715 }
11716 \Hy@DisableOption{setpagesize}%
11717 }
11718 \def\setpdfinkmargin#1{%
11719     \begingroup
11720         \setlength{\dimen@}{#1}%
11721         \literalps@out{%
11722             /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
11723         }%
11724     \endgroup
11725 }

```

11726 </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.

```
11727 (*vtexpdfmark)
11728 \providecommand*\XR@ext}{pdf}
11729 \let\Hy@raisedlink\@empty
11730 \def\literalps@out#1{\special{pS:#1}}%
11731 \def\headerps@out#1{\immediate\special{pS:#1}}%
11732 \input{pdfmark.def}%
11733 \ifx\@pdfproducer\relax
11734   \ifnum\OpMode=\@ne
11735     \def\@pdfproducer{VTeX}%
11736   \else
11737     \def\@pdfproducer{VTeX + Distiller}%
11738   \fi
11739 \fi
11740 \providecommand*\@pdfborder{0 0 1}
11741 \providecommand*\@pdfborderstyle{}
11742 \providecommand*\@pdfview{XYZ}
11743 \providecommand*\@pdfviewparams{ H.V}
11744 \g@addto@macro\Hy@FirstPageHook{%
11745   \headerps@out{%
11746     /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.

```
11747   /HyperBorder {1} def%
11748   /H.V {pdf@hoff pdf@voff null} def%
11749   /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:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```
11750   /H.S {%
11751     currentpoint %
11752     HyperBorder sub%
11753     /pdf@lly exch def %
11754     dup 72 add /pdf@hoff exch def %
11755     HyperBorder sub%
11756     /pdf@llx exch def%
11757   } def%
```

The  $x$  and  $y$  coordinates of the current point, minus the  $\backslash\text{baselineskip}$ :  $\text{pdf@ury} = Y_c + \text{HyperBasePt} + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```
11758   /H.L {%
11759     2 sub%
11760     /HyperBasePt exch def %
11761     currentpoint %
```

```

11762   HyperBasePt add HyperBorder add%
11763   /pdf@ury exch def %
11764   HyperBorder add%
11765   /pdf@urx exch def%
11766   } def%
11767   /H.A {%
11768   H.L %
11769   currentpoint exch pop %
11770   vsize 72 sub exch %
11771   HyperBasePt add add%
11772   /pdf@voff exch def%
11773   } def%
pdf@ury = Yc + HyperBorder, pdf@urx = Xc + HyperBorder
11774   /H.R {%
11775   currentpoint %
11776   HyperBorder add%
11777   /pdf@ury exch def %
11778   HyperBorder add%
11779   /pdf@urx exch def %
11780   currentpoint exch pop vsize 72 sub add%
11781   /pdf@voff exch def%
11782   } def%
11783 }%
11784 }

11785 \def\setpdfinkmargin#1{%
11786 \begingroup
11787 \setlength{\dimen@}{#1}%
11788 \literalps@out{%
11789 /HyperBorder{\strip@pt\dimen@}def%
11790 }%
11791 \endgroup
11792 }

11793 </vtexpdfmark>

```

## 44.11 Textures

```

11794 (*textures)
11795 \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.

```

11796 \begingroup
11797 \obeylines %
11798 \gdef\Hy@ps@CR{\noexpand
11799 }%
11800 \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`.

```
11801 \def\literalps@out#1{%
11802  \special{postscript 0 0 transform}%
11803  \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
11804 }%
11805 %
```

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.

```
11806 \def\headerps@out#1{%
11807  \special{%
11808    prepostscript TeXdict begin\Hy@ps@CR
11809    #1\Hy@ps@CR
11810    end%
11811  }%
11812 }%
11813 %
```

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.

```
11814 \g@addto@macro\Hy@FirstPageHook{%
11815  \headerps@out{%
11816    /betterpdfmark {%
11817      systemdict begin %
11818      dup /BP eq%
11819      {cleartomark gsave nulldevice []}%
11820      {dup /EP eq%
11821        {cleartomark cleartomark grestore}%
11822        {cleartomark}%
11823        ifelse%
11824      }ifelse %
11825    end%
11826  }def\Hy@ps@CR
11827  ___pdfmark___ not{/pdfmark /betterpdfmark load def}-if%
11828 }% end of \headerps@out
11829 }% end of \AtBeginShipoutFirst
11830 %
11831 \input{pdfmark.def}%
11832 %
11833 \ifx\@pdfproducer\relax
11834 \def\@pdfproducer{Textures + Distiller}%
11835 \fi
```

```

11836 \providecommand*\@pdfborder{0 0 1}
11837 \providecommand*\@pdfborderstyle{}
11838 \providecommand*\@pdfview{XYZ}
11839 \providecommand*\@pdfviewparams{ H.V}
11840 %

```

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  $\TeX$ .

```

11841 \Hy@AtBeginDocument{%
11842   \headerps@out{%

```

Textures lives in normal points, I think. So conversion from one coordinate system to another involves doing nothing.

```

11843   /vsize {\Hy@pageheight} def%
11844   /DvipsToPDF {} def%
11845   /PDFToDvips {} def%
11846   /BPToDvips {} def%
11847   /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
11848   /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
11849   /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
11850   /H.S {%
11851     currentpoint %
11852     HyperBorder add /pdf@lly exch def %
11853     dup DvipsToPDF 72 add /pdf@hoff exch def %
11854     HyperBorder sub /pdf@llx exch def%
11855   } def\Hy@ps@CR
11856   /H.L {%
11857     2 sub %
11858     PDFToDvips /HyperBase exch def %
11859     currentpoint %
11860     HyperBase sub /pdf@ury exch def%
11861     /pdf@urx exch def%
11862   } def\Hy@ps@CR
11863   /H.A {%
11864     H.L %
11865     currentpoint exch pop %
11866     vsize 72 sub exch DvipsToPDF %
11867     HyperBase sub % baseline skip
11868     sub /pdf@voff exch def%
11869   } def\Hy@ps@CR
11870   /H.R {%
11871     currentpoint %
11872     HyperBorder sub /pdf@ury exch def %
11873     HyperBorder add /pdf@urx exch def %
11874     currentpoint exch pop vsize 72 sub %
11875     exch DvipsToPDF sub /pdf@voff exch def%
11876   } def\Hy@ps@CR
11877 }%
11878 }
11879 \def\setpdfinkmargin#1{%
11880   \begingroup

```

```

11881 \setlength{\dimen@}{#1}%
11882 \literalps@out{%
11883 /HyperBorder{\stripopt\dimen@\space PDFToDvips}def%
11884 }%
11885 \endgroup
11886 }

11887 \Hy@AtBeginDocument{%
11888 \ifHy@colorlinks
11889 \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
11890 \fi
11891 }

```

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.

```

11892 \expandafter\let\expandafter\keepPDF@SetupDoc
11893 \csname PDF@SetupDoc\endcsname
11894 \def\PDF@SetupDoc{%
11895 \ifx\@baseurl\@empty
11896 \else
11897 \special{html:<base href="\@baseurl">}%
11898 \fi
11899 \keepPDF@SetupDoc
11900 }

11901 \Hy@WrapperDef\hyper@anchor#1{%
11902 \Hy@SaveLastskip
11903 \Hy@VerboseAnchor{#1}%
11904 \begingroup
11905 \let\protect=\string
11906 \special{html:<a name=%
11907 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11908 \endgroup
11909 \Hy@activeanchortrue
11910 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
11911 \special{html:</a>}%
11912 \Hy@activeanchorfalse
11913 \Hy@RestoreLastskip
11914 }

11915 \Hy@WrapperDef\hyper@anchorstart#1{%
11916 \Hy@SaveLastskip
11917 \Hy@VerboseAnchor{#1}%
11918 \begingroup
11919 \hyper@chars
11920 \special{html:<a name=%
11921 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11922 \endgroup
11923 \Hy@activeanchortrue
11924 }

11925 \def\hyper@anchorend{%
11926 \special{html:</a>}%
11927 \Hy@activeanchorfalse
11928 \Hy@RestoreLastskip
11929 }

11930 \def\@urltype{url}

```

```

11931 \def\hyper@linkstart#1#2{%
11932 \Hy@VerboseLinkStart{#1}{#2}%
11933 \expandafter\Hy@colorlink\csname @#1color\endcsname
11934 \def\Hy@tempa{#1}%
11935 \ifx\Hy@tempa\urltype
11936 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11937 \else
11938 \begingroup
11939 \hyper@chars
11940 \special{%
11941 html:<a href=%
11942 \hyper@quote#\Hy@HyperDestNameFilter{#2}\hyper@quote>%
11943 }%
11944 \endgroup
11945 \fi
11946 }
11947 \def\hyper@linkend{%
11948 \special{html:</a>}%
11949 \Hy@endcolorlink
11950 }
11951 \def\hyper@linkfile#1#2#3{%
11952 \hyper@linkurl{#1}{%
11953 \Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi
11954 }%
11955 }
11956 \def\hyper@linkurl#1#2{%
11957 \leavevmode
11958 \ifHy@raiselinks
11959 \Hy@SaveSpaceFactor
11960 \Hy@SaveSavedSpaceFactor
11961 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
11962 \Hy@RestoreSavedSpaceFactor
11963 \@linkdim\dp\@tempboxa
11964 \lower\@linkdim\hbox{%
11965 \hyper@chars
11966 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11967 }%
11968 \Hy@colorlink\@urlcolor
11969 \Hy@RestoreSpaceFactor
11970 #1\Hy@xspace@end
11971 \Hy@SaveSpaceFactor
11972 \@linkdim\ht\@tempboxa
11973 \advance\@linkdim by -6.5\p@
11974 \raise\@linkdim\hbox{\special{html:</a>}}%
11975 \Hy@endcolorlink
11976 \Hy@RestoreSpaceFactor
11977 \else
11978 \begingroup
11979 \hyper@chars
11980 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11981 \Hy@colorlink\@urlcolor#1\Hy@xspace@end
11982 \special{html:</a>}%
11983 \Hy@endcolorlink
11984 \endgroup

```



```

11985 \fi
11986 }
Very poor implementation of \hyper@link without considering #1.
11987 \def\hyper@link#1#2#3{%
11988 \Hy@VerboseLinkStart{#1}{#2}%
11989 \hyper@linkurl{#3}{\#\HyperDestNameFilter{#2}}%
11990 }
11991 \def\hyper@image#1#2{%
11992 \begingroup
11993 \hyper@chars
11994 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
11995 \endgroup
11996 }
11997 </textures>

```

## 44.12 dvipsone

```

11998 % \subsection{dvipsone driver}
11999 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
12000 % |\special| commands.
12001 (*dvipsone)
12002 \providecommand*\XR@ext}{pdf}
12003 \let\Hy@raisedlink\@empty
12004 \providecommand*\@pdfborder{0 0 1}
12005 \providecommand*\@pdfborderstyle{}
12006 \def\literalps@out#1{\special{ps:#1}}%
12007 \def\headerps@out#1{\special{headertext=#1}}%
12008 \input{pdfmark.def}%
12009 \HyInfo@AddonUnsupportedtrue
12010 \def\PDF@FinishDoc{%
12011 \Hy@UseMaketitleInfos
12012 \HyInfo@TrappedUnsupported
12013 \special{PDF: Keywords \@pdfkeywords}%
12014 \special{PDF: Title \@pdftitle}%
12015 \special{PDF: Creator \@pdfcreator}%
12016 \ifx\@pdfcreationdate\@empty
12017 \else
12018 \special{PDF: CreationDate \@pdfcreationdate}%
12019 \fi
12020 \ifx\@pdfmoddate\@empty
12021 \else
12022 \special{PDF: ModDate \@pdfmoddate}%
12023 \fi
12024 \special{PDF: Author \@pdfauthor}%
12025 \ifx\@pdfproducer\relax
12026 \else
12027 \special{PDF: Producer \@pdfproducer}%
12028 \fi
12029 \special{PDF: Subject \@pdfsubject}%
12030 \Hy@DisableOption{pdfauthor}%
12031 \Hy@DisableOption{pdftitle}%
12032 \Hy@DisableOption{pdfsubject}%
12033 \Hy@DisableOption{pdfcreator}%

```

```

12034 \Hy@DisableOption{addtopdfcreator}%
12035 \Hy@DisableOption{pdfcreationdate}%
12036 \Hy@DisableOption{pdfcreationdate}%
12037 \Hy@DisableOption{pdfmoddate}%
12038 \Hy@DisableOption{pdfproducer}%
12039 \Hy@DisableOption{pdfkeywords}%
12040 \Hy@DisableOption{pdftrapped}%
12041 \Hy@DisableOption{pdfinfo}%
12042 }
12043 \def\PDF@SetupDoc{%
12044 \def\Hy@temp{}%
12045 \ifx\@pdfstartpage\@empty
12046 \else
12047 \ifx\@pdfstartview\@empty
12048 \else
12049 \edef\Hy@temp{%
12050 ,Page=\@pdfstartpage
12051 ,View=\@pdfstartview
12052 }%
12053 \fi
12054 \fi
12055 \edef\Hy@temp{%
12056 \noexpand\pdfmark{%
12057 pdfmark=/DOCVIEW,%
12058 PageMode=/\@pdfpagemode
12059 \Hy@temp
12060 }%
12061 }%
12062 \Hy@temp
12063 \ifx\@pdfpagescrop\@empty
12064 \else
12065 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
12066 \fi
12067 \edef\Hy@temp{%
12068 \ifHy@pdftoolbar\else /HideToolbar true\fi
12069 \ifHy@pdfmenubar\else /HideMenubar true\fi
12070 \ifHy@pdfwindowui\else /HideWindowUI true\fi
12071 \ifHy@pdffitwindow /FitWindow true\fi
12072 \ifHy@pdfcenterwindow /CenterWindow true\fi
12073 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
12074 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
12075 \Hy@UseNameKey{Direction}\@pdfdirection
12076 \Hy@UseNameKey{ViewArea}\@pdfviewarea
12077 \Hy@UseNameKey{ViewClip}\@pdfviewclip
12078 \Hy@UseNameKey{PrintArea}\@pdfprintarea
12079 \Hy@UseNameKey{PrintClip}\@pdfprintclip
12080 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
12081 \Hy@UseNameKey{Duplex}\@pdfduplex
12082 \ifx\@pdfpicktraybypdfsize\@empty
12083 \else
12084 /PickTrayByPDFSize \@pdfpicktraybypdfsize
12085 \fi
12086 \ifx\@pdfprintpagerange\@empty
12087 \else

```

```

12088 /PrintPageRange[\@pdfprintpagerange]%
12089 \fi
12090 \ifx\@pdfnumcopies\@empty
12091 \else
12092 /NumCopies \@pdfnumcopies
12093 \fi
12094 }%
12095 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
12096 \pdfmark{%
12097 pdfmark=/PUT,%
12098 Raw={%
12099 \string{Catalog\string}<<%
12100 \ifx\Hy@temp\@empty
12101 \else
12102 /ViewerPreferences<<\Hy@temp>>%
12103 \fi
12104 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
12105 \ifx\@pdflang\relax
12106 \else
12107 /Lang(\@pdflang)%
12108 \fi
12109 \ifx\@baseurl\@empty
12110 \else
12111 /URI<</Base(\Hy@pstringB)>>%
12112 \fi
12113 >>%
12114 }%
12115 }%
12116 }
12117 \providecommand*\@pdfview{XYZ}
12118 \providecommand*\@pdfviewparams{ %
12119 gsave revscl currentpoint grestore %
12120 72 add exch pop null exch null%
12121 }
12122 \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  $\TeX$ .

```

12123 \g@addto@macro\Hy@FirstPageHook{%
12124 \headerps@out{%

```

dvipsone lives in scaled points; does this mean 65536 or 65781?

```

12125 /DvipsToPDF { 65781 div } def%
12126 /PDFToDvips { 65781 mul } def%
12127 /BPToDvips{65781 mul}def%
12128 /HyperBorder { 1 PDFToDvips } def%
12129 /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.

```

12130 /BorderArrayPatch{%

```

```

12131 [exch{%
12132   dup dup type/integertype eq exch type/realttype eq or%
12133   {BPToDvips}if%
12134   }forall]%
12135 }def%
12136 /H.S {%
12137   currentpoint %
12138   HyperBorder add /pdf@lly exch def %
12139   dup DvipsToPDF 72 add /pdf@hoff exch def %
12140   HyperBorder sub /pdf@llx exch def%
12141 } def%
12142 /H.L {%
12143   2 sub %
12144   PDFToDvips /HyperBase exch def %
12145   currentpoint %
12146   HyperBase sub /pdf@ury exch def%
12147   /pdf@urx exch def%
12148 } def%
12149 /H.A {%
12150   H.L %
12151   currentpoint exch pop %
12152   HyperBase sub % baseline skip
12153   DvipsToPDF /pdf@voff exch def%
12154 } def%
12155 /H.R {%
12156   currentpoint %
12157   HyperBorder sub /pdf@ury exch def %
12158   HyperBorder add /pdf@urx exch def %
12159   currentpoint exch pop DvipsToPDF /pdf@voff exch def%
12160 } def%
12161 }%
12162 }

12163 \def\setpdfinkmargin#1{%
12164   \begingroup
12165   \setlength{\dimen@}{#1}%
12166   \literalps@out{%
12167     /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
12168   }%
12169   \endgroup
12170 }

12171 </dvipsone>

```

### 44.13 TeX4ht

```

12172 (*tex4ht)
12173 \providecommand*\XR@ext}{html}
12174 \let\Hy@raisedlink\@empty
12175 \@ifpackageloaded{tex4ht}{%
12176   \Hy@InfoNoLine{tex4ht is already loaded}%
12177 }{%
12178   \RequirePackage[hTeX4ht]{tex4ht}%
12179 }
12180 \hyperlinkfileprefix{}
12181 \let\PDF@FinishDoc\@empty

```

```

12182 \def\PDF@SetupDoc{%
12183   \ifx\@baseurl\@empty
12184   \else
12185     \special{t4ht=<base href="\@baseurl">}%
12186   \fi
12187 }
12188 \Hy@WrapperDef\hyper@anchor#1{%
12189   \Hy@SaveLastskip
12190   \Hy@VerboseAnchor{#1}%
12191   \begingroup
12192     \let\protect=\string
12193     \special{t4ht=<a name=%
12194       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12195   \endgroup
12196   \Hy@activeanchortrue
12197   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
12198   \special{t4ht=</a>}%
12199   \Hy@activeanchorfalse
12200   \Hy@RestoreLastskip
12201 }
12202 \Hy@WrapperDef\hyper@anchorstart#1{%
12203   \Hy@SaveLastskip
12204   \Hy@VerboseAnchor{#1}%
12205   \begingroup
12206     \hyper@chars\special{t4ht=<a name=%
12207       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12208   \endgroup
12209   \Hy@activeanchortrue
12210 }
12211 \def\hyper@anchorend{%
12212   \special{t4ht=</a>}%
12213   \Hy@activeanchorfalse
12214   \Hy@RestoreLastskip
12215 }
12216 \def\@urltype{url}
12217 \def\hyper@linkstart#1#2{%
12218   \Hy@VerboseLinkStart{#1}{#2}%
12219   \expandafter\Hy@colorlink\csname @#1color\endcsname
12220   \def\Hy@tempa{#1}%
12221   \ifx\Hy@tempa\@urltype
12222     \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12223   \else
12224     \begingroup
12225       \hyper@chars
12226       \special{t4ht=<a href=%
12227         \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
12228     \endgroup
12229   \fi
12230 }
12231 \def\hyper@linkend{%
12232   \special{t4ht=</a>}%
12233   \Hy@endcolorlink
12234 }
12235 \def\hyper@linkfile#1#2#3{%

```

```

12236 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi}%
12237 }
12238 \def\hyper@linkurl#1#2{%
12239 \leavevmode
12240 \ifHy@raiselinks
12241 \Hy@SaveSpaceFactor
12242 \Hy@SaveSavedSpaceFactor
12243 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
12244 \Hy@RestoreSavedSpaceFactor
12245 \@linkdim\dp\@tempboxa
12246 \lower\@linkdim\hbox{%
12247 \begingroup
12248 \hyper@chars
12249 \special{%
12250 t4ht=<a href=\hyper@quote#2\hyper@quote>%
12251 }%
12252 \endgroup
12253 }%
12254 \Hy@colorlink\@urlcolor
12255 \Hy@RestoreSpaceFactor
12256 #1\Hy@xspace@end
12257 \Hy@SaveSpaceFactor
12258 \Hy@endcolorlink
12259 \@linkdim\ht\@tempboxa
12260 \advance\@linkdim by -6.5\p@
12261 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
12262 \Hy@RestoreSpaceFactor
12263 \else
12264 \begingroup
12265 \hyper@chars
12266 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12267 \Hy@colorlink\@urlcolor
12268 #1\Hy@xspace@end
12269 \Hy@endcolorlink
12270 \special{t4ht=</a>}%
12271 \endgroup
12272 \fi
12273 }

```

Poor implementation of `\hyper@link` without considering `#1`.

```

12274 \def\hyper@link#1#2#3{%
12275 \Hy@VerboseLinkStart{#1}{#2}%
12276 \hyper@linkurl{#3}{\#HyperDestNameFilter{#2}}%
12277 }
12278 \def\hyper@image#1#2{%
12279 \begingroup
12280 \hyper@chars
12281 \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
12282 \endgroup
12283 }
12284 \let\autoref\ref
12285 \ifx \rEFLiNK \UnDef
12286 \def\rEFLiNK #1#2{#2}%
12287 \fi
12288 \let\backref\@gobble

```

```

Fix for tex4ht.
12289 \AtBeginDocument{%
12290   \expandafter
12291   \let\expandafter\Hy@OrgMakeLabel\csname Make:Label\endcsname
12292   \expandafter\def\csname Make:Label\endcsname#1#2{%
12293     \ifhmode
12294       \Hy@SaveSpaceFactor
12295     \else
12296       \global\Hy@SavedSpaceFactor=1000 %
12297     \fi
12298     \Hy@OrgMakeLabel{#1}{%
12299       \Hy@RestoreSpaceFactor
12300       #2\Hy@xspace@end%
12301       \Hy@SaveSpaceFactor
12302     }%
12303     \Hy@RestoreSpaceFactor
12304   }%
12305 }
12306 </tex4ht>
12307 <{*tex4htcfg>
12308 \IfFileExists{\jobname.cfg}{\endinput}{}
12309 \Preamble{html}
12310   \begin{document}%
12311 \EndPreamble
12312 \def\TeX{TeX}
12313 \def\OMEGA{Omega}
12314 \def\LaTeX{LaTeX}
12315 \def\LaTeXe{LaTeX2e}
12316 \def\eTeX{e-TeX}
12317 \def\MF{Metafont}
12318 \def\MP{MetaPost}
12319 </tex4htcfg>

```

## 45 Driver-specific form support

### 45.1 pdfmarks

change 2020-06-20: added /Euro to encoding

```

12320 <{*pdfmark>
12321 \long\def\@Form[#1]{%
12322 \g@addto@macro\Hy@FirstPageHook{%
12323   \headerps@out{%
12324     [%
12325     /_objdef{pdfDocEncoding}%
12326     /type/dict%
12327     /OBJ pdfmark%
12328     [%
12329     {pdfDocEncoding}%
12330     <<%
12331     /Type/Encoding%
12332     /Differences[%
12333     24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
12334     /tilde %
12335     39/quotesingle %

```

12336 96/grave %  
12337 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%  
12338 /fraction/guilsingleft/guilsingright/minus/perthousand%  
12339 /quotedblbase/quotedblleft/quotedblright/quoteleft%  
12340 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%  
12341 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %  
12342 160/Euro %  
12343 164/currency %  
12344 166/brokenbar %  
12345 168/dieresis/copyright/ordfeminine %  
12346 172/logicalnot/.notdef/registered/macron/degree/plusminus%  
12347 /twosuperior/threesuperior/acute/mu %  
12348 183/periodcentered/cedilla/onesuperior/ordmasculine %  
12349 188/onequarter/onehalf/threequarters %  
12350 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%  
12351 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%  
12352 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%  
12353 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%  
12354 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%  
12355 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%  
12356 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%  
12357 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%  
12358 /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%  
12359 /ucircumflex/udieresis/yacute/thorn/ydieresis%  
12360 ]%  
12361 >>%  
12362 /PUT pdfmark%  
12363 [%  
12364 /\_objdef{ZaDb}%  
12365 /type/dict%  
12366 /OBJ pdfmark%  
12367 [%  
12368 {ZaDb}%  
12369 <<%  
12370 /Type/Font%  
12371 /Subtype/Type1%  
12372 /Name/ZaDb%  
12373 /BaseFont/ZapfDingbats%  
12374 >>%  
12375 /PUT pdfmark%  
12376 [%  
12377 /\_objdef{Helv}%  
12378 /type/dict%  
12379 /OBJ pdfmark%  
12380 [%  
12381 {Helv}%  
12382 <<%  
12383 /Type/Font%  
12384 /Subtype/Type1%  
12385 /Name/Helv%  
12386 /BaseFont/Helvetica%  
12387 /Encoding{pdfDocEncoding}%  
12388 >>%  
12389 /PUT pdfmark%



12390 [%  
12391 /\_objdef{aform}%  
12392 /type/dict%  
12393 /OBJ pdfmark%  
12394 [%  
12395 /\_objdef{afields}%  
12396 /type/array%  
12397 /OBJ pdfmark%  
12398 [%  
12399 /\_objdef{corder}%  
12400 /type/array%  
12401 /OBJ pdfmark%  
12402 {%  
12403 [%  
12404 /BBox[0 0 100 100]%  
12405 /\_objdef{Check}%  
12406 /BP pdfmark %  
12407 1 0 0 setrgbcolor%  
12408 /ZapfDingbats 80 selectfont %  
12409 20 20 moveto%  
12410 (4)show%  
12411 [/EP pdfmark%  
12412 [%  
12413 /BBox[0 0 100 100]%  
12414 /\_objdef{Cross}%  
12415 /BP pdfmark %  
12416 1 0 0 setrgbcolor%  
12417 /ZapfDingbats 80 selectfont %  
12418 20 20 moveto%  
12419 (8)show%  
12420 [/EP pdfmark%  
12421 [%  
12422 /BBox[0 0 250 100]%  
12423 /\_objdef{Submit}%  
12424 /BP pdfmark %  
12425 0.6 setgray %  
12426 0 0 250 100 rectfill %  
12427 1 setgray %  
12428 2 2 moveto %  
12429 2 98 lineto %  
12430 248 98 lineto %  
12431 246 96 lineto %  
12432 4 96 lineto %  
12433 4 4 lineto %  
12434 fill %  
12435 0.34 setgray %  
12436 248 98 moveto %  
12437 248 2 lineto %  
12438 2 2 lineto %  
12439 4 4 lineto %  
12440 246 4 lineto %  
12441 246 96 lineto %  
12442 fill%  
12443 /Helvetica 76 selectfont %

```

12444 0 setgray %
12445 8 22.5 moveto%
12446 (Submit)show%
12447 [/EP pdfmark%
12448 [%
12449 /BBox[0 0 250 100]%
12450 /_objdef{SubmitP}%
12451 /BP pdfmark %
12452 0.6 setgray %
12453 0 0 250 100 rectfill %
12454 0.34 setgray %
12455 2 2 moveto %
12456 2 98 lineto %
12457 248 98 lineto %
12458 246 96 lineto %
12459 4 96 lineto %
12460 4 4 lineto %
12461 fill %
12462 1 setgray %
12463 248 98 moveto %
12464 248 2 lineto %
12465 2 2 lineto %
12466 4 4 lineto %
12467 246 4 lineto %
12468 246 96 lineto %
12469 fill%
12470 /Helvetica 76 selectfont %
12471 0 setgray %
12472 10 20.5 moveto%
12473 (Submit)show%
12474 [/EP pdfmark%
12475 } ?pdfmark%
12476 [%
12477 {aform}%
12478 <<%
12479 /Fields{afields}%
12480 /DR<<%
12481 /Font<<%
12482 /ZaDb{ZaDb}%
12483 /Helv{Helv}%
12484 >>%
12485 >>%
12486 /DA(/Helv 10 Tf 0 g)%
12487 /CO{corder}%
12488 \ifHy@pdfa
12489 \else
12490 \ifHyField@NeedAppearances
12491 /NeedAppearances true%
12492 \fi
12493 \fi
12494 >>%
12495 /PUT pdfmark%
12496 [%
12497 {Catalog}%

```

```

12498 <<%
12499   /AcroForm{aform}%
12500 >>%
12501 /PUT pdfmark%
12502 }}%
12503 \kvsetkeys{Form}{#1}%
12504 }
12505 \let\@endForm\@empty
12506 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12507   \Hy@Message{Sorry, pdfmark drivers do not support FORM gauges}%
12508 }

12509 \newcount\HyField@AnnotCount
12510 \HyField@AnnotCount=\z@
12511 \def\HyField@AdvanceAnnotCount{%
12512   \global\advance\HyField@AnnotCount\@ne
12513 }
12514 \def\HyField@TheAnnotCount{%
12515   \the\HyField@AnnotCount
12516 }

12517 \edef\Fld@pageobjref{/P\string{ThisPage\string}}
12518 \def\HyField@AddToFields#1{%
12519   \pdfmark{%
12520     pdfmark=/APPEND,%
12521     Raw={%
12522       \string{afields\string}%
12523       \string{#1\HyField@TheAnnotCount\string}%
12524     }%
12525   }%
12526   \ifx\Fld@calculate@code\@empty
12527   \else
12528     \pdfmark{%
12529       pdfmark=/APPEND,%
12530       Raw={%
12531         \string{corder\string}%
12532         \string{#1\HyField@TheAnnotCount\string}%
12533       }%
12534     }%
12535   \fi
12536 }

12537 \def\@TextField[#1]#2{% parameters, label
12538   \def\Fld@name{#2}%
12539   \let\Fld@default\@empty
12540   \let\Fld@value\@empty
12541   \def\Fld@width{\DefaultWidthofText}%
12542   \def\Fld@height{%
12543     \ifFld@multiline
12544       \DefaultHeightofTextMultiline
12545     \else
12546       \DefaultHeightofText
12547     \fi
12548   }%
12549   \begingroup
12550   \expandafter\HyField@SetKeys\expandafter{%

```

```

12551     \DefaultOptionsofText,#1%
12552   }%
12553   \HyField@FlagsText
12554   \ifFld@hidden\def\Fld@width{1sp}\fi
12555   \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12556   \HyField@AdvanceAnnotCount
12557   \LayoutTextField{#2}{%
12558     \leavevmode
12559     \Hy@escapeform\PDFForm@Text
12560     \pdfmark{\MakeTextField{\Fld@width}{\Fld@height}}{%
12561       pdfmark=/ANN,%
12562       objdef=text\HyField@TheAnnotCount,%
12563       Raw={\PDFForm@Text}%
12564     }%
12565   }%
12566   \HyField@AddToFields{text}%
12567 \endgroup
12568 }
12569 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12570   \def\Fld@name{#2}%
12571   \let\Fld@default\relax
12572   \let\Fld@value\relax
12573   \def\Fld@width{\DefaultWidthofChoiceMenu}%
12574   \def\Fld@height{\DefaultHeightofChoiceMenu}%
12575   \begingroup
12576     \Fld@menulength=0 %
12577     \@tempdima\z@
12578     \@for\@curropt:=#3\do{%
12579       \expandafter\Fld@checkequals\@curropt==\%
12580       \Hy@StepCount\Fld@menulength
12581       \settowidth{\@tempdimb}{\@currDisplay}%
12582       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12583     }%
12584     \advance\@tempdima by 15\p@
12585     \begingroup
12586     \HyField@SetKeys{#1}%
12587   \edef\x{\endgroup
12588     \noexpand\expandafter
12589     \noexpand\HyField@SetKeys
12590     \noexpand\expandafter{%
12591       \expandafter\noexpand\cname DefaultOptionsof%
12592       \ifFld@radio
12593         Radio%
12594       \else
12595         \ifFld@combo
12596           \ifFld@popdown
12597             PopdownBox%
12598           \else
12599             ComboBox%
12600         \fi
12601       \else
12602         ListBox%
12603       \fi
12604     \fi

```

```

12605     \endcsname
12606   }%
12607 } \x
12608 \HyField@SetKeys{#1}%
12609 \ifFld@hidden\def\Fld@width{1sp}\fi
12610 \ifx\Fld@value\relax
12611   \let\Fld@value\Fld@default
12612 \fi
12613 \LayoutChoiceField{#2}{%
12614   \ifFld@radio
12615     \HyField@FlagsRadioButton
12616     \@@Radio{#3}%
12617   \else
12618     \begingroup
12619       \HyField@FlagsChoice
12620       \ifdim\Fld@width<\@tempdima
12621         \ifdim\@tempdima<1cm\@tempdima1cm\fi
12622         \edef\Fld@width{\the\@tempdima}%
12623       \fi
12624       \ifFld@combo
12625       \else
12626         \@tempdima=\the\Fld@menulength\Fld@charsize
12627         \advance\@tempdima by \Fld@borderwidth bp %
12628         \advance\@tempdima by \Fld@borderwidth bp %
12629         \edef\Fld@height{\the\@tempdima}%
12630       \fi
12631       \@@ListBox{#3}%
12632     \endgroup
12633   \fi
12634 }%
12635 \endgroup
12636 }
12637 \def\@@Radio#1{%
12638   \Fld@listcount=0 %
12639   \EdefEscapeName\Fld@default{\Fld@default}%
12640   \@for\@curropt:=#1\do{%
12641     \expandafter\Fld@checkequals\@curropt==\%
12642     \EdefEscapeName\@currValue{\@currValue}%
12643     \Hy@StepCount\Fld@listcount
12644     \@currDisplay\space
12645     \Hy@escapeform\PDFForm@Radio
12646     \ifnum\Fld@listcount=1 %
12647       \HyField@AdvanceAnnotCount
12648     \fi
12649     \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
12650       pdfmark=/ANN,%
12651       objdef=\ifnum\Fld@listcount=1 radio\HyField@TheAnnotCount\fi,%
12652       Raw={%
12653         \PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>%
12654       }%
12655     } % deliberate space between radio buttons
12656     \ifnum\Fld@listcount=1 %
12657       \HyField@AddToFields{radio}%
12658     \fi

```

```

12659 }%
12660 }
12661 \newcount\Fld@listcount
12662 \def\@@ListBox#1{%
12663 \HyField@PDFChoices{#1}%
12664 \Hy@escapeform\PDFForm@List
12665 \HyField@AdvanceAnnotCount
12666 \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
12667 pdfmark=/ANN,%
12668 objdef=list\HyField@TheAnnotCount,%
12669 Raw={\PDFForm@List}%
12670 }%
12671 \HyField@AddToFields{list}%
12672 }
12673 \def\@PushButton[#1]#2{% parameters, label
12674 \def\Fld@name{#2}%
12675 \begingroup
12676 \expandafter\HyField@SetKeys\expandafter{%
12677 \DefaultOptionsofPushButton,#1%
12678 }%
12679 \ifHy@pdfa
12680 \Hy@Error{%
12681 PDF/A: Push button with JavaScript is prohibited%
12682 } \@ehc
12683 \LayoutPushButtonField{%
12684 \leavevmode
12685 \MakeButtonField{#2}%
12686 }%
12687 \else
12688 \HyField@FlagsPushButton
12689 \ifFld@hidden\def\Fld@width{1sp}\fi
12690 \HyField@AdvanceAnnotCount
12691 \LayoutPushButtonField{%
12692 \leavevmode
12693 \Hy@escapeform\PDFForm@Push
12694 \pdfmark[\MakeButtonField{#2}]{%
12695 pdfmark=/ANN,%
12696 objdef=push\HyField@TheAnnotCount,%
12697 Raw={\PDFForm@Push}%
12698 }%
12699 }%
12700 \HyField@AddToFields{push}%
12701 \fi
12702 \endgroup
12703 }
12704 \def\@Submit[#1]#2{%
12705 \def\Fld@width{\DefaultWidthofSubmit}%
12706 \def\Fld@height{\DefaultHeightofSubmit}%
12707 \begingroup
12708 \expandafter\HyField@SetKeys\expandafter{%
12709 \DefaultOptionsofSubmit,#1%
12710 }%
12711 \HyField@FlagsPushButton
12712 \HyField@FlagsSubmit

```

```

12713 \ifFld@hidden\def\Fld@width{1sp}\fi
12714 \Hy@escapeform\PDFForm@Submit
12715 \HyField@AdvanceAnnotCount
12716 \pdfmark[\MakeButtonField{#2}]{%
12717 pdfmark=/ANN,%
12718 objdef=submit\HyField@TheAnnotCount,%
12719 Raw={\PDFForm@Submit /AP<</N{Submit}/D{SubmitP}>>}}%
12720 }%
12721 \HyField@AddToFields{submit}%
12722 \endgroup
12723 }
12724 \def\@Reset[#1]#2{%
12725 \def\Fld@width{\DefaultWidthofReset}%
12726 \def\Fld@height{\DefaultHeightofReset}%
12727 \begingroup
12728 \expandafter\HyField@SetKeys\expandafter{%
12729 \DefaultOptionsofReset,#1%
12730 }%
12731 \leavevmode
12732 \ifHy@pdfa
12733 \Hy@Error{%
12734 PDF/A: Reset action is prohibited%
12735 } \@ehc
12736 \MakeButtonField{#2}%
12737 \else
12738 \HyField@FlagsPushButton
12739 \ifFld@hidden\def\Fld@width{1sp}\fi
12740 \Hy@escapeform\PDFForm@Reset
12741 \HyField@AdvanceAnnotCount
12742 \pdfmark[\MakeButtonField{#2}]{%
12743 pdfmark=/ANN,%
12744 objdef=reset\HyField@TheAnnotCount,%
12745 Raw={\PDFForm@Reset}%
12746 }%
12747 \HyField@AddToFields{reset}%
12748 \fi
12749 \endgroup
12750 }%
12751 \def\@CheckBox[#1]#2{% parameters, label
12752 \def\Fld@name{#2}%
12753 \def\Fld@default{0}%
12754 \begingroup
12755 \def\Fld@width{\DefaultWidthofCheckBox}%
12756 \def\Fld@height{\DefaultHeightofCheckBox}%
12757 \expandafter\HyField@SetKeys\expandafter{%
12758 \DefaultOptionsofCheckBox,#1%
12759 }%
12760 \HyField@FlagsCheckBox
12761 \ifFld@hidden\def\Fld@width{1sp}\fi
12762 \HyField@AdvanceAnnotCount
12763 \LayoutCheckField{#2}{%
12764 \leavevmode
12765 \Hy@escapeform\PDFForm@Check
12766 \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%

```

```

12767     pdfmark=/ANN,%
12768     objdef=check\HyField@TheAnnotCount,%
12769     Raw={\PDFForm@Check}%
12770   }%
12771 }%
12772 \HyField@AddToFields{check}%
12773 \endgroup
12774 }
12775 </pdfmark>

```

## 45.2 HyperTeX

```

12776 (*hypertex)
12777 \def\@Form[#1]{%
12778   \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12779 }
12780 \let\@endForm\@empty
12781 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12782   \Hy@Message{Sorry, HyperTeX does not support FORM gauges}%
12783 }
12784 \def\@TextField[#1]#2{% parameters, label
12785   \Hy@Message{Sorry, HyperTeX does not support FORM text fields}%
12786 }
12787 \def\@CheckBox[#1]#2{% parameters, label
12788   \Hy@Message{Sorry, HyperTeX does not support FORM checkboxes}%
12789 }
12790 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12791   \Hy@Message{Sorry, HyperTeX does not support FORM choice menus}%
12792 }
12793 \def\@PushButton[#1]#2{% parameters, label
12794   \Hy@Message{Sorry, HyperTeX does not support FORM pushbuttons}%
12795 }
12796 \def\@Reset[#1]#2{%
12797   \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12798 }
12799 \def\@Submit[#1]#2{%
12800   \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12801 }
12802 </hypertex>

```

## 45.3 TeX4ht

```

12803 (*tex4ht)
12804 \def\@Form[#1]{%
12805   \kvsetkeys{Form}{#1}%
12806   \HCode{<form action="\Form@action" method="\Form@method">}%
12807 }
12808 \def\@endForm{\HCode{</form>}}
12809 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12810   \Hy@Message{Sorry, TeX4ht does not support gauges}%
12811 }
12812 \def\@TextField[#1]#2{% parameters, label
12813   \let\Hy@reserved@a\@empty
12814   \def\Fld@name{#2}%
12815   \let\Fld@default\@empty

```



```

12816 \bgroup
12817 \Field@toks={ }%
12818 \kvsetkeys{Field}{#1}%
12819 \HCode{<label for="\Fld@name">#2</label>}%
12820 \ifFld@password
12821 \@@PasswordField
12822 \else
12823 \@@TextField
12824 \fi
12825 \egroup
12826 }
12827 \def\@@PasswordField{%
12828 \HCode{%
12829 <input type="password" %
12830 id="\Fld@name" %
12831 name="\Fld@name" %
12832 \ifFld@hidden type="hidden" \fi
12833 value="\Fld@default" %
12834 \the\Field@toks
12835 >%
12836 }%
12837 }
12838 \def\@@TextField{%
12839 \ifFld@multiline
12840 \HCode{<textarea %
12841 \ifFld@readonly readonly \fi
12842 id="\Fld@name" %
12843 name="\Fld@name" %
12844 \ifFld@hidden type="hidden" \fi
12845 \the\Field@toks>%
12846 }%
12847 \Fld@default
12848 \HCode{</textarea>}%
12849 \else
12850 \HCode{<input type="text" %
12851 \ifFld@readonly readonly \fi
12852 id="\Fld@name" %
12853 name="\Fld@name" %
12854 \ifFld@hidden type="hidden" \fi
12855 value="\Fld@default" %
12856 \the\Field@toks>%
12857 }%
12858 \fi
12859 }
12860 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12861 \def\Fld@name{#2}%
12862 \let\Fld@default\@empty
12863 \let\Hy@reserved@a\relax
12864 \begingroup
12865 \expandafter\Fld@findlength#3\%
12866 \Field@toks={ }%
12867 \kvsetkeys{Field}{#1}%
12868 #2%
12869 \ifFld@radio

```

```

12870     \expandafter\@@Radio#3\}%
12871     \else
12872     \expandafter\@@Menu#3\}%
12873     \fi
12874 \endgroup
12875 }
12876 \def\Fld@findlength#1\{%
12877 \Fld@menulength=0 %
12878 \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
12879 }
12880 \def\@@Menu#1\{%
12881 \HCode{<select size="\the\Fld@menulength" %
12882   name="\Fld@name" %
12883   \the\Field@toks>%
12884 }%
12885 \@for\@curropt:=#1\do{%
12886   \expandafter\Fld@checkequals\@curropt==\}%
12887   \HCode{<option %
12888     \ifx\@curropt\Fld@default selected \fi
12889     value="\@currValue">\@currDisplay</option>%
12890   }%
12891 }%
12892 \HCode{</select>}%
12893 }
12894 \def\@@Radio#1\{%
12895 \@for\@curropt:=#1\do{%
12896   \expandafter\Fld@checkequals\@curropt==\}%
12897   \HCode{<input type="radio" %
12898     \ifx\@curropt\Fld@default checked \fi
12899     name="\Fld@name" %
12900     value="\@currValue" %
12901     \the\Field@toks>%
12902   }%
12903   \@currDisplay
12904 }%
12905 }
12906 \def\@PushButton[#1]#2{% parameters, label
12907 \def\Fld@name{#2}%
12908 \bgroup
12909 \Field@toks={ }%
12910 \kvsetkeys{Field}{#1}%
12911 \HCode{<input type="button" %
12912   name="\Fld@name" %
12913   value="#2" %
12914   \the\Field@toks>%
12915 }%
12916 \HCode{</button>}%
12917 \egroup
12918 }
12919 \def\@Submit[#1]#2{%
12920 \HCode{<button type="submit">#2</button>}%
12921 }
12922 \def\@Reset[#1]#2{%
12923 \HCode{<button type="reset">#2</button>}%

```

```

12924 }
12925 \def\@CheckBox[#1]#2{% parameters, label
12926 \let\Hy@reserved@a\@empty
12927 \def\Fld@name{#2}%
12928 \def\Fld@default{0}%
12929 \bgroup
12930 \Field@toks={ }%
12931 \kvsetkeys{Field}{#1}%
12932 \HCode{<input type="checkbox" %
12933 \ifFld@checked checked \fi
12934 \ifFld@disabled disabled \fi
12935 \ifFld@readonly readonly \fi
12936 name="\Fld@name" %
12937 \ifFld@hidden type="hidden" \fi
12938 value="\Fld@default" %
12939 \the\Fld@toks>%
12940 #2%
12941 }%
12942 \egroup
12943 }
12944 </tex4ht>

```

## 45.4 pdfTeX

```

12945 (*pdfTeX)
12946 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12947 \Hy@Message{Sorry, pdfTeX does not support FORM gauges}%
12948 }
12949 \def\MakeFieldObject#1#2{\sbox0{#1}%
12950 \immediate\pdfxform0 %
12951 \expandafter\edef\csname #2Object\endcsname{%
12952 \the\pdfastxform\space 0 R%
12953 }%
12954 % \hbox to 0pt{\hskip-\maxdimen{\pdfrefxform \the\pdfastxform}}%
12955 }%
12956 \let\HyField@afields\@empty
12957 \let\HyField@cofields\@empty
12958 \@ifundefined{pdfastlink}
12959 {%
12960 \let\HyField@AddToFields\relax
12961 \PackageInfo{hyperref}{%
12962 You need pdfTeX 1.40.0 for setting the /Fields entry.%
12963 \MessageBreak
12964 Adobe Reader/Acrobat accepts an empty /Field array,%
12965 \MessageBreak
12966 but other PDF viewers might complain%
12967 }}%
12968 {%
12969 \let\HyField@AuxAddToFields@gobble
12970 \let\HyField@AuxAddToCoFields@gobbletwo
12971 \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.

```

12972 \def\HyField@ABD@AuxAddToCoFields#1#2{%

```

```

12973 \begingroup
12974 \Hy@safe@activestruer
12975 \let\@secondoftwo\relax
12976 \ifx\HyField@cofields\@empty
12977 \xdef\HyField@cofields{%
12978 \@secondoftwo{#1}{ #2 0 R}%
12979 }%
12980 \else
12981 \let\@secondoftwo\relax
12982 \def\HyField@AddCoField###1##2###3{%
12983 \ifx##1\@empty
12984 \@secondoftwo{#1}{ #2 0 R}%
12985 \expandafter\@gobble
12986 \else
12987 \ifnum\pdfstrcmp{##2}{#1}>\z@
12988 \@secondoftwo{#1}{ #2 0 R}%
12989 \@secondoftwo{##2}{##3}%
12990 \expandafter\expandafter\expandafter\@gobble
12991 \else
12992 \@secondoftwo{##2}{##3}%
12993 \fi
12994 \fi
12995 \HyField@AddCoField
12996 }%
12997 \xdef\HyField@cofields{%
12998 \expandafter\HyField@AddCoField
12999 \HyField@cofields\@empty\@empty\@empty
13000 }%
13001 \fi
13002 \endgroup
13003 }%
13004 \Hy@AtBeginDocument{%
13005 \if@filesw
13006 \immediate\write\@mainaux{%
13007 \string\providecommand\string\HyField@AuxAddToFields[1]{}%
13008 }%
13009 \immediate\write\@mainaux{%
13010 \string\providecommand\string\HyField@AuxAddToCoFields[2]{}%
13011 }%
13012 \fi
13013 \let\HyField@AfterAuxOpen\@firstofone
13014 \def\HyField@AuxAddToFields#1{%
13015 \xdef\HyField@afields{%
13016 \ifx\HyField@afields\@empty
13017 \else
13018 \HyField@afields
13019 \space
13020 \fi
13021 #1 0 R.%
13022 }%
13023 }%
13024 \let\HyField@AuxAddToCoFields\HyField@ABD@AuxAddToCoFields
13025 }%
13026 \def\HyField@AddToFields{%

```

```

13027 \expandafter\HyField@@AddToFields\expandafter{%
13028 \the\pdfastlink
13029 }%
13030 \ifx\Fld@calculate@code\@empty
13031 \else
13032 \begingroup
13033 \Hy@safe@activetrue
13034 \edef\Hy@temp{%
13035 \endgroup
13036 \if@filesw
13037 \write\@mainaux{%
13038 \string\HyField@AuxAddToCoFields{%
13039 \Fld@calculate@sortkey
13040 }{%
13041 \the\pdfastlink
13042 }%
13043 }%
13044 \fi
13045 }%
13046 \Hy@temp
13047 \fi
13048 }%
13049 \def\HyField@@AddToFields#1{%
13050 \HyField@AfterAuxOpen{%
13051 \if@filesw
13052 \write\@mainaux{%
13053 \string\HyField@AuxAddToFields{#1}%
13054 }%
13055 \fi
13056 }%
13057 }%
13058 }
13059 \def\@Form[#1]{%
13060 \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13061 \kvsetkeys{Form}{#1}%
13062 \pdf@ifdraftmode{}{%
13063 \Hy@FormObjects
13064 \ifnum\pdftexversion>13 %
13065 \pdfrefobj\OBJ@pdfdocencoding
13066 \pdfrefobj\OBJ@ZaDb
13067 \pdfrefobj\OBJ@Helv
13068 \fi
13069 \AddToHook{enddocument/afteraux}{%
13070 \immediate\pdfobj{%
13071 <<%
13072 /Fields[\HyField@afields]%
13073 \ifx\HyField@cofields\@empty
13074 \else
13075 /CO[\romannumeral-\`Q\HyField@cofields]%
13076 \fi
13077 /DR<<%
13078 /Font<<%
13079 /ZaDb \OBJ@ZaDb\space 0 R%
13080 /Helv \OBJ@Helv\space 0 R%

```

```

13081     >>%
13082     >>%
13083     /DA(/Helv 10 Tf 0 g)%
13084     \ifHy@pdfa
13085     \else
13086     \ifHyField@NeedAppearances
13087     /NeedAppearances true%
13088     \fi
13089     \fi
13090     >>%
13091     }%
13092     \edef\OBJ@acroform{\the\pdfastobj}%
13093     \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
13094     }%
13095     }%
13096     \MakeFieldObject{%
Same as \ding{123} of package pifont.
13097     \begingroup
13098     \fontfamily{pzd}%
13099     \fontencoding{U}%
13100     \fontseries{m}%
13101     \fontshape{n}%
13102     \selectfont
13103     \char123 %
13104     \endgroup
13105     }{Ding}%
13106     \MakeFieldObject{%
13107     \fbox{\textcolor{yellow}{\textsf{Submit}}}%
13108     }{Submit}%
13109     \MakeFieldObject{%
13110     \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
13111     }{SubmitP}%
13112     }
13113     \let\@endForm\@empty
13114     \let\HyAnn@AbsPageLabel\@empty
13115     \let\Fld@pageobjref\@empty
13116     \@ifundefined{pdfpageref}{%
13117     }{%
13118     \@ifpackageloaded{zref-abspage}{%
13119     \newcount\HyAnn@Count
13120     \HyAnn@Count=\z@
13121     \def\HyAnn@AbsPageLabel{%
13122     \global\advance\HyAnn@Count by\@ne
13123     \zref@labelbyprops{HyAnn@\the\HyAnn@Count}{abspage}%
13124     \zref@refused{HyAnn@\the\HyAnn@Count}%
13125     }%
13126     \def\Fld@pageobjref{%
13127     \zref@ifrefundefined{HyAnn@\the\HyAnn@Count}{%
13128     }{%
13129     \zref@ifrefcontainsprop{HyAnn@\the\HyAnn@Count}{abspage}{%
13130     /P \pdfpageref
13131     \zref@extractdefault{HyAnn@\the\HyAnn@Count}{abspage}{1} %
13132     \space 0 R%
13133     }{%

```

```

13134     }%
13135     }%
13136     }%
13137   }{%
13138   }%
13139 }

13140 \def\@TextField[#1]#2{% parameters, label
13141   \def\Fld@name{#2}%
13142   \let\Fld@default\@empty
13143   \let\Fld@value\@empty
13144   \def\Fld@width{\DefaultWidthofText}%
13145   \def\Fld@height{%
13146     \ifFld@multiline
13147       \DefaultHeightofTextMultiline
13148     \else
13149       \DefaultHeightofText
13150     \fi
13151   }%
13152   \begingroup
13153     \expandafter\HyField@SetKeys\expandafter{%
13154       \DefaultOptionsofText,#1%
13155     }%
13156     \PDFForm@Name
13157     \HyField@FlagsText
13158     \ifFld@hidden\def\Fld@width{1sp}\fi
13159     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13160     \LayoutTextField{#2}{%
13161       \leavevmode
13162       \HyAnn@AbsPageLabel
13163       \Hy@escapeform\PDFForm@Text
13164       \pdfstartlink user {\PDFForm@Text}\relax
13165       \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
13166       \HyField@AddToFields
13167     }%
13168   \endgroup
13169 }

13170 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13171   \def\Fld@name{#2}%
13172   \let\Fld@default\relax
13173   \let\Fld@value\relax
13174   \def\Fld@width{\DefaultWidthofChoiceMenu}%
13175   \def\Fld@height{\DefaultHeightofChoiceMenu}%
13176   \begingroup
13177     \Fld@menulength=0 %
13178     \@tempdima\z@
13179     \@for\@curropt:=#3\do{%
13180       \expandafter\Fld@checkequals\@curropt==\%
13181       \Hy@StepCount\Fld@menulength
13182       \settowidth{\@tempdimb}{\@currDisplay}%
13183       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13184     }%
13185     \advance\@tempdima by 15\p@
13186   \begingroup
13187     \HyField@SetKeys{#1}%

```

```

13188 \edef\x{\endgroup
13189 \noexpand\expandafter
13190 \noexpand\HyField@SetKeys
13191 \noexpand\expandafter{%
13192 \expandafter\noexpand\csname DefaultOptionsof%
13193 \ifFld@radio
13194 Radio%
13195 \else
13196 \ifFld@combo
13197 \ifFld@popdown
13198 PopdownBox%
13199 \else
13200 ComboBox%
13201 \fi
13202 \else
13203 ListBox%
13204 \fi
13205 \fi
13206 \endcsname
13207 }%
13208 }\x
13209 \HyField@SetKeys{#1}%
13210 \PDFForm@Name
13211 \ifFld@hidden\def\Fld@width{1sp}\fi
13212 \ifx\Fld@value\relax
13213 \let\Fld@value\Fld@default
13214 \fi
13215 \LayoutChoiceField{#2}{%
13216 \ifFld@radio
13217 \HyField@FlagsRadioButton
13218 \@@Radio{#3}%
13219 \else
13220 \beginingroup
13221 \HyField@FlagsChoice
13222 \ifdim\Fld@width<\@tempdima
13223 \ifdim\@tempdima<1cm\@tempdima1cm\fi
13224 \edef\Fld@width{\the\@tempdima}%
13225 \fi
13226 \ifFld@combo
13227 \else
13228 \@tempdima=\the\Fld@menulength\Fld@charsize
13229 \advance\@tempdima by \Fld@borderwidth bp %
13230 \advance\@tempdima by \Fld@borderwidth bp %
13231 \edef\Fld@height{\the\@tempdima}%
13232 \fi
13233 \@@ListBox{#3}%
13234 \endgroup
13235 \fi
13236 }%
13237 \endgroup
13238 }
13239 \def\@@Radio#1{%
13240 \Fld@listcount=0 %
13241 \EdefEscapeName\Fld@default{\Fld@default}%

```



```

13242 \@for\@curropt:=#1\do{%
13243 \expandafter\Fld@checkequals\@curropt==\%
13244 \EdefEscapeName\@currValue{\@currValue}%
13245 \Hy@StepCount\Fld@listcount
13246 \@currDisplay\space
13247 \leavevmode
13248 \HyAnn@AbsPageLabel
13249 \Hy@escapeform\PDFForm@Radio
13250 \pdfstartlink user {%
13251 \PDFForm@Radio
13252 /AP<<%
13253 /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.

```

13254 \/\@currValue\space \DingObject
13255 >>%
13256 >>%
13257 }%
13258 \relax
13259 \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
13260 \ifnum\Fld@listcount=1 %
13261 \HyField@AddToFields
13262 \fi
13263 \space % deliberate space between radio buttons
13264 }%
13265 }
13266 \newcount\Fld@listcount
13267 \def\@@Listbox#1{%
13268 \HyField@PDFChoices{#1}%
13269 \leavevmode
13270 \HyAnn@AbsPageLabel
13271 \Hy@escapeform\PDFForm@List
13272 \pdfstartlink user {\PDFForm@List}\relax
13273 \MakeChoiceField{\Fld@width}{\Fld@height}%
13274 \pdfendlink
13275 \HyField@AddToFields
13276 }
13277 \def\@PushButton[#1]#2{% parameters, label
13278 \def\Fld@name{#2}%
13279 \begingroup
13280 \expandafter\HyField@SetKeys\expandafter{%
13281 \DefaultOptionsofPushButton,#1%
13282 }%
13283 \PDFForm@Name
13284 \ifHy@pdfa
13285 \Hy@Error{%
13286 PDF/A: Push button with JavaScript is prohibited%
13287 }\@ehc
13288 \LayoutPushButtonField{%
13289 \leavevmode
13290 \MakeButtonField{#2}%
13291 }%

```

```

13292 \else
13293 \HyField@FlagsPushButton
13294 \ifFld@hidden\def\Fld@width{1sp}\fi
13295 \LayoutPushButtonField{%
13296 \leavevmode
13297 \HyAnn@AbsPageLabel
13298 \Hy@escapeform\PDFForm@Push
13299 \pdfstartlink user {\PDFForm@Push}\relax
13300 \MakeButtonField{#2}%
13301 \pdfendlink
13302 \HyField@AddToFields
13303 }%
13304 \fi
13305 \endgroup
13306 }
13307 \def\@Submit[#1]#2{%
13308 \def\Fld@width{\DefaultWidthofSubmit}%
13309 \def\Fld@height{\DefaultHeightofSubmit}%
13310 \begingroup
13311 \expandafter\HyField@SetKeys\expandafter{%
13312 \DefaultOptionsofSubmit,#1%
13313 }%
13314 \HyField@FlagsPushButton
13315 \HyField@FlagsSubmit
13316 \ifFld@hidden\def\Fld@width{1sp}\fi
13317 \leavevmode
13318 \HyAnn@AbsPageLabel
13319 \Hy@escapeform\PDFForm@Submit
13320 \pdfstartlink user {%
13321 \PDFForm@Submit
13322 /AP<</N \SubmitObject/D \SubmitPObject>>%
13323 }%
13324 \relax
13325 \MakeButtonField{#2}%
13326 \pdfendlink
13327 \HyField@AddToFields
13328 \endgroup
13329 }
13330 \def\@Reset[#1]#2{%
13331 \def\Fld@width{\DefaultWidthofReset}%
13332 \def\Fld@height{\DefaultHeightofReset}%
13333 \begingroup
13334 \expandafter\HyField@SetKeys\expandafter{%
13335 \DefaultOptionsofReset,#1%
13336 }%
13337 \leavevmode
13338 \ifHy@pdfa
13339 \Hy@Error{%
13340 PDF/A: Reset action is prohibited%
13341 }\@ehc
13342 \MakeButtonField{#2}%
13343 \else
13344 \HyField@FlagsPushButton
13345 \ifFld@hidden\def\Fld@width{1sp}\fi

```

```

13346 \HyAnn@AbsPageLabel
13347 \Hy@escapeform\PDFForm@Reset
13348 \pdfstartlink user {\PDFForm@Reset}\relax
13349 \MakeButtonField{#2}%
13350 \pdfendlink
13351 \HyField@AddToFields
13352 \fi
13353 \endgroup
13354 }
13355 \def\@CheckBox[#1]#2{% parameters, label
13356 \def\Fld@name{#2}%
13357 \def\Fld@default{0}%
13358 \begingroup
13359 \def\Fld@width{\DefaultWidthofCheckBox}%
13360 \def\Fld@height{\DefaultHeightofCheckBox}%
13361 \expandafter\HyField@SetKeys\expandafter{%
13362 \DefaultOptionsofCheckBox,#1%
13363 }%
13364 \PDFForm@Name
13365 \HyField@FlagsCheckBox
13366 \ifFld@hidden\def\Fld@width{1sp}\fi
13367 \LayoutCheckField{#2}{%
13368 \leavevmode
13369 \HyAnn@AbsPageLabel
13370 \Hy@escapeform\PDFForm@Check
13371 \pdfstartlink user {\PDFForm@Check}\relax
13372 \MakeCheckField{\Fld@width}{\Fld@height}%
13373 \pdfendlink
13374 \HyField@AddToFields
13375 }%
13376 \endgroup
13377 }
13378 \def\Hy@FormObjects{%
13379 \pdfobj {%
13380 <<%
13381 /Type/Encoding%
13382 /Differences%
13383 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
13384 /ring/tilde %
13385 39/quotesingle %
13386 96/grave %
13387 128/bullet/dagger/daggerdbl/ellipsis/emdash/enddash/florin%
13388 /fraction/guilsingleft/guilsingright/minus/perthousand%
13389 /quotedblbase/quotedblleft/quotedblright/quoteleft%
13390 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
13391 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13392 160/Euro %
13393 164/currency %
13394 166/brokenbar %
13395 168/dieresis/copyright/ordfeminine %
13396 172/logicalnot/.notdef/registered/macron/degree/plusminus%
13397 /twosuperior/threesuperior/acute/mu %
13398 183/periodcentered/cedilla/onesuperior/ordmasculine %
13399 188/onequarter/onehalf/threequarters %

```

```

13400     192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13401     /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
13402     /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
13403     /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
13404     /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
13405     /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
13406     /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
13407     /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
13408     /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
13409     /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
13410     ]%
13411     >>%
13412     }%
13413     \xdef\OBJ@pdfdocencoding{\the\pdfastobj}%
13414     \pdfobj{%
13415     <<%
13416     /Type/Font%
13417     /Subtype/Type1%
13418     /Name/ZaDb%
13419     /BaseFont/ZapfDingbats%
13420     >>%
13421     }%
13422     \xdef\OBJ@ZaDb{\the\pdfastobj}%
13423     \pdfobj{%
13424     <<%
13425     /Type/Font%
13426     /Subtype/Type1%
13427     /Name/Helv%
13428     /BaseFont/Helvetica%
13429     /Encoding \OBJ@pdfdocencoding\space 0 R%
13430     >>%
13431     }%
13432     \xdef\OBJ@Helv{\the\pdfastobj}%
13433     \global\let\Hy@FormObjects\relax
13434     }
13435     </pdfTeX>

```

## 45.5 dvipdfm, xetex

D. P. Story adapted the pdfTeX forms part for dvipdfm, of which version 0.12.7b or higher is required because of a bug.

```
13436 <*dvipdfm | xetex>
```

\@Gauge

```

13437 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
13438   \Hy@Message{Sorry, dvipdfm/XeTeX does not support FORM gauges}%
13439 }

```

\@Form

```

13440 \def\@Form[#1]{%
13441   \@ifundefined{textcolor}{\let\textcolor@gobble}{}%
13442   \kvsetkeys{Form}{#1}%
13443   \Hy@FormObjects
13444   \@pdfm@mark{obj @afields []}%

```

```

13445 \@pdfm@mark{obj @corder []}%
13446 \@pdfm@mark{%
13447   obj @aform <<%
13448   /Fields @afields%
13449   /DR<<%
13450   /Font<<%
13451   /ZaDb @OBJZaDb%
13452   /Helv @OBJHelv%
13453   >>%
13454   >>%
13455   /DA(/Helv 10 Tf 0 g)%
13456   /CO @corder%
13457   \ifHy@pdfa
13458   \else
13459     \ifHyField@NeedAppearances
13460       /NeedAppearances true%
13461     \fi
13462   \fi
13463   >>%
13464 }%
13465 \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
13466 }

```

\@endForm

```
13467 \let\@endForm\@empty
```

\dvipdfm@setdim \dvipdfm@setdim sets dimensions for ann using \pdfm@box.

```

13468 \def\dvipdfm@setdim{%
13469   height \the\ht\pdfm@box\space
13470   width \the\wd\pdfm@box\space
13471   depth \the\dp\pdfm@box\space
13472 }

```

\HyField@AnnotCount

```

13473 \newcount\HyField@AnnotCount
13474 \HyField@AnnotCount=\z@

```

\HyField@AdvanceAnnotCount

```

13475 \def\HyField@AdvanceAnnotCount{%
13476   \global\advance\HyField@AnnotCount\@ne
13477 }

```

\HyField@TheAnnotCount

```

13478 \def\HyField@TheAnnotCount{%
13479   \the\HyField@AnnotCount
13480 }

```

\Fld@pageobjref

```
13481 \def\Fld@pageobjref{/P @thispage}%
```

\HyField@AddToFields

```

13482 \def\HyField@AddToFields#1{%
13483   \@pdfm@mark{put @afields @#1\HyField@TheAnnotCount}%

```

```

13484 \ifx\Fld@calculate@code\@empty
13485 \else
13486 \@pdfm@mark{put @corder @#1\HyField@TheAnnotCount}%
13487 \fi
13488 }

```

#### \@TextField

```

13489 \def\@TextField[#1]#2{% parameters, label
13490 \def\Fld@name{#2}%
13491 \let\Fld@default\@empty
13492 \let\Fld@value\@empty
13493 \def\Fld@width{\DefaultWidthofText}%
13494 \def\Fld@height{%
13495 \ifFld@multiline
13496 \DefaultHeightofTextMultiline
13497 \else
13498 \DefaultHeightofText
13499 \fi
13500 }%
13501 \begingroup
13502 \expandafter\HyField@SetKeys\expandafter{%
13503 \DefaultOptionsofText,#1%
13504 }%
13505 \PDFForm@Name
13506 \HyField@FlagsText
13507 \ifFld@hidden\def\Fld@width{1sp}\fi
13508 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13509 \setbox\pdfm@box=\hbox{%
13510 \MakeTextField{\Fld@width}{\Fld@height}%
13511 }%
13512 \HyField@AdvanceAnnotCount
13513 \LayoutTextField{#2}{%
13514 \leavevmode
13515 \Hy@escapeform\PDFForm@Text
13516 \@pdfm@mark{%
13517 ann @text\HyField@TheAnnotCount\space
13518 \dvi@pdfm@setdim << \PDFForm@Text >>%
13519 }%
13520 }%
13521 \unhbox\pdfm@box
13522 \HyField@AddToFields{text}%
13523 % record in @afields array
13524 \endgroup
13525 }

```

#### \@ChoiceMenu

```

13526 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13527 \def\Fld@name{#2}%
13528 \let\Fld@default\relax
13529 \let\Fld@value\relax
13530 \def\Fld@width{\DefaultWidthofChoiceMenu}%
13531 \def\Fld@height{\DefaultHeightofChoiceMenu}%
13532 \begingroup
13533 \Fld@menulength=0 %

```

```

13534 \@tempdima\z@
13535 \@for\@curropt:=#3\do{%
13536 \expandafter\Fld@checkequals\@curropt==\\%
13537 \Hy@StepCount\Fld@menulength
13538 \settowidth{\@tempdimb}{\@currDisplay}%
13539 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13540 }%
13541 \advance\@tempdima by 15\p@
13542 \begingroup
13543 \HyField@SetKeys{#1}%
13544 \edef\x{\endgroup
13545 \noexpand\expandafter
13546 \noexpand\HyField@SetKeys
13547 \noexpand\expandafter{%
13548 \expandafter\noexpand\csname DefaultOptionsof%
13549 \ifFld@radio
13550 Radio%
13551 \else
13552 \ifFld@combo
13553 \ifFld@popdown
13554 PopdownBox%
13555 \else
13556 ComboBox%
13557 \fi
13558 \else
13559 ListBox%
13560 \fi
13561 \fi
13562 \endcsname
13563 }%
13564 }\x
13565 \HyField@SetKeys{#1}%
13566 \PDFForm@Name
13567 \ifFld@hidden\def\Fld@width{1sp}\fi
13568 \ifx\Fld@value\relax
13569 \let\Fld@value\Fld@default
13570 \fi
13571 \LayoutChoiceField{#2}{%
13572 \ifFld@radio
13573 \HyField@FlagsRadioButton
13574 \@@Radio{#3}%
13575 \else
13576 \begingroup
13577 \HyField@FlagsChoice
13578 \ifdim\Fld@width<\@tempdima
13579 \ifdim\@tempdima<1cm\@tempdima1cm\fi
13580 \edef\Fld@width{\the\@tempdima}%
13581 \fi
13582 \ifFld@combo
13583 \else
13584 \@tempdima=\the\Fld@menulength\Fld@charsize
13585 \advance\@tempdima by \Fld@borderwidth bp %
13586 \advance\@tempdima by \Fld@borderwidth bp %
13587 \edef\Fld@height{\the\@tempdima}%

```

```

13588     \fi
13589     \@@ListBox{#3}%
13590     \endgroup
13591     \fi
13592   }%
13593 \endgroup
13594 }

```

#### \@@Radio

```

13595 \def\@@Radio#1{%
13596   \Fld@listcount=0 %
13597   \EdefEscapeName\Fld@default{\Fld@default}%
13598   \setbox\pdfm@box=\hbox{%
13599     \MakeRadioField{\Fld@width}{\Fld@height}%
13600   }%
13601   \@for\@curropt:=#1\do{%
13602     \expandafter\Fld@checkequals\@curropt==\%
13603     \EdefEscapeName\@currValue{\@currValue}%
13604     \Hy@StepCount\Fld@listcount
13605     \@currDisplay\space
13606     \leavevmode
13607     \Hy@escapeform\PDFForm@Radio
13608     \ifnum\Fld@listcount=1 %
13609       \HyField@AdvanceAnnotCount
13610     \fi
13611     \@pdfm@mark{%
13612       ann %
13613       \ifnum\Fld@listcount=1 %
13614         @radio\HyField@TheAnnotCount%
13615       \space
13616     \fi
13617     \dvipdfm@setdim
13618     <<%
13619     \PDFForm@Radio
13620     /AP<</N<</\@currValue /null>>>>%
13621     >>%
13622   }%
13623   \unhcopy\pdfm@box\space% deliberate space between radio buttons
13624   \ifnum\Fld@listcount=1 %
13625     \HyField@AddToFields{radio}%
13626   \fi
13627 }%
13628 }

```

#### \Fld@listcount

```

13629 \newcount\Fld@listcount

```

#### \@@ListBox

```

13630 \def\@@ListBox#1{%
13631   \HyField@PDFChoices{#1}%
13632   \setbox\pdfm@box=\hbox{%
13633     \MakeChoiceField{\Fld@width}{\Fld@height}%
13634   }%
13635   \leavevmode

```



```

13636 \Hy@escapeform\PDFForm@List
13637 \HyField@AdvanceAnnotCount
13638 \@pdfm@mark{%
13639   ann @list\HyField@TheAnnotCount\space
13640   \dvipdfm@setdim
13641   <<\PDFForm@List>>%
13642 }%
13643 \unhbox\pdfm@box
13644 \HyField@AddToFields{list}%
13645 }

```

#### \@PushButton

```

13646 \def\@PushButton[#1]#2{% parameters, label
13647 \def\Fld@name{#2}%
13648 \begingroup
13649 \expandafter\HyField@SetKeys\expandafter{%
13650   \DefaultOptionsofPushButton,#1%
13651 }%
13652 \PDFForm@Name
13653 \ifHy@pdfa
13654   \Hy@Error{%
13655     PDF/A: Push button with JavaScript is prohibited%
13656   } \@ehc
13657   \LayoutPushButtonField{%
13658     \leavevmode
13659     \MakeButtonField{#2}%
13660   }%
13661 \else
13662   \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13663   \HyField@FlagsPushButton
13664   \ifFld@hidden\def\Fld@width{1sp}\fi
13665   \HyField@AdvanceAnnotCount
13666   \LayoutPushButtonField{%
13667     \leavevmode
13668     \Hy@escapeform\PDFForm@Push
13669     \@pdfm@mark{%
13670       ann @push\HyField@TheAnnotCount\space
13671       \dvipdfm@setdim
13672       <<\PDFForm@Push>>%
13673     }%
13674   }%
13675   \unhbox\pdfm@box
13676   \HyField@AddToFields{push}%
13677 \fi
13678 \endgroup
13679 }

```

#### \@Submit

```

13680 \def\@Submit[#1]#2{%
13681 \def\Fld@width{\DefaultWidthofSubmit}%
13682 \def\Fld@height{\DefaultHeightofSubmit}%
13683 \begingroup
13684 \expandafter\HyField@SetKeys\expandafter{%
13685   \DefaultOptionsofSubmit,#1%

```

```

13686 }%
13687 \HyField@FlagsPushButton
13688 \HyField@FlagsSubmit
13689 \ifFld@hidden\def\Fld@width{1sp}\fi
13690 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13691 \leavevmode
13692 \Hy@escapeform\PDFForm@Submit
13693 \HyField@AdvanceAnnotCount
13694 \@pdfm@mark{%
13695   ann @submit\HyField@TheAnnotCount\space
13696   \dviPDFForm@setdim
13697   <<\PDFForm@Submit>>%
13698 }%
13699 \unhbox\pdfm@box%
13700 \HyField@AddToFields{submit}%
13701 \endgroup
13702 }

```

#### \@Reset

```

13703 \def\@Reset[#1]#2{%
13704   \def\Fld@width{\DefaultWidthofReset}%
13705   \def\Fld@height{\DefaultHeightofReset}%
13706   \begingroup
13707     \expandafter\HyField@SetKeys\expandafter{%
13708       \DefaultOptionsofReset,#1%
13709     }%
13710     \leavevmode
13711     \ifHy@pdfa
13712       \Hy@Error{%
13713         PDF/A: Reset action is prohibited%
13714       } \@ehc
13715       \MakeButtonField{#2}%
13716     \else
13717       \HyField@FlagsPushButton
13718       \ifFld@hidden\def\Fld@width{1sp}\fi
13719       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13720       \Hy@escapeform\PDFForm@Reset
13721       \HyField@AdvanceAnnotCount
13722       \@pdfm@mark{%
13723         ann @reset\HyField@TheAnnotCount\space
13724         \dviPDFForm@setdim
13725         <<\PDFForm@Reset>>%
13726       }%
13727       \unhbox\pdfm@box
13728       \HyField@AddToFields{reset}%
13729     \fi
13730   \endgroup
13731 }

```

#### \@CheckBox

```

13732 \def\@CheckBox[#1]#2{% parameters, label
13733   \def\Fld@name{#2}%
13734   \def\Fld@default{0}%
13735   \begingroup

```

```

13736 \def\Fld@width{\DefaultWidthofCheckBox}%
13737 \def\Fld@height{\DefaultHeightofCheckBox}%
13738 \expandafter\HyField@SetKeys\expandafter{%
13739 \DefaultOptionsofCheckBox,#1%
13740 }%
13741 \PDFForm@Name
13742 \HyField@FlagsCheckBox
13743 \ifFld@hidden\def\Fld@width{1sp}\fi
13744 \setbox\pdfm@box=\hbox{%
13745 \MakeCheckField{\Fld@width}{\Fld@height}%
13746 }%
13747 \HyField@AdvanceAnnotCount
13748 \LayoutCheckField{#2}{%
13749 \leavevmode
13750 \Hy@escapeform\PDFForm@Check
13751 \@pdfm@mark{%
13752 ann @check\HyField@TheAnnotCount\space
13753 \dvi pdfm@setdim
13754 <<\PDFForm@Check>>%
13755 }%
13756 \unhbox\pdfm@box
13757 \HyField@AddToFields{check}%
13758 }%
13759 \endgroup
13760 }

13761 \def\Hy@FormObjects{%
13762 \@pdfm@mark{obj @OBJpdfdocencoding%
13763 <<%
13764 /Type/Encoding%
13765 /Differences[%
13766 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
13767 39/quotesingle %
13768 96/grave %
13769 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13770 /fraction/guilsingleft/guilsingright/minus/perthousand%
13771 /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
13772 /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
13773 /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13774 160/Euro %
13775 164/currency %
13776 166/brokenbar %
13777 168/dieresis/copyright/ordfeminine %
13778 172/logicalnot/.notdef/registered/macron/degree/plusminus%
13779 /twosuperior/threesuperior/acute/mu %
13780 183/periodcentered/cedilla/onesuperior/ordmasculine %
13781 188/onequarter/onehalf/threequarters %
13782 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13783 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
13784 /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
13785 /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
13786 /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
13787 /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
13788 /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%

```

```

13789      /eth/ntilde/ograve/oacute/ocircumflex/otilde/odieresis%
13790      /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
13791      /thorn/ydieresis%
13792      ]%
13793      >>%
13794      }%
13795      \@pdfm@mark{obj @OBJZaDb%
13796      <<%
13797      /Type/Font%
13798      /Subtype/Type1%
13799      /Name/ZaDb%
13800      /BaseFont/ZapfDingbats%
13801      >>%
13802      }%
13803      \@pdfm@mark{obj @OBJHelv%
13804      <<%
13805      /Type/Font%
13806      /Subtype/Type1%
13807      /Name/Helv%
13808      /BaseFont/Helvetica%
13809      /Encoding @OBJpdfdocencoding%
13810      >>%
13811      }%
13812      \global\let\Hy@FormObjects\relax
13813      }
13814      </dvi-pdfm | xetex>

```

## 45.6 Common forms part

```

13815 (*pdfform)

\Fld@pageobjref
13816 \providecommand*{\Fld@pageobjref}{}

\Hy@escapestring
13817 \@ifundefined{pdf@escapestring}
13818 {%
13819   \let\Hy@escapestring\@firstofone
13820   \def\Hy@escapeform#1{%
13821     \ifHy@pdfescapeform
13822       \def\Hy@escapestring##1{%
13823         \noexpand\Hy@escapestring{\noexpand##1}%
13824       }%
13825       \edef\Hy@temp{#1}%
13826       \expandafter\Hy@@escapeform\Hy@temp\Hy@escapestring{}\@nil
13827     \def\Hy@escapestring##1{%
13828       \@ifundefined{Hy@esc@\string##1}{%
13829         ##1%
13830         \ThisShouldNotHappen
13831       }{%
13832         \csname Hy@esc@\string##1\endcsname
13833       }%
13834     }%
13835   \else

```

```

13836   \let\Hy@escapestring\@firstofone
13837   \fi
13838 }%
13839 \def\Hy@@escapeform#1\Hy@escapestring#2#3\@nil{%
13840   \ifx\|#3\|
13841     \else
13842       \expandafter
13843       \Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
13844       \Hy@ReturnAfterFi{%
13845         \Hy@@escapeform#3\@nil
13846       }%
13847     \fi
13848 }%
13849 }{%
13850 \def\Hy@escapeform#1{%
13851   \ifHy@pdfescapeform
13852     \let\Hy@escapestring\pdfescapestring
13853   \else
13854     \let\Hy@escapestring\@firstofone
13855   \fi
13856 }%
13857 \Hy@escapeform{ }%
13858 }

```

#### \PDFForm@Name

```

13859 \def\PDFForm@Name{%
13860   \PDFForm@@Name\Fld@name
13861   \ifx\Fld@altname\relax
13862     \else
13863     \PDFForm@@Name\Fld@altname
13864   \fi
13865   \ifx\Fld@mappingname\relax
13866     \else
13867     \PDFForm@@Name\Fld@mappingname
13868   \fi
13869 }

```

#### \PDFForm@@Name

```

13870 \def\PDFForm@@Name#1{%
13871   \begingroup
13872   \ifnum\Hy@pdf@major@minor@version<105 % implementation note 117, PDF spec 1.7
13873     \ifHy@unicode
13874       \Hy@unicodedefalse
13875     \fi
13876   \fi
13877   \pdfstringdef\Hy@gtemp#1%
13878 \endgroup
13879 \let#1\Hy@gtemp
13880 }

```

#### \Fld@additionalactions

```

13881 \def\Fld@@additionalactions{%
K input (keystroke) format

```

```

13882 \ifx\Fld@keystroke@code\@empty
13883 \else
13884 /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
13885 \fi

F display format
13886 \ifx\Fld@format@code\@empty
13887 \else
13888 /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
13889 \fi

V validation
13890 \ifx\Fld@validate@code\@empty
13891 \else
13892 /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
13893 \fi

C calculation
13894 \ifx\Fld@calculate@code\@empty
13895 \else
13896 /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
13897 \fi

Fo receiving the input focus
13898 \ifx\Fld@onfocus@code\@empty
13899 \else
13900 /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
13901 \fi

Bl loosing the input focus (blurred)
13902 \ifx\Fld@onblur@code\@empty
13903 \else
13904 /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
13905 \fi

D pressing the mouse button (down)
13906 \ifx\Fld@onmousedown@code\@empty
13907 \else
13908 /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
13909 \fi

U releasing the mouse button (up)
13910 \ifx\Fld@onmouseup@code\@empty
13911 \else
13912 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
13913 \fi

E cursor enters the annotation's active area.
13914 \ifx\Fld@onenter@code\@empty
13915 \else
13916 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
13917 \fi

X cursor exits the annotation's active area.
13918 \ifx\Fld@onexit@code\@empty
13919 \else
13920 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
13921 \fi

```

```

13922 }
13923 \def\Fld@additionalactions{%
13924 \if-\Fld@@additionalactions-%
13925 \else
13926 \ifHy@pdfa
13927 \else
13928 /AA<<\Fld@@additionalactions>>%
13929 \fi
13930 \fi
13931 }

```

#### \Fld@annotnames

```

13932 \def\Fld@annotnames{%
13933 /T(\Fld@name)%
13934 \ifx\Fld@altname\relax
13935 \else
13936 /TU(\Fld@altname)%
13937 \fi
13938 \ifx\Fld@mappingname\relax
13939 \else
13940 /TM(\Fld@mappingname)%
13941 \fi
13942 }

```

#### \PDFForm@Check

```

13943 \def\PDFForm@Check{%
13944 /Subtype/Widget%
13945 \Fld@annotflags
13946 \Fld@pageobjref
13947 \Fld@annotnames
13948 /FT/Btn%
13949 \Fld@flags
13950 /Q \Fld@align
13951 /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
13952 /AP<< /N <</Yes<<>>>> >> %new string /Yes is from below
13953 /MK<<%
13954 \ifnum\Fld@rotation=\z@
13955 \else
13956 /R \Fld@rotation
13957 \fi
13958 \ifx\Fld@bordercolor\relax
13959 \else
13960 /BC[\Fld@bordercolor]%
13961 \fi
13962 \ifx\Fld@bcolor\relax
13963 \else
13964 /BG[\Fld@bcolor]%
13965 \fi
13966 /CA(\Hy@escapestring{\Fld@cbsymbol})%
13967 >>%
13968 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13969 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13970 /H/P%
13971 \ifFld@checked /V/Yes/AS/Yes\else /V/Off/AS/Off\fi

```

```
13972 \Fld@additionalactions
13973 }
```

#### \PDFForm@Push

```
13974 \ifHy@pdfa
13975 \else
13976 \def\PDFForm@Push{%
13977 /Subtype/Widget%
13978 \Fld@annotflags
13979 \Fld@pageobjref
13980 \Fld@annotnames
13981 /FT/Btn%
13982 \Fld@flags
13983 /H/P%
13984 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13985 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13986 \ifx\Fld@bordercolor\relax\else 1\fi
13987 \space
13988 \else
13989 /MK<<%
13990 \ifnum\Fld@rotation=\z@
13991 \else
13992 /R \Fld@rotation
13993 \fi
13994 \ifx\Fld@bordercolor\relax
13995 \else
13996 /BC[\Fld@bordercolor]%
13997 \fi
13998 >>%
13999 \fi
14000 /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick@code})>>%
14001 \Fld@additionalactions
14002 }%
14003 \fi
```

#### \PDFForm@List

```
14004 \def\PDFForm@List{%
14005 /Subtype/Widget%
14006 \Fld@annotflags
14007 \Fld@pageobjref
14008 \Fld@annotnames
14009 /FT/Ch%
14010 \Fld@flags
14011 /Q \Fld@align
14012 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14013 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14014 \ifx\Fld@bordercolor\relax\else 1\fi
14015 \ifx\Fld@bcolor\relax \else 1\fi
14016 \space
14017 \else
14018 /MK<<%
14019 \ifnum\Fld@rotation=\z@
14020 \else
14021 /R \Fld@rotation
```



```

14022 \fi
14023 \ifx\Fld@bordercolor\relax
14024 \else
14025 /BC[\Fld@bordercolor]%
14026 \fi
14027 \ifx\Fld@bcolor\relax
14028 \else
14029 /BG[\Fld@bcolor]%
14030 \fi
14031 >>%
14032 \fi
14033 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
14034 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14035 \Fld@choices
14036 \Fld@additionalactions
14037 }

```

#### \PDFForm@Radio

```

14038 \def\PdfForm@Radio{%
14039 /Subtype/Widget%
14040 \Fld@annotflags
14041 \Fld@pageobjref
14042 \Fld@annotnames
14043 /FT/Btn%
14044 \Fld@flags
14045 /H/P%
14046 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14047 /MK<<%
14048 \ifnum\Fld@rotation=\z@
14049 \else
14050 /R \Fld@rotation
14051 \fi
14052 \ifx\Fld@bordercolor\relax
14053 \else
14054 /BC[\Fld@bordercolor]%
14055 \fi
14056 \ifx\Fld@bcolor\relax
14057 \else
14058 /BG[\Fld@bcolor]%
14059 \fi
14060 /CA(\Hy@escapestring{\Fld@radiosymbol})%
14061 >>%
14062 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
14063 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%

```

New code, the default value is used for all buttons

```

14064 \ifx\Fld@default\@empty
14065 /V/Off%
14066 /DV/Off%
14067 \else
14068 /V/\Fld@default
14069 /DV/\Fld@default
14070 \fi
14071 \Fld@additionalactions
14072 }

```

\PDFForm@Text

```
14073 \def\PDFForm@Text{%
14074 /Subtype/Widget%
14075 \Fld@annotflags
14076 \Fld@pageobjref
14077 \Fld@annotnames
14078 /FT/Tx%
14079 \Fld@flags
14080 /Q \Fld@align
14081 /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
14082 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14083     \ifx\Fld@bordercolor\relax\else 1\fi
14084     \ifx\Fld@bcolor\relax \else 1\fi
14085     \space
14086 \else
14087 /MK<<%
14088     \ifnum\Fld@rotation=\z@
14089     \else
14090     /R \Fld@rotation
14091     \fi
14092     \ifx\Fld@bordercolor\relax
14093     \else
14094     /BC[\Fld@bordercolor]%
14095     \fi
14096     \ifx\Fld@bcolor\relax
14097     \else
14098     /BG[\Fld@bcolor]%
14099     \fi
14100 >>%
14101 \fi
14102 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
14103     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14104 /DV(\Hy@escapestring{\Fld@default})%
14105 /V(\Hy@escapestring{\Fld@value})%
14106 \Fld@additionalactions
14107 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
14108 }
```

\PDFForm@Submit

```
14109 \def\PDFForm@Submit{%
14110 /Subtype/Widget%
14111 \Fld@annotflags
14112 \Fld@pageobjref
14113 \Fld@annotnames
14114 /FT/Btn%
14115 \Fld@flags
14116 /H/P%
14117 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14118 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14119     \ifx\Fld@bordercolor\relax\else 1\fi
14120     \space
14121 \else
14122 /MK<<%
14123     \ifnum\Fld@rotation=\z@
```

```

14124 \else
14125 /R \Fld@rotation
14126 \fi
14127 \ifx\Fld@bordercolor\relax
14128 \else
14129 /BC[\Fld@bordercolor]%
14130 \fi
14131 >>%
14132 \fi
14133 /A<<%
14134 /S/SubmitForm%
14135 /F<<%
14136 /FS/URL%
14137 /F(\Hy@escapestring{\Form@action})%
14138 >>%
14139 \Fld@submitflags
14140 >>%
14141 \Fld@additionalactions
14142 }

```

#### \PDFForm@Reset

```

14143 \ifHy@pdfa
14144 \else
14145 \def\PDFForm@Reset{%
14146 /Subtype/Widget%
14147 \Fld@annotflags
14148 \Fld@pageobjref
14149 \Fld@annotnames
14150 /FT/Btn%
14151 \Fld@flags
14152 /H/P%
14153 /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
14154 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14155 \ifx\Fld@bordercolor\relax\else 1\fi
14156 \space
14157 \else
14158 /MK<<%
14159 \ifnum\Fld@rotation=\z@
14160 \else
14161 /R \Fld@rotation
14162 \fi
14163 \ifx\Fld@bordercolor\relax
14164 \else
14165 /BC[\Fld@bordercolor]%
14166 \fi
14167 % /CA (Clear)
14168 % /AC (Done)
14169 >>%
14170 \fi
14171 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14172 /A<</S/ResetForm>>%
14173 \Fld@additionalactions
14174 }%
14175 \fi

```

```
14176 </pdfform>
14177 <*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  $\LaTeX$  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`

```
14178 \def\phantomsection{%
14179   \Hy@MakeCurrentHrefAuto{section*}%
14180   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
14181 }
14182 </packageEnd>
```

### 46.1 Bookmarks

```
14183 <*outlines>
```

This section was written by Heiko Oberdiek; the code replaces an earlier version by David Carlisle.

The first part of bookmark code is in section 6. Further documentation is available as paper and slides of the talk, that Heiko Oberdiek has given at the EuroTeX'99 meeting in Heidelberg. See `paper.pdf` and `slides.pdf` in the `doc` directory of `hyperref`.

When using the right-to-left typesetting based on  $\varepsilon\text{-}\TeX$ , the order of the `\BOOKMARK` commands written to the `\@outlinefile` could appear wrong, because of mis-feature of  $\varepsilon\text{-}\TeX$ 's implementation (that it processes the shipped out lines left-to-right, instead of the order in which they appear in the document). The wrong order will appear when the file contains two bookmarks on the same line typeset right-to-left.

To work around this problem, the `bookmark@seq@number` counter is used to write the bookmark's sequential number into a comment in the `\@outlinefile`, which could be used to post-process it to achieve the proper ordering of `\BOOKMARK` commands in that file.

```
14184 \def\Hy@writebookmark#1#2#3#4#5{%
14185   % section number, text, label, level, file
14186   \ifx\WriteBookmarks\relax%
14187     \else
14188     \ifnum#4>\Hy@bookmarksdepth\relax
14189     \else
14190     \@writetorep{#1}{#2}{#3}{#4}{#5}%
14191     \fi
14192   \fi
14193 }
14194 \def\Hy@currentbookmarklevel{0}
14195 \def\Hy@numberline#1{#1 }
```

```

14196 \def\@@writetorep#1#2#3#4#5{%
14197   \begingroup
14198     \edef\Hy@tempa{#5}%
14199     \ifx\Hy@tempa\Hy@bookmarkstype
14200       \edef\Hy@level{#4}%
14201       \ifx\Hy@levelcheck Y%
14202         \@tempcnta\Hy@level\relax
14203         \advance\@tempcnta by -1 %
14204         \ifnum\Hy@currentbookmarklevel<\@tempcnta
14205           \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
14206           \advance\@tempcnta by 1 %
14207           \Hy@Warning{%
14208             Difference (\the\@tempcnta) between bookmark levels is %
14209             greater \MessageBreak than one, level fixed%
14210           }%
14211           \@tempcnta\Hy@currentbookmarklevel
14212           \advance\@tempcnta by 1 %
14213           \edef\Hy@level{\the\@tempcnta}%
14214         \fi
14215       \else
14216         \global\let\Hy@levelcheck Y%
14217       \fi
14218       \global\let\Hy@currentbookmarklevel\Hy@level
14219       \@tempcnta\Hy@level\relax
14220       \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
14221       \advance\@tempcnta by -1 %
14222       \edef\Hy@tempa{#3}%
14223       \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
14224       \ifx\Hy@tempa\Hy@tempb
14225         \Hy@Warning{%
14226           The anchor of a bookmark and its parent's must not%
14227           \MessageBreak be the same. Added a new anchor%
14228         }%
14229       \phantomsection
14230     \fi
14231     \ifHy@bookmarksnumbered
14232       \let\numberline\Hy@numberline
14233       \let\booknumberline\Hy@numberline
14234       \let\partnumberline\Hy@numberline
14235       \let\chapternumberline\Hy@numberline
14236     \else
14237       \let\numberline\@gobble
14238       \let\booknumberline\@gobble
14239       \let\partnumberline\@gobble
14240       \let\chapternumberline\@gobble
14241     \fi
14242     \pdfstringdef\Hy@tempa{#2}%
14243     \HyPsd@SanitizeForOutFile\Hy@tempa
14244     \if@filesw
14245       \stepcounter{bookmark@seq@number}%
14246       \@ifundefined{@outlinefile}{%
14247         }{%
14248           \protected@write\@outlinefile}{%
14249             \protect\BOOKMARK

```

```

14250      [\Hy@level][\@bookmarkopenstatus{\Hy@level}]{#3}%
14251      {\Hy@tempa}{\Hy@tempb}%
14252      \@percentchar\space\thebookmark@seq@number
14253      }%
14254      }%
14255      \fi
14256      \fi
14257      \endgroup
14258      }
14259      \newcounter{bookmark@seq@number}

14260      \begingroup
14261      \lccode`(`=`{%
14262      \lccode`)`=`}%
14263      \lccode`1`=\z@
14264      \lccode`2`=\z@
14265      \lccode`3`=\z@
14266      \lccode`5`=\z@
14267      \lccode`7`=\z@
14268      \lccode`\#`=\z@
14269      \lccode`\` `=\z@
14270      \lccode`\{`=\z@
14271      \lccode`\}`=\z@
14272      \lowercase{%
14273      \endgroup
14274      \def\HyPsd@SanitizeForOutFile#1{%
14275      \@onelevel@sanitize\Hy@tempa
14276      \escapechar`\\%
14277      \edef\Hy@tempa{%
14278      \expandafter\HyPsd@SanitizeOut@BraceLeft\Hy@tempa(\@nil
14279      }%
14280      \edef\Hy@tempa{%
14281      \expandafter\HyPsd@SanitizeOut@BraceRight\Hy@tempa)\@nil
14282      }%
14283      }%
14284      \def\HyPsd@SanitizeOut@BraceLeft#1(#2\@nil{%
14285      #1%
14286      \ifx\\#2\\%
14287      \expandafter\@gobble
14288      \else
14289      \expandafter\@firstofone
14290      \fi
14291      {%
14292      \string\173%
14293      \HyPsd@SanitizeOut@BraceLeft#2\@nil
14294      }%
14295      }%
14296      \def\HyPsd@SanitizeOut@BraceRight#1)#2\@nil{%
14297      #1%
14298      \ifx\\#2\\%
14299      \expandafter\@gobble
14300      \else
14301      \expandafter\@firstofone
14302      \fi
14303      {%

```

```

14304 \string\175%
14305 \HyPsd@SanitizeOut@BraceRight#2\@nil
14306 }%
14307 }%
14308 }

```

In the call of `\BOOKMARK` the braces around `#4` are omitted, because it is not likely, that the level number contains `]`.

```

14309 \newcommand{\currentpdfbookmark}{%
14310 \pdfbookmark[\Hy@currentbookmarklevel]%
14311 }
14312 \newcommand{\subpdfbookmark}{%
14313 \@tempcnta\Hy@currentbookmarklevel
14314 \Hy@StepCount\@tempcnta
14315 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
14316 }
14317 \newcommand{\belowpdfbookmark}[2]{%
14318 \@tempcnta\Hy@currentbookmarklevel
14319 \Hy@StepCount\@tempcnta
14320 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
14321 \advance\@tempcnta by -1 %
14322 \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
14323 }

```

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.

```

14324 \renewcommand\pdfbookmark[3][0]{%
14325 \Hy@writebookmark}{#2}{#3.#1}{#1}{toc}%
14326 \hyper@anchorstart{#3.#1}\hyper@anchorend
14327 }
14328 \def\BOOKMARK{%
14329 \@ifnextchar{\@BOOKMARK}{\@BOOKMARK[1][-]}%
14330 }
14331 \def\@BOOKMARK[#1]{%
14332 \@ifnextchar{\@BOOKMARK[{#1}]}{\@BOOKMARK[{#1}][-]}%
14333 }

```

The macros for calculating structure of outlines are derived from those by Petr Olsak used in the `texinfopdf` macros.

#### 46.1.1 Rerun warning

`\Hy@OutlineRerunCheck`

```

14334 \RequirePackage{rerunfilecheck}[2009/12/10]
14335 \def\Hy@OutlineRerunCheck{%
14336 \RerunFileCheck{\jobname.out}{%
14337 \immediate\closeout\@outlinefile
14338 }{%
14339 Rerun to get outlines right\MessageBreak
14340 or use package `bookmark'%
14341 }%
14342 }

```

### 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.

```
14343 (*vtex)
```

```
14344 \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.

```
14345 \begingroup
```

```
14346 \catcode\`=12 %
```

```
14347 \ifnum\Hy@VTeXversion<650 %
```

```
14348 \catcode\`=12 %
```

```
14349 \gdef\hv@pdf@char#1#2#3{%
```

```
14350 \char
```

```
14351 \ifcase'#1#2#3 %
```

```
14352 "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
```

```
14353 \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
```

```
14354 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
```

```
14355 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
```

```
14356 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
```

```
14357 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
```

```
14358 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
```

```
14359 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
```

```
14360 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
```

```
14361 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
```

```
14362 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
```

```
14363 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
```

```
14364 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
```

```
14365 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
```

```
14366 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
```

```
14367 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
```

```
14368 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
```

```
14369 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
```

```
14370 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
```

```
14371 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
```

```
14372 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
```

```
14373 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
```

```
14374 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
```

```
14375 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
```

```
14376 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
```

```
14377 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
```

```
14378 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
```

```
14379 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
```

```
14380 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
```

```
14381 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
```

```
14382 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
```

```
14383 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
```

```
14384 \fi
```

```
14385 }%
```



```

14386 \else
14387 \gdef\hv@pdf@char{\char'}%
14388 \fi
14389 \endgroup

```

#### \@@BOOKMARK

```

14390 \def\@@BOOKMARK[#1][#2]#3#4#5{%
14391 \expandafter\edef\csname @count@#3\endcsname{%
14392 \the\@serial@counter
14393 }%
14394 \edef\@mycount{\the\@serial@counter}%
14395 \Hy@StepCount\@serial@counter
14396 \edef\@parcount{%
14397 \expandafter\ifx\csname @count@#5\endcsname\relax
14398 0%
14399 \else
14400 \csname @count@#5\endcsname
14401 \fi
14402 }%
14403 \immediate\special{%
14404 !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
14405 s=\ifx#2-c\else o\fi,t=#4%
14406 }%
14407 }%

```

#### \ReadBookmarks

```

14408 \def\ReadBookmarks{%
14409 \begingroup
14410 \def\0{\hv@pdf@char 0}%
14411 \def\1{\hv@pdf@char 1}%
14412 \def\2{\hv@pdf@char 2}%
14413 \def\3{\hv@pdf@char 3}%
14414 \def\({}%
14415 \def\)}%
14416 \def\do##1{%
14417 \ifnum\catcode`##1=\active
14418 \@makeother##1%
14419 \else
14420 \ifnum\catcode`##1=6 %
14421 \@makeother##1%
14422 \fi
14423 \fi
14424 }%
14425 \dospecials
14426 \Hy@safe@activestrue
14427 \InputIfFileExists{\jobname.out}{\}{}%
14428 \endgroup
14429 \ifx\WriteBookmarks\relax
14430 \else
14431 \if@filesw
14432 \newwrite\@outlinefile
14433 \Hy@OutlineRerunCheck
14434 \immediate\openout\@outlinefile=\jobname.out\relax
14435 \fi

```

```

14436 \fi
14437 }

14438 </vtex>
14439 (*!vtex)
14440 \def\ReadBookmarks{%
14441 \pdf@ifdraftmode{}{%
14442 \begingroup
14443 \def\do##1{%
14444 \ifnum\catcode`##1=\active
14445 \@makeother##1%
14446 \else
14447 \ifnum\catcode`##1=6 %
14448 \@makeother##1%
14449 \fi
14450 \fi
14451 }%
14452 \dospecials
14453 \Hy@safe@activetrue
14454 \escapechar=`\%
14455 \def@@@BOOKMARK[##1][##2]##3##4##5{%
14456 \calc@bm@number{##5}%
14457 }%
14458 \InputIfFileExists{jobname.out}{-}{-}%
14459 \ifx\WriteBookmarks\relax
14460 \global\let\WriteBookmarks\relax
14461 \fi
14462 \def@@@BOOKMARK[##1][##2]##3##4##5{%
14463 \def\Hy@temp{##4}%
14464 (*pdfTeX)
14465 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14466 \Hy@OutlineName{}\Hy@pstringName{%
14467 ##2\check@bm@number{##3}}%
14468 }{%
14469 \expandafter\strip@prefix\meaning\Hy@temp
14470 }%
14471 </pdfTeX>
14472 (*pdfmark)
14473 \pdfmark{%
14474 pdfmark=/OUT,%
14475 Count={##2\check@bm@number{##3}},%
14476 Dest={##3},%
14477 Title=\expandafter\strip@prefix\meaning\Hy@temp
14478 }%
14479 </pdfmark>
14480 (*dvipdfm|xetex)
14481 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14482 \@pdfm@mark{%
14483 outline \ifHy@DvipdfmxOutlineOpen
14484 [%
14485 \ifnum##21>\z@
14486 \else
14487 -%
14488 \fi

```

```

14489         | %
14490         \fi
14491         ##1<<%
14492         /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
14493         /A<<%
14494         /S/GoTo%
14495         /D(\Hy@pstringName)%
14496         >>%
14497         >>%
14498     }%
14499 </dvipdfm | xetex>
14500 }%
14501 \begingroup
14502 \def\WriteBookmarks{0}%
14503 \InputIfFileExists{jobname.out}{-}{-}%
14504 \endgroup
14505 %{\escapechar@m@ne\InputIfFileExists{jobname.out}{-}{-}}%
14506 \endgroup
14507 }%
14508 \ifx\WriteBookmarks\relax
14509 \else
14510 \if@filesw
14511 \newwrite\@outlinefile
14512 \Hy@OutlineRerunCheck
14513 \immediate\openout\@outlinefile=jobname.out\relax
14514 \fi
14515 \fi
14516 }
14517 (*pdfTeX)
14518 \def\Hy@OutlineName#1#2#3#4{%
14519 \pdfoutline goto name{#2}count#3{#4}%
14520 }
14521 </pdfTeX>
14522 \def\check@bm@number#1{%
14523 \expandafter\ifx\csname B_#1\endcsname\relax
14524 0%
14525 \else
14526 \csname B_#1\endcsname
14527 \fi
14528 }
14529 \def\calc@bm@number#1{%
14530 \@tempcnta=\check@bm@number{#1}\relax
14531 \advance\@tempcnta by 1 %
14532 \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
14533 }
14534 </!vtex>
14535 \ifHy@implicit
14536 \else
14537 \expandafter\endinput
14538 \fi
14539 </outlines>
14540 (*outlines | hypertex)
14541 \newlength\Hy@SectionHShift

```

```

14542 \def\Hy@SectionAnchorHref#1{%
14543   \ifx\protect\@typeset@protect
14544     \Hy@@SectionAnchor{#1}%
14545   \fi
14546 }
14547 \DeclareRobustCommand*\Hy@@SectionAnchor}[1]{%
14548   \leavevmode
14549   \hbox to Opt{%
14550     \kern-\Hy@SectionHShift
14551     \Hy@raisedlink{%
14552       \hyper@anchorstart{#1}\hyper@anchorend
14553     }%
14554     \hss
14555   }%
14556 }
14557 \AddToNoCaseChangeList{\Hy@@SectionAnchor}
14558 \@ifundefined{hyper@nopatch@sectioning}
14559 {
14560   \let\H@old@ssect\@ssect
14561   \def\@ssect#1#2#3#4#5{%
14562     \Hy@MakeCurrentHrefAuto{section*}%
14563     \setlength{\Hy@SectionHShift}{#1}%
14564     \begingroup
14565     \toks@{\H@old@ssect{#1}{#2}{#3}{#4}}%
14566     \toks\tw@\expandafter{%
14567       \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14568       #5%
14569     }%
14570   \edef\x{\endgroup
14571     \the\toks@\the\toks\tw@}%
14572   }\x
14573 }
14574 \let\H@old@schapter\@schapter
14575 \def\@schapter#1{%
14576   \begingroup
14577   \let\@mkboth\@gobbletwo
14578   \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14579   \Hy@raisedlink{%
14580     \hyper@anchorstart{\@currentHref}\hyper@anchorend
14581   }%
14582   \endgroup
14583   \H@old@schapter{#1}%
14584 }

```

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:

```

14585 \@ifundefined{chapter}{-}{%
14586   \let\Hy@org@chapter\@chapter
14587   \def\@chapter{%
14588     \def\Hy@next{%
14589       \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14590       \Hy@raisedlink{%
14591         \hyper@anchorstart{\@currentHref}\hyper@anchorend

```

```

14592 }%
14593 }%
14594 \ifnum\c@secnumdepth>\m@ne
14595 \@ifundefined{if@mainmatter}%
14596 \iftrue{\csname if@mainmatter\endcsname}%
14597 \let\Hy@next\relax
14598 \fi
14599 \fi
14600 \Hy@next
14601 \Hy@org@chapter
14602 }%
14603 }

14604 \let\H@old@part\@part
14605 \@ifundefined{chapter}
14606 {\let\Hy@secnum@part\z@}
14607 {\let\Hy@secnum@part\m@ne}
14608 \def\@part{%
14609 \ifnum\Hy@secnum@part>\c@secnumdepth
14610 \phantomsection
14611 \fi
14612 \H@old@part
14613 }

14614 \let\H@old@spart\@spart
14615 \def\@spart#1{%
14616 \Hy@MakeCurrentHrefAuto{part*}%
14617 \Hy@raisedlink{%
14618 \hyper@anchorstart{\@currentHref}\hyper@anchorend
14619 }%
14620 \H@old@spart{#1}%
14621 }

14622 \let\H@old@sect\@sect
14623 \def\@sect#1#2#3#4#5#6[#7]#8{%
14624 \ifnum #2>\c@secnumdepth
14625 \expandafter\@firstoftwo
14626 \else
14627 \expandafter\@secondoftwo
14628 \fi
14629 {%
14630 \Hy@MakeCurrentHrefAuto{section*}%
14631 \setlength{\Hy@SectionHShift}{#3}%
14632 \begingroup
14633 \toks@{\H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}}%
14634 \toks\tw@\expandafter{%
14635 \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14636 #8%
14637 }%
14638 \edef\x{\endgroup
14639 \the\toks@\the\toks\tw@}%
14640 }\x
14641 }{%
14642 \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}{#8}%
14643 }%
14644 }

```

```

14645 }{}
14646 </outlines | hypertext>
14647 (*outlines)

14648 \expandafter\def\csname Parent-4\endcsname{}
14649 \expandafter\def\csname Parent-3\endcsname{}
14650 \expandafter\def\csname Parent-2\endcsname{}
14651 \expandafter\def\csname Parent-1\endcsname{}
14652 \expandafter\def\csname Parent0\endcsname{}
14653 \expandafter\def\csname Parent1\endcsname{}
14654 \expandafter\def\csname Parent2\endcsname{}
14655 \expandafter\def\csname Parent3\endcsname{}
14656 \expandafter\def\csname Parent4\endcsname{}
14657 </outlines>

```

## 47 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek.

### 47.1 PD1 encoding

```

14658 (*pd1enc)
14659 \DeclareFontEncoding{PD1}{}{}

Accents
14660 \DeclareTextAccent{\`}{PD1}{\textasciigrave}
14661 \DeclareTextAccent{\'}{PD1}{\textacute}
14662 \DeclareTextAccent{\^}{PD1}{\textasciicircum}
14663 \DeclareTextAccent{\~}{PD1}{\texttilde}
14664 \DeclareTextAccent{\"}{PD1}{\textasciidieresis}
14665 \DeclareTextAccent{\r}{PD1}{\textring}
14666 \DeclareTextAccent{\v}{PD1}{\textasciicaron}
14667 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
14668 \DeclareTextAccent{\c}{PD1}{\textcedilla}
14669 \DeclareTextAccent{=} {PD1}{\textasciimacron}
14670 \DeclareTextAccent{\b}{PD1}{\textmacronbelow}
14671 \DeclareTextAccent{\d}{PD1}{\textdotbelow}
14672 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textasciigrave}
14673 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
14674 \DeclareTextCompositeCommand{\^}{PD1}{\@empty}{\textasciicircum}
14675 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
14676 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textasciidieresis}
14677 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
14678 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textasciicaron}
14679 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
14680 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
14681 \DeclareTextCompositeCommand{=} {PD1}{\@empty}{\textasciimacron}
14682 \DeclareTextCompositeCommand{\b}{PD1}{\@empty}{\textmacronbelow}
14683 \DeclareTextCompositeCommand{\d}{PD1}{\@empty}{\textdotbelow}
14684 \DeclareTextCompositeCommand{\`}{PD1}{\ }{\textasciigrave}
14685 \DeclareTextCompositeCommand{\'}{PD1}{\ }{\textacute}
14686 \DeclareTextCompositeCommand{\^}{PD1}{\ }{\textasciicircum}

```

```

14687 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\texttilde}
14688 \DeclareTextCompositeCommand{\"}{PD1}{\ }{\textasciidieresis}
14689 \DeclareTextCompositeCommand{\r}{PD1}{\ }{\textring}
14690 \DeclareTextCompositeCommand{\v}{PD1}{\ }{\textasciicaron}
14691 \DeclareTextCompositeCommand{\.}{PD1}{\ }{\textdotaccent}
14692 \DeclareTextCompositeCommand{\c}{PD1}{\ }{\textcedilla}
14693 \DeclareTextCompositeCommand{\=}{PD1}{\ }{\textasciimacron}
14694 \DeclareTextCompositeCommand{\b}{PD1}{\ }{\textmacronbelow}
14695 \DeclareTextCompositeCommand{\d}{PD1}{\ }{\textdotbelow}
14696 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}
14697 \DeclareTextCommand{\t}{PD1}[1]{\TextSymbolUnavailable{\t{#1}}#1}
14698 \DeclareTextCommand{\newtie}{PD1}[1]{%
14699 \TextSymbolUnavailable{\newtie{#1}}#1%
14700 }

```

Special white space escape characters not for use in bookmarks but for other PDF strings.

```

14701 % U+0009 (CHARACTER TABULATION)
14702 \DeclareTextCommand{\textHT}{PD1}{\011}% U+0009
14703 % U+000A (LINE FEED)
14704 \DeclareTextCommand{\textLF}{PD1}{\012}% U+000A
14705 % U+000D (CARRIAGE RETURN)
14706 \DeclareTextCommand{\textCR}{PD1}{\015}% U+000D

```

Accent glyph names

```

14707 % U+02D8 BREVE; breve
14708 \DeclareTextCommand{\textasciibreve}{PD1}{\030}% U+02D8
14709 % U+02C7 CARON; caron
14710 \DeclareTextCommand{\textasciicaron}{PD1}{\031}% U+02C7
14711 % U+02C6 MODIFIER LETTER CIRCUMFLEX ACCENT; circumflex
14712 \DeclareTextCommand{\textcircumflex}{PD1}{\032}% U+02C6
14713 % U+02D9 DOT ABOVE; dotaccent
14714 \DeclareTextCommand{\textdotaccent}{PD1}{\033}% U+02D9
14715 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut
14716 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034}% U+02DD
14717 % U+02DB OGONEK; ogonek
14718 \DeclareTextCommand{\textogonek}{PD1}{\035}% U+02DB
14719 % U+02DA RING ABOVE; ring
14720 \DeclareTextCommand{\textring}{PD1}{\036}% U+02DA
14721 % U+02DC SMALL TILDE; ilde, *tilde
14722 \DeclareTextCommand{\texttilde}{PD1}{\037}% U+02DC

```

\040: U+0020 SPACE; \*space, spacehackarabic

\041: U+0021 EXCLAMATION MARK; exclam

14723 % U+0022 QUOTATION MARK; quotedbl

14724 \DeclareTextCommand{\textquotedbl}{PD1}{"}% \042 U+0022

14725 % U+0023 NUMBER SIGN; numbersign

14726 \DeclareTextCommand{\textnumbersign}{PD1}{\043}% U+0023

14727 % U+0024 DOLLAR SIGN; dollar

14728 \DeclareTextCommand{\textdollar}{PD1}{\044}% U+0024

14729 % U+0025 PERCENT SIGN; percent

14730 \DeclareTextCommand{\textpercent}{PD1}{\045}% U+0025

14731 % U+0026 AMPERSAND; ampersand

14732 \DeclareTextCommand{\textampersand}{PD1}{\046}% U+0026

\047: U+0027 APOSTROPHE; quotesingle

14733 % U+0028 LEFT PARENTHESIS; parenleft  
14734 \DeclareTextCommand{\textparenleft}{PD1}{\string\{}% \050 U+0028  
14735 % U+0029 RIGHT PARENTHESIS; parenright  
14736 \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  
14737 % U+002E FULL STOP; period  
14738 \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  
14739 % U+003C LESS-THAN SIGN; less  
14740 \DeclareTextCommand{\textless}{PD1}{<}% \074 U+003C  
\075: U+003D EQUALS SIGN; equal  
14741 % U+003E GREATER-THAN SIGN; greater  
14742 \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  
14743 % U+005C REVERSE SOLIDUS; backslash  
14744 \DeclareTextCommand{\textbackslash}{PD1}{\134}% U+005C  
14745 % "U+2216 SET MINUS" simulated by "U+005C REVERSE SOLIDUS"  
14746 \DeclareTextCommand{\textsetminus}{PD1}{\textbackslash}  
\135: U+005D RIGHT SQUARE BRACKET; bracketright  
14747 % U+005E CIRCUMFLEX ACCENT; asciicircum  
14748 \DeclareTextCommand{\textasciicircum}{PD1}{\136}% U+005E  
14749 % U+005F LOW LINE; underscore  
14750 \DeclareTextCommand{\textunderscore}{PD1}{\137}% U+005F  
14751 \DeclareTextCommand{\textmacronbelow}{PD1}{\137}% U+005F  
14752 % U+0060 GRAVE ACCENT; grave  
14753 \DeclareTextCommand{\textasciigrave}{PD1}{\140}% U+0060  
\141: U+0061 LATIN SMALL LETTER A; a  
...  
\150: U+0068 LATIN SMALL LETTER H; h  
14754 % U+0069 LATIN SMALL LETTER I; i  
14755 \DeclareTextCompositeCommand{\.}{PD1}{i}{i}% \151 U+0069  
\152: U+006A LATIN SMALL LETTER J; j  
...  
\172: U+007A LATIN SMALL LETTER Z; z  
14756 % U+007B LEFT CURLY BRACKET; braceleft  
14757 \DeclareTextCommand{\textbraceleft}{PD1}{\173}% U+007B



14758 % U+007C VERTICAL LINE; \*bar, verticalbar  
14759 \DeclareTextCommand{\textbar}{PD1}{|}% U+007C  
14760 % U+007D RIGHT CURLY BRACKET; braceright  
14761 \DeclareTextCommand{\textbraceright}{PD1}{\175}% U+007D  
14762 % U+007E TILDE; asciitilde  
14763 \DeclareTextCommand{\textasciitilde}{PD1}{\176}% U+007E  
Slot \177 (0x7F) is undefined in PDFDocEncoding.  
14764 % U+2022 BULLET; bullet  
14765 \DeclareTextCommand{\textbullet}{PD1}{\200}% U+2022  
14766 % U+2020 DAGGER; dagger  
14767 \DeclareTextCommand{\textdagger}{PD1}{\201}% U+2020  
14768 % U+2021 DOUBLE DAGGER; daggerdbl; \ddagger (LaTeX)  
14769 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202}% U+2021  
14770 \DeclareTextCommand{\textddagger}{PD1}{\textdaggerdbl}  
14771 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
14772 \DeclareTextCommand{\textellipsis}{PD1}{\203}% U+2026  
14773 % U+2014 EM DASH; emdash  
14774 \DeclareTextCommand{\textemdash}{PD1}{\204}% U+2014  
14775 % U+2013 EN DASH; endash  
14776 \DeclareTextCommand{\textendash}{PD1}{\205}% U+2013  
14777 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
14778 \DeclareTextCommand{\textflorin}{PD1}{\206}% U+0192  
14779 % U+2044 FRACTION SLASH; fraction  
14780 \DeclareTextCommand{\textfractionsolidus}{PD1}{\207}% U+2044  
14781 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
inglleft  
14782 \DeclareTextCommand{\guilsinglleft}{PD1}{\210}% U+2039  
14783 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
inglright  
14784 \DeclareTextCommand{\guilsinglright}{PD1}{\211}% U+203A  
14785 % U+2212 MINUS SIGN; minus  
14786 \DeclareTextCommand{\textminus}{PD1}{\212}% U+2212  
14787 % U+2030 PER MILLE SIGN; perthousand  
14788 \DeclareTextCommand{\textperthousand}{PD1}{\213}% U+2030  
14789 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
14790 \DeclareTextCommand{\quotedblbase}{PD1}{\214}% U+201E  
14791 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
14792 \DeclareTextCommand{\textquotedblleft}{PD1}{\215}% U+201C  
14793 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
14794 \DeclareTextCommand{\textquotedblright}{PD1}{\216}% U+201D  
14795 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
14796 \DeclareTextCommand{\textquoteleft}{PD1}{\217}% U+2018  
14797 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
14798 \DeclareTextCommand{\textquoteright}{PD1}{\220}% U+2019  
14799 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
14800 \DeclareTextCommand{\quotesinglbase}{PD1}{\221}% U+201A  
14801 % U+2122 TRADE MARK SIGN; trademark  
14802 \DeclareTextCommand{\texttrademark}{PD1}{\222}% U+2122  
14803 % U+FB01 LATIN SMALL LIGATURE FI; fi  
14804 \DeclareTextCommand{\textfi}{PD1}{\223}% U+FB01  
14805 % U+FB02 LATIN SMALL LIGATURE FL; fl  
14806 \DeclareTextCommand{\textfl}{PD1}{\224}% U+FB02  
14807 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
14808 \DeclareTextCommand{\L}{PD1}{\225}% U+0141

14809 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
14810 \DeclareTextCommand{\OE}{PD1}{\226}% U+0152  
14811 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
14812 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227}% U+0160  
14813 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
14814 \DeclareTextCompositeCommand{"}{PD1}{Y}{\230}% U+0178  
14815 \DeclareTextCommand{\IJ}{PD1}{IJ}% ligature U+0049 U+004A  
14816 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
14817 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231}% U+017D  
14818 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
14819 \DeclareTextCommand{\i}{PD1}{\232}% U+0131  
14820 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
14821 \DeclareTextCommand{\l}{PD1}{\233}% U+0142  
14822 % U+0153 LATIN SMALL LIGATURE OE; oe  
14823 \DeclareTextCommand{\oe}{PD1}{\234}% U+0153  
14824 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
14825 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235}% U+0161  
14826 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
14827 \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.

14828 % U+20AC EURO SIGN; \*Euro, euro  
14829 \DeclareTextCommand{\texteuro}{PD1}{\240}% U+20AC  
14830 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
14831 \DeclareTextCommand{\textexclamdown}{PD1}{\241}% U+00A1  
14832 % U+00A2 CENT SIGN; cent  
14833 \DeclareTextCommand{\textcent}{PD1}{\242}% U+00A2  
14834 % U+00A3 POUND SIGN; sterling  
14835 \DeclareTextCommand{\textsterling}{PD1}{\243}% U+00A3  
14836 % U+00A4 CURRENCY SIGN; currency  
14837 \DeclareTextCommand{\textcurrency}{PD1}{\244}% U+00A4  
14838 % U+00A5 YEN SIGN; yen  
14839 \DeclareTextCommand{\textyen}{PD1}{\245}% U+00A5  
14840 % U+00A6 BROKEN BAR; brokenbar  
14841 \DeclareTextCommand{\textbrokenbar}{PD1}{\246}% U+00A6  
14842 % U+00A7 SECTION SIGN; section  
14843 \DeclareTextCommand{\textsection}{PD1}{\247}% U+00A7  
14844 % U+00A8 DIAERESIS; dieresis  
14845 \DeclareTextCommand{\textasciidieresis}{PD1}{\250}% U+00A8  
14846 % U+00A9 COPYRIGHT SIGN; copyright  
14847 \DeclareTextCommand{\textcopyright}{PD1}{\251}% U+00A9  
14848 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
14849 \DeclareTextCommand{\textordfeminine}{PD1}{\252}% U+00AA  
14850 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetleft  
14851 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB  
14852 \DeclareTextCommand{\guillemetleft}{PD1}{\253}% U+00AB  
14853 % U+00AC NOT SIGN; logicalnot  
14854 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC  
14855 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not

No glyph \255 in PDFDocEncoding.

14856 % U+00AE REGISTERED SIGN; registered  
14857 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE  
14858 % U+00AF MACRON; \*macron, overscore

14859 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF  
14860 % U+00B0 DEGREE SIGN; degree  
14861 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0  
14862 % U+00B1 PLUS-MINUS SIGN; plusminus  
14863 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1  
14864 % U+00B2 SUPERSCRIPT TWO; twosuperior  
14865 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}%\* U+00B2  
14866 % U+00B3 SUPERSCRIPT THREE; threesuperior  
14867 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}%\* U+00B3  
14868 % U+00B4 ACUTE ACCENT; acute  
14869 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4  
14870 % U+00B5 MICRO SIGN; mu, mul  
14871 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5  
14872 % U+00B6 PILCROW SIGN; paragraph  
14873 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6  
14874 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
14875 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7  
14876 % U+00B8 CEDILLA; cedilla  
14877 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8  
14878 % U+00B9 SUPERSCRIPT ONE; onesuperior  
14879 \DeclareTextCommand{\textonesuperior}{PD1}{\271}%\* U+00B9  
14880 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
14881 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA  
14882 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetright  
14883 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB  
14884 \DeclareTextCommand{\guillemetright}{PD1}{\273}% U+00BB  
14885 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
14886 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC  
14887 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
14888 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD  
14889 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
14890 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE  
14891 % U+00BF INVERTED QUESTION MARK; questiondown  
14892 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF  
14893 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
14894 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0  
14895 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
14896 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1  
14897 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
14898 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2  
14899 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
14900 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3  
14901 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
14902 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304}% U+00C4  
14903 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
14904 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5  
14905 % U+00C6 LATIN CAPITAL LETTER AE; AE  
14906 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6  
14907 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
14908 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7  
14909 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
14910 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310}% U+00C8  
14911 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
14912 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311}% U+00C9

14913 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
14914 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312}% U+00CA  
14915 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
14916 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313}% U+00CB  
14917 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
14918 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314}% U+00CC  
14919 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
14920 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315}% U+00CD  
14921 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
14922 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316}% U+00CE  
14923 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
14924 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317}% U+00CF  
14925 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
14926 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0  
14927 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0  
14928 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
14929 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321}% U+00D1  
14930 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
14931 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322}% U+00D2  
14932 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
14933 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323}% U+00D3  
14934 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
14935 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324}% U+00D4  
14936 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
14937 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325}% U+00D5  
14938 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
14939 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326}% U+00D6  
14940 % U+00D7 MULTIPLICATION SIGN; multiply  
14941 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7  
14942 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
14943 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8  
14944 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
14945 \DeclareTextCompositeCommand{\`}{PD1}{U}{\331}% U+00D9  
14946 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
14947 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332}% U+00DA  
14948 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
14949 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333}% U+00DB  
14950 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
14951 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334}% U+00DC  
14952 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
14953 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335}% U+00DD  
14954 % U+00DE LATIN CAPITAL LETTER THORN; Thorn; \TH, \Thorn (wasysym)  
14955 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE  
14956 \DeclareTextCommand{\textThorn}{PD1}{\336}%\* U+00DE  
14957 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
14958 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF  
14959 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
14960 \DeclareTextCompositeCommand{\`}{PD1}{a}{\340}% U+00E0  
14961 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
14962 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341}% U+00E1  
14963 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
14964 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342}% U+00E2  
14965 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
14966 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343}% U+00E3

14967 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
14968 \DeclareTextCompositeCommand{"}{PD1}{a}{\344}% U+00E4  
14969 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
14970 \DeclareTextCompositeCommand{r}{PD1}{a}{\345}% U+00E5  
14971 % U+00E6 LATIN SMALL LETTER AE; ae  
14972 \DeclareTextCommand{\ae}{PD1}{\346}% U+00E6  
14973 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
14974 \DeclareTextCompositeCommand{c}{PD1}{c}{\347}% U+00E7  
14975 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
14976 \DeclareTextCompositeCommand{`}{PD1}{e}{\350}% U+00E8  
14977 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
14978 \DeclareTextCompositeCommand{'}{PD1}{e}{\351}% U+00E9  
14979 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
14980 \DeclareTextCompositeCommand{^}{PD1}{e}{\352}% U+00EA  
14981 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
14982 \DeclareTextCompositeCommand{"}{PD1}{e}{\353}% U+00EB  
14983 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
14984 \DeclareTextCompositeCommand{`}{PD1}{i}{\354}% U+00EC  
14985 \DeclareTextCompositeCommand{`}{PD1}{i}{\354}% U+00EC  
14986 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
14987 \DeclareTextCompositeCommand{'}{PD1}{i}{\355}% U+00ED  
14988 \DeclareTextCompositeCommand{'}{PD1}{i}{\355}% U+00ED  
14989 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
14990 \DeclareTextCompositeCommand{^}{PD1}{i}{\356}% U+00EE  
14991 \DeclareTextCompositeCommand{^}{PD1}{i}{\356}% U+00EE  
14992 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
14993 \DeclareTextCompositeCommand{"}{PD1}{i}{\357}% U+00EF  
14994 \DeclareTextCompositeCommand{"}{PD1}{i}{\357}% U+00EF  
14995 % U+00F0 LATIN SMALL LETTER ETH; eth  
14996 \DeclareTextCommand{\dh}{PD1}{\360}% U+00F0  
14997 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
14998 \DeclareTextCompositeCommand{~}{PD1}{n}{\361}% U+00F1  
14999 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
15000 \DeclareTextCompositeCommand{`}{PD1}{o}{\362}% U+00F2  
15001 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
15002 \DeclareTextCompositeCommand{'}{PD1}{o}{\363}% U+00F3  
15003 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
15004 \DeclareTextCompositeCommand{^}{PD1}{o}{\364}% U+00F4  
15005 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
15006 \DeclareTextCompositeCommand{~}{PD1}{o}{\365}% U+00F5  
15007 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
15008 \DeclareTextCompositeCommand{"}{PD1}{o}{\366}% U+00F6  
15009 % U+00F7 DIVISION SIGN; divide  
15010 \DeclareTextCommand{\textdivide}{PD1}{\367}% U+00F7  
15011 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
15012 \DeclareTextCommand{\o}{PD1}{\370}% U+00F8  
15013 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
15014 \DeclareTextCompositeCommand{`}{PD1}{u}{\371}% U+00F9  
15015 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
15016 \DeclareTextCompositeCommand{'}{PD1}{u}{\372}% U+00FA  
15017 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
15018 \DeclareTextCompositeCommand{^}{PD1}{u}{\373}% U+00FB  
15019 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
15020 \DeclareTextCompositeCommand{"}{PD1}{u}{\374}% U+00FC

```

15021 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute
15022 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375}% U+00FD
15023 % U+00FE LATIN SMALL LETTER THORN; thorn; \th, \thorn (wasysym)
15024 \DeclareTextCommand{\th}{PD1}{\376}% U+00FE
15025 \DeclareTextCommand{\textthorn}{PD1}{\376}%* U+00FE
15026 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis
15027 \DeclareTextCompositeCommand{"}{PD1}{y}{\377}% U+00FF
15028 \DeclareTextCommand{\ij}{PD1}{ij}% ligature U+0069 U+006A

```

Glyphs that consist of several characters.

```

15029 \DeclareTextCommand{\SS}{PD1}{SS}%
15030 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}%

```

Aliases (german.sty)

```

15031 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}%
15032 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}%
15033 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}%
15034 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}%
15035 \DeclareTextCommand{\textflqq}{PD1}{\guillemetleft}%
15036 \DeclareTextCommand{\textfrqq}{PD1}{\guillemetright}%
15037 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}%
15038 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}%

```

Aliases (math names)

```

15039 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}%
15040 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}%
15041 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}%
15042 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}%
15043 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}%
15044 \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).

```

15045 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek
15046 \DeclareTextCompositeCommand{\'}{PD1}{c}{c}% cacute
15047 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek
15048 \DeclareTextCompositeCommand{\'}{PD1}{n}{n}% nacute
15049 \DeclareTextCompositeCommand{\'}{PD1}{s}{s}% sacute
15050 \DeclareTextCompositeCommand{\'}{PD1}{z}{z}% zacute
15051 \DeclareTextCompositeCommand{\.}{PD1}{z}{z}% zdot
15052 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek
15053 \DeclareTextCompositeCommand{\'}{PD1}{C}{C}% Cacute
15054 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek
15055 \DeclareTextCompositeCommand{\'}{PD1}{N}{N}% Nacute
15056 \DeclareTextCompositeCommand{\'}{PD1}{S}{S}% Sacute
15057 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z}% Zacute
15058 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z}% Zdot
15059 </pd1enc>

```

## 47.2 PU encoding

```

15060 <*puenc>
15061 \DeclareFontEncoding{PU}{}{}

```

### 47.2.1 NFSS2 accents

15062 % U+0300 COMBINING GRAVE ACCENT; gravecmb, \*gravecomb  
15063 \DeclareTextCommand{\`}{PU}[1]{#1\83\000}% U+0300  
15064 % U+0301 COMBINING ACUTE ACCENT; acutecmb, \*acutecomb  
15065 \DeclareTextCommand{\'}{PU}[1]{#1\83\001}% U+0301  
15066 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb  
15067 \DeclareTextCommand{\^}{PU}[1]{#1\83\002}% U+0302  
15068 % U+0303 COMBINING TILDE; tildecmb, \*tildecomb  
15069 \DeclareTextCommand{\~}{PU}[1]{#1\83\003}% U+0303  
15070 % U+0304 COMBINING MACRON; macroncmb  
15071 \DeclareTextCommand{\=}{PU}[1]{#1\83\004}% U+0304  
15072 % U+0306 COMBINING BREVE; brevecmb  
15073 \DeclareTextCommand{\u}{PU}[1]{#1\83\006}% U+0306  
15074 \ifx\CYRDZE\@undefined \else  
15075 \DeclareTextCommand{\U}{PU}[1]{#1\83\006}% U+0306  
15076 \fi  
15077 % U+0307 COMBINING DOT ABOVE; dotaccentcmb  
15078 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307  
15079 % U+0308 COMBINING DIAERESIS; dieresiscmb  
15080 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308  
15081 % U+030A COMBINING RING ABOVE; ringcmb  
15082 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A  
15083 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb  
15084 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B  
15085 % U+030C COMBINING CARON; caroncmb  
15086 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C  
15087 \end{puenc}  
15088 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb  
15089 \puextra\DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F  
15090 \end{puenc}  
15091 \ifx\CYRDZE\@undefined \else  
15092 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F  
15093 \fi  
15094 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
15095 \DeclareTextCommand{\textinvbreve}{PU}[1]{#1\83\021}% U+0311  
15096 \DeclareTextCommand{\newtie}{PU}[1]{#1\83\021}% U+0311  
15097 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcomb  
15098 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323  
15099 % U+0324 COMBINING DIAERESIS BELOW; dieresisbelowcmb; \textsubum-  
laut (tipa)  
15100 \DeclareTextCommand{\textsubumlaut}{PU}[1]{#1\83\044}% U+0324  
15101 % U+0325 COMBINING RING BELOW; ringbelowcmb; \textsubring (tipa)  
15102 \DeclareTextCommand{\textsubring}{PU}[1]{#1\83\045}% U+0325  
15103 % U+0327 COMBINING CEDILLA; cedillacmb  
15104 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327  
15105 % U+0328 COMBINING OGONEK; ogonekcmb  
15106 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328  
15107 % U+032D COMBINING CIRCUMFLEX ACCENT BELOW;  
15108 % \textsubcircum (tipa)  
15109 \DeclareTextCommand{\textsubcircum}{PU}[1]{#1\83\055}% U+032D  
15110 % U+032E COMBINING BREVE BELOW; brevebelowcmb  
15111 \DeclareTextCommand{\textsubbreve}{PU}[1]{#1\83\056}% U+032E  
15112 % U+0330 COMBINING TILDE BELOW; tildebelowcmb; \textsubtilde (tipa)  
15113 \DeclareTextCommand{\textsubtilde}{PU}[1]{#1\83\060}% U+0330  
15114 % U+0331 COMBINING MACRON BELOW; macronbelowcmb

15115 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331  
15116 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb  
15117 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361  
15118 % U+20DD COMBINING ENCLOSING CIRCLE  
15119 \DeclareTextCommand{\textcircled}{PU}[1]{#1\9040\335}% U+20DD

Double accents.

15120 \DeclareTextCommand{\textacutemacron}{PU}[1]{#1\83\001\83\004}% U+0301 U+0304  
15121 \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.

15122 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textasciigrave}%  
15123 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}%  
15124 \DeclareTextCompositeCommand{\^}{PU}{\@empty}{\textasciicircum}%  
15125 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}%  
15126 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textasciidieresis}%  
15127 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}%  
15128 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textasciicaron}%  
15129 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}%  
15130 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}%  
15131 \DeclareTextCompositeCommand{\u}{PU}{\@empty}{\textasciibreve}%  
15132 (/puenc)  
15133 (puextra)\DeclareTextCompositeCommand{\G}{PU}{\@empty}{\textdoublegrave}%  
15134 (\*puenc)  
15135 \DeclareTextCompositeCommand{\=}{PU}{\@empty}{\textasciimacron}%  
15136 \DeclareTextCompositeCommand{\H}{PU}{\@empty}{\texthungarumlaut}%  
15137 \DeclareTextCompositeCommand{\k}{PU}{\@empty}{\textogonek}%  
15138 \DeclareTextCompositeCommand{\textinvbreve}{PU}{\@empty}{\83\021}% U+0311  
15139 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{\@empty}{\83\044}% U+0324  
15140 \DeclareTextCompositeCommand{\textsubring}{PU}{\@empty}{\textringlow}%  
15141 \DeclareTextCompositeCommand{\textsubcircum}{PU}{\@empty}{\textcircumlow}%  
15142 \DeclareTextCompositeCommand{\textsubbreve}{PU}{\@empty}{\83\056}% U+032E  
15143 \DeclareTextCompositeCommand{\textsubtilde}{PU}{\@empty}{\texttildelow}%  
15144 \DeclareTextCompositeCommand{\b}{PU}{\@empty}{\textmacronbelow}%  
15145 \DeclareTextCompositeCommand{\d}{PU}{\@empty}{\textdotbelow}%  
15146 \DeclareTextCompositeCommand{\t}{PU}{\@empty}{\texttie}%  
15147 \DeclareTextCompositeCommand{\newtie}{PU}{\@empty}{\textnewtie}%  
15148 \DeclareTextCompositeCommand{\textcircled}{PU}{\@empty}{\textbigcircle}%  
15149 \DeclareTextCompositeCommand{\textacutemacron}{PU}{\@empty}{\83\001\83\004}% U+0301 U+0304  
15150 \DeclareTextCompositeCommand{\textgravemacron}{PU}{\@empty}{\83\000\83\004}% U+0300 U+0304  
15151 \DeclareTextCompositeCommand{\`}{PU}{\ }{\textasciigrave}%  
15152 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textacute}%  
15153 \DeclareTextCompositeCommand{\^}{PU}{\ }{\textasciicircum}%  
15154 \DeclareTextCompositeCommand{\~}{PU}{\ }{\texttilde}%  
15155 \DeclareTextCompositeCommand{\"}{PU}{\ }{\textasciidieresis}%  
15156 \DeclareTextCompositeCommand{\r}{PU}{\ }{\textring}%  
15157 \DeclareTextCompositeCommand{\v}{PU}{\ }{\textasciicaron}%  
15158 \DeclareTextCompositeCommand{\.}{PU}{\ }{\textdotaccent}%  
15159 \DeclareTextCompositeCommand{\c}{PU}{\ }{\textcedilla}%  
15160 \DeclareTextCompositeCommand{\u}{PU}{\ }{\textasciibreve}%  
15161 (/puenc)  
15162 (puextra)\DeclareTextCompositeCommand{\G}{PU}{\ }{\textdoublegrave}%



15163 (\*puenc)  
15164 \DeclareTextCompositeCommand{\=} {PU}{\ }{\textasciimacron}%  
15165 \DeclareTextCompositeCommand{\H} {PU}{\ }{\texthungarumlaut}%  
15166 \DeclareTextCompositeCommand{\k} {PU}{\ }{\textogonek}%  
15167 \DeclareTextCompositeCommand{\textinvbreve} {PU}{\ }{\{\ \83\021\}}% U+0311  
15168 \DeclareTextCompositeCommand{\textsubumlaut} {PU}{\ }{\{\ \83\044\}}% U+0324  
15169 \DeclareTextCompositeCommand{\textsubring} {PU}{\ }{\textringlow}%  
15170 \DeclareTextCompositeCommand{\textsubcircum} {PU}{\ }{\textcircumlown}%  
15171 \DeclareTextCompositeCommand{\textsubbreve} {PU}{\ }{\{\ \83\056\}}% U+032E  
15172 \DeclareTextCompositeCommand{\textsubtilde} {PU}{\ }{\texttildelow}%  
15173 \DeclareTextCompositeCommand{\b} {PU}{\ }{\textmacronbelow}%  
15174 \DeclareTextCompositeCommand{\d} {PU}{\ }{\textdotbelow}%  
15175 \DeclareTextCompositeCommand{\t} {PU}{\ }{\texttie}%  
15176 \DeclareTextCompositeCommand{\newtie} {PU}{\ }{\textnewtie}%  
15177 \DeclareTextCompositeCommand{\textcircled} {PU}{\ }{\textbigcircle}%  
15178 \DeclareTextCompositeCommand{\textacutemacron} {PU}{\ }{\{\ \83\001\83\004\}}% U+0301 U+0304  
15179 \DeclareTextCompositeCommand{\textgravemacron} {PU}{\ }{\{\ \83\000\83\004\}}% U+0300 U+0304

Accents for capitals (see encoding TS1)

15180 \DeclareTextCommand{\capitalcedilla} {PU}[1]{\c{#1}}%  
15181 \DeclareTextCommand{\capitalogonek} {PU}[1]{\k{#1}}%  
15182 \DeclareTextCommand{\capitalgrave} {PU}[1]{\`{#1}}%  
15183 \DeclareTextCommand{\capitalacute} {PU}[1]{\'{#1}}%  
15184 \DeclareTextCommand{\capitalcircumflex} {PU}[1]{\^{#1}}%  
15185 \DeclareTextCommand{\capitaltilde} {PU}[1]{\~{#1}}%  
15186 \DeclareTextCommand{\capitaldieresis} {PU}[1]{\"{#1}}%  
15187 \DeclareTextCommand{\capitalhungarumlaut} {PU}[1]{\H{#1}}%  
15188 \DeclareTextCommand{\capitalring} {PU}[1]{\r{#1}}%  
15189 \DeclareTextCommand{\capitalcaron} {PU}[1]{\v{#1}}%  
15190 \DeclareTextCommand{\capitalbreve} {PU}[1]{\u{#1}}%  
15191 \DeclareTextCommand{\capitalmacron} {PU}[1]{\={#1}}%  
15192 \DeclareTextCommand{\capitaldotaccent} {PU}[1]{\.\{#1}}%  
15193 \DeclareTextCommand{\capitaltie} {PU}[1]{\t{#1}}%  
15194 \DeclareTextCommand{\capitalnewtie} {PU}[1]{\newtie{#1}}%

#### 47.2.2 Basic Latin: U+0000 to U+007F

Special white space escape characters.

15195 % U+0009 (CHARACTER TABULATION)  
15196 \DeclareTextCommand{\textHT} {PU}{\80\011}% U+0009  
15197 % U+000A (LINE FEED)  
15198 \DeclareTextCommand{\textLF} {PU}{\80\012}% U+000A  
15199 % U+000D (CARRIAGE RETURN)  
15200 \DeclareTextCommand{\textCR} {PU}{\80\015}% U+000D  
\80\040: U+0020 SPACE; space, spacehackarabic  
\80\041: U+0021 EXCLAMATION MARK; exclam  
15201 % U+0022 QUOTATION MARK; quotedbl  
15202 \DeclareTextCommand{\textquotedbl} {PU}{"}% \80\042 U+0022  
15203 % U+0023 NUMBER SIGN; numbersign  
15204 \DeclareTextCommand{\textnumbersign} {PU}{\80\043}% U+0023  
15205 % U+0024 DOLLAR SIGN; dollar  
15206 \DeclareTextCommand{\textdollar} {PU}{\80\044}% U+0024  
15207 %\* \textdollar -> \mathdollar  
15208 %\* \textdollar -> \EyesDollar (marvosym)  
15209 % U+0025 PERCENT SIGN; percent

15210 \DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025  
15211 % U+0026 AMPERSAND; ampersand  
15212 \DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026  
15213 %\* \textampersand -> \binampersand (stmaryrd)  
15214 %\* \textampersand -> \with (cml)  
15215 % U+0027 APOSTROPHE; quotesingle  
15216 \DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027  
15217 % U+0028 LEFT PARENTHESIS; parenleft  
15218 \DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028  
15219 % U+0029 RIGHT PARENTHESIS; parenright  
15220 \DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029  
15221 % U+002A ASTERISK; asterisk; (?)  
15222 \DeclareTextCommand{\textasteriskcentered}{PU}{\80\052}% U+002A  
15223 % U+002B PLUS SIGN; plus; \MVPlus (marvosym)  
15224 \DeclareTextCommand{\textMVPlus}{PU}{\80\053}%\* U+002B  
15225 % U+002C COMMA; comma; \MVComma (marvosym)  
15226 \DeclareTextCommand{\textMVComma}{PU}{\80\054}%\* U+002C  
15227 % U+002D HYPHEN-MINUS; hyphen; \MVMinus (marvosym)  
15228 \DeclareTextCommand{\textMVMinus}{PU}{\80\055}%\* U+002D  
15229 % U+002E FULL STOP; period; \MVPeriod (marvosym)  
15230 \DeclareTextCommand{\textMVPeriod}{PU}{\80\056}%\* U+002E  
15231 % U+002F SOLIDUS; slash; \MVDivision (marvosym)  
15232 \DeclareTextCommand{\textMVDivision}{PU}{\80\057}%\* U+002F  
15233 % U+0030 DIGIT ZERO; zero; \MVZero (marvosym)  
15234 \DeclareTextCommand{\textMVZero}{PU}{\80\060}%\* U+0030  
15235 % U+0031 DIGIT ONE; one; \MVOne (marvosym)  
15236 \DeclareTextCommand{\textMVOne}{PU}{\80\061}%\* U+0031  
15237 % U+0032 DIGIT TWO; two; \MVTwo (marvosym)  
15238 \DeclareTextCommand{\textMVTwo}{PU}{\80\062}%\* U+0032  
15239 % U+0033 DIGIT THREE; three; \MVThree (marvosym)  
15240 \DeclareTextCommand{\textMVThree}{PU}{\80\063}%\* U+0033  
15241 % U+0034 DIGIT FOUR; four; \MVFour (marvosym)  
15242 \DeclareTextCommand{\textMVFour}{PU}{\80\064}%\* U+0034  
15243 % U+0035 DIGIT FIVE; five; \MVFive (marvosym)  
15244 \DeclareTextCommand{\textMVFive}{PU}{\80\065}%\* U+0035  
15245 % U+0036 DIGIT SIX; six; \MVSix (marvosym)  
15246 \DeclareTextCommand{\textMVSix}{PU}{\80\066}%\* U+0036  
15247 % U+0037 DIGIT SEVEN; seven; \MVSeven (marvosym)  
15248 \DeclareTextCommand{\textMVSeven}{PU}{\80\067}%\* U+0037  
15249 % U+0038 DIGIT EIGHT; eight; \MVEight (marvosym)  
15250 \DeclareTextCommand{\textMVEight}{PU}{\80\070}%\* U+0038  
15251 % U+0039 DIGIT NINE; nine; \MVNine (marvosym)  
15252 \DeclareTextCommand{\textMVNine}{PU}{\80\071}%\* U+0039  
  
\80\072: U+003A COLON; colon  
\80\073: U+003B SEMICOLON; semicolon  
  
15253 % U+003C LESS-THAN SIGN; less  
15254 \DeclareTextCommand{\textless}{PU}{<}% \80\074 U+003C  
  
\80\075: U+003D EQUALS SIGN; equal  
  
15255 % U+003E GREATER-THAN SIGN; greater  
15256 \DeclareTextCommand{\textgreater}{PU}{>}% \80\076 U+003E  
  
\80\077: U+003F QUESTION MARK; question  
  
15257 % U+0040 COMMERCIAL AT; at; \MVAt (marvosym)

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15258 \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
15259 % U+005C REVERSE SOLIDUS; backslash
15260 \DeclareTextCommand{\textbackslash}{PU}{\80\134}% U+005C
\80\135: U+005D RIGHT SQUARE BRACKET; bracketright
15261 % U+005E CIRCUMFLEX ACCENT; asciicircum
15262 \DeclareTextCommand{\textasciicircum}{PU}{\80\136}% U+005E
15263 % U+005F LOW LINE; underscore
15264 \DeclareTextCommand{\textunderscore}{PU}{\80\137}% U+005F
15265 %* \textunderscore -> \mathunderscore (LaTeX)
15266 % U+0060 GRAVE ACCENT; grave
15267 \DeclareTextCommand{\textasciigrave}{PU}{\80\140}% U+0060
\80\141: U+0061 LATIN SMALL LETTER A; a
...
\80\150: U+0068 LATIN SMALL LETTER H; h
15268 % U+0069 LATIN SMALL LETTER I; i
15269 \DeclareTextCompositeCommand{\.}{PU}{i}{i}% \80\151 U+0069
15270 \DeclareTextCompositeCommand{\.}{PU}{i}{i}% \80\151 U+0069
\80\152: U+006A LATIN SMALL LETTER J; j
...
\80\172: U+007A LATIN SMALL LETTER Z; z
15271 % U+007B LEFT CURLY BRACKET; braceleft
15272 \DeclareTextCommand{\textbraceleft}{PU}{\80\173}% U+007B
15273 % U+007C VERTICAL LINE; *bar, verticalbar
15274 \DeclareTextCommand{\textbar}{PU}{|}% \80\174 U+007C
15275 %* \textbar -> \textvtrline (tipa)
15276 % U+007D RIGHT CURLY BRACKET; braceright
15277 \DeclareTextCommand{\textbraceright}{PU}{\80\175}% U+007D
15278 % U+007E TILDE; asciitilde
15279 \DeclareTextCommand{\textasciitilde}{PU}{\80\176}% U+007E

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### 47.2.3 Latin-1 Supplement: U+0080 to U+00FF

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\80\240: U+00A0 NO-BREAK SPACE; nbspace, nonbreakingspace
15280 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown
15281 \DeclareTextCommand{\textexclamdown}{PU}{\80\241}% U+00A1
15282 % U+00A2 CENT SIGN; cent
15283 \DeclareTextCommand{\textcent}{PU}{\80\242}% U+00A2
15284 % U+00A3 POUND SIGN; sterling
15285 \DeclareTextCommand{\textsterling}{PU}{\80\243}% U+00A3
15286 %* \textsterling -> \mathsterling (LaTeX)
15287 %* \textsterling -> \pounds (LaTeX)
15288 % U+00A4 CURRENCY SIGN; currency
15289 \DeclareTextCommand{\textcurrency}{PU}{\80\244}% U+00A4
15290 % U+00A5 YEN SIGN; yen
15291 \DeclareTextCommand{\textyen}{PU}{\80\245}% U+00A5
15292 % U+00A6 BROKEN BAR; brokenbar
15293 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246}% U+00A6

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15294 %\* \textbrokenbar -> \brokenvert (wasysym)  
15295 % U+00A7 SECTION SIGN; section  
15296 \DeclareTextCommand{\textsection}{PU}{\80\247}% U+00A7  
15297 %\* \textsection -> \mathsection (LaTeX)  
15298 %\* \textsection -> \S (LaTeX)  
15299 % U+00A8 DIAERESIS; dieresis  
15300 \DeclareTextCommand{\textasciidieresis}{PU}{\80\250}% U+00A8  
15301 % U+00A9 COPYRIGHT SIGN; copyright  
15302 \DeclareTextCommand{\textcopyright}{PU}{\80\251}%\* U+00A9  
15303 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
15304 \DeclareTextCommand{\textordfeminine}{PU}{\80\252}% U+00AA  
15305 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetleft  
15306 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB  
15307 \DeclareTextCommand{\guillemetleft}{PU}{\80\253}% U+00AB  
15308 % U+00AC NOT SIGN; logicalnot  
15309 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254}% U+00AC  
15310 \DeclareTextCommand{\textlnot}{PU}{\80\254}% U+00AC  
\80\255: U+00AD SOFT HYPHEN; sfthyphen, softthyphen  
15311 % U+00AE REGISTERED SIGN; registered  
15312 \DeclareTextCommand{\textregistered}{PU}{\80\256}% U+00AE  
15313 % U+00AF MACRON; \*macron, overscore  
15314 \DeclareTextCommand{\textasciimacron}{PU}{\80\257}% U+00AF  
15315 % U+00B0 DEGREE SIGN; degree  
15316 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0  
15317 % U+00B1 PLUS-MINUS SIGN; plusminus  
15318 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1  
15319 % U+00B2 SUPERSCRIPT TWO; twosuperior  
15320 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}%\* U+00B2  
15321 % U+00B3 SUPERSCRIPT THREE; threesuperior  
15322 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}%\* U+00B3  
15323 % U+00B4 ACUTE ACCENT; acute  
15324 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4  
15325 \DeclareTextCommand{\textasciiacute}{PU}{\80\264}% U+00B4  
15326 % U+00B5 MICRO SIGN; mu, mu1  
15327 \DeclareTextCommand{\textmu}{PU}{\80\265}% U+00B5  
15328 % U+00B6 PILCROW SIGN; paragraph  
15329 \DeclareTextCommand{\textparagraph}{PU}{\80\266}% U+00B6  
15330 %\* \textparagraph -> \mathparagraph (LaTeX)  
15331 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
15332 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267}% U+00B7  
15333 %\* \textperiodcentered -> \MultiplicationDot (marvosym)  
15334 %\* \textperiodcentered -> \Squaredot (marvosym)  
15335 % U+00B8 CEDILLA; cedilla  
15336 \DeclareTextCommand{\textcedilla}{PU}{\80\270}% U+00B8  
15337 % U+00B9 SUPERSCRIPT ONE; onesuperior  
15338 \DeclareTextCommand{\textonesuperior}{PU}{\80\271}%\* U+00B9  
15339 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
15340 \DeclareTextCommand{\textordmasculine}{PU}{\80\272}% U+00BA  
15341 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetright  
15342 \DeclareTextCommand{\guillemotright}{PU}{\80\273}% U+00BB  
15343 \DeclareTextCommand{\guillemetright}{PU}{\80\273}% U+00BB  
15344 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
15345 \DeclareTextCommand{\textonequarter}{PU}{\80\274}% U+00BC  
15346 % U+00BD VULGAR FRACTION ONE HALF; onehalf

15347 \DeclareTextCommand{\textonehalf}{PU}{\80\275}% U+00BD  
15348 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
15349 \DeclareTextCommand{\textthreequarters}{PU}{\80\276}% U+00BE  
15350 % U+00BF INVERTED QUESTION MARK; questiondown  
15351 \DeclareTextCommand{\textquestiondown}{PU}{\80\277}% U+00BF  
15352 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
15353 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
15354 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
15355 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
15356 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
15357 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302}% U+00C2  
15358 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
15359 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
15360 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
15361 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304}% U+00C4  
15362 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
15363 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305}% U+00C5  
15364 % U+00C6 LATIN CAPITAL LETTER AE; AE  
15365 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6  
15366 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
15367 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7  
15368 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
15369 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
15370 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
15371 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
15372 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
15373 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312}% U+00CA  
15374 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
15375 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313}% U+00CB  
15376 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
15377 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
15378 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
15379 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
15380 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
15381 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316}% U+00CE  
15382 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
15383 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317}% U+00CF  
15384 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
15385 \DeclareTextCommand{\DH}{PU}{\80\320}% U+00D0  
15386 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
15387 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321}% U+00D1  
15388 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
15389 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
15390 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
15391 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
15392 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
15393 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324}% U+00D4  
15394 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
15395 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
15396 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
15397 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326}% U+00D6  
15398 % U+00D7 MULTIPLICATION SIGN; multiply  
15399 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7  
15400 %\* \textmultiply -> \vartimes (stmaryrd)

15401 %\* \textmultiply -> \MVMultiplication (marvosym)  
15402 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
15403 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8  
15404 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
15405 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9  
15406 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
15407 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA  
15408 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
15409 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333}% U+00DB  
15410 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
15411 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334}% U+00DC  
15412 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
15413 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD  
15414 % U+00DE LATIN CAPITAL LETTER THORN; Thorn; \TH, \Thorn (wasysym)  
15415 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE  
15416 \DeclareTextCommand{\textThorn}{PU}{\80\336}%\* U+00DE  
15417 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
15418 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF  
15419 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
15420 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0  
15421 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
15422 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1  
15423 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
15424 \DeclareTextCompositeCommand{\^}{PU}{a}{\80\342}% U+00E2  
15425 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
15426 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
15427 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
15428 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344}% U+00E4  
15429 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
15430 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5  
15431 % U+00E6 LATIN SMALL LETTER AE; ae  
15432 \DeclareTextCommand{\ae}{PU}{\80\346}% U+00E6  
15433 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
15434 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7  
15435 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
15436 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8  
15437 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
15438 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
15439 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
15440 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA  
15441 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
15442 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353}% U+00EB  
15443 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
15444 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
15445 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC  
15446 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
15447 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
15448 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
15449 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
15450 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
15451 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
15452 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
15453 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
15454 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF

15455 % U+00F0 LATIN SMALL LETTER ETH; eth  
15456 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0  
15457 %\* \dh -> \eth (wsuipa, phonetic)  
15458 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
15459 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361}% U+00F1  
15460 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
15461 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
15462 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
15463 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
15464 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
15465 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364}% U+00F4  
15466 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
15467 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
15468 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
15469 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366}% U+00F6  
15470 % U+00F7 DIVISION SIGN; divide  
15471 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7  
15472 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
15473 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8  
15474 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
15475 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
15476 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
15477 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
15478 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
15479 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373}% U+00FB  
15480 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
15481 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374}% U+00FC  
15482 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
15483 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
15484 % U+00FE LATIN SMALL LETTER THORN; thorn;  
15485 % \th, \thorn (wasysym), \textthorn (tipa)  
15486 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE  
15487 \DeclareTextCommand{\textthorn}{PU}{\80\376}%\* U+00FE  
15488 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
15489 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377}% U+00FF

#### 47.2.4 Latin Extended-A: U+0080 to U+017F

15490 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron  
15491 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% U+0100  
15492 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron  
15493 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% U+0101  
15494 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve  
15495 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% U+0102  
15496 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve  
15497 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% U+0103  
15498 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek  
15499 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% U+0104  
15500 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek  
15501 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% U+0105  
15502 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacute  
15503 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% U+0106  
15504 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacute  
15505 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% U+0107

15506 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex  
15507 \DeclareTextCompositeCommand{\~}{PU}{C}{\81\010}% U+0108  
15508 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex  
15509 \DeclareTextCompositeCommand{\~}{PU}{c}{\81\011}% U+0109  
15510 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotaccent  
cent  
15511 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% U+010A  
15512 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent  
15513 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% U+010B  
15514 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron  
15515 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% U+010C  
15516 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron  
15517 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% U+010D  
15518 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron  
15519 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% U+010E  
15520 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron  
15521 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% U+010F  
15522 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash  
15523 \DeclareTextCommand{\DJ}{PU}{\81\020}% U+0110  
15524 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron;  
15525 % \textcrd (tipa)  
15526 \DeclareTextCommand{\dj}{PU}{\81\021}% U+0111  
15527 \DeclareTextCommand{\textcrd}{PU}{\81\021}% U+0111  
15528 %\* \textcrd -> \crossd (wsuipa)  
15529 % An alternate glyph with the stroke through the bowl:  
15530 %\* \textcrd -> \textbard (tipa)  
15531 %\* \textcrd -> \bard (wsuipa)  
15532 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron  
15533 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% U+0112  
15534 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron  
15535 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% U+0113  
15536 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve  
15537 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% U+0114  
15538 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve  
15539 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% U+0115  
15540 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent  
15541 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% U+0116  
15542 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent  
15543 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% U+0117  
15544 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek  
15545 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% U+0118  
15546 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek  
15547 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% U+0119  
15548 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron  
15549 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% U+011A  
15550 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron  
15551 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% U+011B  
15552 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex  
15553 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% U+011C  
15554 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex  
15555 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% U+011D  
15556 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve  
15557 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% U+011E  
15558 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve



15559 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% U+011F  
15560 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotaccent  
15561 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% U+0120  
15562 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent  
15563 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% U+0121  
15564 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcommaaccent  
15565 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% U+0122  
15566 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent  
15567 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% U+0123  
15568 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex  
15569 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% U+0124  
15570 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex  
15571 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% U+0125  
15572 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar  
15573 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126  
15574 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar; \hbar (AmS)  
15575 \DeclareTextCommand{\texthbar}{PU}{\81\047}%\* U+0127  
15576 %\* \texthbar -> \textcrh (tipa)  
15577 %\* \texthbar -> \crossh (wsuipa)  
15578 %\* \texthbar -> \planck (phonetic)  
15579 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; Itilde  
15580 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128  
15581 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde  
15582 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
15583 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
15584 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron  
15585 \DeclareTextCompositeCommand{\=} {PU}{I}{\81\052}% U+012A  
15586 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron  
15587 \DeclareTextCompositeCommand{\=} {PU}{i}{\81\053}% U+012B  
15588 \DeclareTextCompositeCommand{\=} {PU}{i}{\81\053}% U+012B  
15589 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibreve  
15590 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C  
15591 % U+012D LATIN SMALL LETTER I WITH BREVE; ibreve  
15592 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
15593 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
15594 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek  
15595 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E  
15596 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek  
15597 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
15598 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
15599 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent  
15600 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% U+0130  
15601 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
15602 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131  
15603 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ  
15604 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132  
15605 % U+0133 LATIN SMALL LIGATURE IJ; ij  
15606 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133  
15607 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex  
15608 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% U+0134  
15609 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex  
15610 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135

15611 `\DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135`  
15612 `% U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaaccent`  
15613 `\DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136`  
15614 `% U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent`  
15615 `\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 chosen `\textkra`.

15616 `% U+0138 LATIN SMALL LETTER KRA; kgreenlandic`  
15617 `\DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138`  
15618 `% U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute`  
15619 `\DeclareTextCompositeCommand{\'}{PU}{L}{\81\071}% U+0139`  
15620 `% U+013A LATIN SMALL LETTER L WITH ACUTE; lacute`  
15621 `\DeclareTextCompositeCommand{\'}{PU}{l}{\81\072}% U+013A`  
15622 `% U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaaccent`  
15623 `\DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B`  
15624 `% U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent`  
15625 `\DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C`  
15626 `% U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron`  
15627 `\DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D`  
15628 `% U+013E LATIN SMALL LETTER L WITH CARON; lcaron`  
15629 `\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`.

15630 `% U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotaccent`  
15631 `\DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F`  
15632 `% U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent`  
15633 `\DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140`  
15634 `% U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash`  
15635 `\DeclareTextCommand{\L}{PU}{\81\101}% U+0141`  
15636 `% U+0142 LATIN SMALL LETTER L WITH STROKE; lslash`  
15637 `\DeclareTextCommand{\l}{PU}{\81\102}% U+0142`  
15638 `% U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute`  
15639 `\DeclareTextCompositeCommand{\'}{PU}{N}{\81\103}% U+0143`  
15640 `% U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute`  
15641 `\DeclareTextCompositeCommand{\'}{PU}{n}{\81\104}% U+0144`  
15642 `% U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaaccent`  
15643 `\DeclareTextCompositeCommand{\c}{PU}{N}{\81\105}% U+0145`  
15644 `% U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent`  
15645 `\DeclareTextCompositeCommand{\c}{PU}{n}{\81\106}% U+0146`  
15646 `% U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron`  
15647 `\DeclareTextCompositeCommand{\v}{PU}{N}{\81\107}% U+0147`  
15648 `% U+0148 LATIN SMALL LETTER N WITH CARON; ncaron`  
15649 `\DeclareTextCompositeCommand{\v}{PU}{n}{\81\110}% U+0148`  
15650 `% U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napostrophe, quoterightn`  
15651 `\DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149`  
15652 `% U+014A LATIN CAPITAL LETTER ENG; Eng`

15653 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A  
15654 % U+014B LATIN SMALL LETTER ENG; eng  
15655 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B  
15656 %\* \ng -> \eng (wsuipa)  
15657 %\* \ng -> \engma (phonetic)  
15658 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron  
15659 \DeclareTextCompositeCommand{=} {PU}{O}{\81\114}% U+014C  
15660 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron  
15661 \DeclareTextCompositeCommand{=} {PU}{o}{\81\115}% U+014D  
15662 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve  
15663 \DeclareTextCompositeCommand{\u} {PU}{O}{\81\116}% U+014E  
15664 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve  
15665 \DeclareTextCompositeCommand{\u} {PU}{o}{\81\117}% U+014F  
15666 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odblac-  
cute, Ohungarumlaut  
15667 \DeclareTextCompositeCommand{\H} {PU}{O}{\81\120}% U+0150  
15668 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odbla-  
cute, ohungarumlaut  
15669 \DeclareTextCompositeCommand{\H} {PU}{o}{\81\121}% U+0151  
15670 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
15671 \DeclareTextCommand{\OE}{PU}{\81\122}% U+0152  
15672 % U+0153 LATIN SMALL LIGATURE OE; oe  
15673 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153  
15674 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute  
15675 \DeclareTextCompositeCommand{\'} {PU}{R}{\81\124}% U+0154  
15676 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute  
15677 \DeclareTextCompositeCommand{\'} {PU}{r}{\81\125}% U+0155  
15678 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcommaac-  
cent  
15679 \DeclareTextCompositeCommand{\c} {PU}{R}{\81\126}% U+0156  
15680 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcommaaccent  
15681 \DeclareTextCompositeCommand{\c} {PU}{r}{\81\127}% U+0157  
15682 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron  
15683 \DeclareTextCompositeCommand{\v} {PU}{R}{\81\130}% U+0158  
15684 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron  
15685 \DeclareTextCompositeCommand{\v} {PU}{r}{\81\131}% U+0159  
15686 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute  
15687 \DeclareTextCompositeCommand{\'} {PU}{S}{\81\132}% U+015A  
15688 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute  
15689 \DeclareTextCompositeCommand{\'} {PU}{s}{\81\133}% U+015B  
15690 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex  
15691 \DeclareTextCompositeCommand{\^} {PU}{S}{\81\134}% U+015C  
15692 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex  
15693 \DeclareTextCompositeCommand{\^} {PU}{s}{\81\135}% U+015D  
15694 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla  
15695 \DeclareTextCompositeCommand{\c} {PU}{S}{\81\136}% U+015E  
15696 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla  
15697 \DeclareTextCompositeCommand{\c} {PU}{s}{\81\137}% U+015F  
15698 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
15699 \DeclareTextCompositeCommand{\v} {PU}{S}{\81\140}% U+0160  
15700 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
15701 \DeclareTextCompositeCommand{\v} {PU}{s}{\81\141}% U+0161  
15702 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcommaac-  
cent

15703 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162  
15704 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcommaaccent  
15705 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163  
15706 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron  
15707 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164  
15708 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron  
15709 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165  
15710 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar  
15711 \DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166  
15712 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar  
15713 \DeclareTextCommand{\texttslash}{PU}{\81\147}% U+0167  
15714 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde  
15715 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168  
15716 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde  
15717 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
15718 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron  
15719 \DeclareTextCompositeCommand{\=} {PU}{U}{\81\152}% U+016A  
15720 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron  
15721 \DeclareTextCompositeCommand{\=} {PU}{u}{\81\153}% U+016B  
15722 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve  
15723 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154}% U+016C  
15724 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve  
15725 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155}% U+016D  
15726 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring  
15727 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156}% U+016E  
15728 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring  
15729 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157}% U+016F  
15730 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Udblacute, Uhungarumlaut  
15731 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160}% U+0170  
15732 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; udblacute, uhungarumlaut  
15733 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161}% U+0171  
15734 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek  
15735 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162}% U+0172  
15736 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek  
15737 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163}% U+0173  
15738 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex  
15739 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164}% U+0174  
15740 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex  
15741 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165}% U+0175  
15742 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex  
15743 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166}% U+0176  
15744 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex  
15745 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167}% U+0177  
15746 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
15747 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170}% U+0178  
15748 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute  
15749 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171}% U+0179  
15750 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute  
15751 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172}% U+017A  
15752 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent  
15753 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173}% U+017B  
15754 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent

15755 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174}% U+017C  
15756 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
15757 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175}% U+017D  
15758 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
15759 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176}% U+017E  
15760 % U+017F LATIN SMALL LETTER LONG S; longs, slong  
15761 \DeclareTextCommand{\textlongS}{PU}{\81\177}% U+017F

#### 47.2.5 Latin Extended-B: U+0180 to U+024F

15762 % U+0180 LATIN SMALL LETTER B WITH STROKE; bstroke; \textcrb (tipa)  
15763 \DeclareTextCommand{\textcrb}{PU}{\81\200}% U+0180  
15764 %\* \textcrb -> \crossb (wsuipa)  
15765 % An alternate glyph with the stroke through the bowl:  
15766 %\* \textcrb -> \textbarb (tipa)  
15767 %\* \textcrb -> \barb (wsuipa)  
15768 % U+0181 LATIN CAPITAL LETTER B WITH HOOK; Bhook; \hausaB (pho-  
netic)  
15769 \DeclareTextCommand{\texthausaB}{PU}{\81\201}%\* U+0181  
15770 % U+0188 LATIN SMALL LETTER C WITH HOOK; chook; \texthtc (tipa)  
15771 \DeclareTextCommand{\texthtc}{PU}{\81\210}% U+0188  
15772 % U+018A LATIN CAPITAL LETTER D WITH HOOK; Dhook; \hausaD (pho-  
netic)  
15773 \DeclareTextCommand{\texthausaD}{PU}{\81\212}%\* U+018A  
15774 % U+018E LATIN CAPITAL LETTER REVERSED E; Ereversed  
15775 \DeclareTextCommand{\textEreversed}{PU}{\81\216}% U+018E  
15776 \DeclareTextCommand{\textrevE}{PU}{\81\216}% U+018E  
15777 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
15778 \DeclareTextCommand{\textflorin}{PU}{\81\222}% U+0192  
15779 %\* \textflorin -> \Florin (marvosym)  
15780 % U+0195 LATIN SMALL LETTER HV; hv; \texthvlig (tipa)  
15781 \DeclareTextCommand{\texthvlig}{PU}{\81\225}% U+0195  
15782 %\* \texthvlig -> \hv (wsuipa)  
15783 % U+0198 LATIN CAPITAL LETTER K WITH HOOK; Khook; \hausaK (pho-  
netic)  
15784 \DeclareTextCommand{\texthausaK}{PU}{\81\230}%\* U+0198  
15785 % U+0199 LATIN SMALL LETTER K WITH HOOK; khook; \texthtk (tipa)  
15786 \DeclareTextCommand{\texthtk}{PU}{\81\231}% U+0199  
15787 %\* \texthtk -> \hausak (phonetic)  
15788 % U+019A LATIN SMALL LETTER L WITH BAR; lbar;  
15789 % \textbarl (tipa), \barl (wsuipa)  
15790 \DeclareTextCommand{\textbarl}{PU}{\81\232}%\* U+019A  
15791 % U+019B LATIN SMALL LETTER LAMBDA WITH STROKE/  
15792 % LATIN SMALL LETTER BARRED LAMBDA; lambdastroke;  
15793 % \textcrlambda (tipa)  
15794 \DeclareTextCommand{\textcrlambda}{PU}{\81\233}% U+019B  
15795 %\* \textcrlambda -> \crossnilambda (wsuipa)  
15796 %\* \textcrlambda -> \barlambda (phonetic)  
15797 %\* \textcrlambda -> \lambdabar (txfonts/pxfonts)  
15798 %\* \textcrlambda -> \lambdash (txfonts/pxfonts)  
15799 % U+019E LATIN SMALL LETTER N WITH LONG RIGHT LEG; nletright-  
long;  
15800 % \textnrleg (tipx)  
15801 \DeclareTextCommand{\textPUnrleg}{PU}{\81\236}% U+019E  
15802 %\* \textPUnrleg -> \textnrleg (tipx)

15803 % U+01A5 LATIN SMALL LETTER P WITH HOOK; phook; \texthtp (tipa)  
15804 \DeclareTextCommand{\texthtp}{PU}{\81\245}% U+01A5  
15805 % U+01AB LATIN SMALL LETTER T WITH PALATAL HOOK; tpalatalhook;  
15806 % \textlhookt (tipa)  
15807 \DeclareTextCommand{\textlhookt}{PU}{\81\253}% U+01AB  
15808 % U+01AD LATIN SMALL LETTER T WITH HOOK; thook; \texthtt (tipa)  
15809 \DeclareTextCommand{\texthtt}{PU}{\81\255}% U+01AD  
15810 % U+01B9 LATIN SMALL LETTER EZH REVERSED/  
15811 % LATIN SMALL LETTER REVERSED YOGH; \textrevyogh (tipa)  
15812 \DeclareTextCommand{\textrevyogh}{PU}{\81\271}% U+01B9  
15813 % U+01BB LATIN LETTER TWO WITH STROKE; twostroke; \textcrtwo (tipa)  
15814 \DeclareTextCommand{\textcrtwo}{PU}{\81\273}% U+01BB  
15815 % U+01BE LATIN LETTER INVERTED GLOTTAL STOP WITH STROKE;  
15816 % glottalinvertedstroke; \textcrinvglotstop (tipa)  
15817 \DeclareTextCommand{\textcrinvglotstop}{PU}{\81\276}% U+01BE  
15818 % U+01BF LATIN LETTER WYNN; wynn; \textwynn (tipa)  
15819 \DeclareTextCommand{\textwynn}{PU}{\81\277}% U+01BF  
15820 % U+01C0 LATIN LETTER DENTAL CLICK/LATIN LETTER PIPE; clickden-  
tal;  
15821 % \textpipe (tipa)  
15822 \DeclareTextCommand{\textpipe}{PU}{\81\300}% U+01C0  
15823 %\* \textpipe -> \textpipevar (tipx)  
15824 % U+01C1 LATIN LETTER LATERAL CLICK/LATIN LETTER  
15825 % DOUBLE PIPE; clicklateral; \textdoublepipe (tipa)  
15826 \DeclareTextCommand{\textdoublepipe}{PU}{\81\301}% U+01C1  
15827 %\* \textdoublepipe -> \textdoublepipevar (tipx)  
15828 % U+01C2 LATIN LETTER ALVEOLAR CLICK/LATIN LETTER PIPE DOU-  
BLE BAR;  
15829 % clickalveolar; \textdoublebarpipe (tipa)  
15830 \DeclareTextCommand{\textdoublebarpipe}{PU}{\81\302}% U+01C2  
15831 %\* \textdoublebarpipe -> \textdoublebarpipevar (tipx)  
15832 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron  
15833 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315}% U+01CD  
15834 % U+01CE LATIN SMALL LETTER A WITH CARON; acaron  
15835 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316}% U+01CE  
15836 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icaron  
15837 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317}% U+01CF  
15838 % U+01D0 LATIN SMALL LETTER I WITH CARON; icaron  
15839 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
15840 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
15841 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocaron  
15842 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1  
15843 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocaron  
15844 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2  
15845 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucaron  
15846 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3  
15847 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucaron  
15848 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4  
15849 % U+01DD LATIN SMALL LETTER TURNED E; eturned; \inve (wasysym)  
15850 \DeclareTextCommand{\textinve}{PU}{\81\335}%\* U+01DD  
15851 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke  
15852 \DeclareTextCommand{\textGslash}{PU}{\81\344}% U+01E4  
15853 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke  
15854 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5

15855 %\* \textgslash -> \textcrg (tipa)  
15856 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcaron  
15857 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6  
15858 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcaron  
15859 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7  
15860 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcaron  
15861 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8  
15862 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcaron  
15863 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9  
15864 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek  
15865 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA  
15866 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek  
15867 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB  
15868 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcaron  
15869 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
15870 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
15871 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute  
15872 \DeclareTextCompositeCommand{\'}{PU}{G}{\81\364}% U+01F4  
15873 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute  
15874 \DeclareTextCompositeCommand{\'}{PU}{g}{\81\365}% U+01F5  
15875 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE  
15876 \DeclareTextCompositeCommand{\`}{PU}{N}{\81\370}% U+01F8  
15877 % U+01F9 LATIN SMALL LETTER N WITH GRAVE  
15878 \DeclareTextCompositeCommand{\`}{PU}{n}{\81\371}% U+01F9  
15879 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute  
15880 \DeclareTextCompositeCommand{\'}{PU}{\AE}{\81\374}% U+01FC  
15881 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute  
15882 \DeclareTextCompositeCommand{\'}{PU}{\ae}{\81\375}% U+01FD  
15883 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE;  
15884 % \*Oslashacute, Ostrokeacut  
15885 \DeclareTextCompositeCommand{\'}{PU}{\O}{\81\376}% U+01FE  
15886 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE;  
15887 % \*oslashacute, ostrokeacut  
15888 \DeclareTextCompositeCommand{\'}{PU}{\o}{\81\377}% U+01FF  
15889 (/puenc)  
15890 (\*puextra)  
15891 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave  
15892 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200  
15893 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave  
15894 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201  
15895 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave  
15896 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204  
15897 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave  
15898 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205  
15899 (/puextra)  
15900 (\*puenc)  
15901 % U+0206 LATIN CAPITAL LETTER E WITH INVERTED BREVE; Einvert-  
edbreve  
15902 \DeclareTextCompositeCommand{\textinvbreve}{PU}{E}{\82\006}% U+0206  
15903 % U+0207 LATIN SMALL LETTER E WITH INVERTED BREVE; einvert-  
breve  
15904 \DeclareTextCompositeCommand{\textinvbreve}{PU}{e}{\82\007}% U+0207  
15905 (/puenc)  
15906 (\*puextra)

15907 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; Idblgrave  
15908 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208  
15909 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave  
15910 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
15911 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
15912 \puextra  
15913 \puenc  
15914 % U+020A LATIN CAPITAL LETTER I WITH INVERTED BREVE; Iinverted-  
breve  
15915 \DeclareTextCompositeCommand{\textinvbreve}{PU}{I}{\82\012}% U+020A  
15916 % U+020B LATIN SMALL LETTER I WITH INVERTED BREVE; iinverted-  
breve  
15917 \DeclareTextCompositeCommand{\textinvbreve}{PU}{i}{\82\013}% U+020B  
15918 \DeclareTextCompositeCommand{\textinvbreve}{PU}{i}{\82\013}% U+020B  
15919 \puextra  
15920 \puextra  
15921 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave  
15922 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C  
15923 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave  
15924 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D  
15925 \puextra  
15926 \puenc  
15927 % U+020E LATIN CAPITAL LETTER O WITH INVERTED BREVE; Oinverted-  
edbreve  
15928 \DeclareTextCompositeCommand{\textinvbreve}{PU}{O}{\82\016}% U+020E  
15929 % U+020F LATIN SMALL LETTER O WITH INVERTED BREVE; oinverted-  
breve  
15930 \DeclareTextCompositeCommand{\textinvbreve}{PU}{o}{\82\017}% U+020F  
15931 \puenc  
15932 \puextra  
15933 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave  
15934 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210  
15935 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave  
15936 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211  
15937 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave  
15938 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214  
15939 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave  
15940 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215  
15941 \puextra  
15942 \puenc  
15943 % U+0216 LATIN CAPITAL LETTER U WITH INVERTED BREVE; Uinverted-  
edbreve  
15944 \DeclareTextCompositeCommand{\textinvbreve}{PU}{U}{\82\026}% U+0216  
15945 % U+0217 LATIN SMALL LETTER U WITH INVERTED BREVE; uinverted-  
breve  
15946 \DeclareTextCompositeCommand{\textinvbreve}{PU}{u}{\82\027}% U+0217  
15947 % U+021E LATIN CAPITAL LETTER H WITH CARON  
15948 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E  
15949 % U+021F LATIN SMALL LETTER H WITH CARON  
15950 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F  
15951 % U+0221 LATIN SMALL LETTER D WITH CURL; \textctd (tipa)  
15952 \DeclareTextCommand{\textctd}{PU}{\82\041}% U+0221  
15953 % U+0225 LATIN SMALL LETTER Z WITH HOOK; \textcommatailz (tipa)  
15954 \DeclareTextCommand{\textcommatailz}{PU}{\82\045}% U+0225



15955 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE  
15956 \DeclareTextCompositeCommand{\.}{PU}{A}{\82\046}% U+0226  
15957 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE  
15958 \DeclareTextCompositeCommand{\.}{PU}{a}{\82\047}% U+0227  
15959 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA  
15960 \DeclareTextCompositeCommand{\c}{PU}{E}{\82\050}% U+0228  
15961 % U+0229 LATIN SMALL LETTER E WITH CEDILLA  
15962 \DeclareTextCompositeCommand{\c}{PU}{e}{\82\051}% U+0229  
15963 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE  
15964 \DeclareTextCompositeCommand{\.}{PU}{O}{\82\056}% U+022E  
15965 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE  
15966 \DeclareTextCompositeCommand{\.}{PU}{o}{\82\057}% U+022F  
15967 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON  
15968 \DeclareTextCompositeCommand{\=} {PU}{Y}{\82\062}% U+0232  
15969 % U+0233 LATIN SMALL LETTER Y WITH MACRON  
15970 \DeclareTextCompositeCommand{\=} {PU}{y}{\82\063}% U+0233  
15971 % U+0235 LATIN SMALL LETTER N WITH CURL; \textctn (tipa)  
15972 \DeclareTextCommand{\textctn}{PU}{\82\065}% U+0235  
15973 % U+0236 LATIN SMALL LETTER T WITH CURL; \textctt (tipa)  
15974 \DeclareTextCommand{\textctt}{PU}{\82\066}% U+0236  
15975 % U+0237 LATIN SMALL LETTER DOTLESS J  
15976 \DeclareTextCommand{\j}{PU}{\82\067}% U+0237  
15977 % U+0238 LATIN SMALL LETTER DB DIGRAPH; \textdblig (tipx)  
15978 \DeclareTextCommand{\textPUdblig}{PU}{\82\070}% U+0238  
15979 %\* \textPUdblig -> \textdblig (tipx)  
15980 % U+0239 LATIN SMALL LETTER QP DIGRAPH; \textqplig (tipx)  
15981 \DeclareTextCommand{\textPUqplig}{PU}{\82\071}% U+0239  
15982 %\* \textPUqplig -> \textqplig (tipx)  
15983 % U+023C LATIN SMALL LETTER C WITH STROKE; \slashc (wsuipa)  
15984 \DeclareTextCommand{\textslashc}{PU}{\82\074}%\* U+023C  
15985 %\* \textslashc -> \textcentoldstyle (textcomp)  
15986 % With bar instead of stroke:  
15987 %\* \textslashc -> \textbarc (tipa)

#### 47.2.6 IPA Extensions: U+0250 to U+02AF

15988 % U+0250 LATIN SMALL LETTER TURNED A; aturned; \textturna (tipa)  
15989 \DeclareTextCommand{\textturna}{PU}{\82\120}% U+0250  
15990 %\* \textturna -> \inva (wasysym)  
15991 % U+0251 LATIN SMALL LETTER ALPHA/LATIN SMALL LETTER  
15992 % SCRIPT A; ascript; \textscripta (tipa), \scripta (wsuipa)  
15993 \DeclareTextCommand{\textscripta}{PU}{\82\121}%\* U+0251  
15994 %\* \textscripta -> \vara (phonetic)  
15995 % U+0252 LATIN SMALL LETTER TURNED ALPHA; ascriptturned;  
15996 % \textturnscripta (tipa)  
15997 \DeclareTextCommand{\textturnscripta}{PU}{\82\122}% U+0252  
15998 %\* \textturnscripta -> \invscripta (wsuipa)  
15999 %\* \textturnscripta -> \rotvara (phonetic)  
16000 % U+0253 LATIN CAPITAL LETTER B WITH HOOK; bhook; \texthtb (tipa)  
16001 \DeclareTextCommand{\texthtb}{PU}{\82\123}% U+0253  
16002 %\* \texthtb -> \hookb (wsuipa)  
16003 %\* \texthtb -> \hausab (phonetic)  
16004 % U+0254 LATIN SMALL LETTER OPEN O; oopen;  
16005 % \textopeno (tipa), \openo (wasysym)  
16006 \DeclareTextCommand{\textopeno}{PU}{\82\124}%\* U+0254

16007 %\* \textopeno -> \varopeno (phonetic)  
16008 % U+0255 LATIN SMALL LETTER C WITH CURL; ccurl; \textctc (tipa)  
16009 \DeclareTextCommand{\textctc}{PU}{\82\125}% U+0255  
16010 %\* \textctc -> \curlyc (wsuipa)  
16011 % U+0256 LATIN SMALL LETTER D WITH TAIL; dtail; \textrtaild (tipa)  
16012 \DeclareTextCommand{\textrtaild}{PU}{\82\126}% U+0256  
16013 %\* \textrtaild -> \taild (wsuipa)  
16014 % U+0257 LATIN SMALL LETTER D WITH HOOK; dhook; \texthtd (tipa)  
16015 \DeclareTextCommand{\texthtd}{PU}{\82\127}% U+0257  
16016 %\* \texthtd -> \hookd (wsuipa)  
16017 %\* \texthtd -> \hausad (phonetic)  
16018 % U+0258 LATIN SMALL LETTER REVERSED E; ereversed;  
16019 % \textreve (tipa), \reve (wsuipa)  
16020 \DeclareTextCommand{\textreve}{PU}{\82\130}% U+0258  
16021 % U+0259 LATIN SMALL LETTER SCHWA; schwa;  
16022 % \textschwa (tipa), \schwa (wsuipa, phonetic)  
16023 \DeclareTextCommand{\textschwa}{PU}{\82\131}% U+0259  
16024 % U+025A LATIN SMALL LETTER SCHWA WITH HOOK; schwahook;  
16025 % \textrhookschwa (tipa)  
16026 \DeclareTextCommand{\textrhookschwa}{PU}{\82\132}% U+025A  
16027 %\* \textrhookschwa -> \er (wsuipa)  
16028 % U+025B LATIN SMALL LETTER OPEN E/LATIN SMALL LETTER EP-  
SILON; eopen;  
16029 % \niepsilon (wsuipa)  
16030 \DeclareTextCommand{\textniepsilon}{PU}{\82\133}% U+025B  
16031 %\* \textniepsilon -> \epsi (phonetic)  
16032 % U+025C LATIN SMALL LETTER REVERSED OPEN E; eopenreversed;  
16033 % \textrepsilon (tipa), \repsilon (wsuipa)  
16034 \DeclareTextCommand{\textrepsilon}{PU}{\82\134}% U+025C  
16035 % U+025D LATIN SMALL LETTER REVERSED OPEN E WITH HOOK; eopen-  
reversedhook;  
16036 % \textrhookrepsilon (tipa)  
16037 \DeclareTextCommand{\textrhookrepsilon}{PU}{\82\135}% U+025D  
16038 %\* \textrhookrepsilon -> \hookrepsilon (wsuipa)  
16039 % U+025E LATIN SMALL LETTER CLOSED REVERSED OPEN E; eopenre-  
versedclosed;  
16040 % \textcloserepsilon (tipa)  
16041 \DeclareTextCommand{\textcloserepsilon}{PU}{\82\136}% U+025E  
16042 %\* \textcloserepsilon -> \closedrepsilon (wsuipa)  
16043 % U+025F LATIN SMALL LETTER DOTLESS J WITH STROKE; jdot-  
lessstroke;  
16044 % \textbardotlessj (tipa)  
16045 \DeclareTextCommand{\textbardotlessj}{PU}{\82\137}% U+025F  
16046 %\* \textbardotlessj -> \barj (phonetic)  
16047 % U+0260 LATIN SMALL LETTER G WITH HOOK; ghook; \texthtg (tipa)  
16048 \DeclareTextCommand{\texthtg}{PU}{\82\140}% U+0260  
16049 %\* \texthtg -> \hookg (wsuipa)  
16050 % U+0261 LATIN SMALL LETTER SCRIPT G; gscript;  
16051 % \textscriptg (tipa), \scriptg (wsuipa)  
16052 \DeclareTextCommand{\textscriptg}{PU}{\82\141}% U+0261  
16053 %\* \textscriptg -> \varg (phonetic)  
16054 % U+0262 LATIN LETTER SMALL CAPITAL G; \textscg (tipa), \scg (wsuipa)  
16055 \DeclareTextCommand{\textscg}{PU}{\82\142}% U+0262  
16056 % U+0263 LATIN SMALL LETTER GAMMA; gammalatinsmall;

16057 % \ipagamma (wsuipa), \vod (phonetic)  
16058 \DeclareTextCommand{\textipagamma}{PU}{\82\143}%\* U+0263  
16059 %\* \textipagamma -> \vod (pnonetic)  
16060 % U+0264 LATIN SMALL LETTER RAMS HORN; ramshorn;  
16061 % \babygamma (wsuipa)  
16062 \DeclareTextCommand{\textbabygamma}{PU}{\82\144}%\* U+0264  
16063 % U+0265 LATIN SMALL LETTER TURNED H; hturned; \textturnh (tipa)  
16064 \DeclareTextCommand{\textturnh}{PU}{\82\145}% U+0265  
16065 %\* \textturnh -> \invh (wsuipa)  
16066 %\* \textturnh -> \udesc (phonetic)  
16067 % U+0266 LATIN SMALL LETTER H WITH HOOK; hhook; \texthth (tipa)  
16068 \DeclareTextCommand{\texthth}{PU}{\82\146}% U+0266  
16069 %\* \texthth -> \hookh (wsuipa)  
16070 %\* \texthth -> \voicedh (phonetic)  
16071 % U+0267 LATIN SMALL LETTER HENG WITH HOOK; henghook; \tex-  
ththeng (tipa)  
16072 \DeclareTextCommand{\texththeng}{PU}{\82\147}% U+0267  
16073 %\* \texththeng -> \hookheng (wsuipa)  
16074 % U+0268 LATIN SMALL LETTER I WITH STROKE;  
16075 % \textbari (tipa), \bari (wsuipa)  
16076 \DeclareTextCommand{\textbari}{PU}{\82\150}%\* U+0268  
16077 %\* \textbari -> \ibar (phonetic)  
16078 % U+0269 LATIN SMALL LETTER IOTA; iotalatin; \niiota (wsuipa)  
16079 \DeclareTextCommand{\textniiota}{PU}{\82\151}%\* U+0269  
16080 %\* \textniiota -> \vari (phonetic)  
16081 % U+026A LATIN LETTER SMALL CAPITAL I; \textsci (tipa), \sci (wsuipa)  
16082 \DeclareTextCommand{\textsci}{PU}{\82\152}%\* U+026A  
16083 % U+026B LATIN SMALL LETTER L WITH MIDDLE TILDE; lmiddletilde;  
16084 % \textltilde (tipa)  
16085 \DeclareTextCommand{\textltilde}{PU}{\82\153}% U+026B  
16086 %\* \textltilde -> \tildel (wsuipa)  
16087 % U+026C LATIN SMALL LETTER L WITH BELT; lbelt; \textbeltl (tipa)  
16088 \DeclareTextCommand{\textbeltl}{PU}{\82\154}% U+026C  
16089 %\* \textbeltl -> \latfrc (wsuipa)  
16090 % U+026D LATIN SMALL LETTER L WITH RETROFLEX HOOK;  
16091 % lhookretroflex; \textrtaill (tipa)  
16092 \DeclareTextCommand{\textrtaill}{PU}{\82\155}% U+026D  
16093 %\* \textrtaill -> \taill (wsuipa)  
16094 % U+026E LATIN SMALL LETTER LEZH; lezh; \textlyoghlig (tipa)  
16095 \DeclareTextCommand{\textlyoghlig}{PU}{\82\156}% U+026E  
16096 %\* \textlyoghlig -> \lz (wsuipa)  
16097 % U+026F LATIN SMALL LETTER TURNED M; mturned; \textturnm (tipa)  
16098 \DeclareTextCommand{\textturnm}{PU}{\82\157}% U+026F  
16099 %\* \textturnm -> \invm (wsuipa)  
16100 %\* \textturnm -> \rotm (phonetic)  
16101 % U+0270 LATIN SMALL LETTER TURNED M WITH LONG LEG; mlongleg-  
turned;  
16102 % \textturnmrleg (tipa)  
16103 \DeclareTextCommand{\textturnmrleg}{PU}{\82\160}% U+0270  
16104 %\* \textturnmrleg -> \legm (wsuipa)  
16105 % U+0271 LATIN SMALL LETTER M WITH HOOK; mhook; \textltailm (tipa)  
16106 \DeclareTextCommand{\textltailm}{PU}{\82\161}% U+0271  
16107 %\* \textltailm -> \labdentalnas (wsuipa)  
16108 %\* \textltailm -> \emgma (phonetic)

16109 % U+0272 LATIN SMALL LETTER N WITH LEFT HOOK; nhookleft; \textl-  
tailn (tipa)  
16110 \DeclareTextCommand{\textltailn}{PU}{\82\162}% U+0272  
16111 %\* \textltailn -> \nj (wsuipa)  
16112 %\* \textltailn -> \enya (phonetic)  
16113 % U+0273 LATIN SMALL LETTER N WITH RETROFLEX HOOK;  
16114 % nhookretroflex; \textrtailn (tipa)  
16115 \DeclareTextCommand{\textrtailn}{PU}{\82\163}% U+0273  
16116 %\* \textrtailn -> \tailn (wsuipa)  
16117 % U+0274 LATIN LETTER SMALL CAPITAL N; \textscn (tipa), \scn (wsuipa)  
16118 \DeclareTextCommand{\textscn}{PU}{\82\164}%\* U+0274  
16119 % U+0275 LATIN CAPITAL LETTER O WITH MIDDLE TILDE/  
16120 % LATIN CAPITAL LETTER BARRED O; obarred;  
16121 % \textbaro (tipa), \baro (wsuipa)  
16122 % But \baro from stmaryrd is different!  
16123 \DeclareTextCommand{\textbaro}{PU}{\82\165}% U+0275  
16124 % U+0276 LATIN LETTER SMALL CAPITAL OE; \textscoeelig (tipa)  
16125 \DeclareTextCommand{\textscoeelig}{PU}{\82\166}% U+0276  
16126 % U+0277 LATIN SMALL LETTER CLOSED OMEGA; omegalatinclosed;  
16127 % \textcloseomega (tipa)  
16128 \DeclareTextCommand{\textcloseomega}{PU}{\82\167}% U+0277  
16129 %\* \textcloseomega -> \closedniomega (wsuipa)  
16130 %\* \textcloseomega -> \varomega (phonetic)  
16131 % U+0278 LATIN SMALL LETTER PHI; philatin; \nipher (wsuipa)  
16132 \DeclareTextCommand{\textnipher}{PU}{\82\170}%\* U+0278  
16133 % U+0279 LATIN SMALL LETTER TURNED R; rturned; \textturnr (tipa)  
16134 \DeclareTextCommand{\textturnr}{PU}{\82\171}% U+0279  
16135 %\* \textturnr -> \invr (wsuipa)  
16136 %\* \textturnr -> \rotr (phonetic)  
16137 % U+027A LATIN SMALL LETTER TURNED R WITH LONG LEG;  
16138 % rlonglegturned; \textturnlongleg (tipa)  
16139 \DeclareTextCommand{\textturnlongleg}{PU}{\82\172}% U+027A  
16140 %\* \textturnlongleg -> \invleg (wsuipa)  
16141 % U+027B LATIN SMALL LETTER TURNED R WITH HOOK; rhookturned;  
16142 % \textturnrrtail (tipa)  
16143 \DeclareTextCommand{\textturnrrtail}{PU}{\82\173}% U+027B  
16144 %\* \textturnrrtail -> \tailinvr (wsuipa)  
16145 % U+027C LATIN SMALL LETTER R WITH LONG LEG; rlongleg; \textlon-  
gleg (tipa)  
16146 \DeclareTextCommand{\textlongleg}{PU}{\82\174}%\* U+027C  
16147 %\* \textlongleg -> \leg (wsuipa)  
16148 % U+027D LATIN SMALL LETTER R WITH TAIL; rhook; \textrtailr (tipa)  
16149 \DeclareTextCommand{\textrtailr}{PU}{\82\175}% U+027D  
16150 %\* \textrtailr -> \tailr (wsuipa)  
16151 % U+027E LATIN SMALL LETTER R WITH FISHHOOK; rfishhook;  
16152 % \textfishhook (tipa)  
16153 \DeclareTextCommand{\textfishhook}{PU}{\82\176}% U+027E  
16154 %\* \textfishhook -> \flapr (wsuipa)  
16155 %\* \textfishhook -> \flap (phonetic)  
16156 % U+027F LATIN SMALL LETTER REVERSED R WITH FISHHOOK; rfish-  
hookreversed;  
16157 % \textlhtlongi (tipa)  
16158 \DeclareTextCommand{\textlhtlongi}{PU}{\82\177}% U+027F  
16159 % U+0280 LATIN LETTER SMALL CAPITAL R; \textscr (tipa), \scr (wsuipa)

16160 \DeclareTextCommand{\textscr}{PU}{\82\200}%\* U+0280  
16161 % U+0281 LATIN LETTER SMALL CAPITAL INVERTED R; Rsmallinverted;  
16162 % \textinvscr (tipa), \invscr (wsuipa)  
16163 \DeclareTextCommand{\textinvscr}{PU}{\82\201}%\* U+0281  
16164 % U+0282 LATIN SMALL LETTER S WITH HOOK; shook; \textrtails (tipa)  
16165 \DeclareTextCommand{\textrtails}{PU}{\82\202}% U+0282  
16166 %\* \textrtails -> \tails (wsuipa)  
16167 % U+0283 LATIN SMALL LETTER ESH; esh; \textesh (tipa), \esh (wsuipa)  
16168 \DeclareTextCommand{\textesh}{PU}{\82\203}%\* U+0283  
16169 % U+0284 LATIN SMALL LETTER DOTLESS J WITH STROKE AND HOOK;  
16170 % dotlessjstrokehook; \texthtbardotlessj (tipa)  
16171 \DeclareTextCommand{\texthtbardotlessj}{PU}{\82\204}% U+0284  
16172 % U+0285 LATIN SMALL LETTER SQUAT REVERSED ESH; eshsquatre-  
versed;  
16173 % \textvibyi (tipa)  
16174 \DeclareTextCommand{\textvibyi}{PU}{\82\205}% U+0285  
16175 % U+0286 LATIN SMALL LETTER ESH WITH CURL; eshcurl; \textctesh (tipa)  
16176 \DeclareTextCommand{\textctesh}{PU}{\82\206}% U+0286  
16177 %\* \textctesh -> \curlyesh (wsuipa)  
16178 % U+0287 LATIN SMALL LETTER TURNED T; tturned; \textturnt (tipa)  
16179 \DeclareTextCommand{\textturnt}{PU}{\82\207}% U+0287  
16180 %\* \textturnt -> \clickt (wsuipa)  
16181 % U+0288 LATIN SMALL LETTER T WITH RETROFLEX HOOK; retroflex-  
hook;  
16182 % \texttrtailt (tipa)  
16183 \DeclareTextCommand{\texttrtailt}{PU}{\82\210}% U+0288  
16184 %\* \texttrtailt -> \tailt (wsuipa)  
16185 % U+0289 LATIN SMALL LETTER U BAR; ubar;  
16186 % \textbaru (tipa), \baru (wsuipa)  
16187 \DeclareTextCommand{\textbaru}{PU}{\82\211}%\* U+0289  
16188 %\* \textbaru -> \ubar (phonetic)  
16189 % U+028A LATIN SMALL LETTER UPSILON; \niupsilon (wsuipa)  
16190 \DeclareTextCommand{\textniupsilon}{PU}{\82\212}%\* U+028A  
16191 %\* \textniupsilon -> \rotOmega (phonetic)  
16192 % U+028B LATIN SMALL LETTER V WITH HOOK/LATIN SMALL LET-  
TER SCRIPT V;  
16193 % vhook; \textscriptv (tipa), \scriptv (wsuipa)  
16194 \DeclareTextCommand{\textscriptv}{PU}{\82\213}%\* U+028B  
16195 % U+028C LATIN SMALL LETTER TURNED V; vturned; \textturnv (tipa)  
16196 \DeclareTextCommand{\textturnv}{PU}{\82\214}%\* U+028C  
16197 %\* \textturnv -> \invv (wsuipa)  
16198 %\* \textturnv -> \pwedge (phonetic)  
16199 % U+028D LATIN SMALL LETTER TURNED W; wturned; \textturnw (tipa)  
16200 \DeclareTextCommand{\textturnw}{PU}{\82\215}%\* U+028D  
16201 %\* \textturnw -> \invw (wsuipa)  
16202 %\* \textturnw -> \rotw (phonetic)  
16203 % U+028E LATIN SMALL LETTER TURNED Y; yturned; \textturny (tipa)  
16204 \DeclareTextCommand{\textturny}{PU}{\82\216}%\* U+028E  
16205 %\* \textturny -> \invy (wsuipa)  
16206 %\* \textturny -> \roty (phonetic)  
16207 % U+028F LATIN LETTER SMALL CAPITAL Y; \textscy (tipa), \scy (wsuipa)  
16208 \DeclareTextCommand{\textscy}{PU}{\82\217}%\* U+028F  
16209 % U+0290 LATIN SMALL LETTER Z WITH RETROFLEX HOOK; zretroflex-  
hook;

16210 % \textrtailz (tipa)  
16211 \DeclareTextCommand{\textrtailz}{PU}{\82\220}% U+0290  
16212 %\* \textrtailz -> \tailz (wsuipa)  
16213 % U+0291 LATIN SMALL LETTER Z WITH CURL; zcurl; \textctz (tipa)  
16214 \DeclareTextCommand{\textctz}{PU}{\82\221}% U+0291  
16215 %\* \textctz -> \curlyz (wsuipa)  
16216 % U+0292 LATIN SMALL LETTER EZH/LATIN SMALL LETTER YOGH; ezh;  
16217 % \textyogh (tipa), \yogh (wsuipa)  
16218 \DeclareTextCommand{\textyogh}{PU}{\82\222}%\* U+0292  
16219 % U+0293 LATIN SMALL LETTER EZH WITH CURL/LATIN SMALL LETTER YOGH CURL;  
16220 % ezhcurl; \textctyogh (tipa)  
16221 \DeclareTextCommand{\textctyogh}{PU}{\82\223}% U+0293  
16222 %\* \textctyogh -> \curlyyogh (wsuipa)  
16223 % U+0294 LATIN LETTER GLOTTAL STOP; glottalstop;  
16224 % \textglotstop (tipa), \glotstop (wsuipa)  
16225 \DeclareTextCommand{\textglotstop}{PU}{\82\224}%\* U+0294  
16226 %\* \textglotstop -> \ejective (wsuipa)  
16227 %\* \textglotstop -> \glottal (phonetic)  
16228 % U+0295 LATIN LETTER PHARYNGEAL VOICED FRICATIVE/  
16229 % LATIN LETTER REVERSED GLOTTAL STOP; glottalstopreversed;  
16230 % \textrevglotstop (tipa), \revglotstop (wsuipa)  
16231 \DeclareTextCommand{\textrevglotstop}{PU}{\82\225}%\* U+0295  
16232 %\* \textrevglotstop -> \reveject (wsuipa)  
16233 % U+0296 LATIN LETTER INVERTED GLOTTAL STOP; glottalstopinverted;  
16234 % \textinvglotstop (tipa), \invglotstop (wsuipa)  
16235 \DeclareTextCommand{\textinvglotstop}{PU}{\82\226}%\* U+0296  
16236 % U+0297 LATIN LETTER STRETCHED C; cstretched; \textstretchc (tipa)  
16237 \DeclareTextCommand{\textstretchc}{PU}{\82\227}% U+0297  
16238 %\* \textstretchc -> \clickc (wsuipa)  
16239 %\* \textstretchc -> \textstretchcvar (tipx)  
16240 % U+0298 LATIN LETTER BILABIAL CLICK; bilabialclick;  
16241 % \textbullseye (tipa)  
16242 \DeclareTextCommand{\textbullseye}{PU}{\82\230}% U+0298  
16243 %\* \textbullseye -> \clickb (wsuipa)  
16244 %\* \textbullseye -> \textObullseye (tipx)  
16245 % U+0299 LATIN LETTER SMALL CAPITAL B; \textscb (tipa)  
16246 \DeclareTextCommand{\textscb}{PU}{\82\231}% U+0299  
16247 % U+029A LATIN SMALL LETTER CLOSED OPEN E; eopenclosed;  
16248 % \textcloseepsilon (tipa)  
16249 \DeclareTextCommand{\textcloseepsilon}{PU}{\82\232}% U+029A  
16250 % U+029B LATIN LETTER SMALL CAPITAL G WITH HOOK; Gsmallhook;  
16251 % \texthtscg (tipa)  
16252 \DeclareTextCommand{\texthtscg}{PU}{\82\233}% U+029B  
16253 % U+029C LATIN LETTER SMALL CAPITAL H; \textsch (tipa)  
16254 \DeclareTextCommand{\textsch}{PU}{\82\234}% U+029C  
16255 % U+029D LATIN SMALL LETTER J WITH CROSSED-TAIL; jcrossed-tail;  
\textcdj (tipa)  
16256 \DeclareTextCommand{\textctj}{PU}{\82\235}% U+029D  
16257 %\* \textctj -> \textctjvar (tipx)  
16258 % U+029E LATIN SMALL LETTER TURNED K; kturned; \textturnk (tipa)  
16259 \DeclareTextCommand{\textturnk}{PU}{\82\236}% U+029E  
16260 %\* \textturnk -> \textturnsck (tipx)  
16261 % U+029F LATIN LETTER SMALL CAPITAL L; \textscL (tipa)

16262 \DeclareTextCommand{\textsc1}{PU}{\82\237}% U+029F  
16263 % U+02A0 LATIN SMALL LETTER Q WITH HOOK; qhook; \texthtq (tipa)  
16264 \DeclareTextCommand{\texthtq}{PU}{\82\240}% U+02A0  
16265 % U+02A1 LATIN LETTER GLOTTAL STOP WITH STROKE; glottalstop-  
stroke;  
16266 % \textbarglotstop (tipa)  
16267 \DeclareTextCommand{\textbarglotstop}{PU}{\82\241}% U+02A1  
16268 % U+02A2 LATIN LETTER REVERSED GLOTTAL STOP WITH STROKE/  
16269 % LATIN LETTER REVERSED GLOTTAL STOP BAR; glottalstopstrokere-  
versed;  
16270 % \textbarrevglotstop (tipa)  
16271 \DeclareTextCommand{\textbarrevglotstop}{PU}{\82\242}% U+02A2  
16272 % U+02A3 LATIN SMALL LETTER DZ DIGRAPH; dzaltone; \textdzlig (tipa)  
16273 \DeclareTextCommand{\textdzlig}{PU}{\82\243}% U+02A3  
16274 %\* \textdzlig -> \dz (wsupipa)  
16275 % U+02A4 LATIN SMALL LETTER DEZH DIGRAPH; dezh; \textdyogh-  
lig (tipa)  
16276 \DeclareTextCommand{\textdyoghlig}{PU}{\82\244}% U+02A4  
16277 % U+02A5 LATIN SMALL LETTER DZ DIGRAPH WITH CURL; dzcurl;  
16278 % \textdctzlig (tipa)  
16279 \DeclareTextCommand{\textdctzlig}{PU}{\82\245}% U+02A5  
16280 % U+02A6 LATIN SMALL LETTER TS DIGRAPH; ts; \texttslig (tipa)  
16281 \DeclareTextCommand{\texttslig}{PU}{\82\246}% U+02A6  
16282 % U+02A7 LATIN SMALL LETTER TESH DIGRAPH; tesh; \texttshlig (tipa)  
16283 \DeclareTextCommand{\texttshlig}{PU}{\82\247}% U+02A7  
16284 %\* \texttshlig -> \tesh (wsuipa)  
16285 % U+02A8 LATIN SMALL LETTER TC DIGRAPH WITH CURL; tccurl;  
16286 % \texttctclig (tipa)  
16287 \DeclareTextCommand{\texttctclig}{PU}{\82\250}% U+02A8  
16288 % U+02AE LATIN SMALL LETTER TURNED H WITH FISHHOOK;  
16289 % \textlhtlongy (tipa)  
16290 \DeclareTextCommand{\textlhtlongy}{PU}{\82\256}% U+02AE  
16291 % U+02AF LATIN SMALL LETTER TURNED H WITH FISHHOOK AND TAIL;  
16292 % \textvibyy (tipa)  
16293 \DeclareTextCommand{\textvibyy}{PU}{\82\257}% U+02AF

#### 47.2.7 Spacing Modifier Letters: U+02B0 to U+02FF

16294 % U+02BD MODIFIER LETTER REVERSED COMMA;  
16295 % commareversedmod, afi64937; \textrevapostrophe (tipa)  
16296 \DeclareTextCommand{\textrevapostrophe}{PU}{\82\275}% U+02BD  
16297 % U+02C0 MODIFIER LETTER GLOTTAL STOP; glottalstopmod;  
16298 % \textraiseglotstop (tipa)  
16299 \DeclareTextCommand{\textraiseglotstop}{PU}{\82\300}% U+02C0  
16300 % U+02C2 MODIFIER LETTER LEFT ARROWHEAD; arrowheadleftmod;  
16301 % \textlptr (tipa)  
16302 \DeclareTextCommand{\textlptr}{PU}{\82\302}% U+02C2  
16303 % U+02C3 MODIFIER LETTER RIGHT ARROWHEAD; arrowheadrightmod;  
16304 % \textrptr (tipa)  
16305 \DeclareTextCommand{\textrptr}{PU}{\82\303}% U+02C3  
16306 % U+02C7 CARON; caron  
16307 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7  
16308 % U+02C8 MODIFIER LETTER VERTICAL LINE; verticalinmod;  
16309 % \textprimstress (tipa)  
16310 \DeclareTextCommand{\textprimstress}{PU}{\82\310}% U+02C8

16311 % U+02CC MODIFIER LETTER LOW VERTICAL LINE; `verticallinelowmod`;  
 16312 % `\textsecstress` (tipa)  
 16313 `\DeclareTextCommand{\textsecstress}{PU}{\82\314}% U+02CC`  
 16314 % U+02D0 MODIFIER LETTER TRIANGULAR COLON; `colontriangularmod`;  
 16315 % `\textlengthmark` (tipa)  
 16316 `\DeclareTextCommand{\textlengthmark}{PU}{\82\320}% U+02D0`  
 16317 % U+02D1 MODIFIER LETTER HALF TRIANGULAR COLON; `colontriangularhalfmod`;  
 16318 % `\texthalflength` (tipa)  
 16319 `\DeclareTextCommand{\texthalflength}{PU}{\82\321}% U+02D1`  
 16320 % U+02D8 BREVE; `breve`  
 16321 `\DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8`  
 16322 % U+02D9 DOT ABOVE; `dotaccent`  
 16323 `\DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9`  
 16324 % U+02DA RING ABOVE; `ring`  
 16325 `\DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA`  
 16326 % U+02DB OGONEK; `ogonek`  
 16327 `\DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB`  
 16328 % U+02DC SMALL TILDE; `ilde`, `*tilde`  
 16329 `\DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC`  
 16330 % U+02DD DOUBLE ACUTE ACCENT; `hungarumlaut`  
 16331 `\DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD`  
 16332 `\DeclareTextCommand{\textacutedbl}{PU}{\82\335}% U+02DD`  
 16333 % U+02F3 MODIFIER LETTER LOW RING  
 16334 `\DeclareTextCommand{\textringlow}{PU}{\82\363}% U+02F3`  
 16335 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT  
 16336 `\DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5`  
 16337 % U+02F7 MODIFIER LETTER LOW TILDE  
 16338 `\DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7`  
 16339 % U+02F9 MODIFIER LETTER BEGIN HIGH TONE; `\textopencorner` (tipa)  
 16340 `\DeclareTextCommand{\textopencorner}{PU}{\82\371}% U+02F9`  
 16341 % U+02FA MODIFIER LETTER END HIGH TONE; `\textcorner` (tipa)  
 16342 `\DeclareTextCommand{\textcorner}{PU}{\82\372}% U+02FA`

#### 47.2.8 Combining Diacritical Marks: U+0300 to U+036F

16343 % U+030F COMBINING DOUBLE GRAVE ACCENT; `dblgravecmb`  
 16344 `\DeclareTextCommand{\textdoublegrave}{PU}{\83\017}% U+030F`  
 16345 % U+0311 COMBINING INVERTED BREVE; `breveinvertedcmb`  
 16346 `\DeclareTextCommand{\textnewtie}{PU}{\83\021}% U+0311`  
 16347 % U+0323 COMBINING DOT BELOW; `dotbelowcmb`, `*dotbelowcomb`  
 16348 `\DeclareTextCommand{\textdotbelow}{PU}{\83\043}% U+0323`  
 16349 % U+0331 COMBINING MACRON BELOW; `macronbelowcmb`  
 16350 `\DeclareTextCommand{\textmacronbelow}{PU}{\83\061}% U+0331`  
 16351 % U+0361 COMBINING DOUBLE INVERTED BREVE; `breveinverteddoublecmb`  
 16352 `\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.

16353 `\ifx\textBeta\@undefined \else`  
 16354 `\input{puenc-greek.def}`  
 16355 `\fi`  
 16356 `\end{puenc}`



### 47.2.10 Cyrillic: U+0400 to U+04FF

Thanks to Vladimir Volovich (vov@vov.vsu.ru) for the help with the Cyrillic glyph names. Cyrillic only loaded if \CYRDZE is defined.

```
16357 (*puenc)
16358 \ifx\CYRDZE\@undefined \else
16359 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE
16360 \DeclareTextCompositeCommand{\`}{PU}{\CYRE}{\84\000}% U+0400
16361 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrillic, *afii10023
16362 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401
16363 \DeclareTextCompositeCommand{\"}{PU}{\CYRE}{\84\001}% U+0401
16364 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, *afii10051
16365 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402
16366 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, *afii10052
16367 \DeclareTextCompositeCommand{\'}{PU}{\CYRG}{\84\003}% U+0403
16368 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrillic, *afii10053
16369 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404
16370 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzecyrillic, *afii10054
16371 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405
16372 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I;
16373 % Icyrillic, *afii10055
16374 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406
16375 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrillic, *afii10056
16376 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407
16377 \DeclareTextCompositeCommand{\"}{PU}{\CYRII}{\84\007}% U+0407
16378 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, *afii10057
16379 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408
16380 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, *afii10058
16381 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409
16382 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, *afii10059
16383 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A
16384 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, *afii10060
16385 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B
16386 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, *afii10061
16387 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% U+040C
16388 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE
16389 \DeclareTextCompositeCommand{\`}{PU}{\CYRI}{\84\015}% U+040D
16390 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrillic, *afii10062
16391 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E
16392 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\016}% U+040E
16393 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, *afii10145
16394 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F
16395 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, *afii10017
16396 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410
16397 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrillic, *afii10018
16398 \DeclareTextCommand{\CYRB}{PU}{\84\021}% U+0411
16399 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, *afii10019
16400 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412
16401 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, *afii10020
16402 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413
16403 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, *afii10021
16404 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414
16405 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, *afii10022
16406 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415
```

16407 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, \*afii10024  
16408 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416  
16409 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, \*afii10025  
16410 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417  
16411 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrillic, \*afii10026  
16412 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418  
16413 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; Iishortcyrillic, \*afii10027  
16414 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419  
16415 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}% U+0419  
16416 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, \*afii10028  
16417 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A  
16418 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, \*afii10029  
16419 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B  
16420 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, \*afii10030  
16421 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C  
16422 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, \*afii10031  
16423 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D  
16424 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, \*afii10032  
16425 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E  
16426 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, \*afii10033  
16427 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F  
16428 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, \*afii10034  
16429 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420  
16430 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, \*afii10035  
16431 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421  
16432 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, \*afii10036  
16433 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422  
16434 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, \*afii10037  
16435 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423  
16436 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, \*afii10038  
16437 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424  
16438 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, \*afii10039  
16439 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425  
16440 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, \*afii10040  
16441 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426  
16442 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, \*afii10041  
16443 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427  
16444 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, \*afii10042  
16445 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428  
16446 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, \*afii10043  
16447 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429  
16448 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN;  
16449 % Hardsigncyrillic, \*afii10044  
16450 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A  
16451 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, \*afii10045  
16452 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B  
16453 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN;  
16454 % Softsigncyrillic, \*afii10046  
16455 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C  
16456 % U+042D CYRILLIC CAPITAL LETTER E; Eversedcyrillic, \*afii10047  
16457 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D  
16458 % U+042E CYRILLIC CAPITAL LETTER YU; IUcyrillic, \*afii10048  
16459 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E  
16460 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, \*afii10049

16461 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F  
16462 % U+0430 CYRILLIC SMALL LETTER A; acyrillic, \*afii10065  
16463 \DeclareTextCommand{\cyra}{PU}{\84\060}% U+0430  
16464 % U+0431 CYRILLIC SMALL LETTER BE; \*afii10066, becyrillic  
16465 \DeclareTextCommand{\cyrb}{PU}{\84\061}% U+0431  
16466 % U+0432 CYRILLIC SMALL LETTER VE; \*afii10067, vecyrillic  
16467 \DeclareTextCommand{\cyrv}{PU}{\84\062}% U+0432  
16468 % U+0433 CYRILLIC SMALL LETTER GHE; \*afii10068, gecyrillic  
16469 \DeclareTextCommand{\cyrg}{PU}{\84\063}% U+0433  
16470 % U+0434 CYRILLIC SMALL LETTER DE; \*afii10069, decyrillic  
16471 \DeclareTextCommand{\cyrd}{PU}{\84\064}% U+0434  
16472 % U+0435 CYRILLIC SMALL LETTER IE; \*afii10070, iecyrillic  
16473 \DeclareTextCommand{\cyre}{PU}{\84\065}% U+0435  
16474 % U+0436 CYRILLIC SMALL LETTER ZHE; \*afii10072, zhecyrillic  
16475 \DeclareTextCommand{\cyrzh}{PU}{\84\066}% U+0436  
16476 % U+0437 CYRILLIC SMALL LETTER ZE; \*afii10073, zecyrillic  
16477 \DeclareTextCommand{\cyrz}{PU}{\84\067}% U+0437  
16478 % U+0438 CYRILLIC SMALL LETTER I; \*afii10074, iicyrillic  
16479 \DeclareTextCommand{\cyri}{PU}{\84\070}% U+0438  
16480 % U+0439 CYRILLIC SMALL LETTER SHORT I; \*afii10075, iishortcyrillic  
16481 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% U+0439  
16482 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}% U+0439  
16483 % U+043A CYRILLIC SMALL LETTER KA; \*afii10076, kacyrillic  
16484 \DeclareTextCommand{\cyrk}{PU}{\84\072}% U+043A  
16485 % U+043B CYRILLIC SMALL LETTER EL; \*afii10077, elcyrillic  
16486 \DeclareTextCommand{\cyrl}{PU}{\84\073}% U+043B  
16487 % U+043C CYRILLIC SMALL LETTER EM; \*afii10078, emcyrillic  
16488 \DeclareTextCommand{\cyrm}{PU}{\84\074}% U+043C  
16489 % U+043D CYRILLIC SMALL LETTER EN; \*afii10079, encyrillic  
16490 \DeclareTextCommand{\cyrn}{PU}{\84\075}% U+043D  
16491 % U+043E CYRILLIC SMALL LETTER O; \*afii10080, ocyrillic  
16492 \DeclareTextCommand{\cyro}{PU}{\84\076}% U+043E  
16493 % U+043F CYRILLIC SMALL LETTER PE; \*afii10081, pecyrillic  
16494 \DeclareTextCommand{\cyrp}{PU}{\84\077}% U+043F  
16495 % U+0440 CYRILLIC SMALL LETTER ER; \*afii10082, ercyrillic  
16496 \DeclareTextCommand{\cyrr}{PU}{\84\100}% U+0440  
16497 % U+0441 CYRILLIC SMALL LETTER ES; \*afii10083, escyrillic  
16498 \DeclareTextCommand{\cyrs}{PU}{\84\101}% U+0441  
16499 % U+0442 CYRILLIC SMALL LETTER TE; \*afii10084, tecyrillic  
16500 \DeclareTextCommand{\cyrt}{PU}{\84\102}% U+0442  
16501 % U+0443 CYRILLIC SMALL LETTER U; \*afii10085, ucyrillic  
16502 \DeclareTextCommand{\cyru}{PU}{\84\103}% U+0443  
16503 % U+0444 CYRILLIC SMALL LETTER EF; \*afii10086, efcyrillic  
16504 \DeclareTextCommand{\cyrf}{PU}{\84\104}% U+0444  
16505 % U+0445 CYRILLIC SMALL LETTER HA; \*afii10087, khacyrillic  
16506 \DeclareTextCommand{\cyrh}{PU}{\84\105}% U+0445  
16507 % U+0446 CYRILLIC SMALL LETTER TSE; \*afii10088, tsecyrillic  
16508 \DeclareTextCommand{\cyrc}{PU}{\84\106}% U+0446  
16509 % U+0447 CYRILLIC SMALL LETTER CHE; \*afii10089, checyrillic  
16510 \DeclareTextCommand{\cyrch}{PU}{\84\107}% U+0447  
16511 % U+0448 CYRILLIC SMALL LETTER SHA; \*afii10090, shacyrillic  
16512 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% U+0448  
16513 % U+0449 CYRILLIC SMALL LETTER SHCHA; \*afii10091, shchacyrillic  
16514 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% U+0449

16515 % U+044A CYRILLIC SMALL LETTER HARD SIGN; \*afii10092, hardsigncyril-  
lic  
16516 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% U+044A  
16517 %\* \cyrhrdsn -> \hardsign (tipa)  
16518 % U+044B CYRILLIC SMALL LETTER YERU; \*afii10093, yericyrillic  
16519 \DeclareTextCommand{\cyrery}{PU}{\84\113}% U+044B  
16520 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; \*afii10094, softsigncyrillic  
16521 \DeclareTextCommand{\cyrsoftsn}{PU}{\84\114}% U+044C  
16522 %\* \cyrsoftsn -> \softsign (tipa)  
16523 % U+044D CYRILLIC SMALL LETTER E; \*afii10095, ereversedcyrillic  
16524 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% U+044D  
16525 % U+044E CYRILLIC SMALL LETTER YU; \*afii10096, iucyrillic  
16526 \DeclareTextCommand{\cyrriu}{PU}{\84\116}% U+044E  
16527 % U+044F CYRILLIC SMALL LETTER YA; \*afii10097, iacyrillic  
16528 \DeclareTextCommand{\cyrria}{PU}{\84\117}% U+044F  
16529 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE  
16530 \DeclareTextCompositeCommand{\`}{PU}{\cyr}{\84\120}% U+0450  
16531 % U+0451 CYRILLIC SMALL LETTER IO; \*afii10071, iocyrillic  
16532 \DeclareTextCommand{\cyrrio}{PU}{\84\121}% U+0451  
16533 \DeclareTextCompositeCommand{\"}{PU}{\cyr}{\84\121}% U+0451  
16534 % U+0452 CYRILLIC SMALL LETTER DJE; \*afii10099, djecyrillic  
16535 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% U+0452  
16536 % U+0453 CYRILLIC SMALL LETTER GJE; \*afii10100, gjecyrillic  
16537 \DeclareTextCompositeCommand{\'}{PU}{\cyr}{\84\123}% U+0453  
16538 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; \*afii10101, ecyrillic  
16539 \DeclareTextCommand{\cyrrie}{PU}{\84\124}% U+0454  
16540 % U+0455 CYRILLIC SMALL LETTER DZE; \*afii10102, dzecyrillic  
16541 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% U+0455  
16542 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I;  
16543 % \*afii10103, icyrillic  
16544 \DeclareTextCommand{\cyrrii}{PU}{\84\126}% U+0456  
16545 % U+0457 CYRILLIC SMALL LETTER YI; \*afii10104, yicyrillic  
16546 \DeclareTextCommand{\cyrrii}{PU}{\84\127}% U+0457  
16547 \DeclareTextCompositeCommand{\"}{PU}{\cyrrii}{\84\127}% U+0457  
16548 % U+0458 CYRILLIC SMALL LETTER JE; \*afii10105, jecyrillic  
16549 \DeclareTextCommand{\cyrje}{PU}{\84\130}% U+0458  
16550 % U+0459 CYRILLIC SMALL LETTER LJE; \*afii10106, ljecyrillic  
16551 \DeclareTextCommand{\cyrlje}{PU}{\84\131}% U+0459  
16552 % U+045A CYRILLIC SMALL LETTER NJE; \*afii10107, njecyrillic  
16553 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% U+045A  
16554 % U+045B CYRILLIC SMALL LETTER TSHE; \*afii10108, tshecyrillic  
16555 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% U+045B  
16556 % U+045C CYRILLIC SMALL LETTER KJE; \*afii10109, kjecyrillic  
16557 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% U+045C  
16558 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE  
16559 \DeclareTextCompositeCommand{\`}{PU}{\cyrri}{\84\135}% U+045D  
16560 % U+045E CYRILLIC SMALL LETTER SHORT U; \*afii10110, ushortcyrillic  
16561 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E  
16562 \DeclareTextCompositeCommand{\U}{PU}{\cyr}{\84\136}% U+045E  
16563 % U+045F CYRILLIC SMALL LETTER DZHE; \*afii10193, dzhecyrillic  
16564 \DeclareTextCommand{\cyrdze}{PU}{\84\137}% U+045F  
16565 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic  
16566 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460  
16567 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrillic

16568 \DeclareTextCommand{\cyromega}{PU}{\84\141}% U+0461  
16569 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, \*afii10146  
16570 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462  
16571 % U+0463 CYRILLIC SMALL LETTER YAT; \*afii10194, yatcyrillic  
16572 \DeclareTextCommand{\cyryat}{PU}{\84\143}% U+0463  
16573 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic  
16574 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464  
16575 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrillic  
16576 \DeclareTextCommand{\cyriote}{PU}{\84\145}% U+0465  
16577 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslittlecyrillic  
16578 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466  
16579 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslittlecyrillic  
16580 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467  
16581 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslitlei-  
otifiedcyrillic  
16582 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468  
16583 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslitlei-  
otifiedcyrillic  
16584 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469  
16585 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbigcyrillic  
16586 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A  
16587 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbigcyrillic  
16588 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B  
16589 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbigiotified-  
cyrillic  
16590 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C  
16591 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbigiotified-  
cyrillic  
16592 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D  
16593 % U+046E CYRILLIC CAPITAL LETTER KSI; Ksicyrillic  
16594 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% U+046E  
16595 % U+046F CYRILLIC SMALL LETTER KSI; ksicyrillic  
16596 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F  
16597 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psicyrillic  
16598 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470  
16599 % U+0471 CYRILLIC SMALL LETTER PSI; psicyrillic  
16600 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471  
16601 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, \*afii10147  
16602 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472  
16603 % U+0473 CYRILLIC SMALL LETTER FITA; \*afii10195, fitacyrillic  
16604 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473  
16605 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, \*afii10148  
16606 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474  
16607 % U+0475 CYRILLIC SMALL LETTER IZHITSA; \*afii10196, izhitsacyrillic  
16608 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475  
16609 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE  
GRAVE ACCENT; Izhitsadblgravecyrillic  
16610 % GRAVE ACCENT; Izhitsadblgravecyrillic  
16611 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% U+0476  
16612 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE  
GRAVE ACCENT; izhitsadblgravecyrillic  
16613 % GRAVE ACCENT; izhitsadblgravecyrillic  
16614 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477  
16615 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic  
16616 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478  
16617 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic

16618 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479  
16619 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyrillic  
16620 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A  
16621 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic  
16622 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B  
16623 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatitlocyrillic  
16624 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C  
16625 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlocyrillic  
16626 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D  
16627 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic  
16628 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E  
16629 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic  
16630 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F  
16631 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic  
16632 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480  
16633 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic  
16634 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481  
16635 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic  
16636 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% U+0482  
\84\203: U+0483 COMBINING CYRILLIC TITLO; titlocyrilliccmb  
\84\204: U+0484 COMBINING CYRILLIC PALATALIZATION; palatalizationcyrilliccmb  
\84\205: U+0485 COMBINING CYRILLIC DASIA PNEUMATA; dasiapneumatacyrilliccmb  
\84\206: U+0486 COMBINING CYRILLIC PSILI PNEUMATA; psilipneumatcyrilliccmb  
\84\207: U+0487 COMBINING CYRILLIC POKRYTIE  
\84\210: U+0488 COMBINING CYRILLIC HUNDRED THOUSANDS SIGN  
\84\211: U+0489 COMBINING CYRILLIC MILLIONS SIGN  
16637 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL  
16638 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A  
16639 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL  
16640 \DeclareTextCommand{\cyrishrtdsc}{PU}{\84\213}% U+048B  
16641 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN  
16642 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C  
16643 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN  
16644 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D  
16645 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK  
16646 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E  
16647 % U+048F CYRILLIC SMALL LETTER ER WITH TICK  
16648 \DeclareTextCommand{\cyrrtick}{PU}{\84\217}% U+048F  
16649 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturncyrillic, \*afii10050  
16650 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490  
16651 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; \*afii10098, gheupturncyrillic  
16652 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491  
16653 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestrokecyrillic  
16654 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492

16655 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic  
16656 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% U+0493  
16657 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK;  
16658 % Ghemiddlehookcyrillic  
16659 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494  
16660 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK;  
16661 % ghemiddlehookcyrillic  
16662 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495  
16663 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER;  
16664 % Zhedescendercyrillic  
16665 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496  
16666 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER;  
16667 % zhedescendercyrillic  
16668 \DeclareTextCommand{\cyrzhsc}{PU}{\84\227}% U+0497  
16669 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescen-  
dercyrillic  
16670 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498  
16671 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498  
16672 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescender-  
cyrillic  
16673 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% U+0499  
16674 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499  
16675 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescen-  
dercyrillic  
16676 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A  
16677 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kadescen-  
dercyrillic  
16678 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% U+049B  
16679 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE;  
16680 % Kavertikalstrokecyrillic  
16681 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C  
16682 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE;  
16683 % kavertikalstrokecyrillic  
16684 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D  
16685 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic  
16686 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E  
16687 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic  
16688 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% U+049F  
16689 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic  
16690 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0  
16691 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic  
16692 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1  
16693 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescen-  
dercyrillic  
16694 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2  
16695 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endescender-  
cyrillic  
16696 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3  
16697 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic  
16698 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4  
16699 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic  
16700 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5  
16701 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemid-  
dlehookcyrillic

16702 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6  
16703 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddlehookcyrillic  
16704 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7  
16705 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyrillic  
16706 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8  
16707 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic  
16708 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% U+04A9  
16709 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescendercyrillic  
16710 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA  
16711 \DeclareTextCompositeCommand{\k}{PU}{\CYRS}{\84\252}% U+04AA  
16712 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescendercyrillic  
16713 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% U+04AB  
16714 \DeclareTextCompositeCommand{\k}{PU}{\cyr}{\84\253}% U+04AB  
16715 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescendercyrillic  
16716 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC  
16717 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescendercyrillic  
16718 \DeclareTextCommand{\cyrtdsc}{PU}{\84\255}% U+04AD  
16719 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic  
16720 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE  
16721 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; ustraightcyrillic  
16722 \DeclareTextCommand{\cyry}{PU}{\84\257}% U+04AF  
16723 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Ustraightstrokecyrillic  
16724 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0  
16725 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; usstraightstrokecyrillic  
16726 \DeclareTextCommand{\cyryhcrs}{PU}{\84\261}% U+04B1  
16727 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hadescendercyrillic  
16728 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% U+04B2  
16729 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadescendercyrillic  
16730 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% U+04B3  
16731 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetsecyrillic  
16732 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4  
16733 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetsecyrillic  
16734 \DeclareTextCommand{\cyrтетse}{PU}{\84\265}% U+04B5  
16735 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER;  
16736 % Chedescendercyrillic  
16737 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6  
16738 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescendercyrillic  
16739 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% U+04B7  
16740 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE;  
16741 % Cheverticalstrokecyrillic  
16742 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8  
16743 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE;  
16744 % cheverticalstrokecyrillic



16745 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9  
16746 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic  
16747 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA  
16748 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic  
16749 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB  
16750 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasian-  
cyrillic  
16751 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC  
16752 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyril-  
lic  
16753 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% U+04BD  
16754 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCEN-  
DER; Chedescenderabkhasiancyrillic  
16755 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE  
16756 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE  
16757 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCEN-  
DER; chedescenderabkhasiancyrillic  
16758 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% U+04BF  
16759 \DeclareTextCompositeCommand{\k}{PU}{\cyrabhch}{\84\277}% U+04BF  
16760 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic  
16761 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0  
16762 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic  
16763 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1  
16764 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic  
16765 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% U+04C2  
16766 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic  
16767 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3  
16768 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic  
16769 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% U+04C4  
16770 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL  
16771 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5  
16772 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL  
16773 \DeclareTextCommand{\cyrldsc}{PU}{\84\306}% U+04C6  
16774 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic  
16775 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7  
16776 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic  
16777 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% U+04C8  
16778 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakas-  
siancyrillic  
16779 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB  
16780 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassian-  
cyrillic  
16781 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% U+04CC  
16782 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL  
16783 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD  
16784 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL  
16785 \DeclareTextCommand{\cyrmdsc}{PU}{\84\316}% U+04CE  
\84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA  
16786 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevecyrillic  
16787 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0  
16788 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevecyrillic  
16789 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% U+04D1  
16790 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyril-  
lic

16791 \DeclareTextCompositeCommand{\}{PU}{\CYRA}{\84\322}% U+04D2  
16792 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresiscyrillic  
16793 \DeclareTextCompositeCommand{\}{PU}{\cyra}{\84\323}% U+04D3  
16794 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aiecyrillic  
16795 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4  
16796 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aiecyrillic  
16797 \DeclareTextCommand{\cyrae}{PU}{\84\325}% U+04D5  
16798 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrevocyrillic  
16799 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6  
16800 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrevocyrillic  
16801 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% U+04D7  
16802 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwacyrillic  
16803 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8  
16804 % U+04D9 CYRILLIC SMALL LETTER SCHWA; \*afii10846, schwacyrillic  
16805 \DeclareTextCommand{\cyrswa}{PU}{\84\331}% U+04D9  
16806 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS;  
16807 % Schwadieresiscyrillic  
16808 \DeclareTextCompositeCommand{\}{PU}{\CYRSCHWA}{\84\332}% U+04DA  
16809 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS;  
16810 % schwadieresiscyrillic  
16811 \DeclareTextCompositeCommand{\}{PU}{\cyrswa}{\84\333}% U+04DB  
16812 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhedie-  
siscyrillic  
16813 \DeclareTextCompositeCommand{\}{PU}{\CYRZH}{\84\334}% U+04DC  
16814 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedie-  
siscyrillic  
16815 \DeclareTextCompositeCommand{\}{PU}{\cyrzh}{\84\335}% U+04DD  
16816 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedie-  
siscyrillic  
16817 \DeclareTextCompositeCommand{\}{PU}{\CYRZ}{\84\336}% U+04DE  
16818 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedie-  
siscyrillic  
16819 \DeclareTextCompositeCommand{\}{PU}{\cyrz}{\84\337}% U+04DF  
16820 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasian-  
cyrillic  
16821 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0  
16822 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasiancyril-  
lic  
16823 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% U+04E1  
16824 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Imacroncyrillic  
16825 \DeclareTextCompositeCommand{\=}{PU}{\CYRI}{\84\342}% U+04E2  
16826 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacroncyrillic  
16827 \DeclareTextCompositeCommand{\=}{PU}{\cyri}{\84\343}% U+04E3  
16828 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresiscyrillic  
16829 \DeclareTextCompositeCommand{\}{PU}{\CYRI}{\84\344}% U+04E4  
16830 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresiscyrillic  
16831 \DeclareTextCompositeCommand{\}{PU}{\cyri}{\84\345}% U+04E5  
16832 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresiscyril-  
lic  
16833 \DeclareTextCompositeCommand{\}{PU}{\CYRO}{\84\346}% U+04E6  
16834 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresiscyrillic  
16835 \DeclareTextCompositeCommand{\}{PU}{\cyro}{\84\347}% U+04E7  
16836 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarredcyrillic  
16837 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8

16838 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarredcyrillic  
16839 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9  
16840 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERESIS;  
16841 % Obarreddieresiscyrillic  
16842 \DeclareTextCompositeCommand{\"}{PU}{\CYROTLD}{\84\352}% U+04EA  
16843 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS;  
16844 % obarreddieresiscyrillic  
16845 \DeclareTextCompositeCommand{\"}{PU}{\cyrotld}{\84\353}% U+04EB  
16846 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS  
16847 \DeclareTextCompositeCommand{\"}{PU}{\CYREREV}{\84\354}% U+04EC  
16848 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS  
16849 \DeclareTextCompositeCommand{\"}{PU}{\cyrerev}{\84\355}% U+04ED  
16850 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacroncyrillic  
16851 \DeclareTextCompositeCommand{\=} {PU}{\CYRU}{\84\356}% U+04EE  
16852 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacroncyrillic  
16853 \DeclareTextCompositeCommand{\=} {PU}{\cyru}{\84\357}% U+04EF  
16854 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udieresiscyrillic  
16855 \DeclareTextCompositeCommand{\"}{PU}{\CYRU}{\84\360}% U+04F0  
16856 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udieresiscyrillic  
16857 \DeclareTextCompositeCommand{\"}{PU}{\cyru}{\84\361}% U+04F1  
16858 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhungarumlautcyrillic  
16859 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U+04F2  
16860 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhungarumlautcyrillic  
16861 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% U+04F3  
16862 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chedieresiscyrillic  
16863 \DeclareTextCompositeCommand{\"}{PU}{\CYRCH}{\84\364}% U+04F4  
16864 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieresiscyrillic  
16865 \DeclareTextCompositeCommand{\"}{PU}{\cyrch}{\84\365}% U+04F5  
16866 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER  
16867 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6  
16868 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER  
16869 \DeclareTextCommand{\cyrgdsc}{PU}{\84\367}% U+04F7  
16870 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudieresiscyrillic  
16871 \DeclareTextCompositeCommand{\"}{PU}{\CYRERY}{\84\370}% U+04F8  
16872 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudieresiscyrillic  
16873 \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  
16874 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK  
16875 \DeclareTextCommand{\CYRHHK}{PU}{\84\374}% U+04FC  
16876 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK  
16877 \DeclareTextCommand{\cyrhhk}{PU}{\84\375}% U+04FD  
16878 \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

```
16879 \ifx\hebdalet\@undefined\else
16880 % U+05C3 HEBREW PUNCTUATION SOF PASUQ
16881 \DeclareTextCommand{\sofpasuq}{PU}{\85\303}% U+05C3
16882 % U+05D0 HEBREW LETTER ALEF
16883 \DeclareTextCommand{\hebalef}{PU}{\85\320}% U+05D0
16884 % U+05D1 HEBREW LETTER BET
16885 \DeclareTextCommand{\hebbet}{PU}{\85\321}% U+05D1
16886 % U+05D2 HEBREW LETTER GIMEL
16887 \DeclareTextCommand{\hebgimel}{PU}{\85\322}% U+05D2
16888 % U+05D3 HEBREW LETTER DALET
16889 \DeclareTextCommand{\hebdalet}{PU}{\85\323}% U+05D3
16890 % U+05D4 HEBREW LETTER HE
16891 \DeclareTextCommand{\hebhe}{PU}{\85\324}% U+05D4
16892 % U+05D5 HEBREW LETTER VAV
16893 \DeclareTextCommand{\hebvav}{PU}{\85\325}% U+05D5
16894 % U+05D6 HEBREW LETTER ZAYIN
16895 \DeclareTextCommand{\hebzayin}{PU}{\85\326}% U+05D6
16896 % U+05D7 HEBREW LETTER HET
16897 \DeclareTextCommand{\hebhhet}{PU}{\85\327}% U+05D7
16898 % U+05D8 HEBREW LETTER TET
16899 \DeclareTextCommand{\hebtet}{PU}{\85\330}% U+05D8
16900 % U+05D9 HEBREW LETTER YOD
16901 \DeclareTextCommand{\hebyod}{PU}{\85\331}% U+05D9
16902 % U+05DA HEBREW LETTER FINAL KAF
16903 \DeclareTextCommand{\hebfinalkaf}{PU}{\85\332}% U+05DA
16904 % U+05DB HEBREW LETTER KAF
16905 \DeclareTextCommand{\hebkafe}{PU}{\85\333}% U+05DB
16906 % U+05DC HEBREW LETTER LAMED
16907 \DeclareTextCommand{\heblamed}{PU}{\85\334}% U+05DC
16908 % U+05DD HEBREW LETTER FINAL MEM
16909 \DeclareTextCommand{\hebfinalmem}{PU}{\85\335}% U+05DD
16910 % U+05DE HEBREW LETTER MEM
16911 \DeclareTextCommand{\hebmeme}{PU}{\85\336}% U+05DE
16912 % U+05DF HEBREW LETTER FINAL NUN
16913 \DeclareTextCommand{\hebfinalnun}{PU}{\85\337}% U+05DF
16914 % U+05E0 HEBREW LETTER NUN
16915 \DeclareTextCommand{\hebnun}{PU}{\85\340}% U+05E0
16916 % U+05E1 HEBREW LETTER SAMEKH
16917 \DeclareTextCommand{\hebsamekh}{PU}{\85\341}% U+05E1
16918 % U+05E2 HEBREW LETTER AYIN
16919 \DeclareTextCommand{\hebayin}{PU}{\85\342}% U+05E2
16920 % U+05E3 HEBREW LETTER FINAL PE
16921 \DeclareTextCommand{\hebfinalpe}{PU}{\85\343}% U+05E3
16922 % U+05E4 HEBREW LETTER PE
16923 \DeclareTextCommand{\hebpe}{PU}{\85\344}% U+05E4
16924 % U+05E5 HEBREW LETTER FINAL TSADI
16925 \DeclareTextCommand{\hebfinaltsadi}{PU}{\85\345}% U+05E5
16926 % U+05E6 HEBREW LETTER TSADI
```

16927 \DeclareTextCommand{\hebtsadi}{PU}{\85\346}% U+05E6  
 16928 % U+05E7 HEBREW LETTER QOF  
 16929 \DeclareTextCommand{\hebqof}{PU}{\85\347}% U+05E7  
 16930 % U+05E8 HEBREW LETTER RESH  
 16931 \DeclareTextCommand{\hebresh}{PU}{\85\350}% U+05E8  
 16932 % U+05E9 HEBREW LETTER SHIN  
 16933 \DeclareTextCommand{\hebshin}{PU}{\85\351}% U+05E9  
 16934 %\* \hebshin -> \hebsin (he8)  
 16935 % U+05EA HEBREW LETTER TAV  
 16936 \DeclareTextCommand{\hebtav}{PU}{\85\352}% U+05EA  
 16937 % U+05F0 HEBREW LIGATURE YIDDISH DOUBLE VAV  
 16938 \DeclareTextCommand{\doublevav}{PU}{\85\360}% U+05F0  
 16939 % U+05F1 HEBREW LIGATURE YIDDISH VAV YOD  
 16940 \DeclareTextCommand{\vavyod}{PU}{\85\361}% U+05F1  
 16941 % U+05F2 HEBREW LIGATURE YIDDISH DOUBLE YOD  
 16942 \DeclareTextCommand{\doubleyod}{PU}{\85\362}% U+05F2  
 16943 \fi

#### 47.2.12 Thai: U+0E00 to U+0E7F

16944 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai  
 16945 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

#### 47.2.13 Phonetic Extensions: U+1D00 to U+1D7F

16946 % U+1D00 LATIN LETTER SMALL CAPITAL A; \textscA (tipa)  
 16947 \DeclareTextCommand{\textscA}{PU}{\9035\000}% U+1D00  
 16948 % U+1D05 LATIN LETTER SMALL CAPITAL D; \scD (wsuipa)  
 16949 \DeclareTextCommand{\textscD}{PU}{\9035\005}%\* U+1D05  
 16950 % U+1D07 LATIN LETTER SMALL CAPITAL E; \textscE (tipa)  
 16951 \DeclareTextCommand{\textscE}{PU}{\9035\007}% U+1D07  
 16952 % U+1D0A LATIN LETTER SMALL CAPITAL J; \textscJ (tipa)  
 16953 \DeclareTextCommand{\textscJ}{PU}{\9035\012}% U+1D0A  
 16954 % U+1D0B LATIN LETTER SMALL CAPITAL K; \textscK (tipx)  
 16955 \DeclareTextCommand{\textPUscK}{PU}{\9035\013}% U+1D0B  
 16956 %\* \textPUscK -> \textscK (tipx)  
 16957 % U+1D0D LATIN LETTER SMALL CAPITAL M; \textscM (tipx)  
 16958 \DeclareTextCommand{\textPUscM}{PU}{\9035\015}% U+1D0D  
 16959 %\* \textPUscM -> \textscM (tipx)  
 16960 % U+1D18 LATIN LETTER SMALL CAPITAL P; \textscP (tipx)  
 16961 \DeclareTextCommand{\textPUscP}{PU}{\9035\030}% U+1D18  
 16962 %\* \textPUscP -> \textscP (tipx)  
 16963 % U+1D19 LATIN LETTER SMALL CAPITAL REVERSED R; \textrevscr (tipx)  
 16964 \DeclareTextCommand{\textPUrevscr}{PU}{\9035\031}% U+1D19  
 16965 %\* \textPUrevscr -> \textrevscr (tipx)  
 16966 % U+1D1C LATIN LETTER SMALL CAPITAL U; \textscU (tipa), \scU (wsuipa)  
 16967 \DeclareTextCommand{\textscU}{PU}{\9035\034}%\* U+1D1C  
 16968 % U+1D62 LATIN SUBSCRIPT SMALL LETTER I  
 16969 \DeclareTextCommand{\textiinferior}{PU}{\9035\142}%\* U+1D62  
 16970 % U+1D63 LATIN SUBSCRIPT SMALL LETTER R  
 16971 \DeclareTextCommand{\textrinferior}{PU}{\9035\143}%\* U+1D63  
 16972 % U+1D64 LATIN SUBSCRIPT SMALL LETTER U  
 16973 \DeclareTextCommand{\textuinferior}{PU}{\9035\144}%\* U+1D64  
 16974 % U+1D65 LATIN SUBSCRIPT SMALL LETTER V  
 16975 \DeclareTextCommand{\textvinferior}{PU}{\9035\145}%\* U+1D65

16976 % U+1D66 GREEK SUBSCRIPT SMALL LETTER BETA  
 16977 \DeclareTextCommand{\textbetainferior}{PU}{\9035\146}%\* U+1D66  
 16978 % U+1D67 GREEK SUBSCRIPT SMALL LETTER GAMMA  
 16979 \DeclareTextCommand{\textgammainferior}{PU}{\9035\147}%\* U+1D67  
 16980 % U+1D68 GREEK SUBSCRIPT SMALL LETTER RHO  
 16981 \DeclareTextCommand{\textrhoinferior}{PU}{\9035\150}%\* U+1D68  
 16982 % U+1D69 GREEK SUBSCRIPT SMALL LETTER PHI  
 16983 \DeclareTextCommand{\textphiinferior}{PU}{\9035\151}%\* U+1D69  
 16984 % U+1D6A GREEK SUBSCRIPT SMALL LETTER CHI  
 16985 \DeclareTextCommand{\textchiinferior}{PU}{\9035\152}%\* U+1D6A  
 16986 % U+1D7B LATIN SMALL CAPITAL LETTER I WITH STROKE;  
 16987 % \barsci (wsuipa)  
 16988 \DeclareTextCommand{\textbarsci}{PU}{\9035\173}%\* U+1D7B  
 16989 % U+1D7D LATIN SMALL LETTER P WITH STROKE; \barp (wsuipa)  
 16990 \DeclareTextCommand{\textbarp}{PU}{\9035\175}%\* U+1D7D  
 16991 % U+1D7E LATIN SMALL CAPITAL LETTER U WITH STROKE;  
 16992 % \barscu (wsuipa)  
 16993 \DeclareTextCommand{\textbarscu}{PU}{\9035\176}%\* U+1D7E

#### 47.2.14 Phonetic Extensions Supplement: U+1D80 to U+1DBF

16994 % U+1D8F LATIN SMALL LETTER A WITH RETROFLEX HOOK; \text-  
 trhooka (tipx)  
 16995 \DeclareTextCommand{\textPURhooka}{PU}{\9035\217}% U+1D8F  
 16996 %\* \textPURhooka -> \texttrhooka (tipx)  
 16997 % U+1D91 LATIN SMALL LETTER D WITH HOOK AND TAIL; \texthtr-  
 taild (tipa)  
 16998 \DeclareTextCommand{\texthtrtaild}{PU}{\9035\221}%\* U+1D91  
 16999 % U+1D92 LATIN SMALL LETTER E WITH RETROFLEX HOOK; \text-  
 trhooke (tipx)  
 17000 \DeclareTextCommand{\textPURhooke}{PU}{\9035\222}% U+1D92  
 17001 %\* \textPURhooke -> \texttrhooke (tipx)  
 17002 % U+1D93 LATIN SMALL LETTER OPEN E WITH RETROFLEX HOOK;  
 17003 % \textrhookepsilon (tipx)  
 17004 \DeclareTextCommand{\textPURhookepsilon}{PU}{\9035\223}% U+1D93  
 17005 %\* \textPURhookepsilon -> \textrhookepsilon (tipx)  
 17006 % U+1D97 LATIN SMALL LETTER OPEN O WITH RETROFLEX HOOK;  
 17007 % \textrhookopeno (tipx)  
 17008 \DeclareTextCommand{\textPURhookopeno}{PU}{\9035\227}% U+1D97  
 17009 %\* \textPURhookopeno -> \textrhookopeno (tipx)

#### 47.2.15 Latin Extended Additional: U+1E00 to U+1EFF

17010 % U+1E00 LATIN CAPITAL LETTER A WITH RING BELOW; Aringbelow  
 17011 \DeclareTextCompositeCommand{\textsubring}{PU}{A}{\9036\000}% U+1E00  
 17012 % U+1E01 LATIN SMALL LETTER A WITH RING BELOW; aringbelow  
 17013 \DeclareTextCompositeCommand{\textsubring}{PU}{a}{\9036\001}% U+1E01  
 17014 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent  
 17015 \DeclareTextCompositeCommand{\.}{PU}{B}{\9036\002}% U+1E02  
 17016 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent  
 17017 \DeclareTextCompositeCommand{\.}{PU}{b}{\9036\003}% U+1E03  
 17018 % U+1E04 LATIN CAPITAL LETTER B WITH DOT BELOW; Bdotbelow  
 17019 \DeclareTextCompositeCommand{\d}{PU}{B}{\9036\004}% U+1E04  
 17020 % U+1E05 LATIN SMALL LETTER B WITH DOT BELOW; bdotbelow  
 17021 \DeclareTextCompositeCommand{\d}{PU}{b}{\9036\005}% U+1E05  
 17022 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow

17023 \DeclareTextCompositeCommand{\b}{PU}{B}{\9036\006}% U+1E06  
17024 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow  
17025 \DeclareTextCompositeCommand{\b}{PU}{b}{\9036\007}% U+1E07  
17026 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent  
17027 \DeclareTextCompositeCommand{\.}{PU}{D}{\9036\012}% U+1E0A  
17028 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent  
17029 \DeclareTextCompositeCommand{\.}{PU}{d}{\9036\013}% U+1E0B  
17030 % U+1E0C LATIN CAPITAL LETTER D WITH DOT BELOW; Ddotbelow  
17031 \DeclareTextCompositeCommand{\d}{PU}{D}{\9036\014}% U+1E0C  
17032 % U+1E0D LATIN SMALL LETTER D WITH DOT BELOW; ddotbelow  
17033 \DeclareTextCompositeCommand{\d}{PU}{d}{\9036\015}% U+1E0D  
17034 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow  
17035 \DeclareTextCompositeCommand{\b}{PU}{D}{\9036\016}% U+1E0E  
17036 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow  
17037 \DeclareTextCompositeCommand{\b}{PU}{d}{\9036\017}% U+1E0F  
17038 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla  
17039 \DeclareTextCompositeCommand{\c}{PU}{D}{\9036\020}% U+1E10  
17040 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla  
17041 \DeclareTextCompositeCommand{\c}{PU}{d}{\9036\021}% U+1E11  
17042 % U+1E12 LATIN CAPITAL LETTER D WITH CIRCUMFLEX BELOW; Dcircumflexbelow  
17043 \DeclareTextCompositeCommand{\textsubcircum}{PU}{D}{\9036\022}% U+1E12  
17044 % U+1E13 LATIN SMALL LETTER D WITH CIRCUMFLEX BELOW; dircumflexbelow  
17045 \DeclareTextCompositeCommand{\textsubcircum}{PU}{d}{\9036\023}% U+1E13  
17046 % U+1E14 LATIN CAPITAL LETTER E WITH MACRON AND GRAVE;  
17047 % Emacrongrave  
17048 \DeclareTextCompositeCommand{\textgravemacron}{PU}{E}{\9036\024}% U+1E14  
17049 % U+1E15 LATIN SMALL LETTER E WITH MACRON AND GRAVE;  
17050 % emacrongrave  
17051 \DeclareTextCompositeCommand{\textgravemacron}{PU}{e}{\9036\025}% U+1E15  
17052 % U+1E16 LATIN CAPITAL LETTER E WITH MACRON AND ACUTE;  
17053 % Emacronacute  
17054 \DeclareTextCompositeCommand{\textacutemacron}{PU}{E}{\9036\026}% U+1E16  
17055 % U+1E17 LATIN SMALL LETTER E WITH MACRON AND ACUTE;  
17056 % emacronacute  
17057 \DeclareTextCompositeCommand{\textacutemacron}{PU}{e}{\9036\027}% U+1E17  
17058 % U+1E18 LATIN CAPITAL LETTER E WITH CIRCUMFLEX BELOW; Ecircumflexbelow  
17059 \DeclareTextCompositeCommand{\textsubcircum}{PU}{E}{\9036\030}% U+1E18  
17060 % U+1E19 LATIN SMALL LETTER E WITH CIRCUMFLEX BELOW; eircumflexbelow  
17061 \DeclareTextCompositeCommand{\textsubcircum}{PU}{e}{\9036\031}% U+1E19  
17062 % U+1E1A LATIN CAPITAL LETTER E WITH TILDE BELOW; Etildebelow  
17063 \DeclareTextCompositeCommand{\textsubtilde}{PU}{E}{\9036\032}% U+1E1A  
17064 % U+1E1B LATIN SMALL LETTER E WITH TILDE BELOW; etildebelow  
17065 \DeclareTextCompositeCommand{\textsubtilde}{PU}{e}{\9036\033}% U+1E1B  
17066 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent  
17067 \DeclareTextCompositeCommand{\.}{PU}{F}{\9036\036}% U+1E1E  
17068 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent  
17069 \DeclareTextCompositeCommand{\.}{PU}{f}{\9036\037}% U+1E1F  
17070 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron  
17071 \DeclareTextCompositeCommand{\=} {PU}{G}{\9036\040}% U+1E20  
17072 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron

17073 \DeclareTextCompositeCommand{=} {PU}{g}{\9036\041}% U+1E21  
17074 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent  
17075 \DeclareTextCompositeCommand{\.} {PU}{H}{\9036\042}% U+1E22  
17076 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent  
17077 \DeclareTextCompositeCommand{\.} {PU}{h}{\9036\043}% U+1E23  
17078 % U+1E24 LATIN CAPITAL LETTER H WITH DOT BELOW; Hdotbelow  
17079 \DeclareTextCompositeCommand{\d} {PU}{H}{\9036\044}% U+1E24  
17080 % U+1E25 LATIN SMALL LETTER H WITH DOT BELOW; hdotbelow  
17081 \DeclareTextCompositeCommand{\d} {PU}{h}{\9036\045}% U+1E25  
17082 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis  
17083 \DeclareTextCompositeCommand{\"} {PU}{H}{\9036\046}% U+1E26  
17084 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis  
17085 \DeclareTextCompositeCommand{\"} {PU}{h}{\9036\047}% U+1E27  
17086 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla  
17087 \DeclareTextCompositeCommand{\c} {PU}{H}{\9036\050}% U+1E28  
17088 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla  
17089 \DeclareTextCompositeCommand{\c} {PU}{h}{\9036\051}% U+1E29  
17090 % U+1E2A LATIN CAPITAL LETTER H WITH BREVE BELOW; Hbrevebelow  
17091 \DeclareTextCompositeCommand{\textsubbreve} {PU}{H}{\9036\052}% U+1E2A  
17092 % U+1E2B LATIN SMALL LETTER H WITH BREVE BELOW; hbrevebelow  
17093 \DeclareTextCompositeCommand{\textsubbreve} {PU}{h}{\9036\053}% U+1E2B  
17094 % U+1E2C LATIN CAPITAL LETTER I WITH TILDE BELOW; Itildebelow  
17095 \DeclareTextCompositeCommand{\textsubtilde} {PU}{I}{\9036\054}% U+1E2C  
17096 % U+1E2D LATIN SMALL LETTER I WITH TILDE BELOW; itildebelow  
17097 \DeclareTextCompositeCommand{\textsubtilde} {PU}{i}{\9036\055}% U+1E2D  
17098 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute  
17099 \DeclareTextCompositeCommand{\'} {PU}{K}{\9036\060}% U+1E30  
17100 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute  
17101 \DeclareTextCompositeCommand{\'} {PU}{k}{\9036\061}% U+1E31  
17102 % U+1E32 LATIN CAPITAL LETTER K WITH DOT BELOW; Kdotbelow  
17103 \DeclareTextCompositeCommand{\d} {PU}{K}{\9036\062}% U+1E32  
17104 % U+1E33 LATIN SMALL LETTER K WITH DOT BELOW; kdotbelow  
17105 \DeclareTextCompositeCommand{\d} {PU}{k}{\9036\063}% U+1E33  
17106 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow  
17107 \DeclareTextCompositeCommand{\b} {PU}{K}{\9036\064}% U+1E34  
17108 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow  
17109 \DeclareTextCompositeCommand{\b} {PU}{k}{\9036\065}% U+1E35  
17110 % U+1E36 LATIN CAPITAL LETTER L WITH DOT BELOW; Ldotbelow  
17111 \DeclareTextCompositeCommand{\d} {PU}{L}{\9036\066}% U+1E36  
17112 % U+1E37 LATIN SMALL LETTER L WITH DOT BELOW; ldotbelow  
17113 \DeclareTextCompositeCommand{\d} {PU}{l}{\9036\067}% U+1E37  
17114 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow  
17115 \DeclareTextCompositeCommand{\b} {PU}{L}{\9036\072}% U+1E3A  
17116 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow  
17117 \DeclareTextCompositeCommand{\b} {PU}{l}{\9036\073}% U+1E3B  
17118 % U+1E3C LATIN CAPITAL LETTER L WITH CIRCUMFLEX BELOW; Lcircumflexbelow  
17119 \DeclareTextCompositeCommand{\textsubcircum} {PU}{L}{\9036\074}% U+1E3C  
17120 % U+1E3D LATIN SMALL LETTER L WITH CIRCUMFLEX BELOW; lcircumflexbelow  
17121 \DeclareTextCompositeCommand{\textsubcircum} {PU}{l}{\9036\075}% U+1E3D  
17122 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute  
17123 \DeclareTextCompositeCommand{\'} {PU}{M}{\9036\076}% U+1E3E  
17124 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute



17125 \DeclareTextCompositeCommand{\'}{PU}{m}{\9036\077}% U+1E3F  
17126 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent  
17127 \DeclareTextCompositeCommand{\.}{PU}{M}{\9036\100}% U+1E40  
17128 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent  
17129 \DeclareTextCompositeCommand{\.}{PU}{m}{\9036\101}% U+1E41  
17130 % U+1E42 LATIN CAPITAL LETTER M WITH DOT BELOW; Mdotbelow  
17131 \DeclareTextCompositeCommand{\d}{PU}{M}{\9036\102}% U+1E42  
17132 % U+1E43 LATIN SMALL LETTER M WITH DOT BELOW; mdotbelow  
17133 \DeclareTextCompositeCommand{\d}{PU}{m}{\9036\103}% U+1E43  
17134 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent  
17135 \DeclareTextCompositeCommand{\.}{PU}{N}{\9036\104}% U+1E44  
17136 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent  
17137 \DeclareTextCompositeCommand{\.}{PU}{n}{\9036\105}% U+1E45  
17138 % U+1E46 LATIN CAPITAL LETTER N WITH DOT BELOW; Ndotbelow  
17139 \DeclareTextCompositeCommand{\d}{PU}{N}{\9036\106}% U+1E46  
17140 % U+1E47 LATIN SMALL LETTER N WITH DOT BELOW; ndotbelow  
17141 \DeclareTextCompositeCommand{\d}{PU}{n}{\9036\107}% U+1E47  
17142 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow  
17143 \DeclareTextCompositeCommand{\b}{PU}{N}{\9036\110}% U+1E48  
17144 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow  
17145 \DeclareTextCompositeCommand{\b}{PU}{n}{\9036\111}% U+1E49  
17146 % U+1E4A LATIN CAPITAL LETTER N WITH CIRCUMFLEX BELOW; Ncircumflexbelow  
17147 \DeclareTextCompositeCommand{\textsubcircum}{PU}{N}{\9036\112}% U+1E4A  
17148 % U+1E4B LATIN SMALL LETTER N WITH CIRCUMFLEX BELOW; ncircumflexbelow  
17149 \DeclareTextCompositeCommand{\textsubcircum}{PU}{n}{\9036\113}% U+1E4B  
17150 % U+1E50 LATIN CAPITAL LETTER O WITH MACRON AND GRAVE;  
17151 % Omacrongrave  
17152 \DeclareTextCompositeCommand{\textgravemacron}{PU}{O}{\9036\120}% U+1E50  
17153 % U+1E51 LATIN SMALL LETTER O WITH MACRON AND GRAVE;  
17154 % omacrongrave  
17155 \DeclareTextCompositeCommand{\textgravemacron}{PU}{o}{\9036\121}% U+1E51  
17156 % U+1E52 LATIN CAPITAL LETTER O WITH MACRON AND ACUTE;  
17157 % Omacronacute  
17158 \DeclareTextCompositeCommand{\textacutemacron}{PU}{O}{\9036\122}% U+1E52  
17159 % U+1E53 LATIN SMALL LETTER O WITH MACRON AND ACUTE;  
17160 % omacronacute  
17161 \DeclareTextCompositeCommand{\textacutemacron}{PU}{o}{\9036\123}% U+1E53  
17162 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute  
17163 \DeclareTextCompositeCommand{\'}{PU}{P}{\9036\124}% U+1E54  
17164 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute  
17165 \DeclareTextCompositeCommand{\'}{PU}{p}{\9036\125}% U+1E55  
17166 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent  
17167 \DeclareTextCompositeCommand{\.}{PU}{P}{\9036\126}% U+1E56  
17168 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent  
17169 \DeclareTextCompositeCommand{\.}{PU}{p}{\9036\127}% U+1E57  
17170 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent  
17171 \DeclareTextCompositeCommand{\.}{PU}{R}{\9036\130}% U+1E58  
17172 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent  
17173 \DeclareTextCompositeCommand{\.}{PU}{r}{\9036\131}% U+1E59  
17174 % U+1E5A LATIN CAPITAL LETTER R WITH DOT BELOW; Rdotbelow  
17175 \DeclareTextCompositeCommand{\d}{PU}{R}{\9036\132}% U+1E5A  
17176 % U+1E5B LATIN SMALL LETTER R WITH DOT BELOW; rdotbelow

17177 \DeclareTextCompositeCommand{\d}{PU}{r}{\9036\133}% U+1E5B  
17178 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow  
17179 \DeclareTextCompositeCommand{\b}{PU}{R}{\9036\136}% U+1E5E  
17180 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow  
17181 \DeclareTextCompositeCommand{\b}{PU}{r}{\9036\137}% U+1E5F  
17182 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent  
17183 \DeclareTextCompositeCommand{\.}{PU}{S}{\9036\140}% U+1E60  
17184 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent  
17185 \DeclareTextCompositeCommand{\.}{PU}{s}{\9036\141}% U+1E61  
17186 % U+1E62 LATIN CAPITAL LETTER S WITH DOT BELOW; Sdotbelow  
17187 \DeclareTextCompositeCommand{\d}{PU}{S}{\9036\142}% U+1E62  
17188 % U+1E63 LATIN SMALL LETTER S WITH DOT BELOW; sdotbelow  
17189 \DeclareTextCompositeCommand{\d}{PU}{s}{\9036\143}% U+1E63  
17190 % U+1E6A LATIN CAPITAL LETTER T WITH DOT ABOVE; Tdotaccent  
17191 \DeclareTextCompositeCommand{\.}{PU}{T}{\9036\152}% U+1E6A  
17192 % U+1E6B LATIN SMALL LETTER T WITH DOT ABOVE; tdotaccent  
17193 \DeclareTextCompositeCommand{\.}{PU}{t}{\9036\153}% U+1E6B  
17194 % U+1E6C LATIN CAPITAL LETTER T WITH DOT BELOW; Tdotbelow  
17195 \DeclareTextCompositeCommand{\d}{PU}{T}{\9036\154}% U+1E6C  
17196 % U+1E6D LATIN SMALL LETTER T WITH DOT BELOW; tdotbelow  
17197 \DeclareTextCompositeCommand{\d}{PU}{t}{\9036\155}% U+1E6D  
17198 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow  
17199 \DeclareTextCompositeCommand{\b}{PU}{T}{\9036\156}% U+1E6E  
17200 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow  
17201 \DeclareTextCompositeCommand{\b}{PU}{t}{\9036\157}% U+1E6F  
17202 % U+1E70 LATIN CAPITAL LETTER T WITH CIRCUMFLEX BELOW; Tcircumflexbelow  
17203 \DeclareTextCompositeCommand{\textsubcircum}{PU}{T}{\9036\160}% U+1E70  
17204 % U+1E71 LATIN SMALL LETTER T WITH CIRCUMFLEX BELOW; tcircumflexbelow  
17205 \DeclareTextCompositeCommand{\textsubcircum}{PU}{t}{\9036\161}% U+1E71  
17206 % U+1E72 LATIN CAPITAL LETTER U WITH DIAERESIS BELOW; Udiere-  
sisbelow  
17207 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{U}{\9036\162}% U+1E72  
17208 % U+1E73 LATIN SMALL LETTER U WITH DIAERESIS BELOW; udiere-  
sisbelow  
17209 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{u}{\9036\163}% U+1E73  
17210 % U+1E74 LATIN CAPITAL LETTER U WITH TILDE BELOW; Utildebelow  
17211 \DeclareTextCompositeCommand{\textsubtilde}{PU}{U}{\9036\164}% U+1E74  
17212 % U+1E75 LATIN SMALL LETTER U WITH TILDE BELOW; utildebelow  
17213 \DeclareTextCompositeCommand{\textsubtilde}{PU}{u}{\9036\165}% U+1E75  
17214 % U+1E76 LATIN CAPITAL LETTER U WITH CIRCUMFLEX BELOW; Ucircumflexbelow  
17215 \DeclareTextCompositeCommand{\textsubcircum}{PU}{U}{\9036\166}% U+1E76  
17216 % U+1E77 LATIN SMALL LETTER U WITH CIRCUMFLEX BELOW; ucircumflexbelow  
17217 \DeclareTextCompositeCommand{\textsubcircum}{PU}{u}{\9036\167}% U+1E77  
17218 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde  
17219 \DeclareTextCompositeCommand{\~}{PU}{V}{\9036\174}% U+1E7C  
17220 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde  
17221 \DeclareTextCompositeCommand{\~}{PU}{v}{\9036\175}% U+1E7D  
17222 % U+1E7E LATIN CAPITAL LETTER V WITH DOT BELOW; Vdotbelow  
17223 \DeclareTextCompositeCommand{\d}{PU}{V}{\9036\176}% U+1E7E  
17224 % U+1E7F LATIN SMALL LETTER V WITH DOT BELOW; vdotbelow

17225 \DeclareTextCompositeCommand{\d}{PU}{v}{\9036\177}% U+1E7F  
17226 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave  
17227 \DeclareTextCompositeCommand{\`}{PU}{W}{\9036\200}% U+1E80  
17228 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave  
17229 \DeclareTextCompositeCommand{\`}{PU}{w}{\9036\201}% U+1E81  
17230 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute  
17231 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\202}% U+1E82  
17232 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute  
17233 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\203}% U+1E83  
17234 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis  
17235 \DeclareTextCompositeCommand{\"}{PU}{W}{\9036\204}% U+1E84  
17236 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis  
17237 \DeclareTextCompositeCommand{\"}{PU}{w}{\9036\205}% U+1E85  
17238 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent  
17239 \DeclareTextCompositeCommand{\.}{PU}{W}{\9036\206}% U+1E86  
17240 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent  
17241 \DeclareTextCompositeCommand{\.}{PU}{w}{\9036\207}% U+1E87  
17242 % U+1E88 LATIN CAPITAL LETTER W WITH DOT BELOW; wdotbelow  
17243 \DeclareTextCompositeCommand{\d}{PU}{W}{\9036\210}% U+1E88  
17244 % U+1E89 LATIN SMALL LETTER W WITH DOT BELOW; wdotbelow  
17245 \DeclareTextCompositeCommand{\d}{PU}{w}{\9036\211}% U+1E89  
17246 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent  
17247 \DeclareTextCompositeCommand{\.}{PU}{X}{\9036\212}% U+1E8A  
17248 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent  
17249 \DeclareTextCompositeCommand{\.}{PU}{x}{\9036\213}% U+1E8B  
17250 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis  
17251 \DeclareTextCompositeCommand{\"}{PU}{X}{\9036\214}% U+1E8C  
17252 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis  
17253 \DeclareTextCompositeCommand{\"}{PU}{x}{\9036\215}% U+1E8D  
17254 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent  
17255 \DeclareTextCompositeCommand{\.}{PU}{Y}{\9036\216}% U+1E8E  
17256 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent  
17257 \DeclareTextCompositeCommand{\.}{PU}{y}{\9036\217}% U+1E8F  
17258 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex  
17259 \DeclareTextCompositeCommand{\^}{PU}{Z}{\9036\220}% U+1E90  
17260 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex  
17261 \DeclareTextCompositeCommand{\^}{PU}{z}{\9036\221}% U+1E91  
17262 % U+1E92 LATIN CAPITAL LETTER Z WITH DOT BELOW; Zdotbelow  
17263 \DeclareTextCompositeCommand{\d}{PU}{Z}{\9036\222}% U+1E92  
17264 % U+1E93 LATIN SMALL LETTER Z WITH DOT BELOW; zdotbelow  
17265 \DeclareTextCompositeCommand{\d}{PU}{z}{\9036\223}% U+1E93  
17266 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow  
17267 \DeclareTextCompositeCommand{\b}{PU}{Z}{\9036\224}% U+1E94  
17268 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow  
17269 \DeclareTextCompositeCommand{\b}{PU}{z}{\9036\225}% U+1E95  
17270 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow  
17271 \DeclareTextCompositeCommand{\b}{PU}{h}{\9036\226}% U+1E96  
17272 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis  
17273 \DeclareTextCompositeCommand{\"}{PU}{t}{\9036\227}% U+1E97  
17274 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring  
17275 \DeclareTextCompositeCommand{\r}{PU}{w}{\9036\230}% U+1E98  
17276 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring  
17277 \DeclareTextCompositeCommand{\r}{PU}{y}{\9036\231}% U+1E99  
17278 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdo-

taccent

17279 \DeclareTextCompositeCommand{\.}{PU}{\textlongs}{\9036\233}% U+1E9B  
17280 % U+1EA0 LATIN CAPITAL LETTER A WITH DOT BELOW; Adotbelow  
17281 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}% U+1EA0  
17282 % U+1EA1 LATIN SMALL LETTER A WITH DOT BELOW; adotbelow  
17283 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}% U+1EA1  
17284 % U+1EB8 LATIN CAPITAL LETTER E WITH DOT BELOW; Edotbelow  
17285 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}% U+1EB8  
17286 % U+1EB9 LATIN SMALL LETTER E WITH DOT BELOW; edotbelow  
17287 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}% U+1EB9  
17288 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde  
17289 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
17290 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde  
17291 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
17292 % U+1ECA LATIN CAPITAL LETTER I WITH DOT BELOW; Idotbelow  
17293 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}% U+1ECA  
17294 % U+1ECB LATIN SMALL LETTER I WITH DOT BELOW; idotbelow  
17295 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}% U+1ECB  
17296 % U+1ECC LATIN CAPITAL LETTER O WITH DOT BELOW; Odotbelow  
17297 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}% U+1ECC  
17298 % U+1ECD LATIN SMALL LETTER O WITH DOT BELOW; odotbelow  
17299 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}% U+1ECD  
17300 % U+1EE4 LATIN CAPITAL LETTER U WITH DOT BELOW; Udotbelow  
17301 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4  
17302 % U+1EE5 LATIN SMALL LETTER U WITH DOT BELOW; udotbelow  
17303 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}% U+1EE5  
17304 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave  
17305 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2  
17306 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave  
17307 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3  
17308 % U+1EF4 LATIN CAPITAL LETTER Y WITH DOT BELOW; Ydotbelow  
17309 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4  
17310 % U+1EF5 LATIN SMALL LETTER Y WITH DOT BELOW; ydotbelow  
17311 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}% U+1EF5  
17312 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde  
17313 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8  
17314 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde  
17315 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9

#### 47.2.16 General Punctuation: U+2000 to U+206F

17316 % U+200C ZERO WIDTH NON-JOINER; \*afii61664, zerowidthnonjoiner  
17317 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C  
17318 % U+2013 EN DASH; endash  
17319 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013  
17320 % U+2014 EM DASH; emdash  
17321 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014  
17322 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar  
17323 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016  
17324 %\* \textbardbl -> \textdoublevertline (tipa)  
17325 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
17326 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018  
17327 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
17328 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019  
17329 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase

17330 `\DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A`  
17331 `% U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft`  
17332 `\DeclareTextCommand{\textquotedblleft}{PU}{\9040\034}% U+201C`  
17333 `% U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright`  
17334 `\DeclareTextCommand{\textquotedblright}{PU}{\9040\035}% U+201D`  
17335 `% U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase`  
17336 `\DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E`  
17337 `% U+2020 DAGGER; dagger`  
17338 `\DeclareTextCommand{\textdagger}{PU}{\9040\040}%* U+2020`  
17339 `%* \textdagger -> \dag (LaTeX)`  
17340 `% U+2021 DOUBLE DAGGER; daggerdbl; ddagger (LaTeX)`  
17341 `\DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021`  
17342 `%* \textdaggerdbl -> \ddagger (LaTeX)`  
17343 `%* \textdaggerdbl -> \ddag (LaTeX)`  
17344 `% U+2022 BULLET; bullet`  
17345 `\DeclareTextCommand{\textbullet}{PU}{\9040\042}%* U+2022`  
17346 `% U+2025 TWO DOT LEADER; \hdotfor (MnSymbol)`  
17347 `\DeclareTextCommand{\texthdotfor}{PU}{\9040\045}%* U+2025`  
17348 `% U+2026 HORIZONTAL ELLIPSIS; ellipsis`  
17349 `\DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026`  
17350 `%* \textellipsis -> \mathellipsis`  
17351 `% U+2030 PER MILLE SIGN; perthousand`  
17352 `\DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030`  
17353 `% U+2031 PER TEN THOUSAND SIGN`  
17354 `\DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031`  
17355 `% U+2032 PRIME; minute; \prime (MnSymbol)`  
17356 `\DeclareTextCommand{\textprime}{PU}{\9040\062}%* U+2032`  
17357 `% U+2033 DOUBLE PRIME; \second (mathabx)`  
17358 `\DeclareTextCommand{\textsecond}{PU}{\9040\063}%* U+2033`  
17359 `% U+2034 TRIPLE PRIME; \third (mathabx)`  
17360 `\DeclareTextCommand{\textthird}{PU}{\9040\064}%* U+2034`  
17361 `% U+2035 REVERSED PRIME; \backprime (AmS)`  
17362 `\DeclareTextCommand{\textbackprime}{PU}{\9040\065}%* U+2035`  
17363 `% U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-`  
`ingleft`  
17364 `\DeclareTextCommand{\guilsingleft}{PU}{\9040\071}% U+2039`  
17365 `% U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-`  
`ingright`  
17366 `\DeclareTextCommand{\guilsingright}{PU}{\9040\072}% U+203A`  
17367 `% U+203B REFERENCE MARK; referencemark`  
17368 `\DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B`  
17369 `% U+203D INTERROBANG`  
17370 `\DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D`  
17371 `% U+2044 FRACTION SLASH; fraction`  
17372 `\DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044`  
17373 `% U+2045 LEFT SQUARE BRACKET WITH QUILL`  
17374 `\DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045`  
17375 `% U+2046 RIGHT SQUARE BRACKET WITH QUILL`  
17376 `\DeclareTextCommand{\textrquill}{PU}{\9040\106}% U+2046`  
17377 `% U+2052 COMMERCIAL MINUS SIGN`  
17378 `\DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052`  
17379 `% U+2056 THREE DOT PUNCTUATION; \lefttherefore (MnSymbol)`  
17380 `\DeclareTextCommand{\textlefttherefore}{PU}{\9040\126}%* U+2056`  
17381 `% U+2057 QUADRUPLE PRIME; \fourth (mathabx)`

17382 \DeclareTextCommand{\textfourth}{PU}{\9040\127}%\* U+2057  
 17383 % U+2058 FOUR DOT PUNCTUATION; \diamonddots (MnSymbol)  
 17384 \DeclareTextCommand{\textdiamonddots}{PU}{\9040\130}%\* U+2058

#### 47.2.17 Superscripts and Subscripts: U+2070 to U+209F

17385 % U+2070 SUPERSCRIPT ZERO; zerosuperior  
 17386 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}%\* U+2070  
 17387 % U+2071 SUPERSCRIPT LATIN SMALL LETTER I  
 17388 \DeclareTextCommand{\textisuperior}{PU}{\9040\161}%\* U+2071  
 17389 % U+2074 SUPERSCRIPT FOUR; foursuperior  
 17390 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}%\* U+2074  
 17391 % U+2075 SUPERSCRIPT FIVE; fivesuperior  
 17392 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}%\* U+2075  
 17393 % U+2076 SUPERSCRIPT SIX; sixsuperior  
 17394 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}%\* U+2076  
 17395 % U+2077 SUPERSCRIPT SEVEN; sevensuperior  
 17396 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}%\* U+2077  
 17397 % U+2078 SUPERSCRIPT EIGHT; eightsuperior  
 17398 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170}%\* U+2078  
 17399 % U+2079 SUPERSCRIPT NINE; ninesuperior  
 17400 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171}%\* U+2079  
 17401 % U+207A SUPERSCRIPT PLUS SIGN; plussuperior  
 17402 \DeclareTextCommand{\textplussuperior}{PU}{\9040\172}%\* U+207A  
 17403 % U+207B SUPERSCRIPT MINUS  
 17404 \DeclareTextCommand{\textminussuperior}{PU}{\9040\173}%\* U+207B  
 17405 % U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior  
 17406 \DeclareTextCommand{\textequalsuperior}{PU}{\9040\174}%\* U+207C  
 17407 % U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftsuperior  
 17408 \DeclareTextCommand{\textparenleftsuperior}{PU}{\9040\175}%\* U+207D  
 17409 % U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightsuperior  
 17410 \DeclareTextCommand{\textparenrightsuperior}{PU}{\9040\176}%\* U+207E  
 17411 % U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior  
 17412 \DeclareTextCommand{\textnsuperior}{PU}{\9040\177}%\* U+207F  
 17413 % U+2080 SUBSCRIPT ZERO; zeroinferior  
 17414 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}%\* U+2080  
 17415 % U+2081 SUBSCRIPT ONE; oneinferior  
 17416 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201}%\* U+2081  
 17417 % U+2082 SUBSCRIPT TWO; twoinferior  
 17418 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}%\* U+2082  
 17419 % U+2083 SUBSCRIPT THREE; threeinferior  
 17420 \DeclareTextCommand{\textthreeinferior}{PU}{\9040\203}%\* U+2083  
 17421 % U+2084 SUBSCRIPT FOUR; fourinferior  
 17422 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204}%\* U+2084  
 17423 % U+2085 SUBSCRIPT FIVE; fiveinferior  
 17424 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}%\* U+2085  
 17425 % U+2086 SUBSCRIPT SIX; sixinferior  
 17426 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}%\* U+2086  
 17427 % U+2087 SUBSCRIPT SEVEN; seveninferior  
 17428 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}%\* U+2087  
 17429 % U+2088 SUBSCRIPT EIGHT; eightinferior  
 17430 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}%\* U+2088  
 17431 % U+2089 SUBSCRIPT NINE; nineinferior  
 17432 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}%\* U+2089  
 17433 % U+208A SUBSCRIPT PLUS SIGN

17434 \DeclareTextCommand{\textplusinferior}{PU}{\9040\212}%\* U+208A  
17435 % U+208B SUBSCRIPT MINUS  
17436 \DeclareTextCommand{\textminusinferior}{PU}{\9040\213}%\* U+208B  
17437 % U+208C SUBSCRIPT EQUALS SIGN  
17438 \DeclareTextCommand{\textequalsinferior}{PU}{\9040\214}%\* U+208C  
17439 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior  
17440 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}%\* U+208D  
17441 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior  
17442 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}%\* U+208E  
17443 % U+2090 LATIN SUBSCRIPT SMALL LETTER A  
17444 \DeclareTextCommand{\textainferior}{PU}{\9040\220}%\* U+2090  
17445 % U+2091 LATIN SUBSCRIPT SMALL LETTER E  
17446 \DeclareTextCommand{\texteinferior}{PU}{\9040\221}%\* U+2091  
17447 % U+2092 LATIN SUBSCRIPT SMALL LETTER O  
17448 \DeclareTextCommand{\textoinferior}{PU}{\9040\222}%\* U+2092  
17449 % U+2093 LATIN SUBSCRIPT SMALL LETTER X  
17450 \DeclareTextCommand{\textxinferior}{PU}{\9040\223}%\* U+2093  
17451 % U+2094 LATIN SUBSCRIPT SMALL LETTER SCHWA  
17452 \DeclareTextCommand{\textschwainferior}{PU}{\9040\224}%\* U+2094  
17453 % U+2095 LATIN SUBSCRIPT SMALL LETTER H  
17454 \DeclareTextCommand{\texthinferior}{PU}{\9040\225}%\* U+2095  
17455 % U+2096 LATIN SUBSCRIPT SMALL LETTER K  
17456 \DeclareTextCommand{\textkinferior}{PU}{\9040\226}%\* U+2096  
17457 % U+2097 LATIN SUBSCRIPT SMALL LETTER L  
17458 \DeclareTextCommand{\textlinferior}{PU}{\9040\227}%\* U+2097  
17459 % U+2098 LATIN SUBSCRIPT SMALL LETTER M  
17460 \DeclareTextCommand{\textminferior}{PU}{\9040\230}%\* U+2098  
17461 % U+2099 LATIN SUBSCRIPT SMALL LETTER N  
17462 \DeclareTextCommand{\textninferior}{PU}{\9040\231}%\* U+2099  
17463 % U+209A LATIN SUBSCRIPT SMALL LETTER P  
17464 \DeclareTextCommand{\textpinferior}{PU}{\9040\232}%\* U+209A  
17465 % U+209B LATIN SUBSCRIPT SMALL LETTER S  
17466 \DeclareTextCommand{\textsinferior}{PU}{\9040\233}%\* U+209B  
17467 % U+209C LATIN SUBSCRIPT SMALL LETTER T  
17468 \DeclareTextCommand{\texttinferior}{PU}{\9040\234}%\* U+209C

#### 47.2.18 Currency Symbols: U+20A0 to U+20CF

17469 % U+20A1 COLON SIGN; \*colonmonetary, colonsign  
17470 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1  
17471 % U+20A4 LIRA SIGN; afi08941, \*lira  
17472 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4  
17473 % U+20A6 NAIRA SIGN  
17474 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6  
17475 % U+20A7 PESETA SIGN; peseta  
17476 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7  
17477 % U+20A9 WON SIGN; won  
17478 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9  
17479 % U+20AB DONG SIGN; dong  
17480 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB  
17481 % U+20AC EURO SIGN; \*Euro, euro  
17482 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC  
17483 %\* \texteuro -> \EurDig (marvosym)  
17484 %\* \texteuro -> \EURdig (marvosym)  
17485 %\* \texteuro -> \EurHv (marvosym)

17486 %\* \texteuero -> \EURhv (marvosym)  
 17487 %\* \texteuero -> \EurCr (marvosym)  
 17488 %\* \texteuero -> \EURcr (marvosym)  
 17489 %\* \texteuero -> \EurTm (marvosym)  
 17490 %\* \texteuero -> \EURtm (marvosym)  
 17491 %\* \texteuero -> \Eur (marvosym)  
 17492 % U+20B0 GERMAN PENNY SIGN; \Deleatur (marvosym)  
 17493 \DeclareTextCommand{\textDeleatur}{PU}{\9040\260}% U+20B0  
 17494 %\* \textDeleatur -> \Denarius (marvosym)  
 17495 % U+20B1 PESO SIGN  
 17496 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1  
 17497 % U+20B2 GUARANI SIGN  
 17498 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

#### 47.2.19 Letterlike Symbols: U+2100 to U+214F

17499 % U+2103 DEGREE CELSIUS; centigrade  
 17500 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103  
 17501 % U+210F PLANCK CONSTANT OVER TWO PI; \hslash (AmS)  
 17502 \DeclareTextCommand{\texthslash}{PU}{\9041\017}% U+210F  
 17503 % U+2111 BLACK-LETTER CAPITAL I (=imaginary part); Ifraktur; \Im (LaTeX)  
 17504 \DeclareTextCommand{\textIm}{PU}{\9041\021}% U+2111  
 17505 % U+2113 SCRIPT SMALL L (=ell, liter); afii61289, lsquare; \ell (LaTeX)  
 17506 \DeclareTextCommand{\textell}{PU}{\9041\023}% U+2113  
 17507 % U+2116 NUMERO SIGN; \*afii61352, numero  
 17508 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116  
 17509 % U+2117 SOUND RECORDING COPYRIGHT  
 17510 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117  
 17511 % U+2118 SCRIPT CAPITAL P (=Weierstrass elliptic function);  
 17512 % weierstrass; \wp (LaTeX)  
 17513 \DeclareTextCommand{\textwp}{PU}{\9041\030}% U+2118  
 17514 % U+211C BLACK-LETTER CAPITAL R (=real part); Rfraktur; \Re (LaTeX)  
 17515 \DeclareTextCommand{\textRe}{PU}{\9041\034}% U+211C  
 17516 % U+211E PRESCRIPTION TAKE; prescription  
 17517 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E  
 17518 % U+2120 SERVICE MARK  
 17519 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120  
 17520 % U+2122 TRADE MARK SIGN; trademark  
 17521 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122  
 17522 % U+2126 OHM SIGN; Ohm, Omega  
 17523 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126  
 17524 % U+2127 INVERTED OHM SIGN  
 17525 \DeclareTextCommand{\textmho}{PU}{\9041\047}% U+2127  
 17526 %\* \textmho -> \agemO (wasysym)  
 17527 % U+2129 TURNED GREEK SMALL LETTER IOTA; \riota (phonetic)  
 17528 \DeclareTextCommand{\textriota}{PU}{\9041\051}% U+2129  
 17529 % U+212B ANGSTROM SIGN; angstrom  
 17530 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B  
 17531 % U+212E ESTIMATED SYMBOL; estimated  
 17532 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E  
 17533 %\* \textestimated -> \EstimatedSign (marvosym)  
 17534 %\* \textestimated -> \Ecommerce (marvosym)  
 17535 % U+2132 TURNED CAPITAL F; \Finv (AmS)  
 17536 \DeclareTextCommand{\textFinv}{PU}{\9041\062}% U+2132



17537 % U+2135 ALEF SYMBOL; aleph; \aleph (LaTeX)  
 17538 \DeclareTextCommand{\textaleph}{PU}{\9041\065}%\* U+2135  
 17539 % U+2136 BET SYMBOL; \beth (AmS, MnSymbol)  
 17540 \DeclareTextCommand{\textbeth}{PU}{\9041\066}%\* U+2136  
 17541 % U+2137 GIMEL SYMBOL; \gimel (AmS, MnSymbol)  
 17542 \DeclareTextCommand{\textgimel}{PU}{\9041\067}%\* U+2137  
 17543 % U+2138 DALET SYMBOL; \daleth (AmS, MnSymbol)  
 17544 \DeclareTextCommand{\textdaleth}{PU}{\9041\070}%\* U+2138  
 17545 % U+213B FACSIMILE SIGN; \fax (marvosym)  
 17546 \DeclareTextCommand{\textfax}{PU}{\9041\073}%\* U+213B  
 17547 % U+2141 TURNED SANS-SERIF CAPITAL G (=game); \Game  
 17548 \DeclareTextCommand{\textGame}{PU}{\9041\101}%\* U+2141  
 17549 % U+214B TURNED AMPERSAND; \invamp (txfonts/pxfonts)  
 17550 \DeclareTextCommand{\textinvamp}{PU}{\9041\113}% U+214B  
 17551 %\* \textinvamp -> \bindnasrepma (stmaryrd)  
 17552 %\* \textinvamp -> \parr (cml)

#### 47.2.20 Number Forms: U+2150 to U+218F

17553 % U+2150 VULGAR FRACTION ONE SEVENTH  
 17554 \DeclareTextCommand{\textoneseventh}{PU}{\9041\120}% U+2150  
 17555 % U+2151 VULGAR FRACTION ONE NINTH  
 17556 \DeclareTextCommand{\textoneninth}{PU}{\9041\121}% U+2151  
 17557 % U+2152 VULGAR FRACTION ONE TENTH  
 17558 \DeclareTextCommand{\textonetenth}{PU}{\9041\122}% U+2152  
 17559 % U+2153 VULGAR FRACTION ONE THIRD; onethird  
 17560 \DeclareTextCommand{\textonethird}{PU}{\9041\123}% U+2153  
 17561 % U+2154 VULGAR FRACTION TWO THIRDS; twothirds  
 17562 \DeclareTextCommand{\texttwothirds}{PU}{\9041\124}% U+2154  
 17563 % U+2155 VULGAR FRACTION ONE FIFTH  
 17564 \DeclareTextCommand{\textonefifth}{PU}{\9041\125}% U+2155  
 17565 % U+2156 VULGAR FRACTION TWO FIFTHS  
 17566 \DeclareTextCommand{\texttwofifths}{PU}{\9041\126}% U+2156  
 17567 % U+2157 VULGAR FRACTION THREE FIFTHS  
 17568 \DeclareTextCommand{\textthreefifths}{PU}{\9041\127}% U+2157  
 17569 % U+2158 VULGAR FRACTION FOUR FIFTHS  
 17570 \DeclareTextCommand{\textfourfifths}{PU}{\9041\130}% U+2158  
 17571 % U+2159 VULGAR FRACTION ONE SIXTH  
 17572 \DeclareTextCommand{\textonesixth}{PU}{\9041\131}% U+2159  
 17573 % U+215A VULGAR FRACTION FIVE SIXTHS  
 17574 \DeclareTextCommand{\textfivesixths}{PU}{\9041\132}% U+215A  
 17575 % U+215B VULGAR FRACTION ONE EIGHTH; oneeighth  
 17576 \DeclareTextCommand{\textoneeighth}{PU}{\9041\133}% U+215B  
 17577 % U+215C VULGAR FRACTION THREE EIGHTHS; threeeighths  
 17578 \DeclareTextCommand{\textthreeeighths}{PU}{\9041\134}% U+215C  
 17579 % U+215D VULGAR FRACTION FIVE EIGHTHS; fiveeighths  
 17580 \DeclareTextCommand{\textfiveeighths}{PU}{\9041\135}% U+215D  
 17581 % U+215E VULGAR FRACTION SEVEN EIGHTHS; seveneighths  
 17582 \DeclareTextCommand{\textseveneighths}{PU}{\9041\136}% U+215E  
 17583 % U+2184 LATIN SMALL LETTER REVERSED C  
 17584 \DeclareTextCommand{\textrevc}{PU}{\9041\204}% U+2184  
 17585 % U+2189 VULGAR FRACTION ZERO THIRDS  
 17586 \DeclareTextCommand{\textzerthirds}{PU}{\9041\211}% U+2189

#### 47.2.21 Arrows: U+2190 to U+21FF

17587 % U+2190 LEFTWARDS ARROW; arrowleft  
17588 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}%\* U+2190  
17589 % U+2191 UPWARDS ARROW; arrowup  
17590 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}%\* U+2191  
17591 % U+2192 RIGHTWARDS ARROW; arrowright  
17592 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}%\* U+2192  
17593 %\* \textrightarrow -> \MVRightArrow (marvosym)  
17594 %\* \textrightarrow -> \MVRightarrow (marvosym)  
17595 % U+2193 DOWNWARDS ARROW; arrowdown  
17596 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}%\* U+2193  
17597 %\* \textdownarrow -> \MVArrowDown (marvosym)  
17598 %\* \textdownarrow -> \Force (marvosym)  
17599 % U+2194 LEFT RIGHT ARROW; arrowboth; \leftrightarrow (LaTeX)  
17600 \DeclareTextCommand{\textleftrightarrow}{PU}{\9041\224}%\* U+2194  
17601 % U+2195 UP DOWN ARROW; arrowupdn; \updownarrow (LaTeX)  
17602 \DeclareTextCommand{\textupdownarrow}{PU}{\9041\225}%\* U+2195  
17603 % U+2196 NORTH WEST ARROW; arrowupleft; \nwarrow (LaTeX)  
17604 \DeclareTextCommand{\textnwarrow}{PU}{\9041\226}%\* U+2196  
17605 % U+2197 NORTH EAST ARROW; arrowupright; \nearrow (LaTeX)  
17606 \DeclareTextCommand{\textnearrow}{PU}{\9041\227}%\* U+2197  
17607 %\* \textnearrow -> \textglobrise (tipa)  
17608 % U+2198 SOUTH EAST ARROW; arrowdownright; \searrow (LaTeX)  
17609 \DeclareTextCommand{\textsearrow}{PU}{\9041\230}%\* U+2198  
17610 %\* \textsearrow -> \textglobfall (tipa)  
17611 % U+2199 SOUTH WEST ARROW; arrowdownleft; \swarrow (LaTeX)  
17612 \DeclareTextCommand{\textswarrow}{PU}{\9041\231}%\* U+2199  
17613 % U+219A LEFTWARDS ARROW WITH STROKE; \leftarrow (AmS)  
17614 \DeclareTextCommand{\textnleftarrow}{PU}{\9041\232}%\* U+219A  
17615 % U+219B RIGHTWARDS ARROW WITH STROKE; \rightarrow (AmS)  
17616 \DeclareTextCommand{\textnrightarrow}{PU}{\9041\233}%\* U+219B  
17617 % U+219E LEFTWARDS TWO HEADED ARROW; \twoheadleftarrow (AmS)  
17618 \DeclareTextCommand{\texttwoheadleftarrow}{PU}{\9041\236}%\* U+219E  
17619 % \twoheadleftarrow (txfonts/pxfonts)  
17620 \DeclareTextCommand{\textntwoheadleftarrow}{PU}{\9041\236\83\070}%\* U+219E U+0338  
17621 % U+219F UPWARDS TWO HEADED ARROW; \twoheaduparrow (MnSymbol)  
17622 \DeclareTextCommand{\texttwoheaduparrow}{PU}{\9041\237}%\* U+219F  
17623 % U+21A0 RIGHTWARDS TWO HEADED ARROW;  
17624 % \twoheadrightarrow (AmS)  
17625 \DeclareTextCommand{\texttwoheadrightarrow}{PU}{\9041\240}%\* U+21A0  
17626 % \twoheadrightarrow (txfonts/pxfonts)  
17627 \DeclareTextCommand{\textntwoheadrightarrow}{PU}{\9041\240\83\070}%\* U+21A0 U+0338  
17628 % U+21A1 DOWNWARDS TWO HEADED ARROW; \twoheaddownarrow (Mn-  
Symbol)  
17629 \DeclareTextCommand{\texttwoheaddownarrow}{PU}{\9041\241}%\* U+21A1  
17630 % U+21A2 LEFTWARDS ARROW WITH TAIL; \leftarrowtail (AmS)  
17631 \DeclareTextCommand{\textleftarrowtail}{PU}{\9041\242}%\* U+21A2  
17632 % U+21A3 RIGHTWARDS ARROW WITH TAIL; \rightarrowtail (AmS)  
17633 \DeclareTextCommand{\textrightarrowtail}{PU}{\9041\243}%\* U+21A3  
17634 % U+21A6 RIGHTWARDS ARROW FROM BAR; \mapsto (LaTeX)  
17635 \DeclareTextCommand{\textmapsto}{PU}{\9041\246}%\* U+21A6  
17636 % U+21A9 LEFTWARDS ARROW WITH HOOK; \hookleftarrow (LaTeX)  
17637 \DeclareTextCommand{\texthookleftarrow}{PU}{\9041\251}%\* U+21A9  
17638 % U+21AA RIGHTWARDS ARROW WITH HOOK; \hookrightarrow (LaTeX)  
17639 \DeclareTextCommand{\texthookrightarrow}{PU}{\9041\252}%\* U+21AA

17640 % U+21AB LEFTWARDS ARROW WITH LOOP; \looparrowleft (AmS)  
17641 \DeclareTextCommand{\textlooparrowleft}{PU}{\9041\253}%\* U+21AB  
17642 % U+21AC RIGHTWARDS ARROW WITH LOOP; \looparrowright (AmS)  
17643 \DeclareTextCommand{\textlooparrowright}{PU}{\9041\254}%\* U+21AC  
17644 % U+21AE LEFT RIGHT ARROW WITH STROKE; \nletrightarrow (AmS)  
17645 \DeclareTextCommand{\textnletrightarrow}{PU}{\9041\256}%\* U+21AE  
17646 % U+21AF DOWNWARDS ZIGZAG ARROW; \lightning (stmaryrd)  
17647 \DeclareTextCommand{\textlightning}{PU}{\9041\257}%\* U+21AF  
17648 %\* \textlightning -> \Lightning (marvosym)  
17649 % U+21B5 DOWNWARDS ARROW WITH CORNER LEFTWARDS;  
17650 % \dlsH (mathabx)  
17651 \DeclareTextCommand{\textdlsH}{PU}{\9041\265}%\* U+21B5  
17652 % U+21B6 ANTICLOCKWISE TOP SEMICIRCLE ARROW;  
17653 % \curvearrowleft (AmS)  
17654 \DeclareTextCommand{\textcurvearrowleft}{PU}{\9041\266}%\* U+21B6  
17655 % U+21B7 CLOCKWISE TOP SEMICIRCLE ARROW; \curvearrowright (AmS)  
17656 \DeclareTextCommand{\textcurvearrowright}{PU}{\9041\267}%\* U+21B7  
17657 % U+21BC LEFTWARDS HARPOON WITH BARB UPWARDS; harpoonleft-  
barbup;  
17658 % \leftharpoonup (LaTeX)  
17659 \DeclareTextCommand{\textleftharpoonup}{PU}{\9041\274}%\* U+21BC  
17660 % U+21BD LEFTWARDS HARPOON WITH BARB DOWNWARDS;  
17661 % \leftharpoondown (LaTeX)  
17662 \DeclareTextCommand{\textleftharpoondown}{PU}{\9041\275}%\* U+21BD  
17663 % U+21BE UPWARDS HARPOON WITH BARB RIGHTWARDS;  
17664 % \upharpoonright (AmS)  
17665 \DeclareTextCommand{\textupharpoonright}{PU}{\9041\276}%\* U+21BE  
17666 % U+21BF UPWARDS HARPOON WITH BARB LEFTWARDS;  
17667 % \upharpoonleft (AmS)  
17668 \DeclareTextCommand{\textupharpoonleft}{PU}{\9041\277}%\* U+21BF  
17669 % U+21C0 RIGHTWARDS HARPOON WITH BARB UPWARDS; harpoonright-  
barbup  
17670 % \rightharpoonup (LaTeX)  
17671 \DeclareTextCommand{\textrightharpoonup}{PU}{\9041\300}%\* U+21C0  
17672 % U+21C1 RIGHTWARDS HARPOON WITH BARB DOWNWARDS;  
17673 % \rightharpoondown (LaTeX)  
17674 \DeclareTextCommand{\textrightharpoondown}{PU}{\9041\301}%\* U+21C1  
17675 % U+21C2 DOWNWARDS HARPOON WITH BARB RIGHTWARDS;  
17676 % \downharpoonright (AmS)  
17677 \DeclareTextCommand{\textdownharpoonright}{PU}{\9041\302}%\* U+21C2  
17678 % U+21C3 DOWNWARDS HARPOON WITH BARB LEFTWARDS;  
17679 % \downharpoonleft (AmS)  
17680 \DeclareTextCommand{\textdownharpoonleft}{PU}{\9041\303}%\* U+21C3  
17681 % U+21C4 RIGHTWARDS ARROW OVER LEFTWARDS ARROW;  
17682 % \rightarrowleft; \rightleftarrows (MnSymbol)  
17683 \DeclareTextCommand{\textrightleftarrows}{PU}{\9041\304}%\* U+21C4  
17684 % U+21C5 UPWARDS ARROW LEFTWARDS OF DOWNWARDS ARROW; ar-  
rowupleftofdown;  
17685 % \updownarrows (MnSymbol)  
17686 \DeclareTextCommand{\textupdownarrows}{PU}{\9041\305}%\* U+21C5  
17687 % U+21C6 LEFTWARDS ARROW OVER RIGHTWARDS ARROW; arrowleft-  
overright;  
17688 % \leftrightarrows (AmS)  
17689 \DeclareTextCommand{\textleftrightarrows}{PU}{\9041\306}%\* U+21C6

17690 % U+21C7 LEFTWARDS PAIRED ARROWS; \leftleftarrows (AmS)  
17691 \DeclareTextCommand{\textleftleftarrows}{PU}{\9041\307}%\* U+21C7  
17692 % U+21C8 UPWARDS PAIRED ARROWS; \upuparrows (AmS)  
17693 \DeclareTextCommand{\textupuparrows}{PU}{\9041\310}%\* U+21C8  
17694 % U+21C9 RIGHTWARDS PAIRED ARROWS; \rightrightarrows (AmS)  
17695 \DeclareTextCommand{\textrightarrows}{PU}{\9041\311}%\* U+21C9  
17696 % U+21CA DOWNWARDS PAIRED ARROWS; \downdownarrows (AmS)  
17697 \DeclareTextCommand{\textdowndownarrows}{PU}{\9041\312}%\* U+21CA  
17698 % U+21CB LEFTWARDS HARPOON OVER RIGHTWARDS HARPOON;  
17699 % \leftrightharpoons (AmS);  
17700 \DeclareTextCommand{\textleftrightharpoons}{PU}{\9041\313}%\* U+21CB  
17701 % U+21CC RIGHTWARDS HARPOON OVER LEFTWARDS HARPOON;  
17702 % \rightleftharpoons (LaTeX, AmS)  
17703 \DeclareTextCommand{\textrightleftharpoons}{PU}{\9041\314}%\* U+21CC  
17704 % U+21CD LEFTWARDS DOUBLE ARROW WITH STROKE; arrowleftd-  
blstroke;  
17705 % \nLeftarrow (AmS)  
17706 \DeclareTextCommand{\textnLeftarrow}{PU}{\9041\315}%\* U+21CD  
17707 % U+21CE LEFT RIGHT DOUBLE ARROW WITH STROKE; \nLeftrightarrow  
(AmS)  
17708 \DeclareTextCommand{\textnLeftrightarrow}{PU}{\9041\316}%\* U+21CE  
17709 % U+21CF RIGHTWARDS DOUBLE ARROW WITH STROKE; arrowrightd-  
blstroke;  
17710 % \nrightarrow (AmS)  
17711 \DeclareTextCommand{\textnrightarrow}{PU}{\9041\317}%\* U+21CF  
17712 % U+21D0 LEFTWARDS DOUBLE ARROW; arrowdblleft, arrowleftdbl;  
17713 % \Leftarrow (LaTeX)  
17714 \DeclareTextCommand{\textLeftarrow}{PU}{\9041\320}%\* U+21D0  
17715 % U+21D1 UPWARDS DOUBLE ARROW; arrowdblup; \Uparrow (LaTeX)  
17716 \DeclareTextCommand{\textUparrow}{PU}{\9041\321}%\* U+21D1  
17717 % U+21D2 RIGHTWARDS DOUBLE ARROW; arrowdblright, dblarrowright;  
17718 % \rightarrow (LaTeX)  
17719 \DeclareTextCommand{\textrightarrow}{PU}{\9041\322}%\* U+21D2  
17720 %\* \textrightarrow -> \Conclusion (marvosym)  
17721 % U+21D3 DOWNWARDS DOUBLE ARROW; arrowdbl down; \Downarrow (La-  
TeX)  
17722 \DeclareTextCommand{\textDownarrow}{PU}{\9041\323}%\* U+21D3  
17723 % U+21D4 LEFT RIGHT DOUBLE ARROW; arrowdblboth;  
17724 % \Leftrightarrow (LaTeX)  
17725 \DeclareTextCommand{\textLeftrightarrow}{PU}{\9041\324}%\* U+21D4  
17726 %\* \textLeftrightarrow -> \Equivalence (marvosym)  
17727 % U+21D5 UP DOWN DOUBLE ARROW; \Updownarrow (LaTeX)  
17728 \DeclareTextCommand{\textUpdownarrow}{PU}{\9041\325}%\* U+21D5  
17729 % U+21D6 NORTH WEST DOUBLE ARROW; \Nwarrow (MnSymbol)  
17730 \DeclareTextCommand{\textNwarrow}{PU}{\9041\326}%\* U+21D6  
17731 % U+21D7 NORTH EAST DOUBLE ARROW; \Nearrow (MnSymbol)  
17732 \DeclareTextCommand{\textNearrow}{PU}{\9041\327}%\* U+21D7  
17733 % U+21D8 SOUTH EAST DOUBLE ARROW; \Searrow (MnSymbol)  
17734 \DeclareTextCommand{\textSearrow}{PU}{\9041\330}%\* U+21D8  
17735 % U+21D9 SOUTH WEST DOUBLE ARROW; \Swarrow (MnSymbol)  
17736 \DeclareTextCommand{\textSwarrow}{PU}{\9041\331}%\* U+21D9  
17737 % U+21DA LEFTWARDS TRIPLE ARROW; \Lleftarrow (AmS)  
17738 \DeclareTextCommand{\textLleftarrow}{PU}{\9041\332}%\* U+21DA  
17739 % U+21DB RIGHTWARDS TRIPLE ARROW; \Rrightarrow (MnSymbol)

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17740 \DeclareTextCommand{\textRrightarrow}{PU}{\9041\333}%* U+21DB
17741 % U+21DC LEFTWARDS SQUIGGLE ARROW; \leftsquigarrow (mathabx)
17742 \DeclareTextCommand{\textleftsquigarrow}{PU}{\9041\334}%* U+21DC
17743 % U+21DD RIGHTWARDS SQUIGGLE ARROW; \rightsquigarrow (mathabx)
17744 \DeclareTextCommand{\textrightsquigarrow}{PU}{\9041\335}%* U+21DD
17745 % U+21E0 LEFTWARDS DASHED ARROW; arrowdashleft;
17746 % \dashleftarrow (AmS)
17747 \DeclareTextCommand{\textdashleftarrow}{PU}{\9041\340}%* U+21E0
17748 %* \textdashleftarrow -> \dashedleftarrow (MnSymbol)
17749 % U+21E1 UPWARDS DASHED ARROW; arrowdashup; \dasheduparrow (Mn-
Symbol)
17750 \DeclareTextCommand{\textdasheduparrow}{PU}{\9041\341}%* U+21E1
17751 % U+21E2 RIGHTWARDS DASHED ARROW; arrowdashright; \dashrightarrow
(AmS)
17752 \DeclareTextCommand{\textdashrightarrow}{PU}{\9041\342}%* U+21E2
17753 %* \textdashrightarrow -> \dashedrightarrow (MnSymbol)
17754 % U+21E3 DOWNWARDS DASHED ARROW; arrowdashdown; \dasheddownar-
row (MnSymbol)
17755 \DeclareTextCommand{\textdasheddownarrow}{PU}{\9041\343}%* U+21E3
17756 % U+21E8 RIGHTWARDS WHITE ARROW; \pointer (wasysym)
17757 \DeclareTextCommand{\textpointer}{PU}{\9041\350}%* U+21E8
17758 % U+21F5 DOWNWARDS ARROW LEFTWARDS OF UPWARDS ARROW;
17759 % \downuparrows (MnSymbol)
17760 \DeclareTextCommand{\textdownuparrows}{PU}{\9041\365}%* U+21F5
17761 % U+21FD LEFTWARDS OPEN-HEADED ARROW; \leftarrowtriangle (stmaryrd)
17762 \DeclareTextCommand{\textleftarrowtriangle}{PU}{\9041\375}%* U+21FD
17763 % U+21FE RIGHTWARDS OPEN-HEADED ARROW; \rightarrowtriangle (stmaryrd)
17764 \DeclareTextCommand{\textrightarrowtriangle}{PU}{\9041\376}%* U+21FE
17765 % U+21FF LEFT RIGHT OPEN-HEADED ARROW; \leftrightarrowtri-
angle (stmaryrd)
17766 \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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17767 % U+2200 FOR ALL; forall; \forall (LaTeX)
17768 \DeclareTextCommand{\textforall}{PU}{\9042\000}%* U+2200
17769 % U+2201 COMPLEMENT; \complement (AmS)
17770 \DeclareTextCommand{\textcomplement}{PU}{\9042\001}%* U+2201
17771 % U+2202 PARTIAL DIFFERENTIAL; partialdiff; \partial (LaTeX)
17772 \DeclareTextCommand{\textpartial}{PU}{\9042\002}%* U+2202
17773 % U+2203 THERE EXISTS; existential; \exists (LaTeX)
17774 \DeclareTextCommand{\textexists}{PU}{\9042\003}%* U+2203
17775 % U+2204 THERE DOES NOT EXIST; \nexists (AmS)
17776 \DeclareTextCommand{\textnexists}{PU}{\9042\004}%* U+2204
17777 % U+2205 EMPTY SET; emptyset; \emptyset (LaTeX), \varnothing (AmS)
17778 \DeclareTextCommand{\textemptyset}{PU}{\9042\005}%* U+2205
17779 %* \textemptyset -> \varnothing (AmS)
17780 % U+2206 INCREMENT; increment, Deta; \triangle (LaTeX)
17781 \DeclareTextCommand{\texttriangle}{PU}{\9042\006}%* U+2206
17782 % U+2207 NABLA; nabla, gradient; \nabla (LaTeX)
17783 \DeclareTextCommand{\textnabla}{PU}{\9042\007}%* U+2207
17784 % U+2208 ELEMENT OF; element; \in (LaTeX)
17785 \DeclareTextCommand{\textinsymbol}{PU}{\9042\010}%* U+2208
17786 % U+2209 NOT AN ELEMENT OF; notelement, notelementof; \notin (LaTeX)
17787 \DeclareTextCommand{\textnotin}{PU}{\9042\011}%* U+2209

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17788 % U+220A SMALL ELEMENT OF; \smallin (mathdesign)  
17789 \DeclareTextCommand{\textsmallin}{PU}{\9042\012}%\* U+220A  
17790 % U+220B CONTAINS AS MEMBER; suchthat; \ni (LaTeX)  
17791 \DeclareTextCommand{\textni}{PU}{\9042\013}%\* U+220B  
17792 %\* \textni -> \owns (mathabx)  
17793 % U+220C DOES NOT CONTAIN AS MEMBER; \notowner (mathabx)  
17794 \DeclareTextCommand{\textnotowner}{PU}{\9042\014}%\* U+220C  
17795 %\* \textnotowner -> \notni (txfonts/pxfonts)  
17796 % U+220D SMALL CONTAINS AS MEMBER; \smallowns (mathdesign)  
17797 \DeclareTextCommand{\textsmallowns}{PU}{\9042\015}%\* U+220D  
17798 % U+220F N-ARY PRODUCT; \prod (LaTeX)  
17799 \DeclareTextCommand{\textprod}{PU}{\9042\017}%\* U+220F  
17800 % U+2210 N-ARY COPRODUCT; \amalg (LaTeX)  
17801 \DeclareTextCommand{\textamalg}{PU}{\9042\020}%\* U+2210  
17802 % U+2211 N-ARY SUMMATION; summation; \sum (LaTeX)  
17803 \DeclareTextCommand{\textsum}{PU}{\9042\021}%\* U+2211  
17804 % U+2212 MINUS SIGN; minus  
17805 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212  
17806 % U+2213 MINUS-OR-PLUS SIGN; minusplus; \mp (LaTeX)  
17807 \DeclareTextCommand{\textmp}{PU}{\9042\023}%\* U+2213  
17808 % U+2214 DOT PLUS; \dotplus (AmS)  
17809 \DeclareTextCommand{\textdotplus}{PU}{\9042\024}%\* U+2214  
17810 % U+2215 DIVISION SLASH; divisionslash; \Divides (marvosym)  
17811 \DeclareTextCommand{\textDivides}{PU}{\9042\025}%\* U+2215  
17812 % \DividesNot (marvosym)  
17813 \DeclareTextCommand{\textDividesNot}{PU}{\9042\025\9040\322}%\* U+2215 U+20D2  
17814 % U+2216 SET MINUS; \setminus (LaTeX)  
17815 \DeclareTextCommand{\textsetminus}{PU}{\9042\026}%\* U+2216  
17816 % U+2217 ASTERISK OPERATOR; asteriskmath; \ast (LaTeX)  
17817 \DeclareTextCommand{\textast}{PU}{\9042\027}%\* U+2217  
17818 % U+2218 RING OPERATOR; \circ (LaTeX)  
17819 \DeclareTextCommand{\textcirc}{PU}{\9042\030}%\* U+2218  
17820 % U+2219 BULLET OPERATOR; bulletoperator; \bullet (LaTeX)  
17821 \DeclareTextCommand{\textbulletoperator}{PU}{\9042\031}% U+2219  
17822 % U+221A SQUARE ROOT; radical  
17823 \DeclareTextCommand{\textsqrt}{PU}{\9042\032}%\* U+221A  
17824 % U+221D PROPORTIONAL TO; proportional; \propto (LaTeX)  
17825 \DeclareTextCommand{\textpropto}{PU}{\9042\035}%\* U+221D  
17826 %\* \textpropto -> \varprop (wasysym)  
17827 % U+221E INFINITY; infinity; \infty (LaTeX)  
17828 \DeclareTextCommand{\textinfty}{PU}{\9042\036}%\* U+221E  
17829 % U+2220 ANGLE; angle; \angle (LaTeX)  
17830 \DeclareTextCommand{\textangle}{PU}{\9042\040}%\* U+2220  
17831 % U+2221 MEASURED ANGLE; \measuredangle (mathabx, MnSymbol)  
17832 \DeclareTextCommand{\textmeasuredangle}{PU}{\9042\041}%\* U+2221  
17833 % U+2222 SPHERICAL ANGLE; \sphericalangle (AmS)  
17834 \DeclareTextCommand{\textsphericalangle}{PU}{\9042\042}%\* U+2222  
17835 %\* \textsphericalangle -> \varangle (wasysym)  
17836 %\* \textsphericalangle -> \Anglesign (marvosym)  
17837 %\* \textsphericalangle -> \AngleSign (marvosym)  
17838 % U+2223 DIVIDES; divides; \mid (LaTeX)  
17839 \DeclareTextCommand{\textmid}{PU}{\9042\043}%\* U+2223  
17840 % U+2224 DOES NOT DIVIDE; \nmid (AmS)  
17841 \DeclareTextCommand{\textnmid}{PU}{\9042\044}%\* U+2224

17842 %\* \textnmid -> \notdivides (mathabx)  
17843 % U+2225 PARALLEL TO; parallel; \parallel (LaTeX)  
17844 \DeclareTextCommand{\textparallel}{PU}{\9042\045}%\* U+2225  
17845 % U+2226 NOT PARALLEL TO; notparallel; \nparallel (AmS)  
17846 \DeclareTextCommand{\textnparallel}{PU}{\9042\046}%\* U+2226  
17847 %\* \textnparallel -> nUpdownline (MnSymbol)  
17848 % U+2227 LOGICAL AND; logicaland; \wedge (LaTeX)  
17849 \DeclareTextCommand{\textwedge}{PU}{\9042\047}%\* U+2227  
17850 % \owedge (stmaryrd)  
17851 \DeclareTextCommand{\textowedge}{PU}{\9042\047\9040\335}%\* U+2227 U+20DD  
17852 %\* \textowedge -> \varowedge (stmaryrd)  
17853 % U+2228 LOGICAL OR; logicalor; \vee (LaTeX)  
17854 \DeclareTextCommand{\textvee}{PU}{\9042\050}%\* U+2228  
17855 % \ovee (stmaryrd)  
17856 \DeclareTextCommand{\textovee}{PU}{\9042\050\9040\335}%\* U+2228 U+20DD  
17857 %\* \textovee -> \varovee (stmaryrd)  
17858 % U+2229 INTERSECTION; intersection; \cap (LaTeX)  
17859 \DeclareTextCommand{\textcap}{PU}{\9042\051}%\* U+2229  
17860 % U+222A UNION; union; \cup (LaTeX)  
17861 \DeclareTextCommand{\textcup}{PU}{\9042\052}%\* U+222A  
17862 % U+222B INTEGRAL; integral; \int (LaTeX)  
17863 \DeclareTextCommand{\textint}{PU}{\9042\053}%\* U+222B  
17864 %\* \textint -> \varint (wasysym)  
17865 % U+222C DOUBLE INTEGRAL; dblintegral; \iint (AmS)  
17866 \DeclareTextCommand{\textiint}{PU}{\9042\054}%\* U+222C  
17867 % U+222D TRIPLE INTEGRAL; \iiint (AmS)  
17868 \DeclareTextCommand{\textiiint}{PU}{\9042\055}%\* U+222D  
17869 % U+222E CONTOUR INTEGRAL; contourintegral; \oint (LaTeX)  
17870 \DeclareTextCommand{\textoint}{PU}{\9042\056}%\* U+222E  
17871 %\* \textoint -> \varoint (wasysym)  
17872 % U+222F SURFACE INTEGRAL; \oiint (wasysym)  
17873 \DeclareTextCommand{\textoiint}{PU}{\9042\057}%\* U+222F  
17874 % U+2232 CLOCKWISE CONTOUR INTEGRAL;  
17875 % \ointclockwise (txfonts/pxfonts)  
17876 \DeclareTextCommand{\textointclockwise}{PU}{\9042\062}%\* U+2232  
17877 % U+2233 ANTICLOCKWISE CONTOUR INTEGRAL; \ointctrlockwise (tx-  
font/pxfont)  
17878 \DeclareTextCommand{\textointctrlockwise}{PU}{\9042\063}%\* U+2233  
17879 % U+2234 THEREFORE; therefore; \therefore (AmS)  
17880 \DeclareTextCommand{\texttherefore}{PU}{\9042\064}%\* U+2234  
17881 %\* \texttherefore -> uptherefore (MnSymbol)  
17882 % U+2235 BECAUSE; because; \because (AmS)  
17883 \DeclareTextCommand{\textbecause}{PU}{\9042\065}%\* U+2235  
17884 %\* \textbecause -> \downtherefore (MnSymbol)  
17885 % U+2236 RATIO; \vdotdot (MnSymbol)  
17886 \DeclareTextCommand{\textvdotdot}{PU}{\9042\066}%\* U+2236  
17887 % U+2237 PROPORTION; \squaredots (MnSymbol)  
17888 \DeclareTextCommand{\textsquaredots}{PU}{\9042\067}%\* U+2237  
17889 % U+2238 DOT MINUS; \dotminus (MnSymbol)  
17890 \DeclareTextCommand{\textdotminus}{PU}{\9042\070}%\* U+2238  
17891 %\* \textdotminus -> \textdotdiv (mathabx)  
17892 % U+2239 EXCESS; \eqcolon (txfonts/pxfont)  
17893 \DeclareTextCommand{\texteqcolon}{PU}{\9042\071}%\* U+2239  
17894 % U+223C TILDE OPERATOR; similar; \sim (LaTeX)

17895 \DeclareTextCommand{\textsim}{PU}{\9042\074}%\* U+223C  
17896 %\* \textsim -> \AC (wasysym)  
17897 % U+223D REVERSED TILDE; reversedtilde; \backsim (AmS)  
17898 \DeclareTextCommand{\textbacksim}{PU}{\9042\075}%\* U+223D  
17899 % \nbacksim (txfonts/pxfonts)  
17900 \DeclareTextCommand{\textnbacksim}{PU}{\9042\075\83\070}%\* U+223D U+0338  
17901 % U+2240 WREATH PRODUCT; \wr (LaTeX)  
17902 \DeclareTextCommand{\textwr}{PU}{\9042\100}%\* U+2240  
17903 %\* \textwr -> \wreath (MnSymbol)  
17904 % U+2241 NOT TILDE; \nsim (AmS)  
17905 \DeclareTextCommand{\textnsim}{PU}{\9042\101}%\* U+2241  
17906 % U+2242 MINUS TILDE; \eqsim (MnSymbol)  
17907 \DeclareTextCommand{\texteqsim}{PU}{\9042\102}%\* U+2242  
17908 % \neqsim (MnSymbol)  
17909 \DeclareTextCommand{\textneqsim}{PU}{\9042\102\83\070}%\* U+2242 U+0338  
17910 % U+2243 ASYMPTOTICALLY EQUAL TO; asymptoticallyequal; \simeq (LaTeX)  
17911 \DeclareTextCommand{\textsimeq}{PU}{\9042\103}%\* U+2243  
17912 % U+2244 NOT ASYMPTOTICALLY EQUAL TO; \nsimeq (txfonts/pxfonts)  
17913 \DeclareTextCommand{\textnsimeq}{PU}{\9042\104}%\* U+2244  
17914 % U+2245 APPROXIMATELY EQUAL TO; approximatelyequal; \cong (LaTeX)  
17915 \DeclareTextCommand{\textcong}{PU}{\9042\105}%\* U+2245  
17916 % U+2247 NEITHER APPROXIMATELY NOR ACTUALLY EQUAL TO;  
17917 % \ncong (AmS)  
17918 \DeclareTextCommand{\textncong}{PU}{\9042\107}%\* U+2247  
17919 % U+2248 ALMOST EQUAL TO; approxequal; \approx (LaTeX)  
17920 \DeclareTextCommand{\textapprox}{PU}{\9042\110}%\* U+2248  
17921 % U+2249 NOT ALMOST EQUAL TO; \napprox (txfonts/pxfonts0  
17922 \DeclareTextCommand{\textnapprox}{PU}{\9042\111}%\* U+2249  
17923 %\* \textnapprox -> \nthickapprox (txfonts/pxfonts)  
17924 % U+224A ALMOST EQUAL OR EQUAL TO; \approxeq (AmS)  
17925 \DeclareTextCommand{\textapproxeq}{PU}{\9042\112}%\* U+224A  
17926 % \napproxeq (txfonts/pxfonts)  
17927 \DeclareTextCommand{\textnapproxeq}{PU}{\9042\112\83\070}%\* U+224A U+0338  
17928 % U+224B TRIPLE TILDE; \triplesim (MnSymbol)  
17929 \DeclareTextCommand{\texttriplesim}{PU}{\9042\113}%\* U+224B  
17930 %\* \texttriplesim -> \VHF (wasysym)  
17931 % \ntriplesim (MnSymbol)  
17932 \DeclareTextCommand{\textntriplesim}{PU}{\9042\113\83\070}%\* U+224B U+0338  
17933 % U+224C ALL EQUAL TO; allequal; \backcong (MnSymbol)  
17934 \DeclareTextCommand{\textbackcong}{PU}{\9042\114}%\* U+224C  
17935 % \nbackcong (MnSymbol)  
17936 \DeclareTextCommand{\textnbackcong}{PU}{\9042\114\83\070}%\* U+224C U+0338  
17937 % U+224D EQUIVALENT TO; \asymp (LaTeX)  
17938 \DeclareTextCommand{\textasymp}{PU}{\9042\115}%\* U+224D  
17939 % \nasymp (txfonts/pxfonts)  
17940 \DeclareTextCommand{\textnasymp}{PU}{\9042\115\83\070}%\* U+224D U+0338  
17941 %\* \textnasymp -> \notasymp (mathabx)  
17942 % U+224E GEOMETRICALLY EQUIVALENT TO; \Bumpeq (AmS)  
17943 \DeclareTextCommand{\textBumpeq}{PU}{\9042\116}%\* U+224E  
17944 % \nBumpeq (txfonts/pxfonts)  
17945 \DeclareTextCommand{\textnBumpeq}{PU}{\9042\116\83\070}%\* U+224E U+0338  
17946 % U+224F DIFFERENCE BETWEEN; \bumpeq (AmS)  
17947 \DeclareTextCommand{\textbumpeq}{PU}{\9042\117}%\* U+224F



17948 % \nbumpeq (txfonts/pxfonts)  
17949 \DeclareTextCommand{\textnbumpeq}{PU}{\9042\117\83\070}%\* U+224F U+0338  
17950 % U+2250 APPROACHES THE LIMIT; approaches; \doteq (LaTeX)  
17951 \DeclareTextCommand{\textdoteq}{PU}{\9042\120}%\* U+2250  
17952 % \ndoteq (MnSymbol)  
17953 \DeclareTextCommand{\textndoteq}{PU}{\9042\120\83\070}%\* U+2250 U+0338  
17954 % U+2251 GEOMETRICALLY EQUAL TO; geometricallyequal;  
17955 % \doteqdot (AmS)  
17956 \DeclareTextCommand{\textdoteqdot}{PU}{\9042\121}%\* U+2251  
17957 %\* \textdoteqdot -> \Doteq (MnSymbol)  
17958 % \nDoteq (MnSymbol)  
17959 \DeclareTextCommand{\textnDoteq}{PU}{\9042\121\83\070}%\* U+2251 U+0338  
17960 % U+2252 APPROXIMATELY EQUAL TO OR THE IMAGE OF; approx-  
equalorimage;  
17961 % \fallingdotseq (AmS)  
17962 \DeclareTextCommand{\textfallingdotseq}{PU}{\9042\122}%\* U+2252  
17963 % \nfallingdotseq (MnSymbol)  
17964 \DeclareTextCommand{\textnfallingdotseq}{PU}{\9042\122\83\070}%\* U+2252 U+0338  
17965 % U+2253 IMAGE OF OR APPROXIMATELY EQUAL TO; imageorapprox-  
imatelyequal;  
17966 % \risingdotseq (AmS)  
17967 \DeclareTextCommand{\textrisingdotseq}{PU}{\9042\123}%\* U+2253  
17968 % \nrisingdotseq (MnSymbol)  
17969 \DeclareTextCommand{\textnrisingdotseq}{PU}{\9042\123\83\070}%\* U+2253 U+0338  
17970 % U+2254 COLON EQUALS; \colonequals (colonequals)  
17971 \DeclareTextCommand{\textcolonequals}{PU}{\9042\124}%\* U+2254  
17972 % U+2255 EQUALS COLON; \equalscolon (colonequals)  
17973 \DeclareTextCommand{\textequalscolon}{PU}{\9042\125}%\* U+2255  
17974 % U+2256 RING IN EQUAL TO; \eqcirc (AmS)  
17975 \DeclareTextCommand{\texteqcirc}{PU}{\9042\126}%\* U+2256  
17976 % \neqcirc (MnSymbol)  
17977 \DeclareTextCommand{\textneqcirc}{PU}{\9042\126\83\070}%\* U+2256 U+0338  
17978 % U+2257 RING EQUAL TO; \circeq (AmS)  
17979 \DeclareTextCommand{\textcirceq}{PU}{\9042\127}%\* U+2257  
17980 % \ncirceq (MnSymbol)  
17981 \DeclareTextCommand{\textncirceq}{PU}{\9042\127\83\070}%\* U+2257 U+0338  
17982 % U+2259 ESTIMATES; \hateq (MnSymbol)  
17983 \DeclareTextCommand{\texthateq}{PU}{\9042\131}%\* U+2259  
17984 %\* \texthateq -> \corresponds (mathabx)  
17985 %\* \texthateq -> \Corresponds (marvosym)  
17986 % \nhateq (MnSymbol)  
17987 \DeclareTextCommand{\textnhateq}{PU}{\9042\131\83\070}%\* U+2259 U+0338  
17988 % U+225C DELTA EQUAL TO; \triangleeq (AmS)  
17989 \DeclareTextCommand{\texttriangleeq}{PU}{\9042\134}%\* U+225C  
17990 % U+2260 NOT EQUAL TO; notequal; \ne (LaTeX), \neq (LaTeX)  
17991 \DeclareTextCommand{\textneq}{PU}{\9042\140}%\* U+2260  
17992 \DeclareTextCommand{\textne}{PU}{\9042\140}%\* U+2260  
17993 %\* \textneq -> \nequal (MnSymbol)  
17994 % U+2261 IDENTICAL TO; equivalence; \equiv (LaTeX)  
17995 \DeclareTextCommand{\textequiv}{PU}{\9042\141}%\* U+2261  
17996 %\* \textequiv -> \Congruent (marvosym)  
17997 % U+2262 NOT IDENTICAL TO; notidentical; \nequiv (txfonts/pxfonts)  
17998 \DeclareTextCommand{\textnequiv}{PU}{\9042\142}%\* U+2262  
17999 %\* \textnequiv -> \NotCongruent (marvosym)

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18000 %* \textnequiv -> \notequiv (mathabx)
18001 % U+2264 LESS-THAN OR EQUAL TO; lessequal; \le (LaTeX), \leq (LaTeX)
18002 \DeclareTextCommand{\textleq}{PU}{\9042\144}%* U+2264
18003 \DeclareTextCommand{\texttle}{PU}{\9042\144}%* U+2264
18004 %* \textleq -> \LessOrEqual (marvosym)
18005 % U+2265 GREATER-THAN OR EQUAL TO; greaterequal;
18006 % \ge (LaTeX), \geq (LaTeX)
18007 \DeclareTextCommand{\textgeq}{PU}{\9042\145}%* U+2265
18008 \DeclareTextCommand{\textge}{PU}{\9042\145}%* U+2265
18009 %* \textgeq -> \LargerOrEqual (marvosym)
18010 % U+2266 LESS-THAN OVER EQUAL TO; lessorequal; \leqq (AmS)
18011 \DeclareTextCommand{\textleqq}{PU}{\9042\146}%* U+2266
18012 % \nleqq (txfonts/pxfonts)
18013 \DeclareTextCommand{\textnleqq}{PU}{\9042\146\83\070}%* U+2266 U+0338
18014 % U+2267 GREATER-THAN OVER EQUAL TO; greaterorequal; \geqq (AmS)
18015 \DeclareTextCommand{\textgeqq}{PU}{\9042\147}%* U+2267
18016 % \ngeqq (txfonts/pxfonts)
18017 \DeclareTextCommand{\textngeqq}{PU}{\9042\147\83\070}%* U+2267 U+0338
18018 % U+2268 LESS-THAN BUT NOT EQUAL TO; \lneqq (AmS)
18019 \DeclareTextCommand{\textlneqq}{PU}{\9042\150}%* U+2268
18020 % U+2269 GREATER-THAN BUT NOT EQUAL TO; \gneqq (AmS)
18021 \DeclareTextCommand{\textgneqq}{PU}{\9042\151}%* U+2269
18022 % U+226A MUCH LESS-THAN; muchless; \ll (LaTeX)
18023 \DeclareTextCommand{\textll}{PU}{\9042\152}%* U+226A
18024 % \nll (txfonts/pxfonts)
18025 \DeclareTextCommand{\textnll}{PU}{\9042\152\83\070}%* U+226A U+0338
18026 % U+226B MUCH GREATER-THAN; muchgreater; \gg (LaTeX)
18027 \DeclareTextCommand{\textgg}{PU}{\9042\153}%* U+226B
18028 % \ngg (txfonts/pxfonts)
18029 \DeclareTextCommand{\textngg}{PU}{\9042\153\83\070}%* U+226B U+0338
18030 % U+226C BETWEEN; \between (AmS)
18031 \DeclareTextCommand{\textbetween}{PU}{\9042\154}%* U+226C
18032 % U+226E NOT LESS-THAN; notless; \nless (AmS)
18033 \DeclareTextCommand{\textnless}{PU}{\9042\156}%* U+226E
18034 % U+226F NOT GREATER-THAN; notgreater; \ngtr (AmS)
18035 \DeclareTextCommand{\textngtr}{PU}{\9042\157}%* U+226F
18036 % U+2270 NEITHER LESS-THAN NOR EQUAL TO; notlessnorequal;
18037 % \nleq (AmS)
18038 \DeclareTextCommand{\textnleq}{PU}{\9042\160}%* U+2270
18039 % U+2271 NEITHER GREATER-THAN NOR EQUAL TO; notgreaternorequal; \ngeq (AmS)
18040 \DeclareTextCommand{\textngeq}{PU}{\9042\161}%* U+2271
18041 % U+2272 LESS-THAN OR EQUIVALENT TO; lessorequivalent; \lessim (AmS)
18042 \DeclareTextCommand{\textlessim}{PU}{\9042\162}%* U+2272
18043 %* \textlessim -> \apprle (wasysym)
18044 % U+2273 GREATER-THAN OR EQUIVALENT TO; greaterorequivalent; \gtrsim (AmS)
18045 \DeclareTextCommand{\textgtrsim}{PU}{\9042\163}%* U+2273
18046 %* \textgtrsim -> \apprge (wasysym)
18047 % U+2274 NEITHER LESS-THAN NOR EQUIVALENT TO; \nlessim (txfonts/pxfonts)
18048 \DeclareTextCommand{\textnlessim}{PU}{\9042\164}%* U+2274
18049 % U+2275 NEITHER GREATER-THAN NOR EQUIVALENT TO; \ngtrsim (txfonts/pxfonts)

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18050 `\DeclareTextCommand{\textngtrsim}{PU}{\9042\165}%* U+2275`  
18051 `% U+2276 LESS-THAN OR GREATER-THAN; lessorgreater; \lessgtr (AmS)`  
18052 `\DeclareTextCommand{\textlessgtr}{PU}{\9042\166}%* U+2276`  
18053 `% U+2277 GREATER-THAN OR LESS-THAN; greaterorless; \gtrless (AmS)`  
18054 `\DeclareTextCommand{\textgtrless}{PU}{\9042\167}%* U+2277`  
18055 `% U+2278 NEITHER LESS-THAN NOR GREATER-THAN; \ngtrless (tx-`  
`fonts/pxfonts)`  
18056 `\DeclareTextCommand{\textngtrless}{PU}{\9042\170}%* U+2278`  
18057 `% U+2279 NEITHER GREATER-THAN NOR LESS-THAN; \nlessgtr (tx-`  
`fonts/pxfonts)`  
18058 `\DeclareTextCommand{\textnlessgtr}{PU}{\9042\171}%* U+2279`  
18059 `% U+227A PRECEDES; precedes; \prec (LaTeX)`  
18060 `\DeclareTextCommand{\textprec}{PU}{\9042\172}%* U+227A`  
18061 `% U+227B SUCCEEDS; succeeds; \succ (LaTeX)`  
18062 `\DeclareTextCommand{\textsucc}{PU}{\9042\173}%* U+227B`  
18063 `% U+227C PRECEDES OR EQUAL TO; \preccurlyeq (AmS)`  
18064 `\DeclareTextCommand{\textpreccurlyeq}{PU}{\9042\174}%* U+227C`  
18065 `% U+227D SUCCEEDS OR EQUAL TO; \succcurlyeq (AmS)`  
18066 `\DeclareTextCommand{\textsucccurlyeq}{PU}{\9042\175}%* U+227D`  
18067 `% U+227E PRECEDES OR EQUIVALENT TO; \precsim (AmS)`  
18068 `\DeclareTextCommand{\textprecsim}{PU}{\9042\176}%* U+227E`  
18069 `% \nprecsim (txfonts/pxfonts)`  
18070 `\DeclareTextCommand{\textnprecsim}{PU}{\9042\176\83\070}%* U+227E U+0338`  
18071 `% U+227F SUCCEEDS OR EQUIVALENT TO; \succsim (AmS)`  
18072 `\DeclareTextCommand{\textsuccsim}{PU}{\9042\177}%* U+227F`  
18073 `% \nsuccsim (txfonts/pxfonts)`  
18074 `\DeclareTextCommand{\textnsuccsim}{PU}{\9042\177\83\070}%* U+227F U+0338`  
18075 `% U+2280 DOES NOT PRECEDE; notprecedes; \nprec (AmS)`  
18076 `\DeclareTextCommand{\textnprec}{PU}{\9042\200}%* U+2280`  
18077 `% U+2281 DOES NOT SUCCEED; notsucceeds; \nsucc (AmS)`  
18078 `\DeclareTextCommand{\textnsucc}{PU}{\9042\201}%* U+2281`  
18079 `% U+2282 SUBSET OF; propersubset; \subset (LaTeX)`  
18080 `\DeclareTextCommand{\textsubset}{PU}{\9042\202}%* U+2282`  
18081 `% U+2283 SUPERSET OF; propersuperset; \supset (LaTeX)`  
18082 `\DeclareTextCommand{\textsupset}{PU}{\9042\203}%* U+2283`  
18083 `% U+2284 NOT A SUBSET OF; notsubset; \nsubset (mathabx)`  
18084 `\DeclareTextCommand{\textnsubset}{PU}{\9042\204}%* U+2284`  
18085 `% U+2285 NOT A SUPERSET OF; notsuperset; \nsupset (mathabx)`  
18086 `\DeclareTextCommand{\textnsupset}{PU}{\9042\205}%* U+2285`  
18087 `% U+2286 SUBSET OF OR EQUAL TO; reflexsubset; \subsetq (LaTeX)`  
18088 `\DeclareTextCommand{\textsubsetq}{PU}{\9042\206}%* U+2286`  
18089 `% U+2287 SUPERSET OF OR EQUAL TO; reflexsuperset; \supsetq (LaTeX)`  
18090 `\DeclareTextCommand{\textsupsetq}{PU}{\9042\207}%* U+2287`  
18091 `% U+2288 NEITHER A SUBSET OF NOR EQUAL TO; \nsubsetq (AmS)`  
18092 `\DeclareTextCommand{\textnsubsetq}{PU}{\9042\210}%* U+2288`  
18093 `% U+2289 NEITHER A SUPERSET OF NOR EQUAL TO; \nsupsetq (AmS)`  
18094 `\DeclareTextCommand{\textnsupsetq}{PU}{\9042\211}%* U+2289`  
18095 `% U+228A SUBSET OF WITH NOT EQUAL TO; subsetnotequal; \subset-`  
`neq (AmS)`  
18096 `\DeclareTextCommand{\textsubsetneq}{PU}{\9042\212}%* U+228A`  
18097 `% U+228B SUPERSET OF WITH NOT EQUAL TO; supersetnotequal; \supset-`  
`neq (AmS)`  
18098 `\DeclareTextCommand{\textsupsetneq}{PU}{\9042\213}%* U+228B`  
18099 `% U+228D MULTISSET MULTIPLICATION; \cupdot (MnSymbol)`

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18100 \DeclareTextCommand{\textcupdot}{PU}{\9042\215}%* U+228D
18101 % U+228E MULTISSET UNION; \cupplus (MnSymbol)
18102 \DeclareTextCommand{\textcupplus}{PU}{\9042\216}%* U+228E
18103 % U+228F SQUARE IMAGE OF; \sqsubset (latexsym, ...)
18104 \DeclareTextCommand{\textsqsubset}{PU}{\9042\217}%* U+228F
18105 % \nsqsubset (txfonts/pxfonts)
18106 \DeclareTextCommand{\textnsqsubset}{PU}{\9042\217\83\070}%* U+228F U+0338
18107 % U+2290 SQUARE ORIGINAL OF; \sqsupset (latexsym, ...)
18108 \DeclareTextCommand{\textsqsupset}{PU}{\9042\220}%* U+2290
18109 % \nsqsupset (txfonts/pxfonts)
18110 \DeclareTextCommand{\textnsqsupset}{PU}{\9042\220\83\070}%* U+2290 U+0338
18111 % U+2291 SQUARE IMAGE OF OR EQUAL TO; \sqsubseteq (LaTeX)
18112 \DeclareTextCommand{\textsqsubseteq}{PU}{\9042\221}%* U+2291
18113 % \nsqsubseteq (txfonts/pxfonts)
18114 \DeclareTextCommand{\textnsqsubseteq}{PU}{\9042\221\83\070}%* U+2291 U+0338
18115 % U+2292 SQUARE ORIGINAL OF OR EQUAL TO; \sqsupseteq (LaTeX)
18116 \DeclareTextCommand{\textsqsupseteq}{PU}{\9042\222}%* U+2292
18117 % \nsqsupseteq (txfonts/pxfonts)
18118 \DeclareTextCommand{\textnsqsupseteq}{PU}{\9042\222\83\070}%* U+2292 U+0338
18119 % U+2293 SQUARE CAP; \sqcap (LaTeX)
18120 \DeclareTextCommand{\textsqcap}{PU}{\9042\223}%* U+2293
18121 % U+2294 SQUARE CUP; \sqcup (LaTeX)
18122 \DeclareTextCommand{\textsqcup}{PU}{\9042\224}%* U+2294
18123 % U+2295 CIRCLED PLUS; circleplus; \oplus (LaTeX)
18124 \DeclareTextCommand{\textoplus}{PU}{\9042\225}%* U+2295
18125 %* \textoplus -> \varoplus (stmaryrd)
18126 % U+2296 CIRCLED MINUS; minuscircle; \ominus (LaTeX)
18127 \DeclareTextCommand{\textominus}{PU}{\9042\226}%* U+2296
18128 %* \textominus -> \varominus (stmaryrd)
18129 % U+2297 CIRCLED TIMES; circlemultiply; \otimes (LaTeX)
18130 \DeclareTextCommand{\textotimes}{PU}{\9042\227}%* U+2297
18131 %* \textotimes -> \varotimes (stmaryrd)
18132 % U+2298 CIRCLED DIVISION SLASH; \oslash (LaTeX)
18133 \DeclareTextCommand{\textoslash}{PU}{\9042\230}%* U+2298
18134 %* \textoslash -> \varoslash (stmaryrd)
18135 % U+2299 CIRCLED DOT OPERATOR; circle(d?)ot; \odot (LaTeX)
18136 \DeclareTextCommand{\textodot}{PU}{\9042\231}%* U+2299
18137 %* \textodot -> \varodot (stmaryrd)
18138 % U+229A CIRCLED RING OPERATOR; \circledcirc (AmS)
18139 \DeclareTextCommand{\textcircledcirc}{PU}{\9042\232}%* U+229A
18140 %* \textcircledcirc -> \ocirc (mathabx)
18141 %* \textcircledcirc -> \varocircle (stmaryrd)
18142 % U+229B CIRCLED ASTERISK OPERATOR; \circledast (AmS)
18143 \DeclareTextCommand{\textcircledast}{PU}{\9042\233}%* U+229B
18144 %* \textcircledast -> \varoast (stmaryrd)
18145 %* \textcircledast -> \oasterisk (mathabx)
18146 % U+229D CIRCLED DASH; \circleddash (AmS)
18147 \DeclareTextCommand{\textcircleddash}{PU}{\9042\235}%* U+229D
18148 % U+229E SQUARED PLUS; \boxplus (AmS)
18149 \DeclareTextCommand{\textboxplus}{PU}{\9042\236}%* U+229E
18150 % U+229F SQUARED MINUS; \boxminus (AmS)
18151 \DeclareTextCommand{\textboxminus}{PU}{\9042\237}%* U+229F
18152 % U+22A0 SQUARED TIMES; \boxtimes (AmS)
18153 \DeclareTextCommand{\textboxtimes}{PU}{\9042\240}%* U+22A0

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18154 % U+22A1 SQUARED DOT OPERATOR; \boxdot (AmS)
18155 \DeclareTextCommand{\textboxdot}{PU}{\9042\241}%* U+22A1
18156 % U+22A2 RIGHT TACK; \vdash (LaTeX)
18157 \DeclareTextCommand{\textvdash}{PU}{\9042\242}%* U+22A2
18158 %* \textvdash -> \rightvdash (MnSymbol)
18159 % U+22A3 LEFT TACK; tackleft; \dashv (LaTeX)
18160 \DeclareTextCommand{\textdashv}{PU}{\9042\243}%* U+22A3
18161 %* \textdashv -> \leftvdash (MnSymbol)
18162 % \ndashv (mathabx)
18163 \DeclareTextCommand{\textndashv}{PU}{\9042\243\83\070}%* U+22A3 U+0338
18164 %* \textndashv -> \nleftvdash (MnSymbol)
18165 % U+22A4 DOWN TACK (=top); tackdown; \top (LaTeX)
18166 \DeclareTextCommand{\texttop}{PU}{\9042\244}%* U+22A4
18167 %* \texttop -> \downvdash (MnSymbol)
18168 % \ndownvdash (MnSymbol)
18169 \DeclareTextCommand{\textndownvdash}{PU}{\9042\244\83\070}%* U+22A4 U+0338
18170 % U+22A5 UP TACK (=base, bottom); \bot (LaTeX)
18171 \DeclareTextCommand{\textbot}{PU}{\9042\245}%* U+22A5
18172 %* \textbot -> \upvdash (MnSymbol)
18173 % \nupvdash (MnSymbol)
18174 \DeclareTextCommand{\textnupvdash}{PU}{\9042\245\83\070}%* U+22A5 U+0338
18175 %* \textnupvdash -> \nperp (MnSymbol)
18176 % U+22A8 TRUE; \vDash (AmS)
18177 \DeclareTextCommand{\textvDash}{PU}{\9042\250}%* U+22A8
18178 %* \textvDash -> \models (LaTeX)
18179 %* \textvDash -> \rightmodels (MnSymbol)
18180 % U+22A9 FORCES; \Vdash (AmS)
18181 \DeclareTextCommand{\textVdash}{PU}{\9042\251}%* U+22A9
18182 %* \textVdash -> \rightVdash (MnSymbol)
18183 % U+22AA TRIPLE VERTICAL BAR RIGHT TURNSTILE; \Vvdash (AmS)
18184 \DeclareTextCommand{\textVvdash}{PU}{\9042\252}%* U+22AA
18185 % \nVvdash (mathabx)
18186 \DeclareTextCommand{\textnVvdash}{PU}{\9042\252\83\070}%* U+22AA U+0338
18187 % U+22AB DOUBLE VERTICAL BAR DOUBLE RIGHT TURNSTILE;
18188 % \VDash (mathabx)
18189 \DeclareTextCommand{\textVDash}{PU}{\9042\253}%* U+22AB
18190 %* \textVDash -> \rightModels (MnSymbol)
18191 % U+22AC DOES NOT PROVE; \nvdash (AmS)
18192 \DeclareTextCommand{\textnvdash}{PU}{\9042\254}%* U+22AC
18193 %* \textnvdash -> \nrightvdash (MnSymbol)
18194 % U+22AD NOT TRUE; \nvDash (AmS)
18195 \DeclareTextCommand{\textnvDash}{PU}{\9042\255}%* U+22AD
18196 %* \textnvDash -> \nrightmodels (MnSymbol)
18197 %* \textnvDash -> \nmodels (MnSymbol)
18198 % U+22AE DOES NOT FORCE; \nVdash (txfonts/pxfonts)
18199 \DeclareTextCommand{\textnVdash}{PU}{\9042\256}%* U+22AE
18200 %* \textnVdash -> \nrightVdash (MnSymbol)
18201 % U+22AF NEGATED DOUBLE VERTICAL BAR DOUBLE RIGHT TURN-
      STILE; \nVDash (AmS)
18202 \DeclareTextCommand{\textnVDash}{PU}{\9042\257}%* U+22AF
18203 %* \textnVDash -> \nrightModels (MnSymbol)
18204 % U+22B2 NORMAL SUBGROUP OF; \lhd (latexsym, ...)
18205 \DeclareTextCommand{\textlhd}{PU}{\9042\262}%* U+22B2
18206 %* \textlhd -> \lessclosed (MnSymbol)

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18207 % U+22B3 CONTAINS AS NORMAL SUBGROUP; \rhd (latexsym, ...)  
18208 \DeclareTextCommand{\textrhd}{PU}{\9042\263}%\* U+22B3  
18209 %\* \textrhd -> \gtrclosed (MnSymbol)  
18210 % U+22B4 NORMAL SUBGROUP OF OR EQUAL TO; \unlhd (latexsym, ...)  
18211 \DeclareTextCommand{\textunlhd}{PU}{\9042\264}%\* U+22B4  
18212 %\* \textunlhd -> \leqclosed (MnSymbol)  
18213 %\* \textunlhd -> \trianglelefteq (MnSymbol)  
18214 % U+22B5 CONTAINS AS NORMAL SUBGROUP OR EQUAL TO; \unrhd (latexsym, ...)  
18215 \DeclareTextCommand{\textunrhd}{PU}{\9042\265}%\* U+22B5  
18216 %\* \textunrhd -> \geqclosed (MnSymbol)  
18217 %\* \textunrhd -> \trianglerighteq (MnSymbol)  
18218 % U+22B6 ORIGINAL OF; \multimapdotbothA (txfonts/pxfonts)  
18219 \DeclareTextCommand{\textmultimapdotbothA}{PU}{\9042\266}%\* U+22B6  
18220 % U+22B7 IMAGE OF; \multimapdotbothB (txfonts/pxfonts)  
18221 \DeclareTextCommand{\textmultimapdotbothB}{PU}{\9042\267}%\* U+22B7  
18222 % U+22B8 MULTIMAP; \multimap (AmS, txfonts/pxfonts)  
18223 \DeclareTextCommand{\textmultimap}{PU}{\9042\270}%\* U+22B8  
18224 % U+22BB XOR; \veebar (AmS)  
18225 \DeclareTextCommand{\textveebar}{PU}{\9042\273}%\* U+22BB  
18226 % U+22BC NAND; \barwedge (mathabx)  
18227 \DeclareTextCommand{\textbarwedge}{PU}{\9042\274}%\* U+22BC  
18228 % U+22C6 STAR OPERATOR; \star (LaTeX)  
18229 \DeclareTextCommand{\textstar}{PU}{\9042\306}%\* U+22C6  
18230 % U+22C7 DIVISION TIMES; \divideontimes (AmS)  
18231 \DeclareTextCommand{\textdivideontimes}{PU}{\9042\307}%\* U+22C7  
18232 % U+22C8 BOWTIE; \bowtie (LaTeX)  
18233 \DeclareTextCommand{\textbowtie}{PU}{\9042\310}%\* U+22C8  
18234 %\* \textbowtie -> \Bowtie (wasysym)  
18235 % U+22C9 LEFT NORMAL FACTOR SEMIDIRECT PRODUCT; \ltimes (AmS)  
18236 \DeclareTextCommand{\textltimes}{PU}{\9042\311}%\* U+22C9  
18237 % U+22CA RIGHT NORMAL FACTOR SEMIDIRECT PRODUCT;  
18238 % \rtimes (AmS)  
18239 \DeclareTextCommand{\textrtimes}{PU}{\9042\312}%\* U+22CA  
18240 % U+22CB LEFT SEMIDIRECT PRODUCT; \leftthreetimes (AmS)  
18241 \DeclareTextCommand{\textleftthreetimes}{PU}{\9042\313}%\* U+22CB  
18242 % U+22CC RIGHT SEMIDIRECT PRODUCT; \rightthreetimes (AmS)  
18243 \DeclareTextCommand{\textrightthreetimes}{PU}{\9042\314}%\* U+22CC  
18244 % U+22CD REVERSED TILDE EQUALS; \backsimeq (AmS)  
18245 \DeclareTextCommand{\textbacksimeq}{PU}{\9042\315}%\* U+22CD  
18246 % \nbacksimeq (txfonts/pxfonts)  
18247 \DeclareTextCommand{\textnbacksimeq}{PU}{\9042\315\83\070}%\* U+22CD U+0338  
18248 % U+22CE CURLY LOGICAL OR; curlyor; \curlyvee (AmS)  
18249 \DeclareTextCommand{\textcurlyvee}{PU}{\9042\316}%\* U+22CE  
18250 %\* \textcurlyvee -> \varcurlyvee (stmaryrd)  
18251 % U+22CF CURLY LOGICAL AND; curlyand; \curlywedge (AmS)  
18252 \DeclareTextCommand{\textcurlywedge}{PU}{\9042\317}%\* U+22CF  
18253 %\* \textcurlywedge -> \varcurlywedge (stmaryrd)  
18254 % U+22D0 DOUBLE SUBSET; \Subset (AmS)  
18255 \DeclareTextCommand{\textSubset}{PU}{\9042\320}%\* U+22D0  
18256 % \nSubset (txfonts/pxfonts)  
18257 \DeclareTextCommand{\textnSubset}{PU}{\9042\320\83\070}%\* U+22D0 U+0338  
18258 % U+22D1 DOUBLE SUPERSET; \Supset (AmS)  
18259 \DeclareTextCommand{\textSupset}{PU}{\9042\321}%\* U+22D1

18260 % \nSupset (txfonts/pxfonts)  
18261 \DeclareTextCommand{\textnSupset}{PU}{\9042\321\83\070}%\* U+22D1 U+0338  
18262 % U+22D2 DOUBLE INTERSECTION; \Cap (AmS)  
18263 \DeclareTextCommand{\textCap}{PU}{\9042\322}%\* U+22D2  
18264 %\* \textCap -> \doublecap (mathabx)  
18265 % U+22D3 DOUBLE UNION; \Cup (AmS)  
18266 \DeclareTextCommand{\textCup}{PU}{\9042\323}%\* U+22D3  
18267 %\* \textCup -> \doublecup (mathabx)  
18268 % U+22D4 PITCHFORK; \pitchfork (mathabx)  
18269 \DeclareTextCommand{\textpitchfork}{PU}{\9042\324}%\* U+22D4  
18270 % U+22D6 LESS-THAN WITH DOT; \lessdot (AmS)  
18271 \DeclareTextCommand{\textlessdot}{PU}{\9042\326}%\* U+22D6  
18272 % U+22D7 GREATER-THAN WITH DOT; \gtrdot (AmS)  
18273 \DeclareTextCommand{\textgtrdot}{PU}{\9042\327}%\* U+22D7  
18274 % U+22D8 VERY MUCH LESS-THAN; \lll (AmS)  
18275 \DeclareTextCommand{\textlll}{PU}{\9042\330}%\* U+22D8  
18276 % U+22D9 VERY MUCH GREATER-THAN; \ggg (AmS)  
18277 \DeclareTextCommand{\textggg}{PU}{\9042\331}%\* U+22D9  
18278 % U+22DA LESS-THAN EQUAL TO OR GREATER-THAN; lessequalorgreater;  
18279 % \lesseqgtr (AmS)  
18280 \DeclareTextCommand{\textlesseqgtr}{PU}{\9042\332}%\* U+22DA  
18281 % U+22DB GREATER-THAN EQUAL TO OR LESS-THAN; greaterequalorless;  
18282 % \gtreqless (AmS)  
18283 \DeclareTextCommand{\textgtreqless}{PU}{\9042\333}%\* U+22DB  
18284 % U+22DE EQUAL TO OR PRECEDES; \curlyeqprec (MnSymbol)  
18285 \DeclareTextCommand{\textcurlyeqprec}{PU}{\9042\336}%\* U+22DE  
18286 % \ncurlyeqprec (mathabx)  
18287 \DeclareTextCommand{\textncurlyeqprec}{PU}{\9042\336\83\070}%\* U+22DE U+0338  
18288 % U+22DF EQUAL TO OR SUCCEEDS; \curlyeqsucc (MnSymbol)  
18289 \DeclareTextCommand{\textcurlyeqsucc}{PU}{\9042\337}%\* U+22DF  
18290 % \ncurlyeqsucc (mathabx)  
18291 \DeclareTextCommand{\textncurlyeqsucc}{PU}{\9042\337\83\070}%\* U+22DF U+0338  
18292 % U+22E0 DOES NOT PRECEDE OR EQUAL; \npreccurlyeq (txfonts/pxfonts)  
18293 \DeclareTextCommand{\textnpreccurlyeq}{PU}{\9042\340}%\* U+22E0  
18294 % U+22E1 DOES NOT SUCCEED OR EQUAL; \nsucccurlyeq (txfonts/pxfonts)  
18295 \DeclareTextCommand{\textnsucccurlyeq}{PU}{\9042\341}%\* U+22E1  
18296 % U+22E2 NOT SQUARE IMAGE OF OR EQUAL TO; \nsqsubseteq (tx-  
fonts/pxfonts)  
18297 \DeclareTextCommand{\textnqsubseteq}{PU}{\9042\342}%\* U+22E2  
18298 % U+22E3 NOT SQUARE ORIGINAL OF OR EQUAL TO; \nsqsupseteq (tx-  
fonts/pxfonts)  
18299 \DeclareTextCommand{\textnqsupseteq}{PU}{\9042\343}%\* U+22E3  
18300 % U+22E4 SQUARE IMAGE OF OR NOT EQUAL TO; \sqsubsetneq (mathabx)  
18301 \DeclareTextCommand{\textsqsubsetneq}{PU}{\9042\344}%\* U+22E4  
18302 %\* \textsqsubsetneq -> \varsqsubsetneq (mathabx)  
18303 % U+22E5 SQUARE ORIGINAL OF OR NOT EQUAL TO; \sqsupsetneq (math-  
abx)  
18304 \DeclareTextCommand{\textsqsupsetneq}{PU}{\9042\345}%\* U+22E5  
18305 %\* \textsqsupsetneq -> \varsqsupsetneq (mathabx)  
18306 % U+22E6 LESS-THAN BUT NOT EQUIVALENT TO; \lnsim (AmS)  
18307 \DeclareTextCommand{\textlnsim}{PU}{\9042\346}%\* U+22E6  
18308 % U+22E7 GREATER-THAN BUT NOT EQUIVALENT TO; \gnsim (AmS)  
18309 \DeclareTextCommand{\textgnsim}{PU}{\9042\347}%\* U+22E7  
18310 % U+22E8 PRECEDES BUT NOT EQUIVALENT TO; \precsim (AmS)

18311 \DeclareTextCommand{\textprecsim}{PU}{\9042\350}%\* U+22E8  
18312 % U+22E9 SUCCEEDS BUT NOT EQUIVALENT TO; \succsim (AmS)  
18313 \DeclareTextCommand{\textsuccsim}{PU}{\9042\351}%\* U+22E9  
18314 % U+22EA NOT NORMAL SUBGROUP OF; \ntriangleleft (AmS)  
18315 \DeclareTextCommand{\textntriangleleft}{PU}{\9042\352}%\* U+22EA  
18316 %\* \textntriangleleft -> \nlessclosed (MnSymbol)  
18317 % U+22EB DOES NOT CONTAIN AS NORMAL SUBGROUP; \ntriangleright (AmS)  
18318 \DeclareTextCommand{\textntriangleright}{PU}{\9042\353}%\* U+22EB  
18319 %\* \textntriangleright -> \ngtrclosed (MnSymbol)  
18320 % U+22EC NOT NORMAL SUBGROUP OF OR EQUAL TO;  
18321 % \ntrianglelefteq (AmS)  
18322 \DeclareTextCommand{\textntrianglelefteq}{PU}{\9042\354}%\* U+22EC  
18323 % U+22ED DOES NOT CONTAIN AS NORMAL SUBGROUP OR EQUAL;  
18324 % \ntrianglerighteq (AmS)  
18325 \DeclareTextCommand{\textntrianglerighteq}{PU}{\9042\355}%\* U+22ED  
18326 %\* \textntrianglerighteq -> \textngeqclosed  
18327 % U+22EE VERTICAL ELLIPSIS; ellipsisvertical; \vdots (LaTeX)  
18328 \DeclareTextCommand{\textvdots}{PU}{\9042\356}%\* U+22EE  
18329 % U+22EF MIDLINE HORIZONTAL ELLIPSIS; \cdots (LaTeX)  
18330 \DeclareTextCommand{\textcdots}{PU}{\9042\357}%\* U+22EF  
18331 % U+22F0 UP RIGHT DIAGONAL ELLIPSIS; \udots (MnSymbol)  
18332 \DeclareTextCommand{\textudots}{PU}{\9042\360}%\* U+22F0  
18333 % U+22F1 DOWN RIGHT DIAGONAL ELLIPSIS; \ddots (LaTeX)  
18334 \DeclareTextCommand{\textddots}{PU}{\9042\361}%\* U+22F1  
18335 % U+22F6 ELEMENT OF WITH OVERBAR; \barin (mathabx)  
18336 \DeclareTextCommand{\textbarin}{PU}{\9042\366}%\* U+22F6

#### 47.2.23 Miscellaneous Technical: U+2300 to U+23FF

18337 % U+2300 DIAMETER SIGN; \diameter (mathabx,wasysym)  
18338 \DeclareTextCommand{\textdiameter}{PU}{\9043\000}%\* U+2300  
18339 % U+2310 REVERSED NOT SIGN; \backneg (MnSymbol)  
18340 \DeclareTextCommand{\textbackneg}{PU}{\9043\020}%\* U+2310  
18341 % U+2311 SQUARE LOZENGE; \wasylozenge (wasysym)  
18342 \DeclareTextCommand{\textwasylozenge}{PU}{\9043\021}%\* U+2311  
18343 % U+2319 TURNED NOT SIGN; \invbackneg (MnSymbol)  
18344 \DeclareTextCommand{\textinvbackneg}{PU}{\9043\031}%\* U+2319  
18345 % U+231A WATCH; \clock (wasysym)  
18346 \DeclareTextCommand{\textclock}{PU}{\9043\032}%\* U+231A  
18347 %\* \textclock -> \Clocklogo (marvosym)  
18348 %\* \textclock -> \ClockLogo (marvosym)  
18349 % U+231C TOP LEFT CORNER; \ulcorner (AmS)  
18350 \DeclareTextCommand{\textulcorner}{PU}{\9043\034}%\* U+231C  
18351 % U+231D TOP RIGHT CORNER; \urcorner (AmS)  
18352 \DeclareTextCommand{\texturcorner}{PU}{\9043\035}%\* U+231D  
18353 % U+231E BOTTOM LEFT CORNER; \llcorner (AmS)  
18354 \DeclareTextCommand{\textllcorner}{PU}{\9043\036}%\* U+231E  
18355 % U+231F BOTTOM RIGHT CORNER; \lrcorner (AmS)  
18356 \DeclareTextCommand{\textlrcorner}{PU}{\9043\037}%\* U+231F  
18357 % U+2322 FROWN; \frown (LaTeX)  
18358 \DeclareTextCommand{\textfrown}{PU}{\9043\042}%\* U+2322  
18359 % U+2323 SMILE; \smile (LaTeX)  
18360 \DeclareTextCommand{\textsmile}{PU}{\9043\043}%\* U+2323  
18361 % U+2328 KEYBOARD; \Keyboard (marvosym)



18362 \DeclareTextCommand{\textKeyboard}{PU}{\9043\050}%\* U+2328  
18363 % U+2329 LEFT-POINTING ANGLE BRACKET; angleleft; \langle (LaTeX)  
18364 \DeclareTextCommand{\textlangle}{PU}{\9043\051}%\* U+2329  
18365 % U+232A RIGHT-POINTING ANGLE BRACKET; angleright; \rangle (LaTeX)  
18366 \DeclareTextCommand{\textrightangle}{PU}{\9043\052}%\* U+232A  
18367 % U+2339 APL FUNCTIONAL SYMBOL QUAD DIVIDE; \APLinv (wasysym)  
18368 \DeclareTextCommand{\textAPLinv}{PU}{\9043\071}%\* U+2339  
18369 % U+233C APL FUNCTIONAL SYMBOL QUAD CIRCLE; \Tumbler (marvosym)  
18370 \DeclareTextCommand{\textTumbler}{PU}{\9043\074}%\* U+233C  
18371 % U+233D APL FUNCTIONAL SYMBOL CIRCLE STILE; \baro (stmaryrd)  
18372 \DeclareTextCommand{\textstmaryrdbaro}{PU}{\9043\075}% U+233D  
18373 %\* \textstmaryrdbaro -> \baro (stmaryrd)  
18374 % U+233F APL FUNCTIONAL SYMBOL SLASH BAR; \notslash (wasysym)  
18375 \DeclareTextCommand{\textnotslash}{PU}{\9043\077}%\* U+233F  
18376 % U+2340 APL FUNCTIONAL SYMBOL BACKSLASH BAR;  
18377 % \notbackslash (wasysym)  
18378 \DeclareTextCommand{\textnotbackslash}{PU}{\9043\100}%\* U+2340  
18379 % U+2342 APL FUNCTIONAL SYMBOL QUAD BACKSLASH; \boxbackslash (mathabx)  
18380 \DeclareTextCommand{\textboxbackslash}{PU}{\9043\102}%\* U+2342  
18381 % U+2347 APL FUNCTIONAL SYMBOL QUAD LEFTWARDS ARROW;  
18382 % \APLleftarrowbox (wasysym)  
18383 \DeclareTextCommand{\textAPLleftarrowbox}{PU}{\9043\107}%\* U+2347  
18384 % U+2348 APL FUNCTIONAL SYMBOL QUAD RIGHTWARDS ARROW;  
18385 % \APLrightarrowbox (wasysym)  
18386 \DeclareTextCommand{\textAPLrightarrowbox}{PU}{\9043\110}%\* U+2348  
18387 % U+2350 APL FUNCTIONAL SYMBOL QUAD UPWARDS ARROW; \APLuparrowbox (wasysym)  
18388 \DeclareTextCommand{\textAPLuparrowbox}{PU}{\9043\120}%\* U+2350  
18389 % U+2357 APL FUNCTIONAL SYMBOL QUAD DOWNWARDS ARROW;  
18390 % \APLdownarrowbox (wasysym)  
18391 \DeclareTextCommand{\textAPLdownarrowbox}{PU}{\9043\127}%\* U+2357  
18392 % U+235E APL FUNCTIONAL SYMBOL QUOTE QUAD;  
18393 % \APLinput (wasysym)  
18394 \DeclareTextCommand{\textAPLinput}{PU}{\9043\136}%\* U+235E  
18395 % U+2370 APL FUNCTIONAL SYMBOL QUAD QUESTION; \Request (china2e)  
18396 \DeclareTextCommand{\textRequest}{PU}{\9043\160}%\* U+2370  
18397 % U+2393 DIRECT CURRENT SYMBOL FORM TWO; \Beam (marvosym)  
18398 \DeclareTextCommand{\textBeam}{PU}{\9043\223}%\* U+2393  
18399 % U+2394 SOFTWARE-FUNCTION SYMBOL; \hexagon (wasysym)  
18400 \DeclareTextCommand{\texthexagon}{PU}{\9043\224}%\* U+2394  
18401 % U+2395 APL FUNCTIONAL SYMBOL QUAD; \APLbox (wasysym)  
18402 \DeclareTextCommand{\textAPLbox}{PU}{\9043\225}%\* U+2395  
18403 % U+23ED BLACK RIGHT-POINTING DOUBLE TRIANGLE WITH VERTICAL BAR;  
18404 % \ForwardToIndex (marvosym)  
18405 \DeclareTextCommand{\textForwardToIndex}{PU}{\9043\355}%\* U+23ED  
18406 % U+23EE BLACK LEFT-POINTING DOUBLE TRIANGLE WITH VERTICAL BAR;  
18407 % \RewindToIndex (marvosym)  
18408 \DeclareTextCommand{\textRewindToIndex}{PU}{\9043\356}%\* U+23EE

#### 47.2.24 Control Pictures: U+2400 to U+243F

18409 % U+2422 BLANK SYMBOL  
18410 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422  
18411 % U+2423 OPEN BOX; blank  
18412 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

#### 47.2.25 Optical Character Recognition: U+2440 to U+245F

18413 % U+244A OCR DOUBLE BACKSLASH; \bbslash (stmaryrd)  
18414 \DeclareTextCommand{\textbbslash}{PU}{\9044\112}%\* U+244A  
18415 %\* \textbbslash -> \varparallelinv (txfonts/pxfonts)

#### 47.2.26 Enclosed Alphanumerics: U+2460 to U+24FF

18416 % U+2460 CIRCLED DIGIT ONE; onecircle  
18417 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460  
18418 % U+2461 CIRCLED DIGIT TWO; twocircle  
18419 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461  
18420 % U+2462 CIRCLED DIGIT THREE; threecircle  
18421 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462  
18422 % U+2463 CIRCLED DIGIT FOUR; fourcircle  
18423 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463  
18424 % U+2464 CIRCLED DIGIT FIVE; fivecircle  
18425 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464  
18426 % U+2465 CIRCLED DIGIT SIX; sixcircle  
18427 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465  
18428 % U+2466 CIRCLED DIGIT SEVEN; sevencircle  
18429 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466  
18430 % U+2467 CIRCLED DIGIT EIGHT; eightcircle  
18431 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467  
18432 % U+2468 CIRCLED DIGIT NINE; ninecircle  
18433 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468  
18434 % U+2469 CIRCLED NUMBER TEN; tencircle  
18435 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469  
18436 % U+246A CIRCLED NUMBER ELEVEN; elevencircle  
18437 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A  
18438 % U+246B CIRCLED NUMBER TWELVE; twelvecircle  
18439 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B  
18440 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle  
18441 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C  
18442 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle  
18443 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D  
18444 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle  
18445 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E  
18446 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle  
18447 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F  
18448 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle  
18449 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470  
18450 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle  
18451 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471  
18452 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle  
18453 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472  
18454 % U+2473 CIRCLED NUMBER TWENTY; twentycircle  
18455 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473  
18456 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle  
18457 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6  
18458 % \CircledA (marvosym)

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18459 \DeclareTextCommand{\textCircledA}{PU}{\9044\266}%* U+24B6
18460 %* \textCircledA -> \CleaningA
18461 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle
18462 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7
18463 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle
18464 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8
18465 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle
18466 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9
18467 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle
18468 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA
18469 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle
18470 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB
18471 % \CleaningF (marvosym)
18472 \DeclareTextCommand{\textCleaningF}{PU}{\9044\273}%* U+24BB
18473 % \CleaningFF (marvosym)
18474 \DeclareTextCommand{\textCleaningFF}{PU}{\9044\273\83\062}%* U+24BB U+0332
18475 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle
18476 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC
18477 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle
18478 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD
18479 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle
18480 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE
18481 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle
18482 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF
18483 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle
18484 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0
18485 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle
18486 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1
18487 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle
18488 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2
18489 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle
18490 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3
18491 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle
18492 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4
18493 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle
18494 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5
18495 % \CleaningP (marvosym)
18496 \DeclareTextCommand{\textCleaningP}{PU}{\9044\305}%* U+24C5
18497 % \CleaningPP (marvosym)
18498 \DeclareTextCommand{\textCleaningPP}{PU}{\9044\305\83\062}%* U+24C5 U+0332
18499 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle
18500 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6
18501 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle
18502 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7
18503 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle
18504 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8
18505 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle
18506 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9
18507 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle
18508 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA
18509 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle
18510 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB
18511 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle
18512 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC

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18513 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle  
18514 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD  
18515 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle  
18516 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE  
18517 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle  
18518 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF  
18519 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle  
18520 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0  
18521 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle  
18522 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1  
18523 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle  
18524 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2  
18525 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle  
18526 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3  
18527 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle  
18528 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4  
18529 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle  
18530 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5  
18531 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle  
18532 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6  
18533 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle  
18534 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7  
18535 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle  
18536 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8  
18537 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcircle  
18538 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9  
18539 % U+24DA CIRCLED LATIN SMALL LETTER K; kcircle  
18540 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA  
18541 % U+24DB CIRCLED LATIN SMALL LETTER L; lcircle  
18542 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB  
18543 % U+24DC CIRCLED LATIN SMALL LETTER M; mcircle  
18544 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC  
18545 % U+24DD CIRCLED LATIN SMALL LETTER N; ncircle  
18546 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD  
18547 % U+24DE CIRCLED LATIN SMALL LETTER O; ocircle  
18548 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE  
18549 % U+24DF CIRCLED LATIN SMALL LETTER P; pcircle  
18550 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF  
18551 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcircle  
18552 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0  
18553 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcircle  
18554 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1  
18555 % U+24E2 CIRCLED LATIN SMALL LETTER S; scircle  
18556 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2  
18557 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcircle  
18558 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3  
18559 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucircle  
18560 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4  
18561 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcircle  
18562 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5  
18563 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcircle  
18564 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6  
18565 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcircle  
18566 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7

18567 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycircle  
18568 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8  
18569 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcircle  
18570 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9  
18571 % U+24EA CIRCLED DIGIT ZERO  
18572 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

#### 47.2.27 Box Drawing: U+2500 to 257F

18573 % U+2504 BOX DRAWINGS LIGHT TRIPLE DASH HORIZONTAL; \Cutting-  
Line (marvosym)  
18574 \DeclareTextCommand{\textCuttingLine}{PU}{\9045\004}%\* U+2504  
18575 %\* \textCuttingLine -> \Kutline (marvosym)  
18576 %\* \textCuttingLine -> \CutLine (marvosym)  
18577 %\* \textCuttingLine -> \Cutline (marvosym)

#### 47.2.28 Geometric Shapes: U+25A0 to U+25FF

18578 % U+25B2 BLACK UP-POINTING TRIANGLE; \UParrow (wasysym)  
18579 \DeclareTextCommand{\textUParrow}{PU}{\9045\262}%\* U+25B2  
18580 %\* \textUParrow -> \MoveUp (marvosym)  
18581 % U+25B3 WHITE UP-POINTING TRIANGLE; whiteuppointingtriangle;  
18582 % \bigtriangleup (LaTeX)  
18583 \DeclareTextCommand{\textbigtriangleup}{PU}{\9045\263}%\* U+25B3  
18584 %\* \textbigtriangleup -> \APLup (wasysym)  
18585 %\* \textbigtriangleup -> \Bleech (marvosym)  
18586 % U+25B6 BLACK RIGHT-POINTING TRIANGLE; \Forward (marvosym)  
18587 \DeclareTextCommand{\textForward}{PU}{\9045\266}%\* U+25B6  
18588 % U+25B7 WHITE RIGHT-POINTING TRIANGLE (= z notation range restric-  
tion);  
18589 % whiterightpointingtriangle; \triangleright (LaTeX)  
18590 \DeclareTextCommand{\texttriangleright}{PU}{\9045\267}%\* U+25B7  
18591 % U+25BA BLACK RIGHT-POINTING POINTER; \RHD (wasysym)  
18592 \DeclareTextCommand{\textRHD}{PU}{\9045\272}%\* U+25BA  
18593 % U+25BC BLACK DOWN-POINTING TRIANGLE; \DOWNarrow (wasysym)  
18594 \DeclareTextCommand{\textDOWNarrow}{PU}{\9045\274}%\* U+25BC  
18595 %\* \textDOWNarrow -> \MoveDown (marvosym)  
18596 % U+25BD WHITE DOWN-POINTING TRIANGLE; whitedownpointingtri-  
angle;  
18597 % \bigtriangledown (LaTeX)  
18598 \DeclareTextCommand{\textbigtriangledown}{PU}{\9045\275}%\* U+25BD  
18599 %\* \textbigtriangledown -> \APLdown (wasysym)  
18600 % U+25C0 BLACK LEFT-POINTING TRIANGLE; \Rewind (marvosym)  
18601 \DeclareTextCommand{\textRewind}{PU}{\9045\300}%\* U+25C0  
18602 % U+25C1 WHITE RIGHT-POINTING TRIANGLE (= z notation domain re-  
striction);  
18603 % whiteleftpointingtriangle; \triangleleft (LaTeX)  
18604 \DeclareTextCommand{\texttriangleleft}{PU}{\9045\301}%\* U+25C1  
18605 % U+25C4 BLACK LEFT-POINTING POINTER; \LHD (wasysym)  
18606 \DeclareTextCommand{\textLHD}{PU}{\9045\304}%\* U+25C4  
18607 % U+25C7 WHITE DIAMOND; whitediamond; \diamond (LaTeX)  
18608 \DeclareTextCommand{\textdiamond}{PU}{\9045\307}%\* U+25C7  
18609 %\* \textdiamond -> \Diamond (wasysym)  
18610 % U+25CA LOZENGE; lozenge; \lozenge (AmS)  
18611 \DeclareTextCommand{\textlozenge}{PU}{\9045\312}%\* U+25CA  
18612 % U+25D6 LEFT HALF BLACK CIRCLE; \LEFTCIRCLE (wasysym)

18613 \DeclareTextCommand{\textLEFTCIRCLE}{PU}{\9045\326}%\* U+25D6  
18614 % U+25D7 RIGHT HALF BLACK CIRCLE; \RIGHTCIRCLE (wasysym)  
18615 \DeclareTextCommand{\textRIGHTCIRCLE}{PU}{\9045\327}%\* U+25D7  
18616 % U+25E6 WHITE BULLET; \*openbullet, whitebullet  
18617 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}%\* U+25E6  
18618 % U+25EB WHITE SQUARE WITH VERTICAL BISECTING LINE;  
18619 % \boxbar (stmaryrd)  
18620 \DeclareTextCommand{\textboxbar}{PU}{\9045\353}%\* U+25EB  
18621 % U+25EF LARGE CIRCLE; largecircle  
18622 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}%\* U+25EF  
18623 %\* \textbigcircle -> \varbigcirc (stmaryrd)  
18624 %

#### 47.2.29 Miscellaneous Symbols: U+2600 to U+26FF

18625 % U+2601 CLOUD; \Cloud (ifsym)  
18626 \DeclareTextCommand{\textCloud}{PU}{\9046\001}%\* U+2601  
18627 % U+2605 BLACK STAR; \FiveStar (bbding)  
18628 \DeclareTextCommand{\textFiveStar}{PU}{\9046\005}%\* U+2605  
18629 % U+2606 WHITE STAR; \FiveStarOpen (bbding)  
18630 \DeclareTextCommand{\textFiveStarOpen}{PU}{\9046\006}%\* U+2606  
18631 % U+260E BLACK TELEPHONE; telephoneblack; \Phone (bbding)  
18632 \DeclareTextCommand{\textPhone}{PU}{\9046\016}%\* U+260E  
18633 %\* \textPhone -> \Telefon (marvosym)  
18634 % U+2610 BALLOT BOX; \boxempty (stmaryrd)  
18635 \DeclareTextCommand{\textboxempty}{PU}{\9046\020}%\* U+2610  
18636 %\* \textboxempty -> \Box (wasysym)  
18637 % U+2611 BALLOT BOX WITH CHECK; \Checkedbox (marvosym)  
18638 \DeclareTextCommand{\textCheckedbox}{PU}{\9046\021}%\* U+2611  
18639 %\* \textCheckedbox -> \CheckedBox (marvosym)  
18640 % U+2612 BALLOT BOX WITH X; \Crossedbox (marvosym)  
18641 \DeclareTextCommand{\textCrossedbox}{PU}{\9046\022}%\* U+2612  
18642 %\* \textCrossedbox -> \XBox (wasysym)  
18643 %\* \textCrossedbox -> \CrossedBox (marvosym)  
18644 % U+2615 HOT BEVERAGE; \Coffeecup (marvosym)  
18645 \DeclareTextCommand{\textCoffeecup}{PU}{\9046\025}%\* U+2615  
18646 % U+261A BLACK LEFT POINTING INDEX; \HandCuffLeft (bbding)  
18647 \DeclareTextCommand{\textHandCuffLeft}{PU}{\9046\032}%\* U+261A  
18648 % U+261B BLACK RIGHT POINTING INDEX; \HandCuffRight (bbding)  
18649 \DeclareTextCommand{\textHandCuffRight}{PU}{\9046\033}%\* U+261B  
18650 % U+261C WHITE LEFT POINTING INDEX; \HandLeft (bbding)  
18651 \DeclareTextCommand{\textHandLeft}{PU}{\9046\034}%\* U+261C  
18652 %\* \textHandLeft -> \rightpointleft (fourier)  
18653 % U+261E WHITE RIGHT POINTING INDEX; \HandRight (bbding)  
18654 \DeclareTextCommand{\textHandRight}{PU}{\9046\036}%\* U+261E  
18655 %\* \textHandRight -> \leftpointright (fourier)  
18656 %\* \textHandRight -> \PointingHand (marvosym)  
18657 %\* \textHandRight -> \Pointinghand (marvosym)  
18658 % U+2622 RADIOACTIVE SIGN; \Radioactivity (marvosym)  
18659 \DeclareTextCommand{\textRadioactivity}{PU}{\9046\042}%\* U+2622  
18660 %\* \textRadioactivity -> \Radiation (ifsym)  
18661 % U+2623 BIOHAZARD SIGN; \Biohazard (marvosym)  
18662 \DeclareTextCommand{\textBiohazard}{PU}{\9046\043}%\* U+2623  
18663 % U+2625 ANKH; \Ankh (marvosym)  
18664 \DeclareTextCommand{\textAnkh}{PU}{\9046\045}%\* U+2625

18665 % U+262F YIN YANG; \YinYang (marvosym)  
18666 \DeclareTextCommand{\textYinYang}{PU}{\9046\057}%\* U+262F  
18667 %\* \textYinYang -> \Yinyang (marvosym)  
18668 %\* \textYinYang -> \YingYang (marvosym)  
18669 %\* \textYinYang -> \Yingyang (marvosym)  
18670 % U+2639 WHITE FROWNING FACE; \frownie (wasysym)  
18671 \DeclareTextCommand{\textfrownie}{PU}{\9046\071}%\* U+2639  
18672 %\* \textfrownie -> \Frowny (marvosym)  
18673 % U+263A WHITE SMILING FACE; \smiley (wasysym)  
18674 \DeclareTextCommand{\textsmiley}{PU}{\9046\072}%\* U+263A  
18675 %\* \textsmiley -> \Smiley (marvosym)  
18676 % U+263B BLACK SMILING FACE; \blacksmiley (wasysym)  
18677 \DeclareTextCommand{\textblacksmiley}{PU}{\9046\073}%\* U+263B  
18678 % U+263C WHITE SUN WITH RAYS; \sun (wasysym)  
18679 \DeclareTextCommand{\textsun}{PU}{\9046\074}%\* U+263C  
18680 %\* \textsun -> \Sun (marvosym)  
18681 % U+263D FIRST QUARTER MOON; \leftmoon (wasysym, mathabx)  
18682 \DeclareTextCommand{\textleftmoon}{PU}{\9046\075}%\* U+263D  
18683 % U+263E LAST QUARTER MOON; \rightmoon (wasysym, mathabx)  
18684 \DeclareTextCommand{\textrightmoon}{PU}{\9046\076}%\* U+263E  
18685 % U+263F MERCURY; \mercury (wasysym)  
18686 \DeclareTextCommand{\textmercury}{PU}{\9046\077}%\* U+263F  
18687 %\* \textmercury -> \Mercury (marvosym)  
18688 % U+2640 FEMALE SIGN; female; \female (wasysym)  
18689 \DeclareTextCommand{\textPUfemale}{PU}{\9046\100}% U+2640  
18690 %\* \textPUfemale -> \textfemale (tipx)  
18691 %\* \textPUfemale -> \female (wasysym)  
18692 %\* \textPUfemale -> \venus (wasysym)  
18693 %\* \textPUfemale -> \Venus (marvosym)  
18694 %\* \textPUfemale -> \Female (marvosym)  
18695 % U+2641 EARTH; \earth (wasysym)  
18696 \DeclareTextCommand{\textearth}{PU}{\9046\101}%\* U+2641  
18697 %\* \textearth -> \Earth (marvosym)  
18698 % U+2642 MALE SIGN; male, mars; \male (wasysym)  
18699 \DeclareTextCommand{\textmale}{PU}{\9046\102}%\* U+2642  
18700 %\* \textmale -> \mars (wasysym)  
18701 %\* \textmale -> \Mars (marvosym)  
18702 %\* \textmale -> \Male (marvosym)  
18703 % U+2643 JUPITER; \jupiter (wasysym)  
18704 \DeclareTextCommand{\textjupiter}{PU}{\9046\103}%\* U+2643  
18705 %\* \textjupiter -> \Jupiter (marvosym)  
18706 % U+2644 SATURN; \saturn (wasysym)  
18707 \DeclareTextCommand{\textsaturn}{PU}{\9046\104}%\* U+2644  
18708 %\* \textsaturn -> \Saturn (marvosym)  
18709 % U+2645 URANUS; \uranus (wasysym)  
18710 \DeclareTextCommand{\texturanus}{PU}{\9046\105}%\* U+2645  
18711 %\* \texturanus -> \Uranus (marvosym)  
18712 % U+2646 NEPTUNE; \neptune (wasysym)  
18713 \DeclareTextCommand{\textneptune}{PU}{\9046\106}%\* U+2646  
18714 %\* \textneptune -> \Neptune (marvosym)  
18715 % U+2647 PLUTO; \pluto (wasysym)  
18716 \DeclareTextCommand{\textpluto}{PU}{\9046\107}%\* U+2647  
18717 %\* \textpluto -> \Pluto (marvosym)  
18718 % U+2648 ARIES; \aries (wasysym)

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18719 \DeclareTextCommand{\textaries}{PU}{\9046\110}%* U+2648
18720 %* \textaries -> \Aries (marvosym)
18721 % U+2649 TAURUS; \taurus (wasysym)
18722 \DeclareTextCommand{\texttaurus}{PU}{\9046\111}%* U+2649
18723 %* \texttaurus -> \Taurus (marvosym)
18724 % U+264A GEMINI; \gemini (wasysym)
18725 \DeclareTextCommand{\textgemini}{PU}{\9046\112}%* U+264A
18726 %* \textgemini -> \Gemini (marvosym)
18727 % U+264B CANCER; \cancer (wasysym)
18728 \DeclareTextCommand{\textcancer}{PU}{\9046\113}%* U+264B
18729 %* \textcancer -> \Cancer (marvosym)
18730 % U+264C LEO; \leo (wasysym)
18731 \DeclareTextCommand{\textleo}{PU}{\9046\114}%* U+264C
18732 %* \textleo -> \Leo (marvosym)
18733 % U+264D VIRGO; \virgo (wasysym)
18734 \DeclareTextCommand{\textvirgo}{PU}{\9046\115}%* U+264D
18735 %* \textvirgo -> \Virgo (marvosym)
18736 % U+264E LIBRA; \libra (wasysym)
18737 \DeclareTextCommand{\textlibra}{PU}{\9046\116}%* U+264E
18738 %* \textlibra -> \Libra (marvosym)
18739 % U+264F SCORPIO; \scorpio (wasysym)
18740 \DeclareTextCommand{\textscorpio}{PU}{\9046\117}%* U+264F
18741 %* \textscorpio -> \Scorpio (marvosym)
18742 % U+2650 SAGITTARIUS; \sagittarius (wasysym)
18743 \DeclareTextCommand{\textsagittarius}{PU}{\9046\120}%* U+2650
18744 %* \textsagittarius -> \Sagittarius (marvosym)
18745 % U+2651 CAPRICORN; \capricornus (wasysym)
18746 \DeclareTextCommand{\textcapricornus}{PU}{\9046\121}%* U+2651
18747 %* \textcapricornus -> \Capricorn (marvosym)
18748 % U+2652 AQUARIUS; \aquarius (wasysym)
18749 \DeclareTextCommand{\textaquarius}{PU}{\9046\122}%* U+2652
18750 %* \textaquarius -> \Aquarius (marvosym)
18751 % U+2653 PISCES; \pisces (wasysym)
18752 \DeclareTextCommand{\textpisces}{PU}{\9046\123}%* U+2653
18753 %* \textpisces -> \Pisces (marvosym)
18754 % U+2660 BLACK SPADE SUIT; spade, spadesuitblack; \spadesuit (LaTeX)
18755 \DeclareTextCommand{\textspadesuitblack}{PU}{\9046\140}% U+2660
18756 %* \textspadesuitblack -> \spadesuit (MnSymbol)
18757 % U+2661 WHITE HEART SUIT; heartsuitwhite; \heartsuit (LaTeX)
18758 \DeclareTextCommand{\textheartsuitwhite}{PU}{\9046\141}% U+2661
18759 %* \textheartsuitwhite -> \Heart (marvosym)
18760 %* \textheartsuitwhite -> \heartsuit (MnSymbol)
18761 % U+2662 WHITE DIAMOND SUIT; diamondsuitwhite; \diamondsuit (LaTeX)
18762 \DeclareTextCommand{\textdiamondsuitwhite}{PU}{\9046\142}% U+2662
18763 %* \textdiamondsuitwhite -> \diamondsuit (MnSymbol)
18764 % U+2663 BLACK CLUB SUIT; club, clubsuitblack; \clubsuit (LaTeX)
18765 \DeclareTextCommand{\textclubsuitblack}{PU}{\9046\143}% U+2663
18766 %* \textclubsuitblack -> \clubsuit (MnSymbol)
18767 % U+2664 WHITE SPADE SUIT; spadesuitwhite
18768 \DeclareTextCommand{\textspadesuitwhite}{PU}{\9046\144}% U+2664
18769 % U+2665 BLACK HEART SUIT; heartsuitblack, heart
18770 \DeclareTextCommand{\textheartsuitblack}{PU}{\9046\145}% U+2665
18771 % U+2666 BLACK DIAMOND SUIT; diamond
18772 \DeclareTextCommand{\textdiamondsuitblack}{PU}{\9046\146}% U+2666

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18773 % U+2667 WHITE CLUB SUIT; clubsuitwhite  
18774 \DeclareTextCommand{\textclubsuitwhite}{PU}{\9046\147}% U+2667  
18775 % U+2669 QUARTER NOTE; quarternote; \quarternote (wasysym, arev)  
18776 \DeclareTextCommand{\textquarternote}{PU}{\9046\151}%\* U+2669  
18777 % U+266A EIGHTH NOTE; musicalnote; \textmusicalnote (textcomp)  
18778 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}% U+266A  
18779 %\* \textmusicalnote -> \eighthnote (wasysym, arev)  
18780 % U+266B BEAMED EIGHTH NOTES; eighthnotebeamed; \twonotes (wasysym)  
18781 \DeclareTextCommand{\texttwonotes}{PU}{\9046\153}%\* U+266B  
18782 % U+266C BEAMED SIXTEENTH NOTES; beamedsixteenthnotes; \sixteenth-  
note (arev)  
18783 \DeclareTextCommand{\textsixteenthnote}{PU}{\9046\154}%\* U+266C  
18784 % U+266D MUSIC FLAT SIGN; musicflatsign; \flat (LaTeX)  
18785 \DeclareTextCommand{\textflat}{PU}{\9046\155}%\* U+266D  
18786 % U+266E MUSIC NATURAL SIGN; \natural (LaTeX)  
18787 \DeclareTextCommand{\textnatural}{PU}{\9046\156}%\* U+266E  
18788 % U+266F MUSIC SHARP SIGN; musicsharpsign; \sharp (LaTeX)  
18789 \DeclareTextCommand{\textsharp}{PU}{\9046\157}%\* U+266F  
18790 % U+2672 UNIVERSAL RECYCLING SYMBOL; \recycle (recycle)  
18791 \DeclareTextCommand{\textrecycle}{PU}{\9046\162}%\* U+2672  
18792 %\* \textrecycle -> \Recycling (marvosym)  
18793 % U+267F WHEELCHAIR SYMBOL; \Wheelchair (marvosym)  
18794 \DeclareTextCommand{\textWheelchair}{PU}{\9046\177}%\* U+267F  
18795 % U+2691 BLACK FLAG; \Flag (ifsym)  
18796 \DeclareTextCommand{\textFlag}{PU}{\9046\221}%\* U+2691  
18797 %\* \textFlag -> \VarFlag (ifsym)  
18798 % U+2692 HAMMER AND PICK; \MineSign (marvosym)  
18799 \DeclareTextCommand{\textMineSign}{PU}{\9046\222}%\* U+2692  
18800 % U+2694 CROSSED SWORDS; \dsmilitary (dictsym)  
18801 \DeclareTextCommand{\textdsmilitary}{PU}{\9046\224}%\* U+2694  
18802 %\* \textdsmilitary -> \textxswup (fourier)  
18803 % U+2695 STAFF OF AESCULAPIUS; \dsmedical (dictsym)  
18804 \DeclareTextCommand{\textdsmedical}{PU}{\9046\225}%\* U+2695  
18805 % U+2696 SCALES; \dsjuridical (dictsym)  
18806 \DeclareTextCommand{\textdsjuridical}{PU}{\9046\226}%\* U+2696  
18807 % U+2697 ALEMBIC; \dschemical (dictsym)  
18808 \DeclareTextCommand{\textdschemical}{PU}{\9046\227}%\* U+2697  
18809 % U+2698 FLOWER; \dsbiological (dictsym)  
18810 \DeclareTextCommand{\textdsbiological}{PU}{\9046\230}%\* U+2698  
18811 % U+269A STAFF OF HERMES; \dscommercial (dictsym)  
18812 \DeclareTextCommand{\textdscommercial}{PU}{\9046\232}%\* U+269A  
18813 % U+269D OUTLINED WHITE STAR; \manstar (manfnt)  
18814 \DeclareTextCommand{\textmanstar}{PU}{\9046\235}%\* U+269D  
18815 % U+26A0 WARNING SIGN; \danger (fourier)  
18816 \DeclareTextCommand{\textdanger}{PU}{\9046\240}%\* U+26A0  
18817 % U+26A2 DOUBLED FEMALE SIGN; \FemaleFemale (marvosym)  
18818 \DeclareTextCommand{\textFemaleFemale}{PU}{\9046\242}%\* U+26A2  
18819 % U+26A3 DOUBLED MALE SIGN; \MaleMale (marvosym)  
18820 \DeclareTextCommand{\textMaleMale}{PU}{\9046\243}%\* U+26A3  
18821 % U+26A4 INTERLOCKED FEMALE AND MALE SIGN; \FemaleMale (mar-  
vosym)  
18822 \DeclareTextCommand{\textFemaleMale}{PU}{\9046\244}%\* U+26A4  
18823 % U+26A5 MALE AND FEMALE SIGN; \Hermaphrodite (marvosym)  
18824 \DeclareTextCommand{\textHermaphrodite}{PU}{\9046\245}%\* U+26A5

18825 % U+26AA MEDIUM WHITE CIRCLE; \Neural (marvosym)  
 18826 \DeclareTextCommand{\textNeutral}{PU}{\9046\252}%\* U+26AA  
 18827 % U+26AD MARRIAGE SYMBOL  
 18828 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD  
 18829 % U+26AE DIVORCE SYMBOL  
 18830 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE  
 18831 % U+26B2 NEUTER; \textunconfemale (tipx)  
 18832 \DeclareTextCommand{\textPUunconfemale}{PU}{\9046\262}% U+26B2  
 18833 %\* \textPUunconfemale -> \textunconfemale (tipx)  
 18834 % U+26B9 SEXTILE; \hexstar (wasysym)  
 18835 \DeclareTextCommand{\texthexstar}{PU}{\9046\271}%\* U+26B9  
 18836 % U+26BD SOCCER BALL; \Football (marvosym)  
 18837 \DeclareTextCommand{\textSoccerBall}{PU}{\9046\275}% U+26BD  
 18838 %\* \textSoccerBall -> \Football (marvosym)  
 18839 % U+26C5 SUN BEHIND CLOUD; \SunCloud (ifsym)  
 18840 \DeclareTextCommand{\textSunCloud}{PU}{\9046\305}%\* U+26C5  
 18841 % U+26C6 RAIN; \Rain (ifsym)  
 18842 \DeclareTextCommand{\textRain}{PU}{\9046\306}%\* U+26C6  
 18843 % U+26D4 NO ENTRY; \noway (fourier)  
 18844 \DeclareTextCommand{\textnoway}{PU}{\9046\324}%\* U+26D4  
 18845 % U+26F0 MOUNTAIN; \Mountain (ifsym)  
 18846 \DeclareTextCommand{\textMountain}{PU}{\9046\360}%\* U+26F0  
 18847 % U+26FA TENT; \Tent (ifsym)  
 18848 \DeclareTextCommand{\textTent}{PU}{\9046\372}%\* U+26FA

#### 47.2.30 Dingbats: U+2700 to U+27BF

18849 % U+2701 UPPER BLADE SCISSORS; \ScissorRightBrokenBottom (bding)  
 18850 \DeclareTextCommand{\textScissorRightBrokenBottom}{PU}{\9047\001}% U+2701  
 18851 %\* \textScissorRightBrokenBottom -> \CutLeft (marvosym)  
 18852 %\* \textScissorRightBrokenBottom -> \Cutright (marvosym)  
 18853 % U+2702 BLACK SCISSORS; \ScissorRight (bding)  
 18854 \DeclareTextCommand{\textScissorRight}{PU}{\9047\002}%\* U+2702  
 18855 %\* \textScissorRight -> \RightScissors (marvosym)  
 18856 %\* \textScissorRight -> \Leftscissors (marvosym)  
 18857 % U+2703 LOWER BLADE SCISSORS; \ScissorRightBrokenTop (bding)  
 18858 \DeclareTextCommand{\textScissorRightBrokenTop}{PU}{\9047\003}%\* U+2703  
 18859 % U+2704 WHITE SCISSORS; \ScissorHollowRight (bding)  
 18860 \DeclareTextCommand{\textScissorHollowRight}{PU}{\9047\004}%\* U+2704  
 18861 % U+2706 TELEPHONE LOCATION SIGN; \PhoneHandset (bding)  
 18862 \DeclareTextCommand{\textPhoneHandset}{PU}{\9047\006}%\* U+2706  
 18863 % U+2707 TAPE DRIVE; \Tape (bding)  
 18864 \DeclareTextCommand{\textTape}{PU}{\9047\007}%\* U+2707  
 18865 % U+2708 AIRPLANE; \Plane (bding)  
 18866 \DeclareTextCommand{\textPlane}{PU}{\9047\010}%\* U+2708  
 18867 % U+2709 ENVELOPE; \Envelope (bding),  
 18868 \DeclareTextCommand{\textEnvelope}{PU}{\9047\011}%\* U+2709  
 18869 %\* \textEnvelope -> \Letter (marvosym)  
 18870 % U+270C VICTORY HAND; \Peace (bding)  
 18871 \DeclareTextCommand{\textPeace}{PU}{\9047\014}%\* U+270C  
 18872 % U+270D WRITING HAND; \WritingHand (marvosym)  
 18873 \DeclareTextCommand{\textWritingHand}{PU}{\9047\015}%\* U+270D  
 18874 %\* \textWritingHand -> \Writinghand (marvosym)  
 18875 % U+270E LOWER RIGHT PENCIL; \PencilRightDown (bding)  
 18876 \DeclareTextCommand{\textPencilRightDown}{PU}{\9047\016}%\* U+270E

18877 % U+270F PENCIL; \PencilRight (bding)  
18878 \DeclareTextCommand{\textPencilRight}{PU}{\9047\017}%\* U+270F  
18879 % U+2710 UPPER RIGHT PENCIL; \PencilRightUp (bding)  
18880 \DeclareTextCommand{\textPencilRightUp}{PU}{\9047\020}%\* U+2710  
18881 % U+2711 WHITE NIB; \NibRight (bding)  
18882 \DeclareTextCommand{\textNibRight}{PU}{\9047\021}%\* U+2711  
18883 % U+2712 BLACK NIB; \NibSolidRight (bding)  
18884 \DeclareTextCommand{\textNibSolidRight}{PU}{\9047\022}%\* U+2712  
18885 % U+2713 CHECK MARK; checkmark; \Checkmark (bding)  
18886 \DeclareTextCommand{\textCheckmark}{PU}{\9047\023}%\* U+2713  
18887 %\* \textCheckmark -> \checkmark (MnSymbol)  
18888 % U+2714 HEAVY CHECK MARK; \CheckmarkBold (bding)  
18889 \DeclareTextCommand{\textCheckmarkBold}{PU}{\9047\024}%\* U+2714  
18890 % U+2715 MULTIPLICATION X; \XSolid (bding)  
18891 \DeclareTextCommand{\textXSolid}{PU}{\9047\025}%\* U+2715  
18892 % U+2716 HEAVY MULTIPLICATION X; \XSolidBold (bding)  
18893 \DeclareTextCommand{\textXSolidBold}{PU}{\9047\026}%\* U+2716  
18894 % U+2717 BALLOT X; \XSolidBrush (bding)  
18895 \DeclareTextCommand{\textXSolidBrush}{PU}{\9047\027}%\* U+2717  
18896 % U+2719 OUTLINED GREEK CROSS; \PlusOutline (bding)  
18897 \DeclareTextCommand{\textPlusOutline}{PU}{\9047\031}%\* U+2719  
18898 % U+271A HEAVY GREEK CROSS; \Plus (bding)  
18899 \DeclareTextCommand{\textPlus}{PU}{\9047\032}%\* U+271A  
18900 % U+271B OPEN CENTRE CROSS; \PlusThinCenterOpen (bding)  
18901 \DeclareTextCommand{\textPlusThinCenterOpen}{PU}{\9047\033}%\* U+271B  
18902 % U+271C HEAVY OPEN CENTRE CROSS; \PlusCenterOpen (bding)  
18903 \DeclareTextCommand{\textPlusCenterOpen}{PU}{\9047\034}%\* U+271C  
18904 % U+271D LATIN CROSS; \Cross (bding)  
18905 \DeclareTextCommand{\textCross}{PU}{\9047\035}%\* U+271D  
18906 % U+271E SHADOWED WHITE LATIN CROSS; \CrossOpenShadow (bding)  
18907 \DeclareTextCommand{\textCrossOpenShadow}{PU}{\9047\036}%\* U+271E  
18908 % U+271F OUTLINED LATIN CROSS; \CrossOutline (bding)  
18909 \DeclareTextCommand{\textCrossOutline}{PU}{\9047\037}%\* U+271F  
18910 % U+2720 MALTESE CROSS; \CrossMaltese (bding)  
18911 \DeclareTextCommand{\textCrossMaltese}{PU}{\9047\040}%\* U+2720  
18912 % U+2721 STAR OF DAVID; \DavidStar (bding)  
18913 \DeclareTextCommand{\textDavidStar}{PU}{\9047\041}%\* U+2721  
18914 %\* \textDavidStar -> \davidstar (wasysym)  
18915 % U+2722 FOUR TEARDROP-SPOKED ASTERISK; \FourAsterisk (bding)  
18916 \DeclareTextCommand{\textFourAsterisk}{PU}{\9047\042}%\* U+2722  
18917 % U+2723 FOUR BALLOON-SPOKED ASTERISK; \JackStar (bding)  
18918 \DeclareTextCommand{\textJackStar}{PU}{\9047\043}%\* U+2723  
18919 % U+2724 HEAVY FOUR BALLOON-SPOKED ASTERISK; \JackStarBold (bding)  
18920 \DeclareTextCommand{\textJackStarBold}{PU}{\9047\044}%\* U+2724  
18921 % U+2725 FOUR CLUB-SPOKED ASTERISK; \CrossClowerTips (bding)  
18922 \DeclareTextCommand{\textClowerTips}{PU}{\9047\045}%\* U+2725  
18923 % U+2726 BLACK FOUR POINTED STAR; \FourStar (bding)  
18924 \DeclareTextCommand{\textFourStar}{PU}{\9047\046}%\* U+2726  
18925 % U+2727 WHITE FOUR POINTED STAR; \FourStarOpen (bding)  
18926 \DeclareTextCommand{\textFourStarOpen}{PU}{\9047\047}%\* U+2727  
18927 % U+272A CIRCLED WHITE STAR; \FiveStarOpenCircled (bding)  
18928 \DeclareTextCommand{\textFiveStarOpenCircled}{PU}{\9047\052}%\* U+272A  
18929 % U+272B OPEN CENTRE BLACK STAR; \FiveStarCenterOpen (bding)

18930 \DeclareTextCommand{\textFiveStarCenterOpen}{PU}{\9047\053}%\* U+272B  
18931 % U+272C BLACK CENTRE WHITE STAR; \FiveStarOpenDotted (bding)  
18932 \DeclareTextCommand{\textFiveStarOpenDotted}{PU}{\9047\054}%\* U+272C  
18933 % U+272D OUTLINED BLACK STAR; \FiveStarOutline (bding)  
18934 \DeclareTextCommand{\textFiveStarOutline}{PU}{\9047\055}%\* U+272D  
18935 % U+272E HEAVY OUTLINED BLACK STAR; \FiveStarOutlineHeavy (bding)  
18936 \DeclareTextCommand{\textFiveStarOutlineHeavy}{PU}{\9047\056}%\* U+272E  
18937 % U+272F PINWHEEL STAR; \FiveStarConvex (bding)  
18938 \DeclareTextCommand{\textFiveStarConvex}{PU}{\9047\057}%\* U+272F  
18939 % U+2730 SHADOWED WHITE STAR; \FiveStarShadow (bding)  
18940 \DeclareTextCommand{\textFiveStarShadow}{PU}{\9047\060}%\* U+2730  
18941 % U+2731 HEAVY ASTERISK; \AsteriskBold (bding)  
18942 \DeclareTextCommand{\textAsteriskBold}{PU}{\9047\061}%\* U+2731  
18943 % U+2732 OPEN CENTRE ASTERISK; \AsteriskCenterOpen (bding)  
18944 \DeclareTextCommand{\textAsteriskCenterOpen}{PU}{\9047\062}%\* U+2732  
18945 % U+2734 EIGHT POINTED BLACK STAR; \EightStarTaper (bding)  
18946 \DeclareTextCommand{\textEightStarTaper}{PU}{\9047\064}%\* U+2734  
18947 % U+2735 EIGHT POINTED PINWHEEL STAR; \EightStarConvex (bding)  
18948 \DeclareTextCommand{\textEightStarConvex}{PU}{\9047\065}%\* U+2735  
18949 % U+2736 SIX POINTED BLACK STAR; \SixStar (bding)  
18950 \DeclareTextCommand{\textSixStar}{PU}{\9047\066}%\* U+2736  
18951 % U+2737 EIGHT POINTED RECTILINEAR BLACK STAR; \EightStar (bding)  
18952 \DeclareTextCommand{\textEightStar}{PU}{\9047\067}%\* U+2737  
18953 % U+2738 HEAVY EIGHT POINTED RECTILINEAR BLACK STAR; \EightStarBold (bding)  
18954 \DeclareTextCommand{\textEightStarBold}{PU}{\9047\070}%\* U+2738  
18955 % U+2739 TWELVE POINTED BLACK STAR; \TwelveStar (bding)  
18956 \DeclareTextCommand{\textTwelveStar}{PU}{\9047\071}%\* U+2739  
18957 % U+273A SIXTEEN POINTED ASTERISK; \SixteenStarLight (bding)  
18958 \DeclareTextCommand{\textSixteenStarLight}{PU}{\9047\072}%\* U+273A  
18959 % U+273B TEARDROP-SPOKED ASTERISK; \SixFlowerPetalRemoved (bding)  
18960 \DeclareTextCommand{\textSixFlowerPetalRemoved}{PU}{\9047\073}%\* U+273B  
18961 % U+273C OPEN CENTRE TEARDROP-SPOKED ASTERISK;  
18962 % \SixFlowerOpenCenter (bding)  
18963 \DeclareTextCommand{\textSixFlowerOpenCenter}{PU}{\9047\074}%\* U+273C  
18964 % U+273D HEAVY TEARDROP-SPOKED ASTERISK; \Asterisk (bding)  
18965 \DeclareTextCommand{\textAsterisk}{PU}{\9047\075}%\* U+273D  
18966 % U+273E SIX PETALLED BLACK AND WHITE FLORETTE; \SixFlowerAlternate (bding)  
18967 \DeclareTextCommand{\textSixFlowerAlternate}{PU}{\9047\076}%\* U+273E  
18968 % U+273F BLACK FLORETTE; \FiveFlowerPetal (bding)  
18969 \DeclareTextCommand{\textFiveFlowerPetal}{PU}{\9047\077}%\* U+273F  
18970 % U+2740 WHITE FLORETTE; \FiveFlowerOpen (bding)  
18971 \DeclareTextCommand{\textFiveFlowerOpen}{PU}{\9047\100}%\* U+2740  
18972 % U+2741 EIGHT PETALLED OUTLINED BLACK FLORETTE; \EightFlowerPetal (bding)  
18973 \DeclareTextCommand{\textEightFlowerPetal}{PU}{\9047\101}%\* U+2741  
18974 % U+2742 CIRCLED OPEN CENTRE EIGHT POINTED STAR; \SunshineOpenCircled (bding)  
18975 \DeclareTextCommand{\textSunshineOpenCircled}{PU}{\9047\102}%\* U+2742  
18976 % U+2743 HEAVY TEARDROP-SPOKED PINWHEEL ASTERISK; \SixFlowerAltPetal (bding)

18977 \DeclareTextCommand{\textSixFlowerAltPetal}{PU}{\9047\103}%\* U+2743  
18978 % U+2744 SNOWFLAKE; \SnowflakeChevron (bding)  
18979 \DeclareTextCommand{\textSnowflakeChevron}{PU}{\9047\104}%\* U+2744  
18980 % U+2745 TIGHT TRIFOLIATE SNOWFLAKE; \Snowflake (bding)  
18981 \DeclareTextCommand{\textSnowflake}{PU}{\9047\105}%\* U+2745  
18982 % U+2746 HEAVY CHEVRON SNOWFLAKE; \SnowflakeChevronBold (bding)  
18983 \DeclareTextCommand{\textSnowflakeChevronBold}{PU}{\9047\106}%\* U+2746  
18984 % U+2747 SPARKLE; \Sparkle (bding)  
18985 \DeclareTextCommand{\textSparkle}{PU}{\9047\107}%\* U+2747  
18986 % U+2748 HEAVY SPARKLE; \SparkleBold (bding)  
18987 \DeclareTextCommand{\textSparkleBold}{PU}{\9047\110}%\* U+2748  
18988 % U+2749 BALLOON-SPOKED ASTERISK; \AsteriskRoundedEnds (bding)  
18989 \DeclareTextCommand{\textAsteriskRoundedEnds}{PU}{\9047\111}%\* U+2749  
18990 % U+274A EIGHT TEARDROP-SPOKED PROPELLER ASTERISK;  
18991 % \EightFlowerPetalRemoved (bding)  
18992 \DeclareTextCommand{\textEightFlowerPetalRemoved}{PU}{\9047\112}%\* U+274A  
18993 % U+274B HEAVY EIGHT TEARDROP-SPOKED PROPELLER ASTERISK;  
18994 % \EightAsterisk (bding)  
18995 \DeclareTextCommand{\textEightAsterisk}{PU}{\9047\113}%\* U+274B  
18996 % U+274D SHADOWED WHITE CIRCLE; \CircleShadow (bding)  
18997 \DeclareTextCommand{\textCircleShadow}{PU}{\9047\115}%\* U+274D  
18998 % U+274F LOWER RIGHT DROP-SHADOWED WHITE SQUARE;  
18999 % \SquareShadowBottomRight (bding)  
19000 \DeclareTextCommand{\textSquareShadowBottomRight}{PU}{\9047\117}%\* U+274F  
19001 % U+2750 UPPER RIGHT DROP-SHADOWED WHITE SQUARE;  
19002 % \SquareShadowTopRight (bding)  
19003 \DeclareTextCommand{\textSquareTopRight}{PU}{\9047\120}%\* U+2750  
19004 % U+2751 LOWER RIGHT SHADOWED WHITE SQUARE;  
19005 % \SquareCastShadowBottomRight (bding)  
19006 \DeclareTextCommand{\textSquareCastShadowBottomRight}{PU}{\9047\121}%\* U+2751  
19007 % U+2752 UPPER RIGHT SHADOWED WHITE SQUARE;  
19008 % \SquareCastShadowTopRight (bding)  
19009 \DeclareTextCommand{\textSquareCastShadowTopRight}{PU}{\9047\122}%\* U+2752  
19010 % U+2756 BLACK DIAMOND MINUS WHITE X; \OrnamentDiamondSolid (b-  
ding)  
19011 \DeclareTextCommand{\textDiamondSolid}{PU}{\9047\126}%\* U+2756  
19012 % U+2758 LIGHT VERTICAL BAR; \RectangleThin (bding)  
19013 \DeclareTextCommand{\textRectangleThin}{PU}{\9047\130}%\* U+2758  
19014 % U+2759 MEDIUM VERTICAL BAR; \Rectangle (bding)  
19015 \DeclareTextCommand{\textRectangle}{PU}{\9047\131}%\* U+2759  
19016 % U+275A HEAVY VERTICAL BAR; \RectangleBold (bding)  
19017 \DeclareTextCommand{\textRectangleBold}{PU}{\9047\132}%\* U+275A

#### 47.2.31 Miscellaneous Mathematical Symbols-A: U+27C0 to U+27EF

19018 % U+27C2 PERPENDICULAR; perpendicular; \perp (LaTeX)  
19019 \DeclareTextCommand{\textperp}{PU}{\9047\302}%\* U+27C2  
19020 % \notperp (mathabx)  
19021 \DeclareTextCommand{\textnotperp}{PU}{\9047\302\83\070}%\* U+27C2 U+0338  
19022 % U+27C7 OR WITH DOT INSIDE; \veedot (MnSymbol)  
19023 \DeclareTextCommand{\textveedot}{PU}{\9047\307}%\* U+27C7  
19024 % U+27D1 AND WITH DOT; \wedgedot (MnSymbol)  
19025 \DeclareTextCommand{\textwedgedot}{PU}{\9047\321}%\* U+27D1  
19026 % U+27DC LEFT MULTIMAP; \leftspoon (MnSymbol)  
19027 \DeclareTextCommand{\textleftspoon}{PU}{\9047\334}%\* U+27DC

19028 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET  
19029 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}%\* U+27E6  
19030 %\* \textlbrackdbl -> \lbracket (stmaryrd)  
19031 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET  
19032 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}%\* U+27E7  
19033 %\* \textrbrackdbl -> \rrbracket (stmaryrd)

#### 47.2.32 Supplemental Arrows-A: U+27F0 to U+27FF

19034 % U+27F2 ANTICLOCKWISE GAPPED CIRCLE ARROW;  
19035 % \circlearrowleft (AmS)  
19036 \DeclareTextCommand{\textcirclearrowleft}{PU}{\9047\362}%\* U+27F2  
19037 % U+27F3 CLOCKWISE GAPPED CIRCLE ARROW; \circlearrowright (AmS)  
19038 \DeclareTextCommand{\textcirclearrowright}{PU}{\9047\363}%\* U+27F3  
19039 % U+27F5 LONG LEFTWARDS ARROW; \longleftarrow (AmS)  
19040 \DeclareTextCommand{\textlongleftarrow}{PU}{\9047\365}%\* U+27F5  
19041 % U+27F6 LONG RIGHTWARDS ARROW; \longrightarrow (AmS)  
19042 \DeclareTextCommand{\textlongrightarrow}{PU}{\9047\366}%\* U+27F6  
19043 % U+27F7 LONG LEFT RIGHT ARROW; \longlefttrightarrow (AmS)  
19044 \DeclareTextCommand{\textlonglefttrightarrow}{PU}{\9047\367}%\* U+27F7  
19045 % U+27F8 LONG LEFTWARDS DOUBLE ARROW; \Longleftarrow (AmS)  
19046 \DeclareTextCommand{\textLongleftarrow}{PU}{\9047\370}%\* U+27F8  
19047 % U+27F9 LONG RIGHTWARDS DOUBLE ARROW; \Longrightarrow (AmS)  
19048 \DeclareTextCommand{\textLongrightarrow}{PU}{\9047\371}%\* U+27F9  
19049 % U+27FA LONG LEFT RIGHT DOUBLE ARROW; \Longlefttrightarrow (AmS)  
19050 \DeclareTextCommand{\textLonglefttrightarrow}{PU}{\9047\372}%\* U+27FA  
19051 % U+27FC LONG RIGHTWARDS ARROW FROM BAR; \longmapsto (AmS)  
19052 \DeclareTextCommand{\textlongmapsto}{PU}{\9047\374}%\* U+27FC  
19053 % U+27FD LONG LEFTWARDS DOUBLE ARROW FROM BAR; \Longmaps-  
from (stmaryrd)  
19054 \DeclareTextCommand{\textLongmapsfrom}{PU}{\9047\375}%\* U+27FD  
19055 % U+27FE LONG RIGHTWARDS DOUBLE ARROW FROM BAR; \Longmap-  
sto (stmaryrd)  
19056 \DeclareTextCommand{\textLongmapsto}{PU}{\9047\376}%\* U+27FE

#### 47.2.33 Supplemental Arrows-B: U+2900 to U+297F

19057 % U+2921 NORTH WEST AND SOUTH EAST ARROW; \nwsearrow (MnSym-  
bol)  
19058 \DeclareTextCommand{\textnwsearrow}{PU}{\9051\041}%\* U+2921  
19059 % U+2922 NORTH EAST AND SOUTH WEST ARROW; \neswarrow (MnSym-  
bol)  
19060 \DeclareTextCommand{\textneswarrow}{PU}{\9051\042}%\* U+2922  
19061 % U+2923 NORTH WEST ARROW WITH HOOK; \hooknwarrow (MnSymbol)  
19062 \DeclareTextCommand{\texthooknwarrow}{PU}{\9051\043}%\* U+2923  
19063 % U+2924 NORTH EAST ARROW WITH HOOK; \hooknearrow (MnSymbol)  
19064 \DeclareTextCommand{\textrhooknearrow}{PU}{\9051\044}%\* U+2924  
19065 % U+2925 SOUTH EAST ARROW WITH HOOK; \hooksearrow (MnSymbol)  
19066 \DeclareTextCommand{\texthooksearrow}{PU}{\9051\045}%\* U+2925  
19067 % U+2926 SOUTH WEST ARROW WITH HOOK; \hookswarrow (MnSymbol)  
19068 \DeclareTextCommand{\textrhookswarrow}{PU}{\9051\046}%\* U+2926  
19069 % U+2933 WAVE ARROW POINTING DIRECTLY RIGHT; \leadsto (wasysym)  
19070 \DeclareTextCommand{\textleadsto}{PU}{\9051\063}%\* U+2933  
19071 % U+2934 ARROW POINTING RIGHTWARDS THEN CURVING UPWARDS;  
19072 % \rcurvearrowne (MnSymbol)  
19073 \DeclareTextCommand{\textrcurvearrowne}{PU}{\9051\064}%\* U+2934

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19074 % U+2935 ARROW POINTING RIGHTWARDS THEN CURVING DOWN-
WARDS;
19075 % \lcurvearrowse (MnSymbol)
19076 \DeclareTextCommand{\textlcurvearrowse}{PU}{\9051\065}%* U+2935
19077 % U+2936 ARROW POINTING DOWNWARDS THEN CURVING LEFT-
WARDS;
19078 % \lcurvearrowsw (MnSymbol)
19079 \DeclareTextCommand{\textlcurvearrowsw}{PU}{\9051\066}%* U+2936
19080 % U+2937 ARROW POINTING DOWNWARDS THEN CURVING RIGHT-
WARDS;
19081 % \rcurvearrowse (MnSymbol)
19082 \DeclareTextCommand{\textrcurvearrowse}{PU}{\9051\067}%* U+2937
19083 % U+2938 RIGHT-SIDE ARC CLOCKWISE ARROW; \lcurvearrowdown (Mn-
Symbol)
19084 \DeclareTextCommand{\textlcurvearrowdown}{PU}{\9051\070}%* U+2938
19085 %* \textlcurvearrowdown -> \RightTorque (marvosym)
19086 %* \textlcurvearrowdown -> \Righttorque (marvosym)
19087 % U+2939 LEFT-SIDE ARC ANTICLOCKWISE ARROW;
19088 % \rcurvearrowdown (MnSymbol)
19089 \DeclareTextCommand{\textrcurvearrowdown}{PU}{\9051\071}%* U+2939
19090 %* \textrcurvearrowdown -> \LeftTorque (marvosym)
19091 %* \textrcurvearrowdown -> \Lefttorque (marvosym)
19092 % U+293A TOP ARC ANTICLOCKWISE ARROW; \rcurvearrowleft (MnSym-
bol)
19093 \DeclareTextCommand{\textrcurvearrowleft}{PU}{\9051\072}%* U+293A
19094 % U+293B BOTTOM ARC ANTICLOCKWISE ARROW;
19095 % \rcurvearrowright (MnSymbol)
19096 \DeclareTextCommand{\textrcurvearrowright}{PU}{\9051\073}%* U+293B
19097 % U+294A LEFT BARB UP RIGHT BARB DOWN HARPOON; \leftrighthar-
poon (mathabx)
19098 \DeclareTextCommand{\textleftrightharpoon}{PU}{\9051\112}%* U+294A
19099 % U+294B LEFT BARB DOWN RIGHT BARB UP HARPOON; \rightlefthar-
poon (mathabx)
19100 \DeclareTextCommand{\textrightleftharpoon}{PU}{\9051\113}%* U+294B
19101 % U+294C UP BARB RIGHT DOWN BARB LEFT HARPOON;
19102 % \updownharpoonrightleft (MnSymbol)
19103 \DeclareTextCommand{\textupdownharpoonrightleft}{PU}{\9051\114}%* U+294C
19104 % U+294D UP BARB LEFT DOWN BARB RIGHT HARPOON;
19105 % \updownharpoonleftright (MnSymbol)
19106 \DeclareTextCommand{\textupdownharpoonleftright}{PU}{\9051\115}%* U+294D
19107 % U+2962 LEFTWARDS HARPOON WITH BARB UP ABOVE LEFTWARDS
19108 % HARPOON WITH BARB DOWN; \leftleftharpoons (mathabx)
19109 \DeclareTextCommand{\textleftleftharpoons}{PU}{\9051\142}%* U+2962
19110 % U+2963 UPWARDS HARPOON WITH BARB LEFT BESIDE UPWARDS
19111 % HARPOON WITH BARB RIGHT; \upupharpoons (mathabx)
19112 \DeclareTextCommand{\textupupharpoons}{PU}{\9051\143}%* U+2963
19113 % U+2964 RIGHTWARDS HARPOON WITH BARB UP ABOVE RIGHT-
WARDS HARPOON
19114 % WITH BARB DOWN; \rightrightarpoons (mathabx)
19115 \DeclareTextCommand{\textrightarpoons}{PU}{\9051\144}%* U+2964
19116 % U+2965 DOWNWARDS HARPOON WITH BARB LEFT BESIDE DOWN-
WARDS HARPOON
19117 % WITH BARB RIGHT; \downdownharpoons (mathabx)
19118 \DeclareTextCommand{\textdowndownharpoons}{PU}{\9051\145}%* U+2965

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19119 % U+296A LEFTWARDS HARPOON WITH BARB UP ABOVE LONG DASH;  
 19120 % \leftbarharpoon (mathabx)  
 19121 \DeclareTextCommand{\textleftbarharpoon}{PU}{\9051\152}%\* U+296A  
 19122 % U+296B LEFTWARDS HARPOON WITH BARB DOWN BELOW  
 19123 % LONG DASH; \barleftharpoon (mathabx)  
 19124 \DeclareTextCommand{\textbarleftharpoon}{PU}{\9051\153}%\* U+296B  
 19125 % U+296C RIGHTWARDS HARPOON WITH BARB UP ABOVE  
 19126 % LONG DASH; \rightbarharpoon (mathabx)  
 19127 \DeclareTextCommand{\textrightbarharpoon}{PU}{\9051\154}%\* U+296C  
 19128 % U+296D RIGHTWARDS HARPOON WITH BARB DOWN BELOW  
 19129 % LONG DASH; \barrightharpoon (mathabx)  
 19130 \DeclareTextCommand{\textbarrightharpoon}{PU}{\9051\155}%\* U+296D  
 19131 % U+296E UPWARDS HARPOON WITH BARB LEFT BESIDE DOWN-  
 WARDS HARPOON  
 19132 % WITH BARB RIGHT; \updownharpoons (mathabx)  
 19133 \DeclareTextCommand{\textupdownharpoons}{PU}{\9051\156}%\* U+296E  
 19134 % U+296F DOWNWARDS HARPOON WITH BARB LEFT BESIDE UP-  
 WARDS HARPOON  
 19135 % WITH BARB RIGHT; \downupharpoons (mathabx)  
 19136 \DeclareTextCommand{\textdownupharpoons}{PU}{\9051\157}%\* U+296F  
 19137 % U+297F DOWN FISH TAIL  
 19138 \DeclareTextCommand{\textmoo}{PU}{\9051\177\83\066}%\* U+297F U+0336

#### 47.2.34 Miscellaneous Mathematical Symbols-B: U+2980 to U+29FF

19139 % U+2987 Z NOTATION LEFT IMAGE BRACKET; \lparenthesis (stmaryrd)  
 19140 \DeclareTextCommand{\textllparenthesis}{PU}{\9051\207}%\* U+2987  
 19141 % U+2988 Z NOTATION RIGHT IMAGE BRACKET; \rrparenthesis (stmaryrd)  
 19142 \DeclareTextCommand{\textrrparenthesis}{PU}{\9051\210}%\* U+2988  
 19143 % U+29B0 REVERSED EMPTY SET; \invdiameter (wasysym)  
 19144 \DeclareTextCommand{\textinvdiameter}{PU}{\9051\260}%\* U+29B0  
 19145 % U+29B6 CIRCLED VERTICAL BAR; \obar (stmaryrd)  
 19146 \DeclareTextCommand{\textobar}{PU}{\9051\266}%\* U+29B6  
 19147 %\* \textobar -> \textvarobar (stmaryrd)  
 19148 % U+29B8 CIRCLED REVERSE SOLIDUS; \obslash (stmaryrd)  
 19149 \DeclareTextCommand{\textobslash}{PU}{\9051\270}%\* U+29B8  
 19150 %\* \textobslash -> \circledbslash (txfonts/pxfonts)  
 19151 %\* \textobslash -> \obackslash (mathabx)  
 19152 %\* \textobslash -> \varobslash (stmaryrd)  
 19153 % U+29BA CIRCLE DIVIDED BY HORIZONTAL BAR AND TOP HALF  
 19154 % DIVIDED BY VERTICAL BAR; \obot (mathabx)  
 19155 \DeclareTextCommand{\textobot}{PU}{\9051\272}%\* U+29BA  
 19156 %\* \textobot -> \odplus (ulsy)  
 19157 % U+29BB CIRCLE WITH SUPERIMPOSED X; \NoChemicalCleaning (mar-  
 vosym)  
 19158 \DeclareTextCommand{\textNoChemicalCleaning}{PU}{\9051\273}%\* U+29BB  
 19159 % U+29C0 CIRCLED LESS-THAN; \olessthan (stmaryrd)  
 19160 \DeclareTextCommand{\textolessthan}{PU}{\9051\300}%\* U+29C0  
 19161 %\* \textolessthan -> \varolessthan (stmaryrd)  
 19162 % U+29C1 CIRCLED GREATER-THAN; \ogreaterthan (stmaryrd)  
 19163 \DeclareTextCommand{\textogreaterthan}{PU}{\9051\301}%\* U+29C1  
 19164 %\* \textogreaterthan -> \varogreaterthan (stmaryrd)  
 19165 % U+29C4 SQUARED RISING DIAGONAL SLASH; \boxslash (mathabx, stmaryrd)  
 19166 \DeclareTextCommand{\textboxslash}{PU}{\9051\304}%\* U+29C4  
 19167 % U+29C5 SQUARED FALLING DIAGONAL SLASH; \boxbslash (stmaryrd)



19168 `\DeclareTextCommand{\textboxslash}{PU}{\9051\305}%* U+29C5`  
 19169 `% U+29C6 SQUARED ASTERISK; \boxast (stmaryrd)`  
 19170 `\DeclareTextCommand{\textboxast}{PU}{\9051\306}%* U+29C6`  
 19171 `% U+29C7 SQUARED SMALL CIRCLE; \boxcircle (stmaryrd)`  
 19172 `\DeclareTextCommand{\textboxcircle}{PU}{\9051\307}%* U+29C7`  
 19173 `% U+29C8 SQUARED SQUARE; \boxbox (stmaryrd)`  
 19174 `\DeclareTextCommand{\textboxbox}{PU}{\9051\310}%* U+29C8`  
 19175 `% U+29D3 BLACK BOWTIE; \Valve (marvosym)`  
 19176 `\DeclareTextCommand{\textValve}{PU}{\9051\323}%* U+29D3`  
 19177 `% U+29DF DOUBLE-ENDED MULTIMAP; \multimapboth (txfonts/pxfonts)`  
 19178 `\DeclareTextCommand{\textmultimapboth}{PU}{\9051\337}%* U+29DF`  
 19179 `% U+29E2 SHUFFLE PRODUCT; \shuffle (shuffle)`  
 19180 `\DeclareTextCommand{\textshuffle}{PU}{\9051\342}%* U+29E2`

#### 47.2.35 Supplemental Mathematical Operators: U+2A00 to U+2AFF

19181 `% U+2A04 N-ARY UNION OPERATOR WITH PLUS; \uplus (LaTeX)`  
 19182 `\DeclareTextCommand{\textuplus}{PU}{\9052\004}%* U+2A04`  
 19183 `% U+2A07 TWO LOGICAL AND OPERATOR; \bigdoublewedge (MnSymbol)`  
 19184 `\DeclareTextCommand{\textbigdoublewedge}{PU}{\9052\007}%* U+2A07`  
 19185 `% U+2A08 TWO LOGICAL OR OPERATOR; \bigdoublevee (MnSymbol)`  
 19186 `\DeclareTextCommand{\textbigdoublevee}{PU}{\9052\010}%* U+2A08`  
 19187 `% U+2A1D JOIN; \Join (latexsym, amssymb, mathabx, txfonts,`  
 19188 `% pxfonts, wasysym)`  
 19189 `\DeclareTextCommand{\textJoin}{PU}{\9052\035}%* U+2A1D`  
 19190 `% U+2A1F Z NOTATION SCHEMA COMPOSITION; \fatsemi (stmaryrd)`  
 19191 `\DeclareTextCommand{\textfatsemi}{PU}{\9052\037}%* U+2A1F`  
 19192 `% U+2A22 PLUS SIGN WITH SMALL CIRCLE ABOVE; \cirplus (mathabx)`  
 19193 `\DeclareTextCommand{\textcirplus}{PU}{\9052\042}%* U+2A22`  
 19194 `% U+2A2A MINUS SIGN WITH DOT BELOW; \minusdot (MnSymbol)`  
 19195 `\DeclareTextCommand{\textminusdot}{PU}{\9052\052}%* U+2A2A`  
 19196 `%* \textminusdot -> \divdot (mathabx)`  
 19197 `% U+2A30 MULTIPLICATION SIGN WITH DOT ABOVE; \dottimes (mathabx)`  
 19198 `\DeclareTextCommand{\textdottimes}{PU}{\9052\060}%* U+2A30`  
 19199 `% U+2A32 SEMIDIRECT PRODUCT WITH BOTTOM CLOSED;`  
 19200 `\dtimes (mathdesign)`  
 19201 `\DeclareTextCommand{\textdtimes}{PU}{\9052\062}%* U+2A32`  
 19202 `% U+2A38 CIRCLED DIVISION SIGN; \odiv (mathabx)`  
 19203 `\DeclareTextCommand{\textodiv}{PU}{\9052\070}%* U+2A38`  
 19204 `% U+2A3C INTERIOR PRODUCT; \invneg (MnSymbol)`  
 19205 `\DeclareTextCommand{\textinvneg}{PU}{\9052\074}%* U+2A3C`  
 19206 `% U+2A4E DOUBLE SQUARE INTERSECTION; \sqdoublecap (mathabx)`  
 19207 `\DeclareTextCommand{\textsqdoublecap}{PU}{\9052\116}%* U+2A4E`  
 19208 `%* \textsqdoublecap -> \doublesqcap (MnSymbol)`  
 19209 `% U+2A40 INTERSECTION WITH DOT; \capdot (MnSymbol)`  
 19210 `\DeclareTextCommand{\textcapdot}{PU}{\9052\100}%* U+2A40`  
 19211 `% U+2A4F DOUBLE SQUARE UNION; \sqdoublecup (mathabx)`  
 19212 `\DeclareTextCommand{\textsqdoublecup}{PU}{\9052\117}%* U+2A4F`  
 19213 `%* \textsqdoublecup -> \doublesqcup (MnSymbol)`  
 19214 `% U+2A55 TWO INTERSECTING LOGICAL AND; \doublewedge (MnSymbol)`  
 19215 `\DeclareTextCommand{\textdoublewedge}{PU}{\9052\125}%* U+2A55`  
 19216 `% U+2A56 TWO INTERSECTING LOGICAL OR; \doublevee (MnSymbol)`  
 19217 `\DeclareTextCommand{\textdoublevee}{PU}{\9052\126}%* U+2A56`  
 19218 `%* \textdoublevee -> \merge (stmaryrd)`  
 19219 `% U+2A5E LOGICAL AND WITH DOUBLE OVERBAR;`

19220 % \doublebarwedge (AmS)  
19221 \DeclareTextCommand{\textdoublebarwedge}{PU}{\9052\136}%\* U+2A5E  
19222 % U+2A63 LOGICAL OR WITH DOUBLE UNDERBAR;  
19223 % \veedoublebar (mahtabx)  
19224 \DeclareTextCommand{\textveedoublebar}{PU}{\9052\143}%\* U+2A63  
19225 % U+2A66 EQUALS SIGN WITH DOT BELOW; \eqdot (MnSymbol)  
19226 \DeclareTextCommand{\texteqdot}{PU}{\9052\146}%\* U+2A66  
19227 % \neqdot (MnSymbol)  
19228 \DeclareTextCommand{\textneqdot}{PU}{\9052\146\83\070}%\* U+2A66 U+0338  
19229 % U+2A74 DOUBLE COLON EQUAL; \coloncolonequals (colonequals)  
19230 \DeclareTextCommand{\textcoloncolonequals}{PU}{\9052\164}%\* U+2A74  
19231 % U+2A7D LESS-THAN OR SLANTED EQUAL TO; \leqslant (AmS)  
19232 \DeclareTextCommand{\textleqslant}{PU}{\9052\175}%\* U+2A7D  
19233 % \nleqslant (txfonts/pxfonts)  
19234 \DeclareTextCommand{\textnleqslant}{PU}{\9052\175\83\070}%\* U+2A7D U+0338  
19235 % U+2A7E GREATER-THAN OR SLANTED EQUAL TO; \geqslant (AmS)  
19236 \DeclareTextCommand{\textgeqslant}{PU}{\9052\176}%\* U+2A7E  
19237 % \ngeqslant (txfonts/pxfonts)  
19238 \DeclareTextCommand{\textngeqslant}{PU}{\9052\176\83\070}%\* U+2A7E U+0338  
19239 % U+2A85 LESS-THAN OR APPROXIMATE; \lessapprox (AmS)  
19240 \DeclareTextCommand{\textlessapprox}{PU}{\9052\205}%\* U+2A85  
19241 % \nlessapprox (txfonts/pxfonts)  
19242 \DeclareTextCommand{\textnlessapprox}{PU}{\9052\205\83\070}%\* U+2A85 U+0338  
19243 % U+2A86 GREATER-THAN OR APPROXIMATE; \gtrapprox (AmS)  
19244 \DeclareTextCommand{\textgtrapprox}{PU}{\9052\206}%\* U+2A86  
19245 % \ngtrapprox (txfonts/pxfonts)  
19246 \DeclareTextCommand{\textngtrapprox}{PU}{\9052\206\83\070}%\* U+2A86 U+0338  
19247 % U+2A87 LESS-THAN AND SINGLE-LINE NOT EQUAL TO; \lneq (AmS)  
19248 \DeclareTextCommand{\textlneq}{PU}{\9052\207}%\* U+2A87  
19249 % U+2A88 GREATER-THAN AND SINGLE-LINE NOT EQUAL TO;  
19250 % \gneq (AmS)  
19251 \DeclareTextCommand{\textgneq}{PU}{\9052\210}%\* U+2A88  
19252 % U+2A89 LESS-THAN AND NOT APPROXIMATE; \lnapprox (AmS)  
19253 \DeclareTextCommand{\textlnapprox}{PU}{\9052\211}%\* U+2A89  
19254 % U+2A8A GREATER-THAN AND NOT APPROXIMATE; \gnapprox (AmS)  
19255 \DeclareTextCommand{\textgnapprox}{PU}{\9052\212}%\* U+2A8A  
19256 % U+2A8B LESS-THAN ABOVE DOUBLE-LINE EQUAL ABOVE GREATER-  
THAN;  
19257 % \lesseqgtr (AmS)  
19258 \DeclareTextCommand{\textlesseqgtr}{PU}{\9052\213}%\* U+2A8B  
19259 % U+2A8C GREATER-THAN ABOVE DOUBLE-LINE EQUAL ABOVE LESS-  
THAN;  
19260 % \gtreqless (AmS)  
19261 \DeclareTextCommand{\textgtreqless}{PU}{\9052\214}%\* U+2A8C  
19262 % U+2A95 SLANTED EQUAL TO OR LESS-THAN; \eqslantless (AmS)  
19263 \DeclareTextCommand{\texteqslantless}{PU}{\9052\225}%\* U+2A95  
19264 % U+2A96 SLANTED EQUAL TO OR GREATER-THAN; \eqslantgtr (AmS)  
19265 \DeclareTextCommand{\texteqslantgtr}{PU}{\9052\226}%\* U+2A96  
19266 % U+2AA6 LESS-THAN CLOSED BY CURVE; \leftslice (stmaryrd)  
19267 \DeclareTextCommand{\textleftslice}{PU}{\9052\246}%\* U+2AA6  
19268 % U+2AA7 GREATER-THAN CLOSED BY CURVE; \rightslice (stmaryrd)  
19269 \DeclareTextCommand{\textrightslice}{PU}{\9052\247}%\* U+2AA7  
19270 % U+2AAF PRECEDES ABOVE SINGLE-LINE EQUALS SIGN; \preceq (Mn-  
Symbol)

19271 \DeclareTextCommand{\textpreceq}{PU}{\9052\257}%\* U+2AAF  
19272 % \npreceq (txfonts/pxfonts)  
19273 \DeclareTextCommand{\textnpreceq}{PU}{\9052\257\83\070}%\* U+2AAF U+0338  
19274 % U+2AB0 SUCCEEDS ABOVE SINGLE-LINE EQUALS SIGN; \succeq (Mn-  
Symbol)  
19275 \DeclareTextCommand{\textsucceq}{PU}{\9052\260}%\* U+2AB0  
19276 % \nsucceq (txfonts/pxfonts)  
19277 \DeclareTextCommand{\textnsucceq}{PU}{\9052\260\83\070}%\* U+2AB0 U+0338  
19278 % U+2AB1 PRECEDES ABOVE SINGLE-LINE NOT EQUAL TO; \preceq (mathabx)  
19279 \DeclareTextCommand{\textprecneq}{PU}{\9052\261}%\* U+2AB1  
19280 % U+2AB2 SUCCEEDS ABOVE SINGLE-LINE NOT EQUAL TO; \succneq (mathabx)  
19281 \DeclareTextCommand{\textsuccneq}{PU}{\9052\262}%\* U+2AB2  
19282 % U+2AB3 PRECEDES ABOVE EQUALS SIGN; \preceqq (txfonts/pxfonts)  
19283 \DeclareTextCommand{\textpreceqq}{PU}{\9052\263}%\* U+2AB3  
19284 % \npreceqq (txfonts/pxfonts)  
19285 \DeclareTextCommand{\textnpreceqq}{PU}{\9052\263\83\070}%\* U+2AB3 U+0338  
19286 % U+2AB4 SUCCEEDS ABOVE EQUALS SIGN; \succeqq (txfonts/pxfonts)  
19287 \DeclareTextCommand{\textsucceqq}{PU}{\9052\264}%\* U+2AB4  
19288 % \nsucceqq (txfonts/pxfonts)  
19289 \DeclareTextCommand{\textnsucceqq}{PU}{\9052\264\83\070}%\* U+2AB4 U+0338  
19290 % U+2AB5 PRECEDES ABOVE NOT EQUAL TO; \precneqq (txfonts/pxfonts)  
19291 \DeclareTextCommand{\textprecneqq}{PU}{\9052\265}%\* U+2AB5  
19292 % U+2AB6 SUCCEEDS ABOVE NOT EQUAL TO; \succneqq (txfonts/pxfonts)  
19293 \DeclareTextCommand{\textsuccneqq}{PU}{\9052\266}%\* U+2AB6  
19294 % U+2AB7 PRECEDES ABOVE ALMOST EQUAL TO; \precapprox (AmS)  
19295 \DeclareTextCommand{\textprecapprox}{PU}{\9052\267}%\* U+2AB7  
19296 % \nprecapprox (txfonts/pxfonts)  
19297 \DeclareTextCommand{\textnprecapprox}{PU}{\9052\267\83\070}%\* U+2AB7 U+0338  
19298 % U+2AB8 SUCCEEDS ABOVE ALMOST EQUAL TO; \succapprox (AmS)  
19299 \DeclareTextCommand{\textsuccapprox}{PU}{\9052\270}%\* U+2AB8  
19300 % \nsuccapprox (txfonts/pxfonts)  
19301 \DeclareTextCommand{\textnsuccapprox}{PU}{\9052\270\83\070}%\* U+2AB8 U+0338  
19302 % U+2AB9 PRECEDES ABOVE NOT ALMOST EQUAL TO; \precnapprox (AmS)  
19303 \DeclareTextCommand{\textprecnapprox}{PU}{\9052\271}%\* U+2AB9  
19304 % U+2ABA SUCCEEDS ABOVE NOT ALMOST EQUAL TO; \succnapprox (AmS)  
19305 \DeclareTextCommand{\textsuccnapprox}{PU}{\9052\272}%\* U+2ABA  
19306 % U+2AC5 SUBSET OF ABOVE EQUALS SIGN; \subseteqq (AmS)  
19307 \DeclareTextCommand{\textsubseteqq}{PU}{\9052\305}%\* U+2AC5  
19308 % \nsubseteqq (txfonts/pxfonts, mathabx)  
19309 \DeclareTextCommand{\textnsubseteqq}{PU}{\9052\305\83\070}%\* U+2AC5 U+0338  
19310 % U+2AC6 SUPERSET OF ABOVE EQUALS SIGN; \supseteqq (AmS)  
19311 \DeclareTextCommand{\textsupseteqq}{PU}{\9052\306}%\* U+2AC6  
19312 % \nsupseteqq (mathabx)  
19313 \DeclareTextCommand{\textnsupseteqq}{PU}{\9052\306\83\070}%\* U+2AC6 U+0338  
19314 % U+2AE3 DOUBLE VERTICAL BAR LEFT TURNSTILE  
19315 \DeclareTextCommand{\textdashV}{PU}{\9052\343}%\* U+2AE3  
19316 %\* \textdashV -> \leftVdash (MnSymbol)  
19317 % \ndashV (mathabx)  
19318 \DeclareTextCommand{\textndashV}{PU}{\9052\343\83\070}%\* U+2AE3 U+0338  
19319 %\* \textndashV -> \nleftVdash (MnSymbol)

19320 % U+2AE4 VERTICAL BAR DOUBLE LEFT TURNSTILE; \Dashv (mathabx)  
19321 \DeclareTextCommand{\textDashv}{PU}{\9052\344}%\* U+2AE4  
19322 %\* \textDashv -> \leftmodels (MnSymbol)  
19323 % \nDashv (mathabx)  
19324 \DeclareTextCommand{\textnDashv}{PU}{\9052\344\83\070}%\* U+2AE4 U+0338  
19325 %\* \textnDashv -> \leftmodels (MnSymbol)  
19326 % U+2AE5 DOUBLE VERTICAL BAR DOUBLE LEFT TURNSTILE;  
19327 % \DashV (mathabx)  
19328 \DeclareTextCommand{\textDashV}{PU}{\9052\345}%\* U+2AE5  
19329 %\* \textDashV -> \leftModels (MnSymbol)  
19330 % \nDashV (mathabx)  
19331 \DeclareTextCommand{\textnDashV}{PU}{\9052\345\83\070}%\* U+2AE5 U+0338  
19332 %\* \textnDashV -> \leftModels (MnSymbol)  
19333 % U+2AEA DOUBLE DOWN TACK; \downmodels (MnSymbol)  
19334 \DeclareTextCommand{\textdownmodels}{PU}{\9052\352}%\* U+2AEA  
19335 % \ndownmodels (MnSymbol)  
19336 \DeclareTextCommand{\textndownmodels}{PU}{\9052\352\83\070}%\* U+2AEA U+0338  
19337 % U+2AEB DOUBLE UP TACK; \upmodels (MnSymbol)  
19338 \DeclareTextCommand{\textupmodels}{PU}{\9052\353}%\* U+2AEB  
19339 % \nupmodels (MnSymbol)  
19340 \DeclareTextCommand{\textnupmodels}{PU}{\9052\353\83\070}%\* U+2AEB U+0338  
19341 % U+2AEF VERTICAL LINE WITH CIRCLE ABOVE; \upspoon (MnSymbol)  
19342 \DeclareTextCommand{\textupspoon}{PU}{\9052\357}%\* U+2AEF  
19343 % U+2AF4 TRIPLE VERTICAL BAR BINARY RELATION;  
19344 % \interleave (stmaryrd)  
19345 \DeclareTextCommand{\textinterleave}{PU}{\9052\364}%\* U+2AF4  
19346 % U+2AFD DOUBLE SOLIDUS OPERATOR; \sslash (stmaryrd)  
19347 \DeclareTextCommand{\textsslash}{PU}{\9052\375}%\* U+2AFD  
19348 %\* \textsslash -> \varparallel (txfonts\pxfonts)

#### 47.2.36 Miscellaneous Symbols and Arrows: U+2B00 to U+2BFF

19349 % U+2B20 WHITE PENTAGON; \pentagon (wasysym)  
19350 \DeclareTextCommand{\textpentagon}{PU}{\9053\040}%\* U+2B20  
19351 % U+2B21 WHITE HEXAGON; \varhexagon (wasysym)  
19352 \DeclareTextCommand{\textvarhexagon}{PU}{\9053\041}%\* U+2B21

#### 47.2.37 Latin Extended-C: U+2C60 to U+2C7F

19353 % U+2C7C LATIN SUBSCRIPT SMALL LETTER J  
19354 \DeclareTextCommand{\textjinferior}{PU}{\9054\174}%\* U+2C7C

#### 47.2.38 Supplemental Punctuation: U+2E00 to U+2E7F

19355 % U+2E13 DOTTED OBELOS; \slashdiv (MnSymbol)  
19356 \DeclareTextCommand{\textslashdiv}{PU}{\9056\023}%\* U+2E13  
19357 % U+2E18 INVERTED INTERROBANG; \textinterrobangdown (textcomp)  
19358 \DeclareTextCommand{\textinterrobangdown}{PU}{\9056\030}% U+2E18  
19359 % U+2E2D FIVE DOT MARK; \fivedots (MnSymbol)  
19360 \DeclareTextCommand{\textfivedots}{PU}{\9056\055}%\* U+2E2D

#### 47.2.39 Modifier Tone Letters: U+A700 to U+A71F

19361 % U+A71B MODIFIER LETTER RAISED UP ARROW; \textupstep (tipa)  
19362 \DeclareTextCommand{\textupstep}{PU}{\9247\033}% U+A71B  
19363 % U+A71C MODIFIER LETTER RAISED DOWN ARROW;  
19364 % \textdownstep (tipa)  
19365 \DeclareTextCommand{\textdownstep}{PU}{\9247\034}% U+A71C

#### 47.2.40 Latin Extended-D: U+A720 to U+A7FF

19366 % U+A727 LATIN SMALL LETTER HENG; \textheng (tipx)  
19367 \DeclareTextCommand{\textPUheng}{PU}{\9247\047}% U+A727  
19368 %\* \textPUheng -> \textheng (tipx)  
19369 % U+A72C LATIN CAPITAL LETTER CUATRILLO; \textlhookfour (tipx)  
19370 \DeclareTextCommand{\textPUlhookfour}{PU}{\9247\054}% U+A72C  
19371 %\* \textPUlhookfour -> \textlhookfour (tipx)  
19372 % U+A730 LATIN LETTER SMALL CAPITAL F; \textscf (tipx)  
19373 \DeclareTextCommand{\textPUScf}{PU}{\9247\060}% U+A730  
19374 %\* \textPUScf -> \textscf (tipx)  
19375 % U+A735 LATIN SMALL LETTER AO; \textao lig (tipx)  
19376 \DeclareTextCommand{\textPUaolig}{PU}{\9247\065}% U+A735  
19377 %\* \textPUaolig -> \textao lig (tipx)  
19378 % U+A74F LATIN SMALL LETTER OO; \oo (wsuipa)  
19379 \DeclareTextCommand{\textoo}{PU}{\9247\117}%\* U+A74F  
19380 % U+A788 MODIFIER LETTER LOW CIRCUMFLEX ACCENT  
19381 \DeclareTextCommand{\textcircumlw}{PU}{\9247\210}% U+A788

#### 47.2.41 Alphabetic Presentation Forms: U+FB00 to U+FB4F

19382 % U+FB01 LATIN SMALL LIGATURE FI; fi  
19383 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01  
19384 % U+FB02 LATIN SMALL LIGATURE FL; fl  
19385 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02

#### 47.2.42 Musical Symbols: U+1D100 to U+1D1FF

19386 % U+1D13B MUSICAL SYMBOL WHOLE REST; \GaPa (harmony)  
19387 \DeclareTextCommand{\textGaPa}{PU}{\9330\064\9335\073}%\* U+1D13B  
19388 % U+1D13C MUSICAL SYMBOL HALF REST; \HaPa (harmony)  
19389 \DeclareTextCommand{\textHaPa}{PU}{\9330\064\9335\074}%\* U+1D13C  
19390 % U+1D13D MUSICAL SYMBOL QUARTER REST; \ViPa (harmony)  
19391 \DeclareTextCommand{\textViPa}{PU}{\9330\064\9335\075}%\* U+1D13D  
19392 % U+1D13E MUSICAL SYMBOL EIGHTH REST; \AcPa (harmony)  
19393 \DeclareTextCommand{\textAcPa}{PU}{\9330\064\9335\076}%\* U+1D13E  
19394 % U+1D13F MUSICAL SYMBOL SIXTEENTH REST; \SePa (harmony)  
19395 \DeclareTextCommand{\textSePa}{PU}{\9330\064\9335\077}%\* U+1D13F  
19396 % U+1D140 MUSICAL SYMBOL THIRTY-SECOND REST; \ZwPa (harmony)  
19397 \DeclareTextCommand{\textZwPa}{PU}{\9330\064\9335\100}%\* U+1D140  
19398 % U+1D15D MUSICAL SYMBOL WHOLE NOTE; \fullnote (wasysym)  
19399 \DeclareTextCommand{\textfullnote}{PU}{\9330\064\9335\135}%\* U+1D15D  
19400 %\* \textfullnote -> \Ganz (harmony)  
19401 % U+1D15E MUSICAL SYMBOL HALF NOTE; \halfnote (wasysym)  
19402 \DeclareTextCommand{\texthalfnote}{PU}{\9330\064\9335\136}%\* U+1D15E  
19403 %\* \texthalfnote -> \Halb (harmony)  
19404 % U+1D15F MUSICAL SYMBOL QUARTER NOTE; \Vier (harmony)  
19405 \DeclareTextCommand{\textVier}{PU}{\9330\064\9335\137}%\* U+1D15F  
19406 % U+1D160 MUSICAL SYMBOL EIGHTH NOTE; \Acht (harmony)  
19407 \DeclareTextCommand{\textAcht}{PU}{\9330\064\9335\140}%\* U+1D160  
19408 % U+1D161 MUSICAL SYMBOL SIXTEENTH NOTE; \Sech (harmony)  
19409 \DeclareTextCommand{\textSech}{PU}{\9330\064\9335\141}%\* U+1D161  
19410 % U+1D162 MUSICAL SYMBOL THIRTY-SECOND NOTE; \Zwdr (harmony)  
19411 \DeclareTextCommand{\textZwdr}{PU}{\9330\064\9335\142}%\* U+1D162

#### 47.2.43 Miscellaneous Symbols and Pictographs: U+1F300 to U+1F5FF

19412 % U+1F30D EARTH GLOBE EUROPE-AFRICA; \Mundus (marvosym)  
19413 \DeclareTextCommand{\textMundus}{PU}{\9330\074\9337\015}%\* U+1F30D  
19414 % U+1F319 CRESCENT MOON; \Moon (marvosym)  
19415 \DeclareTextCommand{\textMoon}{PU}{\9330\074\9337\031}%\* U+1F319  
19416 % U+1F468 MAN; \ManFace (marvosym)  
19417 \DeclareTextCommand{\textManFace}{PU}{\9330\075\9334\150}%\* U+1F468  
19418 % U+1F469 WOMAN; \WomanFace (marvosym)  
19419 \DeclareTextCommand{\textWomanFace}{PU}{\9330\075\9334\151}%\* U+1F469  
19420 %\* \textWomanFace -> \Womanface (marvosym)  
19421 % U+1F4E0 FAX MACHINE; \Fax (marvosym)  
19422 \DeclareTextCommand{\textFax}{PU}{\9330\075\9334\340}%\* U+1F4E0  
19423 %\* \textFax -> \Faxmachine (marvosym)  
19424 % U+1F525 FIRE; \Fire (ifsym)  
19425 \DeclareTextCommand{\textFire}{PU}{\9330\075\9335\045}%\* U+1F525

#### 47.2.44 Transport and Map Symbols: U+1F680 to U+1F6FF

19426 % U+1F6B2 BICYCLE; \Bicycle (marvosym)  
19427 \DeclareTextCommand{\textBicycle}{PU}{\9330\075\9336\262}%\* U+1F6B2  
19428 % U+1F6B9 MENS SYMBOL; \Gentsroom (marvosym)  
19429 \DeclareTextCommand{\textGentsroom}{PU}{\9330\075\9336\271}%\* U+1F6B9  
19430 % U+1F6BA WOMENS SYMBOL; \Ladiesroom (marvosym)  
19431 \DeclareTextCommand{\textLadiesroom}{PU}{\9330\075\9336\272}%\* U+1F6BA

#### 47.2.45 Miscellaneous

19432 \DeclareTextCommand{\SS}{PU}{SS}%  
19433 % \textcopyleft (textcomp)  
19434 \DeclareTextCommand{\textcopyleft}{PU}{\9041\204\9040\335}% U+2184 U+20DD  
19435 % \ccnc (ccllicenses)  
19436 \DeclareTextCommand{\textccnc}{PU}{\80\044\9040\340}%\* U+0024 U+20E0  
19437 % \ccnd (ccllicenses)  
19438 \DeclareTextCommand{\textccnd}{PU}{=\9040\335}%\* U+003D U+20DD  
19439 % \ccsa (ccllicenses)  
19440 \DeclareTextCommand{\textccsa}{PU}{\9047\362\9040\335}%\* U+27F2 U+20DD  
19441 % \Info (marvosym, china2e)  
19442 \DeclareTextCommand{\textInfo}{PU}{\9330\065\9334\042\9040\336}%\* U+1D422 U+20DE  
19443 % \CESign (marvosym)  
19444 \DeclareTextCommand{\textCESign}{PU}{\80\103\80\105}%\* U+0043 U+0045  
19445 %\* \textCESign -> \CESign (marvosym)

#### 47.2.46 Aliases

Aliases (german.sty)

19446 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}%  
19447 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}%  
19448 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}%  
19449 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}%  
19450 \DeclareTextCommand{\textflqq}{PU}{\guillemetleft}%  
19451 \DeclareTextCommand{\textfrqq}{PU}{\guillemetright}%  
19452 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}%  
19453 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}%

Aliases (math names)

19454 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}%\*  
19455 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}%\*  
19456 \DeclareTextCommand{\textdiv}{PU}{\textdivide}%\*

```

19457 \DeclareTextCommand{\textpm}{PU}{\textplusminus}%*
19458 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}%*
19459 </puenc>

```

### 47.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```

19460 (*puvnenc)

19461 \DeclareTextCommand{\abreve}{PU}{\81\003}% U+0103
19462 \DeclareTextCommand{\acircumflex}{PU}{\80\342}% U+00E2
19463 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}% U+00EA
19464 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}% U+00F4
19465 \DeclareTextCommand{\ohorn}{PU}{\81\241}% U+01A1
19466 \DeclareTextCommand{\uhorn}{PU}{\81\260}% U+01B0
19467 \DeclareTextCommand{\ABREVE}{PU}{\81\002}% U+0102
19468 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}% U+00C2
19469 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}% U+00CA
19470 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}% U+00D4
19471 \DeclareTextCommand{\OHORN}{PU}{\81\240}% U+01A0
19472 \DeclareTextCommand{\UHORN}{PU}{\81\257}% U+01AF

19473 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1
19474 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}% U+1EA1
19475 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0
19476 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}% U+1EA3
19477 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3
19478 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}% U+1EAF
19479 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}% U+1EB7
19480 \DeclareTextCompositeCommand{\`}{PU}{\abreve}{\9036\261}% U+1EB1
19481 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}% U+1EB3
19482 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}% U+1EB5
19483 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}% U+1EA5
19484 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}% U+1EAD
19485 \DeclareTextCompositeCommand{\`}{PU}{\acircumflex}{\9036\247}% U+1EA7
19486 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}% U+1EA9
19487 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}% U+1EAB
19488 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9
19489 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}% U+1EB9
19490 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8
19491 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}% U+1EBB
19492 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD
19493 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}% U+1EBF
19494 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}% U+1EC7
19495 \DeclareTextCompositeCommand{\`}{PU}{\ecircumflex}{\9036\301}% U+1EC1
19496 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}% U+1EC3
19497 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}% U+1EC5
19498 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED
19499 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}% U+1ECB
19500 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC
19501 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}% U+1EC9
19502 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129
19503 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3
19504 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}% U+1ECD

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19505 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
19506 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}% U+1ECF  
19507 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
19508 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}% U+1ED1  
19509 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}% U+1ED9  
19510 \DeclareTextCompositeCommand{\`}{PU}{\ocircumflex}{\9036\323}% U+1ED3  
19511 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}% U+1ED5  
19512 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}% U+1ED7  
19513 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}% U+1EDB  
19514 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}% U+1EE3  
19515 \DeclareTextCompositeCommand{\`}{PU}{\ohorn}{\9036\335}% U+1EDD  
19516 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}% U+1EDF  
19517 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}% U+1EE1  
19518 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
19519 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}% U+1EE5  
19520 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
19521 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}% U+1EE7  
19522 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
19523 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}% U+1EE9  
19524 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}% U+1EF1  
19525 \DeclareTextCompositeCommand{\`}{PU}{\uhorn}{\9036\353}% U+1EEB  
19526 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}% U+1EED  
19527 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}% U+1EEF  
19528 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
19529 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}% U+1EF5  
19530 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3  
19531 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}% U+1EF7  
19532 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9  
19533 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
19534 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}% U+1EA0  
19535 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
19536 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}% U+1EA2  
19537 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
19538 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}% U+1EAE  
19539 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}% U+1EB6  
19540 \DeclareTextCompositeCommand{\`}{PU}{\ABREVE}{\9036\260}% U+1EB0  
19541 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}% U+1EB2  
19542 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}% U+1EB4  
19543 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}% U+1EA4  
19544 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}% U+1EAC  
19545 \DeclareTextCompositeCommand{\`}{PU}{\ACIRCUMFLEX}{\9036\246}% U+1EA6  
19546 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}% U+1EA8  
19547 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}% U+1EA A  
19548 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
19549 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}% U+1EB8  
19550 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
19551 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}% U+1EBA  
19552 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
19553 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\276}% U+1EBE  
19554 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}% U+1EC6  
19555 \DeclareTextCompositeCommand{\`}{PU}{\ECIRCUMFLEX}{\9036\300}% U+1EC0  
19556 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}% U+1EC2  
19557 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}% U+1EC4  
19558 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD



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19559 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}% U+1ECA
19560 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC
19561 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}% U+1EC8
19562 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128
19563 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3
19564 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}% U+1ECC
19565 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2
19566 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}% U+1ECE
19567 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5
19568 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}% U+1ED0
19569 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}% U+1ED8
19570 \DeclareTextCompositeCommand{\`}{PU}{\OCIRCUMFLEX}{\9036\322}% U+1ED2
19571 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}% U+1ED4
19572 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}% U+1ED6
19573 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\332}% U+1EDA
19574 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}% U+1EE2
19575 \DeclareTextCompositeCommand{\`}{PU}{\OHORN}{\9036\334}% U+1EDC
19576 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}% U+1EDE
19577 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}% U+1EE0
19578 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA
19579 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4
19580 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9
19581 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}% U+1EE6
19582 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168
19583 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}% U+1EE8
19584 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}% U+1EF0
19585 \DeclareTextCompositeCommand{\`}{PU}{\UHORN}{\9036\352}% U+1EEA
19586 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}% U+1EEC
19587 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}% U+1EEE
19588 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD
19589 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4
19590 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2
19591 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}% U+1EF6
19592 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8
19593 </p>

```

## 47.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```

19594 (*puarenc)
19595 % U+0621;afii57409;ARABIC LETTER HAMZA
19596 \DeclareTextCommand{\hamza}{PU}{\86\041}% U+0621
19597 % U+0622;afii57410;ARABIC LETTER ALEF WITH MADDA ABOVE
19598 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% U+0622
19599 % U+0623;afii57411;ARABIC LETTER ALEF WITH HAMZA ABOVE
19600 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% U+0623
19601 % U+0624;afii57412;ARABIC LETTER WAW WITH HAMZA ABOVE
19602 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% U+0624
19603 % U+0625;afii57413;ARABIC LETTER ALEF WITH HAMZA BELOW
19604 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% U+0625
19605 % U+0626;afii57414;ARABIC LETTER YEH WITH HAMZA ABOVE
19606 \DeclareTextCommand{\yahamza}{PU}{\86\046}% U+0626
19607 % U+0627;afii57415;ARABIC LETTER ALEF

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19608 \DeclareTextCommand{\alef}{PU}{\86\047}% U+0627  
19609 % U+0628;afii57416;ARABIC LETTER BEH  
19610 \DeclareTextCommand{\baa}{PU}{\86\050}% U+0628  
19611 % U+0629;afii57417;ARABIC LETTER TEH MARBUTA  
19612 \DeclareTextCommand{\T}{PU}{\86\051}% U+0629  
19613 % U+062A;afii57418;ARABIC LETTER TEH  
19614 \DeclareTextCommand{\taa}{PU}{\86\052}% U+062A  
19615 % U+062B;afii57419;ARABIC LETTER THEH  
19616 \DeclareTextCommand{\thaa}{PU}{\86\053}% U+062B  
19617 % U+062C;afii57420;ARABIC LETTER JEEM  
19618 \DeclareTextCommand{\jeem}{PU}{\86\054}% U+062C  
19619 % U+062D;afii57421;ARABIC LETTER HAH  
19620 \DeclareTextCommand{\Haa}{PU}{\86\055}% U+062D  
19621 % U+062E;afii57422;ARABIC LETTER KHAH  
19622 \DeclareTextCommand{\kha}{PU}{\86\056}% U+062E  
19623 % U+062F;afii57423;ARABIC LETTER DAL  
19624 \DeclareTextCommand{\dal}{PU}{\86\057}% U+062F  
19625 % U+0630;afii57424;ARABIC LETTER THAL  
19626 \DeclareTextCommand{\dhal}{PU}{\86\060}% U+0630  
19627 % U+0631;afii57425;ARABIC LETTER REH  
19628 \DeclareTextCommand{\ra}{PU}{\86\061}% U+0631  
19629 % U+0632;afii57426;ARABIC LETTER ZAIN  
19630 \DeclareTextCommand{\zay}{PU}{\86\062}% U+0632  
19631 % U+0633;afii57427;ARABIC LETTER SEEN  
19632 \DeclareTextCommand{\seen}{PU}{\86\063}% U+0633  
19633 % U+0634;afii57428;ARABIC LETTER SHEEN  
19634 \DeclareTextCommand{\sheen}{PU}{\86\064}% U+0634  
19635 % U+0635;afii57429;ARABIC LETTER SAD  
19636 \DeclareTextCommand{\sad}{PU}{\86\065}% U+0635  
19637 % U+0636;afii57430;ARABIC LETTER DAD  
19638 \DeclareTextCommand{\dad}{PU}{\86\066}% U+0636  
19639 % U+0637;afii57431;ARABIC LETTER TAH  
19640 \DeclareTextCommand{\Ta}{PU}{\86\067}% U+0637  
19641 % U+0638;afii57432;ARABIC LETTER ZAH  
19642 \DeclareTextCommand{\za}{PU}{\86\070}% U+0638  
19643 % U+0639;afii57433;ARABIC LETTER AIN  
19644 \DeclareTextCommand{\ayn}{PU}{\86\071}% U+0639  
19645 % U+063A;afii57434;ARABIC LETTER GHAIN  
19646 \DeclareTextCommand{\ghayn}{PU}{\86\072}% U+063A  
19647 % U+0640;afii57440;ARABIC TATWEEL  
19648 \DeclareTextCommand{\tatweel}{PU}{\86\100}% U+0640  
19649 % U+0641;afii57441;ARABIC LETTER FEH  
19650 \DeclareTextCommand{\fa}{PU}{\86\101}% U+0641  
19651 % U+0642;afii57442;ARABIC LETTER QAF  
19652 \DeclareTextCommand{\qaf}{PU}{\86\102}% U+0642  
19653 % U+0643;afii57443;ARABIC LETTER KAF  
19654 \DeclareTextCommand{\kaf}{PU}{\86\103}% U+0643  
19655 % U+0644;afii57444;ARABIC LETTER LAM  
19656 \DeclareTextCommand{\lam}{PU}{\86\104}% U+0644  
19657 % U+0645;afii57445;ARABIC LETTER MEEM  
19658 \DeclareTextCommand{\meem}{PU}{\86\105}% U+0645  
19659 % U+0646;afii57446;ARABIC LETTER NOON  
19660 \DeclareTextCommand{\nun}{PU}{\86\106}% U+0646  
19661 % U+0647;afii57470;ARABIC LETTER HEH

19662 \DeclareTextCommand{\ha}{PU}{\86\107}% U+0647  
19663 % U+0648;afi57448;ARABIC LETTER WAW  
19664 \DeclareTextCommand{\waw}{PU}{\86\110}% U+0648  
19665 % U+0649;afi57449;ARABIC LETTER ALEF MAKSURA  
19666 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% U+0649  
19667 % U+064A;afi57450;ARABIC LETTER YEH  
19668 \DeclareTextCommand{\ya}{PU}{\86\112}% U+064A  
  
19669 % U+064B;afi57451;ARABIC FATHATAN  
19670 \DeclareTextCommand{\nasb}{PU}{\86\113}% U+064B  
19671 % U+064C;afi57452;ARABIC DAMMATAN  
19672 \DeclareTextCommand{\raff}{PU}{\86\114}% U+064C  
19673 % U+064D;afi57453;ARABIC KASRATAN  
19674 \DeclareTextCommand{\jarr}{PU}{\86\115}% U+064D  
19675 % U+064E;afi57454;ARABIC FATHA  
19676 \DeclareTextCommand{\fatha}{PU}{\86\116}% U+064E  
19677 % U+064F;afi57455;ARABIC DAMMA  
19678 \DeclareTextCommand{\damma}{PU}{\86\117}% U+064F  
19679 % U+0650;afi57456;ARABIC KASRA  
19680 \DeclareTextCommand{\kasra}{PU}{\86\120}% U+0650  
19681 % U+0651;afi57457;ARABIC SHADDA  
19682 \DeclareTextCommand{\shadda}{PU}{\86\121}% U+0651  
19683 % U+0652;afi57458;ARABIC SUKUN  
19684 \DeclareTextCommand{\sukun}{PU}{\86\122}% U+0652  
  
Farsi  
19685 % U+067E ARABIC LETTER PEH; afi57506  
19686 \DeclareTextCommand{\peh}{PU}{\86\176}% U+067E  
19687 % U+0686 ARABIC LETTER TCHEH; afi57507  
19688 \DeclareTextCommand{\tcheh}{PU}{\86\206}% U+0686  
19689 % U+0698 ARABIC LETTER JEH; afi57508  
19690 \DeclareTextCommand{\jeh}{PU}{\86\230}% U+0698  
19691 % U+06A9 ARABIC LETTER KEHEH  
19692 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% U+06A9  
19693 % U+06AF ARABIC LETTER GAF; afi57509  
19694 \DeclareTextCommand{\gaf}{PU}{\86\257}% U+06AF  
19695 % U+06CC ARABIC LETTER FARSI YEH  
19696 \DeclareTextCommand{\farsiya}{PU}{\86\314}% U+06CC  
  
19697 % U+200C ZERO WIDTH NON-JOINER; afi61664  
19698 \DeclareTextCommand{\ZWJ}{PU}{\9040\014}% U+200C  
19699 % U+200D ZERO WIDTH JOINER; afi301  
19700 \DeclareTextCommand{\textEncodingNoboundary}{PU}{\9040\015}% U+200D  
  
19701 </puarenc>  
19702 <\*psdextra>  
19703 \Hy@VersionCheck{psdextra.def}  
19704 \DeclareTextCommand{\textGamma}{PU}{\83\223}%\* U+0393  
19705 \DeclareTextCommand{\textDelta}{PU}{\83\224}%\* U+0394  
19706 \DeclareTextCommand{\textTheta}{PU}{\83\230}%\* U+0398  
19707 \DeclareTextCommand{\textLambda}{PU}{\83\233}%\* U+039B  
19708 \DeclareTextCommand{\textXi}{PU}{\83\236}%\* U+039E  
19709 \DeclareTextCommand{\textPi}{PU}{\83\240}%\* U+03A0  
19710 \DeclareTextCommand{\textSigma}{PU}{\83\243}%\* U+03A3  
19711 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}%\* U+03A5  
19712 \DeclareTextCommand{\textPhi}{PU}{\83\246}%\* U+03A6

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19713 \DeclareTextCommand{\textChi}{PU}{\83\247}% U+03A7
19714 \DeclareTextCommand{\textPsi}{PU}{\83\250}%* U+03A8
19715 \DeclareTextCommand{\textOmega}{PU}{\83\251}%* U+03A9
19716 \DeclareTextCommand{\textalpha}{PU}{\83\261}%* U+03B1
19717 \DeclareTextCommand{\textbeta}{PU}{\83\262}%* U+03B2
19718 \DeclareTextCommand{\textgamma}{PU}{\83\263}%* U+03B3
19719 \DeclareTextCommand{\textdelta}{PU}{\83\264}%* U+03B4
19720 \DeclareTextCommand{\textepsilon}{PU}{\83\265}%* U+03B5
19721 \DeclareTextCommand{\textzeta}{PU}{\83\266}%* U+03B6
19722 \DeclareTextCommand{\texteta}{PU}{\83\267}%* U+03B7
19723 \DeclareTextCommand{\texttheta}{PU}{\83\270}%* U+03B8
19724 \DeclareTextCommand{\textiota}{PU}{\83\271}%* U+03B9
19725 \DeclareTextCommand{\textkappa}{PU}{\83\272}%* U+03BA
19726 \DeclareTextCommand{\textlambda}{PU}{\83\273}%* U+03BB
19727 \DeclareTextCommand{\textmugreek}{PU}{\83\274}%* U+03BC
19728 \DeclareTextCommand{\textnu}{PU}{\83\275}%* U+03BD
19729 \DeclareTextCommand{\textxi}{PU}{\83\276}%* U+03BE
19730 \DeclareTextCommand{\textpi}{PU}{\83\300}%* U+03C0
19731 \DeclareTextCommand{\textrho}{PU}{\83\301}%* U+03C1
19732 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}%* U+03C2
19733 \DeclareTextCommand{\textsigma}{PU}{\83\303}%* U+03C3
19734 \DeclareTextCommand{\texttau}{PU}{\83\304}%* U+03C4
19735 \DeclareTextCommand{\textupsilon}{PU}{\83\305}%* U+03C5
19736 \DeclareTextCommand{\textphi}{PU}{\83\306}%* U+03C6
19737 \DeclareTextCommand{\textchi}{PU}{\83\307}%* U+03C7
19738 \DeclareTextCommand{\textpsi}{PU}{\83\310}%* U+03C8
19739 \DeclareTextCommand{\textomega}{PU}{\83\311}%* U+03C9
19740 \newcommand*{\psdmapshortnames}{%
19741 \let\MVPlus\textMVPlus
19742 \let\MVComma\textMVComma
19743 \let\MVMinus\textMVMinus
19744 \let\MVPeriod\textMVPeriod
19745 \let\MVDivision\textMVDivision
19746 \let\MVZero\textMVZero
19747 \let\MVOne\textMVOne
19748 \let\MVTwo\textMVTwo
19749 \let\MVThree\textMVThree
19750 \let\MVFour\textMVFfour
19751 \let\MVFive\textMVFfive
19752 \let\MVSix\textMVSix
19753 \let\MVSeven\textMVSeven
19754 \let\MVEight\textMVEight
19755 \let\MVNine\textMVNine
19756 \let\MVAt\textMVAt
19757 \let\copyright\textcopyright
19758 \let\twosuperior\texttwosuperior
19759 \let\treesuperior\texttreesuperior
19760 \let\onesuperior\textonesuperior
19761 \let\Thorn\textThorn
19762 \let\thorn\textthorn
19763 \let\hbar\texthbar
19764 \let\hausasB\texthausasB
19765 \let\hausasD\texthausasD
19766 \let\hausasK\texthausasK

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19767 \let\barl\textbarl  
19768 \let\inve\textinve  
19769 \let\slashc\textslashc  
19770 \let\scripta\textscripta  
19771 \let\openo\textopeno  
19772 \let\rtaild\textrtaild  
19773 \let\reve\textreve  
19774 \let\schwa\textschwa  
19775 \let\niepsilon\textniepsilon  
19776 \let\repsilon\textrepsilon  
19777 \let\rhookrepsilon\textrhoepsilon  
19778 \let\scriptg\textscriptg  
19779 \let\scg\textscg  
19780 \let\ipagamma\textipagamma  
19781 \let\babygamma\textbabygamma  
19782 \let\bari\textbari  
19783 \let\niiota\textniiota  
19784 \let\sci\textsci  
19785 \let\scn\textscn  
19786 \let\niphi\textniphi  
19787 \let\longlegr\textlonglegr  
19788 \let\scr\textscr  
19789 \let\invscr\textinvscr  
19790 \let\esh\textesh  
19791 \let\baru\textbaru  
19792 \let\niupsilon\textniupsilon  
19793 \let\scriptv\textscriptv  
19794 \let\turnv\textturnv  
19795 \let\turnw\textturnw  
19796 \let\turny\textturny  
19797 \let\scy\textscy  
19798 \let\yogh\textyogh  
19799 \let\glotstop\textglotstop  
19800 \let\revglotstop\textrevglotstop  
19801 \let\invglotstop\textinvglotstop  
19802 \let\Gamma\textGamma  
19803 \let\Delta\textDelta  
19804 \let\Theta\textTheta  
19805 \let\Lambda\textLambda  
19806 \let\Xi\textXi  
19807 \let\Pi\textPi  
19808 \let\Sigma\textSigma  
19809 \let\Upsilon\textUpsilon  
19810 \let\Phi\textPhi  
19811 \let\Psi\textPsi  
19812 \let\Omega\textOmega  
19813 \let\alpha\textalpha  
19814 \let\beta\textbeta  
19815 \let\gamma\textgamma  
19816 \let\delta\textdelta  
19817 \let\epsilon\textepsilon  
19818 \let\zeta\textzeta  
19819 \let\eta\texteta  
19820 \let\theta\texttheta

19821 `\let\iota\textiota`  
19822 `\let\kappa\textkappa`  
19823 `\let\lambda\textlambda`  
19824 `\let\mu\textmu`  
19825 `\let\mugreek\textmugreek`  
19826 `\let\nu\textnu`  
19827 `\let\xi\textxi`  
19828 `\let\pi\textpi`  
19829 `\let\rho\textrho`  
19830 `\let\varsigma\textvarsigma`  
19831 `\let\sigma\textsigma`  
19832 `\let\tau\texttau`  
19833 `\let\upsilon\textupsilon`  
19834 `\let\phi\textphi`  
19835 `\let\chi\textchi`  
19836 `\let\psi\textpsi`  
19837 `\let\omega\textomega`  
19838 `\let\scd\textscd`  
19839 `\let\scu\textscu`  
19840 `\let\iinferior\textiinferior`  
19841 `\let\rinferior\textrinferior`  
19842 `\let\uinferior\textuinferior`  
19843 `\let\vinferior\textvinferior`  
19844 `\let\betainferior\textbetainferior`  
19845 `\let\gammainferior\textgammainferior`  
19846 `\let\rhoinferior\textrhoinferior`  
19847 `\let\phiinferior\textphiinferior`  
19848 `\let\chiinferior\textchiinferior`  
19849 `\let\barsci\textbarsci`  
19850 `\let\barp\textbarp`  
19851 `\let\barscu\textbarscu`  
19852 `\let\htrtaild\texthtrtaild`  
19853 `\let\dagger\textdagger`  
19854 `\let\bullet\textbullet`  
19855 `\let\hdotfor\texthdotfor`  
19856 `\let\prime\textprime`  
19857 `\let\second\textsecond`  
19858 `\let\third\textthird`  
19859 `\let\backprime\textbackprime`  
19860 `\let\lefttherefore\textlefttherefore`  
19861 `\let\fourth\textfourth`  
19862 `\let\diamonddots\textdiamonddots`  
19863 `\let\zerosuperior\textzerosuperior`  
19864 `\let\isuperior\textisuperior`  
19865 `\let\foursuperior\textfoursuperior`  
19866 `\let\fivesuperior\textfivesuperior`  
19867 `\let\sixsuperior\textsixsuperior`  
19868 `\let\sevensuperior\textsevensuperior`  
19869 `\let\eightsuperior\texteightsuperior`  
19870 `\let\ninesuperior\textninesuperior`  
19871 `\let\plussuperior\textplussuperior`  
19872 `\let\minussuperior\textminussuperior`  
19873 `\let\equalsuperior\textequalsuperior`  
19874 `\let\parenleftsuperior\textparenleftsuperior`

19875 \let\parenrightsuperior\textparenrightsuperior  
19876 \let\nsuperior\textnsuperior  
19877 \let\zeroinferior\textzeroinferior  
19878 \let\oneinferior\textoneinferior  
19879 \let\twoinferior\texttwoinferior  
19880 \let\threeinferior\textthreeinferior  
19881 \let\fourinferior\textfourinferior  
19882 \let\fiveinferior\textfiveinferior  
19883 \let\sixinferior\textsixinferior  
19884 \let\seveninferior\textseveninferior  
19885 \let\eightinferior\texteightinferior  
19886 \let\nineinferior\textnineinferior  
19887 \let\plusinferior\textplusinferior  
19888 \let\minusinferior\textminusinferior  
19889 \let\equalsinferior\textequalsinferior  
19890 \let\parenleftinferior\textparenleftinferior  
19891 \let\parenrightinferior\textparenrightinferior  
19892 \let\ainferior\textainferior  
19893 \let\einferior\texteinferior  
19894 \let\oinferior\textoinferior  
19895 \let\xinferior\textxinferior  
19896 \let\schwainferior\textschwainferior  
19897 \let\hinferior\texthinferior  
19898 \let\kinferior\textkinferior  
19899 \let\linferior\textlinferior  
19900 \let\minferior\textminferior  
19901 \let\ninferior\textninferior  
19902 \let\pinferior\textpinferior  
19903 \let\sinferior\textsinferior  
19904 \let\tinferior\texttinferior  
19905 \let\Deleatur\textDeleatur  
19906 \let\hslash\texthslash  
19907 \let\Im\textIm  
19908 \let\ell\textell  
19909 \let\wp\textwp  
19910 \let\Re\textRe  
19911 \let\mho\textmho  
19912 \let\riota\textriota  
19913 \let\Finv\textFinv  
19914 \let\aleph\textaleph  
19915 \let\beth\textbeth  
19916 \let\gimel\textgimel  
19917 \let\daleth\textdaleth  
19918 \let\xfax\textfax  
19919 \let\Game\textGame  
19920 \let\leftarrow\textleftarrow  
19921 \let\uparrow\textuparrow  
19922 \let\rightarrow\textrightarrow  
19923 \let\downarrow\textdownarrow  
19924 \let\leftrightarrow\textleftrightarrow  
19925 \let\updownarrow\textupdownarrow  
19926 \let\nwarrow\textnwarrow  
19927 \let\nearrow\textnearrow  
19928 \let\searrow\textsearrow

19929 `\let\swarrow\textswarrow`  
19930 `\let\nleftarrow\textnleftarrow`  
19931 `\let\nrightarrow\textnrightarrow`  
19932 `\let\twoheadleftarrow\texttwoheadleftarrow`  
19933 `\let\ntwoheadleftarrow\textntwoheadleftarrow`  
19934 `\let\twoheaduparrow\texttwoheaduparrow`  
19935 `\let\twoheadrightarrow\texttwoheadrightarrow`  
19936 `\let\ntwoheadrightarrow\textntwoheadrightarrow`  
19937 `\let\twoheaddownarrow\texttwoheaddownarrow`  
19938 `\let\leftarrowtail\textleftarrowtail`  
19939 `\let\rightarrowtail\textrightarrowtail`  
19940 `\let\mapsto\textmapsto`  
19941 `\let\hookrightarrow\texthookrightarrow`  
19942 `\let\hookleftarrow\texthookleftarrow`  
19943 `\let\looparrowleft\textlooparrowleft`  
19944 `\let\looparrowright\textlooparrowright`  
19945 `\let\nleftrightarrow\textnleftrightarrow`  
19946 `\let\lightning\textlightning`  
19947 `\let\dsh\textdsh`  
19948 `\let\curvearrowleft\textcurvearrowleft`  
19949 `\let\curvearrowright\textcurvearrowright`  
19950 `\let\leftharpoonup\textleftharpoonup`  
19951 `\let\leftharpoondown\textleftharpoondown`  
19952 `\let\upharpoonright\textupharpoonright`  
19953 `\let\upharpoonleft\textupharpoonleft`  
19954 `\let\rightharpoonup\text\rightharpoonup`  
19955 `\let\rightharpoondown\text\rightharpoondown`  
19956 `\let\downharpoonright\textdownharpoonright`  
19957 `\let\downharpoonleft\textdownharpoonleft`  
19958 `\let\rightleftarrows\textrightleftarrows`  
19959 `\let\updownarrows\textupdownarrows`  
19960 `\let\leftrightarrows\textleftrightarrows`  
19961 `\let\leftleftarrows\textleftleftarrows`  
19962 `\let\upuparrows\textupuparrows`  
19963 `\let\rightrightarrow\textrightarrow`  
19964 `\let\downrightarrow\textdownrightarrow`  
19965 `\let\leftthreetimes\textleftthreetimes`  
19966 `\let\rightthreetimes\textrightthreetimes`  
19967 `\let\nLeftarrow\textnLeftarrow`  
19968 `\let\nLeftrightarrow\textnLeftrightarrow`  
19969 `\let\nrightarrow\textnrightarrow`  
19970 `\let\Leftarrow\textLeftarrow`  
19971 `\let\Uparrow\textUparrow`  
19972 `\let\Rightarrow\textRightarrow`  
19973 `\let\Downarrow\textDownarrow`  
19974 `\let\Leftrightarrow\textLeftrightarrow`  
19975 `\let\Updownarrow\textUpdownarrow`  
19976 `\let\Nrightarrow\textNrightarrow`  
19977 `\let\Nearrow\textNearrow`  
19978 `\let\Searrow\textSearrow`  
19979 `\let\Swarrow\textSwarrow`  
19980 `\let\Lleftarrow\textLleftarrow`  
19981 `\let\Rrightarrow\textRrightarrow`  
19982 `\let\leftsquigarrow\textleftsquigarrow`



19983 `\let\rightsquigarrow\textrightsquigarrow`  
19984 `\let\dashleftarrow\textdashleftarrow`  
19985 `\let\dasheduparrow\textdasheduparrow`  
19986 `\let\dashrightarrow\textdashrightarrow`  
19987 `\let\dasheddownarrow\textdasheddownarrow`  
19988 `\let\pointer\textpointer`  
19989 `\let\downuparrows\textdownuparrows`  
19990 `\let\leftarrowtriangle\textleftarrowtriangle`  
19991 `\let\rightarrowtriangle\textrightarrowtriangle`  
19992 `\let\leftrightarrowtriangle\textleftrightarrowtriangle`  
19993 `\let\forall\textforall`  
19994 `\let\complement\textcomplement`  
19995 `\let\partial\textpartial`  
19996 `\let\exists\textexists`  
19997 `\let\nexists\textnexists`  
19998 `\let\emptyset\textemptyset`  
19999 `\let\triangle\texttriangle`  
20000 `\let\nabla\textnabla`  
20001 `\let\in\textinsymbol`  
20002 `\let\notin\textnotin`  
20003 `\let\smallin\textsmallin`  
20004 `\let\ni\textni`  
20005 `\let\notowner\textnotowner`  
20006 `\let\smallowns\textsmallowns`  
20007 `\let\prod\textprod`  
20008 `\let\amalg\textamalg`  
20009 `\let\sum\textsum`  
20010 `\let\mp\textmp`  
20011 `\let\dotplus\textdotplus`  
20012 `\let\Divides\textDivides`  
20013 `\let\DividesNot\textDividesNot`  
20014 `\let\setminus\textsetminus`  
20015 `\let\ast\textast`  
20016 `\let\circ\textcirc`  
20017 `\let\surd\textsurd`  
20018 `\let\propto\textpropto`  
20019 `\let\infty\textinfty`  
20020 `\let\angle\textangle`  
20021 `\let\measuredangle\textmeasuredangle`  
20022 `\let\sphericalangle\textsphericalangle`  
20023 `\let\mid\textmid`  
20024 `\let\nmid\textnmid`  
20025 `\let\parallel\textparallel`  
20026 `\let\nparallel\textnparallel`  
20027 `\let\wedge\textwedge`  
20028 `\let\owedge\textowedge`  
20029 `\let\vee\textvee`  
20030 `\let\ovee\textovee`  
20031 `\let\cap\textcap`  
20032 `\let\cup\textcup`  
20033 `\let\int\textint`  
20034 `\let\iint\textiint`  
20035 `\let\iiint\textiiint`  
20036 `\let\oint\textoint`

20037 `\let\oiint\textoiint`  
20038 `\let\ointclockwise\textointclockwise`  
20039 `\let\ointctrlockwise\textointctrlockwise`  
20040 `\let\therefore\texttherefore`  
20041 `\let\because\textbecause`  
20042 `\let\vdotdot\textvdotdot`  
20043 `\let\squaredots\textsquaredots`  
20044 `\let\dotminus\textdotminus`  
20045 `\let\eqcolon\texteqcolon`  
20046 `\let\sim\textsim`  
20047 `\let\backsim\textbacksim`  
20048 `\let\nbacksim\textnbacksim`  
20049 `\let\wr\textwr`  
20050 `\let\nsim\textnsim`  
20051 `\let\eqsim\texteqsim`  
20052 `\let\neqsim\textneqsim`  
20053 `\let\simeq\textsimeq`  
20054 `\let\nsimeq\textnsimeq`  
20055 `\let\cong\textcong`  
20056 `\let\ncong\textncong`  
20057 `\let\approx\textapprox`  
20058 `\let\napprox\textnapprox`  
20059 `\let\approxeq\textapproxeq`  
20060 `\let\napproxeq\textnapproxeq`  
20061 `\let\triplesim\texttriplesim`  
20062 `\let\ntriplesim\textntriplesim`  
20063 `\let\backcong\textbackcong`  
20064 `\let\nbackcong\textnbackcong`  
20065 `\let\asymp\textasymp`  
20066 `\let\nasymp\textnasymp`  
20067 `\let\Bumpeq\textBumpeq`  
20068 `\let\nBumpeq\textnBumpeq`  
20069 `\let\bumpeq\textbumpeq`  
20070 `\let\nbumpeq\textnbumpeq`  
20071 `\let\doteq\textdoteq`  
20072 `\let\ndoteq\textndoteq`  
20073 `\let\doteqdot\textdoteqdot`  
20074 `\let\ndoteq\textndoteq`  
20075 `\let\fallingdoteq\textfallingdoteq`  
20076 `\let\nfallingdoteq\textnfallingdoteq`  
20077 `\let\risingdoteq\textrisingdoteq`  
20078 `\let\nrisingdoteq\textnrisingdoteq`  
20079 `\let\colonequals\textcolonequals`  
20080 `\let\equalscolon\textequalscolon`  
20081 `\let\eqcirc\texteqcirc`  
20082 `\let\neqcirc\textneqcirc`  
20083 `\let\circeq\textcirceq`  
20084 `\let\ncirceq\textncirceq`  
20085 `\let\hateq\texthateq`  
20086 `\let\nhateq\textnhateq`  
20087 `\let\triangleeq\texttriangleeq`  
20088 `\let\neq\textneq`  
20089 `\let\ne\textne`  
20090 `\let\equiv\textequiv`

20091 \let\nequiv\textnequiv  
20092 \let\leq\textleq  
20093 \let\le\textle  
20094 \let\geq\textgeq  
20095 \let\ge\textge  
20096 \let\leqq\textleqq  
20097 \let\leqq\textleqq  
20098 \let\geqq\textgeqq  
20099 \let\geqq\textgeqq  
20100 \let\leqq\textleqq  
20101 \let\geqq\textgeqq  
20102 \let\ll\textll  
20103 \let\nll\textnll  
20104 \let\gg\textgg  
20105 \let\ngg\textngg  
20106 \let\between\textbetween  
20107 \let\nless\textnless  
20108 \let\ngtr\textngtr  
20109 \let\nleq\textnleq  
20110 \let\ngel\textngel  
20111 \let\lesssim\textlessim  
20112 \let\gtrsim\textgtrsim  
20113 \let\nlessim\textnlessim  
20114 \let\ngtrsim\textngtrsim  
20115 \let\lessgtr\textlessgtr  
20116 \let\gtrless\textgtrless  
20117 \let\ngtrless\textngtrless  
20118 \let\nlessgtr\textnlessgtr  
20119 \let\prec\textprec  
20120 \let\succ\textsucc  
20121 \let\preccurlyeq\textpreccurlyeq  
20122 \let\succcurlyeq\textsucccurlyeq  
20123 \let\prec\textprec  
20124 \let\prec\textprec  
20125 \let\succsim\textsuccsim  
20126 \let\nsuccsim\textnsuccsim  
20127 \let\prec\textprec  
20128 \let\nsucc\textnsucc  
20129 \let\subset\textsubset  
20130 \let\supset\textsupset  
20131 \let\nsubset\textnsubset  
20132 \let\nsupset\textnsupset  
20133 \let\subseteq\textsubseteq  
20134 \let\supseteq\textsupseteq  
20135 \let\nsubseteq\textnsubseteq  
20136 \let\nsupseteq\textnsupseteq  
20137 \let\subsetneq\textsubsetneq  
20138 \let\supsetneq\textsupsetneq  
20139 \let\cup\textcup  
20140 \let\cup\textcup  
20141 \let\sqsubset\textsqsubset  
20142 \let\nsqsubset\textnsqsubset  
20143 \let\sqsupset\textsqsupset  
20144 \let\nsqsupset\textnsqsupset

20145 `\let\sqssubseteq\textsqsubseteq`  
 20146 `\let\nsqsubseteq\textnsqsubseteq`  
 20147 `\let\sqsupseteq\textsqsupseteq`  
 20148 `\let\nsqsupseteq\textnsqsupseteq`  
 20149 `\let\sqcap\textsqcap`  
 20150 `\let\sqcup\textsqcup`  
 20151 `\let\oplus\textoplus`  
 20152 `\let\ominus\textominus`  
 20153 `\let\otimes\textotimes`  
 20154 `\let\oslash\textoslash`  
 20155 `\let\odot\textodot`  
 20156 `\let\circledcirc\textcircledcirc`  
 20157 `\let\circledast\textcircledast`  
 20158 `\let\circleddash\textcircleddash`  
 20159 `\let\boxplus\textboxplus`  
 20160 `\let\boxminus\textboxminus`  
 20161 `\let\boxtimes\textboxtimes`  
 20162 `\let\boxdot\textboxdot`  
 20163 `\let\vdash\textvdash`  
 20164 `\let\dashv\textdashv`  
 20165 `\let\ndashv\textndashv`  
 20166 `\let\top\texttop`  
 20167 `\let\ndownvdash\textndownvdash`  
 20168 `\let\bot\textbot`  
 20169 `\let\nupvdash\textnupvdash`  
 20170 `\let\vDash\textvDash`  
 20171 `\let\Vdash\textVdash`  
 20172 `\let\Vvdash\textVvdash`  
 20173 `\let\NVdash\textNVdash`  
 20174 `\let\VDash\textVDash`  
 20175 `\let\Nvdash\textNvdash`  
 20176 `\let\NVdash\textNVdash`  
 20177 `\let\NVdash\textNVdash`  
 20178 `\let\NVdash\textNVdash`  
 20179 `\let\lhd\textlhd`  
 20180 `\let\rhd\textrhd`  
 20181 `\let\unlhd\textunlhd`  
 20182 `\let\unrhd\textunrhd`  
 20183 `\let\multimapdotbothA\textmultimapdotbothA`  
 20184 `\let\multimapdotbothB\textmultimapdotbothB`  
 20185 `\let\multimap\textmultimap`  
 20186 `\let\veebar\textveebar`  
 20187 `\let\barwedge\textbarwedge`  
 20188 `\let\star\textstar`  
 20189 `\let\divideontimes\textdivideontimes`  
 20190 `\let\bowtie\textbowtie`  
 20191 `\let\ltimes\textltimes`  
 20192 `\let\rtimes\textrtimes`  
 20193 `\let\leftthreetimes\textleftthreetimes`  
 20194 `\let\rightthreetimes\textrightthreetimes`  
 20195 `\let\backsimeq\textbacksimeq`  
 20196 `\let\Nbacksimeq\textNbacksimeq`  
 20197 `\let\curlyvee\textcurlyvee`  
 20198 `\let\curlywedge\textcurlywedge`

20199 \let\Subset\textSubset  
 20200 \let\nSubset\textnSubset  
 20201 \let\Supset\textSupset  
 20202 \let\nSupset\textnSupset  
 20203 \let\Cap\textCap  
 20204 \let\Cup\textCup  
 20205 \let\pitchfork\textpitchfork  
 20206 \let\lessdot\textlessdot  
 20207 \let\gtrdot\textgtrdot  
 20208 \let\lll\textlll  
 20209 \let\ggg\textggg  
 20210 \let\lesseqgtr\textlesseqgtr  
 20211 \let\gtreqless\textgtreqless  
 20212 \let\curlyeqprec\textcurlyeqprec  
 20213 \let\ncurlyeqprec\textncurlyeqprec  
 20214 \let\curlyeqsucc\textcurlyeqsucc  
 20215 \let\ncurlyeqsucc\textncurlyeqsucc  
 20216 \let\preccurlyeq\textpreccurlyeq  
 20217 \let\nsucccurlyeq\textnsucccurlyeq  
 20218 \let\nqsubseteq\textnqsubseteq  
 20219 \let\nqsupseteq\textnqsupseteq  
 20220 \let\sqsubsetneq\textsqssubsetneq  
 20221 \let\sqsupsetneq\textsqsupsetneq  
 20222 \let\lnsim\textlnsim  
 20223 \let\gnsim\textgnsim  
 20224 \let\precnsim\textprecnsim  
 20225 \let\succnsim\textsuccnsim  
 20226 \let\ntriangleleft\textntriangleleft  
 20227 \let\ntriangleright\textntriangleright  
 20228 \let\ntrianglelefteq\textntrianglelefteq  
 20229 \let\ntrianglerighteq\textntrianglerighteq  
 20230 \let\vdots\textvdots  
 20231 \let\cdots\textcdots  
 20232 \let\udots\textudots  
 20233 \let\ddots\textddots  
 20234 \let\barin\textbarin  
 20235 \let\diameter\textdiameter  
 20236 \let\backneg\textbackneg  
 20237 \let\wasylozenge\textwasylozenge  
 20238 \let\invbackneg\textinvbackneg  
 20239 \let\clock\textclock  
 20240 \let\ulcorner\textulcorner  
 20241 \let\urcorner\texturcorner  
 20242 \let\llcorner\textllcorner  
 20243 \let\lrcorner\textlrcorner  
 20244 \let\frown\textfrown  
 20245 \let\smile\textsmile  
 20246 \let\Keyboard\textKeyboard  
 20247 \let\langle\textlangle  
 20248 \let\rangle\textrangle  
 20249 \let\APLinv\textAPLinv  
 20250 \let\Tumbler\textTumbler  
 20251 \let\notslash\textnotslash  
 20252 \let\notbackslash\textnotbackslash

20253 \let\boxbackslash\textboxbackslash  
20254 \let\APLleftarrowbox\textAPLleftarrowbox  
20255 \let\APLrightarrowbox\textAPLrightarrowbox  
20256 \let\APLuparrowbox\textAPLuparrowbox  
20257 \let\APLdownarrowbox\textAPLdownarrowbox  
20258 \let\APLinput\textAPLinput  
20259 \let\Request\textRequest  
20260 \let\Beam\textBeam  
20261 \let\hexagon\texthexagon  
20262 \let\APLbox\textAPLbox  
20263 \let\ForwardToIndex\textForwardToIndex  
20264 \let\RewindToIndex\textRewindToIndex  
20265 \let\bbslash\textbbslash  
20266 \let\CircledA\textCircledA  
20267 \let\CleaningF\textCleaningF  
20268 \let\CleaningFF\textCleaningFF  
20269 \let\CleaningP\textCleaningP  
20270 \let\CleaningPP\textCleaningPP  
20271 \let\CuttingLine\textCuttingLine  
20272 \let\UParrow\textUParrow  
20273 \let\bigtriangleup\textbigtriangleup  
20274 \let\Forward\textForward  
20275 \let\triangleright\texttriangleright  
20276 \let\RHD\textRHD  
20277 \let\DOWNarrow\textDOWNarrow  
20278 \let\bigtriangledown\textbigtriangledown  
20279 \let\Rewind\textRewind  
20280 \let\triangleleft\texttriangleleft  
20281 \let\LHD\textLHD  
20282 \let\diamond\textdiamond  
20283 \let\lozenge\textlozenge  
20284 \let\LEFTCIRCLE\textLEFTCIRCLE  
20285 \let\RIGHTCIRCLE\textRIGHTCIRCLE  
20286 \let\openbullet\textopenbullet  
20287 \let\boxbar\textboxbar  
20288 \let\bigcircle\textbigcircle  
20289 \let\Cloud\textCloud  
20290 \let\FiveStar\textFiveStar  
20291 \let\FiveStarOpen\textFiveStarOpen  
20292 \let\Phone\textPhone  
20293 \let\boxempty\textboxempty  
20294 \let\Checkedbox\textCheckedbox  
20295 \let\Crossedbox\textCrossedbox  
20296 \let\Coffeecup\textCoffeecup  
20297 \let\HandCuffLeft\textHandCuffLeft  
20298 \let\HandCuffRight\textHandCuffRight  
20299 \let\HandLeft\textHandLeft  
20300 \let\HandRight\textHandRight  
20301 \let\Radioactivity\textRadioactivity  
20302 \let\Biohazard\textBiohazard  
20303 \let\Ankh\textAnkh  
20304 \let\YinYang\textYinYang  
20305 \let\frownie\textfrownie  
20306 \let\smiley\textsmiley

20307 \let\blacksmiley\textblacksmiley  
20308 \let\sun\textsun  
20309 \let\leftmoon\textleftmoon  
20310 \let\rightmoon\textrightmoon  
20311 \let\mercury\textmercury  
20312 \let\earth\textearth  
20313 \let\male\textmale  
20314 \let\jupiter\textjupiter  
20315 \let\saturn\textsaturn  
20316 \let\uranus\texturanus  
20317 \let\neptune\textneptune  
20318 \let\pluto\textpluto  
20319 \let\aries\textaries  
20320 \let\taurus\texttaurus  
20321 \let\gemini\textgemini  
20322 \let\cancer\textcancer  
20323 \let\leo\textleo  
20324 \let\virgo\textvirgo  
20325 \let\libra\textlibra  
20326 \let\scorpio\textscorpio  
20327 \let\sagittarius\textsagittarius  
20328 \let\capricornus\textcapricornus  
20329 \let\aquarius\textaquarius  
20330 \let\pisces\textpisces  
20331 \let\quarternote\textquarternote  
20332 \let\twonotes\texttwonotes  
20333 \let\sixteenthnote\textsixteenthnote  
20334 \let\flat\textflat  
20335 \let\natural\textnatural  
20336 \let\sharp\textsharp  
20337 \let\recycle\textrecycle  
20338 \let\Wheelchair\textWheelchair  
20339 \let\Flag\textFlag  
20340 \let\MineSign\textMineSign  
20341 \let\ds military\textds military  
20342 \let\ds medical\textds medical  
20343 \let\ds juridical\textds juridical  
20344 \let\ds chemical\textds chemical  
20345 \let\ds biological\textds biological  
20346 \let\ds commercial\textds commercial  
20347 \let\manstar\textmanstar  
20348 \let\danger\textdanger  
20349 \let\FemaleFemale\textFemaleFemale  
20350 \let\MaleMale\textMaleMale  
20351 \let\FemaleMale\textFemaleMale  
20352 \let\Hermaphrodite\textHermaphrodite  
20353 \let\Neutral\textNeutral  
20354 \let\hexstar\texthexstar  
20355 \let\SunCloud\textSunCloud  
20356 \let\Rain\textRain  
20357 \let\noway\textnoway  
20358 \let\Mountain\textMountain  
20359 \let\Tent\textTent  
20360 \let\ScissorRight\textScissorRight

20361 \let\ScissorRightBrokenTop\textScissorRightBrokenTop  
 20362 \let\ScissorHollowRight\textScissorHollowRight  
 20363 \let\PhoneHandset\textPhoneHandset  
 20364 \let\Tape\textTape  
 20365 \let\Plane\textPlane  
 20366 \let\Envelope\textEnvelope  
 20367 \let\Peace\textPeace  
 20368 \let\WritingHand\textWritingHand  
 20369 \let\PencilRightDown\textPencilRightDown  
 20370 \let\PencilRight\textPencilRight  
 20371 \let\PencilRightUp\textPencilRightUp  
 20372 \let\NibRight\textNibRight  
 20373 \let\NibSolidRight\textNibSolidRight  
 20374 \let\Checkmark\textCheckmark  
 20375 \let\CheckmarkBold\textCheckmarkBold  
 20376 \let\XSolid\textXSolid  
 20377 \let\XSolidBold\textXSolidBold  
 20378 \let\XSolidBrush\textXSolidBrush  
 20379 \let\PlusOutline\textPlusOutline  
 20380 \let\Plus\textPlus  
 20381 \let\PlusThinCenterOpen\textPlusThinCenterOpen  
 20382 \let\PlusCenterOpen\textPlusCenterOpen  
 20383 \let\Cross\textCross  
 20384 \let\CrossOpenShadow\textCrossOpenShadow  
 20385 \let\CrossOutline\textCrossOutline  
 20386 \let\CrossMaltese\textCrossMaltese  
 20387 \let\DavidStar\textDavidStar  
 20388 \let\FourAsterisk\textFourAsterisk  
 20389 \let\JackStar\textJackStar  
 20390 \let\JackStarBold\textJackStarBold  
 20391 \let\CloverTips\textCloverTips  
 20392 \let\FourStar\textFourStar  
 20393 \let\FourStarOpen\textFourStarOpen  
 20394 \let\FiveStarOpenCircled\textFiveStarOpenCircled  
 20395 \let\FiveStarCenterOpen\textFiveStarCenterOpen  
 20396 \let\FiveStarOpenDotted\textFiveStarOpenDotted  
 20397 \let\FiveStarOutline\textFiveStarOutline  
 20398 \let\FiveStarOutlineHeavy\textFiveStarOutlineHeavy  
 20399 \let\FiveStarConvex\textFiveStarConvex  
 20400 \let\FiveStarShadow\textFiveStarShadow  
 20401 \let\AsteriskBold\textAsteriskBold  
 20402 \let\AsteriskCenterOpen\textAsteriskCenterOpen  
 20403 \let\EightStarTaper\textEightStarTaper  
 20404 \let\EightStarConvex\textEightStarConvex  
 20405 \let\SixStar\textSixStar  
 20406 \let\EightStar\textEightStar  
 20407 \let\EightStarBold\textEightStarBold  
 20408 \let\TwelveStar\textTwelveStar  
 20409 \let\SixteenStarLight\textSixteenStarLight  
 20410 \let\SixFlowerPetalRemoved\textSixFlowerPetalRemoved  
 20411 \let\SixFlowerOpenCenter\textSixFlowerOpenCenter  
 20412 \let\Asterisk\textAsterisk  
 20413 \let\SixFlowerAlternate\textSixFlowerAlternate  
 20414 \let\FiveFlowerPetal\textFiveFlowerPetal



20415 `\let\FiveFlowerOpen\textFiveFlowerOpen`  
 20416 `\let\EightFlowerPetal\textEightFlowerPetal`  
 20417 `\let\SunshineOpenCircled\textSunshineOpenCircled`  
 20418 `\let\SixFlowerAltPetal\textSixFlowerAltPetal`  
 20419 `\let\SnowflakeChevron\textSnowflakeChevron`  
 20420 `\let\Snowflake\textSnowflake`  
 20421 `\let\SnowflakeChevronBold\textSnowflakeChevronBold`  
 20422 `\let\Sparkle\textSparkle`  
 20423 `\let\SparkleBold\textSparkleBold`  
 20424 `\let\AsteriskRoundedEnds\textAsteriskRoundedEnds`  
 20425 `\let\EightFlowerPetalRemoved\textEightFlowerPetalRemoved`  
 20426 `\let\EightAsterisk\textEightAsterisk`  
 20427 `\let\CircleShadow\textCircleShadow`  
 20428 `\let\SquareShadowBottomRight\textSquareShadowBottomRight`  
 20429 `\let\SquareTopRight\textSquareTopRight`  
 20430 `\let\SquareCastShadowBottomRight\textSquareCastShadowBottomRight`  
 20431 `\let\SquareCastShadowTopRight\textSquareCastShadowTopRight`  
 20432 `\let\DiamondSolid\textDiamondSolid`  
 20433 `\let\RectangleThin\textRectangleThin`  
 20434 `\let\Rectangle\textRectangle`  
 20435 `\let\RectangleBold\textRectangleBold`  
 20436 `\let\perp\textperp`  
 20437 `\let\notperp\textnotperp`  
 20438 `\let\veedot\textveedot`  
 20439 `\let\wedgedot\textwedgedot`  
 20440 `\let\leftspoon\textleftspoon`  
 20441 `\let\lbrackdbl\textlbrackdbl`  
 20442 `\let\rbrackdbl\textrbrackdbl`  
 20443 `\let\circlearrowleft\textcirclearrowleft`  
 20444 `\let\circlearrowright\textcirclearrowright`  
 20445 `\let\longleftarrow\textlongleftarrow`  
 20446 `\let\longrightarrow\textlongrightarrow`  
 20447 `\let\longleftarrowright\textlongleftarrowright`  
 20448 `\let\Longleftarrow\textLongleftarrow`  
 20449 `\let\Longrightarrow\textLongrightarrow`  
 20450 `\let\Longleftarrowright\textLongleftarrowright`  
 20451 `\let\longmapsto\textlongmapsto`  
 20452 `\let\Longmapsfrom\textLongmapsfrom`  
 20453 `\let\Longmapsto\textLongmapsto`  
 20454 `\let\nwsearrow\textnwsearrow`  
 20455 `\let\neswarrow\textneswarrow`  
 20456 `\let\hookrightarrow\texthookrightarrow`  
 20457 `\let\rhookrightarrow\text\rhookrightarrow`  
 20458 `\let\hookrightarrow\texthookrightarrow`  
 20459 `\let\rhookrightarrow\text\rhookrightarrow`  
 20460 `\let\leadsto\textleadsto`  
 20461 `\let\rcurvearrowne\textrcurvearrowne`  
 20462 `\let\lcurvearrowse\textlcurvearrowse`  
 20463 `\let\lcurvearrowsw\textlcurvearrowsw`  
 20464 `\let\rcurvearrowse\textrcurvearrowse`  
 20465 `\let\lcurvearrowdown\textlcurvearrowdown`  
 20466 `\let\rcurvearrowdown\textrcurvearrowdown`  
 20467 `\let\rcurvearrowleft\textrcurvearrowleft`  
 20468 `\let\rcurvearrowright\textrcurvearrowright`

20469  $\backslash\text{leftrightharpoon}\text{leftrightharpoon}$   
20470  $\backslash\text{rightleftharpoon}\text{rightleftharpoon}$   
20471  $\backslash\text{updownharpoonrightleft}\text{updownharpoonrightleft}$   
20472  $\backslash\text{updownharpoonleftright}\text{updownharpoonleftright}$   
20473  $\backslash\text{leftleftharpoons}\text{leftleftharpoons}$   
20474  $\backslash\text{upupharpoons}\text{upupharpoons}$   
20475  $\backslash\text{rightrightarpoons}\text{rightrightarpoons}$   
20476  $\backslash\text{downdownharpoons}\text{downdownharpoons}$   
20477  $\backslash\text{leftbarharpoon}\text{leftbarharpoon}$   
20478  $\backslash\text{barleftharpoon}\text{barleftharpoon}$   
20479  $\backslash\text{rightbarharpoon}\text{rightbarharpoon}$   
20480  $\backslash\text{barrightharpoon}\text{barrightharpoon}$   
20481  $\backslash\text{updownharpoons}\text{updownharpoons}$   
20482  $\backslash\text{downupharpoons}\text{downupharpoons}$   
20483  $\backslash\text{moo}\text{moo}$   
20484  $\backslash\text{llparenthesis}\text{llparenthesis}$   
20485  $\backslash\text{rrparenthesis}\text{rrparenthesis}$   
20486  $\backslash\text{invdiameter}\text{invdiameter}$   
20487  $\backslash\text{obar}\text{obar}$   
20488  $\backslash\text{obslash}\text{obslash}$   
20489  $\backslash\text{obot}\text{obot}$   
20490  $\backslash\text{NoChemicalCleaning}\text{NoChemicalCleaning}$   
20491  $\backslash\text{olessthan}\text{olessthan}$   
20492  $\backslash\text{ogreaterthan}\text{ogreaterthan}$   
20493  $\backslash\text{boxslash}\text{boxslash}$   
20494  $\backslash\text{boxbslash}\text{boxbslash}$   
20495  $\backslash\text{boxast}\text{boxast}$   
20496  $\backslash\text{boxcircle}\text{boxcircle}$   
20497  $\backslash\text{boxbox}\text{boxbox}$   
20498  $\backslash\text{Valve}\text{Valve}$   
20499  $\backslash\text{multimapboth}\text{multimapboth}$   
20500  $\backslash\text{shuffle}\text{shuffle}$   
20501  $\backslash\text{uplus}\text{uplus}$   
20502  $\backslash\text{bigdoublewedge}\text{bigdoublewedge}$   
20503  $\backslash\text{bigdoublevee}\text{bigdoublevee}$   
20504  $\backslash\text{Join}\text{Join}$   
20505  $\backslash\text{fatsemi}\text{fatsemi}$   
20506  $\backslash\text{cirplus}\text{cirplus}$   
20507  $\backslash\text{minusdot}\text{minusdot}$   
20508  $\backslash\text{dottimes}\text{dottimes}$   
20509  $\backslash\text{dtimes}\text{dtimes}$   
20510  $\backslash\text{odiv}\text{odiv}$   
20511  $\backslash\text{invneg}\text{invneg}$   
20512  $\backslash\text{sqdoublecap}\text{sqdoublecap}$   
20513  $\backslash\text{capdot}\text{capdot}$   
20514  $\backslash\text{sqdoublecup}\text{sqdoublecup}$   
20515  $\backslash\text{doublewedge}\text{doublewedge}$   
20516  $\backslash\text{doublevee}\text{doublevee}$   
20517  $\backslash\text{doublebarwedge}\text{doublebarwedge}$   
20518  $\backslash\text{veedoublebar}\text{veedoublebar}$   
20519  $\backslash\text{eqdot}\text{eqdot}$   
20520  $\backslash\text{neqdot}\text{neqdot}$   
20521  $\backslash\text{coloncolonequals}\text{coloncolonequals}$   
20522  $\backslash\text{leqslant}\text{leqslant}$

20523 `\let\nleqslant\textnleqslant`  
20524 `\let\geqslant\textgeqslant`  
20525 `\let\ngeqslant\textngeqslant`  
20526 `\let\lessapprox\textlessapprox`  
20527 `\let\nlessapprox\textnlessapprox`  
20528 `\let\gtrapprox\textgtrapprox`  
20529 `\let\ngtrapprox\textngtrapprox`  
20530 `\let\lneq\textlneq`  
20531 `\let\gneq\textgneq`  
20532 `\let\lnapprox\textlnapprox`  
20533 `\let\gnapprox\textgnapprox`  
20534 `\let\lesseqgtr\textlesseqgtr`  
20535 `\let\gtreqless\textgtreqless`  
20536 `\let\eqslantless\texteqslantless`  
20537 `\let\eqslantgtr\texteqslantgtr`  
20538 `\let\leftslice\textleftslice`  
20539 `\let\rightslice\textrightslice`  
20540 `\let\preceq\textpreceq`  
20541 `\let\npreceq\textnpreceq`  
20542 `\let\succeq\textsucceq`  
20543 `\let\nsucceq\textnsucceq`  
20544 `\let\precneq\textprecneq`  
20545 `\let\succneq\textsuccneq`  
20546 `\let\preceqq\textpreceqq`  
20547 `\let\npreceqq\textnpreceqq`  
20548 `\let\succeqq\textsucceqq`  
20549 `\let\nsucceqq\textnsucceqq`  
20550 `\let\precneqq\textprecneqq`  
20551 `\let\succneqq\textsuccneqq`  
20552 `\let\precapprox\textprecapprox`  
20553 `\let\nprecapprox\textnprecapprox`  
20554 `\let\succapprox\textsuccapprox`  
20555 `\let\nsuccapprox\textnsuccapprox`  
20556 `\let\precnapprox\textprecnapprox`  
20557 `\let\succnapprox\textsuccnapprox`  
20558 `\let\subseteqq\textsubseteqq`  
20559 `\let\nsubseteqq\textnsubseteqq`  
20560 `\let\supseteqq\textsupseteqq`  
20561 `\let\nsupseteqq\textnsupseteqq`  
20562 `\let\dashV\textdashV`  
20563 `\let\ndashV\textndashV`  
20564 `\let\Dashv\textDashv`  
20565 `\let\nDashv\textnDashv`  
20566 `\let\DashV\textDashV`  
20567 `\let\nDashV\textnDashV`  
20568 `\let\downmodels\textdownmodels`  
20569 `\let\ndownmodels\textndownmodels`  
20570 `\let\upmodels\textupmodels`  
20571 `\let\nupmodels\textnupmodels`  
20572 `\let\upspoon\textupspoon`  
20573 `\let\interleave\textinterleave`  
20574 `\let\slash\textslash`  
20575 `\let\pentagon\textpentagon`  
20576 `\let\varhexagon\textvarhexagon`

20577 `\let\jinferior\textjinferior`  
20578 `\let\slashdiv\textslashdiv`  
20579 `\let\fivedots\textfivedots`  
20580 `\let\oo\textoo`  
20581 `\let\GaPa\textGaPa`  
20582 `\let\HaPa\textHaPa`  
20583 `\let\ViPa\textViPa`  
20584 `\let\AcPa\textAcPa`  
20585 `\let\SePa\textSePa`  
20586 `\let\ZwPa\textZwPa`  
20587 `\let\fullnote\textfullnote`  
20588 `\let\halfnote\texthalfnote`  
20589 `\let\Vier\textVier`  
20590 `\let\Acht\textAcht`  
20591 `\let\Sech\textSech`  
20592 `\let\Zwdr\textZwdr`  
20593 `\let\Mundus\textMundus`  
20594 `\let\Moon\textMoon`  
20595 `\let\ManFace\textManFace`  
20596 `\let\WomanFace\textWomanFace`  
20597 `\let\Fax\textFax`  
20598 `\let\Fire\textFire`  
20599 `\let\Bicycle\textBicycle`  
20600 `\let\Gentsroom\textGentsroom`  
20601 `\let\Ladiesroom\textLadiesroom`  
20602 `\let\ccnc\textccnc`  
20603 `\let\ccsa\textccsa`  
20604 `\let\Info\textInfo`  
20605 `\let\CESign\textCESign`  
20606 `\let\neg\textneg`  
20607 `\let\times\texttimes`  
20608 `\let\div\textdiv`  
20609 `\let\pm\textpm`  
20610 `\let\cdot\textcdot`  
20611 `}% \psdmapshortnames`  
20612 `\newcommand*{\psdaliasnames}{%`  
20613 `\let\epsdice\HyPsd@DieFace`  
20614 `\let\fcdice\HyPsd@DieFace`  
20615 `\let\MoonPha\HyPsd@MoonPha`  
20616 `\let\mathdollar\textdollar`  
20617 `\let\EyesDollar\textdollar`  
20618 `\let\binampersand\textampersand`  
20619 `\let\with\textampersand`  
20620 `\let\mathunderscore\textunderscore`  
20621 `\let\textvertline\textbar`  
20622 `\let\mathsterling\textsterling`  
20623 `\let\pounds\textsterling`  
20624 `\let\brokenvert\textbrokenbar`  
20625 `\let\mathsection\textsection`  
20626 `\let\S\textsection`  
20627 `\let\mathparagraph\textparagraph`  
20628 `\let\MultiplicationDot\textperiodcentered`  
20629 `\let\Squaredot\textperiodcentered`  
20630 `\let\vartimes\textmultiply`

20631 \let\MVMultiplication\textmultiply  
20632 \let\eth\dh  
20633 \let\crossd\textcrd  
20634 \let\textbard\textcrd  
20635 \let\bard\textcrd  
20636 \let\textcrh\texthbar  
20637 \let\crossh\texthbar  
20638 \let\planck\texthbar  
20639 \let\eng\ng  
20640 \let\engma\ng  
20641 \let\crossb\textcrb  
20642 \let\textbarb\textcrb  
20643 \let\barb\textcrb  
20644 \let\Florin\textflorin  
20645 \let\hv\texthvlig  
20646 \let\hausak\texthtk  
20647 \let\crossnilambda\textcrlambda  
20648 \let\barlambda\textcrlambda  
20649 \let\lambdabar\textcrlambda  
20650 \let\lambdaslash\textcrlambda  
20651 \let\textnrleg\textPUnrleg  
20652 \let\textpipevar\textpipe  
20653 \let\textdoublepipevar\textdoublepipe  
20654 \let\textdoublebarpipevar\textdoublebarpipe  
20655 \let\textcrg\textgslash  
20656 \let\textdblig\textPUdblig  
20657 \let\textqplig\textPUqplig  
20658 \let\textcentoldstyle\textslashc  
20659 \let\textbarc\textslashc  
20660 \let\inva\textturna  
20661 \let\vara\textscripta  
20662 \let\invscripta\textturnscripta  
20663 \let\rotvara\textturnscripta  
20664 \let\hookb\texthtb  
20665 \let\hausab\texthtb  
20666 \let\varopeno\textopeno  
20667 \let\curlyc\textctc  
20668 \let\taild\textrtaild  
20669 \let\hookd\texthtd  
20670 \let\hausad\texthtd  
20671 \let\er\textrhookschwa  
20672 \let\epsi\textniepsilon  
20673 \let\hookrepsilon\textrhookrepsilon  
20674 \let\closedrepsilon\textcloserepsilon  
20675 \let\barj\textbardotlessj  
20676 \let\hookg\texthtg  
20677 \let\varg\textscriptg  
20678 \let\vod\textipagamma  
20679 \let\invh\textturnh  
20680 \let\udesc\textturnh  
20681 \let\hookh\texthth  
20682 \let\voicedh\texthth  
20683 \let\hookheng\texththeng  
20684 \let\ibar\textbari

20685 \let\vari\textniota  
 20686 \let\tildel\texttilde  
 20687 \let\latfric\textbeltl  
 20688 \let\tail\textrtail  
 20689 \let\lz\textlyoghlig  
 20690 \let\invm\textturnm  
 20691 \let\rotm\textturnm  
 20692 \let\legm\textturnmleg  
 20693 \let\labdentainas\textltailm  
 20694 \let\emgma\textltailm  
 20695 \let\nj\textltailn  
 20696 \let\enya\textltailn  
 20697 \let\tain\textrtainn  
 20698 \let\closedniomega\textcloseomega  
 20699 \let\varomega\textcloseomega  
 20700 \let\invr\textturnr  
 20701 \let\rotr\textturnr  
 20702 \let\invlegr\textturnlonglegr  
 20703 \let\tailinvr\textturnrrtail  
 20704 \let\legr\textlonglegr  
 20705 \let\tair\textrtair  
 20706 \let\flapr\textfishhookr  
 20707 \let\flap\textfishhookr  
 20708 \let\tails\textrtails  
 20709 \let\curlyesh\textctesh  
 20710 \let\clickt\textturnt  
 20711 \let\tailt\textrtailt  
 20712 \let\ubar\textbaru  
 20713 \let\rotOmega\textniupsilon  
 20714 \let\invv\textturnv  
 20715 \let\pwedge\textturnv  
 20716 \let\invw\textturnw  
 20717 \let\rotw\textturnw  
 20718 \let\invy\textturny  
 20719 \let\roty\textturny  
 20720 \let\tailz\textrtailz  
 20721 \let\curlyz\textctz  
 20722 \let\curlyyogh\textctyogh  
 20723 \let\ejective\textglotstop  
 20724 \let\glottal\textglotstop  
 20725 \let\reveject\textrevglotstop  
 20726 \let\clickc\textstretchc  
 20727 \let\textstretchcvar\textstretchc  
 20728 \let\clickb\textbullseye  
 20729 \let\textObullseye\textbullseye  
 20730 \let\textctjvar\textctj  
 20731 \let\textturnsck\textturnk  
 20732 \let\dz\textdzlig  
 20733 \let\tesh\textteshlig  
 20734 \let\digamma\textdigammagreek  
 20735 \let\hardsign\cyrrhdsn  
 20736 \let\softsign\cyrsftsn  
 20737 \let\hebsin\hebshin  
 20738 \let\textsck\textPUscck

20739 `\let\textscm\textPUscm`  
20740 `\let\textscp\textPUscp`  
20741 `\let\textrevscr\textPUrevscr`  
20742 `\let\textrhooka\textPURhooka`  
20743 `\let\textrhooke\textPURhooke`  
20744 `\let\textrhookepsilon\textPURhookepsilon`  
20745 `\let\texthookopeno\textPURhookopeno`  
20746 `\let\textdoublevertline\textbardbl`  
20747 `\let\dag\textdagger`  
20748 `\let\ddagger\textdaggerdbl`  
20749 `\let\ddag\textdaggerdbl`  
20750 `\let\mathellipsis\textellipsis`  
20751 `\let\EurDig\texteuo`  
20752 `\let\EURdig\texteuo`  
20753 `\let\EurHv\texteuo`  
20754 `\let\EURhv\texteuo`  
20755 `\let\EurCr\texteuo`  
20756 `\let\EURcr\texteuo`  
20757 `\let\EurTm\texteuo`  
20758 `\let\EURtm\texteuo`  
20759 `\let\Eur\texteuo`  
20760 `\let\Denarius\textDeleatur`  
20761 `\let\agemO\textmho`  
20762 `\let\EstimatedSign\textestimated`  
20763 `\let\Ecommerce\textestimated`  
20764 `\let\bindnasrepma\textinvamp`  
20765 `\let\parr\textinvamp`  
20766 `\let\MVRightArrow\textrightarrow`  
20767 `\let\MVRightarrow\textrightarrow`  
20768 `\let\MVArrowDown\textdownarrow`  
20769 `\let\Force\textdownarrow`  
20770 `\let\textglobrise\textnearrow`  
20771 `\let\textglobfall\textsearrow`  
20772 `\let\Lightning\textlightning`  
20773 `\let\Conclusion\textrightarrow`  
20774 `\let\dashedleftarrow\textdashleftarrow`  
20775 `\let\dashedrightarrow\textdashrightarrow`  
20776 `\let\varnothing\textemptyset`  
20777 `\let\owns\textni`  
20778 `\let\notni\textnotowner`  
20779 `\let\varprop\textpropto`  
20780 `\let\varangle\textsphericalangle`  
20781 `\let\Anglesign\textsphericalangle`  
20782 `\let\AngleSign\textsphericalangle`  
20783 `\let\notdivides\textnmid`  
20784 `\let\varowedge\textowedge`  
20785 `\let\varovee\textovee`  
20786 `\let\varint\textint`  
20787 `\let\varoint\textoint`  
20788 `\let\downtherefore\textbecause`  
20789 `\let\textdotdiv\textdotminus`  
20790 `\let\AC\textsim`  
20791 `\let\wreath\textwr`  
20792 `\let\nthickapprox\textnapprox`

20793 \let\VHF\texttriplesim  
20794 \let\notasymp\textnasymp  
20795 \let\Doteq\textdoteqdot  
20796 \let\corresponds\texthateq  
20797 \let\Corresponds\texthateq  
20798 \let\nequal\textneq  
20799 \let\Congruent\textequiv  
20800 \let\NotCongruent\textnequiv  
20801 \let\notequiv\textnequiv  
20802 \let\LessOrEqual\textleq  
20803 \let\LargerOrEqual\textgeq  
20804 \let\apprle\textlessim  
20805 \let\apprge\textgtrsim  
20806 \let\varoplus\textoplus  
20807 \let\varominus\textominus  
20808 \let\varotimes\textotimes  
20809 \let\varoslash\textoslash  
20810 \let\varodot\textodot  
20811 \let\ocirc\textcircledcirc  
20812 \let\varocircle\textcircledcirc  
20813 \let\varoast\textcircledast  
20814 \let\oasterisk\textcircledast  
20815 \let\rightvdash\textvdash  
20816 \let\leftvdash\textdashv  
20817 \let\leftvdash\textndashv  
20818 \let\downvdash\texttop  
20819 \let\upvdash\textbot  
20820 \let\nperp\textnupvdash  
20821 \let\models\textvDash  
20822 \let\rightmodels\textvDash  
20823 \let\rightVdash\textVdash  
20824 \let\rightModels\textVDash  
20825 \let\rightvdash\textnvdash  
20826 \let\rightmodels\textnvDash  
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20848 \let\varparallelinv\textbbslash  
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20854 \let\APLup\textbigtriangleup  
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20959 \begin{document}
20960 \end{document}
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