

# 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  $\LaTeX$  definition and compares this definition with the current meaning of that command.

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```



```

82 \let\HyC@org@robustoptcmd\HyC@noValue
83 \HyC@next
84 }

```

`\HyC@noValue`

```

85 \def\HyC@noValue{NoValue}

```

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

```

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

```

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

```

90 \newtoks\HyC@Toks

```

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

```

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

```

`\HyC@nc@opt` This macro scans the first optional argument of a `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.

`\MakeUppercaseUnsupportedInPdfStrings`  
`\MakeLowercaseUnsupportedInPdfStrings`

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

```

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@unicodedefalse
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   \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 information 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 11011yy 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\@capytype}}%
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{hpdtex}%
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{hpdtex}%
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\cyrery\cyr.}%
```

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

```
3072 % \def\equationautorefname{%
3073 % \cyr\cyrv\cyrery\cyr\cyrz\cyr\cyrn\cyr\cyr
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\cyri.}%
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\text-
3166     tomega\textsigma\texteta}%
3167   \def\footnoteautorefname{\textupsilon\textpi\textomicron\textsigma\text-
3168     eta\textmu\textepsilon\acconos\textiota\textomega\textsigma\texteta}%
3169   \def\itemautorefname{\textalpha\textnu\texttau\textiota\textkappa\textep-
3170     silon\acconos\textiota\textmu\textepsilon\textnu\textomicron}%
3171   \def\figureautorefname{\textSigma\textchi\acconos\texteta\textmu\textal-
3172     pha}%
3173   \def\tableautorefname{\textPi\acconos\textiota\textnu\textalpha\textkappa\text-
3174     talpha}%
3175   \def\partautorefname{\textMu\acconos\textepsilon\textrho\textomicron\textvar-
3176     sigma}%
3177   \def\appendixautorefname{\textPi\textalpha\textrho\acconos\textalpha\text-
3178     rho\texttau\texteta\textmu\textalpha}%
3179   \def\chapterautorefname{\textkappa\textepsilon\textphi\acconos\textal-
3180     pha\textlambda\textalpha\textiota\textomicron}%
3181   \def\sectionautorefname{\textepsilon\textnu\acconos\textomicron\texttau\text-
3182     eta\texttau\textalpha}%
3183   \def\subsectionautorefname{\textupsilon\textpi\textomicron\textepsilon\textnu\ac-
3184     conos\textomicron\texttau\texteta\texttau\textalpha}%
3185   \def\subsubsectionautorefname{\textupsilon\textpi\textomicron-\textupsilon\textpi\textomicron\text-
3186   \def\paragraphautorefname{\textpi\textalpha\textrho\acconos\textalpha\textgamma\text-

```

```

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}{pdfa}[true]{%
3968     \Hy@boolkey{pdfa}{#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{hdviwind}%
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

```

for grouping consistency:

```

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}{$3}{$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@activestruel
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\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\%
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}{#2}{#3}{\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}{ExclFKKey}{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}{ExclFKKey}%
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\Fld@Hy@DefFormAction{\def\Fld@action}
5817 \def\Fld@enc@html{html}
5818 \define@key{Form}{encoding}{%
5819   \def\Fld@tempa{#1}%
5820   \ifx\Fld@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\Fld@temp{#1}}%
5833   \@ifundefined{Form@method@\Hy@temp}{%
5834     \@onelevel@sanitize\Fld@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{onenter}
6080 \Hy@temp{onexit}

6081 \let\Fld@calculate@sortkey\@empty
6082 \define@key{Field}{calculatesortkey}[1]{%
6083   \def\Fld@calculate@sortkey{#1}%
6084 }

6085 \ifHy@texht
6086   \def\Hy@temp#1{%
6087     \define@key{Field}{#1}{%
6088       \Field@addtoks{#1}{##1}%
6089     }%
6090   }%
6091 \else
6092   \def\Hy@temp#1{%
6093     \define@key{Field}{#1}{%
6094       \Hy@WarnHTMLFieldOption{#1}%
6095     }%
6096   }%
6097 \fi
6098 \Hy@temp{ondblclick}
6099 \Hy@temp{onmousedown}
6100 \Hy@temp{onmouseup}
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{pdfprintsclating}%
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 </package>

```

## 23 Package nohyperref

This package is introduced by Sebastian Rahtz.

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

Some low-level commands:

```

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{#3}%
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 \AtBeginShipout{%
6447   \Hy@EveryPageHook
6448   \ifx\Hy@EveryPageBoxHook\@empty
```

```

6449 \else
6450 \setbox\AtBeginShipoutBox=\vbox{%
6451 \offinterlineskip
6452 \Hy@EveryPageBoxHook
6453 \box\AtBeginShipoutBox
6454 }%
6455 \fi
6456 }
6457 \Hy@iffileloaded{hpdftex.def}{-%
6458 \AtBeginShipout{%
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 }%

```

Package `atveryend` is used to get behind the final `\clearpage` and to avoid a `\clearpage` in `\AtEndDocument`. Then the PDF catalog entry for `\PageLabels` is set.

```

6692 \RequirePackage{atveryend}[2009/12/07]%
6693 \AtVeryEndDocument{%
6694 \HyPL@SetPageLabels
6695 }%

6696 \fi
6697 </pdfTeX | vtx>

```

### 27.1.2 xetex

```

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

```

```

6702 \else
6703 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
6704 \fi
6705 \define@key{Hyp}{unicode}[true]{%
6706 \Hy@boolkey{unicode}{#1}%
6707 \ifHy@unicode
6708 \else
6709 \Hy@Warning{%
6710 XeTeX driver only supports `unicode=true'. Ignoring\MessageBreak
6711 option setting `unicode=false'%
6712 }%
6713 \Hy@unicodetrue
6714 \fi
6715 }
6716 \define@key{Hyp}{pdfencoding}{%
6717 \edef\HyPsd@temp{#1}%
6718 \ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
6719 \let\HyPsd@pdfencoding\HyPsd@temp
6720 \else
6721 \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
6722 \let\HyPsd@pdfencoding\HyPsd@temp
6723 \else
6724 \Hy@Warning{%
6725 XeTeX driver only supports\MessageBreak
6726 `pdfencoding=unicode|auto'. Ignoring option\MessageBreak
6727 setting `pdfencoding=\HyPsd@temp'%
6728 }%
6729 \fi
6730 \fi
6731 }
6732 \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:

```

6733 \def\setpdfinkmargin#1{%
6734 \begingroup
6735 \setlength{\dimen@}{#1}%
6736 \special{dvipdfmx:config g \strip@pt\dimen@}%
6737 \endgroup}
6738 </xetex>

```

set the pdf version

```

6739 < *dvipdfm | xetex>
6740 \special{pdf:majorversion \Hy@pdf@majorversion}
6741 \special{pdf:minorversion \Hy@pdf@minorversion}
6742 </dvipdfm | xetex>

```

### 27.1.3 pdfmarkbase, dvipdfm, xetex

```

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

```

```

6750     {%
6751     userdict /?pdfmark systemdict /exec get put%
6752     }{%
6753     userdict /?pdfmark systemdict /pop get put %
6754     userdict /pdfmark systemdict /cleartomark get put%
6755     }%
6756     ifelse%
6757     }%
6758     \the\toks@
6759     }%
6760 }%
6761 \endgroup
6762 \pdfmarkbase)

```

\Hy@PutCatalog

```

6763 \dvi\pdfm | xetex)\def\Hy@PutCatalog#1{\@pdfm@mark{docview <<#1>>}}
6764 (*pdfmarkbase)
6765 \def\Hy@PutCatalog#1{%
6766 \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} <<#1>>}}%
6767 }
6768 \pdfmarkbase)

6769 (*pdfmarkbase | dvi\pdfm | xetex)
6770 \ifHy@pdfpagelabels

```

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

```

6771 \def\HyPL@StorePageLabel#1{%
6772 \if@filesw
6773 \beginpage
6774 \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
6775 \immediate\write\@mainaux{%
6776 \string\HyPL@Entry{\Hy@tempa}%
6777 }%
6778 \endpage
6779 \fi
6780 }%

```

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.

```

6781 \Hy@AtBeginDocument{%
6782 \if@filesw
6783 \immediate\write\@mainaux{%
6784 \string\providecommand\string*\string\HyPL@Entry[1]{}%
6785 }%
6786 \fi
6787 \ifx\HyPL@Labels\@empty
6788 \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
6789 \else
6790 \HyPL@SetPageLabels
6791 \fi
6792 \let\HyPL@Entry\@gobble
6793 }%

```

`\HyPL@Entry`

```
6794 \def\HyPL@Entry#1{%
6795   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
6796     \HyPL@Labels
6797     #1%
6798   }%
6799 }%

6800 \fi
6801 </pdfmarkbase | dvipdfm | xetex>
6802 <*packageEnd>

6803 \ifx\MaybeStopEarly\relax
6804 \else
6805   \Hy@stoppedearlytrue
6806   \expandafter\MaybeStopEarly
6807 \fi
6808 \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

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



```

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

```

Thanks to Greta Meyer (gbd@pop.cwru.edu) for making me realize that enumeration starts at 0 for every list! But `\item` occurs inside `\trivlist`, so check if its a real `\item` before incrementing counters.

```

6845 \let\H@item\item
6846 \newcounter{Item}
6847 \def\theHItem{\arabic{Item}}
6848 \def\item{%
6849 \@hyper@itemfalse
6850 \if@nmbrrlist\@hyper@itemtrue\fi
6851 \H@item
6852 }
6853 \providecommand\theHenumi {\theHItem}
6854 \providecommand\theHenumii {\theHItem}
6855 \providecommand\theHenumiii {\theHItem}
6856 \providecommand\theHenumiv {\theHItem}
6857 \providecommand\theHHfootnote {\arabic{Hfootnote}}
6858 \providecommand\theHmpfootnote{\arabic{mpfootnote}}
6859 \@ifundefined{theHHmpfootnote}{%
6860 \let\theHHmpfootnote\theHHfootnote
6861 }{}

```

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.

```

6862 \let\H@refstepcounter\refstepcounter
6863 \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`

```

6864 \newif\if@hyper@item
6865 \newif\if@skiphyperref
6866 \@hyper@itemfalse
6867 \@skiphyperreffalse
6868 \ExplSyntaxOn
6869 \def\refstepcounter#1{%
6870   \legacy_if:nF {Hy@pdfstring}
6871   {
6872     \H@refstepcounter{#1}%
6873     \bool_lazy_and:nnT
6874     { \l__hyp_target_create_bool }
6875     { ! \legacy_if_p:n{@skiphyperref} }
6876     {
6877       \legacy_if:nTF {@hyper@item}
6878       {
6879         \stepcounter{Item}%
6880         \hyper@refstepcounter{Item}%
6881         \@hyper@itemfalse
6882       }
6883       {
6884         \hyper@refstepcounter{#1}%
6885       }
6886     }
6887   }
6888 }
6889 \ExplSyntaxOff
6890 \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.

```

6891 \newif\ifmeasuring@\measuring@false
6892 \newcommand\Hy@ifnotmeasuring[1]{#1}
6893 \AddToHook{package/amsmath/after}
6894 {
6895   \renewcommand\Hy@ifnotmeasuring[1]
6896   {\ifmeasuring@ \else #1\fi}
6897 }

```

`\hyper@refstepcounter`

```

6898 \def\hyper@refstepcounter#1{%
6899   \HyCnt@ProvideTheHCounter{#1}%
6900   \hyper@makecurrent{#1}%
6901   \Hy@ifnotmeasuring
6902   {\Hy@raisedlink{%
6903     \hyper@anchorstart{\@currentHref}\hyper@anchorend
6904   }}%
6905 }

```

`\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 L<sup>A</sup>T<sub>E</sub>X', substring search `\in@` can be used.

```

6906 \def\HyCnt@ProvideTheHCounter#1{%
6907   \@ifundefined{theH#1}{%
6908     \expandafter\def\csname theH#1\endcsname{}%
6909     \def\Hy@temp{\@elt{#1}}%
6910     \@onelevel@sanitize\Hy@temp
6911     \let\HyOrg@elt\@elt
6912     \edef\@elt{%
6913       \noexpand\HyCnt@LookForParentCounter
6914       \expandafter\noexpand\csname theH#1\endcsname
6915     }%
6916     \cl@@ckpt
6917     \let\@elt\HyOrg@elt
6918     \expandafter
6919     \Hy@LocalAppendToMacro\csname theH#1\expandafter\endcsname
6920     \expandafter{%
6921       \expandafter\@arabic\csname c@#1\endcsname
6922     }%
6923   }%
6924 }

```

`\Hy@LookForParentCounter`

```

6925 \def\HyCnt@LookForParentCounter#1#2{%
6926   \expandafter\let\expandafter\Hy@temp@A\csname cl@#2\endcsname
6927   \@ifundefined{cl@#2}{%
6928     }{%
6929     \@onelevel@sanitize\Hy@temp@A
6930     \edef\Hy@temp@A{%
6931       \noexpand\in@{\Hy@temp}{\Hy@temp@A}%
6932     }\Hy@temp@A
6933     \ifin@
6934       \@ifundefined{theH#2}{%
6935         \expandafter\Hy@LocalAppendToMacro\expandafter#1%
6936         \expandafter{%
6937           \expandafter\@arabic\csname c@#2\endcsname.%
6938         }%
6939       }{%
6940         \expandafter\Hy@LocalAppendToMacro\expandafter#1%
6941         \expandafter{%
6942           \csname theH#2\endcsname.%
6943         }%
6944       }%
6945     \fi
6946   }%
6947 }

```

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`.

```

6948 \begingroup\expandafter\expandafter\expandafter\endgroup
6949 \expandafter\ifx\csname chapter\endcsname\relax
6950 \def\Hy@chapterstring{section}%
6951 \else
6952 \def\Hy@chapterstring{chapter}%
6953 \fi
6954 \def\Hy@appendixstring{appendix}
6955 \def\Hy@chapapp{\Hy@chapterstring}
6956 \@ifundefined{appendix}{%
6957 }{%
6958 \let\HyOrg@appendix\appendix
6959 \def\Hy@AlphNoErr#1{%
6960 \ifnum\value{#1}>26 %
6961 \Alph\number\value{#1}%
6962 \else
6963 \ifnum\value{#1}<1 %
6964 \Alph\number\value{#1}%
6965 \else
6966 \Alph{#1}%
6967 \fi
6968 \fi
6969 }%
6970 \def\appendix{%
6971 \@ifundefined{chapter}{%
6972 \gdef\theHsection{\Hy@AlphNoErr{section}}%
6973 }{%
6974 \gdef\theHchapter{\Hy@AlphNoErr{chapter}}%
6975 }%
6976 \xdef\Hy@chapapp{\Hy@appendixstring}%
6977 \HyOrg@appendix
6978 }%
6979 }

```

`\Hy@Test@alph`

```

6980 \def\Hy@Test@alph#1{%
6981 \ifcase#1\or
6982 a\or b\or c\or d\or e\or f\or g\or h\or i\or j\or
6983 k\or l\or m\or n\or o\or p\or q\or r\or s\or t\or
6984 u\or v\or w\or x\or y\or z%
6985 \else
6986 \@ctrerr
6987 \fi
6988 }

```

`\Hy@Test@Alph`

```

6989 \def\Hy@Test@Alph#1{%
6990 \ifcase#1\or
6991 A\or B\or C\or D\or E\or F\or G\or H\or I\or J\or
6992 K\or L\or M\or N\or O\or P\or Q\or R\or S\or T\or
6993 U\or V\or W\or X\or Y\or Z%
6994 \else
6995 \@ctrerr

```

```
6996 \fi
6997 }
```

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

```
6998 \NewHook{__hyp/target/setname }
6999 \define@key{Hyp}{next-anchor}{%
7000   \AddToHookNext{__hyp/target/setname}%
7001   {\Hy@MakeCurrentHref{#1}}%
7002 }
```

`\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.

```
7003 \def\hyper@makecurrent#1{%
7004   \begingroup
7005   \Hy@safe@activetrue
7006   \edef\Hy@param{#1}%
7007   \ifx\Hy@param\Hy@chapterstring
7008     \let\Hy@param\Hy@chapapp
7009   \fi
7010   \ifHy@hypertextnames
7011     \let\@number\@firstofone
7012     \def\@fnsymbol##1{\fnsymbol\number##1}%
7013     \def\@arabic##1{\number##1}%
7014     \ifx\@alph\Hy@Test@alph
7015       \else
7016         \def\@alph{alph\number}%
7017       \fi
7018     \ifx\@Alph\Hy@Test@Alph
7019       \else
7020         \def\@Alph{Alph\number}%
7021       \fi
7022     \ifHy@naturalnames
7023       \let\textlatin\@firstofone
7024       \xdef\HyperGlobalCurrentHref{\csname the#1\endcsname}%
7025     \else
7026       \xdef\HyperGlobalCurrentHref{%
7027         \csname
7028           the%
7029           \expandafter\ifx\csname theH#1\endcsname\relax\else H\fi
7030           #1%
7031         \endcsname
7032       }%
7033     \fi
7034     \xdef\HyperGlobalCurrentHref{%
7035       \Hy@param.\expandafter\strip@prefix\meaning\HyperGlobalCurrentHref
7036     }%
7037     \else
7038       \Hy@GlobalStepCount\Hy@linkcounter
7039       \xdef\HyperGlobalCurrentHref{\Hy@param.\the\Hy@linkcounter}%
7040     \fi
7041   \endgroup
7042   \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
7043   \ifHy@localanchername
```

```

7044 \let\@currentHref\HyperLocalCurrentHref
7045 \else
7046 \global\let\@currentHref\HyperGlobalCurrentHref
7047 \fi
7048 \UseHook{__hyp/target/setname}%
7049 }

```

`\Hy@MakeCurrentHref`

```

7050 \def\Hy@MakeCurrentHref#1{%
7051 \edef\HyperLocalCurrentHref{#1}%
7052 \@onelevel@sanitize\HyperLocalCurrentHref
7053 \global\let\HyperGlobalCurrentHref\HyperLocalCurrentHref
7054 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
7055 \ifHy@localanchorname
7056 \let\@currentHref\HyperLocalCurrentHref
7057 \else
7058 \global\let\@currentHref\HyperGlobalCurrentHref
7059 \fi
7060 }

```

`\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.

```

7061 \def\Hy@MakeCurrentHrefAuto#1{%
7062 \Hy@GlobalStepCount\Hy@linkcounter
7063 \Hy@MakeCurrentHref{#1.\the\Hy@linkcounter}%
7064 \UseHook{__hyp/target/setname}}

```

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

```

7065 \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.

```

7066 \def\hypergetref#1{\getrefbykeydefault{#1}{}}{??}}
7067 \def\hypergetpageref#1{\getrefbykeydefault{#1}{page}{0}}

```

## 30 Package `varwidth` support

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

```

7068 \@if@t@r\fmtversion{2023-11-01}
7069 {
7070 \AddToHook{package/varwidth/after}
7071 {
7072 \NewSocketPlug{hyp/raisedlink}{varwidth}{\@vwid@wrap{#1}}
7073 \appto\@vwid@setup{\AssignSocketPlug{hyp/raisedlink}{varwidth}}
7074 }
7075 }{}

```

## 31 Package titlesec and titletoc support

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

Package titlesec support:

```
7076 \@ifpackageloaded{titlesec}{%
7077   \def\ttl@Hy@steplink#1{%
7078     \Hy@MakeCurrentHrefAuto{#1*}%
7079     \edef\ttl@Hy@saveanchor{%
7080       \noexpand\Hy@raisedlink{%
7081         \noexpand\hyper@anchorstart{\@currentHref}%
7082         \noexpand\hyper@anchorend
7083         \def\noexpand\ttl@Hy@SavedCurrentHref{\@currentHref}%
7084         \noexpand\ttl@Hy@PatchSaveWrite
7085       }%
7086     }%
7087   }%
7088   \def\ttl@Hy@PatchSaveWrite{%
7089     \begingroup
7090     \toks@\expandafter{\ttl@savewrite}%
7091     \edef\x{\endgroup
7092       \def\noexpand\ttl@savewrite{%
7093         \let\noexpand\@currentHref
7094           \noexpand\ttl@Hy@SavedCurrentHref
7095         \the\toks@
7096       }%
7097     }%
7098     \x
7099   }%
7100   \def\ttl@Hy@refstepcounter#1{%
7101     \let\ttl@b\Hy@raisedlink
7102     \def\Hy@raisedlink##1{%
7103       \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
7104     }%
7105     \refstepcounter{#1}%
7106     \let\Hy@raisedlink\ttl@b
7107   }%
7108 }{}
```

## 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

```
7109 \@ifpackageloaded{longtable}{%
7110   \@ifundefined{hyper@nopatch@longtable}{%
7111     \begingroup
7112     \def\y{\LT@array}%
7113     \@ifundefined{scr@LT@array}{%
7114       \@ifundefined{adl@LT@array}{\def\y{\adl@LT@array}}%
7115     }{\def\y{\scr@LT@array}}%

```

```

7116 \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
7117 \expandafter\endgroup
7118 \expandafter\def\y[##1]##2{%
7119 \H@refstepcounter{#1}%
7120 \hyper@makecurrent{table}%
7121 \let\Hy@LT@currentHref\@currentHref
7122 #2\@sharp###4%
7123 }%
7124 }%
7125 \expandafter\expandafter\expandafter\x\y[##1][##2]\@nil
Patch of \LT@start: add anchor before first line after \vskip\LTpre
7126 \begingroup
7127 \def\x#1\ifvoid\LT@foot#2\fi#3\@nil{%
7128 \endgroup
7129 \def\LT@start{%
7130 #1%
7131 \ifvoid\LT@foot#2\fi
7132 \let\@currentHref\Hy@LT@currentHref
7133 \Hy@raisedlink{%
7134 \hyper@anchorstart{\@currentHref}\hyper@anchorend
7135 }%
7136 #3%
7137 }%
7138 }%
7139 \expandafter\x\LT@start\@nil
7140 }{}
7141 }{}

```

### 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`

```

7142 \let\new@refstepcounter\refstepcounter
7143 \let\H@equation\equation
7144 \let\H@endequation\endequation
7145 \@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.

```

7146 \@ifpackageloaded{amsmath}{}{%
7147 \def\equation{%
7148 \let\refstepcounter\H@refstepcounter
7149 \H@equation
7150 \hyper@makecurrent{equation}%

```



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

```

7151   \mathopen{%
7152     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}}%
7153   }%
7154   \let\refstepcounter\new@refstepcounter
7155 }%
7156 \def\endequation{%
7157   \ifx\Hy@raisedlink\@empty
7158     \hyper@anchorend
7159   \else
7160     \mathclose{\Hy@raisedlink{\hyper@anchorend}}}%
7161   \fi
7162   \H@endequation
7163 }%
7164 }
7165 }{}

```

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.

```

7166 \newif\if@eqnstar
7167 \@eqnstarfalse
7168 \let\H@eqnarray\eqnarray
7169 \let\H@endeqnarray\endeqnarray
7170 \@ifundefined{hyper@nopatch@mathenv}{%
7171   \def\eqnarray{%
7172     \let\Hy@reserved@a\relax
7173     \def\@currentHref{}%
7174     \H@eqnarray
7175     \if@eqnstar
7176     \else
7177       \ifx\\\@currentHref\\%
7178       \else
7179         \hyper@makecurrent{equation}%
7180         \mathopen{%
7181           \Hy@raisedlink{%
7182             \hyper@anchorstart{\@currentHref}\hyper@anchorend
7183           }%
7184         }%
7185       \fi
7186     \fi
7187   }
7188   \def\endeqnarray{%
7189     \H@endeqnarray
7190   }
7191 }{}

```

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.

```

7192 \@namedef{eqnarray*}{%
7193   \protected\def\@eqnrcr{\nonumber\@seqnrcr}\@eqnstartrue\eqnarray

```

```

7194 }
7195 \@namedef{endeqnarray*}{%
7196   \nonumber\endeqnarray\@eqnstarfalse
7197 }

```

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

```

7198 \@ifundefined{subeqnarray}{}{%
7199   \let\H@subeqnarray\subeqnarray
7200   \let\H@endsubeqnarray\endsubeqnarray
7201   \def\subeqnarray{%
7202     \let\Hy@reserved@a\relax
7203     \H@subeqnarray
7204     \hyper@makecurrent{equation}%
7205     \hyper@anchorstart{\@currentHref}{\hyper@anchorend
7206   }%
7207   \def\endsubeqnarray{%
7208     \H@endsubeqnarray
7209   }%
7210   \providecommand\theHsubequation{\theHequation\alph{subequation}}%
7211 }

```

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

```

7212 \def\make@stripped@name#1{%
7213   \begingroup
7214     \escapechar\m@ne
7215     \global\let\newname\@empty
7216     \protected@edef\Hy@tempa{#1}%
7217     \edef\@tempb{%
7218       \noexpand\@tfor\noexpand\Hy@tempa:=%
7219       \expandafter\strip@prefix\meaning\Hy@tempa
7220     }%
7221     \@tempb\do{%
7222       \if\Hy@tempa\else
7223       \if\Hy@tempa\else
7224         \xdef\newname{\newname\Hy@tempa}%
7225       \fi
7226     \fi
7227   }%
7228   \endgroup
7229 }

```

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.

```

7230 \AddToHook{cmd/subequations/before}
7231 {%
7232   \stepcounter{equation}%
7233   \protected@edef\theHparentequation{\theHequation}%
7234   \addtocounter{equation}{-1}%
7235 }
7236
7237 \AddToHook{cmd/subequations/after}
7238 {%

```

```

7239 \def\theHequation{\theHparentequation\alph{equation}}%
7240 \ignorespaces
7241 }

```

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

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

The patch will not apply to `cleveref`, this means that with `cleveref` there can be a page break between target and theorem but beside this it hopefully 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).

```

7242 \newcommand\Hy@theorem@refstepcounter[1]
7243 {%
7244 \H@refstepcounter{#1}%
7245 \hyper@makecurrent{#1}%
7246 \global\let\Hy@dth@currentHref\@currentHref
7247 \Hy@theorem@makelinktarget{\Hy@dth@currentHref}%
7248 }
7249 \newcommand\Hy@theorem@makelinktarget[1]

```

```

7250 {
7251   \AddToHookNext{cmd/item/before}
7252   {\AddToHookNext{para/begin}
7253     {\let\Hy@tempa\@currentHref
7254       \MakeLinkTarget*{#1}% \Hy@dth@currentHref
7255       \global\let\@currentHref\Hy@tempa
7256     }%
7257   }%
7258 }

```

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.

```

7259 \AddToHook{begindocument}
7260 {%
7261   \@ifundefined{deferred@thm@head}{}
7262   {%
7263     \let\Hy@deferred@thm@head\deferred@thm@head
7264     \def\deferred@thm@head#1{\Hy@deferred@thm@head{#1}}%
7265     \renewcommand\Hy@theorem@makelinktarget[1]
7266     {%
7267       \AddToHookNext{cmd/deferred@thm@head/before}
7268       {\AddToHookNext{para/begin}
7269         {\let\Hy@tempa\@currentHref
7270           \MakeLinkTarget*{#1}%
7271           \global\let\@currentHref\Hy@tempa
7272         }%
7273       }%
7274     }%
7275   }%
7276 }
7277 \@ifundefined{hyper@nopatch@thm}{%
7278 \AtBeginDocument{%
7279 \ifpackageloaded{cleveref}
7280 {\AddToHook{cmd/@thm/before}{\ifhmode\unskip\fi}}
7281 {%
7282 \ifpatchable\@thm{\refstepcounter}
7283 {\patchcmd\@thm{\refstepcounter}{\Hy@theorem@refstepcounter}{}{}}
7284 {}%
7285 }}}{}

```

## 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.

```

7286 \@ifundefined{hyper@nopatch@footnote}{%
7287 \ifHy@hyperfootnotes
7288 \newcounter{Hfootnote}%
7289 \let\H@@footnotetext\@footnotetext
7290 \let\H@@footnotemark\@footnotemark

```

```

7291 \def\@xfootnotenext[#1]{%
7292   \begingroup
7293   \csname c@\@mpfn\endcsname #1\relax
7294   \unrestored@protected@xdef\@thefnmark{\thempfn}%
7295   \endgroup
7296   \ifx\@footnotetext\@mpfootnotetext
7297     \expandafter\H@\@mpfootnotetext
7298   \else
7299     \expandafter\H@\@footnotetext
7300   \fi
7301 }%
7302 \def\@xfootnotemark[#1]{%
7303   \begingroup
7304   \c@footnote #1\relax
7305   \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7306   \endgroup
7307   \H@\@footnotemark
7308 }%
7309 \let\H@\@mpfootnotetext\@mpfootnotetext
7310 \long\def\@mpfootnotetext#1{%
7311   \H@\@mpfootnotetext{%
7312     \ifHy@nesting
7313       \expandafter\@firstoftwo
7314     \else
7315       \expandafter\@secondoftwo
7316     \fi
7317   }%
7318   \expandafter\hyper@@anchor\expandafter{%
7319     \Hy@footnote@currentHref
7320   }\ignorespaces #1}%
7321 }{%
7322   \Hy@raisedlink{%
7323     \expandafter\hyper@@anchor\expandafter{%
7324       \Hy@footnote@currentHref
7325     }\relax}%
7326   }\ignorespaces #1%
7327 }%
7328 }%
7329 }%
7330 \long\def\@footnotetext#1{%
7331   \H@\@footnotetext{%
7332     \ifHy@nesting
7333       \expandafter\@firstoftwo
7334     \else
7335       \expandafter\@secondoftwo
7336     \fi
7337   }%
7338   \expandafter\hyper@@anchor\expandafter{%
7339     \Hy@footnote@currentHref
7340   }\ignorespaces #1}%
7341 }{%
7342   \Hy@raisedlink{%
7343     \expandafter\hyper@@anchor\expandafter{%
7344       \Hy@footnote@currentHref

```

```

7345     }{\relax}%
7346     }%
7347     \let\@currentHref\Hy@footnote@currentHref
7348     \let\@currentlabelname\@empty
7349     \ignorespaces #1%
7350     }%
7351     }%
7352     }%

```

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.

```

7353 \def\@footnotemark{%
7354 \leavevmode
7355 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7356 \stepcounter{Hfootnote}%
7357 \global\let\Hy@saved@currentHref\@currentHref
7358 \hyper@makecurrent{Hfootnote}%
7359 \global\let\Hy@footnote@currentHref\@currentHref
7360 \global\let\@currentHref\Hy@saved@currentHref
7361 \hyper@linkstart{link}{\Hy@footnote@currentHref}%
7362 \@makefnmark
7363 \hyper@linkend
7364 \ifhmode\spacefactor\@x@sf\fi
7365 \relax
7366 }%

```

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

```

7367 \@ifpackageloaded{tabularx}{%
7368 \let\HyOrg@TX@endtabularx\TX@endtabularx
7369 \def\Hy@tabularx@hook{%
7370 \let\@footnotetext\H@@footnotetext
7371 \let\@footnotemark\H@@footnotemark
7372 \let\@mpfootnotetext\H@@mpfootnotetext
7373 }%
7374 \begingroup
7375 \toks@\expandafter{\TX@endtabularx}%
7376 \xdef\Hy@gtemp{%
7377 \noexpand\Hy@tabularx@hook
7378 \the\toks@
7379 }%
7380 \endgroup
7381 \let\TX@endtabularx\Hy@gtemp
7382 }{}%

```

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

```

7383 \@ifpackageloaded{longtable}{%
7384 \CheckCommand{\LT@p@ftntext}[1]{%
7385 \edef\@tempa{%

```

```

7386     \the\LT@p@ftn
7387     \noexpand\footnotetext[\the\c@footnote]%
7388   }%
7389   \global\LT@p@ftn\expandafter{\@tempa{#1}}%
7390 }%
7391 \long\def\LT@p@ftntext#1{%
7392   \edef\@tempa{%
7393     \the\LT@p@ftn
7394     \begingroup
7395     \noexpand\c@footnote=\the\c@footnote\relax
7396     \noexpand\protected@xdef\noexpand\@thefnmark{%
7397       \noexpand\thempfn
7398     }%
7399     \noexpand\Hy@LT@footnotetext{%
7400       \Hy@footnote@currentHref
7401     }%
7402   }%
7403   \global\LT@p@ftn\expandafter{%
7404     \@tempa{#1}%
7405   \endgroup
7406   }%
7407 }%
7408 \long\def\Hy@LT@footnotetext#1#2{%
7409   \H@@footnotetext{%
7410     \ifHy@nesting
7411       \hyper@@anchor{#1}{#2}%
7412     \else
7413       \Hy@raisedlink{%
7414         \hyper@@anchor{#1}{\relax}%
7415       }%
7416     \def\@currentHref{#1}%
7417     \let\@currentlabelname\@empty
7418     #2%
7419   \fi
7420   }%
7421 }%
7422 }-}%

```

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

```

7423 \@ifpackageloaded{fancyvrb}{%
7424   \def\V@@footnotetext{%
7425     \insert\footins\bgroup
7426     \csname reset@font\endcsname
7427     \footnotesize
7428     \interlinepenalty\interfootnotelinepenalty
7429     \splittopskip\footnotesep
7430     \splitmaxdepth\dp\strutbox
7431     \floatingpenalty \@MM
7432     \hsize\columnwidth
7433     \@parboxrestore
7434     \def\@currentcounter{footnote}%
7435     \protected@edef\@currentlabel{\csname p@footnote\endcsname\@thefn-
mark}%
7436     \@makefnptext}%
7437   \rule{\z@}{\footnotesep}%

```

```

7438 \bgroup
7439 \aftergroup\V@@@footnotetext
7440 \Hy@raisedlink{%
7441   \expandafter\hyper@@anchor\expandafter{%
7442     \Hy@footnote@currentHref
7443   }\relax}%
7444 }%
7445 \let\@currentHref\Hy@footnote@currentHref
7446 \let\@currentlabelname\@empty
7447 \ignorespaces
7448 }%
7449 }{}%

```

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

```

7450 \def\Hy@temp#1{%
7451   \begingroup
7452     \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7453   \endgroup
7454   \@footnotemark
7455 }%
7456 \ifx\Hy@temp\footref
7457   \def\footref#1{%
7458     \begingroup
7459       \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7460     \endgroup
7461     \H@@@footnotemark
7462   }%
7463 \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.

```

7464 \let\HyOrg@maketitle\maketitle
7465 \def\maketitle{%
7466   \let\Hy@saved@footnotemark\@footnotemark
7467   \let\Hy@saved@footnotetext\@footnotetext
7468   \let\@footnotemark\H@@@footnotemark
7469   \let\@footnotetext\H@@@footnotetext
7470   \@ifnextchar[\Hy@maketitle@optarg{% ]
7471     \HyOrg@maketitle
7472     \Hy@maketitle@end
7473   }%
7474 }%
7475 \def\Hy@maketitle@optarg[#1]{%
7476   \HyOrg@maketitle[#{#1}]%
7477   \Hy@maketitle@end
7478 }%
7479 \def\Hy@maketitle@end{%
7480   \ifx\@footnotemark\H@@@footnotemark
7481     \let\@footnotemark\Hy@saved@footnotemark
7482   \fi
7483   \ifx\@footnotetext\H@@@footnotetext
7484     \let\@footnotetext\Hy@saved@footnotetext
7485   \fi

```



```

7486 }%

\realfootnote Does anyone remember the function and purpose of \realfootnote?
7487 \def\realfootnote{%
7488   \ifnextchar[\@xfootnote%
7489     {\stepcounter{\@mpfn}%
7490     \protected@xdef\@thefnmark{\thempfn}%
7491     \H@@footnotemark\H@@footnotetext
7492   }%
7493 }%

7494 \fi
7495 }{}
7496 \Hy@DisableOption{hyperfootnotes}

7497 </packageEnd>
7498 <*check>
7499 \checklatex
7500 \checkcommand\def\@xfootnotenext[#1]{%
7501   \begingroup
7502     \csname c@\@mpfn\endcsname #1\relax
7503     \unrestored@protected@xdef\@thefnmark{\thempfn}%
7504   \endgroup
7505   \@footnotetext
7506 }
7507 \checkcommand\def\@xfootnotemark[#1]{%
7508   \begingroup
7509     \c@footnote #1\relax
7510     \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7511   \endgroup
7512   \@footnotemark
7513 }
7514 \checkcommand\def\@footnotemark{%
7515   \leavevmode
7516   \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7517   \@makefnmark
7518   \ifhmode\spacefactor\@x@sf\fi
7519   \relax
7520 }
7521 </check>
7522 <*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.

```

7523 \@ifundefined{hyper@nopatch@caption}{%
7524 \def\caption{%
7525   \ifx\@captive\@undefined
7526     \@latex@error{\noexpand\caption outside float}\@ehd
7527     \expandafter\@gobble
7528   \else
7529     \H@refstepcounter\@captive

```

```

7530 \let\Hy@tempa\@caption
7531 \@ifundefined{float@caption}{%
7532 }{%
7533 \expandafter\ifx\csname @float@c@\@capttype\endcsname
7534 \float@caption
7535 \let\Hy@tempa\Hy@float@caption
7536 \fi
7537 }%
7538 \expandafter\@firstofone
7539 \fi
7540 {\@dblarg{\Hy@tempa\@capttype}}%
7541 }
7542 \long\def\@caption#1[#2]#3{%
7543 \expandafter\ifx\csname if@capstart\expandafter\endcsname
7544 \csname iftrue\endcsname
7545 \global\let\@currentHref\hc@currentHref
7546 \else
7547 \hyper@makecurrent{\@capttype}%
7548 \fi
7549 \@ifundefined{NR@gettitle}{%
7550 \def\@currentlabelname{#2}%
7551 }{%
7552 \NR@gettitle{#2}%
7553 }%
7554 \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
7555 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7556 }%
7557 \begingroup
7558 \@parboxrestore
7559 \if@minipage
7560 \@setminipage
7561 \fi
7562 \normalsize
7563 \expandafter\ifx\csname if@capstart\expandafter\endcsname
7564 \csname iftrue\endcsname
7565 \global\@capstartfalse
7566 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
7567 \else
7568 \@makecaption{\csname fnum@#1\endcsname}{%
7569 \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

7570 \ifHy@nesting
7571 \expandafter\hyper@@anchor\expandafter{\@currentHref}{#3}%
7572 \else
7573 \Hy@raisedlink{%
7574 \expandafter\hyper@@anchor\expandafter{%
7575 \@currentHref
7576 }{\relax}%
7577 }%
7578 #3%
7579 \fi
7580 }%
7581 \fi
7582 \par

```

```

7583 \endgroup
7584 }}{}}%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’.

```

7585 \let\Hy@float@caption\@caption
7586 \newcommand{\HyNew@float@makebox}[1]{%
7587   \HyOrg@float@makebox{%
7588     #1\relax
7589     \ifx\Hy@float@currentHref\@undefined
7590       \else
7591         \expandafter\hyper@\@anchor\expandafter{%
7592           \Hy@float@currentHref
7593         }\relax}%
7594     \global\let\Hy@float@currentHref\@undefined
7595   \fi
7596 }%
7597 }%
7598 \@ifpackageloaded{float}{%
7599   \def\Hy@float@caption{%
7600     \ifx\Hy@float@currentHref\@undefined
7601       \hyper@makecurrent{\@capttype}%
7602     \global\let\Hy@float@currentHref\@currentHref
7603     \else
7604       \let\@currentHref\Hy@float@currentHref
7605     \fi
7606     \float@caption
7607   }%
7608   \let\HyOrg@float@makebox\float@makebox
7609   \let\float@makebox\HyNew@float@makebox
7610 }{}}

7611 \</packageEnd>
7612 \<{*check}
7613 \checklatex[1999/06/01 - 2000/06/01]
7614 \checkcommand\def\caption{%
7615   \ifx\@capttype\@undefined
7616     \@latex@error{\noexpand\caption outside float}\@ehd
7617     \expandafter\@gobble
7618   \else
7619     \refstepcounter\@capttype
7620     \expandafter\@firstofone
7621   \fi
7622   {\@dblarg{\@caption\@capttype}}%
7623 }
7624 \checkcommand\long\def\@caption#1[#2]#3{%
7625   \par
7626   \addcontentsline{\csname ext@#1\endcsname}{#1}{%
7627     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7628   }%
7629   \begingroup
7630   \@parboxrestore

```

```

7631 \if@minipage
7632 \setminipage
7633 \fi
7634 \normalsize
7635 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
7636 \endgroup
7637 }
7638 </check>
7639 <*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.

```

7640 \def\hyper@natlinkstart#1{%
7641 \Hy@backout{#1}%
7642 \hyper@linkstart{cite}{cite.#1}%
7643 \def\hyper@nat@current{#1}%
7644 }
7645 \def\hyper@natlinkend{%
7646 \hyper@linkend
7647 }
7648 \def\hyper@natlinkbreak#1#2{%
7649 \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
7650 }
7651 \def\hyper@natanchorstart#1{%
7652 \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
7653 }
7654 \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.

```

7655 \@ifundefined{hyper@nopatch@bib}
7656 {%
7657 \ifundefined{NAT@parse}{%
7658 \providecommand*\@extra@binfo{}%
7659 \providecommand*\@extra@b@citeb{}%
7660 \def\bibcite#1#2{%
7661 \@newl@bel{b}{#1\@extra@binfo}{%
7662 \hyper@@link[cite]{}{cite.#1\@extra@b@citeb}{#2}%
7663 }%
7664 }%
7665 \gdef\@extra@binfo{}%

```

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

```

7666 \let\Hy@biblecite\biblecite
7667 \begingroup
7668 \ifundefined{bbl@cite@choice}{%
7669 \g@addto@macro\bbl@cite@choice{%
7670 \let\biblecite\Hy@biblecite
7671 }%
7672 }%
7673 \endgroup

```

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

```

7674 \providecommand*\@BIBLABEL{\@biblabel}%
7675 \def\@bibitem[#1]#2{%
7676 \@skiphyperreftrue
7677 \H@item[%
7678 \ifx\Hy@raisedlink\@empty
7679 \hyper@anchorstart{cite.#2\@extra@b@citeb}%
7680 \@BIBLABEL{#1}%
7681 \hyper@anchorend
7682 \else
7683 \Hy@raisedlink{%
7684 \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
7685 }%
7686 \@BIBLABEL{#1}%
7687 \fi
7688 \hfill
7689 ]%
7690 \@skiphyperreffalse
7691 \if@filesw
7692 \begingroup
7693 \let\protect\noexpand
7694 \immediate\write\@auxout{%
7695 \string\biblecite{#2}{#1}%
7696 }%
7697 \endgroup
7698 \fi
7699 \ignorespaces
7700 }%

```

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

```

7701 \def\@bibitem#1{%
7702 \@skiphyperreftrue\H@item\@skiphyperreffalse
7703 \Hy@raisedlink{%
7704 \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
7705 }%
7706 \if@filesw
7707 \begingroup
7708 \let\protect\noexpand
7709 \immediate\write\@auxout{%
7710 \string\biblecite{#1}{\the\value{\@listctr}}%
7711 }%
7712 \endgroup
7713 \fi

```

```

7714     \ignorespaces
7715   }%
7716 }{}%
7717 }{}

7718 </packageEnd>
7719 <*check>
7720 \checklatex
7721 \checkcommand\def\@bibitem[#1]#2{%
7722   \item[\@biblabel{#1}\hfill]%
7723   \if@filesw
7724     {%
7725       \let\protect\noexpand
7726       \immediate\write\@auxout{%
7727         \string\bibcite{#2}{#1}%
7728       }%
7729     }%
7730   \fi
7731   \ignorespaces
7732 }
7733 \checkcommand\def\@bibitem#1{%
7734   \item
7735   \if@filesw
7736     \immediate\write\@auxout{%
7737       \string\bibcite{#1}{\the\value{\@listctr}}%
7738     }%
7739   \fi
7740   \ignorespaces
7741 }
7742 </check>
7743 <*packageEnd>

```

### 37.1 Package harvard

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

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

```

7744 \ifpackageloaded{harvard}{%
7745   \Hy@AtBeginDocument{%
7746     \Hy@Info{*** compatibility with harvard **** }%
7747     \Hy@raiselinksfalse
7748     \def\harvardcite#1#2#3#4{%
7749       \global\@namedef{HAR@fn@#1}{\hyper@@link[cite]{cite.#1}{#2}}%
7750       \global\@namedef{HAR@an@#1}{\hyper@@link[cite]{cite.#1}{#3}}%
7751       \global\@namedef{HAR@yr@#1}{\hyper@@link[cite]{cite.#1}{#4}}%
7752       \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
7753     }%
7754     \def\HAR@citetoaux#1{%
7755       \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
7756     \ifHy@backref

```

```

7757 \ifx\@empty\@currentlabel
7758 \else
7759 \@bsphack
7760 \if@filesw
7761 \protected@write\@auxout{}{%
7762 \string\@writefile{brf}{%
7763 \string\backcite{#1}{%
7764 {\thepage}{\@currentlabel}{\@currentHref}%
7765 }%
7766 }%
7767 }%
7768 \fi
7769 \@esphack
7770 \fi
7771 \fi
7772 }%
7773 \def\harvarditem{%
7774 \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
7775 }%
7776 \def\@harvarditem[#1]#2#3#4#5\par{%
7777 \item[]%
7778 \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
7779 \if@filesw
7780 \begingroup
7781 \def\protect##1{\string ##1\space}%
7782 \ifthenelse{\equal{#1}{\null}}%
7783 {\def\next{{#4}{#2}{#2}{#3}}}%
7784 {\def\next{{#4}{#2}{#1}{#3}}}%
7785 \immediate\write\@auxout{\string\harvardcite\codeof\next}%
7786 \endgroup
7787 \fi
7788 \protect\hspace*{-\labelwidth}%
7789 \protect\hspace*{-\labelsep}%
7790 \ignorespaces
7791 #5%
7792 \ifHy@backref
7793 \newblock
7794 \backref{\csname br@#4\endcsname}%
7795 \fi
7796 \par
7797 }%

```

\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:

```

7798 \long\def\HAR@checkcitations#1#2#3#4{%
7799 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%
7800 \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
7801 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#3}}%
7802 \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
7803 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#4}}%
7804 \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
7805 \else
7806 \@tempswatruue

```

```

7807     \fi
7808     \else
7809     \@tempwattrue
7810     \fi
7811     \else
7812     \@tempwattrue
7813     \fi
7814 }%
7815 }%

7816 }{}

```

## 37.2 Package chicago

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

```

7817 \@ifpackageloaded{chicago}{%

```

```

\citeN

```

```

7818 \def\citeN{%
7819   \def\@citesep{-1000}%
7820   \def\@cite##1##2{##1}%
7821   \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
7822   \@citedata@opt
7823 }%

```

```

\shortciteN

```

```

7824 \def\shortciteN{%
7825   \def\@citesep{-1000}%
7826   \def\@cite##1##2{##1}%
7827   \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
7828   \@citedata@opt
7829 }%

```

```

\@citedata@opt

```

```

7830 \def\@citedata@opt{%
7831   \let\@cite@opt\@empty
7832   \@ifnextchar [{%
7833     \@tempwattrue
7834     \@citedatax@opt
7835   }{%
7836     \@tempwafalse
7837     \@citedatax[]%
7838   }%
7839 }%

```

```

\@citedatax@opt

```

```

7840 \def\@citedatax@opt[#1]{%
7841   \def\@cite@opt{, #1}%
7842   \@citedatax[{#1}]%
7843 }%

7844 }{}

```



## 38 Page numbers

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

Experimental!

This where we supply a destination for each page.

The name of destination is stored in the global command `\@currentHpage`, this allows it to retrieve it with an extended reference system like zref or the new property code from L<sup>A</sup>T<sub>E</sub>X 2023-11-01.

```
7845 \def\@currentHpage{Doc-Start}
7846 \ifclassloaded{slides}{-%
7847   \def\Hy@SlidesFormatOptionalPage#1{(#1)}%
7848   \def\Hy@PageAnchorSlidesPlain{%
7849     \advance\c@page\@ne
7850     \xdef\@currentHpage{page.\the\c@slide.\the\c@overlay.\the\c@note%
7851       \ifnum\c@page=\@ne
7852         \else
7853           .\the\c@page
7854         \fi}%
7855   \edef\Hy@TempPageAnchor{%
7856     \noexpand\hyper@@anchor{%
7857       \@currentHpage
7858     }%
7859   }%
7860   \advance\c@page-\@ne
7861 }%
7862 \def\Hy@PageAnchorSlide{%
7863   \advance\c@page\@ne
7864   \ifnum\c@page>\@ne
7865     \@ifundefined{theHpage}{-%
7866       \protected@edef\Hy@TheSlideOptionalPage{%
7867         \Hy@SlidesFormatOptionalPage{thepage}%
7868       }%
7869     }{%
7870       \protected@edef\Hy@TheSlideOptionalPage{%
7871         \Hy@SlidesFormatOptionalPage{theHpage}%
7872       }%
7873     }%
7874   \else
7875     \def\Hy@TheSlideOptionalPage{}%
7876   \fi
7877   \advance\c@page-\@ne
7878   \pdfstringdef\@the@H@page{%
7879     \csname
7880       the%
7881       \@ifundefined{theH\Hy@SlidesPage}{H}%
7882       \Hy@SlidesPage
7883     \endcsname
7884   \Hy@TheSlideOptionalPage
7885 }%
7886 \@gobblethree
```

```

7887 }%
7888 \def\Hy@SlidesPage{slide}%
7889 \g@addto@macro\slide{%
7890   \def\Hy@SlidesPage{slide}%
7891 }%
7892 \g@addto@macro\overlay{%
7893   \def\Hy@SlidesPage{overlay}%
7894 }%
7895 \g@addto@macro\note{%
7896   \def\Hy@SlidesPage{note}%
7897 }%
7898 }{%
7899 \def\Hy@PageAnchorSlidesPlain{}}%
7900 \def\Hy@PageAnchorSlide{}}%
7901 }
7902 \def\Hy@EveryPageAnchor{%
7903   \Hy@DistillerDestFix
7904   \ifHy@pageanchor
7905     \ifHy@hypertextnames
7906       \ifHy@plainpages
7907         \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
7908         \xdef\@currentHpage{page.\the\c@page}%
7909         \Hy@PageAnchorSlidesPlain
7910       \else
7911         \begingroup
7912         \let\@number\@firstofone
7913         \Hy@unicodefalse
7914         \Hy@PageAnchorSlide
7915         \pdfstringdef\@the@H@page{\thepage}%
7916         \endgroup
7917         \EdefUnescapeString\@the@H@page{\@the@H@page}%
7918         \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
7919         \xdef\@currentHpage{page.\@the@H@page}%
7920       \fi
7921     \else
7922       \Hy@GlobalStepCount\Hy@pagecounter
7923       \def\Hy@TempPageAnchor{%
7924         \hyper@@anchor{page.\the\Hy@pagecounter}%
7925       }%
7926       \xdef\@currentHpage{page.\the\Hy@pagecounter}%
7927     \fi
7928   \vbox to 0pt{%
7929     \kern\voffset
7930     \kern\topmargin
7931     \kern-1bp\relax
7932     \hbox to 0pt{%
7933       \kern\hoffset
7934       \kern\ifodd\value{page}%
7935         \oddsidemargin
7936       \else
7937         \evensidemargin
7938       \fi
7939     \kern-1bp\relax
7940     \Hy@TempPageAnchor\relax

```

```

7941     \hss
7942   }%
7943   \vss
7944 }%
7945 \fi
7946 }
7947 \g@addto@macro\Hy@EveryPageBoxHook{%
7948   \Hy@EveryPageAnchor
7949 }

```

## 39 Table of contents

TV Raman noticed that people who add arbitrary material into the TOC generate a bad or null link. We avoid that by checking if the current destination is empty. But if ‘the most recent destination’ is not what you expect, you will be in trouble. In newer L<sup>A</sup>T<sub>E</sub>X releases this is defined to put a % at the end of the line in the tocfile.

```

7950 \providecommand\protected@file@percent{}
7951 \@ifundefined{hyper@nopatch@toc}{%
7952   \def\addcontentsline#1#2#3{% toc extension, type, tag
7953     \begingroup
7954       \let\label@gobble
7955       \ifx\@currentHref\@empty
7956         \Hy@Warning{%
7957           No destination for bookmark of \string\addcontentsline,%
7958           \MessageBreak destination is added%
7959         }%
7960       \phantomsection
7961     \fi
7962     \expandafter\ifx\csname toplevel@#2\endcsname\relax
7963       \begingroup
7964         \def\Hy@tempa{#1}%
7965         \ifx\Hy@tempa\Hy@bookmarkstype
7966           \Hy@WarningNoLine{%
7967             bookmark level for unknown #2 defaults to 0%
7968           }%
7969         \else
7970           \Hy@Info{bookmark level for unknown #2 defaults to 0}%
7971         \fi
7972       \endgroup
7973       \expandafter\gdef\csname toplevel@#2\endcsname{0}%
7974     \fi
7975     \edef\Hy@toclevel{\csname toplevel@#2\endcsname}%
7976     \Hy@writebookmark{\csname the#2\endcsname}%
7977       {#3}%
7978       {\@currentHref}%
7979       {\Hy@toclevel}%
7980       {#1}%
7981     \ifHy@verbose
7982       \begingroup
7983         \def\Hy@tempa{#3}%
7984         \@onelevel@sanitize\Hy@tempa

```

```

7985     \let\temp@online\on@line
7986     \let\on@line\@empty
7987     \Hy@Info{%
7988         bookmark\temp@online:\MessageBreak
7989         thecounter {\csname the#2\endcsname}\MessageBreak
7990         text {\Hy@tempa}\MessageBreak
7991         reference {\@currentHref}\MessageBreak
7992         toplevel {\Hy@toplevel}\MessageBreak
7993         type {#1}%
7994     }%
7995     \endgroup
7996     \fi
7997     \addtocontents{#1}{%
7998     \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}\protected@file@per-
cent
7999     }%
8000     \endgroup
8001     }
8002 }{}

```

`\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:

```

8003 \protected\def\Hy@toclinkstart{\hyper@linkstart{link}{\Hy@tocdestname}}
8004 \protected\def\Hy@toclinkend{\hyper@linkend}
8005
8006 \@ifundefined{hyper@nopatch@toc}{%
8007     \def\contentsline#1#2#3#4{%
8008         \begingroup
8009         \Hy@safe@activestrue
8010         \edef\x{\endgroup
8011             \def\noexpand\Hy@tocdestname{#4}%
8012             }\x
8013         \ifx\Hy@tocdestname\@empty
8014             \csname l@#1\endcsname{#2}{#3}%
8015         \else
8016             \ifcase\Hy@linktoc % none
8017                 \csname l@#1\endcsname{#2}{#3}%
8018             \or % section
8019                 \csname l@#1\endcsname{%
8020                 \Hy@toclinkstart{#2}\Hy@toclinkend
8021                 }{#3}%
8022             \or % page
8023                 \def\Hy@temp{#3}%
8024                 \ifx\Hy@temp\@empty
8025                     \csname l@#1\endcsname{#2}{#3}%
8026                 \else
8027                     \csname l@#1\endcsname{{#2}}{#3}%
8028                     \Hy@toclinkstart{#3}\Hy@toclinkend
8029                 }%
8030                 \fi
8031             \else % all
8032                 \def\Hy@temp{#3}%

```

```

8033     \ifx\Hy@temp\@empty
8034       \csname l@#1\endcsname{%
8035         \Hy@toclinkstart{#2}\Hy@toclinkend
8036       }{}%
8037     \else
8038       \csname l@#1\endcsname{%
8039         \Hy@toclinkstart{#2}\Hy@toclinkend
8040       }{%
8041         \Hy@toclinkstart{#3}\Hy@toclinkend
8042       }%
8043     \fi
8044   \fi
8045 \fi
8046 }
8047 }{}

8048 \endpackage
8049 \check
8050 \checklatex
8051 \checkcommand\def\addcontentsline#1#2#3{%
8052   \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
8053 }
8054 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
8055 \endcheck
8056 \endpackage

```

## 40 New counters

The whole theorem business makes up new counters on the fly; we are going to intercept this. Sigh. Do it at the level where new counters are defined. change 2024-02-14: use a csname to handle counter names with commands, see issue #330

```

8057 \@ifundefined{hyper@nopatch@counter}
8058 {
8059   \let\H@definecounter\@definecounter
8060   \def\@definecounter#1{%
8061     \H@definecounter{#1}%
8062     \expandafter
8063     \gdef\csname theH#1\expandafter\endcsname\expandafter
8064       {\expandafter\@arabic\csname c@#1\endcsname}}%
8065 }{}

```

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.

```

8066 \@ifundefined{hyper@nopatch@counter}
8067 {
8068   \let\H@newctr\@newctr
8069   \def\@newctr#1[#2]{%
8070     \H@newctr#1[#2]}%
8071   \expandafter\gdef\csname theH#1\endcsname{%
8072     \csname the\@ifundefined{theH#2}{H}{H}#2\endcsname.\arabic{#1}%
8073   }%
8074 }
8075 }{}

```

## 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.

```

8076 \ifundefined{hyper@nopatch@amsmath@tag}
8077   {%
8078   \AddToHook{package/amsmath/after}{%
8079     \def\Hy@make@anchor{%
8080       \Hy@MakeCurrentHrefAuto{AMS}%
8081       \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
8082     }%
8083     \def\Hy@make@df@tag@@#1{%
8084       \gdef\df@tag{%
8085         \maketag@@@{\Hy@make@anchor#1}%
8086         \def\@currentlabel{#1}%
8087       }%
8088     }%
8089     \def\Hy@make@df@tag@@@#1{%
8090       \gdef\df@tag{%
8091         \tagform@{\Hy@make@anchor#1}%
8092         \toks@\@xp{\p@equation{#1}}%
8093         \edef\@currentlabel{\the\toks@}%
8094       }%
8095     }%
8096     \let\HyOrg@make@df@tag@@\make@df@tag@@
8097     \let\HyOrg@make@df@tag@@@\make@df@tag@@@
8098     \let\make@df@tag@@\Hy@make@df@tag@@
8099     \let\make@df@tag@@@\Hy@make@df@tag@@@
8100   }%
8101 }%

```

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.

```

8102 \@ifundefined{hyper@nopatch@counter}
8103 {
8104   \let\HyOrg@addtoreset\@addtoreset
8105   \def\@addtoreset#1#2{%
8106     \HyOrg@addtoreset{#1}{#2}%
8107     \expandafter\xdef\csname theH#1\endcsname{%
8108       \expandafter\noexpand
8109         \csname the\@ifundefined{theH#2}{}H#2\endcsname
8110       .\noexpand\the\noexpand\value{#1}%
8111     }%
8112   }
8113 }{}

```

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

```

8114 </packageEnd>
8115 <*check>
8116 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
8117 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
8118   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
8119     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
8120       \@addtoreset{#2}{#3}%
8121       \@xp\xdef\csname the#2\endcsname{%
8122         \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8123       }%
8124     }%
8125   }%
8126 }%
8127 </check>

```

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

```

8128 <*packageEnd>
8129 \@ifundefined{hyper@nopatch@counter}
8130 {
8131   \AddToHook{package/amsmath/after}{%
8132     \renewcommand*\numberwithin}[3][\arabic]{%
8133       \@ifundefined{c@#2}{\@nocounterr{#2}}{%
8134         \@ifundefined{c@#3}{\@nocnterr{#3}}{%
8135           \HyOrg@addtoreset{#2}{#3}%
8136           \@xp\xdef\csname the#2\endcsname{%
8137             \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8138           }%
8139           \@xp\xdef\csname theH#2\endcsname{%
8140             \@xp\@nx
8141             \csname the\@ifundefined{theH#3}{}H#3\endcsname
8142             .\@nx#1{#2}%
8143           }%
8144         }%
8145       }%
8146     }%
8147   }{}
8148 }{}

```

## 42 Included figures

Simply intercept the low level graphics package macro.

```
8149 \ifHy@hyperfigures
8150 \let\Hy@Gin@setfile\Gin@setfile
8151 \def\Gin@setfile#1#2#3{%
8152   \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
8153 }%
8154 \fi
8155 \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.

```
8156 \ifHy@hyperindex
8157 \def\HyInd@ParenLeft{({}%
8158 \def\HyInd@ParenRight{)}}%
8159 \def\hyperindexformat#1#2{%
8160   \let\HyOrg@hyperpage\hyperpage
8161   \let\hyperpage\@firstofone
8162   #1{\HyOrg@hyperpage{#2}}%
8163   \let\hyperpage\HyOrg@hyperpage
8164 }%
8165 \Hy@nextfalse
8166 \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
8167 \@ifpackageloaded{index}{\Hy@nexttrue}{}%
8168 \@ifpackageloaded{amsmidx}{\Hy@nexttrue}{}%
8169 \begingroup
8170 \lccode`|= \expandafter`\HyInd@EncapChar\relax
8171 \lccode`\/= `\\ \relax
8172 \lowercase{\endgroup
8173 \ifHy@next
8174   \let\HyInd@org@wrindex\@wrindex
8175   \def\@wrindex#1#2{\HyInd@wrindex{#1}#2||\}%
8176   \def\HyInd@wrindex#1#2|#3|#4\{\%
8177     \ifx\|#3\%
8178       \HyInd@org@wrindex{#1}{#2|hyperpage}%
8179     \else
8180       \HyInd@@@wrindex{#1}{#2}#3\%
8181     \fi
8182   }%
8183 \def\HyInd@@@wrindex#1#2#3#4\{\%
8184 \def\Hy@temp@A{#3}%
8185 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
```



```

8186         \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8187         \relax
8188     \HyInd@org@wrindex{#1}{%
8189     #2|hyperindexformat{/#3#4}%
8190     }%
8191 \else
8192     \ifx\#4\%
8193     \ifx\Hy@temp@A\HyInd@ParenRight
8194     \HyInd@org@wrindex{#1}{#2|#3}%
8195     \else
8196     \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
8197     \fi
8198     \else
8199     \HyInd@org@wrindex{#1}{%
8200     #2|#3hyperindexformat{/#4}%
8201     }%
8202     \fi
8203     \fi
8204     }%
8205 \else
8206     \def\@wrindex#1{\@wrindex#1||\}%
8207     \def\@wrindex#1|#2|#3\%
8208     \if@filesw
8209     \ifx\#2\%
8210     \protected@write\@indexfile{}{%
8211     \string\indexentry{#1|hyperpage}{\thepage}%
8212     }%
8213     \else
8214     \HyInd@@@wrindex{#1}#2\%
8215     \fi
8216     \fi
8217     \endgroup
8218     \@esphack
8219     }%
8220 \def\HyInd@@@wrindex#1#2#3\%
8221 \def\Hy@temp@A{#2}%
8222 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8223     \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8224     \relax
8225     \protected@write\@indexfile{}{%
8226     \string\indexentry{%
8227     #1|hyperindexformat{/#2#3}%
8228     }{\thepage}%
8229     }%
8230 \else
8231     \ifx\#3\%
8232     \ifx\Hy@temp@A\HyInd@ParenRight
8233     \HyInd@DefKey{#1}%
8234     \@ifundefined{HyInd@(\HyInd@key)}{%
8235     \let\Hy@temp@empty
8236     }{%
8237     \expandafter\let\expandafter\Hy@temp
8238     \csname HyInd@(\HyInd@key)\endcsname
8239     }%

```

```

8240     \protected@write\@indexfile{}{%
8241         \string\indexentry{#1|#2\Hy@temp}{\thepage}%
8242     }%
8243     \else
8244     \protected@write\@indexfile{}{%
8245         \string\indexentry{#1|#2hyperpage}{\thepage}%
8246     }%
8247     \HyInd@DefKey{#1}%
8248     \expandafter
8249     \gdef\csname HyInd@(\HyInd@key)\endcsname{%
8250         hyperpage%
8251     }%
8252     \fi
8253     \else
8254     \protected@write\@indexfile{}{%
8255         \string\indexentry{%
8256             #1|#2hyperindexformat{/#3}%
8257         }{\thepage}%
8258     }%
8259     \ifx\Hy@temp@A\HyInd@ParenLeft
8260     \HyInd@DefKey{#1}%
8261     \expandafter
8262     \gdef\csname HyInd@(\HyInd@key)\endcsname{%
8263         hyperindexformat{/#3}%
8264     }%
8265     \fi
8266     \fi
8267     \fi
8268 }%
8269 \def\HyInd@DefKey#1{%
8270     \begingroup
8271     \let\protect\@unexpandable@protect
8272     \edef\Hy@temp{#1}%
8273     \@onelevel@sanitize\Hy@temp
8274     \global\let\HyInd@key\Hy@temp
8275     \endgroup
8276 }%
8277 \fi
8278 }%
8279 \fi
8280 \Hy@DisableOption{hyperindex}
8281 \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.

```
8282 \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.

```

8283 \def\hyperpage#1{%
8284     \HyInd@hyperpage#1\nohyperpage{}\@nil
8285 }
8286 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{%
8287     \HyInd@@hyperpage{#1}%

```

```

8288 #2%
8289 \def\Hy@temp{#3}%
8290 \ifx\Hy@temp\@empty
8291 \else
8292 \Hy@ReturnAfterFi{%
8293 \HyInd@hyperpage#3\@nil
8294 }%
8295 \fi
8296 }
8297 \def\HyInd@@hyperpage#1{\@hyperpage#1----\}
8298 \def\@hyperpage#1--#2--#3\{\%
8299 \ifx\#2\%
8300 \@commahyperpage{#1}%
8301 \else
8302 \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
8303 \fi
8304 }
8305 \def\@commahyperpage#1{\@commahyperpage#1, \}
8306 \def\@commahyperpage#1, #2, #3\{\%
8307 \ifx\#2\%
8308 \HyInd@pagelink{#1}%
8309 \else
8310 \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
8311 \fi
8312 }

```

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

```

8313 \def\HyInd@pagelink#1{%
8314 \begingroup
8315 \toks@={}%
8316 \HyInd@removespaces#1 \@nil
8317 \endgroup
8318 }
8319 \def\HyInd@removespaces#1 #2\@nil{%
8320 \toks@=\expandafter{\the\toks@#1}%
8321 \ifx\#2\%
8322 \edef\x{\the\toks@}%
8323 \ifx\x\@empty
8324 \else
8325 \hyperlink{page.\the\toks@}{\the\toks@}%
8326 \fi
8327 \else
8328 \Hy@ReturnAfterFi{%
8329 \HyInd@removespaces#2\@nil
8330 }%
8331 \fi
8332 }

```

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.

```

8333 \ifHy@texht
8334 \expandafter\endinput

```

```

8335 \fi
8336 \let\real@setref\@setref
8337 \def\@setref#1#2#3{% csname, extract group, refname
8338   \ifx#1\relax
8339     \protect\G@refundefinedtrue
8340     \nfss@text{\reset@font\bfseries ??}%
8341     \@latex@warning{%
8342       Reference `#3' on page \thepage \space undefined%
8343     }%
8344   \else
8345     \expandafter\Hy@setref@link#1\@empty\@empty\@empty\@nil{#2}%
8346   \fi
8347 }

```

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

```

8348 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
8349   \begingroup
8350   \toks0={\hyper@@link{#5}{#4}}%
8351   \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
8352   \edef\x{\endgroup
8353     \the\toks0 {\the\toks1 }%
8354   }%
8355   \x
8356 }
8357 \def\@pagesetref#1#2#3{% csname, extract macro, ref
8358   \ifx#1\relax
8359     \protect\G@refundefinedtrue
8360     \nfss@text{\reset@font\bfseries ??}%
8361     \@latex@warning{%
8362       Reference `#3' on page \thepage \space undefined%
8363     }%
8364   \else
8365     \protect\hyper@@link
8366     {\expandafter\@fifthoffive#1}%
8367     {page.\expandafter\@secondoffive#1}%
8368     {\expandafter\@secondoffive#1}%
8369   \fi
8370 }

8371 </packageEnd>
8372 <*check>
8373 \checklatex
8374 \checkcommand\def\@setref#1#2#3{%
8375   \ifx#1\relax
8376     \protect\G@refundefinedtrue
8377     \nfss@text{\reset@font\bfseries ??}%
8378     \@latex@warning{%
8379       Reference `#3' on page \thepage \space undefined%
8380     }%
8381   \else
8382     \expandafter#2#1\null
8383   \fi
8384 }
8385 </check>

```

8386 (\*packageEnd)

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

```
8387 \def\HyRef@StarSetRef#1{%
8388   \begingroup
8389   \Hy@safe@activestrue
8390   \let\protect\@unexpandable@protect
8391   \edef\x{#1}%
8392   \@onelevel@sanitize\x
8393   \edef\x{\endgroup
8394     \noexpand\HyRef@@StarSetRef
8395     \expandafter\noexpand\csname r@\x\endcsname{x}%
8396   }%
8397   \x
8398 }
8399 \def\HyRef@@StarSetRef#1#2#3{%
8400   \ifx#1\@undefined
8401     \let#1\relax
8402   \fi
8403   \real@setref#1#3{#2}%
8404 }
8405 \def\@refstar#1{%
8406   \HyRef@StarSetRef{#1}\@firstoffive
8407 }
8408 \def\@pagerefstar#1{%
8409   \HyRef@StarSetRef{#1}\@secondoffive
8410 }
8411 \def\@namerefstar#1{%
8412   \HyRef@StarSetRef{#1}\@thirdoffive
8413 }
8414 \def\@Refstar#1{%
8415   \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
8416 }%
8417 \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
8418   \MakeUppercase#1%
8419 }%
8420 \def\HyRef@Ref#1{%
8421   \hyperref[{#1}]{\Ref*{#1}}%
8422 }%
8423 \Hy@AtBeginDocument{%
8424   \@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.

```
8425   \@ifundefined{hyper@nopatch@varioref}
8426   {
8427     \renewcommand\Vref@star[2][]{%
8428       \begingroup
8429         \let\T@pageref\@pagerefstar
8430         \Ref*{#2}
8431         \vpageref[#1]{#2}%
8432       \endgroup
8433     }%
```

```

8434 \renewcommand\vr@f[2][]{%
8435 \begingroup
8436 \let\T@pageref\@pagerefstar
8437 \hyperref[#{2}]{%
8438 \Ref*{#2}
8439 \vpageref[#1]{#2}%
8440 }%
8441 \endgroup
8442 }%
8443 \renewcommand\vr@f[2][]{%
8444 \begingroup
8445 \let\T@pageref\@pagerefstar
8446 \hyperref[#{2}]{%
8447 \ref*{#2}
8448 \vpageref[#1]{#2}%
8449 }%
8450 \endgroup
8451 }%
8452 \renewcommand\vr@star[2][]{%
8453 \begingroup
8454 \let\T@pageref\@pagerefstar
8455 \ref*{#2}
8456 \vpageref[#1]{#2}%
8457 \endgroup
8458 }%
8459 }{}%
8460 }{}%
8461 }

8462 \DeclareRobustCommand*\autopageref}{%
8463 \@ifstar{%
8464 \HyRef@autopagerefname\pageref*%
8465 }\HyRef@autopageref
8466 }
8467 \def\HyRef@autopageref#1{%
8468 \hyperref[#{1}]{\HyRef@autopagerefname\pageref*{#1}}%
8469 }
8470 \def\HyRef@autopagerefname{%
8471 \@ifundefined{pageautorefname}{%
8472 \@ifundefined{pagename}{%
8473 \Hy@Warning{No autoref name for `page'}%
8474 }{%
8475 \pagename\nobreakspace
8476 }%
8477 }{}%
8478 \pageautorefname\nobreakspace
8479 }%
8480 }

```

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

```

8481 \NewDocumentCommand\autoref{s}
8482 {\leavevmode
8483 \IfBooleanTF{#1}{\HyRef@autoref@gobbletwo}{\HyRef@autoref\hyper@@link}}
8484 \def\HyRef@autoref#1#2{%

```

```

8485 \begingroup
8486   \Hy@safe@activetrue
8487   \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
8488 \endgroup
8489 }
8490 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
8491   \HyRef@ShowKeysRef{#2}%
8492   \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
8493   \edef\HyRef@thisref{%
8494     \expandafter\@fourthoffive#1\@empty\@empty\@empty
8495   }%
8496   \expandafter\HyRef@testreftype\HyRef@thisref.\.%
8497   \Hy@safe@activesfalse
8498   #3{%
8499     \expandafter\@fifthoffive#1\@empty\@empty\@empty
8500   }{%
8501     \expandafter\@fourthoffive#1\@empty\@empty\@empty
8502   }{%
8503     \HyRef@currentHtag
8504     \expandafter\@firstoffive#1\@empty\@empty\@empty
8505     \null
8506   }%
8507 \else
8508   \protect\G@refundefinedtrue
8509   \nfss@text{\reset@font\bfseries ??}%
8510   \@latex@warning{%
8511     Reference `#2' on page \thepage\space undefined%
8512   }%
8513 \fi
8514 }
8515 \def\HyRef@testreftype#1.#2\{\%
8516   \@ifundefined{#1autorefname}{\%
8517     \@ifundefined{#1name}{\%
8518       \HyRef@StripStar#1\*\@nil{#1}%
8519       \@ifundefined{\HyRef@name autorefname}{\%
8520         \@ifundefined{\HyRef@name name}{\%
8521           \def\HyRef@currentHtag{\%
8522             \Hy@Warning{No autoref name for `#1'}%
8523           }{\%
8524             \edef\HyRef@currentHtag{\%
8525               \expandafter\noexpand\csname\HyRef@name name\endcsname
8526               \noexpand~%
8527             }%
8528           }%
8529         }{\%
8530           \edef\HyRef@currentHtag{\%
8531             \expandafter\noexpand
8532             \csname\HyRef@name autorefname\endcsname
8533             \noexpand~%
8534           }%
8535         }%
8536       }{\%
8537         \edef\HyRef@currentHtag{\%
8538           \expandafter\noexpand\csname#1name\endcsname

```

```

8539     \noexpand-%
8540   }%
8541 }%
8542 }{%
8543   \edef\HyRef@currentHtag{%
8544     \expandafter\noexpand\csname#1autorefname\endcsname
8545     \noexpand-%
8546   }%
8547 }%
8548 }
8549 \def\HyRef@StripStar#1*\#2\@nil#3{%
8550   \def\HyRef@name{#2}%
8551   \ifx\HyRef@name\HyRef@CaseStar
8552     \def\HyRef@name{#1}%
8553   \else
8554     \def\HyRef@name{#3}%
8555   \fi
8556 }
8557 \def\HyRef@CaseStar{*\\}
8558 \def\HyRef@currentHtag{}

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

8559 \let\HyRef@ShowKeysRef@gobble
8560 \def\HyRef@ShowKeysInit{%
8561   \@ifundefined{SK@@label}{}
8562   {%
8563     \ifx\SK@ref\@empty
8564       \else
8565         \def\HyRef@ShowKeysRef{%
8566           \SK@\SK@@ref
8567         }%
8568       \fi
8569     }%
8570 }
8571 \AddToHook{package/showkeys/after}{\HyRef@ShowKeysInit}

```

Defaults for the names that \autoref uses.

```

8572 \providecommand*\AMSautorefname{\equationautorefname}
8573 \providecommand*\Hfootnoteautorefname{\footnoteautorefname}
8574 \providecommand*\Itemautorefname{\itemautorefname}
8575 \providecommand*\itemautorefname{item}
8576 \providecommand*\equationautorefname{Equation}
8577 \providecommand*\footnoteautorefname{footnote}
8578 \providecommand*\itemautorefname{item}
8579 \providecommand*\figureautorefname{Figure}
8580 \providecommand*\tableautorefname{Table}
8581 \providecommand*\partautorefname{Part}
8582 \providecommand*\appendixautorefname{Appendix}
8583 \providecommand*\chapterautorefname{chapter}
8584 \providecommand*\sectionautorefname{section}
8585 \providecommand*\subsectionautorefname{subsection}
8586 \providecommand*\subsubsectionautorefname{subsubsection}
8587 \providecommand*\paragraphautorefname{paragraph}

```



```

8588 \providecommand*\subparagraphautorefname{subparagraph}
8589 \providecommand*\FancyVerbLineautorefname{line}
8590 \providecommand*\theoremautorefname{Theorem}
8591 \providecommand*\pageautorefname{page}
8592 \endpackage

```

## 44 Configuration files

### 44.1 PS/PDF strings

Some drivers write PS or PDF strings. These strings are delimited by parentheses, therefore a lonely unmatched parenthesis must be avoided to avoid PS or PDF syntax errors. Also the backslash character itself has to be protected.

`\Hy@pstringdef` Therefore such strings should be passed through `\Hy@pstringdef`. The first argument holds a macro for the result, the second argument is the string that needs protecting. Since version 1.30.0 pdf<sub>TEX</sub> offers `\pdfescapestring`.

```

8593 (*pdfTEX | dviPDFM | xetex | vtex | pdfmarkbase | dviwindo)
8594 \beginGROUP\expandafter\expandafter\expandafter\endGROUP
8595 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
8596 \beginGROUP
8597 \catcode\| = 0 %
8598 \@makeother\| %
8599 |\@firstofone{|\endGROUP
8600 |def|Hy@pstringdef#1#2{%
8601 |beginGROUP
8602 |edef~{|string~}%
8603 |xdef|Hy@gtemp{#2}%
8604 |endGROUP
8605 |let#1|Hy@gtemp
8606 |@onelevel@sanitize#1%
8607 |edef#1{|expandafter|Hy@ExchangeBackslash#1|\@nil}%
8608 |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
8609 |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
8610 }%
8611 |def|Hy@ExchangeBackslash#1\#2|\@nil{%
8612 #1%
8613 |ifx|\#2|\%
8614 |else
8615 \\\%
8616 |Hy@ReturnAfterFi{%
8617 |Hy@ExchangeBackslash#2|\@nil
8618 }%
8619 |fi
8620 }%
8621 }%
8622 \def\Hy@ExchangeLeftParenthesis#1(#2|\@nil{%
8623 #1%
8624 \ifx\#2\%
8625 \else
8626 \@backslashchar%
8627 \Hy@ReturnAfterFi{%

```

```

8628     \Hy@ExchangeLeftParenthesis#2\@nil
8629     }%
8630     \fi
8631     }%
8632     \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
8633     #1%
8634     \ifx\#2\%
8635     \else
8636     \@backslashchar)%
8637     \Hy@ReturnAfterFi{%
8638     \Hy@ExchangeRightParenthesis#2\@nil
8639     }%
8640     \fi
8641     }%
8642     \else
8643     \def\Hy@pstringdef#1#2{%
8644     \begingroup
8645     \edef~{\string~}%
8646     \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
8647     \endgroup
8648     \let#1\Hy@gtemp
8649     }%
8650     \fi
8651     (/pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo)

```

## 44.2 pdfTeX

```

8652 (*pdfTeX)
8653 \providecommand*\XR@ext}{pdf}
8654 \Hy@setbreaklinks{true}
8655 \def\HyPat@ObjRef{%
8656 [0-9]*[1-9][0-9]* 0 R%
8657 }

```

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

```

8658 \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
8659 \def\Hy@pdfminorversion{\pdfminorversion}%
8660 \ifHy@ocgcolorlinks
8661 \ifnum\Hy@pdfmajorminor@version<105 %
8662 \kvsetkeys{Hyp}{pdfversion=1.5}%
8663 \fi
8664 \fi
8665 \ifHy@setpdfversion
8666 \ifnum\Hy@pdf@majorminor@version<105 %
8667 \@ifundefined{pdfobjcompresslevel}{%
8668 }{%
8669 \ifHy@verbose
8670 \Hy@InfoNoLine{%

```

```

8671     PDF object streams are disabled, because they are%
8672     \MessageBreak
8673     not supported in requested PDF version %
8674     \Hy@pdf@majorversion.\Hy@pdf@minorversion
8675     }%
8676     \fi
8677     \pdfobjcompresslevel=\z@
8678     }%
8679     \fi
8680     \ifnum\Hy@pdfmajorminor@version=\Hy@pdf@majorminor@version\relax
8681     \else
8682     \let\Hy@temp\@empty
8683     \def\Hy@temp@A#1#2{%
8684     \ifnum#1>\z@
8685     \edef\Hy@temp{%
8686     \Hy@temp
8687     \space\space
8688     \the#1\space #2%
8689     \ifnum#1=\@ne\else s\fi
8690     \MessageBreak
8691     }%
8692     \fi
8693     }%
8694     \Hy@temp@A\pdflastobj{PDF object}%
8695     \Hy@temp@A\pdflastxform{form XObject}%
8696     \Hy@temp@A\pdflastximage{image XObject}%
8697     \Hy@temp@A\pdflastannot{annotation}%
8698     \@ifundefined{pdflastlink}{%
8699     }{%
8700     \Hy@temp@A\pdflastlink{link}%
8701     }%
8702     \ifx\Hy@temp\@empty
8703     \Hy@pdfmajorversion=\Hy@pdf@majorversion\relax
8704     \Hy@pdfminorversion=\Hy@pdf@minorversion\relax
8705     \else
8706     \let\Hy@temp@A\@empty
8707     \ifnum\Hy@pdf@majorminor@version=104 %
8708     \IfFileExists{pdf14.sty}{%
8709     \def\Hy@temp@A{%
8710     \MessageBreak
8711     Or \string\RequirePackage{pdf14} can be used%
8712     \MessageBreak
8713     before \string\documentclass\space as shortcut%
8714     }%
8715     }}%
8716     \fi
8717     \Hy@WarningNoLine{%
8718     The PDF version number could not be set,\MessageBreak
8719     because some PDF objects are already written:%
8720     \MessageBreak
8721     \Hy@temp
8722     The version should be set as early as possible:%
8723     \MessageBreak
8724     \space\space

```

```

8725     \expandafter\string\Hy@pdfmajorversion=\Hy@pdf@majorversion, %
8726     \expandafter\string\Hy@pdfminorversion=\Hy@pdf@minorversion
8727     \string\relax
8728     \ifnum\Hy@pdf@majorminor@version<105 %
8729     \@ifundefined{pdfobjcompresslevel}{%
8730     }{%
8731     \MessageBreak
8732     \space\space
8733     \string\pdfobjcompresslevel=0\string\relax
8734     }%
8735     \fi
8736     \Hy@temp@A
8737     }%
8738     \fi
8739     \fi
8740     \PackageInfo{hyperref}{%
8741     \expandafter\string\Hy@pdfmajorversion.%
8742     \expandafter\string\Hy@pdfminorversion
8743     :=\number\Hy@pdf@majorversion.\number\Hy@pdf@minorversion\space
8744     }%
8745     \fi
8746     \edef\Hy@pdf@majorversion{\number\Hy@pdfmajorversion}%
8747     \edef\Hy@pdf@minorversion{\number\Hy@pdfminorversion}%
8748     \Hy@DisableOption{pdfversion}%

8749     \ifHy@ocgcolorlinks
8750     \pdf@ifdraftmode{}{%
8751     \immediate\pdfobj{%
8752     <<%
8753     /Type/OCG%
8754     /Name(View)%
8755     /Usage<<%
8756     /Print<<%
8757     /PrintState/OFF%
8758     >>%
8759     /View<<%
8760     /ViewState/ON%
8761     >>%
8762     >>%
8763     >>%
8764     }%
8765     \edef\OBJ@OCG@view{\the\pdfastobj\space 0 R}%
8766     \immediate\pdfobj{%
8767     <<%
8768     /Type/OCG%
8769     /Name(Print)%
8770     /Usage<<%
8771     /Print<<%
8772     /PrintState/ON%
8773     >>%
8774     /View<<%
8775     /ViewState/OFF%
8776     >>%
8777     >>%
8778     >>%

```

```

8779 }%
8780 \edef\OBJ@OCG@print{\the\pdfastobj\space 0 R}%
8781 \immediate\pdfobj{%
8782   [%
8783   \OBJ@OCG@view\space\OBJ@OCG@print
8784   ]%
8785 }%
8786 \edef\OBJ@OCGs{\the\pdfastobj\space 0 R}%
8787 \pdfcatalog{%
8788   /OCProperties<<%
8789   /OCGs \OBJ@OCGs
8790   /D<<%
8791   /OFF[\OBJ@OCG@print]%
8792   /AS[%
8793     <<%
8794     /Event/View%
8795     /OCGs \OBJ@OCGs
8796     /Category[/View]%
8797     >>%
8798     <<%
8799     /Event/Print%
8800     /OCGs \OBJ@OCGs
8801     /Category[/Print]%
8802     >>%
8803     <<%
8804     /Event/Export%
8805     /OCGs \OBJ@OCGs
8806     /Category[/Print]%
8807     >>%
8808   ]%
8809   >>%
8810 }%
8811 }%
8812 \begingroup
8813 \edef\x{\endgroup
8814 \pdfpageresources{
8815 \the\pdfpageresources
8816 /Properties<<%
8817 /OCView \OBJ@OCG@view
8818 /OCPrint \OBJ@OCG@print
8819 >>%
8820 }%
8821 }%
8822 \x
8823 }%
8824 \Hy@AtBeginDocument{%
8825 \def\Hy@colorlink#1{%
8826 \begingroup
8827 \ifHy@ocgcolorlinks
8828 \def\Hy@ocgcolor{#1}%
8829 \setbox0=\hbox\bgroup\color@begingroup
8830 \else
8831 \HyColor@UseColor#1%
8832 \fi

```

```

8833 }%
8834 \def\Hy@endcolorlink{%
8835   \ifHy@ocgcolorlinks
8836     \color@endgroup\egroup
8837     \mbox{%
8838       \pdfiteral page{/OC/OCPrint BDC}%
8839       \rlap{\copy0}%
8840       \pdfiteral page{EMC/OC/OCView BDC}%
8841       \begingroup
8842         \expandafter\HyColor@UseColor\Hy@ocgcolor
8843         \box0 %
8844       \endgroup
8845       \pdfiteral page{EMC}%
8846     }%
8847   \fi
8848 \endgroup
8849 }%
8850 }%
8851 \else
8852 \Hy@DisableOption{ocgcolorlinks}%
8853 \fi

```

First, allow for some changes and additions to pdftex syntax:

```

8854 \def\setpdfinkmargin#1{%
8855   \begingroup
8856     \setlength{\dimen@}{#1}%
8857   \expandafter\endgroup
8858   \expandafter\pdfinkmargin\the\dimen@\relax
8859 }
8860 \pdfinkmargin1pt %

```

First set up the default linking

```
8861 \providecommand*\@pdfview{XYZ}
```

First define the anchors:

```

8862 \Hy@WrapperDef\new@pdfink#1{%
8863   \ifhmode
8864     \@savsf\spacefactor
8865   \fi
8866   \Hy@SaveLastskip
8867   \Hy@VerboseAnchor{#1}%
8868   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
8869   \Hy@DestName\Hy@pstringDest\@pdfview
8870   \Hy@RestoreLastskip
8871   \ifhmode
8872     \spacefactor\@savsf
8873   \fi
8874 }
8875 \let\pdf@endanchor\@empty

```

\Hy@DestName Wrap the call of \pdfdest name in \Hy@DestName. Then it can easier be caught by package hypdestopt.

```

8876 \def\Hy@DestName#1#2{%
8877   \pdfdest name{#1}#2\relax
8878 }

```

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.

```

8879 \providecommand*\@pdfborder{0 0 1}
8880 \providecommand*\@pdfborderstyle{}
8881 \def\Hy@undefinedname{UNDEFINED}
8882 \def\find@pdfink#1#2{%
8883   \leavevmode
8884   \protected@edef\Hy@testname{#2}%
8885   \ifx\Hy@testname\@empty
8886     \Hy@Warning{%
8887       Empty destination name,\MessageBreak
8888       using `\'Hy@undefinedname'%
8889     }%
8890   \let\Hy@testname\Hy@undefinedname
8891   \else
8892     \Hy@pstringdef\Hy@testname{%
8893       \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
8894     }%
8895   \fi
8896   \Hy@StartlinkName{%
8897     \ifHy@pdfa /F 4\fi
8898     \Hy@setpdfborder
8899     \Hy@setpdfhighlight
8900     \ifx\CurrentBorderColor\relax
8901     \else
8902       /C[\CurrentBorderColor]%
8903     \fi
8904   }\Hy@testname
8905   \expandafter\Hy@colorlink\csname @#1color\endcsname
8906 }
8907 \def\Hy@StartlinkName#1#2{%
8908   \pdfstartlink attr{#1}goto name{#2}\relax
8909 }
8910 \def\close@pdfink{%
8911   \Hy@endcolorlink
8912   \Hy@VerboseLinkStop
8913   \pdfendlink
8914 }
8915 \def\hyper@anchor#1{%
8916   \new@pdfink{#1}\anchor@spot\pdf@endanchor
8917 }
8918 \def\hyper@anchorstart#1{%
8919   \new@pdfink{#1}%
8920   \Hy@activeanchortrue
8921 }
8922 \def\hyper@anchorend{%
8923   \pdf@endanchor
8924   \Hy@activeanchorfalse
8925 }
8926 \def\hyper@linkstart#1#2{%
8927   \Hy@VerboseLinkStart{#1}{#2}%
8928   \@ifundefined{#1bordercolor}{%

```

```

8929 \let\CurrentBorderColor\relax
8930 }{%
8931 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8932 }%
8933 \find@pdfink{#1}{#2}%
8934 }
8935 \def\hyper@linkend{\close@pdfink}
8936 \def\hyper@link#1#2#3{%
8937 \Hy@VerboseLinkStart{#1}{#2}%
8938 \@ifundefined{@#1bordercolor}{%
8939 \let\CurrentBorderColor\relax
8940 }{%
8941 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8942 }%
8943 \find@pdfink{#1}{#2}#3\Hy@xspace@end
8944 \close@pdfink
8945 }
8946 \let\CurrentBorderColor\@linkbordercolor
8947 \def\hyper@linkurl#1#2{%
8948 \begingroup
8949 \Hy@pstringdef\Hy@pstringURI{#2}%
8950 \hyper@chars
8951 \leavevmode
8952 \pdfstartlink
8953 attr{%
8954 \Hy@setpdfborder
8955 \Hy@setpdfhighlight
8956 \ifx\@urlbordercolor\relax
8957 \else
8958 /C[\@urlbordercolor]%
8959 \fi
8960 }%
8961 user{%
8962 /Subtype/Link%
8963 \ifHy@pdfa /F 4\fi
8964 /A<<%
8965 /Type/Action%
8966 /S/URI%
8967 /URI(\Hy@pstringURI)%
8968 \ifHy@href@ismap
8969 /IsMap true%
8970 \fi
8971 \Hy@href@nextactionraw
8972 >>%
8973 }%
8974 \relax
8975 \Hy@colorlink\@urlcolor#1\Hy@xspace@end
8976 \close@pdfink
8977 \endgroup
8978 }
8979 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
8980 \begingroup
8981 \def\Hy@pstringF{#2}%
8982 \Hy@CleanupFile\Hy@pstringF

```



```

8983 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
8984 \Hy@pstringdef\Hy@pstringD{#3}%
8985 \Hy@MakeRemoteAction
8986 \leavevmode
8987 \pdfstartlink
8988 attr{%
8989   \Hy@setpdfborder
8990   \Hy@setpdfhighlight
8991   \ifx\@filebordercolor\relax
8992   \else
8993     /C[\@filebordercolor]%
8994   \fi
8995 }%
8996 user {%
8997   /Subtype/Link%
8998   \ifHy@pdfa /F 4\fi
8999   /A<<%
9000   /F(\Hy@pstringF)%
9001   /S/GoToR%
9002   \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}

```

```

9003   \ifx\#3\%
9004     /D[\Hy@href@page\@pdfremotestartview]%
9005   \else
9006     /D(\Hy@pstringD)%
9007   \fi
9008   \Hy@href@nextactionraw
9009   >>%
9010 }%
9011 \relax
9012 \Hy@colorlink\@filecolor#1\Hy@xspace@end
9013 \close@pdfink
9014 \endgroup
9015 }
9016 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
9017 \begingroup
9018 \Hy@pstringdef\Hy@pstringF{#1}%
9019 \Hy@pstringdef\Hy@pstringP{#3}%
9020 \leavevmode
9021 \pdfstartlink
9022 attr{%
9023   \Hy@setpdfborder
9024   \Hy@setpdfhighlight

```

```

9025     \ifx\@runbordercolor\relax
9026     \else
9027       /C[\@runbordercolor]%
9028     \fi
9029   }%
9030   user {%
9031     /Subtype/Link%
9032     \ifHy@pdfa /F 4\fi
9033     /A<<%
9034       /F(\Hy@pstringF)%
9035       /S/Launch%
9036       \Hy@SetNewWindow
9037       \ifx\#3\%
9038       \else
9039         /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
9040       \fi
9041       \Hy@href@nextactionraw
9042     >>%
9043   }%
9044   \relax
9045   \Hy@colorlink\@runcolor#2\Hy@xspace@end
9046   \close@pdfink
9047 \endgroup
9048 }

```

\PDF@SetupDoc

```

9049 \def\PDF@SetupDoc{%
9050   \ifx\@pdfpagescrop\@empty
9051   \else
9052     \edef\process@me{%
9053       \pdfpagesattr={%
9054         /CropBox[\@pdfpagescrop]%
9055         \expandafter\ifx\expandafter\the\pdfpagesattr\%
9056         \else
9057           ^^J\the\pdfpagesattr
9058         \fi
9059       }%
9060     }%
9061     \process@me
9062   \fi
9063   \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9064   \pdfcatalog{%
9065     /PageMode/\@pdfpagemode
9066     \ifx\@baseurl\@empty
9067     \else
9068       /URI<</Base(\Hy@pstringB)>>%
9069     \fi
9070   }%
9071   \ifx\@pdfstartpage\@empty
9072   \else
9073     \ifx\@pdfstartview\@empty
9074     \else
9075       openaction goto page\@pdfstartpage{\@pdfstartview}%
9076     \fi

```

```

9077 \fi
9078 \edef\Hy@temp{%
9079 \ifHy@pdftoolbar\else /HideToolbar true\fi
9080 \ifHy@pdfmenubar\else /HideMenubar true\fi
9081 \ifHy@pdfwindowui\else /HideWindowUI true\fi
9082 \ifHy@pdffitwindow /FitWindow true\fi
9083 \ifHy@pdfcenterwindow /CenterWindow true\fi
9084 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9085 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9086 \Hy@UseNameKey{Direction}\@pdfdirection
9087 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9088 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9089 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9090 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9091 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9092 \Hy@UseNameKey{Duplex}\@pdfduplex
9093 \ifx\@pdfpicktraybypdfsize\@empty
9094 \else
9095 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9096 \fi
9097 \ifx\@pdfprintpagerange\@empty
9098 \else
9099 /PrintPageRange[\@pdfprintpagerange]%
9100 \fi
9101 \ifx\@pdfnumcopies\@empty
9102 \else
9103 /NumCopies \@pdfnumcopies
9104 \fi
9105 }%
9106 \pdfcatalog{%
9107 \ifx\Hy@temp\@empty
9108 \else
9109 /ViewerPreferences<<\Hy@temp>>%
9110 \fi
9111 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9112 \ifx\@pdflang\relax
9113 \else
9114 /Lang(\@pdflang)%
9115 \fi
9116 }%
9117 }

```

\PDF@FinishDoc

```

9118 \def\PDF@FinishDoc{%
9119 \pdf@ifdraftmode{}-%
9120 \Hy@UseMaketitleInfos
9121 \HyInfo@GenerateAddons
9122 \pdfinfo{%
9123 /Author(\@pdfauthor)%
9124 /Title(\@pdftitle)%
9125 /Subject(\@pdfsubject)%
9126 /Creator(\@pdfcreator)%
9127 \ifx\@pdfcreationdate\@empty
9128 \else

```

```

9129     /CreationDate(\@pdfcreationdate)%
9130     \fi
9131     \ifx\@pdfmoddate\@empty
9132     \else
9133     /ModDate(\@pdfmoddate)%
9134     \fi
9135     \ifx\@pdfproducer\relax
9136     \else
9137     /Producer(\@pdfproducer)%
9138     \fi
9139     /Keywords(\@pdfkeywords)%
9140     \ifx\@pdftrapped\@empty
9141     \else
9142     /Trapped/\@pdftrapped
9143     \fi
9144     \HyInfo@Addons
9145   }%
9146 }%
9147 \Hy@DisableOption{pdfauthor}%
9148 \Hy@DisableOption{pdftitle}%
9149 \Hy@DisableOption{pdfsubject}%
9150 \Hy@DisableOption{pdfcreator}%
9151 \Hy@DisableOption{addtopdfcreator}%
9152 \Hy@DisableOption{pdfcreationdate}%
9153 \Hy@DisableOption{pdfmoddate}%
9154 \Hy@DisableOption{pdfproducer}%
9155 \Hy@DisableOption{pdfkeywords}%
9156 \Hy@DisableOption{pdftrapped}%
9157 \Hy@DisableOption{pdfinfo}%
9158 }

```

`\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`.

```

9159 \def\hyper@pagetransition{%
9160   \ifx\@pdfpagetransition\relax
9161   \else
9162     \expandafter\Hy@RemoveTransPageAttr
9163     \the\pdfpageattr^^J/Trans{}>>\END
9164     \ifx\@pdfpagetransition\@empty
9165     \else
9166     \edef\@processme{%
9167       \global\pdfpageattr{%
9168         \the\pdfpageattr
9169         ^^J/Trans << /S /\@pdfpagetransition\space >>%
9170       }%
9171     }%
9172     \@processme
9173   \fi
9174 }%
9175 }

```

`\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.

```

9176 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
9177   \ifx\#2\%
9178     \global\pdfpageattr{#1}%
9179   \else
9180     \Hy@RemoveTransPageAttr#1#4\END
9181   \fi
9182 }

```

`\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`.

```

9183 \def\hyper@pageduration{%
9184   \ifx\@pdfpageduration\relax
9185   \else
9186     \expandafter
9187     \Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
9188   \ifx\@pdfpageduration\@empty
9189   \else
9190     \edef\@processme{%
9191       \global\pdfpageattr{%
9192         \the\pdfpageattr
9193         ^^J/Dur \@pdfpageduration\space
9194       }%
9195     }%
9196     \@processme
9197   \fi
9198 \fi
9199 }

```

`\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.

```

9200 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
9201   \ifx\#2\%
9202     \global\pdfpageattr{#1}%
9203   \else
9204     \Hy@RemoveDurPageAttr#1#4\END
9205   \fi
9206 }

9207 \pdf@ifdraftmode{}{%
9208   \g@addto@macro\Hy@EveryPageHook{%
9209     \hyper@pagetransition
9210     \hyper@pageduration
9211   }%
9212 }

```

Also XeTeX support `\pdfpagewidth` and `\pdfpageheight`, but it does not provide `\pdfhorigin` and `\pdfvorigin`.

```

9213 </pdftex>
9214 (*pdftex | xetex)
9215 \Hy@AtBeginDocument{%
9216   \ifHy@setpagesize
9217     \expandafter\@firstofone
9218   \else
9219     \expandafter\@gobble
9220   \fi
9221   {%
9222     \@ifclassloaded{seminar}{%
9223 (*pdftex)
9224   \setlength{\pdfhorigin}{1truein}%
9225   \setlength{\pdfvorigin}{1truein}%
9226 </pdftex>
9227   \ifportrait
9228     \ifdim\paperwidth=\z@
9229     \else
9230       \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
9231     \fi
9232     \ifdim\paperheight=\z@
9233     \else
9234       \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
9235     \fi
9236   \else
9237     \ifdim\paperheight=\z@
9238     \else
9239       \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
9240     \fi
9241     \ifdim\paperwidth=\z@
9242     \else
9243       \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
9244     \fi
9245   \fi
9246 }{%
9247   \ifnum\mag=\@m
9248     \ifdim\stockwidth>\z@
9249     \ifdim\stockheight>\z@
9250       \setlength{\pdfpagewidth}{\stockwidth}%
9251       \setlength{\pdfpageheight}{\stockheight}%
9252     \else
9253       \ifdim\paperwidth>\z@
9254       \ifdim\paperheight>\z@
9255         \setlength{\pdfpagewidth}{\paperwidth}%
9256         \setlength{\pdfpageheight}{\paperheight}%
9257       \fi
9258     \fi
9259   \fi
9260 \else
9261   \ifdim\stockwidth=\z@
9262   \ifdim\paperwidth>\z@
9263   \ifdim\paperheight>\z@
9264     \setlength{\pdfpagewidth}{\paperwidth}%
9265     \setlength{\pdfpageheight}{\paperheight}%
9266   \fi

```

```

9267     \fi
9268     \fi
9269     \fi
9270     \fi
9271   }%
9272 }%
9273 \Hy@DisableOption{setpagesize}%
9274 }
9275 </pdftex | xetex>
9276 (*pdftex)
9277 \def\Acrobatmenu#1#2{%
9278   \Hy@Acrobatmenu{#1}{#2}{%
9279     \leavevmode
9280     \EdefEscapeName\Hy@temp@menu{#1}%
9281     \pdfstartlink
9282     attr{%
9283       \Hy@setpdfborder
9284       \Hy@setpdfhighlight
9285       \ifx\@menubordercolor\relax
9286         \else
9287         /C[\@menubordercolor]%
9288       \fi
9289     }%
9290     user{%
9291       /Subtype/Link%
9292       \ifHy@pdfa /F 4\fi
9293       /A<<%
9294       /S/Named%
9295       /N/\Hy@temp@menu
9296       \Hy@href@nextactionraw
9297     >>%
9298   }%
9299   \relax
9300   \Hy@colorlink\@menucolor#2%
9301   \close@pdfink
9302 }%
9303 }

```

#### 44.2.1 Fix for problem with different nesting levels

`\AtBeginShipoutFirst` adds an additional box layer around the first output page. This disturbs pdfTeX's low level link commands `\pdfstartlink` and `\pdfendlink`, if a link is broken across the first and second output page.

The problem could be fixed by replacing `\AtBeginShipoutFirst`, because the box layer is not necessary for pdfTeX- no `\specials` need to be inserted. However it's easier to add an additional box level for the pages after the first one. Also `\AtBeginShipoutFirst` could be invoked independently from `hyperref`.

Since version 2011/10/05 v1.16 of package 'atbegshi' `\AtBeginShipoutFirst` does not add a additional box layer.

change 2020-10-01: the code has been removed as outdated.

```

9304 </pdftex>

```

### 44.3 hypertext

The Hyper $\TeX$  specification (this is borrowed from an article by Arthur Smith) says that conformant viewers/translators must recognize the following set of  $\backslash$ 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 ( $\backslash$ ), and if it looks like a URL name it may cause problems.

```
9305 (*hypertext)
9306 \providecommand*\XR@ext}{dvi}
9307 \let\PDF@FinishDoc\@empty
9308 \def\PDF@SetupDoc{%
9309   \ifx\@baseurl\@empty
9310     \else
9311       \special{html:<base href="\@baseurl">}%
9312     \fi
9313 }
9314 \Hy@WrapperDef\hyper@anchor#1{%
9315   \Hy@SaveLastskip
9316   \Hy@VerboseAnchor{#1}%
9317   \begingroup
9318     \let\protect=\string
9319     \hyper@chars
9320     \special{html:<a name=%
9321       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9322   \endgroup
9323   \Hy@activeanchortrue
9324   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
```



```

9325 \special{html:</a>}%
9326 \Hy@activeanchorfalse
9327 \Hy@RestoreLastskip
9328 }
9329 \Hy@WrapperDef\hyper@anchorstart#1{%
9330 \Hy@SaveLastskip
9331 \Hy@VerboseAnchor{#1}%
9332 \begingroup
9333 \hyper@chars
9334 \special{html:<a name=%
9335 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9336 \endgroup
9337 \Hy@activeanchortrue
9338 }
9339 \def\hyper@anchorend{%
9340 \special{html:</a>}%
9341 \Hy@activeanchorfalse
9342 \Hy@RestoreLastskip
9343 }
9344 \def\@urltype{url}
9345 \def\hyper@linkstart#1#2{%
9346 \Hy@VerboseLinkStart{#1}{#2}%
9347 \expandafter\Hy@colorlink\csname @#1color\endcsname
9348 \def\Hy@tempa{#1}%
9349 \ifx\Hy@tempa\@urltype
9350 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9351 \else
9352 \begingroup
9353 \hyper@chars
9354 \special{html:<a href=%
9355 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
9356 \endgroup
9357 \fi
9358 }
9359 \def\hyper@linkend{%
9360 \special{html:</a>}%
9361 \Hy@endcolorlink
9362 }
9363 \def\hyper@linkfile#1#2#3{%
9364 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\\else\#3\fi}%
9365 }
9366 \def\hyper@linkurl#1#2{%

```

If we want to raise up the final link `\special`, we need to get its height; ask me why L<sup>A</sup>T<sub>E</sub>X constructs make this totally foul up, and make us revert to basic T<sub>E</sub>X. I do not know.

```

9367 \leavevmode
9368 \ifHy@raiselinks
9369 \Hy@SaveSpaceFactor
9370 \Hy@SaveSavedSpaceFactor
9371 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9372 \Hy@RestoreSavedSpaceFactor
9373 \@linkdim\dp\@tempboxa
9374 \lower\@linkdim\hbox{%

```

```

9375 \hyper@chars
9376 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9377 }%
9378 \Hy@colorlink\@urlcolor
9379 \Hy@RestoreSpaceFactor
9380 #1%
9381 \Hy@SaveSpaceFactor
9382 \@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).

```

9383 \advance\@linkdim by -6.5\p@
9384 \raise\@linkdim\hbox{\special{html:</a>}}%
9385 \Hy@endcolorlink
9386 \Hy@RestoreSpaceFactor
9387 \else
9388 \begingroup
9389 \hyper@chars
9390 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9391 \Hy@colorlink\@urlcolor#1\Hy@xspace@end
9392 \special{html:</a>}%
9393 \Hy@endcolorlink
9394 \endgroup
9395 \fi
9396 }

```

Very poor implementation of `\hyper@link` without considering `#1`.

```

9397 \def\hyper@link#1#2#3{%
9398 \Hy@VerboseLinkStart{#1}{#2}%
9399 \hyper@linkurl{#3}{\#\HyperDestNameFilter{#2}}%
9400 }
9401 \def\hyper@image#1#2{%
9402 \begingroup
9403 \hyper@chars
9404 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
9405 \endgroup
9406 }
9407 </hypertex>
9408 <*\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.

```

9409 \providecommand*\XR@ext}{dvi}
9410 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
9411 \Hy@WrapperDef\hyper@anchor#1{%
9412   \Hy@SaveLastskip
9413   \Hy@VerboseAnchor{#1}%
9414   \begingroup
9415     \let\protect=\string
9416     \special{mark: #1}%
9417   \endgroup
9418   \Hy@activeanchortrue
9419   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9420   \Hy@activeanchorfalse
9421   \Hy@RestoreLastskip
9422 }
9423 \Hy@WrapperDef\hyper@anchorstart#1{%
9424   \Hy@SaveLastskip
9425   \Hy@VerboseAnchor{#1}%
9426   \special{mark: #1}%
9427   \Hy@activeanchortrue
9428 }
9429 \def\hyper@anchorend{%
9430   \Hy@activeanchorfalse
9431   \Hy@RestoreLastskip
9432 }
9433 \def\hyper@linkstart#1#2{%
9434   \Hy@VerboseLinkStart{#1}{#2}%
9435   \expandafter\Hy@colorlink\csname @#1color\endcsname
9436   \special{button: %
9437     10000000 %
9438     \number\baselineskip\space
9439     #2%
9440   }%
9441 }
9442 \def\hyper@linkend{%
9443   \Hy@endcolorlink
9444 }
9445 \def\hyper@link#1#2#3{%
9446   \Hy@VerboseLinkStart{#1}{#2}%
9447   \leavevmode
9448   \ifHy@raiselinks
9449     \Hy@SaveSpaceFactor
9450     \Hy@SaveSavedSpaceFactor
9451     \sbox\@tempboxa{\Hy@RestoreSpaceFactor#3}%
9452     \Hy@RestoreSavedSpaceFactor
9453     \@linkdim\dp\@tempboxa
9454     \lower\@linkdim\hbox{%
9455       \special{button: %
9456         \number\wd\@tempboxa\space
9457         \number\ht\@tempboxa\space
9458         #2%
9459       }%
9460     \expandafter\Hy@colorlink\csname @#1color\endcsname

```

```

9461 \Hy@RestoreSpaceFactor
9462 #3\Hy@xspace@end
9463 \Hy@SaveSpaceFactor
9464 \Hy@endcolorlink
9465 }%
9466 \@linkdim\ht\@tempboxa
9467 \advance\@linkdim by -6.5\p@
9468 \raise\@linkdim\hbox{}%
9469 \Hy@RestoreSpaceFactor
9470 \else
9471 \special{button: %
9472 \number\wd\@tempboxa\space
9473 \number\ht\@tempboxa\space
9474 #2%
9475 }%
9476 \expandafter\Hy@colorlink\csname @#1color\endcsname
9477 #3\Hy@xspace@end
9478 \Hy@endcolorlink
9479 \fi
9480 }
9481 \def\hyper@linkurl#1#2{%
9482 \begingroup
9483 \hyper@chars
9484 \leavevmode
9485 \ifHy@raiselinks
9486 \Hy@SaveSpaceFactor
9487 \Hy@SaveSavedSpaceFactor
9488 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9489 \Hy@RestoreSavedSpaceFactor
9490 \@linkdim\dp\@tempboxa
9491 \lower\@linkdim\hbox{%
9492 \special{button: %
9493 \number\wd\@tempboxa\space
9494 \number\ht\@tempboxa\space
9495 launch: \wwwbrowser\space
9496 #2%
9497 }%
9498 \Hy@colorlink\@urlcolor
9499 \Hy@RestoreSpaceFactor
9500 #1\Hy@xspace@end
9501 \Hy@SaveSpaceFactor
9502 \Hy@endcolorlink
9503 }%
9504 \@linkdim\ht\@tempboxa
9505 \advance\@linkdim by -6.5\p@
9506 \raise\@linkdim\hbox{}%
9507 \Hy@RestoreSpaceFactor
9508 \else
9509 \special{button: %
9510 \number\wd\@tempboxa\space
9511 \number\ht\@tempboxa\space
9512 launch: \wwwbrowser\space
9513 #2%
9514 }%

```

```

9515 \Hy@colorlink\@urlcolor
9516 #1\Hy@xspace@end
9517 \Hy@endcolorlink
9518 \fi
9519 \endgroup
9520 }
9521 \def\hyper@linkfile#1#2#3{%
9522 \begingroup
9523 \hyper@chars
9524 \leavevmode
9525 \ifHy@raiselinks
9526 \Hy@SaveSpaceFactor
9527 \Hy@SaveSavedSpaceFactor
9528 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9529 \Hy@RestoreSavedSpaceFactor
9530 \@linkdim\dp\@tempboxa
9531 \lower\@linkdim\hbox{%
9532 \special{button: %
9533 \number\wd\@tempboxa\space
9534 \number\ht\@tempboxa\space
9535 #3,%
9536 file: #2%
9537 }%
9538 \Hy@colorlink\@filecolor
9539 \Hy@RestoreSpaceFactor
9540 #1\Hy@xspace@end
9541 \Hy@SaveSpaceFactor
9542 \Hy@endcolorlink
9543 }%
9544 \@linkdim\ht\@tempboxa
9545 \advance\@linkdim by -6.5\p@
9546 \raise\@linkdim\hbox{}%
9547 \Hy@RestoreSpaceFactor
9548 \else
9549 \special{button: %
9550 \number\wd\@tempboxa\space
9551 \number\ht\@tempboxa\space
9552 #3,%
9553 file: #2%
9554 }%
9555 \Hy@colorlink\@filecolor
9556 #1\Hy@xspace@end
9557 \Hy@endcolorlink
9558 \fi
9559 \endgroup
9560 }
9561 \HyInfo@AddonUnsupportedtrue
9562 \def\PDF@FinishDoc{%
9563 \Hy@UseMaketitleInfos
9564 \HyInfo@TrappedUnsupported
9565 \special{PDF: Keywords \@pdfkeywords}%
9566 \special{PDF: Title \@pdftitle}%
9567 \special{PDF: Creator \@pdfcreator}%
9568 \ifx\@pdfcreationdate\@empty

```

```

9569 \else
9570 \special{PDF: CreationDate \@pdfcreationdate}%
9571 \fi
9572 \ifx\@pdfmoddate\@empty
9573 \else
9574 \special{PDF: ModDate \@pdfmoddate}%
9575 \fi
9576 \special{PDF: Author \@pdfauthor}%
9577 \ifx\@pdfproducer\relax
9578 \else
9579 \special{PDF: Producer \@pdfproducer}%
9580 \fi
9581 \special{PDF: Subject \@pdfsubject}%
9582 \Hy@DisableOption{pdfauthor}%
9583 \Hy@DisableOption{pdftitle}%
9584 \Hy@DisableOption{pdfsubject}%
9585 \Hy@DisableOption{pdfcreator}%
9586 \Hy@DisableOption{addtopdfcreator}%
9587 \Hy@DisableOption{pdfcreationdate}%
9588 \Hy@DisableOption{pdfcreationdate}%
9589 \Hy@DisableOption{pdfmoddate}%
9590 \Hy@DisableOption{pdfproducer}%
9591 \Hy@DisableOption{pdfkeywords}%
9592 \Hy@DisableOption{pdftrapped}%
9593 \Hy@DisableOption{pdfinfo}%
9594 }
9595 \def\PDF@SetupDoc{%
9596 \ifx\@baseurl\@empty
9597 \else
9598 \special{PDF: Base \@baseurl}%
9599 \fi
9600 \ifx\@pdfpagescrop\@empty\else
9601 \special{PDF: BBox \@pdfpagescrop}%
9602 \fi
9603 \def\Hy@temp{%
9604 \ifx\@pdfstartpage\@empty
9605 \else
9606 \ifx\@pdfstartview\@empty
9607 \else
9608 \edef\Hy@temp{%
9609 ,Page=\@pdfstartpage
9610 ,View=\@pdfstartview
9611 }%
9612 \fi
9613 \fi
9614 \edef\Hy@temp{%
9615 \noexpand\pdfmark{%
9616 pdfmark=/DOCVIEW,%
9617 PageMode=/\@pdfpagemode
9618 \Hy@temp
9619 }%
9620 }%
9621 \Hy@temp
9622 \ifx\@pdfpagescrop\@empty

```

```

9623 \else
9624 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9625 \fi
9626 \edef\Hy@temp{%
9627 \ifHy@pdftoolbar\else /HideToolbar true\fi
9628 \ifHy@pdfmenubar\else /HideMenubar true\fi
9629 \ifHy@pdfwindowui\else /HideWindowUI true\fi
9630 \ifHy@pdffitwindow /FitWindow true\fi
9631 \ifHy@pdfcenterwindow /CenterWindow true\fi
9632 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9633 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9634 \Hy@UseNameKey{Direction}\@pdfdirection
9635 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9636 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9637 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9638 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9639 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9640 \Hy@UseNameKey{Duplex}\@pdfduplex
9641 \ifx\@pdfpicktraybypdfsize\@empty
9642 \else
9643 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9644 \fi
9645 \ifx\@pdfprintpagerange\@empty
9646 \else
9647 /PrintPageRange[\@pdfprintpagerange]%
9648 \fi
9649 \ifx\@pdfnumcopies\@empty
9650 \else
9651 /NumCopies \@pdfnumcopies
9652 \fi
9653 }%
9654 \pdfmark{pdfmark=/PUT,%
9655 Raw={%
9656 \string{Catalog}\string}<<%
9657 \ifx\Hy@temp\@empty
9658 \else
9659 /ViewerPreferences<<\Hy@temp>>%
9660 \fi
9661 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9662 \ifx\@pdflang\relax
9663 \else
9664 /Lang(\@pdflang)%
9665 \fi
9666 >>%
9667 }%
9668 }%
9669 }
9670 </dviwindo>
9671 <*\dviPDFm | xetex>

```

## 44.5 dvipdfm/xetex dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

(x)dvipdfmx replaces destination names by numbers. This makes it impossible

to link from an external document with xr-hyper, so from version 7.00j on this is suppressed with a config special.

```

9672 \special{dvipdfmx:config C 0x0010}
9673 \providecommand*\XR@ext}{pdf}
9674 \Hy@setbreaklinks{true}
9675 \def\HyPat@ObjRef{%
9676   @[^ ]+%
9677 }
9678 \newsavebox{\pdfm@box}
9679 \def\@pdfm@mark#1{\special{pdf:#1}}
9680 \Hy@WrapperDef\@pdfm@dest#1{%
9681   \Hy@SaveLastskip
9682   \Hy@VerboseAnchor{#1}%
9683   \begingroup
9684     \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9685     \def\x{XYZ}%
9686     \ifx\x\@pdfview
9687       \def\x{XYZ @xpos @ypos null}%
9688     \else
9689       \def\x{FitH}%
9690       \ifx\x\@pdfview
9691         \def\x{FitH @ypos}%
9692       \else
9693         \def\x{FitBH}%
9694         \ifx\x\@pdfview
9695           \def\x{FitBH @ypos}%
9696         \else
9697           \def\x{FitV}%
9698           \ifx\x\@pdfview
9699             \def\x{FitV @xpos}%
9700           \else
9701             \def\x{FitBV}%
9702             \ifx\x\@pdfview
9703               \def\x{FitBV @xpos}%
9704             \else
9705               \def\x{Fit}%
9706               \ifx\x\@pdfview
9707                 \let\x\@pdfview
9708               \else
9709                 \def\x{FitB}%
9710                 \ifx\x\@pdfview
9711                   \let\x\@pdfview
9712                 \else
9713                   \def\x{FitR}%
9714                   \ifx\x\@pdfview
9715                     \Hy@Warning{'pdfview=FitR' is not supported}%
9716                   \def\x{XYZ @xpos @ypos null}%
9717                 \else
9718                   \@onelevel@sanitize\@pdfview
9719                   \Hy@Warning{%
9720                     Unknown value '\@pdfview' for pdfview%
9721                   }%
9722                 \def\x{XYZ @xpos @ypos null}%
9723               \fi

```



```

9724         \fi
9725         \fi
9726         \fi
9727         \fi
9728         \fi
9729         \fi
9730         \fi
9731         \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
9732     \endgroup
9733     \Hy@RestoreLastskip
9734 }
9735 \providecommand*\@pdfview{XYZ}
9736 \providecommand*\@pdfborder{0 0 1}
9737 \providecommand*\@pdfborderstyle{}
9738 \def\hyper@anchor#1{%
9739     \@pdfm@dest{#1}%
9740 }
9741 \def\hyper@anchorstart#1{%
9742     \Hy@activeanchortrue
9743     \@pdfm@dest{#1}%
9744 }
9745 \def\hyper@anchorend{%
9746     \Hy@activeanchorfalse
9747 }
9748 \newcounter{Hy@AnnotLevel}
9749 \ifHy@ocgcolorlinks
9750     \def\OBJ@OCG@view{@OCG@view}%
9751     \@pdfm@mark{%
9752         obj \OBJ@OCG@view <<%
9753             /Type/OCG%
9754             /Name(View)%
9755             /Usage<<%
9756             /Print<<%
9757             /PrintState/OFF%
9758             >>%
9759             /View<<%
9760             /ViewState/ON%
9761             >>%
9762             >>%
9763             >>%
9764         }%
9765     \@pdfm@mark{close \OBJ@OCG@view}%
9766     \def\OBJ@OCG@print{@OCG@print}%
9767     \@pdfm@mark{%
9768         obj \OBJ@OCG@print <<%
9769             /Type/OCG%
9770             /Name(Print)%
9771             /Usage<<%
9772             /Print<<%
9773             /PrintState/ON%
9774             >>%
9775             /View<<%
9776             /ViewState/OFF%

```

```

9777     >>%
9778     >>%
9779     >>%
9780 }%
9781 \@pdfm@mark{close \OBJ@OCG@print}%
9782 \def\OBJ@OCGs{@OCGs}%
9783 \@pdfm@mark{%
9784   obj \OBJ@OCGs [%
9785     \OBJ@OCG@view\space\OBJ@OCG@print
9786   ]%
9787 }%
9788 \@pdfm@mark{close \OBJ@OCGs}%
9789 \@pdfm@mark{%
9790   put @catalog <<%
9791     /OCProperties<<%
9792     /OCGs \OBJ@OCGs
9793     /D<<%
9794     /OFF[\OBJ@OCG@print]%
9795     /AS[%
9796       <<%
9797         /Event/View%
9798         /OCGs \OBJ@OCGs
9799         /Category[/View]%
9800       >>%
9801       <<%
9802         /Event/Print%
9803         /OCGs \OBJ@OCGs
9804         /Category[/Print]%
9805       >>%
9806       <<%
9807         /Event/Export%
9808         /OCGs \OBJ@OCGs
9809         /Category[/Print]%
9810       >>%
9811     ]%
9812   >>%
9813   >>%
9814   >>%
9815 }%
9816 \AtBeginShipout{%
9817   \setbox\AtBeginShipoutBox=\hbox{%
9818     \copy\AtBeginShipoutBox
9819     \@pdfm@mark{%
9820       put @resources <<%
9821         /Properties<<%
9822         /OCView \OBJ@OCG@view
9823         /OCPrint \OBJ@OCG@print
9824       >>%
9825       >>%
9826     }%
9827   }%
9828 }%
9829 \Hy@AtBeginDocument{%
9830   \def\Hy@colorlink#1{%

```

```

9831 \begingroup
9832 \ifHy@ocgcolorlinks
9833 \def\Hy@ocgcolor{#1}%
9834 \setbox0=\hbox\bgroup\color@begingroup
9835 \else
9836 \HyColor@UseColor#1%
9837 \fi
9838 }%
9839 \def\Hy@endcolorlink{%
9840 \ifHy@ocgcolorlinks
9841 \color@endgroup\egroup
9842 \mbox{%
9843 \@pdfm@mark{content /OC/OCPrint BDC}%
9844 \rlap{\copy0}%
9845 \@pdfm@mark{content EMC/OC/OCView BDC}%
9846 \begingroup
9847 \expandafter\HyColor@UseColor\Hy@ocgcolor
9848 \box0 %
9849 \endgroup
9850 \@pdfm@mark{content EMC}%
9851 }%
9852 \fi
9853 \endgroup
9854 }%
9855 }%
9856 \else
9857 \Hy@DisableOption{ocgcolorlinks}%
9858 \fi

```

Use primitive counter arithmetic here to avoid amsmath redefining `\stepcounter` (github issue/13)

```

9859 \def\Hy@BeginAnnot#1{%
9860 \global\advance\c@Hy@AnnotLevel\@ne
9861 \ifnum\c@Hy@AnnotLevel=\@ne
9862 #1%
9863 \fi
9864 }
9865 \def\Hy@endAnnot{%
9866 \ifnum\value{Hy@AnnotLevel}=\@ne
9867 \Hy@endcolorlink
9868 \@pdfm@mark{eann}%
9869 \fi
9870 \global\advance\c@Hy@AnnotLevel\m@ne
9871 }
9872 \def\Hy@undefinedname{UNDEFINED}
9873 \def\hyper@linkstart#1#2{%
9874 \Hy@VerboseLinkStart{#1}{#2}%
9875 \leavevmode
9876 \Hy@BeginAnnot{%
9877 \protected@edef\Hy@testname{#2}%
9878 \ifx\Hy@testname\@empty
9879 \Hy@Warning{%
9880 Empty destination name,\MessageBreak
9881 using '\Hy@undefinedname'%

```

```

9882 }%
9883 \let\Hy@testname\Hy@undefinedname
9884 \else
9885 \Hy@pstringdef\Hy@testname{%
9886 \expandafter\HyperDestNameFilter\expandafter{%
9887 \Hy@testname
9888 }%
9889 }%
9890 \fi
9891 \@pdfm@mark{%
9892 bann<<%
9893 /Type/Annot%
9894 /Subtype/Link%
9895 \ifHy@pdfa /F 4\fi
9896 \Hy@setpdfborder
9897 \Hy@setpdfhighlight
9898 \expandafter\ifx\csname @#1bordercolor\endcsname\relax
9899 \else
9900 /C[\csname @#1bordercolor\endcsname]%
9901 \fi
9902 /A<<%
9903 /S/GoTo%
9904 /D(\Hy@testname)%
9905 \Hy@href@nextactionraw
9906 >>%
9907 >>%
9908 }%
9909 \expandafter\Hy@colorlink\csname @#1color\endcsname
9910 }%
9911 }
9912 \def\hyper@linkend{\Hy@EndAnnot}%
9913 \def\hyper@link#1#2#3{%
9914 \hyper@linkstart{#1}{#2}#3\Hy@xspace@end\hyper@linkend
9915 }
9916 \def\hyper@linkfile#1#2#3{%
9917 \leavevmode
9918 \Hy@BeginAnnot{%
9919 \def\Hy@pstringF{#2}%
9920 \Hy@CleanupFile\Hy@pstringF
9921 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
9922 \Hy@pstringdef\Hy@pstringD{#3}%
9923 \Hy@MakeRemoteAction
9924 \@pdfm@mark{%
9925 bann<<%
9926 /Type/Annot%
9927 /Subtype/Link%
9928 \ifHy@pdfa /F 4\fi
9929 \Hy@setpdfborder
9930 \Hy@setpdfhighlight
9931 \ifx\@filebordercolor\relax
9932 \else
9933 /C[\@filebordercolor]%
9934 \fi
9935 /A<<%

```

```

9936      /S/GoToR%
9937      /F(\Hy@pstringF)%
9938      /D%
9939      \ifx\|#3\|%
9940      [\Hy@href@page\@pdfremotestartview]%
9941      \else
9942      (\Hy@pstringD)%
9943      \fi
9944      \Hy@SetNewWindow
9945      \Hy@href@nextactionraw
9946      >>%
9947      >>%
9948      }%
9949      \Hy@colorlink\@filecolor
9950      }%
9951      #1\Hy@xspace@end
9952      \Hy@EndAnnot
9953      }
9954      \def\@hyper@launch run:#1\|#2#3{% filename, anchor text linkname
9955      \leavevmode
9956      \Hy@BeginAnnot{%
9957      \Hy@pstringdef\Hy@pstringF{#1}%
9958      \Hy@pstringdef\Hy@pstringP{#3}%
9959      \@pdfm@mark{%
9960      bann<<%
9961      /Type/Annot%
9962      /Subtype/Link%
9963      \ifHy@pdfa /F 4\fi
9964      \Hy@setpdfborder
9965      \Hy@setpdfhighlight
9966      \ifx\@runbordercolor\relax
9967      \else
9968      /C[\@runbordercolor]%
9969      \fi
9970      /A<<%
9971      /F(\Hy@pstringF)%
9972      /S/Launch%
9973      \Hy@SetNewWindow
9974      \ifx\|#3\|%
9975      \else
9976      /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
9977      \fi
9978      \Hy@href@nextactionraw
9979      >>%
9980      >>%
9981      }%
9982      \Hy@colorlink\@runcolor
9983      }%
9984      #2\Hy@xspace@end
9985      \Hy@EndAnnot
9986      }
9987      \def\hyper@linkurl#1#2{%
9988      \leavevmode
9989      \Hy@BeginAnnot{%

```

```

9990 \Hy@pstringdef\Hy@pstringURI{#2}%
9991 \@pdfm@mark{%
9992   bann<<%
9993     /Type/Annot%
9994     /Subtype/Link%
9995     \ifHy@pdfa /F 4\fi
9996     \Hy@setpdfborder
9997     \Hy@setpdfhighlight
9998     \ifx \@urlbordercolor\relax
9999     \else
10000       /C[\@urlbordercolor]%
10001     \fi
10002     /A<<%
10003     /S/URI%
10004     /URI(\Hy@pstringURI)%
10005     \ifHy@href@ismap
10006     /IsMap true%
10007     \fi
10008     \Hy@href@nextactionraw
10009     >>%
10010   >>%
10011 }%
10012 \Hy@colorlink \@urlcolor
10013 }%
10014 #1\Hy@xspace@end
10015 \Hy@EndAnnot
10016 }
10017 \def\Acrobatmenu#1#2{%
10018 \Hy@Acrobatmenu{#1}{#2}{%
10019   \Hy@BeginAnnot{%
10020     \EdefEscapeName\Hy@temp@menu{#1}%
10021     \@pdfm@mark{%
10022       bann<<%
10023         /Type/Annot%
10024         /Subtype/Link%
10025         \ifHy@pdfa /F 4\fi
10026         \Hy@setpdfborder
10027         \Hy@setpdfhighlight
10028         \ifx \@menubordercolor\relax
10029         \else
10030           /C[\@menubordercolor]%
10031         \fi
10032         /A<<%
10033         /S/Named%
10034         /N/\Hy@temp@menu
10035         \Hy@href@nextactionraw
10036         >>%
10037       >>%
10038     }%
10039     \Hy@colorlink \@menucolor
10040   }%
10041   #2\Hy@xspace@end
10042   \Hy@EndAnnot
10043 }%

```

```

10044 }
10045
10046 \def\PDF@FinishDoc{%
10047 \Hy@UseMaketitleInfos
10048 \HyInfo@GenerateAddons
10049 \@pdfm@mark{%
10050 docinfo<<%
10051 /Title(\@pdftitle)%
10052 /Subject(\@pdfsubject)%
10053 /Creator(\@pdfcreator)%
10054 \ifx\@pdfcreationdate\@empty
10055 \else
10056 /CreationDate(\@pdfcreationdate)%
10057 \fi
10058 \ifx\@pdfmoddate\@empty
10059 \else
10060 /ModDate(\@pdfmoddate)%
10061 \fi
10062 /Author(\@pdfauthor)%
10063 \ifx\@pdfproducer\relax
10064 \else
10065 /Producer(\@pdfproducer)%
10066 \fi
10067 /Keywords(\@pdfkeywords)%
10068 \ifx\@pdftrapped\@empty
10069 \else
10070 /Trapped/\@pdftrapped
10071 \fi
10072 \HyInfo@Addons
10073 >>%
10074 }%
10075 \Hy@DisableOption{pdfauthor}%
10076 \Hy@DisableOption{pdftitle}%
10077 \Hy@DisableOption{pdfsubject}%
10078 \Hy@DisableOption{pdfcreator}%
10079 \Hy@DisableOption{adddtopdfcreator}%
10080 \Hy@DisableOption{pdfcreationdate}%
10081 \Hy@DisableOption{pdfcreationdate}%
10082 \Hy@DisableOption{pdfmoddate}%
10083 \Hy@DisableOption{pdfproducer}%
10084 \Hy@DisableOption{pdfkeywords}%
10085 \Hy@DisableOption{pdftrapped}%
10086 \Hy@DisableOption{pdfinfo}%
10087 }

10088 \def\PDF@SetupDoc{%
10089 \edef\Hy@temp{%
10090 \ifHy@pdftoolbar\else /HideToolbar true\fi
10091 \ifHy@pdfmenubar\else /HideMenubar true\fi
10092 \ifHy@pdfwindowui\else /HideWindowUI true\fi
10093 \ifHy@pdfwindow /FitWindow true\fi
10094 \ifHy@pdfcenterwindow /CenterWindow true\fi
10095 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10096 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10097 \Hy@UseNameKey{Direction}\@pdfdirection

```

```

10098 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10099 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10100 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10101 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10102 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10103 \Hy@UseNameKey{Duplex}\@pdfduplex
10104 \ifx\@pdfpicktraybypdfsize\@empty
10105 \else
10106 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10107 \fi
10108 \ifx\@pdfprintpagerange\@empty
10109 \else
10110 /PrintPageRange[\@pdfprintpagerange]%
10111 \fi
10112 \ifx\@pdfnumcopies\@empty
10113 \else
10114 /NumCopies \@pdfnumcopies
10115 \fi
10116 }%
10117 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10118 \@pdfm@mark{%
10119 docview<<%
10120 \ifx\@pdfstartpage\@empty
10121 \else
10122 \ifx\@pdfstartview\@empty
10123 \else
10124 /OpenAction[@page\@pdfstartpage\@pdfstartview]%
10125 \fi
10126 \fi
10127 \ifx\@baseurl\@empty
10128 \else
10129 /URI<</Base(\Hy@pstringB)>>%
10130 \fi
10131 /PageMode/\@pdfpagemode
10132 \ifx\Hy@temp\@empty
10133 \else
10134 /ViewerPreferences<<\Hy@temp>>%
10135 \fi
10136 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10137 \ifx\@pdflang\relax
10138 \else
10139 /Lang(\@pdflang)%
10140 \fi
10141 >>%
10142 }%
10143 \ifx\@pdfpagescrop\@empty
10144 \else
10145 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}%
10146 \fi
10147 }
10148 </dvi/pdfm | xetex>
10149 <*/dvi/pdfm | xetex>

```

\hyper@pagetransition



```

10150 \def\hyper@pagetransition{%
10151 \ifx\@pdfpagetransition\relax
10152 \else
10153 \ifx\@pdfpagetransition\@empty
10154 \else
10155 \special{pdf:put @thispage %
10156 <</Trans<</S/\@pdfpagetransition>>>>%
10157 }%
10158 \fi
10159 \fi
10160 }

```

\hyper@pageduration

```

10161 \def\hyper@pageduration{%
10162 \ifx\@pdfpageduration\relax
10163 \else
10164 \ifx\@pdfpageduration\@empty
10165 \else
10166 \special{pdf:put @thispage %
10167 <</Dur \@pdfpageduration>>>%
10168 }%
10169 \fi
10170 \fi
10171 }

10172 \g@addto@macro\Hy@EveryPageBoxHook{%
10173 \hyper@pagetransition
10174 \hyper@pageduration
10175 }

10176 </dvi pdfm | xetex>

```

XeTeX uses pdfTeX's method `\pdfpagewidth` and `\pdfpageheight` for setting the paper size.

```

10177 (*dvi pdfm)
10178 \AtBeginShipoutFirst{%
10179 \ifHy@setpagesize
10180 \begingroup
10181 \ifnum\mag=\@m
10182 \ifdim\stockwidth>\z@
10183 \ifdim\stockheight>\z@
10184 \special{papersize=\the\stockwidth,\the\stockheight}%
10185 \else
10186 \ifdim\paperwidth>\z@
10187 \ifdim\paperheight>\z@
10188 \special{papersize=\the\paperwidth,\the\paperheight}%
10189 \fi
10190 \fi
10191 \fi
10192 \else
10193 \ifdim\stockwidth=\z@
10194 \ifdim\paperwidth>\z@
10195 \ifdim\paperheight>\z@
10196 \special{papersize=\the\paperwidth,\the\paperheight}%
10197 \fi

```

```

10198     \fi
10199     \fi
10200     \fi
10201     \fi
10202     \endgroup
10203     \fi
10204     \Hy@DisableOption{setpagesize}%
10205 }
10206 </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.

```

10207 <*vtexhtml>
10208 \providecommand*\XR@ext}{htm}
10209 \RequirePackage{vtexhtml}
10210 \newif\if@Localurl
10211 \let\PDF@FinishDoc\@empty
10212 \def\PDF@SetupDoc{%
10213   \ifx\@baseurl\@empty
10214     \else
10215     \special{!direct <base href="\@baseurl">}%
10216   \fi
10217 }
10218 \def\@urltype{url}
10219 \def\hyper@link#1#2#3{%
10220   \Hy@VerboseLinkStart{#1}{#2}%
10221   \leavevmode
10222   \special{!direct <a href=%
10223     \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
10224   #3\Hy@xspace@end
10225   \special{!direct </a>}%
10226 }
10227 \def\hyper@linkurl#1#2{%
10228   \begingroup
10229   \hyper@chars
10230   \leavevmode
10231   \MathBSuppress=1\relax
10232   \special{!direct <a href=%
10233     \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}%
10234   #1\Hy@xspace@end
10235   \MathBSuppress=0\relax
10236   \special{!direct </a>}%
10237   \endgroup
10238 }
10239 \def\hyper@linkfile#1#2#3{%
10240   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
10241 }
10242 \def\hyper@linkstart#1#2{%
10243   \Hy@VerboseLinkStart{#1}{#2}%
10244   \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
10245     \@Localurltrue
10246     \special{!direct <a href=\hyper@quote#2\hyper@quote>}%

```

```

10247 \else
10248 \@@Localurlfalse
10249 \begingroup
10250 \hyper@chars
10251 \special{!aref \HyperDestNameFilter{#2}}%
10252 \endgroup
10253 \fi
10254 }
10255 \def\hyper@linkend{%
10256 \if@Localurl
10257 \special{!endaref}%
10258 \else
10259 \special{!direct </a>}%
10260 \fi
10261 }
10262 \Hy@WrapperDef\hyper@anchorstart#1{%
10263 \Hy@SaveLastskip
10264 \Hy@VerboseAnchor{#1}%
10265 \begingroup
10266 \hyper@chars
10267 \special{!aname #1}%
10268 \special{!direct <a name=%
10269 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10270 \endgroup
10271 \Hy@activeanchortrue
10272 }
10273 \def\hyper@anchorend{%
10274 \special{!direct </a>}%
10275 \Hy@activeanchorfalse
10276 \Hy@RestoreLastskip
10277 }
10278 \Hy@WrapperDef\hyper@anchor#1{%
10279 \Hy@SaveLastskip
10280 \Hy@VerboseAnchor{#1}%
10281 \begingroup
10282 \let\protect=\string
10283 \hyper@chars
10284 \leavevmode
10285 \special{!aname #1}%
10286 \special{!direct <a name=%
10287 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10288 \endgroup
10289 \Hy@activeanchortrue
10290 \bgroup\anchor@spot\egroup
10291 \special{!direct </a>}%
10292 \Hy@activeanchorfalse
10293 \Hy@RestoreLastskip
10294 }
10295 \def\@@Form[#1]{%
10296 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10297 }
10298 \let\@endForm\@empty
10299 \def\@@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10300 \Hy@Message{Sorry, TeXpider does not yet support FORM gauges}%

```

```

10301 }
10302 \def\@TextField[#1]#2{% parameters, label
10303 \Hy@Message{Sorry, TeXpider does not yet support FORM text fields}%
10304 }
10305 \def\@CheckBox[#1]#2{% parameters, label
10306 \Hy@Message{Sorry, TeXpider does not yet support FORM checkboxes}%
10307 }
10308 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10309 \Hy@Message{Sorry, TeXpider does not yet support FORM choice menus}%
10310 }
10311 \def\@PushButton[#1]#2{% parameters, label
10312 \Hy@Message{Sorry, TeXpider does not yet support FORM pushbuttons}%
10313 }
10314 \def\@Reset[#1]#2{%
10315 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10316 }
10317 \def\@Submit[#1]#2{%
10318 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10319 }
10320 </vtexthtml>
10321 <*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.

```

10322 \ifcsname mediaheight\endcsname
10323 \ifHy@setpagesize
10324 \providecommand*\VTeXInitMediaSize{%
10325 \ifnum\mag=\@m
10326 \ifdim\stockwidth>\z@
10327 \ifdim\stockheight>\z@
10328 \setlength\mediaheight\stockheight
10329 \setlength\mediawidth\stockwidth
10330 \else
10331 \ifdim\paperwidth>\z@
10332 \ifdim\paperheight>\z@
10333 \setlength\mediaheight\paperheight
10334 \setlength\mediawidth\paperwidth
10335 \fi
10336 \fi
10337 \fi
10338 \else
10339 \ifdim\stockwidth=\z@
10340 \ifdim\paperwidth>\z@
10341 \ifdim\paperheight>\z@
10342 \setlength\mediaheight\paperheight
10343 \setlength\mediawidth\paperwidth
10344 \fi
10345 \fi
10346 \fi
10347 \fi
10348 \fi
10349 }%
10350 \Hy@AtBeginDocument{\VTeXInitMediaSize}%

```

```

10351 \fi
10352 \Hy@DisableOption{setpagesize}%
10353 \fi
Older versions of VTeX require xyz in lower case.
10354 \providecommand*\@pdfview{xyz}
10355 \providecommand*\@pdfborder{0 0 1}
10356 \providecommand*\@pdfborderstyle{}
10357 \let\CurrentBorderColor\@linkbordercolor
10358 \Hy@WrapperDef\hyper@anchor#1{%
10359 \Hy@SaveLastskip
10360 \Hy@VerboseAnchor{#1}%
10361 \begingroup
10362 \let\protect=\string
10363 \hyper@chars
10364 \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10365 \endgroup
10366 \Hy@activeanchortrue
10367 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
10368 \Hy@activeanchorfalse
10369 \Hy@RestoreLastskip
10370 }
10371 \Hy@WrapperDef\hyper@anchorstart#1{%
10372 \Hy@SaveLastskip
10373 \Hy@VerboseAnchor{#1}%
10374 \begingroup
10375 \hyper@chars
10376 \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10377 \endgroup
10378 \Hy@activeanchortrue
10379 }
10380 \def\hyper@anchorend{%
10381 \Hy@activeanchorfalse
10382 \Hy@RestoreLastskip
10383 }
10384 \def\@urltype{url}
10385 \def\Hy@undefinedname{UNDEFINED}
10386 \def\hyper@linkstart#1#2{%
10387 \Hy@VerboseLinkStart{#1}{#2}%
10388 \Hy@pstringdef\Hy@pstringURI{#2}%
10389 \expandafter\Hy@colorlink\csname @#1color\endcsname
10390 \@ifundefined{#@1bordercolor}{%
10391 \let\CurrentBorderColor\relax
10392 }{%
10393 \edef\CurrentBorderColor{%
10394 \csname @#1bordercolor\endcsname
10395 }%
10396 }%
10397 \def\Hy@tempa{#1}%
10398 \ifx\Hy@tempa\@urltype
10399 \special{!%
10400 aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10401 \ifHy@href@ismap
10402 /IsMap true%
10403 \fi

```

```

10404     \Hy@href@nextactionraw
10405     >,%
10406     a=<%
10407     \ifHy@pdfa /F 4\fi
10408     \Hy@setpdfborder
10409     \ifx\CurrentBorderColor\relax
10410     \else
10411     /C [\CurrentBorderColor]%
10412     \fi
10413     >%
10414     }%
10415 \else
10416 \protected@edef\Hy@testname{#2}%
10417 \ifx\Hy@testname\@empty
10418 \Hy@Warning{%
10419     Empty destination name,\MessageBreak
10420     using ` \Hy@undefinedname'%
10421     }%
10422 \let\Hy@testname\Hy@undefinedname
10423 \fi
10424 \special{!%
10425     aref \expandafter\HyperDestNameFilter
10426     \expandafter{\Hy@testname};%
10427     a=<%
10428     \ifHy@pdfa /F 4\fi
10429     \Hy@setpdfborder
10430     \ifx\CurrentBorderColor\relax
10431     \else
10432     /C [\CurrentBorderColor]%
10433     \fi
10434     >%
10435     }%
10436 \fi
10437 }
10438 \def\hyper@linkend{%
10439 \special{!endaref}%
10440 \Hy@endcolorlink
10441 }
10442 \def\hyper@linkfile#1#2#3{%
10443 \leavevmode
10444 \def\Hy@pstringF{#2}%
10445 \Hy@CleanupFile\Hy@pstringF
10446 \special{!%
10447     aref <%
10448     \ifnum\Hy@VTeXversion>753 \ifHy@pdfnewwindow n\fi\fi
10449     f=\Hy@pstringF>#3;%
10450     a=<%
10451     \ifHy@pdfa /F 4\fi
10452     \Hy@setpdfborder
10453     \ifx\@filebordercolor\relax
10454     \else
10455     /C [\@filebordercolor]%
10456     \fi
10457     >%

```

```

10458 }%
10459 \Hy@colorlink\@filecolor
10460 #1\Hy@xspace@end
10461 \Hy@endcolorlink
10462 \special{!endaref}%
10463 }
10464 \def\hyper@linkurl#1#2{%
10465 \begingroup
10466 \Hy@pstringdef\Hy@pstringURI{#2}%
10467 \hyper@chars
10468 \leavevmode
10469 \special{!%
10470   aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10471   \ifHy@href@ismap
10472     /IsMap true%
10473   \fi
10474   \Hy@href@nextactionraw
10475   >,%
10476   a=<%
10477   \ifHy@pdfa /F 4\fi
10478   \Hy@setpdfborder
10479   \ifx \@urlbordercolor\relax
10480     \else
10481     /C [\@urlbordercolor]%
10482   \fi
10483   >%
10484 }%
10485 \Hy@colorlink\@urlcolor
10486 #1\Hy@xspace@end
10487 \Hy@endcolorlink
10488 \special{!endaref}%
10489 \endgroup
10490 }
10491 \def\hyper@link#1#2#3{%
10492 \Hy@VerboseLinkStart{#1}{#2}%
10493 \@ifundefined{@#1bordercolor}{%
10494 \let\CurrentBorderColor\relax
10495 }{%
10496 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
10497 }%
10498 \leavevmode
10499 \protected@edef\Hy@testname{#2}%
10500 \ifx\Hy@testname\@empty
10501 \Hy@Warning{%
10502   Empty destination name,\MessageBreak
10503   using ` \Hy@undefinedname'%
10504 }%
10505 \let\Hy@testname\Hy@undefinedname
10506 \fi
10507 \special{!%
10508   aref \expandafter\HyperDestNameFilter
10509   \expandafter{\Hy@testname};%
10510   a=<%
10511   \ifHy@pdfa /F 4\fi

```

```

10512 \Hy@setpdfborder
10513 \ifx\CurrentBorderColor\relax
10514 \else
10515 /C [\CurrentBorderColor]%
10516 \fi
10517 >%
10518 }%
10519 \expandafter
10520 \Hy@colorlink\csname @#1color\endcsname
10521 #3\Hy@xspace@end
10522 \Hy@endcolorlink
10523 \special{!endaref}%
10524 }
10525 \def\hyper@image#1#2{%
10526 \hyper@linkurl{#2}{#1}%
10527 }
10528 \def\@hyper@launch run:#1\#2#3{%
10529 \Hy@pstringdef\Hy@pstringF{#1}%
10530 \Hy@pstringdef\Hy@pstringP{#3}%
10531 \leavevmode
10532 \special{!aref %
10533 <u=%
10534 /Type/Action%
10535 /S/Launch%
10536 /F(\Hy@pstringF)%
10537 \Hy@SetNewWindow
10538 \ifx\#3\%
10539 \else
10540 /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>%
10541 \fi
10542 \Hy@href@nextactionraw
10543 >,%
10544 a=<%
10545 \ifHy@pdfa /F 4\fi
10546 \Hy@setpdfborder
10547 \ifx\@runbordercolor\relax
10548 \else
10549 /C[\@runbordercolor]%
10550 \fi
10551 >%
10552 }%
10553 \Hy@colorlink\@runcolor
10554 #2\Hy@xspace@end
10555 \Hy@endcolorlink
10556 \special{!endaref}%
10557 }
10558 \def\Acrobatmenu#1#2{%
10559 \EdefEscapeName\Hy@temp@menu{#1}%
10560 \Hy@Acrobatmenu{#1}{#2}{%
10561 \special{!%
10562 aref <u=/S /Named /N /\Hy@temp@menu>;%
10563 a=<%
10564 \ifHy@pdfa /F 4\fi
10565 \Hy@setpdfborder

```



```

10566     \ifx\@menubordercolor\relax
10567     \else
10568     /C[\@menubordercolor]%
10569     \fi
10570     >%
10571     }%
10572     \Hy@colorlink\@menucolor
10573     #2\Hy@xspace@end
10574     \Hy@endcolorlink
10575     \special{!endaref}%
10576     }%
10577 }

```

The following code (transition effects) is made by Alex Kostin.

The code below makes sense for  $\text{V}\text{T}\text{E}\text{X}$  7.02 or later.

Please never use  $\@ifundefined{V\TeX version}\{..\}\{..\}$  *globally*.

```

10578 \ifnum\Hy@VTeXversion<702 %
10579 \else
10580 \def\hyper@pagetransition{%
10581 \ifx\@pdfpagetransition\relax
10582 \else
10583 \ifx\@pdfpagetransition\@empty

```

Standard incantation.

1. Does an old entry have to be deleted? 2. If 1=yes, how to delete?

```

10584 \else
10585 \hvtex@parse@trans\@pdfpagetransition
10586 \fi
10587 \fi
10588 }%

```

I have to write an “honest” parser to convert raw PDF code into  $\text{V}\text{T}\text{E}\text{X}$   $\backslash\text{special}$ . (AVK)

Syntax of  $\text{V}\text{T}\text{E}\text{X}$   $\backslash\text{special}\{!\text{trans } \langle\text{transition\_effect}\rangle\}$ :

```

<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:

```

10589 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
10590 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
10591 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%

```

```

10592 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
10593 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
10594 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
10595 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%

```

Optional parameters:

```

10596 \def\hvtex@par@dimension{/Dm}%
10597 \def\hvtex@par@direction{/Di}%
10598 \def\hvtex@par@duration{/D}%
10599 \def\hvtex@par@motion{/M}%

```

Tokenizer:

```

10600 \def\hvtex@gettoken{%
10601   \expandafter\hvtex@gettoken@\hvtex@buffer\@nil
10602 }%

```

Notice that tokens in the input buffer must be space delimited.

```

10603 \def\hvtex@gettoken@#1 #2\@nil{%
10604   \edef\hvtex@token{#1}%
10605   \edef\hvtex@buffer{#2}%
10606 }%
10607 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

10608 \let\hvtex@trans@code\@empty
10609 \let\hvtex@param@dimension\@empty
10610 \let\hvtex@param@direction\@empty
10611 \let\hvtex@param@duration\@empty
10612 \let\hvtex@param@motion\@empty
10613 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

10614 \hvtex@gettoken
10615 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

10616   \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

10617   \else
10618     \hvtex@gettoken
10619   \fi
10620 \fi
10621 \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```

10622 \hvtex@trans@params
10623 }%

```

Reentrant macro to parse optional parameters.

```

10624 \def\hvtex@trans@params{%
10625   \ifx\hvtex@buffer\@empty
10626   \else
10627     \hvtex@gettoken
10628     \let\hvtex@trans@par\hvtex@token
10629     \ifx\hvtex@buffer\@empty
10630     \else
10631       \hvtex@gettoken
10632       \ifx\hvtex@trans@par\hvtex@par@duration

```

/D is the effect duration in seconds. V<sub>T</sub>E<sub>X</sub> special takes it in milliseconds.

```

10633     \let\hvtex@param@duration\hvtex@token
10634     \else \ifx\hvtex@trans@par\hvtex@par@motion
/M can be either /I or /O
10635     \expandafter\edef\expandafter\hvtex@param@motion
10636     \expandafter{\expandafter\@gobble\hvtex@token}%
10637     \else \ifx\hvtex@trans@par\hvtex@par@dimension

```

/Dm can be either /H or /V

```

10638     \expandafter\edef\expandafter\hvtex@param@dimension
10639     \expandafter{\expandafter\@gobble\hvtex@token}%
10640     \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).

```

10641     \let\hvtex@param@direction\hvtex@token
10642     \fi\fi\fi
10643     \fi
10644     \fi
10645     \ifx\hvtex@buffer\@empty
10646     \let\next\hvtex@produce@trans
10647     \else
10648     \let\next\hvtex@trans@params
10649     \fi
10650     \next
10651 }%

```

Merge <transition\_effect> and issue the special when possible. Too lazy to validate optional parameters.

```

10652 \def\hvtex@produce@trans{%
10653 \let\vtex@trans@special\@empty
10654 \if S\hvtex@trans@code
10655 \edef\vtex@trans@special{\hvtex@trans@code
10656 \hvtex@param@dimension\hvtex@param@motion}%
10657 \else\if B\hvtex@trans@code
10658 \edef\vtex@trans@special{%
10659 \hvtex@trans@code\hvtex@param@dimension
10660 }%
10661 \else\if X\hvtex@trans@code
10662 \edef\vtex@trans@special{%
10663 \hvtex@trans@code\hvtex@param@motion
10664 }%
10665 \else\if W\hvtex@trans@code
10666 \edef\vtex@trans@special{%
10667 \hvtex@trans@code\hvtex@param@direction
10668 }%
10669 \else\if D\hvtex@trans@code
10670 \let\vtex@trans@special\hvtex@trans@code
10671 \else\if R\hvtex@trans@code
10672 \let\vtex@trans@special\hvtex@trans@code
10673 \else\if G\hvtex@trans@code
10674 \edef\vtex@trans@special{%
10675 \hvtex@trans@code\hvtex@param@direction
10676 }%

```

```

10677 \fi\fi\fi\fi\fi\fi
10678 \ifx\vtex@trans@special@empty
10679 \else
10680 \ifx\hvtex@param@duration@empty
10681 \else
10682 \setlength{\dimen@}{\hvtex@param@duration\p@}%

```

I'm not guilty of possible overflow.

```

10683 \multiply\dimen@\@m
10684 \edef\vtex@trans@special{%
10685 \vtex@trans@special,\strip@pt\dimen@
10686 }%
10687 \fi

```

And all the mess is just for this.

```

10688 \special{!trans \vtex@trans@special}%
10689 \fi
10690 }%

10691 \def\hyper@pageduration{%
10692 \ifx\@pdfpageduration\relax
10693 \else
10694 \ifx\@pdfpageduration@empty
10695 \special{!duration-}%
10696 \else
10697 \special{!duration \@pdfpageduration}%
10698 \fi
10699 \fi
10700 }%
10701 \g@addto@macro\Hy@EveryPageBoxHook{%
10702 \hyper@pagetransition
10703 \hyper@pageduration
10704 }%
10705 \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

```

10706 \ifx\@pdfproducer\relax
10707 \def\@pdfproducer{VTeX}%
10708 \ifnum\Hy@VTeXversion>\z@
10709 \count@\VTeXversion
10710 \divide\count@ 100 %
10711 \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
10712 \multiply\count@ -100 %
10713 \advance\count@\VTeXversion
10714 \edef\@pdfproducer{%
10715 \@pdfproducer

```

```

10716 .\ifnum\count@<10 0\fi\the\count@
10717 \ifx\VTeXOS\@undefined\else
10718 \ifnum\VTeXOS>0 %
10719 \ifnum\VTeXOS<6 %
10720 \space(%
10721 \ifcase\VTeXOS
10722 \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
10723 \fi
10724 )%
10725 \fi
10726 \fi
10727 \fi
10728 ,\space
10729 \ifnum\OpMode=\@one PDF\else PS\fi
10730 \space backend%
10731 \ifx\gexmode\@undefined\else
10732 \ifnum\gexmode>\z@\space with GeX\fi
10733 \fi
10734 }%
10735 \fi
10736 \fi

```

Current `!pdfinfo` key syntax:

Key	Field	Type
<b>a</b>	<b>Author</b>	String
<b>b</b>	<b>CropBox</b>	String
<b>c</b>	<b>Creator</b>	String
<b>k</b>	<b>Keywords</b>	String
<b>l</b>	<b>PageLayout</b>	PS
<b>p</b>	<b>PageMode</b>	PS
<b>r</b>	<b>Producer</b>	String
<b>s</b>	<b>Subject</b>	String
<b>t</b>	<b>Title</b>	String
<b>u</b>	<b>URI</b>	PS
<b>v</b>	<b>ViewPreferences</b>	PS

Note: PS objects that are dicts are in <<<.>>> (yuck; no choice).

```

10737 \def\PDF@SetupDoc{%
10738 \ifx\@pdfpagescrop\@empty
10739 \else
10740 \special{!pdfinfo b=<\@pdfpagescrop>}%
10741 \fi
10742 \ifx\@pdfstartpage\@empty
10743 \else
10744 \ifx\@pdfstartview\@empty
10745 \else
10746 \special{!onopen Page\@pdfstartpage}%
10747 \fi
10748 \fi
10749 \special{!pdfinfo p=</\@pdfpagemode>}%
10750 \ifx\@baseurl\@empty
10751 \else
10752 \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
10753 \fi

```

```

10754 \special{!pdfinfo v=<<<%
10755   \ifHy@pdftoolbar\else /HideToolbar true\fi
10756   \ifHy@pdfmenubar\else /HideMenubar true\fi
10757   \ifHy@pdfwindowui\else /HideWindowUI true\fi
10758   \ifHy@pdfwindow /FitWindow true\fi
10759   \ifHy@pdfcenterwindow /CenterWindow true\fi
10760   \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10761   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10762   \Hy@UseNameKey{Direction}\@pdfdirection
10763   \Hy@UseNameKey{ViewArea}\@pdfviewarea
10764   \Hy@UseNameKey{ViewClip}\@pdfviewclip
10765   \Hy@UseNameKey{PrintArea}\@pdfprintarea
10766   \Hy@UseNameKey{PrintClip}\@pdfprintclip
10767   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10768   \Hy@UseNameKey{Duplex}\@pdfduplex
10769   \ifx\@pdfpicktraybypdfsize\@empty
10770   \else
10771     /PickTrayByPDFSize \@pdfpicktraybypdfsize
10772   \fi
10773   \ifx\@pdfprintpagerange\@empty
10774   \else
10775     /PrintPageRange[\@pdfprintpagerange]%
10776   \fi
10777   \ifx\@pdfnumcopies\@empty
10778   \else
10779     /NumCopies \@pdfnumcopies
10780   \fi
10781 >>>}%
10782 \ifx\@pdfpagelayout\@empty
10783 \else
10784 \special{!pdfinfo l=</\@pdfpagelayout\space>}%
10785 \fi
10786 }%
10787 \HyInfo@AddonUnsupportedtrue
10788 \define@key{Hyp}{pdfcreationdate}{%
10789   \Hy@Warning{%
10790     VTeX does not support pdfcreationdate.\MessageBreak
10791     Therefore its setting is ignored%
10792   }%
10793 }
10794 \define@key{Hyp}{pdfmoddate}{%
10795   \Hy@Warning{%
10796     VTeX does not support pdfmoddate.\MessageBreak
10797     Therefore its setting is ignored%
10798   }%
10799 }
10800 \def\PDF@FinishDoc{%
10801   \Hy@UseMaketitleInfos
10802   \HyInfo@TrappedUnsupported
10803   \special{!pdfinfo a=<\@pdfauthor>}%
10804   \special{!pdfinfo t=<\@pdftitle>}%
10805   \special{!pdfinfo s=<\@pdfsubject>}%
10806   \special{!pdfinfo c=<\@pdfcreator>}%
10807   \ifx\@pdfproducer\relax

```

```

10808 \else
10809   \special{!pdfinfo r=<\@pdfproducer>}%
10810 \fi
10811 \special{!pdfinfo k=<\@pdfkeywords>}%
10812 \Hy@DisableOption{pdfauthor}%
10813 \Hy@DisableOption{pdftitle}%
10814 \Hy@DisableOption{pdfsubject}%
10815 \Hy@DisableOption{pdfcreator}%
10816 \Hy@DisableOption{addtopdfcreator}%
10817 \Hy@DisableOption{pdfcreationdate}%
10818 \Hy@DisableOption{pdfcreationdate}%
10819 \Hy@DisableOption{pdfmoddate}%
10820 \Hy@DisableOption{pdfproducer}%
10821 \Hy@DisableOption{pdfkeywords}%
10822 \Hy@DisableOption{pdftrapped}%
10823 \Hy@DisableOption{pdfinfo}%
10824 }
10825 </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.

```

10826 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
10827 <packageEnd>\providecommand*{\Hy@DistillerDestFix}{-}
10828 <*pdfmark | dviwindo>
10829 \def\Hy@DistillerDestFix{%
10830   \begingroup
10831   \let\x\literalps@out

```

The fix has to be passed unchanged through GeX, if VTeX in PostScript mode with GeX is used.

```

10832   \ifnum \@ifundefined{OpMode}{0}{0}{%
10833     \@ifundefined{gexmode}{0}{0}{%
10834       \ifnum\gexmode>0 \OpMode\else 0\fi
10835     }>1 %
10836   \def\x##1{%
10837     \immediate\special{!##1}%
10838   }%
10839 \fi
10840 \x{%
10841   /product where{%
10842     pop %
10843     product(Distiller)search{%
10844       pop pop pop %
10845     version(.)search{%

```

```

10846     exch pop exch pop%
10847     (3011)eq{%
10848         gsave %
10849         newpath 0 0 moveto closepath clip%
10850         /Courier findfont 10 scalefont setfont %
10851         72 72 moveto(.)show %
10852         grestore%
10853     }if%
10854     }{pop}ifelse%
10855     }{pop}ifelse%
10856     }if%
10857     }%
10858 \endgroup
10859 }
10860 </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

```

```

10861 (*pdfmark)
10862 \Hy@breaklinks@unsupported
10863 \def\HyPat@ObjRef{%
10864   \[~{}]+\}%
10865 }
10866 \Hy@WrapperDef\hyper@anchor#1{%
10867   \Hy@SaveLastskip
10868   \Hy@VerboseAnchor{#1}%
10869   \begingroup
10870   \pdfmark[\anchor@spot]{%
10871     pdfmark=/DEST,%
10872     linktype=anchor,%
10873     View=/\@pdfview \@pdfviewparams,%
10874     DestAnchor={#1}%
10875   }%
10876 \endgroup
10877 \Hy@RestoreLastskip
10878 }
10879 \@ifundefined{hyper@anchorstart}{\endinput}{}
10880 \Hy@WrapperDef\hyper@anchorstart#1{%
10881   \Hy@SaveLastskip
10882   \Hy@VerboseAnchor{#1}%
10883   \literalps@out{H.S}%

```



```

10884 \Hy@AllowHyphens
10885 \xdef\hyper@currentanchor{#1}%
10886 \Hy@activeanchortrue
10887 }
10888 \def\hyper@anchorend{%
10889 \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
10890 \pdfmark{%
10891 pdfmark=/DEST,%
10892 linktype=anchor,%
10893 View=/\@pdfview \@pdfviewparams,%
10894 DestAnchor=\hyper@currentanchor,%
10895 }%
10896 \Hy@activeanchorfalse
10897 \Hy@RestoreLastskip
10898 }
10899 \def\hyper@linkstart#1#2{%
10900 \Hy@VerboseLinkStart{#1}{#2}%
10901 \ifHy@breaklinks
10902 \else
10903 \leavevmode
10904 \ifmmode
10905 \def\Hy@LinkMath{#}%
10906 \else
10907 \let\Hy@LinkMath\@empty
10908 \fi
10909 \Hy@SaveSpaceFactor
10910 \hbox\bgroup
10911 \Hy@RestoreSpaceFactor
10912 \Hy@LinkMath
10913 \fi
10914 \expandafter\Hy@colorlink\csname @#1color\endcsname
10915 \literalps@out{H.S}%
10916 \Hy@AllowHyphens
10917 \xdef\hyper@currentanchor{#2}%
10918 \gdef\hyper@currentlinktype{#1}%
10919 }
10920 \def\hyper@linkend{%
10921 \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
10922 \@ifundefined{@\hyper@currentlinktype bordercolor}{%
10923 \let\Hy@tempcolor\relax
10924 }{%
10925 \edef\Hy@tempcolor{%
10926 \csname @\hyper@currentlinktype bordercolor\endcsname
10927 }%
10928 }%
10929 \pdfmark{%
10930 pdfmark=/ANN,%
10931 linktype=link,%
10932 Subtype=/Link,%
10933 PDFAFlags=4,%
10934 Dest=\hyper@currentanchor,%
10935 AcroHighlight=\@pdfhighlight,%
10936 Border=\@pdfborder,%
10937 BorderStyle=\@pdfborderstyle,%

```

```

10938   Color=\Hy@tempcolor,%
10939   Raw=H.B%
10940 }%
10941 \Hy@endcolorlink
10942 \ifHy@breaklinks
10943 \else
10944   \Hy@LinkMath
10945   \Hy@SaveSpaceFactor
10946 \egroup
10947 \Hy@RestoreSpaceFactor
10948 \fi
10949 }

```

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.

```

10950 \begingroup
10951 \catcode`P=12 %
10952 \catcode`T=12 %
10953 \lowercase{\endgroup
10954 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
10955 }
10956 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

`\hyper@pagetransition`

```

10957 \def\hyper@pagetransition{%
10958 \ifx\@pdfpagetransition\relax
10959 \else
10960 \ifx\@pdfpagetransition\@empty
10961 % 1. Does an old entry have to be deleted?
10962 % 2. If 1=yes, how to delete?
10963 \else
10964 \pdfmark{%
10965 pdfmark=/PUT,%
10966 Raw={%
10967 \string{ThisPage\string}%
10968 <</Trans << /S /\@pdfpagetransition\space >> >>%
10969 }%
10970 }%
10971 \fi
10972 \fi
10973 }

```

`\hyper@pageduration`

```

10974 \def\hyper@pageduration{%
10975 \ifx\@pdfpageduration\relax
10976 \else
10977 \ifx\@pdfpageduration\@empty
10978 % 1. Does an old entry have to be deleted?
10979 % 2. If 1=yes, how to delete?
10980 \else
10981 \pdfmark{%
10982 pdfmark=/PUT,%
10983 Raw={%

```

```

10984     \string{ThisPage\string}%
10985     <</Dur \@pdfpageduration>>%
10986     }%
10987   }%
10988   \fi
10989 \fi
10990 }

10991 \g@addto@macro\Hy@EveryPageBoxHook{%
10992   \hyper@pagetransition
10993   \hyper@pageduration
10994 }

10995 \def\hyper@image#1#2{%
10996   \hyper@linkurl{#2}{#1}%
10997 }
10998 \def\Hy@undefinedname{UNDEFINED}
10999 \def\hyper@link#1#2#3{%
11000   \Hy@VerboseLinkStart{#1}{#2}%
11001   \@ifundefined{@#1bordercolor}{%
11002     \let\Hy@tempcolor\relax
11003   }{%
11004     \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
11005   }%
11006   \begingroup
11007     \protected@edef\Hy@testname{#2}%
11008     \ifx\Hy@testname\@empty
11009       \Hy@Warning{%
11010         Empty destination name,\MessageBreak
11011         using '\Hy@undefinedname'%
11012       }%
11013       \let\Hy@testname\Hy@undefinedname
11014     \fi
11015     \pdfmark[#{#3}]{%
11016       Color=\Hy@tempcolor,%
11017       linktype={#1},%
11018       AcroHighlight=\@pdfhighlight,%
11019       Border=\@pdfborder,%
11020       BorderStyle=\@pdfborderstyle,%
11021       pdfmark=/ANN,%
11022       Subtype=/Link,%
11023       PDFAFlags=4,%
11024       Dest=\Hy@testname
11025     }%
11026   \endgroup
11027 }
11028 \newtoks\pdf@docset
11029 \def\PDF@FinishDoc{%
11030   \Hy@UseMaketitleInfos
11031   \Hy@Info@GenerateAddons
11032   \let\Hy@temp\@empty
11033   \ifx\@pdfcreationdate\@empty
11034     \else
11035     \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
11036   \fi

```

```

11037 \ifx \@pdfmoddate \@empty
11038 \else
11039 \expandafter \def \expandafter \Hy@temp \expandafter {%
11040 \Hy@temp
11041 ModDate=\@pdfmoddate,%
11042 }%
11043 \fi
11044 \ifx \@pdfproducer \relax
11045 \else
11046 \expandafter \def \expandafter \Hy@temp \expandafter {%
11047 \Hy@temp
11048 Producer=\@pdfproducer,%
11049 }%
11050 \fi
11051 \expandafter
11052 \pdfmark \expandafter {%
11053 \Hy@temp
11054 pdfmark=/DOCINFO,%
11055 Title=\@pdftitle,%
11056 Subject=\@pdfsubject,%
11057 Creator=\@pdfcreator,%
11058 Author=\@pdfauthor,%
11059 Keywords=\@pdfkeywords,%
11060 Trapped=\@pdftrapped
11061 }%
11062 \ifx \HyInfo@Addons \@empty
11063 \else
11064 \pdfmark {%
11065 pdfmark=/DOCINFO,%
11066 Raw={\HyInfo@Addons}%
11067 }%
11068 \fi
11069 \Hy@DisableOption{pdfauthor}%
11070 \Hy@DisableOption{pdftitle}%
11071 \Hy@DisableOption{pdfsubject}%
11072 \Hy@DisableOption{pdfcreator}%
11073 \Hy@DisableOption{addtopdfcreator}%
11074 \Hy@DisableOption{pdfcreationdate}%
11075 \Hy@DisableOption{pdfcreationdate}%
11076 \Hy@DisableOption{pdfmoddate}%
11077 \Hy@DisableOption{pdfproducer}%
11078 \Hy@DisableOption{pdfkeywords}%
11079 \Hy@DisableOption{pdftrapped}%
11080 \Hy@DisableOption{pdfinfo}%
11081 }
11082 \def \PDF@SetupDoc {%
11083 \def \Hy@temp {}%
11084 \ifx \@pdfstartpage \@empty
11085 \else
11086 \ifx \@pdfstartview \@empty
11087 \else
11088 \edef \Hy@temp {%
11089 ,Page=\@pdfstartpage
11090 ,View=\@pdfstartview

```

```

11091 }%
11092 \fi
11093 \fi
11094 \edef\Hy@temp{%
11095 \noexpand\pdfmark{%
11096 pdfmark=/DOCVIEW,%
11097 PageMode=/\@pdfpagemode
11098 \Hy@temp
11099 }%
11100 }%
11101 \Hy@temp
11102 \ifx\@pdfpagescrop\@empty
11103 \else
11104 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
11105 \fi
11106 \edef\Hy@temp{%
11107 \ifHy@pdftoolbar\else /HideToolbar true\fi
11108 \ifHy@pdfmenubar\else /HideMenubar true\fi
11109 \ifHy@pdfwindowui\else /HideWindowUI true\fi
11110 \ifHy@pdffitwindow /FitWindow true\fi
11111 \ifHy@pdfcenterwindow /CenterWindow true\fi
11112 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
11113 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
11114 \Hy@UseNameKey{Direction}\@pdfdirection
11115 \Hy@UseNameKey{ViewArea}\@pdfviewarea
11116 \Hy@UseNameKey{ViewClip}\@pdfviewclip
11117 \Hy@UseNameKey{PrintArea}\@pdfprintarea
11118 \Hy@UseNameKey{PrintClip}\@pdfprintclip
11119 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
11120 \Hy@UseNameKey{Duplex}\@pdfduplex
11121 \ifx\@pdfpicktraybypdfsize\@empty
11122 \else
11123 /PickTrayByPDFSize \@pdfpicktraybypdfsize
11124 \fi
11125 \ifx\@pdfprintpagerange\@empty
11126 \else
11127 /PrintPageRange[\@pdfprintpagerange]%
11128 \fi
11129 \ifx\@pdfnumcopies\@empty
11130 \else
11131 /NumCopies \@pdfnumcopies
11132 \fi
11133 }%
11134 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
11135 \pdfmark{%
11136 pdfmark=/PUT,%
11137 Raw={%
11138 \string{Catalog\string}<<%
11139 \ifx\Hy@temp\@empty
11140 \else
11141 /ViewerPreferences<<\Hy@temp>>%
11142 \fi
11143 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
11144 \ifx\@pdflang\relax

```

```

11145     \else
11146     /Lang(\@pdflang)%
11147     \fi
11148     \ifx\@baseurl\@empty
11149     \else
11150     /URI<</Base(\Hy@pstringB)>>%
11151     \fi
11152     >>%
11153     }%
11154 }%
11155 }
11156 </pdfmark>
11157 (*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.

```

11158 \newif\ifHy@pdfmarkerror
11159 \def\pdfmark{\@ifnextchar[{\pdfmark@}{\pdfmark@[]}}
11160 \def\pdfmark@[#1]#2{%
11161   \Hy@pdfmarkerrorfalse
11162   \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
11163   \@processme
11164   \let\pdf@type\relax
11165   \let\pdf@objdef\@empty
11166   \kvsetkeys{PDF}{#2}%
11167   \ifHy@pdfmarkerror
11168   \else
11169     \ifx\pdf@type\relax
11170       \Hy@WarningNoLine{no pdfmark type specified in #2!}%
11171       \ifx\#1\%
11172         \else
11173         \pdf@rect{#1}%
11174         \fi
11175       \else
11176         \ifx\#1\%
11177           \literalps@out{%
11178             [%
11179             \ifx\pdf@objdef\@empty
11180             \else
11181             /_objdef\string{\pdf@objdef\string}%
11182             \fi
11183             \the\pdf@toks\space\pdf@type\space pdfmark%
11184             }%
11185           \else
11186           \@ifundefined{@\pdf@linktype color}{%
11187             \Hy@colorlink\@linkcolor
11188             }{%
11189             \expandafter\Hy@colorlink
11190             \csname @\pdf@linktype color\endcsname
11191             }%

```

```

11192     \pdf@rect{#1}%
11193     \literalps@out{%
11194     [%
11195     \ifx\pdf@objdef\@empty
11196     \else
11197     /_objdef\string{\pdf@objdef\string}%
11198     \fi
11199     \the\pdf@toks\space\pdf@type\space pdfmark%
11200     }%
11201     \Hy@endcolorlink
11202     \fi
11203     \fi
11204     \fi
11205 }

```

The complicated bit is working out the right enclosing rectangle of some piece of T<sub>E</sub>X text, needed by the /Rect key. This solution originates with Toby Thain (toby@netspace.net.au).

For the case breaklinks is enabled, I have added two hooks, the first one for package setouterhbox, it provides a hopefully better method without setting the text twice.

```
\usepackage[hyperref]{setouterhbox}
```

With the second hook, also you can set the text twice, e.g.:

```

\long\def\Hy@setouterhbox#1#2{\long\def\my@temp{#2}}
\def\Hy@breaklinksunhbox#1{\my@temp}

```

```

11206 \newsavebox{\pdf@box}
11207 \providecommand*{\Hy@setouterhbox}{\sbox}
11208 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
11209 \def\Hy@DEST{/DEST}
11210 \def\pdf@rect#1{%
11211   \begingroup
11212   \chardef\x=1 %
11213   \def\Hy@temp{#1}%
11214   \ifx\Hy@temp\@empty
11215   \chardef\x=0 %
11216   \else
11217   \def\y{\anchor@spot}%
11218   \ifx\Hy@temp\y
11219   \def\y{\relax}%
11220   \ifx\anchor@spot\y
11221   \chardef\x=0 %
11222   \fi
11223   \fi
11224   \fi
11225   \expandafter\endgroup
11226   \ifcase\x
11227   \literalps@out{H.S}%
11228   \literalps@out{H.R}%
11229   \else
11230   \leavevmode
11231   \Hy@SaveSpaceFactor

```

```

11232 \ifmmode
11233 \def\Hy@LinkMath{${}%
11234 \else
11235 \let\Hy@LinkMath\@empty
11236 \fi
11237 \ifHy@breaklinks
11238 \Hy@setouterhbox\pdf@box{%
11239 \Hy@RestoreSpaceFactor
11240 \Hy@LinkMath
11241 \Hy@AllowHyphens#1\Hy@xspace@end
11242 \Hy@LinkMath
11243 \Hy@SaveSpaceFactor
11244 }%
11245 \else
11246 \sbox\pdf@box{%
11247 \Hy@RestoreSpaceFactor
11248 \Hy@LinkMath
11249 #1\Hy@xspace@end
11250 \Hy@LinkMath
11251 \Hy@SaveSpaceFactor
11252 }%
11253 \fi
11254 \dimen@ht\pdf@box
11255 \ifdim\dp\pdf@box=\z@
11256 \literalps@out{H.S}%
11257 \else
11258 \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
11259 \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...).

```

11260 \ifHy@breaklinks
11261 \ifhmode
11262 \Hy@breaklinkssunhbox\pdf@box
11263 \else
11264 \box\pdf@box
11265 \fi
11266 \else
11267 \expandafter\box\pdf@box
11268 \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

11269 \ifdim\dimen@=\z@
11270 \literalps@out{H.R}%
11271 \else
11272 \raise\dimen@\hbox{\literalps@out{H.R}}%
11273 \fi
11274 \Hy@RestoreSpaceFactor
11275 \fi
11276 \ifx\pdf@type\Hy@DEST

```



```

11277 \else
11278 \pdf@addtoksx{H.B}%
11279 \fi
11280 }

```

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.

```

11281 \newtoks\pdf@toks
11282 \newtoks\pdf@defaulttoks
11283 \pdf@defaulttoks={}%
11284 \def\pdf@addtoks#1#2{%
11285 \edef\@processme{\pdf@toks{\the\pdf@toks/#2 #1}}%
11286 \@processme
11287 }
11288 \def\pdf@addtoksx#1{%
11289 \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
11290 \@processme
11291 }
11292 \def\PDFdefaults#1{%
11293 \pdf@defaulttoks={#1}%
11294 }

```

This is the list of allowed keys. See the Acrobat manual for an explanation.

```

11295 % what is the type of pdfmark?
11296 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
11297 % what is the link type?
11298 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
11299 \def\pdf@linktype{link}
11300 % named object?
11301 \define@key{PDF}{objdef}{\edef\pdf@objdef{#1}}
11302 \let\pdf@objdef\@empty
11303 % parameter is a stream of PDF
11304 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
11305 % parameter is a name
11306 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
11307 % parameter is a array
11308 \define@key{PDF}{Border}{%
11309 \edef\Hy@temp{#1}%
11310 \ifx\Hy@temp\@empty
11311 \else
11312 \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
11313 \fi
11314 }
11315 \let\Hy@BorderArrayPatch\@empty
11316 % parameter is a dictionary
11317 \define@key{PDF}{BorderStyle}{%
11318 \edef\Hy@temp{#1}%
11319 \ifx\Hy@temp\@empty
11320 \else
11321 \pdf@addtoks{<<#1>>}{BS}%
11322 \fi
11323 }
11324 % parameter is a array
11325 \define@key{PDF}{Color}{%

```

```

11326 \ifx\relax#1\relax
11327 \else
11328 \pdf@addtoks{[#1]}{Color}% hash-ok
11329 \fi
11330 }
11331 % parameter is a string
11332 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
11333 % parameter is a integer
11334 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
11335 % parameter is a array
11336 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
11337 % parameter is a string
11338 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
11339 % parameter is a string or file
11340 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
11341 % parameter is a destination
11342 \define@key{PDF}{Dest}{%
11343 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11344 \ifx\Hy@pstringDest\@empty
11345 \Hy@pdfmarkerrortrue
11346 \Hy@Warning{Destination with empty name ignored}%
11347 \else
11348 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11349 \fi
11350 }
11351 \define@key{PDF}{DestAnchor}{%
11352 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11353 \ifx\Hy@pstringDest\@empty
11354 \Hy@pdfmarkerrortrue
11355 \Hy@Warning{Destination with empty name ignored}%
11356 \else
11357 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11358 \fi
11359 }
11360 % parameter is a string
11361 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
11362 % parameter is a string
11363 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
11364 % parameter is a int
11365 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
11366 \define@key{PDF}{PDFAFlags}{%
11367 \ifHy@pdfa
11368 \pdf@addtoks{#1}{F}%
11369 \fi
11370 }
11371 % parameter is a name
11372 \define@key{PDF}{AcroHighlight}{%
11373 \begingroup
11374 \edef\x{#1}%
11375 \expandafter\endgroup\ifx\x\@empty
11376 \else
11377 \pdf@addtoks{#1}{H}%
11378 \fi
11379 }

```

```

11380 % parameter is a string
11381 \define@key{PDF}{ID}{\pdf@addtoks{(#1)}{ID}}% hash-ok
11382 % parameter is a string
11383 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
11384 % parameter is a string
11385 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11386 % parameter is a string
11387 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
11388 % parameter is a Boolean
11389 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
11390 % parameter is a integer or name
11391 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
11392 % parameter is a name
11393 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
11394 % parameter is a string
11395 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
11396 % parameter is a array
11397 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
11398 % parameter is a integer
11399 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
11400 % parameter is a name
11401 \define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
11402 % parameter is a string
11403 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
11404 % parameter is a string
11405 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
11406 % parameter is a string
11407 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
11408 % parameter is an array
11409 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
11410 % parameter is a string
11411 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}
These are the keys used in the DOCINFO section.
11412 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
11413 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
11414 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
11415 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11416 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
11417 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
11418 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
11419 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11420 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
11421 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}
11422 \define@key{PDF}{Trapped}{%
11423 \edef\Hy@temp{#1}%
11424 \ifx\Hy@temp\@empty
11425 \else
11426 \pdf@addtoks{/#1}{Trapped}%
11427 \fi
11428 }
11429
11430 (/pdfmarkbase)
11431 (*pdfmark)
11432 \def\Acrobatmenu#1#2{%

```

```

11433 \EdefEscapeName\Hy@temp@menu{#1}%
11434 \Hy@Acrobatmenu{#1}{#2}{%
11435 \pdfmark{#2}{%
11436 linktype=menu,%
11437 pdfmark=/ANN,%
11438 AcroHighlight=\@pdfhighlight,%
11439 Border=\@pdfborder,%
11440 BorderStyle=\@pdfborderstyle,%
11441 Color=\@menubordercolor,%
11442 Action={<</Subtype/Named/N/\Hy@temp@menu>>},%
11443 Subtype=/Link,%
11444 PDFAFlags=4%
11445 }%
11446 }%
11447 }

```

And now for some useful examples:

```

11448 \def\PDFNextPage{\@ifnextchar{\PDFNextPage@}{\PDFNextPage@[]}}
11449 \def\PDFNextPage@#1#2{%
11450 \pdfmark{#2}{%
11451 #1,%
11452 Border=\@pdfborder,%
11453 BorderStyle=\@pdfborderstyle,%
11454 Color=.2 .1 .5,%
11455 pdfmark=/ANN,%
11456 Subtype=/Link,%
11457 PDFAFlags=4,%
11458 Page=/Next%
11459 }%
11460 }
11461 \def\PDFPreviousPage{%
11462 \@ifnextchar{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
11463 }
11464 \def\PDFPreviousPage@#1#2{%
11465 \pdfmark{#2}{%
11466 #1,%
11467 Border=\@pdfborder,%
11468 BorderStyle=\@pdfborderstyle,%
11469 Color=.4 .4 .1,%
11470 pdfmark=/ANN,%
11471 Subtype=/Link,%
11472 PDFAFlags=4,%
11473 Page=/Prev%
11474 }%
11475 }
11476 \def\PDFOpen#1{%
11477 \pdfmark{#1,pdfmark=/DOCVIEW}%
11478 }

```

This will only work if you use Distiller 2.1 or higher.

```

11479 \def\hyper@linkurl#1#2{%
11480 \begingroup
11481 \Hy@pstringdef\Hy@pstringURI{#2}%
11482 \hyper@chars
11483 \leavevmode

```

```

11484 \pdfmark[#{#1}]{%
11485 pdfmark=/ANN,%
11486 linktype=url,%
11487 AcroHighlight=\@pdfhighlight,%
11488 Border=\@pdfborder,%
11489 BorderStyle=\@pdfborderstyle,%
11490 Color=\@urlbordercolor,%
11491 Action={<<%
11492 /Subtype/URI%
11493 /URI(\Hy@pstringURI)%
11494 \ifHy@href@ismap
11495 /IsMap true%
11496 \fi
11497 >>},%
11498 Subtype=/Link,%
11499 PDFAFlags=4%
11500 }%
11501 \endgroup
11502 }
11503 \def\hyper@linkfile#1#2#3{%
11504 \begingroup
11505 \def\Hy@pstringF{#2}%
11506 \Hy@CleanupFile\Hy@pstringF
11507 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
11508 \Hy@pstringdef\Hy@pstringD{#3}%
11509 \Hy@MakeRemoteAction
11510 \leavevmode
11511 \pdfmark[#{#1}]{%
11512 pdfmark=/ANN,%
11513 Subtype=/Link,%
11514 PDFAFlags=4,%
11515 AcroHighlight=\@pdfhighlight,%
11516 Border=\@pdfborder,%
11517 BorderStyle=\@pdfborderstyle,%
11518 linktype=file,%
11519 Color=\@filebordercolor,%
11520 Action={%
11521 <<%
11522 /S/GoToR%
11523 \Hy@SetNewWindow
11524 /F(\Hy@pstringF)%
11525 /D%
11526 \ifx\#3\%
11527 [\Hy@href@page\@pdfremotestartview]%
11528 \else
11529 (\Hy@pstringD)cvn%
11530 \fi
11531 \Hy@href@nextactionraw
11532 >>%
11533 }%
11534 }%
11535 \endgroup
11536 }
11537 \def\@hyper@launch run:#1\#2#3{%

```

```

11538 \begingroup
11539 \Hy@pstringdef\Hy@pstringF{#1}%
11540 \Hy@pstringdef\Hy@pstringP{#3}%
11541 \leavevmode
11542 \pdfmark[#{2}]{%
11543 pdfmark=/ANN,%
11544 Subtype=/Link,%
11545 PDFAFlags=4,%
11546 AcroHighlight=\@pdfhighlight,%
11547 Border=\@pdfborder,%
11548 BorderStyle=\@pdfborderstyle,%
11549 linktype=run,%
11550 Color=\@runbordercolor,%
11551 Action={%
11552 <<%
11553 /S/Launch%
11554 \Hy@SetNewWindow
11555 /F(\Hy@pstringF)%
11556 \ifx\#3\%
11557 \else
11558 /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
11559 \fi
11560 \Hy@href@nextactionraw
11561 >>%
11562 }%
11563 }%
11564 \endgroup
11565 }
11566 </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.

```

11567 (*dvips)
11568 \providecommand*\XR@ext}{pdf}
11569 \let\Hy@raisedlink\@empty
11570 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
11571 \def\headerps@out#1{\special{! #1}}%
11572 \input{pdfmark.def}%
11573 \ifx\@pdfproducer\relax
11574 \def\@pdfproducer{dvips + Distiller}%
11575 \fi
11576 \providecommand*\@pdfborder{0 0 1}
11577 \providecommand*\@pdfborderstyle{}
11578 \providecommand*\@pdfview{XYZ}
11579 \providecommand*\@pdfviewparams{ H.V}
11580 \def\Hy@BorderArrayPatch{BorderArrayPatch}

```

```

11581 \g@addto@macro\Hy@FirstPageHook{%
11582 \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.

```

11583 /DvipsToPDF{72.27 mul Resolution div} def%
11584 /PDFToDvips{72.27 div Resolution mul} def%
11585 /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.

```

11586 product (Ghostscript) search {pop pop pop revision 927 gt}%
11587 {pop false} ifelse%
11588 {%
11589 /BorderArrayPatch{} def%
11590 }%
11591 {%
11592 /BorderArrayPatch{%
11593 [exch{%
11594 dup dup type/integertype eq exch type/realttype eq or%
11595 {BPToDvips}if%
11596 }forall]%
11597 }def%
11598 } 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.

```

11599 /HyperBorder {1 PDFToDvips} def%
11600 /H.V {pdf@hoff pdf@voff null} def%
11601 /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

```

11602 /H.S {%
11603 currentpoint %
11604 HyperBorder add /pdf@lly exch def %
11605 dup DvipsToPDF 72 add /pdf@hoff exch def %
11606 HyperBorder sub /pdf@llx exch def%
11607 } def%

```

The calculation of upper left  $y$  is done without raising the point in  $\TeX$ , 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`

```

11608 /H.L {%
11609 2 sub dup%
11610 /HyperBasePt exch def %
11611 PDFToDvips /HyperBaseDvips exch def %
11612 currentpoint %
11613 HyperBaseDvips sub /pdf@ury exch def%
11614 /pdf@urx exch def%
11615 } def%
11616 /H.A {%
11617 H.L %
11618 % |pdf@voff| = the distance from the top of the page to a point
11619 % |\baselineskip| above the current point in PDF coordinates
11620 currentpoint exch pop %
11621 vsize 72 sub exch DvipsToPDF %
11622 HyperBasePt sub % baseline skip
11623 sub /pdf@voff exch def%
11624 } def%
11625 /H.R {%
11626 currentpoint %
11627 HyperBorder sub /pdf@ury exch def %
11628 HyperBorder add /pdf@urx exch def %
11629 % |pdf@voff| = the distance from the top of the page to the current point, in
11630 % PDF coordinates
11631 currentpoint exch pop vsize 72 sub %
11632 exch DvipsToPDF sub /pdf@voff exch def%
11633 } def%
11634 }%
11635 }
11636 \AtBeginShipoutFirst{%
11637 \ifHy@setpagesize
11638 \begingroup
11639 \ifnum\mag=\@m
11640 \ifdim\stockwidth>\z@
11641 \ifdim\stockheight>\z@
11642 \special{papersize=\the\stockwidth,\the\stockheight}%
11643 \else
11644 \ifdim\paperwidth>\z@
11645 \ifdim\paperheight>\z@
11646 \special{papersize=\the\paperwidth,\the\paperheight}%
11647 \fi
11648 \fi
11649 \fi
11650 \else
11651 \ifdim\stockwidth=\z@
11652 \ifdim\paperwidth>\z@
11653 \ifdim\paperheight>\z@

```



```

11654     \special{papersize=\the\paperwidth,\the\paperheight}%
11655     \fi
11656     \fi
11657     \fi
11658     \fi
11659     \fi
11660     \endgroup
11661     \fi
11662     \Hy@DisableOption{setpagesize}%
11663 }

11664 \def\setpdfinkmargin#1{%
11665   \begingroup
11666     \setlength{\dimen@}{#1}%
11667     \literalps@out{%
11668       /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
11669     }%
11670   \endgroup
11671 }

11672 </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.

```

11673 (*vtexpdfmark)
11674 \providecommand*\XR@ext}{pdf}
11675 \let\Hy@raisedlink\@empty
11676 \def\literalps@out#1{\special{pS:#1}}%
11677 \def\headerps@out#1{\immediate\special{pS:#1}}%
11678 \input{pdfmark.def}%
11679 \ifx\@pdfproducer\relax
11680   \ifnum\OpMode=\@one
11681     \def\@pdfproducer{VTeX}%
11682   \else
11683     \def\@pdfproducer{VTeX + Distiller}%
11684   \fi
11685 \fi
11686 \providecommand*\@pdfborder{0 0 1}
11687 \providecommand*\@pdfborderstyle{}
11688 \providecommand*\@pdfview{XYZ}
11689 \providecommand*\@pdfviewparams{ H.V}

11690 \g@addto@macro\Hy@FirstPageHook{%
11691   \headerps@out{%
11692     /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.

```

11693   /HyperBorder {1} def%
11694   /H.V {pdf@hoff pdf@voff null} def%
11695   /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:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

11696 /H.S {%
11697   currentpoint %
11698   HyperBorder sub%
11699   /pdf@lly exch def %
11700   dup 72 add /pdf@hoff exch def %
11701   HyperBorder sub%
11702   /pdf@llx exch def%
11703 } def%

```

The  $x$  and  $y$  coordinates of the current point, minus the `\baselineskip`:  $\text{pdf@ury} = Y_c + \text{HyperBasePt} + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

11704 /H.L {%
11705   2 sub%
11706   /HyperBasePt exch def %
11707   currentpoint %
11708   HyperBasePt add HyperBorder add%
11709   /pdf@ury exch def %
11710   HyperBorder add%
11711   /pdf@urx exch def%
11712 } def%
11713 /H.A {%
11714   H.L %
11715   currentpoint exch pop %
11716   vsize 72 sub exch %
11717   HyperBasePt add add%
11718   /pdf@voff exch def%
11719 } def%

```

$\text{pdf@ury} = Y_c + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

11720 /H.R {%
11721   currentpoint %
11722   HyperBorder add%
11723   /pdf@ury exch def %
11724   HyperBorder add%
11725   /pdf@urx exch def %
11726   currentpoint exch pop vsize 72 sub add%
11727   /pdf@voff exch def%
11728 } def%
11729 }%
11730 }

```

```

11731 \def\setpdfinkmargin#1{%
11732   \begingroup
11733   \setlength{\dimen@}{#1}%
11734   \literalps@out{%
11735     /HyperBorder{\strip@pt\dimen@}def%
11736   }%
11737   \endgroup
11738 }
11739 </vtexpdfmark>

```

## 44.11 Textures

```
11740 (*textures)
11741 \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.

```
11742 \begingroup
11743 \obeylines %
11744 \gdef\Hy@ps@CR{\noexpand
11745 }%
11746 \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`.

```
11747 \def\literalps@out#1{%
11748 \special{postscript 0 0 transform}%
11749 \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
11750 }%
11751 %
```

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.

```
11752 \def\headerps@out#1{%
11753 \special{%
11754 prepostscript TeXdict begin\Hy@ps@CR
11755 #1\Hy@ps@CR
11756 end%
11757 }%
11758 }%
11759 %
```

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.

```
11760 \g@addto@macro\Hy@FirstPageHook{%
11761 \headerps@out{%
11762 /betterpdfmark {%
```

```

11763    systemdict begin %
11764      dup /BP eq%
11765      {cleartomark gsave nulldevice []}%
11766      {dup /EP eq%
11767        {cleartomark cleartomark grestore}%}
11768      {cleartomark}%
11769      ifelse%
11770    }ifelse %
11771  end%
11772 }def\Hy@ps@CR
11773 ___pdfmark___ not{/pdfmark /betterpdfmark load def}if%
11774 }% end of \headerps@out
11775 }% end of \AtBeginShipoutFirst
11776 %
11777 \input{pdfmark.def}%
11778 %
11779 \ifx\@pdfproducer\relax
11780   \def\@pdfproducer{Textures + Distiller}%
11781 \fi
11782 \providecommand*\@pdfborder{0 0 1}
11783 \providecommand*\@pdfborderstyle{}
11784 \providecommand*\@pdfview{XYZ}
11785 \providecommand*\@pdfviewparams{ H.V}
11786 %

```

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  $\TeX$ .

```

11787 \Hy@AtBeginDocument{%
11788   \headerps@out{%

```

Textures lives in normal points, I think. So conversion from one coordinate system to another involves doing nothing.

```

11789   /vsize {\Hy@pageheight} def%
11790   /DvipsToPDF {} def%
11791   /PDFToDvips {} def%
11792   /BPToDvips {} def%
11793   /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
11794   /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
11795   /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
11796   /H.S {}%
11797   currentpoint %
11798   HyperBorder add /pdf@lly exch def %
11799   dup DvipsToPDF 72 add /pdf@hoff exch def %
11800   HyperBorder sub /pdf@llx exch def%
11801 } def\Hy@ps@CR
11802 /H.L {}%
11803 2 sub %
11804 PDFToDvips /HyperBase exch def %
11805 currentpoint %
11806 HyperBase sub /pdf@ury exch def%
11807 /pdf@urx exch def%

```

```

11808 } def\Hy@ps@CR
11809 /H.A {%
11810   H.L %
11811   currentpoint exch pop %
11812   vsize 72 sub exch DvipsToPDF %
11813   HyperBase sub % baseline skip
11814   sub /pdf@voff exch def%
11815 } def\Hy@ps@CR
11816 /H.R {%
11817   currentpoint %
11818   HyperBorder sub /pdf@ury exch def %
11819   HyperBorder add /pdf@urx exch def %
11820   currentpoint exch pop vsize 72 sub %
11821   exch DvipsToPDF sub /pdf@voff exch def%
11822 } def\Hy@ps@CR
11823 }%
11824 }

11825 \def\setpdfinkmargin#1{%
11826   \begingroup
11827   \setlength{\dimen@}{#1}%
11828   \literalps@out{%
11829     /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
11830   }%
11831   \endgroup
11832 }

11833 \Hy@AtBeginDocument{%
11834   \ifHy@colorlinks
11835     \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
11836   \fi
11837 }

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.

11838 \expandafter\let\expandafter\keepPDF@SetupDoc
11839   \csname PDF@SetupDoc\endcsname
11840 \def\PDF@SetupDoc{%
11841   \ifx\@baseurl\@empty
11842   \else
11843     \special{html:<base href="\@baseurl">}%
11844   \fi
11845   \keepPDF@SetupDoc
11846 }
11847 \Hy@WrapperDef\hyper@anchor#1{%
11848   \Hy@SaveLastskip
11849   \Hy@VerboseAnchor{#1}%
11850   \begingroup
11851     \let\protect=\string
11852     \special{html:<a name=%
11853       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11854   \endgroup
11855   \Hy@activeanchortrue
11856   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink

```

```

11857 \special{html:</a>}%
11858 \Hy@activeanchorfalse
11859 \Hy@RestoreLastskip
11860 }
11861 \Hy@WrapperDef\hyper@anchorstart#1{%
11862 \Hy@SaveLastskip
11863 \Hy@VerboseAnchor{#1}%
11864 \begingroup
11865 \hyper@chars
11866 \special{html:<a name=%
11867 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11868 \endgroup
11869 \Hy@activeanchortrue
11870 }
11871 \def\hyper@anchorend{%
11872 \special{html:</a>}%
11873 \Hy@activeanchorfalse
11874 \Hy@RestoreLastskip
11875 }
11876 \def\@urltype{url}
11877 \def\hyper@linkstart#1#2{%
11878 \Hy@VerboseLinkStart{#1}{#2}%
11879 \expandafter\Hy@colorlink\csname @#1color\endcsname
11880 \def\Hy@tempa{#1}%
11881 \ifx\Hy@tempa\@urltype
11882 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11883 \else
11884 \begingroup
11885 \hyper@chars
11886 \special{%
11887 html:<a href=%
11888 \hyper@quote#\HyperDestNameFilter{#2}\hyper@quote>%
11889 }%
11890 \endgroup
11891 \fi
11892 }
11893 \def\hyper@linkend{%
11894 \special{html:</a>}%
11895 \Hy@endcolorlink
11896 }
11897 \def\hyper@linkfile#1#2#3{%
11898 \hyper@linkurl{#1}{%
11899 \Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi
11900 }%
11901 }
11902 \def\hyper@linkurl#1#2{%
11903 \leavevmode
11904 \ifHy@raiselinks
11905 \Hy@SaveSpaceFactor
11906 \Hy@SaveSavedSpaceFactor
11907 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
11908 \Hy@RestoreSavedSpaceFactor
11909 \@linkdim\dp\@tempboxa
11910 \lower\@linkdim\hbox{%

```

```

11911 \hyper@chars
11912 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11913 }%
11914 \Hy@colorlink\@urlcolor
11915 \Hy@RestoreSpaceFactor
11916 #1\Hy@xspace@end
11917 \Hy@SaveSpaceFactor
11918 \@linkdim\ht\@tempboxa
11919 \advance\@linkdim by -6.5\p@
11920 \raise\@linkdim\hbox{\special{html:</a>}}%
11921 \Hy@endcolorlink
11922 \Hy@RestoreSpaceFactor
11923 \else
11924 \begingroup
11925 \hyper@chars
11926 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11927 \Hy@colorlink\@urlcolor#1\Hy@xspace@end
11928 \special{html:</a>}%
11929 \Hy@endcolorlink
11930 \endgroup
11931 \fi
11932 }

```

Very poor implementation of \hyper@link without considering #1.

```

11933 \def\hyper@link#1#2#3{%
11934 \Hy@VerboseLinkStart{#1}{#2}%
11935 \hyper@linkurl{#3}{\# \Hy@HyperDestNameFilter{#2}}%
11936 }
11937 \def\hyper@image#1#2{%
11938 \begingroup
11939 \hyper@chars
11940 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
11941 \endgroup
11942 }
11943 </textures>

```

## 44.12 dvipsone

```

11944 % \subsection{dvipsone driver}
11945 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
11946 % |\special| commands.
11947 (*dvipsone)
11948 \providecommand*\XR@ext}{pdf}
11949 \let\Hy@raisedlink\@empty
11950 \providecommand*\@pdfborder{0 0 1}
11951 \providecommand*\@pdfborderstyle{}
11952 \def\literalps@out#1{\special{ps:#1}}%
11953 \def\headerps@out#1{\special{headertext=#1}}%
11954 \input{pdfmark.def}%
11955 \HyInfo@AddonUnsupportedtrue
11956 \def\PDF@FinishDoc{%
11957 \Hy@UseMaketitleInfos
11958 \HyInfo@TrappedUnsupported
11959 \special{PDF: Keywords \@pdfkeywords}%

```

```

11960 \special{PDF: Title \@pdftitle}%
11961 \special{PDF: Creator \@pdfcreator}%
11962 \ifx\@pdfcreationdate\@empty
11963 \else
11964   \special{PDF: CreationDate \@pdfcreationdate}%
11965 \fi
11966 \ifx\@pdfmoddate\@empty
11967 \else
11968   \special{PDF: ModDate \@pdfmoddate}%
11969 \fi
11970 \special{PDF: Author \@pdfauthor}%
11971 \ifx\@pdfproducer\relax
11972 \else
11973   \special{PDF: Producer \@pdfproducer}%
11974 \fi
11975 \special{PDF: Subject \@pdfsubject}%
11976 \Hy@DisableOption{pdfauthor}%
11977 \Hy@DisableOption{pdftitle}%
11978 \Hy@DisableOption{pdfsubject}%
11979 \Hy@DisableOption{pdfcreator}%
11980 \Hy@DisableOption{addtopdfcreator}%
11981 \Hy@DisableOption{pdfcreationdate}%
11982 \Hy@DisableOption{pdfcreationdate}%
11983 \Hy@DisableOption{pdfmoddate}%
11984 \Hy@DisableOption{pdfproducer}%
11985 \Hy@DisableOption{pdfkeywords}%
11986 \Hy@DisableOption{pdftrapped}%
11987 \Hy@DisableOption{pdfinfo}%
11988 }
11989 \def\PDF@SetupDoc{%
11990 \def\Hy@temp{}%
11991 \ifx\@pdfstartpage\@empty
11992 \else
11993   \ifx\@pdfstartview\@empty
11994   \else
11995     \edef\Hy@temp{%
11996       ,Page=\@pdfstartpage
11997       ,View=\@pdfstartview
11998     }%
11999   \fi
12000 \fi
12001 \edef\Hy@temp{%
12002   \noexpand\pdfmark{%
12003     pdfmark=/DOCVIEW,%
12004     PageMode=/\@pdfpagemode
12005   }\Hy@temp
12006 }%
12007 }%
12008 \Hy@temp
12009 \ifx\@pdfpagescrop\@empty
12010 \else
12011   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
12012 \fi
12013 \edef\Hy@temp{%

```



```

12014 \ifHy@pdftoolbar\else /HideToolbar true\fi
12015 \ifHy@pdfmenubar\else /HideMenubar true\fi
12016 \ifHy@pdfwindowui\else /HideWindowUI true\fi
12017 \ifHy@pdfwindow /FitWindow true\fi
12018 \ifHy@pdfcenterwindow /CenterWindow true\fi
12019 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
12020 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
12021 \Hy@UseNameKey{Direction}\@pdfdirection
12022 \Hy@UseNameKey{ViewArea}\@pdfviewarea
12023 \Hy@UseNameKey{ViewClip}\@pdfviewclip
12024 \Hy@UseNameKey{PrintArea}\@pdfprintarea
12025 \Hy@UseNameKey{PrintClip}\@pdfprintclip
12026 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
12027 \Hy@UseNameKey{Duplex}\@pdfduplex
12028 \ifx\@pdfpicktraybypdfsize\@empty
12029 \else
12030 /PickTrayByPDFSize \@pdfpicktraybypdfsize
12031 \fi
12032 \ifx\@pdfprintpagerange\@empty
12033 \else
12034 /PrintPageRange[\@pdfprintpagerange]%
12035 \fi
12036 \ifx\@pdfnumcopies\@empty
12037 \else
12038 /NumCopies \@pdfnumcopies
12039 \fi
12040 }%
12041 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
12042 \pdfmark{%
12043 pdfmark=/PUT,%
12044 Raw={%
12045 \string{Catalog\string}<<%
12046 \ifx\Hy@temp\@empty
12047 \else
12048 /ViewerPreferences<<\Hy@temp>>%
12049 \fi
12050 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
12051 \ifx\@pdflang\relax
12052 \else
12053 /Lang(\@pdflang)%
12054 \fi
12055 \ifx\@baseurl\@empty
12056 \else
12057 /URI<</Base(\Hy@pstringB)>>%
12058 \fi
12059 >>%
12060 }%
12061 }%
12062 }
12063 \providecommand*\@pdfview{XYZ}
12064 \providecommand*\@pdfviewparams{ %
12065 gsave revscl currentpoint grestore %
12066 72 add exch pop null exch null%
12067 }

```

```
12068 \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`.

```
12069 \g@addto@macro\Hy@FirstPageHook{%
```

```
12070 \headerps@out{%
```

`dvipsone` lives in scaled points; does this mean 65536 or 65781?

```
12071 /DvipsToPDF { 65781 div } def%
```

```
12072 /PDFToDvips { 65781 mul } def%
```

```
12073 /BPToDvips{65781 mul}def%
```

```
12074 /HyperBorder { 1 PDFToDvips } def%
```

```
12075 /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.

```
12076 /BorderArrayPatch{%
```

```
12077 [exch{%
```

```
12078 dup dup type/integertype eq exch type/realttype eq or%
```

```
12079 {BPToDvips}if%
```

```
12080 }forall]%
```

```
12081 }def%
```

```
12082 /H.S {%
```

```
12083 currentpoint %
```

```
12084 HyperBorder add /pdf@lly exch def %
```

```
12085 dup DvipsToPDF 72 add /pdf@hoff exch def %
```

```
12086 HyperBorder sub /pdf@llx exch def%
```

```
12087 } def%
```

```
12088 /H.L {%
```

```
12089 2 sub %
```

```
12090 PDFToDvips /HyperBase exch def %
```

```
12091 currentpoint %
```

```
12092 HyperBase sub /pdf@ury exch def%
```

```
12093 /pdf@urx exch def%
```

```
12094 } def%
```

```
12095 /H.A {%
```

```
12096 H.L %
```

```
12097 currentpoint exch pop %
```

```
12098 HyperBase sub % baseline skip
```

```
12099 DvipsToPDF /pdf@voff exch def%
```

```
12100 } def%
```

```
12101 /H.R {%
```

```
12102 currentpoint %
```

```
12103 HyperBorder sub /pdf@ury exch def %
```

```
12104 HyperBorder add /pdf@urx exch def %
```

```
12105 currentpoint exch pop DvipsToPDF /pdf@voff exch def%
```

```
12106 } def%
```

```
12107 }%
```

```
12108 }
```

```
12109 \def\setpdfinkmargin#1{%
```

```
12110 \begingroup
```

```

12111 \setlength{\dimen@}{#1}%
12112 \literalps@out{%
12113 /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
12114 }%
12115 \endgroup
12116 }
12117 </dvipsone>

```

#### 44.13 TeX4ht

```

12118 (*tex4ht)
12119 \providecommand*\XR@ext}{html}
12120 \let\Hy@raisedlink\@empty
12121 \@ifpackageloaded{tex4ht}{%
12122 \Hy@InfoNoLine{tex4ht is already loaded}%
12123 }{%
12124 \RequirePackage[hx4ht]{tex4ht}%
12125 }
12126 \hyperlinkfileprefix{}
12127 \let\PDF@FinishDoc\@empty
12128 \def\PDF@SetupDoc{%
12129 \ifx\@baseurl\@empty
12130 \else
12131 \special{t4ht=<base href="\@baseurl">}%
12132 \fi
12133 }
12134 \Hy@WrapperDef\hyper@anchor#1{%
12135 \Hy@SaveLastskip
12136 \Hy@VerboseAnchor{#1}%
12137 \begingroup
12138 \let\protect=\string
12139 \special{t4ht=<a name=%
12140 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12141 \endgroup
12142 \Hy@activeanchortrue
12143 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
12144 \special{t4ht=</a>}%
12145 \Hy@activeanchorfalse
12146 \Hy@RestoreLastskip
12147 }
12148 \Hy@WrapperDef\hyper@anchorstart#1{%
12149 \Hy@SaveLastskip
12150 \Hy@VerboseAnchor{#1}%
12151 \begingroup
12152 \hyper@chars\special{t4ht=<a name=%
12153 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12154 \endgroup
12155 \Hy@activeanchortrue
12156 }
12157 \def\hyper@anchorend{%
12158 \special{t4ht=</a>}%
12159 \Hy@activeanchorfalse
12160 \Hy@RestoreLastskip
12161 }
12162 \def\@urlltype{url}

```

```

12163 \def\hyper@linkstart#1#2{%
12164   \Hy@VerboseLinkStart{#1}{#2}%
12165   \expandafter\Hy@colorlink\csname @#1color\endcsname
12166   \def\Hy@tempa{#1}%
12167   \ifx\Hy@tempa \@urltype
12168     \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12169   \else
12170     \begingroup
12171     \hyper@chars
12172     \special{t4ht=<a href=%
12173       \hyper@quote\#\Hy@HyperDestNameFilter{#2}\hyper@quote>}%
12174     \endgroup
12175   \fi
12176 }
12177 \def\hyper@linkend{%
12178   \special{t4ht=</a>}%
12179   \Hy@endcolorlink
12180 }
12181 \def\hyper@linkfile#1#2#3{%
12182   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
12183 }
12184 \def\hyper@linkurl#1#2{%
12185   \leavevmode
12186   \ifHy@raiselinks
12187     \Hy@SaveSpaceFactor
12188     \Hy@SaveSavedSpaceFactor
12189     \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
12190     \Hy@RestoreSavedSpaceFactor
12191     \@linkdim\dp\@tempboxa
12192     \lower\@linkdim\hbox{%
12193       \begingroup
12194         \hyper@chars
12195         \special{%
12196           t4ht=<a href=\hyper@quote#2\hyper@quote>%
12197         }%
12198       \endgroup
12199     }%
12200     \Hy@colorlink\@urlcolor
12201     \Hy@RestoreSpaceFactor
12202     #1\Hy@xspace@end
12203     \Hy@SaveSpaceFactor
12204     \Hy@endcolorlink
12205     \@linkdim\ht\@tempboxa
12206     \advance\@linkdim by -6.5\p@
12207     \raise\@linkdim\hbox{\special{t4ht=</a>}}%
12208     \Hy@RestoreSpaceFactor
12209   \else
12210     \begingroup
12211     \hyper@chars
12212     \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12213     \Hy@colorlink\@urlcolor
12214     #1\Hy@xspace@end
12215     \Hy@endcolorlink
12216     \special{t4ht=</a>}%

```

```

12217 \endgroup
12218 \fi
12219 }

Poor implementation of \hyper@link without considering #1.
12220 \def\hyper@link#1#2#3{%
12221 \Hy@VerboseLinkStart{#1}{#2}%
12222 \hyper@linkurl{#3}{\#\HyperDestNameFilter{#2}}%
12223 }
12224 \def\hyper@image#1#2{%
12225 \begingroup
12226 \hyper@chars
12227 \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
12228 \endgroup
12229 }
12230 \let\autoref\ref
12231 \ifx \rEfLiNK \UnDef
12232 \def\rEfLiNK #1#2{#2}%
12233 \fi
12234 \let\backref\@gobble

Fix for tex4ht.
12235 \AtBeginDocument{%
12236 \expandafter
12237 \let\expandafter\Hy@OrgMakeLabel\csname Make:Label\endcsname
12238 \expandafter\def\csname Make:Label\endcsname#1#2{%
12239 \ifhmode
12240 \Hy@SaveSpaceFactor
12241 \else
12242 \global\Hy@SavedSpaceFactor=1000 %
12243 \fi
12244 \Hy@OrgMakeLabel{#1}{#2}%
12245 \Hy@RestoreSpaceFactor
12246 #2\Hy@xspace@end%
12247 \Hy@SaveSpaceFactor
12248 }%
12249 \Hy@RestoreSpaceFactor
12250 }%
12251 }
12252 </tex4ht>
12253 (*tex4htcfg)
12254 \IfFileExists{\jobname.cfg}{\endinput}{}
12255 \Preamble{html}
12256 \begin{document}%
12257 \EndPreamble
12258 \def\TeX{TeX}
12259 \def\OMEGA{Omega}
12260 \def\LaTeX{LaTeX}
12261 \def\LaTeXe{LaTeX2e}
12262 \def\eTeX{e-TeX}
12263 \def\MF{Metafont}
12264 \def\MP{MetaPost}
12265 </tex4htcfg>

```

## 45 Driver-specific form support

### 45.1 pdfmarks

change 2020-06-20: added /Euro to encoding

```
12266 (*pdfmark)
12267 \long\def\@Form[#1]{%
12268 \g@addto@macro\Hy@FirstPageHook{%
12269 \headerps@out{%
12270 [%
12271 /_objdef{pdfDocEncoding}%
12272 /type/dict%
12273 /OBJ pdfmark%
12274 [%
12275 {pdfDocEncoding}%
12276 <<%
12277 /Type/Encoding%
12278 /Differences[%
12279 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
12280 /tilde %
12281 39/quotesingle %
12282 96/grave %
12283 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
12284 /fraction/guilsingleft/guilsingright/minus/perthousand%
12285 /quotedblbase/quotedblleft/quotedblright/quoteleft%
12286 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%
12287 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
12288 160/Euro %
12289 164/currency %
12290 166/brokenbar %
12291 168/dieresis/copyright/ordfeminine %
12292 172/logicalnot/.notdef/registered/macron/degree/plusminus%
12293 /twosuperior/threesuperior/acute/mu %
12294 183/periodcentered/cedilla/onesuperior/ordmasculine %
12295 188/onequarter/onehalf/threequarters %
12296 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
12297 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
12298 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
12299 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
12300 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
12301 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
12302 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
12303 /iacute/icircumflex/idieresis/eth/ntilde/ograve/oacute%
12304 /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%
12305 /ucircumflex/udieresis/yacute/thorn/ydieresis%
12306 ]%
12307 >>%
12308 /PUT pdfmark%
12309 [%
12310 /_objdef{ZaDb}%
12311 /type/dict%
12312 /OBJ pdfmark%
12313 [%
12314 {ZaDb}%
```

```

12315 <<%
12316 /Type/Font%
12317 /Subtype/Type1%
12318 /Name/ZaDb%
12319 /BaseFont/ZapfDingbats%
12320 >>%
12321 /PUT pdfmark%
12322 [%
12323 /_objdef{Helv}%
12324 /type/dict%
12325 /OBJ pdfmark%
12326 [%
12327 {Helv}%
12328 <<%
12329 /Type/Font%
12330 /Subtype/Type1%
12331 /Name/Helv%
12332 /BaseFont/Helvetica%
12333 /Encoding{pdfDocEncoding}%
12334 >>%
12335 /PUT pdfmark%
12336 [%
12337 /_objdef{aform}%
12338 /type/dict%
12339 /OBJ pdfmark%
12340 [%
12341 /_objdef{afields}%
12342 /type/array%
12343 /OBJ pdfmark%
12344 [%
12345 /_objdef{corder}%
12346 /type/array%
12347 /OBJ pdfmark%
12348 {%
12349 [%
12350 /BBox[0 0 100 100]%
12351 /_objdef{Check}%
12352 /BP pdfmark %
12353 1 0 0 setrgbcolor%
12354 /ZapfDingbats 80 selectfont %
12355 20 20 moveto%
12356 (4)show%
12357 [/EP pdfmark%
12358 [%
12359 /BBox[0 0 100 100]%
12360 /_objdef{Cross}%
12361 /BP pdfmark %
12362 1 0 0 setrgbcolor%
12363 /ZapfDingbats 80 selectfont %
12364 20 20 moveto%
12365 (8)show%
12366 [/EP pdfmark%
12367 [%
12368 /BBox[0 0 250 100]%

```

12369 /\_objdef{Submit}%  
12370 /BP pdfmark %  
12371 0.6 setgray %  
12372 0 0 250 100 rectfill %  
12373 1 setgray %  
12374 2 2 moveto %  
12375 2 98 lineto %  
12376 248 98 lineto %  
12377 246 96 lineto %  
12378 4 96 lineto %  
12379 4 4 lineto %  
12380 fill %  
12381 0.34 setgray %  
12382 248 98 moveto %  
12383 248 2 lineto %  
12384 2 2 lineto %  
12385 4 4 lineto %  
12386 246 4 lineto %  
12387 246 96 lineto %  
12388 fill%  
12389 /Helvetica 76 selectfont %  
12390 0 setgray %  
12391 8 22.5 moveto%  
12392 (Submit)show%  
12393 [/EP pdfmark%  
12394 [%  
12395 /BBox[0 0 250 100]%  
12396 /\_objdef{SubmitP}%  
12397 /BP pdfmark %  
12398 0.6 setgray %  
12399 0 0 250 100 rectfill %  
12400 0.34 setgray %  
12401 2 2 moveto %  
12402 2 98 lineto %  
12403 248 98 lineto %  
12404 246 96 lineto %  
12405 4 96 lineto %  
12406 4 4 lineto %  
12407 fill %  
12408 1 setgray %  
12409 248 98 moveto %  
12410 248 2 lineto %  
12411 2 2 lineto %  
12412 4 4 lineto %  
12413 246 4 lineto %  
12414 246 96 lineto %  
12415 fill%  
12416 /Helvetica 76 selectfont %  
12417 0 setgray %  
12418 10 20.5 moveto%  
12419 (Submit)show%  
12420 [/EP pdfmark%  
12421 }?pdfmark%  
12422 [%



```

12423 {aform}%
12424 <<%
12425 /Fields{afields}%
12426 /DR.<<%
12427 /Font.<<%
12428 /ZaDb{ZaDb}%
12429 /Helv{Helv}%
12430 >>%
12431 >>%
12432 /DA(/Helv 10 Tf 0 g)%
12433 /CO{corder}%
12434 \ifHy@pdfa
12435 \else
12436 \ifHyField@NeedAppearances
12437 /NeedAppearances true%
12438 \fi
12439 \fi
12440 >>%
12441 /PUT pdfmark%
12442 [%
12443 {Catalog}%
12444 <<%
12445 /AcroForm{aform}%
12446 >>%
12447 /PUT pdfmark%
12448 ]}%
12449 \kvsetkeys{Form}{#1}%
12450 }
12451 \let\@endForm\@empty
12452 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12453 \Hy@Message{Sorry, pdfmark drivers do not support FORM gauges}%
12454 }

12455 \newcount\HyField@AnnotCount
12456 \HyField@AnnotCount=\z@
12457 \def\HyField@AdvanceAnnotCount{%
12458 \global\advance\HyField@AnnotCount\@ne
12459 }
12460 \def\HyField@TheAnnotCount{%
12461 \the\HyField@AnnotCount
12462 }

12463 \edef\Fld@pageobjref{/P\string{ThisPage\string}}

12464 \def\HyField@AddToFields#1{%
12465 \pdfmark{%
12466 pdfmark=/APPEND,%
12467 Raw={%
12468 \string{afields\string}%
12469 \string{#1\HyField@TheAnnotCount\string}%
12470 }%
12471 }%
12472 \ifx\Fld@calculate@code\@empty
12473 \else
12474 \pdfmark{%
12475 pdfmark=/APPEND,%

```

```

12476     Raw={%
12477         \string{corder\string}%
12478         \string{#1\HyField@TheAnnotCount\string}%
12479     }%
12480 }%
12481 \fi
12482 }

12483 \def\@TextField[#1]#2{% parameters, label
12484 \def\Fld@name{#2}%
12485 \let\Fld@default\@empty
12486 \let\Fld@value\@empty
12487 \def\Fld@width{\DefaultWidthofText}%
12488 \def\Fld@height{%
12489     \ifFld@multiline
12490         \DefaultHeightofTextMultiline
12491     \else
12492         \DefaultHeightofText
12493     \fi
12494 }%
12495 \begingroup
12496 \expandafter\HyField@SetKeys\expandafter{%
12497     \DefaultOptionsofText,#1%
12498 }%
12499 \HyField@FlagsText
12500 \ifFld@hidden\def\Fld@width{1sp}\fi
12501 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12502 \HyField@AdvanceAnnotCount
12503 \LayoutTextField{#2}{%
12504     \leavevmode
12505     \Hy@escapeform\PDFForm@Text
12506     \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
12507         pdfmark=/ANN,%
12508         objdef=text\HyField@TheAnnotCount,%
12509         Raw={\PDFForm@Text}%
12510     }%
12511 }%
12512 \HyField@AddToFields{text}%
12513 \endgroup
12514 }

12515 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12516 \def\Fld@name{#2}%
12517 \let\Fld@default\relax
12518 \let\Fld@value\relax
12519 \def\Fld@width{\DefaultWidthofChoiceMenu}%
12520 \def\Fld@height{\DefaultHeightofChoiceMenu}%
12521 \begingroup
12522 \Fld@menulength=0 %
12523 \@tempdima\z@
12524 \@for\@curropt:=#3\do{%
12525     \expandafter\Fld@checkequals\@curropt==\%
12526     \Hy@StepCount\Fld@menulength
12527     \settowidth{\@tempdimb}{\@currDisplay}%
12528     \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12529 }%

```

```

12530 \advance\@tempdima by 15\p@
12531 \begingroup
12532 \HyField@SetKeys{#1}%
12533 \edef\x{\endgroup
12534 \noexpand\expandafter
12535 \noexpand\HyField@SetKeys
12536 \noexpand\expandafter{%
12537 \expandafter\noexpand\csname DefaultOptionsof%
12538 \ifFld@radio
12539 Radio%
12540 \else
12541 \ifFld@combo
12542 \ifFld@popdown
12543 PopdownBox%
12544 \else
12545 ComboBox%
12546 \fi
12547 \else
12548 ListBox%
12549 \fi
12550 \fi
12551 \endcsname
12552 }%
12553 }\x
12554 \HyField@SetKeys{#1}%
12555 \ifFld@hidden\def\Fld@width{1sp}\fi
12556 \ifx\Fld@value\relax
12557 \let\Fld@value\Fld@default
12558 \fi
12559 \LayoutChoiceField{#2}{%
12560 \ifFld@radio
12561 \HyField@FlagsRadioButton
12562 \@@Radio{#3}%
12563 \else
12564 \begingroup
12565 \HyField@FlagsChoice
12566 \ifdim\Fld@width<\@tempdima
12567 \ifdim\@tempdima<1cm\@tempdima1cm\fi
12568 \edef\Fld@width{\the\@tempdima}%
12569 \fi
12570 \ifFld@combo
12571 \else
12572 \@tempdima=\the\Fld@menulength\Fld@charsize
12573 \advance\@tempdima by \Fld@borderwidth bp %
12574 \advance\@tempdima by \Fld@borderwidth bp %
12575 \edef\Fld@height{\the\@tempdima}%
12576 \fi
12577 \@@ListBox{#3}%
12578 \endgroup
12579 \fi
12580 }%
12581 \endgroup
12582 }
12583 \def\@@Radio#1{%

```

```

12584 \Fld@listcount=0 %
12585 \EdefEscapeName\Fld@default{\Fld@default}%
12586 \@for\@curropt:=#1\do{%
12587   \expandafter\Fld@checkequals\@curropt==\%
12588   \EdefEscapeName\@currValue{\@currValue}%
12589   \Hy@StepCount\Fld@listcount
12590   \@currDisplay\space
12591   \Hy@escapeform\PDFForm@Radio
12592   \ifnum\Fld@listcount=1 %
12593     \HyField@AdvanceAnnotCount
12594     \fi
12595     \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
12596       pdfmark=/ANN,%
12597       objdef=\ifnum\Fld@listcount=1 radio\HyField@TheAnnotCount\fi,%
12598       Raw={%
12599         \PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>%
12600       }%
12601     } % deliberate space between radio buttons
12602     \ifnum\Fld@listcount=1 %
12603       \HyField@AddToFields{radio}%
12604     \fi
12605   }%
12606 }
12607 \newcount\Fld@listcount
12608 \def\@@Listbox#1{%
12609   \HyField@PDFChoices{#1}%
12610   \Hy@escapeform\PDFForm@List
12611   \HyField@AdvanceAnnotCount
12612   \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
12613     pdfmark=/ANN,%
12614     objdef=list\HyField@TheAnnotCount,%
12615     Raw={\PDFForm@List}%
12616   }%
12617   \HyField@AddToFields{list}%
12618 }
12619 \def\@PushButton[#1]#2{% parameters, label
12620   \def\Fld@name{#2}%
12621   \begingroup
12622     \expandafter\HyField@SetKeys\expandafter{%
12623       \DefaultOptionsofPushButton,#1%
12624     }%
12625     \ifHy@pdfa
12626       \Hy@Error{%
12627         PDF/A: Push button with JavaScript is prohibited%
12628       }\@ehc
12629     \LayoutPushButtonField{%
12630       \leavevmode
12631       \MakeButtonField{#2}%
12632     }%
12633   \else
12634     \HyField@FlagsPushButton
12635     \ifFld@hidden\def\Fld@width{1sp}\fi
12636     \HyField@AdvanceAnnotCount
12637     \LayoutPushButtonField{%

```

```

12638     \leavevmode
12639     \Hy@escapeform\PDFForm@Push
12640     \pdfmark[\MakeButtonField{#2}]{%
12641       pdfmark=/ANN,%
12642       objdef=push\HyField@TheAnnotCount,%
12643       Raw={\PDFForm@Push}%
12644     }%
12645   }%
12646   \HyField@AddToFields{push}%
12647   \fi
12648 \endgroup
12649 }
12650 \def\@Submit[#1]#2{%
12651   \def\Fld@width{\DefaultWidthofSubmit}%
12652   \def\Fld@height{\DefaultHeightofSubmit}%
12653   \begingroup
12654     \expandafter\HyField@SetKeys\expandafter{%
12655       \DefaultOptionsofSubmit,#1%
12656     }%
12657     \HyField@FlagsPushButton
12658     \HyField@FlagsSubmit
12659     \ifFld@hidden\def\Fld@width{1sp}\fi
12660     \Hy@escapeform\PDFForm@Submit
12661     \HyField@AdvanceAnnotCount
12662     \pdfmark[\MakeButtonField{#2}]{%
12663       pdfmark=/ANN,%
12664       objdef=submit\HyField@TheAnnotCount,%
12665       Raw={\PDFForm@Submit /AP<</N{Submit}/D{SubmitP}>>}}%
12666     }%
12667     \HyField@AddToFields{submit}%
12668   \endgroup
12669 }
12670 \def\@Reset[#1]#2{%
12671   \def\Fld@width{\DefaultWidthofReset}%
12672   \def\Fld@height{\DefaultHeightofReset}%
12673   \begingroup
12674     \expandafter\HyField@SetKeys\expandafter{%
12675       \DefaultOptionsofReset,#1%
12676     }%
12677     \leavevmode
12678     \ifHy@pdfa
12679       \Hy@Error{%
12680         PDF/A: Reset action is prohibited%
12681       } \@ehc
12682     \MakeButtonField{#2}%
12683   \else
12684     \HyField@FlagsPushButton
12685     \ifFld@hidden\def\Fld@width{1sp}\fi
12686     \Hy@escapeform\PDFForm@Reset
12687     \HyField@AdvanceAnnotCount
12688     \pdfmark[\MakeButtonField{#2}]{%
12689       pdfmark=/ANN,%
12690       objdef=reset\HyField@TheAnnotCount,%
12691       Raw={\PDFForm@Reset}%

```

```

12692 }%
12693 \HyField@AddToFields{reset}%
12694 \fi
12695 \endgroup
12696 }%
12697 \def\@CheckBox[#1]#2{% parameters, label
12698 \def\Fld@name{#2}%
12699 \def\Fld@default{0}%
12700 \begingroup
12701 \def\Fld@width{\DefaultWidthofCheckBox}%
12702 \def\Fld@height{\DefaultHeightofCheckBox}%
12703 \expandafter\HyField@SetKeys\expandafter{%
12704 \DefaultOptionsofCheckBox,#1%
12705 }%
12706 \HyField@FlagsCheckBox
12707 \ifFld@hidden\def\Fld@width{1sp}\fi
12708 \HyField@AdvanceAnnotCount
12709 \LayoutCheckField{#2}{%
12710 \leavevmode
12711 \Hy@escapeform\PDFForm@Check
12712 \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
12713 pdfmark=/ANN,%
12714 objdef=check\HyField@TheAnnotCount,%
12715 Raw={\PDFForm@Check}%
12716 }%
12717 }%
12718 \HyField@AddToFields{check}%
12719 \endgroup
12720 }
12721 \pdfmark)

```

## 45.2 HyperTeX

```

12722 (*hypertex)
12723 \def\@Form[#1]{%
12724 \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12725 }
12726 \let\@endForm\@empty
12727 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12728 \Hy@Message{Sorry, HyperTeX does not support FORM gauges}%
12729 }
12730 \def\@TextField[#1]#2{% parameters, label
12731 \Hy@Message{Sorry, HyperTeX does not support FORM text fields}%
12732 }
12733 \def\@CheckBox[#1]#2{% parameters, label
12734 \Hy@Message{Sorry, HyperTeX does not support FORM checkboxes}%
12735 }
12736 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12737 \Hy@Message{Sorry, HyperTeX does not support FORM choice menus}%
12738 }
12739 \def\@PushButton[#1]#2{% parameters, label
12740 \Hy@Message{Sorry, HyperTeX does not support FORM pushbuttons}%
12741 }
12742 \def\@Reset[#1]#2{%

```

```

12743 \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12744 }
12745 \def\@Submit[#1]#2{%
12746 \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12747 }
12748 </hypertex>

```

### 45.3 TeX4ht

```

12749 (*tex4ht)
12750 \def\@Form[#1]{%
12751 \kvsetkeys{Form}{#1}%
12752 \HCode{<form action="\Form@action" method="\Form@method">}%
12753 }
12754 \def\@endForm{\HCode{</form>}}
12755 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12756 \Hy@Message{Sorry, TeX4ht does not support gauges}%
12757 }
12758 \def\@TextField[#1]#2{% parameters, label
12759 \let\Hy@reserved@a\@empty
12760 \def\Fld@name{#2}%
12761 \let\Fld@default\@empty
12762 \bgroup
12763 \Field@toks={ }%
12764 \kvsetkeys{Field}{#1}%
12765 \HCode{<label for="\Fld@name">#2</label>}%
12766 \ifFld@password
12767 \@@PasswordField
12768 \else
12769 \@@TextField
12770 \fi
12771 \egroup
12772 }
12773 \def\@@PasswordField{%
12774 \HCode{%
12775 <input type="password" %
12776 id="\Fld@name" %
12777 name="\Fld@name" %
12778 \ifFld@hidden type="hidden" \fi
12779 value="\Fld@default" %
12780 \the\Field@toks
12781 >%
12782 }%
12783 }
12784 \def\@@TextField{%
12785 \ifFld@multiline
12786 \HCode{<textarea %
12787 \ifFld@readonly readonly \fi
12788 id="\Fld@name" %
12789 name="\Fld@name" %
12790 \ifFld@hidden type="hidden" \fi
12791 \the\Field@toks>%
12792 }%
12793 \Fld@default
12794 \HCode{</textarea>}%

```

```

12795 \else
12796 \HCode{<input type="textbox" %
12797 \ifFld@readonly readonly \fi
12798 id="\Fld@name" %
12799 name="\Fld@name" %
12800 \ifFld@hidden type="hidden" \fi
12801 value="\Fld@default" %
12802 \the\Field@toks>%
12803 }%
12804 \fi
12805 }
12806 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12807 \def\Fld@name{#2}%
12808 \let\Fld@default\@empty
12809 \let\Hy@reserved@a\relax
12810 \begingroup
12811 \expandafter\Fld@findlength#3\\{%
12812 \Field@toks={ }%
12813 \kvsetkeys{Field}{#1}%
12814 #2%
12815 \ifFld@radio
12816 \expandafter\@@Radio#3\\{%
12817 \else
12818 \expandafter\@@Menu#3\\{%
12819 \fi
12820 \endgroup
12821 }
12822 \def\Fld@findlength#1\\{%
12823 \Fld@menulength=0 %
12824 \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
12825 }
12826 \def\@@Menu#1\\{%
12827 \HCode{<select size="\the\Fld@menulength" %
12828 name="\Fld@name" %
12829 \the\Field@toks>%
12830 }%
12831 \@for\@curropt:=#1\do{%
12832 \expandafter\Fld@checkequals\@curropt==\\{%
12833 \HCode{<option %
12834 \ifx\@curropt\Fld@default selected \fi
12835 value="\@currValue">\@currDisplay</option>%
12836 }%
12837 }%
12838 \HCode{</select>}%
12839 }
12840 \def\@@Radio#1\\{%
12841 \@for\@curropt:=#1\do{%
12842 \expandafter\Fld@checkequals\@curropt==\\{%
12843 \HCode{<input type="radio" %
12844 \ifx\@curropt\Fld@default checked \fi
12845 name="\Fld@name" %
12846 value="\@currValue" %
12847 \the\Field@toks>%
12848 }%

```



```

12849 \currDisplay
12850 }%
12851 }
12852 \def\@PushButton[#1]#2{% parameters, label
12853 \def\Fld@name{#2}%
12854 \bgroup
12855 \Field@toks={ }%
12856 \kvsetkeys{Field}{#1}%
12857 \HCode{<input type="button" %
12858 name="\Fld@name" %
12859 value="#2" %
12860 \the\Fld@toks>%
12861 }%
12862 \HCode{</button>}%
12863 \egroup
12864 }
12865 \def\@Submit[#1]#2{%
12866 \HCode{<button type="submit">#2</button>}%
12867 }
12868 \def\@Reset[#1]#2{%
12869 \HCode{<button type="reset">#2</button>}%
12870 }
12871 \def\@CheckBox[#1]#2{% parameters, label
12872 \let\Hy@reserved@a\@empty
12873 \def\Fld@name{#2}%
12874 \def\Fld@default{0}%
12875 \bgroup
12876 \Field@toks={ }%
12877 \kvsetkeys{Field}{#1}%
12878 \HCode{<input type="checkbox" %
12879 \ifFld@checked checked \fi
12880 \ifFld@disabled disabled \fi
12881 \ifFld@readonly readonly \fi
12882 name="\Fld@name" %
12883 \ifFld@hidden type="hidden" \fi
12884 value="\Fld@default" %
12885 \the\Fld@toks>%
12886 #2%
12887 }%
12888 \egroup
12889 }
12890 </tex4ht>

```

## 45.4 pdfTeX

```

12891 (*pdftex)
12892 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12893 \Hy@Message{Sorry, pdftex does not support FORM gauges}%
12894 }
12895 \def\MakeFieldObject#1#2{\sbox0{#1}%
12896 \immediate\pdfxform0 %
12897 \expandafter\edef\csname #2Object\endcsname{%
12898 \the\pdfastxform\space 0 R%
12899 }%
12900 % \hbox to 0pt{\hskip-\maxdimen{\pdfrefxform \the\pdfastxform}}%

```

```

12901 }%
12902 \let\HyField@afields\@empty
12903 \let\HyField@cofields\@empty
12904 \@ifundefined{pdflastlink}
12905 {%
12906 \let\HyField@AddToFields\relax
12907 \PackageInfo{hyperref}{%
12908   You need pdfTeX 1.40.0 for setting the /Fields entry.%
12909 \MessageBreak
12910   Adobe Reader/Acrobat accepts an empty /Field array,%
12911 \MessageBreak
12912   but other PDF viewers might complain%
12913 }}%
12914 {%
12915 \let\HyField@AuxAddToFields\@gobble
12916 \let\HyField@AuxAddToCoFields\@gobbletwo
12917 \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.

```

12918 \def\HyField@ABD@AuxAddToCoFields#1#2{%
12919 \begingroup
12920 \Hy@safe@activetrue
12921 \let\@secondoftwo\relax
12922 \ifx\HyField@cofields\@empty
12923 \xdef\HyField@cofields{%
12924 \@secondoftwo{#1}{ #2 0 R}%
12925 }%
12926 \else
12927 \let\@secondoftwo\relax
12928 \def\HyField@AddCoField##1##2##3{%
12929 \ifx##1\@empty
12930 \@secondoftwo{#1}{ #2 0 R}%
12931 \expandafter\@gobble
12932 \else
12933 \ifnum\pdfstrcmp{##2}{#1}>\z@
12934 \@secondoftwo{#1}{ #2 0 R}%
12935 \@secondoftwo{##2}{##3}%
12936 \expandafter\expandafter\expandafter\@gobble
12937 \else
12938 \@secondoftwo{##2}{##3}%
12939 \fi
12940 \fi
12941 \HyField@AddCoField
12942 }%
12943 \xdef\HyField@cofields{%
12944 \expandafter\HyField@AddCoField
12945 \HyField@cofields\@empty\@empty\@empty
12946 }%
12947 \fi
12948 \endgroup
12949 }%
12950 \Hy@AtBeginDocument{%
12951 \if@filesw
12952 \immediate\write\@mainaux{%

```

```

12953     \string\providecommand\string\HyField@AuxAddToFields[1]{}%
12954 }%
12955 \immediate\write\@mainaux{%
12956     \string\providecommand\string\HyField@AuxAddToCoFields[2]{}%
12957 }%
12958 \fi
12959 \let\HyField@AfterAuxOpen\@firstofone
12960 \def\HyField@AuxAddToFields#1{%
12961     \xdef\HyField@afields{%
12962         \ifx\HyField@afields\@empty
12963         \else
12964             \HyField@afields
12965             \space
12966         \fi
12967         #1 0 R.%
12968     }%
12969 }%
12970 \let\HyField@AuxAddToCoFields\HyField@ABD@AuxAddToCoFields
12971 }%
12972 \def\HyField@AddToFields{%
12973     \expandafter\HyField@@AddToFields\expandafter{%
12974         \the\pdfastlink
12975     }%
12976     \ifx\Fld@calculate@code\@empty
12977     \else
12978         \begingroup
12979         \Hy@safe@activestruer
12980         \edef\Hy@temp{%
12981             \endgroup
12982             \if@filesw
12983                 \write\@mainaux{%
12984                     \string\HyField@AuxAddToCoFields{%
12985                         \Fld@calculate@sortkey
12986                     }{%
12987                         \the\pdfastlink
12988                     }%
12989                 }%
12990             \fi
12991         }%
12992         \Hy@temp
12993     \fi
12994 }%
12995 \def\HyField@@AddToFields#1{%
12996     \HyField@AfterAuxOpen{%
12997         \if@filesw
12998             \write\@mainaux{%
12999                 \string\HyField@AuxAddToFields{#1}%
13000             }%
13001         \fi
13002     }%
13003 }%
13004 }
13005 \def\@Form[#1]{%
13006     \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%

```

```

13007 \kvsetkeys{Form}{#1}%
13008 \pdf@ifdraftmode{}{%
13009   \Hy@FormObjects
13010   \ifnum\pdftexversion>13 %
13011     \pdfrefobj\OBJ@pdfdocencoding
13012     \pdfrefobj\OBJ@ZaDb
13013     \pdfrefobj\OBJ@Helv
13014   \fi
13015   \AtVeryEndDocument{%
13016     \immediate\pdfobj{%
13017       <<%
13018         /Fields[\HyField@afields]%
13019         \ifx\HyField@cofields\@empty
13020           \else
13021             /CO[\romannumeral-\`Q\HyField@cofields]%
13022           \fi
13023         /DR<<%
13024         /Font<<%
13025           /ZaDb \OBJ@ZaDb\space 0 R%
13026           /Helv \OBJ@Helv\space 0 R%
13027         >>%
13028       >>%
13029       /DA(/Helv 10 Tf 0 g)%
13030       \ifHy@pdfa
13031       \else
13032         \ifHyField@NeedAppearances
13033           /NeedAppearances true%
13034         \fi
13035       \fi
13036     >>%
13037   }%
13038   \edef\OBJ@acroform{\the\pdflastobj}%
13039   \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
13040 }%
13041 }%
13042 \MakeFieldObject{%
Same as \ding{123} of package pifont.
13043   \begingroup
13044     \fontfamily{pzd}%
13045     \fontencoding{U}%
13046     \fontseries{m}%
13047     \fontshape{n}%
13048     \selectfont
13049     \char123 %
13050   \endgroup
13051 }{Ding}%
13052 \MakeFieldObject{%
13053   \fbox{\textcolor{yellow}{\textsf{Submit}}}%
13054 }{Submit}%
13055 \MakeFieldObject{%
13056   \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
13057 }{SubmitP}%
13058 }
13059 \let\@endForm\@empty

```

```

13060 \let\HyAnn@AbsPageLabel\@empty
13061 \let\Fld@pageobjref\@empty
13062 \@ifundefined{pdfpageref}{%
13063 }{%
13064 \@ifpackageloaded{zref-abspage}{%
13065   \newcount\HyAnn@Count
13066   \HyAnn@Count=\z@
13067   \def\HyAnn@AbsPageLabel{%
13068     \global\advance\HyAnn@Count by\@ne
13069     \zref@labelbyprops{HyAnn@\the\HyAnn@Count}{abspage}%
13070     \zref@refused{HyAnn@\the\HyAnn@Count}%
13071   }%
13072   \def\Fld@pageobjref{%
13073     \zref@ifrefundefined{HyAnn@\the\HyAnn@Count}{%
13074     }{%
13075       \zref@ifrefcontainsprop{HyAnn@\the\HyAnn@Count}{abspage}{%
13076         /P \pdfpageref
13077         \zref@extractdefault{HyAnn@\the\HyAnn@Count}{abspage}{1} %
13078         \space 0 R%
13079       }{%
13080       }%
13081     }%
13082   }%
13083 }{%
13084 }%
13085 }

13086 \def\@TextField[#1]#2{% parameters, label
13087   \def\Fld@name{#2}%
13088   \let\Fld@default\@empty
13089   \let\Fld@value\@empty
13090   \def\Fld@width{\DefaultWidthofText}%
13091   \def\Fld@height{%
13092     \ifFld@multiline
13093       \DefaultHeightofTextMultiline
13094     \else
13095       \DefaultHeightofText
13096     \fi
13097   }%
13098   \begingroup
13099     \expandafter\HyField@SetKeys\expandafter{%
13100       \DefaultOptionsofText,#1%
13101     }%
13102   \PDFForm@Name
13103   \HyField@FlagsText
13104   \ifFld@hidden\def\Fld@width{1sp}\fi
13105   \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13106   \LayoutTextField{#2}{%
13107     \leavevmode
13108     \HyAnn@AbsPageLabel
13109     \Hy@escapeform\PDFForm@Text
13110     \pdfstartlink user {\PDFForm@Text}\relax
13111     \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
13112     \HyField@AddToFields
13113   }%

```

```

13114 \endgroup
13115 }
13116 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13117 \def\Fld@name{#2}%
13118 \let\Fld@default\relax
13119 \let\Fld@value\relax
13120 \def\Fld@width{\DefaultWidthofChoiceMenu}%
13121 \def\Fld@height{\DefaultHeightofChoiceMenu}%
13122 \begingroup
13123 \Fld@menulength=0 %
13124 \@tempdima\z@
13125 \@for\@curropt:=#3\do{%
13126 \expandafter\Fld@chekequals\@curropt==\%
13127 \Hy@StepCount\Fld@menulength
13128 \settowidth{\@tempdimb}{\@currDisplay}%
13129 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13130 }%
13131 \advance\@tempdima by 15\p@
13132 \begingroup
13133 \HyField@SetKeys{#1}%
13134 \edef\x{\endgroup
13135 \noexpand\expandafter
13136 \noexpand\HyField@SetKeys
13137 \noexpand\expandafter{
13138 \expandafter\noexpand\csname DefaultOptionsof%
13139 \ifFld@radio
13140 Radio%
13141 \else
13142 \ifFld@combo
13143 \ifFld@popdown
13144 PopdownBox%
13145 \else
13146 ComboBox%
13147 \fi
13148 \else
13149 ListBox%
13150 \fi
13151 \fi
13152 \endcsname
13153 }%
13154 }\x
13155 \HyField@SetKeys{#1}%
13156 \PDFForm@Name
13157 \ifFld@hidden\def\Fld@width{1sp}\fi
13158 \ifx\Fld@value\relax
13159 \let\Fld@value\Fld@default
13160 \fi
13161 \LayoutChoiceField{#2}{%
13162 \ifFld@radio
13163 \HyField@FlagsRadioButton
13164 \@@Radio{#3}%
13165 \else
13166 \begingroup
13167 \HyField@FlagsChoice

```

```

13168     \ifdim\Fld@width<\@tempdima
13169     \ifdim\@tempdima<1cm\@tempdima1cm\fi
13170     \edef\Fld@width{\the\@tempdima}%
13171     \fi
13172     \ifFld@combo
13173     \else
13174     \@tempdima=\the\Fld@menulength\Fld@charsize
13175     \advance\@tempdima by \Fld@borderwidth bp %
13176     \advance\@tempdima by \Fld@borderwidth bp %
13177     \edef\Fld@height{\the\@tempdima}%
13178     \fi
13179     \@@ListBox{#3}%
13180     \endgroup
13181     \fi
13182     }%
13183 \endgroup
13184 }
13185 \def\@@Radio#1{%
13186   \Fld@listcount=0 %
13187   \EdefEscapeName\Fld@default{\Fld@default}%
13188   \@for\@curropt:=#1\do{%
13189     \expandafter\Fld@checkequals\@curropt==\%
13190     \EdefEscapeName\@currValue{\@currValue}%
13191     \Hy@StepCount\Fld@listcount
13192     \@currDisplay\space
13193     \leavevmode
13194     \HyAnn@AbsPageLabel
13195     \Hy@escapeform\PDFForm@Radio
13196     \pdfstartlink user {%
13197       \PDFForm@Radio
13198       /AP<<%
13199       /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.

```

13200     /\@currValue\space \DingObject
13201     >>%
13202     >>%
13203     }%
13204     \relax
13205     \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
13206     \ifnum\Fld@listcount=1 %
13207     \HyField@AddToFields
13208     \fi
13209     \space % deliberate space between radio buttons
13210     }%
13211 }
13212 \newcount\Fld@listcount
13213 \def\@@ListBox#1{%
13214   \HyField@PDFChoices{#1}%
13215   \leavevmode
13216   \HyAnn@AbsPageLabel
13217   \Hy@escapeform\PDFForm@List

```

```

13218 \pdfstartlink user {\PDFForm@List}\relax
13219 \MakeChoiceField{\Fld@width}{\Fld@height}%
13220 \pdfendlink
13221 \HyField@AddToFields
13222 }
13223 \def\@PushButton[#1]#2{% parameters, label
13224 \def\Fld@name{#2}%
13225 \begingroup
13226 \expandafter\HyField@SetKeys\expandafter{%
13227 \DefaultOptionsofPushButton,#1%
13228 }%
13229 \PDFForm@Name
13230 \ifHy@pdfa
13231 \Hy@Error{%
13232 PDF/A: Push button with JavaScript is prohibited%
13233 } \@ehc
13234 \LayoutPushButtonField{%
13235 \leavevmode
13236 \MakeButtonField{#2}%
13237 }%
13238 \else
13239 \HyField@FlagsPushButton
13240 \ifFld@hidden\def\Fld@width{1sp}\fi
13241 \LayoutPushButtonField{%
13242 \leavevmode
13243 \HyAnn@AbsPageLabel
13244 \Hy@escapeform\PDFForm@Push
13245 \pdfstartlink user {\PDFForm@Push}\relax
13246 \MakeButtonField{#2}%
13247 \pdfendlink
13248 \HyField@AddToFields
13249 }%
13250 \fi
13251 \endgroup
13252 }
13253 \def\@Submit[#1]#2{%
13254 \def\Fld@width{\DefaultWidthofSubmit}%
13255 \def\Fld@height{\DefaultHeightofSubmit}%
13256 \begingroup
13257 \expandafter\HyField@SetKeys\expandafter{%
13258 \DefaultOptionsofSubmit,#1%
13259 }%
13260 \HyField@FlagsPushButton
13261 \HyField@FlagsSubmit
13262 \ifFld@hidden\def\Fld@width{1sp}\fi
13263 \leavevmode
13264 \HyAnn@AbsPageLabel
13265 \Hy@escapeform\PDFForm@Submit
13266 \pdfstartlink user {%
13267 \PDFForm@Submit
13268 /AP<</N \SubmitObject/D \SubmitPObject>>%
13269 }%
13270 \relax
13271 \MakeButtonField{#2}%

```



```

13272 \pdfendlink
13273 \HyField@AddToFields
13274 \endgroup
13275 }
13276 \def\@Reset[#1]#2{%
13277 \def\Fld@width{\DefaultWidthofReset}%
13278 \def\Fld@height{\DefaultHeightofReset}%
13279 \begingroup
13280 \expandafter\HyField@SetKeys\expandafter{%
13281 \DefaultOptionsofReset,#1%
13282 }%
13283 \leavevmode
13284 \ifHy@pdfa
13285 \Hy@Error{%
13286 PDF/A: Reset action is prohibited%
13287 }\@ehc
13288 \MakeButtonField{#2}%
13289 \else
13290 \HyField@FlagsPushButton
13291 \ifFld@hidden\def\Fld@width{1sp}\fi
13292 \HyAnn@AbsPageLabel
13293 \Hy@escapeform\PDFForm@Reset
13294 \pdfstartlink user {\PDFForm@Reset}\relax
13295 \MakeButtonField{#2}%
13296 \pdfendlink
13297 \HyField@AddToFields
13298 \fi
13299 \endgroup
13300 }
13301 \def\@CheckBox[#1]#2{% parameters, label
13302 \def\Fld@name{#2}%
13303 \def\Fld@default{0}%
13304 \begingroup
13305 \def\Fld@width{\DefaultWidthofCheckBox}%
13306 \def\Fld@height{\DefaultHeightofCheckBox}%
13307 \expandafter\HyField@SetKeys\expandafter{%
13308 \DefaultOptionsofCheckBox,#1%
13309 }%
13310 \PDFForm@Name
13311 \HyField@FlagsCheckBox
13312 \ifFld@hidden\def\Fld@width{1sp}\fi
13313 \LayoutCheckField{#2}{%
13314 \leavevmode
13315 \HyAnn@AbsPageLabel
13316 \Hy@escapeform\PDFForm@Check
13317 \pdfstartlink user {\PDFForm@Check}\relax
13318 \MakeCheckField{\Fld@width}{\Fld@height}%
13319 \pdfendlink
13320 \HyField@AddToFields
13321 }%
13322 \endgroup
13323 }
13324 \def\Hy@FormObjects{%
13325 \pdfobj {%

```

13326 <<%  
13327 /Type/Encoding%  
13328 /Differences[%  
13329 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%  
13330 /ring/tilde %  
13331 39/quotesingle %  
13332 96/grave %  
13333 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%  
13334 /fraction/guilsingleft/guilsingright/minus/perthousand%  
13335 /quotedblbase/quotedblleft/quotedblright/quoteleft%  
13336 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%  
13337 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %  
13338 160/Euro %  
13339 164/currency %  
13340 166/brokenbar %  
13341 168/dieresis/copyright/ordfeminine %  
13342 172/logicalnot/.notdef/registered/macron/degree/plusminus%  
13343 /twosuperior/threesuperior/acute/mu %  
13344 183/periodcentered/cedilla/onesuperior/ordmasculine %  
13345 188/onequarter/onehalf/threequarters %  
13346 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%  
13347 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%  
13348 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%  
13349 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%  
13350 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%  
13351 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%  
13352 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%  
13353 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%  
13354 /ocircumflex/otilde/odieresis/divide/oslash/ugrave%  
13355 /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%  
13356 ]%  
13357 >>%  
13358 }%  
13359 \xdef\OBJ@pdfdocencoding{\the\pdfastobj}%  
13360 \pdfobj{%  
13361 <<%  
13362 /Type/Font%  
13363 /Subtype/Type1%  
13364 /Name/ZaDb%  
13365 /BaseFont/ZapfDingbats%  
13366 >>%  
13367 }%  
13368 \xdef\OBJ@ZaDb{\the\pdfastobj}%  
13369 \pdfobj{%  
13370 <<%  
13371 /Type/Font%  
13372 /Subtype/Type1%  
13373 /Name/Helv%  
13374 /BaseFont/Helvetica%  
13375 /Encoding \OBJ@pdfdocencoding\space 0 R.%  
13376 >>%  
13377 }%  
13378 \xdef\OBJ@Helv{\the\pdfastobj}%  
13379 \global\let\Hy@FormObjects\relax

```
13380 }
13381 </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.

```
13382 <*dvipdfm | xetex>
```

```
\@Gauge
```

```
13383 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
13384 \Hy@Message{Sorry, dvipdfm/XeTeX does not support FORM gauges}%
13385 }
```

```
\@Form
```

```
13386 \def\@Form[#1]{%
13387 \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13388 \kvsetkeys{Form}{#1}%
13389 \Hy@FormObjects
13390 \@pdfm@mark{obj @afields []}%
13391 \@pdfm@mark{obj @corder []}%
13392 \@pdfm@mark{%
13393   obj @aform <<%
13394   /Fields @afields%
13395   /DR<<%
13396   /Font<<%
13397   /ZaDb @OBJZaDb%
13398   /Helv @OBJHelv%
13399   >>%
13400   >>%
13401   /DA(/Helv 10 Tf 0 g)%
13402   /CO @corder%
13403   \ifHy@pdfa
13404   \else
13405     \ifHyField@NeedAppearances
13406       /NeedAppearances true%
13407     \fi
13408   \fi
13409   >>%
13410 }%
13411 \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
13412 }
```

```
\@endForm
```

```
13413 \let\@endForm\@empty
```

```
\dvipdfm@setdim \dvipdfm@setdim sets dimensions for ann using \pdfm@box.
```

```
13414 \def\dvipdfm@setdim{%
13415   height \the\ht\pdfm@box\space
13416   width \the\wd\pdfm@box\space
13417   depth \the\dp\pdfm@box\space
13418 }
```

\HyField@AnnotCount

```
13419 \newcount\HyField@AnnotCount
13420 \HyField@AnnotCount=\z@
```

\HyField@AdvanceAnnotCount

```
13421 \def\HyField@AdvanceAnnotCount{%
13422 \global\advance\HyField@AnnotCount\@ne
13423 }
```

\HyField@TheAnnotCount

```
13424 \def\HyField@TheAnnotCount{%
13425 \the\HyField@AnnotCount
13426 }
```

\Fld@pageobjref

```
13427 \def\Fld@pageobjref{/P @thispage}%
```

\HyField@AddToFields

```
13428 \def\HyField@AddToFields#1{%
13429 \@pdfm@mark{put @afields @#1\HyField@TheAnnotCount}%
13430 \ifx\Fld@calculate@code\@empty
13431 \else
13432 \@pdfm@mark{put @corder @#1\HyField@TheAnnotCount}%
13433 \fi
13434 }
```

\@TextField

```
13435 \def\@TextField[#1]#2{% parameters, label
13436 \def\Fld@name{#2}%
13437 \let\Fld@default\@empty
13438 \let\Fld@value\@empty
13439 \def\Fld@width{\DefaultWidthofText}%
13440 \def\Fld@height{%
13441 \ifFld@multiline
13442 \DefaultHeightofTextMultiline
13443 \else
13444 \DefaultHeightofText
13445 \fi
13446 }%
13447 \begingroup
13448 \expandafter\HyField@SetKeys\expandafter{%
13449 \DefaultOptionsofText,#1%
13450 }%
13451 \PDFForm@Name
13452 \HyField@FlagsText
13453 \ifFld@hidden\def\Fld@width{1sp}\fi
13454 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13455 \setbox\pdfm@box=\hbox{%
13456 \MakeTextField{\Fld@width}{\Fld@height}%
13457 }%
13458 \HyField@AdvanceAnnotCount
13459 \LayoutTextField{#2}{%
13460 \leavevmode
```

```

13461 \Hy@escapeform\PDFForm@Text
13462 \@pdfm@mark{%
13463   ann @text\HyField@TheAnnotCount\space
13464   \dviPDFm@setdim << \PDFForm@Text >>%
13465 }%
13466 }%
13467 \unhbox\pdfm@box
13468 \HyField@AddToFields{text}%
13469 % record in @afields array
13470 \endgroup
13471 }

```

#### \@ChoiceMenu

```

13472 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13473 \def\Fld@name{#2}%
13474 \let\Fld@default\relax
13475 \let\Fld@value\relax
13476 \def\Fld@width{\DefaultWidthofChoiceMenu}%
13477 \def\Fld@height{\DefaultHeightofChoiceMenu}%
13478 \begingroup
13479 \Fld@menulength=0 %
13480 \@tempdima\z@
13481 \@for\@curropt:=#3\do{%
13482 \expandafter\Fld@checkequals\@curropt==\%
13483 \Hy@StepCount\Fld@menulength
13484 \settowidth{\@tempdimb}{\@currDisplay}%
13485 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13486 }%
13487 \advance\@tempdima by 15\p@
13488 \begingroup
13489 \HyField@SetKeys{#1}%
13490 \edef\x{\endgroup
13491 \noexpand\expandafter
13492 \noexpand\HyField@SetKeys
13493 \noexpand\expandafter{%
13494 \expandafter\noexpand\cename DefaultOptionsof%
13495 \ifFld@radio
13496 Radio%
13497 \else
13498 \ifFld@combo
13499 \ifFld@popdown
13500 PopdownBox%
13501 \else
13502 ComboBox%
13503 \fi
13504 \else
13505 ListBox%
13506 \fi
13507 \fi
13508 \endcename
13509 }%
13510 }\x
13511 \HyField@SetKeys{#1}%
13512 \PDFForm@Name

```

```

13513 \ifFld@hidden\def\Fld@width{1sp}\fi
13514 \ifx\Fld@value\relax
13515 \let\Fld@value\Fld@default
13516 \fi
13517 \LayoutChoiceField{#2}{%
13518 \ifFld@radio
13519 \HyField@FlagsRadioButton
13520 \@@Radio{#3}%
13521 \else
13522 \begingroup
13523 \HyField@FlagsChoice
13524 \ifdim\Fld@width<\@tempdima
13525 \ifdim\@tempdima<1cm\@tempdima1cm\fi
13526 \edef\Fld@width{\the\@tempdima}%
13527 \fi
13528 \ifFld@combo
13529 \else
13530 \@tempdima=\the\Fld@menulength\Fld@charsize
13531 \advance\@tempdima by \Fld@borderwidth bp %
13532 \advance\@tempdima by \Fld@borderwidth bp %
13533 \edef\Fld@height{\the\@tempdima}%
13534 \fi
13535 \@@ListBox{#3}%
13536 \endgroup
13537 \fi
13538 }%
13539 \endgroup
13540 }

```

#### \@@Radio

```

13541 \def\@@Radio#1{%
13542 \Fld@listcount=0 %
13543 \EdefEscapeName\Fld@default{\Fld@default}%
13544 \setbox\pdfm@box=\hbox{%
13545 \MakeRadioField{\Fld@width}{\Fld@height}%
13546 }%
13547 \@for\@curropt:=#1\do{%
13548 \expandafter\Fld@checkequals\@curropt==\%
13549 \EdefEscapeName\@currValue{\@currValue}%
13550 \Hy@StepCount\Fld@listcount
13551 \@currDisplay\space
13552 \leavevmode
13553 \Hy@escapeform\PDFForm@Radio
13554 \ifnum\Fld@listcount=1 %
13555 \HyField@AdvanceAnnotCount
13556 \fi
13557 \@pdfm@mark{%
13558 ann %
13559 \ifnum\Fld@listcount=1 %
13560 @radio\HyField@TheAnnotCount%
13561 \space
13562 \fi
13563 \dvi pdfm@setdim
13564 <<%

```

```

13565     \PDFForm@Radio
13566     /AP<</N<</\@currValue /null>>>%
13567     >>%
13568   }%
13569   \unhcopy\pdfm@box\space% deliberate space between radio buttons
13570   \ifnum\Fld@listcount=1 %
13571     \HyField@AddToFields{radio}%
13572   \fi
13573 }%
13574 }

\Fld@listcount
13575 \newcount\Fld@listcount

\@@ListBox
13576 \def\@@ListBox#1{%
13577   \HyField@PDFChoices{#1}%
13578   \setbox\pdfm@box=\hbox{%
13579     \MakeChoiceField{\Fld@width}{\Fld@height}%
13580   }%
13581   \leavevmode
13582   \Hy@escapeform\PDFForm@List
13583   \HyField@AdvanceAnnotCount
13584   \@pdfm@mark{%
13585     ann @list\HyField@TheAnnotCount\space
13586     \dvi pdfm@setdim
13587     <<\PDFForm@List>>%
13588   }%
13589   \unhbox\pdfm@box
13590   \HyField@AddToFields{list}%
13591 }

\@PushButton
13592 \def\@PushButton[#1]#2{% parameters, label
13593   \def\Fld@name{#2}%
13594   \begingroup
13595     \expandafter\HyField@SetKeys\expandafter{%
13596       \DefaultOptionsofPushButton,#1%
13597     }%
13598     \PDFForm@Name
13599     \ifHy@pdfa
13600       \Hy@Error{%
13601         PDF/A: Push button with JavaScript is prohibited%
13602       } \@ehc
13603     \LayoutPushButtonField{%
13604       \leavevmode
13605       \MakeButtonField{#2}%
13606     }%
13607   \else
13608     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13609     \HyField@FlagsPushButton
13610     \ifFld@hidden\def\Fld@width{1sp}\fi
13611     \HyField@AdvanceAnnotCount
13612     \LayoutPushButtonField{%

```

```

13613 \leavevmode
13614 \Hy@escapeform\PDFForm@Push
13615 \@pdfm@mark{%
13616   ann @push\HyField@TheAnnotCount\space
13617   \dviPDFm@setdim
13618   <<\PDFForm@Push>>%
13619   }%
13620 }%
13621 \unhbox\pdfm@box
13622 \HyField@AddToFields{push}%
13623 \fi
13624 \endgroup
13625 }

```

\@Submit

```

13626 \def\@Submit[#1]#2{%
13627 \def\Fld@width{\DefaultWidthofSubmit}%
13628 \def\Fld@height{\DefaultHeightofSubmit}%
13629 \begingroup
13630 \expandafter\HyField@SetKeys\expandafter{%
13631   \DefaultOptionsofSubmit,#1%
13632 }%
13633 \HyField@FlagsPushButton
13634 \HyField@FlagsSubmit
13635 \ifFld@hidden\def\Fld@width{1sp}\fi
13636 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13637 \leavevmode
13638 \Hy@escapeform\PDFForm@Submit
13639 \HyField@AdvanceAnnotCount
13640 \@pdfm@mark{%
13641   ann @submit\HyField@TheAnnotCount\space
13642   \dviPDFm@setdim
13643   <<\PDFForm@Submit>>%
13644   }%
13645 \unhbox\pdfm@box%
13646 \HyField@AddToFields{submit}%
13647 \endgroup
13648 }

```

\@Reset

```

13649 \def\@Reset[#1]#2{%
13650 \def\Fld@width{\DefaultWidthofReset}%
13651 \def\Fld@height{\DefaultHeightofReset}%
13652 \begingroup
13653 \expandafter\HyField@SetKeys\expandafter{%
13654   \DefaultOptionsofReset,#1%
13655 }%
13656 \leavevmode
13657 \ifHy@pdfa
13658   \Hy@Error{%
13659     PDF/A: Reset action is prohibited%
13660   }\@ehc
13661   \MakeButtonField{#2}%
13662 \else

```



```

13663 \HyField@FlagsPushButton
13664 \ifFld@hidden\def\Fld@width{1sp}\fi
13665 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13666 \Hy@escapeform\PDFForm@Reset
13667 \HyField@AdvanceAnnotCount
13668 \@pdfm@mark{%
13669   ann @reset\HyField@TheAnnotCount\space
13670   \dvipdfm@setdim
13671   <<\PDFForm@Reset>>%
13672 }%
13673 \unhbox\pdfm@box
13674 \HyField@AddToFields{reset}%
13675 \fi
13676 \endgroup
13677 }

```

#### \@CheckBox

```

13678 \def\@CheckBox[#1]#2{% parameters, label
13679 \def\Fld@name{#2}%
13680 \def\Fld@default{0}%
13681 \begingroup
13682 \def\Fld@width{\DefaultWidthofCheckBox}%
13683 \def\Fld@height{\DefaultHeightofCheckBox}%
13684 \expandafter\HyField@SetKeys\expandafter{%
13685   \DefaultOptionsofCheckBox,#1%
13686 }%
13687 \PDFForm@Name
13688 \HyField@FlagsCheckBox
13689 \ifFld@hidden\def\Fld@width{1sp}\fi
13690 \setbox\pdfm@box=\hbox{%
13691   \MakeCheckField{\Fld@width}{\Fld@height}%
13692 }%
13693 \HyField@AdvanceAnnotCount
13694 \LayoutCheckField{#2}%
13695 \leavevmode
13696 \Hy@escapeform\PDFForm@Check
13697 \@pdfm@mark{%
13698   ann @check\HyField@TheAnnotCount\space
13699   \dvipdfm@setdim
13700   <<\PDFForm@Check>>%
13701 }%
13702 \unhbox\pdfm@box
13703 \HyField@AddToFields{check}%
13704 }%
13705 \endgroup
13706 }

13707 \def\Hy@FormObjects{%
13708 \@pdfm@mark{obj @OBJpdfdocencoding%
13709 <<%
13710 /Type/Encoding%
13711 /Differences[
13712   24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
13713   39/quotesingle %

```

13714 96/grave %  
13715 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%  
13716 /fraction/guilsinglleft/guilsinglright/minus/perthousand%  
13717 /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%  
13718 /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%  
13719 /Zcaron/dotlessi/lslash/oe/scaron/zcaron %  
13720 160/Euro %  
13721 164/currency %  
13722 166/brokenbar %  
13723 168/dieresis/copyright/ordfeminine %  
13724 172/logicalnot/.notdef/registered/macron/degree/plusminus%  
13725 /twosuperior/threesuperior/acute/mu %  
13726 183/periodcentered/cedilla/onesuperior/ordmasculine %  
13727 188/onequarter/onehalf/threequarters %  
13728 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%  
13729 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%  
13730 /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%  
13731 /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%  
13732 /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%  
13733 /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%  
13734 /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%  
13735 /eth/ntilde/ograde/oacute/ocircumflex/otilde/odieresis%  
13736 /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%  
13737 /thorn/ydieresis%  
13738 ]%  
13739 >>%  
13740 }%  
13741 \@pdfm@mark{obj @OBJZaDb%  
13742 <<%  
13743 /Type/Font%  
13744 /Subtype/Type1%  
13745 /Name/ZaDb%  
13746 /BaseFont/ZapfDingbats%  
13747 >>%  
13748 }%  
13749 \@pdfm@mark{obj @OBJHelv%  
13750 <<%  
13751 /Type/Font%  
13752 /Subtype/Type1%  
13753 /Name/Helv%  
13754 /BaseFont/Helvetica%  
13755 /Encoding @OBJpdfdocencoding%  
13756 >>%  
13757 }%  
13758 \global\let\Hy@FormObjects\relax  
13759 }  
13760 </dvipdfm | xetex>

## 45.6 Common forms part

13761 (\*pdfform)

\Fld@pageobjref

13762 \providecommand\*{\Fld@pageobjref}{}

\Hy@escapestring

```
13763 \@ifundefined{pdf@escapestring}
13764 {%
13765 \let\Hy@escapestring\@firstofone
13766 \def\Hy@escapeform#1{%
13767 \ifHy@pdfescapeform
13768 \def\Hy@escapestring###1{%
13769 \noexpand\Hy@escapestring{\noexpand###1}%
13770 }%
13771 \edef\Hy@temp{#1}%
13772 \expandafter\Hy@@@escapeform\Hy@temp\Hy@escapestring}\@nil
13773 \def\Hy@escapestring###1{%
13774 \@ifundefined{Hy@esc@\string###1}{%
13775 ###1%
13776 \ThisShouldNotHappen
13777 }{%
13778 \csname Hy@esc@\string###1\endcsname
13779 }%
13780 }%
13781 \else
13782 \let\Hy@escapestring\@firstofone
13783 \fi
13784 }%
13785 \def\Hy@@@escapeform#1\Hy@escapestring##2##3\@nil{%
13786 \ifx\##3\%
13787 \else
13788 \expandafter
13789 \Hy@pstringdef\csname Hy@esc@\string##2\endcsname{##2}%
13790 \Hy@ReturnAfterFi{%
13791 \Hy@@@escapeform##3\@nil
13792 }%
13793 \fi
13794 }%
13795 }{%
13796 \def\Hy@escapeform#1{%
13797 \ifHy@pdfescapeform
13798 \let\Hy@escapestring\pdfescapestring
13799 \else
13800 \let\Hy@escapestring\@firstofone
13801 \fi
13802 }%
13803 \Hy@escapeform{}}%
13804 }
```

\PDFForm@Name

```
13805 \def\PDFForm@Name{%
13806 \PDFForm@@Name\Fld@name
13807 \ifx\Fld@altname\relax
13808 \else
13809 \PDFForm@@Name\Fld@altname
13810 \fi
13811 \ifx\Fld@mappingname\relax
13812 \else
13813 \PDFForm@@Name\Fld@mappingname
```

```
13814 \fi
13815 }
```

#### \PDFForm@@Name

```
13816 \def\PDFForm@@Name#1{%
13817 \begingroup
13818 \ifnum\Hy@pdf@major@minor@version<105 % implementation note 117, PDF spec 1.7
13819 \ifHy@unicode
13820 \Hy@unicodedefalse
13821 \fi
13822 \fi
13823 \pdfstringdef\Hy@gtemp#1%
13824 \endgroup
13825 \let#1\Hy@gtemp
13826 }
```

#### \Fld@additionalactions

```
13827 \def\Fld@@@additionalactions{%
K input (keystroke) format
13828 \ifx\Fld@keystroke@code\@empty
13829 \else
13830 /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
13831 \fi
F display format
13832 \ifx\Fld@format@code\@empty
13833 \else
13834 /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
13835 \fi
V validation
13836 \ifx\Fld@validate@code\@empty
13837 \else
13838 /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
13839 \fi
C calculation
13840 \ifx\Fld@calculate@code\@empty
13841 \else
13842 /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
13843 \fi
Fo receiving the input focus
13844 \ifx\Fld@onfocus@code\@empty
13845 \else
13846 /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
13847 \fi
Bl losing the input focus (blurred)
13848 \ifx\Fld@onblur@code\@empty
13849 \else
13850 /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
13851 \fi
```

D pressing the mouse button (down)

```
13852 \ifx\Fld@onmousedown@code\@empty
13853 \else
13854 /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
13855 \fi
```

U releasing the mouse button (up)

```
13856 \ifx\Fld@onmouseup@code\@empty
13857 \else
13858 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
13859 \fi
```

E cursor enters the annotation's active area.

```
13860 \ifx\Fld@onenter@code\@empty
13861 \else
13862 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
13863 \fi
```

X cursor exits the annotation's active area.

```
13864 \ifx\Fld@onexit@code\@empty
13865 \else
13866 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
13867 \fi
13868 }
13869 \def\Fld@additionalactions{%
13870 \if\Fld@@additionalactions-%
13871 \else
13872 \ifHy@pdfa
13873 \else
13874 /AA<<\Fld@@additionalactions>>%
13875 \fi
13876 \fi
13877 }
```

\Fld@annotnames

```
13878 \def\Fld@annotnames{%
13879 /T(\Fld@name)%
13880 \ifx\Fld@altname\relax
13881 \else
13882 /TU(\Fld@altname)%
13883 \fi
13884 \ifx\Fld@mappingname\relax
13885 \else
13886 /TM(\Fld@mappingname)%
13887 \fi
13888 }
```

\PDFForm@Check

```
13889 \def\PDFForm@Check{%
13890 /Subtype/Widget%
13891 \Fld@annotflags
13892 \Fld@pageobjref
13893 \Fld@annotnames
13894 /FT/Btn%
13895 \Fld@flags
```

```

13896 /Q \Fld@align
13897 /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
13898 /AP<< /N <</Yes<<>>>> >> %new string /Yes is from below
13899 /MK<<%
13900 \ifnum\Fld@rotation=\z@
13901 \else
13902 /R \Fld@rotation
13903 \fi
13904 \ifx\Fld@bordercolor\relax
13905 \else
13906 /BC[\Fld@bordercolor]%
13907 \fi
13908 \ifx\Fld@bcolor\relax
13909 \else
13910 /BG[\Fld@bcolor]%
13911 \fi
13912 /CA(\Hy@escapestring{\Fld@cbsymbol})%
13913 >>%
13914 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13915 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13916 /H/P%
13917 \ifFld@checked /V/Yes/AS/Yes\else /V/Off/AS/Off\fi
13918 \Fld@additionalactions
13919 }

```

\PDFForm@Push

```

13920 \ifHy@pdfa
13921 \else
13922 \def\PDFForm@Push{%
13923 /Subtype/Widget%
13924 \Fld@annotflags
13925 \Fld@pageobjref
13926 \Fld@annotnames
13927 /FT/Btn%
13928 \Fld@flags
13929 /H/P%
13930 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13931 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13932 \ifx\Fld@bordercolor\relax\else 1\fi
13933 \space
13934 \else
13935 /MK<<%
13936 \ifnum\Fld@rotation=\z@
13937 \else
13938 /R \Fld@rotation
13939 \fi
13940 \ifx\Fld@bordercolor\relax
13941 \else
13942 /BC[\Fld@bordercolor]%
13943 \fi
13944 >>%
13945 \fi
13946 /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick@code})>>%
13947 \Fld@additionalactions

```

13948 }%  
13949 \fi

#### \PDFForm@List

```
13950 \def\PDFForm@List{%  
13951 /Subtype/Widget%  
13952 \Fld@annotflags  
13953 \Fld@pageobjref  
13954 \Fld@annotnames  
13955 /FT/Ch%  
13956 \Fld@flags  
13957 /Q \Fld@align  
13958 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%  
13959 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi  
13960     \ifx\Fld@bordercolor\relax\else 1\fi  
13961     \ifx\Fld@bcolor\relax \else 1\fi  
13962     \space  
13963 \else  
13964 /MK<<%  
13965     \ifnum\Fld@rotation=\z@  
13966     \else  
13967     /R \Fld@rotation  
13968     \fi  
13969     \ifx\Fld@bordercolor\relax  
13970     \else  
13971     /BC[\Fld@bordercolor]%  
13972     \fi  
13973     \ifx\Fld@bcolor\relax  
13974     \else  
13975     /BG[\Fld@bcolor]%  
13976     \fi  
13977 >>%  
13978 \fi  
13979 /DA(/Helv \strip@pt\Fld@charsize\space Tf%  
13980     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%  
13981 \Fld@choices  
13982 \Fld@additionalactions  
13983 }
```

#### \PDFForm@Radio

```
13984 \def\PDFForm@Radio{%  
13985 /Subtype/Widget%  
13986 \Fld@annotflags  
13987 \Fld@pageobjref  
13988 \Fld@annotnames  
13989 /FT/Btn%  
13990 \Fld@flags  
13991 /H/P%  
13992 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%  
13993 /MK<<%  
13994     \ifnum\Fld@rotation=\z@  
13995     \else  
13996     /R \Fld@rotation  
13997     \fi
```

```

13998 \ifx\Fld@bordercolor\relax
13999 \else
14000 /BC[\Fld@bordercolor]%
14001 \fi
14002 \ifx\Fld@bcolor\relax
14003 \else
14004 /BG[\Fld@bcolor]%
14005 \fi
14006 /CA(\Hy@escapestring{\Fld@radiosymbol})%
14007 >>%
14008 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
14009 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%

```

New code, the default value is used for all buttons

```

14010 \ifx\Fld@default\@empty
14011 /V/Off%
14012 /DV/Off%
14013 \else
14014 /V/\Fld@default
14015 /DV/\Fld@default
14016 \fi
14017 \Fld@additionalactions
14018 }

```

#### \PDFForm@Text

```

14019 \def\PDFForm@Text{%
14020 /Subtype/Widget%
14021 \Fld@annotflags
14022 \Fld@pageobjref
14023 \Fld@annotnames
14024 /FT/Tx%
14025 \Fld@flags
14026 /Q \Fld@align
14027 /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
14028 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14029 \ifx\Fld@bordercolor\relax\else 1\fi
14030 \ifx\Fld@bcolor\relax \else 1\fi
14031 \space
14032 \else
14033 /MK<<%
14034 \ifnum\Fld@rotation=\z@
14035 \else
14036 /R \Fld@rotation
14037 \fi
14038 \ifx\Fld@bordercolor\relax
14039 \else
14040 /BC[\Fld@bordercolor]%
14041 \fi
14042 \ifx\Fld@bcolor\relax
14043 \else
14044 /BG[\Fld@bcolor]%
14045 \fi
14046 >>%
14047 \fi

```



```

14048 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
14049 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14050 /DV(\Hy@escapestring{\Fld@default})%
14051 /V(\Hy@escapestring{\Fld@value})%
14052 \Fld@additionalactions
14053 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
14054 }

```

#### \PDFForm@Submit

```

14055 \def\PDFForm@Submit{%
14056 /Subtype/Widget%
14057 \Fld@annotflags
14058 \Fld@pageobjref
14059 \Fld@annotnames
14060 /FT/Btn%
14061 \Fld@flags
14062 /H/P%
14063 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14064 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14065 \ifx\Fld@bordercolor\relax\else 1\fi
14066 \space
14067 \else
14068 /MK<<%
14069 \ifnum\Fld@rotation=\z@
14070 \else
14071 /R \Fld@rotation
14072 \fi
14073 \ifx\Fld@bordercolor\relax
14074 \else
14075 /BC[\Fld@bordercolor]%
14076 \fi
14077 >>%
14078 \fi
14079 /A<<%
14080 /S/SubmitForm%
14081 /F<<%
14082 /FS/URL%
14083 /F(\Hy@escapestring{\Form@action})%
14084 >>%
14085 \Fld@submitflags
14086 >>%
14087 \Fld@additionalactions
14088 }

```

#### \PDFForm@Reset

```

14089 \ifHy@pdfa
14090 \else
14091 \def\PDFForm@Reset{%
14092 /Subtype/Widget%
14093 \Fld@annotflags
14094 \Fld@pageobjref
14095 \Fld@annotnames
14096 /FT/Btn%
14097 \Fld@flags

```

```

14098 /H/P%
14099 /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
14100 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14101 \ifx\Fld@bordercolor\relax\else 1\fi
14102 \space
14103 \else
14104 /MK<<%
14105 \ifnum\Fld@rotation=\z@
14106 \else
14107 /R \Fld@rotation
14108 \fi
14109 \ifx\Fld@bordercolor\relax
14110 \else
14111 /BC[\Fld@bordercolor]%
14112 \fi
14113 % /CA (Clear)
14114 % /AC (Done)
14115 >>%
14116 \fi
14117 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14118 /A<</S/ResetForm>>%
14119 \Fld@additionalactions
14120 }%
14121 \fi

14122 </pdfform>
14123 <*packageEnd>

```

## 46 Bookmarks in the PDF file

This was originally developed by Yannis Haralambous (it was the separate `reper.sty`); it needed the `reper` 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`

```

14124 \def\phantomsection{%
14125 \Hy@MakeCurrentHrefAuto{section*}%
14126 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
14127 }
14128 </packageEnd>

```

### 46.1 Bookmarks

```
14129 <*outlines>
```

This section was written by Heiko Oberdiek; the code replaces an earlier version by David Carlisle.

The first part of bookmark code is in section 6. Further documentation is available as paper and slides of the talk, that Heiko Oberdiek has given at the

EuroTeX'99 meeting in Heidelberg. See `paper.pdf` and `slides.pdf` in the `doc` directory of `hyperref`.

When using the right-to-left typesetting based on  $\varepsilon$ -TeX, the order of the `\BOOKMARK` commands written to the `\@outlinefile` could appear wrong, because of mis-feature of  $\varepsilon$ -TeX's implementation (that it processes the shipped out lines left-to-right, instead of the order in which they appear in the document). The wrong order will appear when the file contains two bookmarks on the same line typeset right-to-left.

To work around this problem, the `bookmark@seq@number` counter is used to write the bookmark's sequential number into a comment in the `\@outlinefile`, which could be used to post-process it to achieve the proper ordering of `\BOOKMARK` commands in that file.

```

14130 \def\Hy@writebookmark#1#2#3#4#5{%
14131   % section number, text, label, level, file
14132   \ifx\WriteBookmarks\relax%
14133   \else
14134     \ifnum#4>\Hy@bookmarksdepth\relax
14135     \else
14136       \@writetorep{#1}{#2}{#3}{#4}{#5}%
14137     \fi
14138   \fi
14139 }
14140 \def\Hy@currentbookmarklevel{0}
14141 \def\Hy@numberline#1{#1 }
14142 \def\@@writetorep#1#2#3#4#5{%
14143   \begingroup
14144     \edef\Hy@tempa{#5}%
14145     \ifx\Hy@tempa\Hy@bookmarkstype
14146       \edef\Hy@level{#4}%
14147       \ifx\Hy@levelcheck Y%
14148         \@tempcnta\Hy@level\relax
14149         \advance\@tempcnta by -1 %
14150         \ifnum\Hy@currentbookmarklevel<\@tempcnta
14151           \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
14152           \advance\@tempcnta by 1 %
14153           \Hy@Warning{%
14154             Difference (\the\@tempcnta) between bookmark levels is %
14155             greater \MessageBreak than one, level fixed%
14156           }%
14157           \@tempcnta\Hy@currentbookmarklevel
14158           \advance\@tempcnta by 1 %
14159           \edef\Hy@level{\the\@tempcnta}%
14160         \fi
14161       \else
14162         \global\let\Hy@levelcheck Y%
14163       \fi
14164       \global\let\Hy@currentbookmarklevel\Hy@level
14165       \@tempcnta\Hy@level\relax
14166       \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
14167       \advance\@tempcnta by -1 %
14168       \edef\Hy@tempa{#3}%
14169       \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
14170       \ifx\Hy@tempa\Hy@tempb

```

```

14171     \Hy@Warning{%
14172         The anchor of a bookmark and its parent's must not%
14173         \MessageBreak be the same. Added a new anchor%
14174     }%
14175     \phantomsection
14176 \fi
14177 \ifHy@bookmarksnumbered
14178     \let\numberline\Hy@numberline
14179     \let\booknumberline\Hy@numberline
14180     \let\partnumberline\Hy@numberline
14181     \let\chapternumberline\Hy@numberline
14182 \else
14183     \let\numberline\@gobble
14184     \let\booknumberline\@gobble
14185     \let\partnumberline\@gobble
14186     \let\chapternumberline\@gobble
14187 \fi
14188 \pdfstringdef\Hy@tempa{#2}%
14189 \HyPsd@SanitizeForOutFile\Hy@tempa
14190 \if@filesw
14191     \stepcounter{bookmark@seq@number}%
14192     \@ifundefined{@outlinefile}{%
14193     }{%
14194         \protected@write\@outlinefile}{%
14195         \protect\BOOKMARK
14196         [\Hy@level][\@bookmarkopenstatus{\Hy@level}]{#3}%
14197         {\Hy@tempa}{\Hy@tempb}%
14198         \@percentchar\space\thebookmark@seq@number
14199     }%
14200     }%
14201 \fi
14202 \fi
14203 \endgroup
14204 }
14205 \newcounter{bookmark@seq@number}

14206 \begingroup
14207 \lccode` (= ` { %
14208 \lccode` ) = ` } %
14209 \lccode` 1 = \z@
14210 \lccode` 2 = \z@
14211 \lccode` 3 = \z@
14212 \lccode` 5 = \z@
14213 \lccode` 7 = \z@
14214 \lccode` \# = \z@
14215 \lccode` \` = \z@
14216 \lccode` \{ = \z@
14217 \lccode` \} = \z@
14218 \lowercase{%
14219 \endgroup
14220 \def\HyPsd@SanitizeForOutFile#1{%
14221     \@onelevel@sanitize\Hy@tempa
14222     \escapechar` \ %
14223     \edef\Hy@tempa{%
14224         \expandafter\HyPsd@SanitizeOut@BraceLeft\Hy@tempa(\@nil

```

```

14225 }%
14226 \edef\Hy@tempa{%
14227   \expandafter\HyPsd@SanitizeOut@BraceRight\Hy@tempa)\@nil
14228 }%
14229 }%
14230 \def\HyPsd@SanitizeOut@BraceLeft#1(#2\@nil{%
14231   #1%
14232   \ifx\#2\%
14233     \expandafter\@gobble
14234   \else
14235     \expandafter\@firstofone
14236   \fi
14237   {%
14238     \string\173%
14239     \HyPsd@SanitizeOut@BraceLeft#2\@nil
14240   }%
14241 }%
14242 \def\HyPsd@SanitizeOut@BraceRight#1)#2\@nil{%
14243   #1%
14244   \ifx\#2\%
14245     \expandafter\@gobble
14246   \else
14247     \expandafter\@firstofone
14248   \fi
14249   {%
14250     \string\175%
14251     \HyPsd@SanitizeOut@BraceRight#2\@nil
14252   }%
14253 }%
14254 }

```

In the call of `\BOOKMARK` the braces around `#4` are omitted, because it is not likely, that the level number contains `]`.

```

14255 \newcommand{\currentpdfbookmark}{%
14256   \pdfbookmark[\Hy@currentbookmarklevel]%
14257 }
14258 \newcommand{\subpdfbookmark}{%
14259   \@tempcnta\Hy@currentbookmarklevel
14260   \Hy@StepCount\@tempcnta
14261   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
14262 }
14263 \newcommand{\belowpdfbookmark}[2]{%
14264   \@tempcnta\Hy@currentbookmarklevel
14265   \Hy@StepCount\@tempcnta
14266   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
14267   \advance\@tempcnta by -1 %
14268   \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
14269 }

```

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.

```

14270 \renewcommand\pdfbookmark[3][0]{%
14271   \Hy@writebookmark}{#2}{#3.#1}{#1}{toc}%

```

```

14272 \hyper@anchorstart{#3.#1}\hyper@anchorend
14273 }
14274 \def\BOOKMARK{%
14275 \@ifnextchar{\@BOOKMARK}{\@BOOKMARK[1][-]}%
14276 }
14277 \def\@BOOKMARK[#1]{%
14278 \@ifnextchar{\@@BOOKMARK[#1]}{\@BOOKMARK[#1][-]}%
14279 }

```

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`

```

14280 \RequirePackage{rerunfilecheck}[2009/12/10]
14281 \def\Hy@OutlineRerunCheck{%
14282 \RerunFileCheck{\jobname.out}{%
14283 \immediate\closeout\outlinefile
14284 }{%
14285 Rerun to get outlines right\MessageBreak
14286 or use package `bookmark'%
14287 }%
14288 }

```

#### 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.

```

14289 (*vtex)
14290 \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.

```

14291 \begingroup
14292 \catcode`\'=12 %
14293 \ifnum\Hy@VTeXversion<650 %
14294 \catcode`\ "=12 %
14295 \gdef\hv@pdf@char#1#2#3{%
14296 \char
14297 \ifcase'#1#2#3 %
14298 "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
14299 \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
14300 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
14301 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
14302 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
14303 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
14304 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
14305 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
14306 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
14307 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%

```

```

14308 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
14309 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
14310 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
14311 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
14312 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
14313 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
14314 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
14315 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
14316 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
14317 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
14318 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
14319 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
14320 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
14321 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
14322 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
14323 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
14324 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
14325 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
14326 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
14327 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
14328 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
14329 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
14330 \fi
14331 }%
14332 \else
14333 \gdef\hv@pdf@char{\char'}%
14334 \fi
14335 \endgroup

```

#### \@@BOOKMARK

```

14336 \def\@@BOOKMARK[#1][#2]#3#4#5{%
14337 \expandafter\edef\csname @count@#3\endcsname{%
14338 \the\@serial@counter
14339 }%
14340 \edef\@mycount{\the\@serial@counter}%
14341 \Hy@StepCount\@serial@counter
14342 \edef\@parcount{%
14343 \expandafter\ifx\csname @count@#5\endcsname\relax
14344 0%
14345 \else
14346 \csname @count@#5\endcsname
14347 \fi
14348 }%
14349 \immediate\special{%
14350 !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
14351 s=\ifx#2-c\else o\fi,t=#4%
14352 }%
14353 }%

```

#### \ReadBookmarks

```

14354 \def\ReadBookmarks{%
14355 \begingroup
14356 \def\0{\hv@pdf@char 0}%
14357 \def\1{\hv@pdf@char 1}%

```

```

14358 \def\2{\hv@pdf@char 2}%
14359 \def\3{\hv@pdf@char 3}%
14360 \def\{(){}%
14361 \def\}{}%
14362 \def\do###1{%
14363 \ifnum\catcode`###1=\active
14364 \@makeother###1%
14365 \else
14366 \ifnum\catcode`###1=6 %
14367 \@makeother###1%
14368 \fi
14369 \fi
14370 }%
14371 \dospecials
14372 \Hy@safe@activetrue
14373 \InputIfFileExists{\jobname.out}{-}{-}%
14374 \endgroup
14375 \ifx\WriteBookmarks\relax
14376 \else
14377 \if@filesw
14378 \newwrite\@outlinefile
14379 \Hy@OutlineRerunCheck
14380 \immediate\openout\@outlinefile=\jobname.out\relax
14381 \fi
14382 \fi
14383 }

14384 </vtex>

14385 <!*vtex>
14386 \def\ReadBookmarks{%
14387 \pdf@ifdraftmode{-}{-}%
14388 \begingroup
14389 \def\do###1{%
14390 \ifnum\catcode`###1=\active
14391 \@makeother###1%
14392 \else
14393 \ifnum\catcode`###1=6 %
14394 \@makeother###1%
14395 \fi
14396 \fi
14397 }%
14398 \dospecials
14399 \Hy@safe@activetrue
14400 \escapechar=`\%
14401 \def\@@BOOKMARK[##1][##2]##3##4##5{%
14402 \calc@bm@number{##5}%
14403 }%
14404 \InputIfFileExists{\jobname.out}{-}{-}%
14405 \ifx\WriteBookmarks\relax
14406 \global\let\WriteBookmarks\relax
14407 \fi
14408 \def\@@BOOKMARK[##1][##2]##3##4##5{%
14409 \def\Hy@temp{##4}%
14410 <*pdfTeX>

```



```

14411 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{###3}}%
14412 \Hy@OutlineName{}\Hy@pstringName{%
14413   ##2\check@bm@number{###3}%
14414 }{%
14415   \expandafter\strip@prefix\meaning\Hy@temp
14416 }%
14417 \pdfetex)
14418 (*pdfmark)
14419 \pdfmark{%
14420   pdfmark=/OUT,%
14421   Count={##2\check@bm@number{###3}},%
14422   Dest={###3},%
14423   Title=\expandafter\strip@prefix\meaning\Hy@temp
14424 }%
14425 \pdfmark)
14426 (*dvi pdfm | xetex)
14427 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{###3}}%
14428 \@pdfm@mark{%
14429   outline \ifHy@DvipdfmxOutlineOpen
14430     [%
14431       \ifnum##21>\z@
14432       \else
14433         -%
14434         \fi
14435       ] %
14436       \fi
14437       ##1<<%
14438       /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
14439       /A<<%
14440       /S/GoTo%
14441       /D(\Hy@pstringName)%
14442       >>%
14443       >>%
14444     }%
14445 \dvi pdfm | xetex)
14446 }%
14447 \begingroup
14448 \def\WriteBookmarks{0}%
14449 \InputIfFileExists{\jobname.out}{-}{-}%
14450 \endgroup
14451 %{\escapechar\m@ne\InputIfFileExists{\jobname.out}{-}{-}}%
14452 \endgroup
14453 }%
14454 \ifx\WriteBookmarks\relax
14455 \else
14456 \if@filesw
14457 \newwrite\@outlinefile
14458 \Hy@OutlineRerunCheck
14459 \immediate\openout\@outlinefile=\jobname.out\relax
14460 \fi
14461 \fi
14462 }
14463 (*pdfetex)
14464 \def\Hy@OutlineName#1##2##3##4{%

```

```

14465 \pdfoutline goto name{#2}count#3{#4}%
14466 }
14467 </pdfutex>
14468 \def\check@bm@number#1{%
14469 \expandafter\ifx\csname B_#1\endcsname\relax
14470 0%
14471 \else
14472 \csname B_#1\endcsname
14473 \fi
14474 }
14475 \def\calc@bm@number#1{%
14476 \@tempcnta=\check@bm@number{#1}\relax
14477 \advance\@tempcnta by 1 %
14478 \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
14479 }
14480 </!vtex>

14481 \ifHy@implicit
14482 \else
14483 \expandafter\endinput
14484 \fi

14485 </outlines>
14486 (*outlines | hypertex)

14487 \newlength\Hy@SectionHShift
14488 \def\Hy@SectionAnchorHref#1{%
14489 \ifx\protect\@typeset@protect
14490 \Hy@@SectionAnchor{#1}%
14491 \fi
14492 }
14493 \DeclareRobustCommand*{\Hy@@SectionAnchor}[1]{%
14494 \leavevmode
14495 \hbox to 0pt{%
14496 \kern-\Hy@SectionHShift
14497 \Hy@raisedlink{%
14498 \hyper@anchorstart{#1}\hyper@anchorend
14499 }%
14500 \hss
14501 }%
14502 }
14503 \AddToNoCaseChangeList{\Hy@@SectionAnchor}
14504 \@ifundefined{hyper@nopatch@sectioning}
14505 {
14506 \let\H@old@ssect\@ssect
14507 \def\@ssect#1#2#3#4#5{%
14508 \Hy@MakeCurrentHrefAuto{section*}%
14509 \setlength{\Hy@SectionHShift}{#1}%
14510 \begingroup
14511 \toks@{\H@old@ssect{#1}{#2}{#3}{#4}}%
14512 \toks\tw@\expandafter{%
14513 \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14514 #5%
14515 }%
14516 \edef\x{\endgroup
14517 \the\toks@\the\toks\tw@}%

```

```

14518 } \x
14519 }
14520 \let \H@old@chapter \@chapter
14521 \def \@chapter#1{%
14522   \begingroup
14523   \let \@mkboth \@gobbletwo
14524   \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14525   \Hy@raisedlink{%
14526     \hyper@anchorstart{\@currentHref}\hyper@anchorend
14527   }%
14528   \endgroup
14529   \H@old@chapter{#1}%
14530 }

```

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:

```

14531 \@ifundefined{@chapter}{}{%
14532   \let \Hy@org@chapter \@chapter
14533   \def \@chapter{%
14534     \def \Hy@next{%
14535       \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14536       \Hy@raisedlink{%
14537         \hyper@anchorstart{\@currentHref}\hyper@anchorend
14538       }%
14539     }%
14540     \ifnum \c@secnumdepth > \m@ne
14541       \@ifundefined{if@mainmatter}{%
14542         \iftrue{\csname if@mainmatter\endcsname}%
14543         \let \Hy@next \relax
14544       } \fi
14545     } \fi
14546     \Hy@next
14547     \Hy@org@chapter
14548   }%
14549 }

14550 \let \H@old@part \@part
14551 \@ifundefined{chapter}{
14552   {\let \Hy@secnum@part \z@}
14553   {\let \Hy@secnum@part \m@ne}
14554   \def \@part{%
14555     \ifnum \Hy@secnum@part > \c@secnumdepth
14556       \phantomsection
14557     } \fi
14558   \H@old@part
14559 }

14560 \let \H@old@spart \@spart
14561 \def \@spart#1{%
14562   \Hy@MakeCurrentHrefAuto{part*}%
14563   \Hy@raisedlink{%
14564     \hyper@anchorstart{\@currentHref}\hyper@anchorend
14565   }%
14566   \H@old@spart{#1}%

```

```

14567 }
14568 \let\H@old@sect\@sect
14569 \def\@sect#1#2#3#4#5#6[#7]#8{%
14570   \ifnum #2>\c@secnumdepth
14571     \expandafter\@firstoftwo
14572   \else
14573     \expandafter\@secondoftwo
14574   \fi
14575   {%
14576     \Hy@MakeCurrentHrefAuto{section*}%
14577     \setlength{\Hy@SectionHShift}{#3}%
14578     \begingroup
14579     \toks@{\H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}}%
14580     \toks\tw@\expandafter{%
14581       \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14582       #8%
14583     }%
14584     \edef\x{\endgroup
14585       \the\toks@\the\toks\tw@}%
14586     }\x
14587   }{%
14588     \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}{#8}%
14589   }%
14590 }
14591 }{}

14592 </outlines | hypertex>
14593 (*outlines)

14594 \expandafter\def\csname Parent-4\endcsname{}
14595 \expandafter\def\csname Parent-3\endcsname{}
14596 \expandafter\def\csname Parent-2\endcsname{}
14597 \expandafter\def\csname Parent-1\endcsname{}
14598 \expandafter\def\csname Parent0\endcsname{}
14599 \expandafter\def\csname Parent1\endcsname{}
14600 \expandafter\def\csname Parent2\endcsname{}
14601 \expandafter\def\csname Parent3\endcsname{}
14602 \expandafter\def\csname Parent4\endcsname{}

14603 </outlines>

```

## 47 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek.

### 47.1 PD1 encoding

```

14604 (*pd1enc)
14605 \DeclareFontEncoding{PD1}{}{}

Accents
14606 \DeclareTextAccent{\`}{PD1}{\textasciigrave}
14607 \DeclareTextAccent{\'}{PD1}{\textacute}
14608 \DeclareTextAccent{\^}{PD1}{\textasciicircum}

```

```

14609 \DeclareTextAccent{\~}{PD1}{\texttilde}
14610 \DeclareTextAccent{\"}{PD1}{\textasciidieresis}
14611 \DeclareTextAccent{\r}{PD1}{\textstring}
14612 \DeclareTextAccent{\v}{PD1}{\textasciicaron}
14613 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
14614 \DeclareTextAccent{\c}{PD1}{\textcedilla}
14615 \DeclareTextAccent{\=} {PD1}{\textasciimacron}
14616 \DeclareTextAccent{\b}{PD1}{\textmacronbelow}
14617 \DeclareTextAccent{\d}{PD1}{\textdotbelow}
14618 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textasciigrave}
14619 \DeclareTextCompositeCommand{\' }{PD1}{\@empty}{\textacute}
14620 \DeclareTextCompositeCommand{\^}{PD1}{\@empty}{\textasciicircum}
14621 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
14622 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textasciidieresis}
14623 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textstring}
14624 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textasciicaron}
14625 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
14626 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
14627 \DeclareTextCompositeCommand{\=} {PD1}{\@empty}{\textasciimacron}
14628 \DeclareTextCompositeCommand{\b}{PD1}{\@empty}{\textmacronbelow}
14629 \DeclareTextCompositeCommand{\d}{PD1}{\@empty}{\textdotbelow}
14630 \DeclareTextCompositeCommand{\`}{PD1}{\ }{\textasciigrave}
14631 \DeclareTextCompositeCommand{\' }{PD1}{\ }{\textacute}
14632 \DeclareTextCompositeCommand{\^}{PD1}{\ }{\textasciicircum}
14633 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\texttilde}
14634 \DeclareTextCompositeCommand{\"}{PD1}{\ }{\textasciidieresis}
14635 \DeclareTextCompositeCommand{\r}{PD1}{\ }{\textstring}
14636 \DeclareTextCompositeCommand{\v}{PD1}{\ }{\textasciicaron}
14637 \DeclareTextCompositeCommand{\.}{PD1}{\ }{\textdotaccent}
14638 \DeclareTextCompositeCommand{\c}{PD1}{\ }{\textcedilla}
14639 \DeclareTextCompositeCommand{\=} {PD1}{\ }{\textasciimacron}
14640 \DeclareTextCompositeCommand{\b}{PD1}{\ }{\textmacronbelow}
14641 \DeclareTextCompositeCommand{\d}{PD1}{\ }{\textdotbelow}
14642 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}
14643 \DeclareTextCommand{\t}{PD1}[1]{\TextSymbolUnavailable{\t{#1}}#1}
14644 \DeclareTextCommand{\newtie}{PD1}[1]{%
14645 \TextSymbolUnavailable{\newtie{#1}}#1%
14646 }

```

Special white space escape characters not for use in bookmarks but for other PDF strings.

```

14647 % U+0009 (CHARACTER TABULATION)
14648 \DeclareTextCommand{\textHT}{PD1}{\011}% U+0009
14649 % U+000A (LINE FEED)
14650 \DeclareTextCommand{\textLF}{PD1}{\012}% U+000A
14651 % U+000D (CARRIAGE RETURN)
14652 \DeclareTextCommand{\textCR}{PD1}{\015}% U+000D

```

Accent glyph names

```

14653 % U+02D8 BREVE; breve
14654 \DeclareTextCommand{\textasciibreve}{PD1}{\030}% U+02D8
14655 % U+02C7 CARON; caron
14656 \DeclareTextCommand{\textasciicaron}{PD1}{\031}% U+02C7
14657 % U+02C6 MODIFIER LETTER CIRCUMFLEX ACCENT; circumflex
14658 \DeclareTextCommand{\textcircumflex}{PD1}{\032}% U+02C6

```

14659 % U+02D9 DOT ABOVE; dotaccent  
14660 \DeclareTextCommand{\textdotaccent}{PD1}{\033}% U+02D9  
14661 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
14662 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034}% U+02DD  
14663 % U+02DB OGONEK; ogonek  
14664 \DeclareTextCommand{\textogonek}{PD1}{\035}% U+02DB  
14665 % U+02DA RING ABOVE; ring  
14666 \DeclareTextCommand{\textring}{PD1}{\036}% U+02DA  
14667 % U+02DC SMALL TILDE; ilde, \*tilde  
14668 \DeclareTextCommand{\texttilde}{PD1}{\037}% U+02DC  
  
\040: U+0020 SPACE; \*space, spacehackarabic  
\041: U+0021 EXCLAMATION MARK; exclam  
14669 % U+0022 QUOTATION MARK; quotedbl  
14670 \DeclareTextCommand{\textquotedbl}{PD1}{"}% \042 U+0022  
14671 % U+0023 NUMBER SIGN; numbersign  
14672 \DeclareTextCommand{\textnumbersign}{PD1}{\043}% U+0023  
14673 % U+0024 DOLLAR SIGN; dollar  
14674 \DeclareTextCommand{\textdollar}{PD1}{\044}% U+0024  
14675 % U+0025 PERCENT SIGN; percent  
14676 \DeclareTextCommand{\textpercent}{PD1}{\045}% U+0025  
14677 % U+0026 AMPERSAND; ampersand  
14678 \DeclareTextCommand{\textampersand}{PD1}{\046}% U+0026  
  
\047: U+0027 APOSTROPHE; quotesingle  
  
  
14679 % U+0028 LEFT PARENTHESIS; parenleft  
14680 \DeclareTextCommand{\textparenleft}{PD1}{\string\(% \050 U+0028  
14681 % U+0029 RIGHT PARENTHESIS; parenright  
14682 \DeclareTextCommand{\textparenright}{PD1}{\string\)% \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  
14683 % U+002E FULL STOP; period  
14684 \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  
14685 % U+003C LESS-THAN SIGN; less  
14686 \DeclareTextCommand{\textless}{PD1}{<}% \074 U+003C  
  
\075: U+003D EQUALS SIGN; equal  
14687 % U+003E GREATER-THAN SIGN; greater  
14688 \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  
14689 % U+005C REVERSE SOLIDUS; backslash  
14690 \DeclareTextCommand{\textbackslash}{PD1}{\134}% U+005C  
14691 % "U+2216 SET MINUS" simulated by "U+005C REVERSE SOLIDUS"  
14692 \DeclareTextCommand{\textsetminus}{PD1}{\textbackslash}  
\135: U+005D RIGHT SQUARE BRACKET; bracketright  
14693 % U+005E CIRCUMFLEX ACCENT; asciicircum  
14694 \DeclareTextCommand{\textasciicircum}{PD1}{\136}% U+005E  
14695 % U+005F LOW LINE; underscore  
14696 \DeclareTextCommand{\textunderscore}{PD1}{\137}% U+005F  
14697 \DeclareTextCommand{\textmacronbelow}{PD1}{\137}% U+005F  
14698 % U+0060 GRAVE ACCENT; grave  
14699 \DeclareTextCommand{\textasciigrave}{PD1}{\140}% U+0060  
\141: U+0061 LATIN SMALL LETTER A; a  
...  
\150: U+0068 LATIN SMALL LETTER H; h  
14700 % U+0069 LATIN SMALL LETTER I; i  
14701 \DeclareTextCompositeCommand{\.}{PD1}{i}{i}% \151 U+0069  
\152: U+006A LATIN SMALL LETTER J; j  
...  
\172: U+007A LATIN SMALL LETTER Z; z  
14702 % U+007B LEFT CURLY BRACKET; braceleft  
14703 \DeclareTextCommand{\textbraceleft}{PD1}{\173}% U+007B  
14704 % U+007C VERTICAL LINE; \*bar, verticalbar  
14705 \DeclareTextCommand{\textbar}{PD1}{|}% U+007C  
14706 % U+007D RIGHT CURLY BRACKET; braceright  
14707 \DeclareTextCommand{\textbraceright}{PD1}{\175}% U+007D  
14708 % U+007E TILDE; asciitilde  
14709 \DeclareTextCommand{\textasciitilde}{PD1}{\176}% U+007E  
Slot \177 (0x7F) is undefined in PDFDocEncoding.  
14710 % U+2022 BULLET; bullet  
14711 \DeclareTextCommand{\textbullet}{PD1}{\200}% U+2022  
14712 % U+2020 DAGGER; dagger  
14713 \DeclareTextCommand{\textdagger}{PD1}{\201}% U+2020  
14714 % U+2021 DOUBLE DAGGER; daggerdbl; \ddagger (LaTeX)  
14715 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202}% U+2021  
14716 \DeclareTextCommand{\textddagger}{PD1}{\textdaggerdbl}  
14717 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
14718 \DeclareTextCommand{\textellipsis}{PD1}{\203}% U+2026  
14719 % U+2014 EM DASH; emdash  
14720 \DeclareTextCommand{\textemdash}{PD1}{\204}% U+2014  
14721 % U+2013 EN DASH; endash  
14722 \DeclareTextCommand{\textendash}{PD1}{\205}% U+2013  
14723 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
14724 \DeclareTextCommand{\textflorin}{PD1}{\206}% U+0192  
14725 % U+2044 FRACTION SLASH; fraction  
14726 \DeclareTextCommand{\textfractionsolidus}{PD1}{\207}% U+2044  
14727 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
ingleft  
14728 \DeclareTextCommand{\guilsingleft}{PD1}{\210}% U+2039

14729 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guiltingright  
\DeclareTextCommand{\guiltingright}{PD1}{\211}% U+203A  
14731 % U+2212 MINUS SIGN; minus  
14732 \DeclareTextCommand{\textminus}{PD1}{\212}% U+2212  
14733 % U+2030 PER MILLE SIGN; perthousand  
14734 \DeclareTextCommand{\textperthousand}{PD1}{\213}% U+2030  
14735 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
14736 \DeclareTextCommand{\quotedblbase}{PD1}{\214}% U+201E  
14737 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
14738 \DeclareTextCommand{\textquotedblleft}{PD1}{\215}% U+201C  
14739 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
14740 \DeclareTextCommand{\textquotedblright}{PD1}{\216}% U+201D  
14741 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
14742 \DeclareTextCommand{\textquoteleft}{PD1}{\217}% U+2018  
14743 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
14744 \DeclareTextCommand{\textquoteright}{PD1}{\220}% U+2019  
14745 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
14746 \DeclareTextCommand{\quotesinglbase}{PD1}{\221}% U+201A  
14747 % U+2122 TRADE MARK SIGN; trademark  
14748 \DeclareTextCommand{\texttrademark}{PD1}{\222}% U+2122  
14749 % U+FB01 LATIN SMALL LIGATURE FI; fi  
14750 \DeclareTextCommand{\textfi}{PD1}{\223}% U+FB01  
14751 % U+FB02 LATIN SMALL LIGATURE FL; fl  
14752 \DeclareTextCommand{\textfl}{PD1}{\224}% U+FB02  
14753 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
14754 \DeclareTextCommand{\L}{PD1}{\225}% U+0141  
14755 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
14756 \DeclareTextCommand{\OE}{PD1}{\226}% U+0152  
14757 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
14758 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227}% U+0160  
14759 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
14760 \DeclareTextCompositeCommand{"}{PD1}{Y}{\230}% U+0178  
14761 \DeclareTextCommand{\IJ}{PD1}{IJ}% ligature U+0049 U+004A  
14762 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
14763 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231}% U+017D  
14764 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
14765 \DeclareTextCommand{\i}{PD1}{\232}% U+0131  
14766 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
14767 \DeclareTextCommand{\l}{PD1}{\233}% U+0142  
14768 % U+0153 LATIN SMALL LIGATURE OE; oe  
14769 \DeclareTextCommand{\oe}{PD1}{\234}% U+0153  
14770 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
14771 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235}% U+0161  
14772 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
14773 \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.  
14774 % U+20AC EURO SIGN; \*Euro, euro  
14775 \DeclareTextCommand{\texteuro}{PD1}{\240}% U+20AC  
14776 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
14777 \DeclareTextCommand{\textexclamdown}{PD1}{\241}% U+00A1  
14778 % U+00A2 CENT SIGN; cent  
14779 \DeclareTextCommand{\textcent}{PD1}{\242}% U+00A2



14780 % U+00A3 POUND SIGN; sterling  
14781 \DeclareTextCommand{\textsterling}{PD1}{\243}% U+00A3  
14782 % U+00A4 CURRENCY SIGN; currency  
14783 \DeclareTextCommand{\textcurrency}{PD1}{\244}% U+00A4  
14784 % U+00A5 YEN SIGN; yen  
14785 \DeclareTextCommand{\textyen}{PD1}{\245}% U+00A5  
14786 % U+00A6 BROKEN BAR; brokenbar  
14787 \DeclareTextCommand{\textbrokenbar}{PD1}{\246}% U+00A6  
14788 % U+00A7 SECTION SIGN; section  
14789 \DeclareTextCommand{\textsection}{PD1}{\247}% U+00A7  
14790 % U+00A8 DIAERESIS; dieresis  
14791 \DeclareTextCommand{\textasciidieresis}{PD1}{\250}% U+00A8  
14792 % U+00A9 COPYRIGHT SIGN; copyright  
14793 \DeclareTextCommand{\textcopyright}{PD1}{\251}% U+00A9  
14794 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
14795 \DeclareTextCommand{\textordfeminine}{PD1}{\252}% U+00AA  
14796 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetleft  
14797 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB  
14798 \DeclareTextCommand{\guillemetleft}{PD1}{\253}% U+00AB  
14799 % U+00AC NOT SIGN; logicalnot  
14800 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC  
14801 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not  
No glyph \255 in PDFDocEncoding.  
14802 % U+00AE REGISTERED SIGN; registered  
14803 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE  
14804 % U+00AF MACRON; \*macron, overscore  
14805 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF  
14806 % U+00B0 DEGREE SIGN; degree  
14807 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0  
14808 % U+00B1 PLUS-MINUS SIGN; plusminus  
14809 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1  
14810 % U+00B2 SUPERSCRIPT TWO; twosuperior  
14811 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}%\* U+00B2  
14812 % U+00B3 SUPERSCRIPT THREE; threesuperior  
14813 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}%\* U+00B3  
14814 % U+00B4 ACUTE ACCENT; acute  
14815 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4  
14816 % U+00B5 MICRO SIGN; mu, mu1  
14817 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5  
14818 % U+00B6 PILCROW SIGN; paragraph  
14819 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6  
14820 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
14821 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7  
14822 % U+00B8 CEDILLA; cedilla  
14823 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8  
14824 % U+00B9 SUPERSCRIPT ONE; onesuperior  
14825 \DeclareTextCommand{\textonesuperior}{PD1}{\271}%\* U+00B9  
14826 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
14827 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA  
14828 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetright  
14829 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB  
14830 \DeclareTextCommand{\guillemetright}{PD1}{\273}% U+00BB  
14831 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
14832 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC

14833 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
14834 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD  
14835 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
14836 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE  
14837 % U+00BF INVERTED QUESTION MARK; questiondown  
14838 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF  
14839 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
14840 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0  
14841 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
14842 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1  
14843 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
14844 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2  
14845 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
14846 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3  
14847 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
14848 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304}% U+00C4  
14849 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
14850 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5  
14851 % U+00C6 LATIN CAPITAL LETTER AE; AE  
14852 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6  
14853 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
14854 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7  
14855 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
14856 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310}% U+00C8  
14857 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
14858 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311}% U+00C9  
14859 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
14860 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312}% U+00CA  
14861 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
14862 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313}% U+00CB  
14863 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
14864 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314}% U+00CC  
14865 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
14866 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315}% U+00CD  
14867 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
14868 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316}% U+00CE  
14869 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
14870 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317}% U+00CF  
14871 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
14872 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0  
14873 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0  
14874 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
14875 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321}% U+00D1  
14876 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
14877 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322}% U+00D2  
14878 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
14879 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323}% U+00D3  
14880 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
14881 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324}% U+00D4  
14882 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
14883 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325}% U+00D5  
14884 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
14885 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326}% U+00D6  
14886 % U+00D7 MULTIPLICATION SIGN; multiply

14887 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7  
14888 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
14889 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8  
14890 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
14891 \DeclareTextCompositeCommand{\`}{PD1}{U}{\331}% U+00D9  
14892 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
14893 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332}% U+00DA  
14894 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
14895 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333}% U+00DB  
14896 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
14897 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334}% U+00DC  
14898 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
14899 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335}% U+00DD  
14900 % U+00DE LATIN CAPITAL LETTER THORN; Thorn; \TH, \Thorn (wasysym)  
14901 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE  
14902 \DeclareTextCommand{\textThorn}{PD1}{\336}%\* U+00DE  
14903 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
14904 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF  
14905 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
14906 \DeclareTextCompositeCommand{\`}{PD1}{a}{\340}% U+00E0  
14907 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
14908 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341}% U+00E1  
14909 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
14910 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342}% U+00E2  
14911 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
14912 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343}% U+00E3  
14913 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
14914 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344}% U+00E4  
14915 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
14916 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345}% U+00E5  
14917 % U+00E6 LATIN SMALL LETTER AE; ae  
14918 \DeclareTextCommand{\ae}{PD1}{\346}% U+00E6  
14919 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
14920 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347}% U+00E7  
14921 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
14922 \DeclareTextCompositeCommand{\`}{PD1}{e}{\350}% U+00E8  
14923 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
14924 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351}% U+00E9  
14925 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
14926 \DeclareTextCompositeCommand{\^}{PD1}{e}{\352}% U+00EA  
14927 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
14928 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353}% U+00EB  
14929 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
14930 \DeclareTextCompositeCommand{\`}{PD1}{i}{\354}% U+00EC  
14931 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354}% U+00EC  
14932 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
14933 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
14934 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
14935 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
14936 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
14937 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
14938 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
14939 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
14940 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF

14941 % U+00F0 LATIN SMALL LETTER ETH; eth  
14942 \DeclareTextCommand{\dh}{PD1}{\360}% U+00F0  
14943 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
14944 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361}% U+00F1  
14945 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
14946 \DeclareTextCompositeCommand{\`}{PD1}{o}{\362}% U+00F2  
14947 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
14948 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363}% U+00F3  
14949 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
14950 \DeclareTextCompositeCommand{\^}{PD1}{o}{\364}% U+00F4  
14951 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
14952 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365}% U+00F5  
14953 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
14954 \DeclareTextCompositeCommand{\\"}{PD1}{o}{\366}% U+00F6  
14955 % U+00F7 DIVISION SIGN; divide  
14956 \DeclareTextCommand{\textdivide}{PD1}{\367}% U+00F7  
14957 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
14958 \DeclareTextCommand{\o}{PD1}{\370}% U+00F8  
14959 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
14960 \DeclareTextCompositeCommand{\`}{PD1}{u}{\371}% U+00F9  
14961 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
14962 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372}% U+00FA  
14963 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
14964 \DeclareTextCompositeCommand{\^}{PD1}{u}{\373}% U+00FB  
14965 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
14966 \DeclareTextCompositeCommand{\\"}{PD1}{u}{\374}% U+00FC  
14967 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
14968 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375}% U+00FD  
14969 % U+00FE LATIN SMALL LETTER THORN; thorn; \th, \thorn (wasysym)  
14970 \DeclareTextCommand{\th}{PD1}{\376}% U+00FE  
14971 \DeclareTextCommand{\textthorn}{PD1}{\376}%\* U+00FE  
14972 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
14973 \DeclareTextCompositeCommand{\\"}{PD1}{y}{\377}% U+00FF  
14974 \DeclareTextCommand{\ij}{PD1}{ij}% ligature U+0069 U+006A

Glyphs that consist of several characters.  
14975 \DeclareTextCommand{\SS}{PD1}{SS}%  
14976 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}%

Aliases (german.sty)  
14977 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}%  
14978 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}%  
14979 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}%  
14980 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}%  
14981 \DeclareTextCommand{\textflqq}{PD1}{\guillemetleft}%  
14982 \DeclareTextCommand{\textfrqq}{PD1}{\guillemetright}%  
14983 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}%  
14984 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}%

Aliases (math names)  
14985 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}%  
14986 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}%  
14987 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}%  
14988 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}%  
14989 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}%  
14990 \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).

```

14991 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek
14992 \DeclareTextCompositeCommand{\'}{PD1}{c}{c}% cacute
14993 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek
14994 \DeclareTextCompositeCommand{\'}{PD1}{n}{n}% nacute
14995 \DeclareTextCompositeCommand{\'}{PD1}{s}{s}% sacute
14996 \DeclareTextCompositeCommand{\'}{PD1}{z}{z}% zacute
14997 \DeclareTextCompositeCommand{\.}{PD1}{z}{z}% zdot
14998 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek
14999 \DeclareTextCompositeCommand{\'}{PD1}{C}{C}% Cacute
15000 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek
15001 \DeclareTextCompositeCommand{\'}{PD1}{N}{N}% Nacute
15002 \DeclareTextCompositeCommand{\'}{PD1}{S}{S}% Sacute
15003 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z}% Zacute
15004 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z}% Zdot
15005 </pd1enc>

```

## 47.2 PU encoding

```

15006 (*puenc)
15007 \DeclareFontEncoding{PU}{}{}

```

### 47.2.1 NFSS2 accents

```

15008 % U+0300 COMBINING GRAVE ACCENT; gravecmb, *gravecomb
15009 \DeclareTextCommand{\`}{PU}[1]{#1\83\000}% U+0300
15010 % U+0301 COMBINING ACUTE ACCENT; acutecmb, *acutecomb
15011 \DeclareTextCommand{\'}{PU}[1]{#1\83\001}% U+0301
15012 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb
15013 \DeclareTextCommand{\^}{PU}[1]{#1\83\002}% U+0302
15014 % U+0303 COMBINING TILDE; tildecmb, *tildecmb
15015 \DeclareTextCommand{\~}{PU}[1]{#1\83\003}% U+0303
15016 % U+0304 COMBINING MACRON; macroncmb
15017 \DeclareTextCommand{\=}{PU}[1]{#1\83\004}% U+0304
15018 % U+0306 COMBINING BREVE; brevecmb
15019 \DeclareTextCommand{\u}{PU}[1]{#1\83\006}% U+0306
15020 \ifx\CYRDZE@undefined \else
15021 \DeclareTextCommand{\U}{PU}[1]{#1\83\006}% U+0306
15022 \fi
15023 % U+0307 COMBINING DOT ABOVE; dotaccentcmb
15024 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307
15025 % U+0308 COMBINING DIAERESIS; dieresiscmb
15026 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308
15027 % U+030A COMBINING RING ABOVE; ringcmb
15028 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A
15029 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb
15030 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B
15031 % U+030C COMBINING CARON; caroncmb
15032 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C
15033 </puenc>
15034 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb
15035 (puextra)\DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F
15036 (*puenc)

```

```

15037 \ifx\CYRDZE\@undefined \else
15038 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F
15039 \fi
15040 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb
15041 \DeclareTextCommand{\textinvbreve}{PU}[1]{#1\83\021}% U+0311
15042 \DeclareTextCommand{\newtie}{PU}[1]{#1\83\021}% U+0311
15043 % U+0323 COMBINING DOT BELOW; dotbelowcmb, *dotbelowcmb
15044 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323
15045 % U+0324 COMBINING DIAERESIS BELOW; dieresisbelowcmb; \textsubum-
    laut (tipa)
15046 \DeclareTextCommand{\textsubumlaut}{PU}[1]{#1\83\044}% U+0324
15047 % U+0325 COMBINING RING BELOW; ringbelowcmb; \textsubring (tipa)
15048 \DeclareTextCommand{\textsubring}{PU}[1]{#1\83\045}% U+0325
15049 % U+0327 COMBINING CEDILLA; cedillacmb
15050 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327
15051 % U+0328 COMBINING OGONEK; ogonekcmb
15052 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328
15053 % U+032D COMBINING CIRCUMFLEX ACCENT BELOW;
15054 % \textsubcircum (tipa)
15055 \DeclareTextCommand{\textsubcircum}{PU}[1]{#1\83\055}% U+032D
15056 % U+032E COMBINING BREVE BELOW; brevebelowcmb
15057 \DeclareTextCommand{\textsubbreve}{PU}[1]{#1\83\056}% U+032E
15058 % U+0330 COMBINING TILDE BELOW; tildebelowcmb; \textsubtilde (tipa)
15059 \DeclareTextCommand{\textsubtilde}{PU}[1]{#1\83\060}% U+0330
15060 % U+0331 COMBINING MACRON BELOW; macronbelowcmb
15061 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331
15062 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddou-
    blecmb
15063 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361
15064 % U+20DD COMBINING ENCLOSING CIRCLE
15065 \DeclareTextCommand{\textcircled}{PU}[1]{#1\9040\335}% U+20DD

```

Double accents.

```

15066 \DeclareTextCommand{\textacutemacron}{PU}[1]{#1\83\001\83\004}% U+0301 U+0304
15067 \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.

```

15068 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textasciigrave}%
15069 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}%
15070 \DeclareTextCompositeCommand{\^}{PU}{\@empty}{\textasciicircum}%
15071 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}%
15072 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textasciidieresis}%
15073 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}%
15074 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textasciacaron}%
15075 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}%
15076 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}%
15077 \DeclareTextCompositeCommand{\u}{PU}{\@empty}{\textasciibreve}%
15078 </puenc>
15079 <puextra>\DeclareTextCompositeCommand{\G}{PU}{\@empty}{\textdoublegrave}%
15080 <*puenc>
15081 \DeclareTextCompositeCommand{\=}{PU}{\@empty}{\textasciimacron}%
15082 \DeclareTextCompositeCommand{\H}{PU}{\@empty}{\texthungarumlaut}%
15083 \DeclareTextCompositeCommand{\k}{PU}{\@empty}{\textogonek}%
15084 \DeclareTextCompositeCommand{\textinvbreve}{PU}{\@empty}{\83\021}% U+0311

```

```

15085 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{\@empty}{\ \83\044}}% U+0324
15086 \DeclareTextCompositeCommand{\textsubring}{PU}{\@empty}{\textringlow}%
15087 \DeclareTextCompositeCommand{\textsubcircum}{PU}{\@empty}{\textcirc-
low}%
15088 \DeclareTextCompositeCommand{\textsubbreve}{PU}{\@empty}{\ \83\056}}% U+032E
15089 \DeclareTextCompositeCommand{\textsubtilde}{PU}{\@empty}{\texttildelow}%
15090 \DeclareTextCompositeCommand{\b}{PU}{\@empty}{\textmacronbelow}%
15091 \DeclareTextCompositeCommand{\d}{PU}{\@empty}{\textdotbelow}%
15092 \DeclareTextCompositeCommand{\t}{PU}{\@empty}{\texttie}%
15093 \DeclareTextCompositeCommand{\newtie}{PU}{\@empty}{\textnewtie}%
15094 \DeclareTextCompositeCommand{\textcircled}{PU}{\@empty}{\textbigcircle}%
15095 \DeclareTextCompositeCommand{\textacutemacron}{PU}{\@empty}{\ \83\001\83\004}}% U+0301 U
15096 \DeclareTextCompositeCommand{\textgravemacron}{PU}{\@empty}{\ \83\000\83\004}}% U+0300 U
15097 \DeclareTextCompositeCommand{\`}{PU}{\ }{\textasciigrave}%
15098 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textacute}%
15099 \DeclareTextCompositeCommand{\^}{PU}{\ }{\textasciicircum}%
15100 \DeclareTextCompositeCommand{\~}{PU}{\ }{\texttilde}%
15101 \DeclareTextCompositeCommand{\"}{PU}{\ }{\textasciidieresis}%
15102 \DeclareTextCompositeCommand{\r}{PU}{\ }{\textring}%
15103 \DeclareTextCompositeCommand{\v}{PU}{\ }{\textasciicaron}%
15104 \DeclareTextCompositeCommand{\.}{PU}{\ }{\textdotaccent}%
15105 \DeclareTextCompositeCommand{\c}{PU}{\ }{\textcedilla}%
15106 \DeclareTextCompositeCommand{\u}{PU}{\ }{\textasciibreve}%
15107 (/puenc)
15108 (puextra)\DeclareTextCompositeCommand{\G}{PU}{\ }{\textdoublegrave}%
15109 (*puenc)
15110 \DeclareTextCompositeCommand{\=}{PU}{\ }{\textasciimacron}%
15111 \DeclareTextCompositeCommand{\H}{PU}{\ }{\texthungarumlaut}%
15112 \DeclareTextCompositeCommand{\k}{PU}{\ }{\textogonek}%
15113 \DeclareTextCompositeCommand{\textinvbreve}{PU}{\ }{\ \83\021}}% U+0311
15114 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{\ }{\ \83\044}}% U+0324
15115 \DeclareTextCompositeCommand{\textsubring}{PU}{\ }{\textringlow}%
15116 \DeclareTextCompositeCommand{\textsubcircum}{PU}{\ }{\textcircumlow}%
15117 \DeclareTextCompositeCommand{\textsubbreve}{PU}{\ }{\ \83\056}}% U+032E
15118 \DeclareTextCompositeCommand{\textsubtilde}{PU}{\ }{\texttildelow}%
15119 \DeclareTextCompositeCommand{\b}{PU}{\ }{\textmacronbelow}%
15120 \DeclareTextCompositeCommand{\d}{PU}{\ }{\textdotbelow}%
15121 \DeclareTextCompositeCommand{\t}{PU}{\ }{\texttie}%
15122 \DeclareTextCompositeCommand{\newtie}{PU}{\ }{\textnewtie}%
15123 \DeclareTextCompositeCommand{\textcircled}{PU}{\ }{\textbigcircle}%
15124 \DeclareTextCompositeCommand{\textacutemacron}{PU}{\ }{\ \83\001\83\004}}% U+0301 U+0304
15125 \DeclareTextCompositeCommand{\textgravemacron}{PU}{\ }{\ \83\000\83\004}}% U+0300 U+0304

Accents for capitals (see encoding TS1)
15126 \DeclareTextCommand{\capitalcedilla}{PU}[1]{\c{#1}}%
15127 \DeclareTextCommand{\capitalogonek}{PU}[1]{\k{#1}}%
15128 \DeclareTextCommand{\capitalgrave}{PU}[1]{\`{#1}}%
15129 \DeclareTextCommand{\capitalacute}{PU}[1]{\'{#1}}%
15130 \DeclareTextCommand{\capitalcircumflex}{PU}[1]{\^{#1}}%
15131 \DeclareTextCommand{\capitaltilde}{PU}[1]{\~{#1}}%
15132 \DeclareTextCommand{\capitaldieresis}{PU}[1]{\"}{#1}}%
15133 \DeclareTextCommand{\capitalhungarumlaut}{PU}[1]{\H{#1}}%
15134 \DeclareTextCommand{\capitalring}{PU}[1]{\r{#1}}%
15135 \DeclareTextCommand{\capitalcaron}{PU}[1]{\v{#1}}%

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15136 \DeclareTextCommand{\capitalbreve}{PU}[1]{\u{#1}}%  
 15137 \DeclareTextCommand{\capitalmacron}{PU}[1]{\={#1}}%  
 15138 \DeclareTextCommand{\capitaldotaccent}{PU}[1]{\.\{#1}}%  
 15139 \DeclareTextCommand{\capitaltie}{PU}[1]{\t{#1}}%  
 15140 \DeclareTextCommand{\capitalnewtie}{PU}[1]{\newtie{#1}}%

#### 47.2.2 Basic Latin: U+0000 to U+007F

Special white space escape characters.

15141 % U+0009 (CHARACTER TABULATION)  
 15142 \DeclareTextCommand{\textHT}{PU}{\80\011}% U+0009  
 15143 % U+000A (LINE FEED)  
 15144 \DeclareTextCommand{\textLF}{PU}{\80\012}% U+000A  
 15145 % U+000D (CARRIAGE RETURN)  
 15146 \DeclareTextCommand{\textCR}{PU}{\80\015}% U+000D  
 \80\040: U+0020 SPACE; space, spacehackarabic  
 \80\041: U+0021 EXCLAMATION MARK; exclam  
 15147 % U+0022 QUOTATION MARK; quotedbl  
 15148 \DeclareTextCommand{\textquotedbl}{PU}{"}% \80\042 U+0022  
 15149 % U+0023 NUMBER SIGN; numbersign  
 15150 \DeclareTextCommand{\textnumbersign}{PU}{\80\043}% U+0023  
 15151 % U+0024 DOLLAR SIGN; dollar  
 15152 \DeclareTextCommand{\textdollar}{PU}{\80\044}% U+0024  
 15153 %\* \textdollar -> \mathdollar  
 15154 %\* \textdollar -> \EyesDollar (marvosym)  
 15155 % U+0025 PERCENT SIGN; percent  
 15156 \DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025  
 15157 % U+0026 AMPERSAND; ampersand  
 15158 \DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026  
 15159 %\* \textampersand -> \binampersand (stmaryrd)  
 15160 %\* \textampersand -> \with (cml)  
 15161 % U+0027 APOSTROPHE; quotesingle  
 15162 \DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027  
 15163 % U+0028 LEFT PARENTHESIS; parenleft  
 15164 \DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028  
 15165 % U+0029 RIGHT PARENTHESIS; parenright  
 15166 \DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029  
 15167 % U+002A ASTERISK; asterisk; (?)  
 15168 \DeclareTextCommand{\textasteriskcentered}{PU}{\80\052}% U+002A  
 15169 % U+002B PLUS SIGN; plus; \MVPlus (marvosym)  
 15170 \DeclareTextCommand{\textMVPlus}{PU}{\80\053}%\* U+002B  
 15171 % U+002C COMMA; comma; \MVComma (marvosym)  
 15172 \DeclareTextCommand{\textMVComma}{PU}{\80\054}%\* U+002C  
 15173 % U+002D HYPHEN-MINUS; hyphen; \MVMinus (marvosym)  
 15174 \DeclareTextCommand{\textMVMinus}{PU}{\80\055}%\* U+002D  
 15175 % U+002E FULL STOP; period; \MVPeriod (marvosym)  
 15176 \DeclareTextCommand{\textMVPeriod}{PU}{\80\056}%\* U+002E  
 15177 % U+002F SOLIDUS; slash; \MVDivision (marvosym)  
 15178 \DeclareTextCommand{\textMVDivision}{PU}{\80\057}%\* U+002F  
 15179 % U+0030 DIGIT ZERO; zero; \MVZero (marvosym)  
 15180 \DeclareTextCommand{\textMVZero}{PU}{\80\060}%\* U+0030  
 15181 % U+0031 DIGIT ONE; one; \MVOne (marvosym)  
 15182 \DeclareTextCommand{\textMVOne}{PU}{\80\061}%\* U+0031  
 15183 % U+0032 DIGIT TWO; two; \MVTwo (marvosym)



15184 \DeclareTextCommand{\textMVTwo}{PU}{\80\062}%\* U+0032  
15185 % U+0033 DIGIT THREE; three; \MVThree (marvosym)  
15186 \DeclareTextCommand{\textMVThree}{PU}{\80\063}%\* U+0033  
15187 % U+0034 DIGIT FOUR; four; \MVFour (marvosym)  
15188 \DeclareTextCommand{\textMVFour}{PU}{\80\064}%\* U+0034  
15189 % U+0035 DIGIT FIVE; five; \MVFive (marvosym)  
15190 \DeclareTextCommand{\textMVFive}{PU}{\80\065}%\* U+0035  
15191 % U+0036 DIGIT SIX; six; \MVSix (marvosym)  
15192 \DeclareTextCommand{\textMVSix}{PU}{\80\066}%\* U+0036  
15193 % U+0037 DIGIT SEVEN; seven; \MVSeven (marvosym)  
15194 \DeclareTextCommand{\textMVSeven}{PU}{\80\067}%\* U+0037  
15195 % U+0038 DIGIT EIGHT; eight; \MVEight (marvosym)  
15196 \DeclareTextCommand{\textMVEight}{PU}{\80\070}%\* U+0038  
15197 % U+0039 DIGIT NINE; nine; \MVNine (marvosym)  
15198 \DeclareTextCommand{\textMVNine}{PU}{\80\071}%\* U+0039  
  
\80\072: U+003A COLON; colon  
\80\073: U+003B SEMICOLON; semicolon  
  
15199 % U+003C LESS-THAN SIGN; less  
15200 \DeclareTextCommand{\textless}{PU}{<}% \80\074 U+003C  
  
\80\075: U+003D EQUALS SIGN; equal  
  
15201 % U+003E GREATER-THAN SIGN; greater  
15202 \DeclareTextCommand{\textgreater}{PU}{>}% \80\076 U+003E  
  
\80\077: U+003F QUESTION MARK; question  
  
15203 % U+0040 COMMERCIAL AT; at; \MVAt (marvosym)  
15204 \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  
  
15205 % U+005C REVERSE SOLIDUS; backslash  
15206 \DeclareTextCommand{\textbackslash}{PU}{\80\134}% U+005C  
  
\80\135: U+005D RIGHT SQUARE BRACKET; bracketright  
  
15207 % U+005E CIRCUMFLEX ACCENT; asciicircum  
15208 \DeclareTextCommand{\textasciicircum}{PU}{\80\136}% U+005E  
15209 % U+005F LOW LINE; underscore  
15210 \DeclareTextCommand{\textunderscore}{PU}{\80\137}% U+005F  
15211 %\* \textunderscore -> \mathunderscore (LaTeX)  
15212 % U+0060 GRAVE ACCENT; grave  
15213 \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  
  
15214 % U+0069 LATIN SMALL LETTER I; i  
15215 \DeclareTextCompositeCommand{\.}{PU}{\i}{i}% \80\151 U+0069  
15216 \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  
  
15217 % U+007B LEFT CURLY BRACKET; braceleft

15218 \DeclareTextCommand{\textbraceleft}{PU}{\80\173}% U+007B  
15219 % U+007C VERTICAL LINE; \*bar, verticalbar  
15220 \DeclareTextCommand{\textbar}{PU}{|}% \80\174 U+007C  
15221 %\* \textbar -> \textvline (tipa)  
15222 % U+007D RIGHT CURLY BRACKET; braceright  
15223 \DeclareTextCommand{\textbraceright}{PU}{\80\175}% U+007D  
15224 % U+007E TILDE; asciitilde  
15225 \DeclareTextCommand{\textasciitilde}{PU}{\80\176}% U+007E

### 47.2.3 Latin-1 Supplement: U+0080 to U+00FF

\80\240: U+00A0 NO-BREAK SPACE; nbspace, nonbreakingspace  
15226 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
15227 \DeclareTextCommand{\textexclamdown}{PU}{\80\241}% U+00A1  
15228 % U+00A2 CENT SIGN; cent  
15229 \DeclareTextCommand{\textcent}{PU}{\80\242}% U+00A2  
15230 % U+00A3 POUND SIGN; sterling  
15231 \DeclareTextCommand{\textsterling}{PU}{\80\243}% U+00A3  
15232 %\* \textsterling -> \mathsterling (LaTeX)  
15233 %\* \textsterling -> \pounds (LaTeX)  
15234 % U+00A4 CURRENCY SIGN; currency  
15235 \DeclareTextCommand{\textcurrency}{PU}{\80\244}% U+00A4  
15236 % U+00A5 YEN SIGN; yen  
15237 \DeclareTextCommand{\textyen}{PU}{\80\245}% U+00A5  
15238 % U+00A6 BROKEN BAR; brokenbar  
15239 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246}% U+00A6  
15240 %\* \textbrokenbar -> \brokenvert (wasysym)  
15241 % U+00A7 SECTION SIGN; section  
15242 \DeclareTextCommand{\textsection}{PU}{\80\247}% U+00A7  
15243 %\* \textsection -> \mathsection (LaTeX)  
15244 %\* \textsection -> \S (LaTeX)  
15245 % U+00A8 DIAERESIS; diaeresis  
15246 \DeclareTextCommand{\textasciidieresis}{PU}{\80\250}% U+00A8  
15247 % U+00A9 COPYRIGHT SIGN; copyright  
15248 \DeclareTextCommand{\textcopyright}{PU}{\80\251}%\* U+00A9  
15249 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
15250 \DeclareTextCommand{\textordfeminine}{PU}{\80\252}% U+00AA  
15251 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetleft  
15252 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB  
15253 \DeclareTextCommand{\guillemetleft}{PU}{\80\253}% U+00AB  
15254 % U+00AC NOT SIGN; logicalnot  
15255 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254}% U+00AC  
15256 \DeclareTextCommand{\textlnot}{PU}{\80\254}% U+00AC  
\80\255: U+00AD SOFT HYPHEN; sftthyphen, softthyphen  
15257 % U+00AE REGISTERED SIGN; registered  
15258 \DeclareTextCommand{\textregistered}{PU}{\80\256}% U+00AE  
15259 % U+00AF MACRON; \*macron, overscore  
15260 \DeclareTextCommand{\textasciimacron}{PU}{\80\257}% U+00AF  
15261 % U+00B0 DEGREE SIGN; degree  
15262 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0  
15263 % U+00B1 PLUS-MINUS SIGN; plusminus  
15264 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1  
15265 % U+00B2 SUPERSCRIPT TWO; twosuperior

15266 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}%\* U+00B2  
15267 % U+00B3 SUPERSCRIP T THREE; threesuperior  
15268 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}%\* U+00B3  
15269 % U+00B4 ACUTE ACCENT; acute  
15270 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4  
15271 \DeclareTextCommand{\textasciiacute}{PU}{\80\264}% U+00B4  
15272 % U+00B5 MICRO SIGN; mu, mu1  
15273 \DeclareTextCommand{\textmu}{PU}{\80\265}% U+00B5  
15274 % U+00B6 PILCROW SIGN; paragraph  
15275 \DeclareTextCommand{\textparagraph}{PU}{\80\266}% U+00B6  
15276 %\* \textparagraph -> \mathparagraph (LaTeX)  
15277 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
15278 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267}% U+00B7  
15279 %\* \textperiodcentered -> \MultiplicationDot (marvosym)  
15280 %\* \textperiodcentered -> \Squaredot (marvosym)  
15281 % U+00B8 CEDILLA; cedilla  
15282 \DeclareTextCommand{\textcedilla}{PU}{\80\270}% U+00B8  
15283 % U+00B9 SUPERSCRIP T ONE; onesuperior  
15284 \DeclareTextCommand{\textonesuperior}{PU}{\80\271}%\* U+00B9  
15285 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
15286 \DeclareTextCommand{\textordmasculine}{PU}{\80\272}% U+00BA  
15287 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetright  
15288 \DeclareTextCommand{\guillemotright}{PU}{\80\273}% U+00BB  
15289 \DeclareTextCommand{\guillemetright}{PU}{\80\273}% U+00BB  
15290 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
15291 \DeclareTextCommand{\textonequarter}{PU}{\80\274}% U+00BC  
15292 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
15293 \DeclareTextCommand{\textonehalf}{PU}{\80\275}% U+00BD  
15294 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
15295 \DeclareTextCommand{\textthreequarters}{PU}{\80\276}% U+00BE  
15296 % U+00BF INVERTED QUESTION MARK; questiondown  
15297 \DeclareTextCommand{\textquestiondown}{PU}{\80\277}% U+00BF  
15298 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
15299 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
15300 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
15301 \DeclareTextCompositeCommand{\' }{PU}{A}{\80\301}% U+00C1  
15302 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
15303 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302}% U+00C2  
15304 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
15305 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
15306 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
15307 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304}% U+00C4  
15308 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
15309 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305}% U+00C5  
15310 % U+00C6 LATIN CAPITAL LETTER AE; AE  
15311 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6  
15312 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
15313 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7  
15314 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
15315 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
15316 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
15317 \DeclareTextCompositeCommand{\' }{PU}{E}{\80\311}% U+00C9  
15318 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
15319 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312}% U+00CA

15320 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
15321 \DeclareTextCompositeCommand{"}{PU}{E}{\80\313}% U+00CB  
15322 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
15323 \DeclareTextCompositeCommand{"}{PU}{I}{\80\314}% U+00CC  
15324 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
15325 \DeclareTextCompositeCommand{"}{PU}{I}{\80\315}% U+00CD  
15326 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
15327 \DeclareTextCompositeCommand{"}{PU}{I}{\80\316}% U+00CE  
15328 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
15329 \DeclareTextCompositeCommand{"}{PU}{I}{\80\317}% U+00CF  
15330 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
15331 \DeclareTextCommand{\DH}{PU}{\80\320}% U+00D0  
15332 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
15333 \DeclareTextCompositeCommand{"}{PU}{N}{\80\321}% U+00D1  
15334 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
15335 \DeclareTextCompositeCommand{"}{PU}{O}{\80\322}% U+00D2  
15336 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
15337 \DeclareTextCompositeCommand{"}{PU}{O}{\80\323}% U+00D3  
15338 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
15339 \DeclareTextCompositeCommand{"}{PU}{O}{\80\324}% U+00D4  
15340 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
15341 \DeclareTextCompositeCommand{"}{PU}{O}{\80\325}% U+00D5  
15342 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
15343 \DeclareTextCompositeCommand{"}{PU}{O}{\80\326}% U+00D6  
15344 % U+00D7 MULTIPLICATION SIGN; multiply  
15345 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7  
15346 %\* \textmultiply -> \vartimes (stmaryrd)  
15347 %\* \textmultiply -> \MVMultiplication (marvosym)  
15348 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
15349 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8  
15350 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
15351 \DeclareTextCompositeCommand{"}{PU}{U}{\80\331}% U+00D9  
15352 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
15353 \DeclareTextCompositeCommand{"}{PU}{U}{\80\332}% U+00DA  
15354 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
15355 \DeclareTextCompositeCommand{"}{PU}{U}{\80\333}% U+00DB  
15356 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
15357 \DeclareTextCompositeCommand{"}{PU}{U}{\80\334}% U+00DC  
15358 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
15359 \DeclareTextCompositeCommand{"}{PU}{Y}{\80\335}% U+00DD  
15360 % U+00DE LATIN CAPITAL LETTER THORN; Thorn; \TH, \Thorn (wasysym)  
15361 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE  
15362 \DeclareTextCommand{\textThorn}{PU}{\80\336}%\* U+00DE  
15363 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
15364 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF  
15365 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
15366 \DeclareTextCompositeCommand{"}{PU}{a}{\80\340}% U+00E0  
15367 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
15368 \DeclareTextCompositeCommand{"}{PU}{a}{\80\341}% U+00E1  
15369 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
15370 \DeclareTextCompositeCommand{"}{PU}{a}{\80\342}% U+00E2  
15371 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
15372 \DeclareTextCompositeCommand{"}{PU}{a}{\80\343}% U+00E3  
15373 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis

15374 \DeclareTextCompositeCommand{\a}{PU}{a}{\80\344}% U+00E4  
15375 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
15376 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5  
15377 % U+00E6 LATIN SMALL LETTER AE; ae  
15378 \DeclareTextCommand{\ae}{PU}{\80\346}% U+00E6  
15379 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
15380 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7  
15381 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
15382 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8  
15383 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
15384 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
15385 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
15386 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA  
15387 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
15388 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353}% U+00EB  
15389 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
15390 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
15391 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
15392 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
15393 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
15394 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
15395 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
15396 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
15397 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
15398 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
15399 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
15400 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
15401 % U+00F0 LATIN SMALL LETTER ETH; eth  
15402 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0  
15403 %\* \dh -> \eth (wsuipa, phonetic)  
15404 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
15405 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361}% U+00F1  
15406 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
15407 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
15408 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
15409 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
15410 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
15411 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364}% U+00F4  
15412 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
15413 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
15414 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
15415 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366}% U+00F6  
15416 % U+00F7 DIVISION SIGN; divide  
15417 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7  
15418 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
15419 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8  
15420 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
15421 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
15422 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
15423 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
15424 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
15425 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373}% U+00FB  
15426 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
15427 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374}% U+00FC

15428 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
15429 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
15430 % U+00FE LATIN SMALL LETTER THORN; thorn;  
15431 % \th, \thorn (wasysym), \textthorn (tipa)  
15432 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE  
15433 \DeclareTextCommand{\textthorn}{PU}{\80\376}%\* U+00FE  
15434 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
15435 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377}% U+00FF

#### 47.2.4 Latin Extended-A: U+0080 to U+017F

15436 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron  
15437 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% U+0100  
15438 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron  
15439 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% U+0101  
15440 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve  
15441 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% U+0102  
15442 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve  
15443 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% U+0103  
15444 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek  
15445 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% U+0104  
15446 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek  
15447 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% U+0105  
15448 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacute  
15449 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% U+0106  
15450 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacute  
15451 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% U+0107  
15452 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex  
15453 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% U+0108  
15454 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex  
15455 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% U+0109  
15456 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotaccent  
15457 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% U+010A  
15458 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent  
15459 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% U+010B  
15460 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron  
15461 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% U+010C  
15462 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron  
15463 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% U+010D  
15464 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron  
15465 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% U+010E  
15466 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron  
15467 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% U+010F  
15468 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash  
15469 \DeclareTextCommand{\DJ}{PU}{\81\020}% U+0110  
15470 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron;  
15471 % \textcrd (tipa)  
15472 \DeclareTextCommand{\dj}{PU}{\81\021}% U+0111  
15473 \DeclareTextCommand{\textcrd}{PU}{\81\021}% U+0111  
15474 %\* \textcrd -> \crossd (wsuipa)  
15475 % An alternate glyph with the stroke through the bowl:  
15476 %\* \textcrd -> \textbard (tipa)  
15477 %\* \textcrd -> \bard (wsuipa)

15478 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron  
15479 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% U+0112  
15480 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron  
15481 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% U+0113  
15482 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve  
15483 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% U+0114  
15484 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve  
15485 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% U+0115  
15486 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent  
15487 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% U+0116  
15488 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent  
15489 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% U+0117  
15490 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek  
15491 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% U+0118  
15492 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek  
15493 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% U+0119  
15494 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron  
15495 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% U+011A  
15496 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron  
15497 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% U+011B  
15498 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex  
15499 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% U+011C  
15500 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex  
15501 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% U+011D  
15502 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve  
15503 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% U+011E  
15504 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve  
15505 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% U+011F  
15506 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotac-  
cent  
15507 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% U+0120  
15508 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent  
15509 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% U+0121  
15510 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcomma-  
maaccent  
15511 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% U+0122  
15512 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent  
15513 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% U+0123  
15514 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex  
15515 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% U+0124  
15516 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex  
15517 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% U+0125  
15518 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar  
15519 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126  
15520 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar; \hbar (AmS)  
15521 \DeclareTextCommand{\texthbar}{PU}{\81\047}%\* U+0127  
15522 %\* \texthbar -> \textcrh (tipa)  
15523 %\* \texthbar -> \crossh (wsuipa)  
15524 %\* \texthbar -> \planck (phonetic)  
15525 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; Itilde  
15526 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128  
15527 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde  
15528 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
15529 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129

15530 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron  
15531 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% U+012A  
15532 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron  
15533 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
15534 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
15535 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibreve  
15536 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C  
15537 % U+012D LATIN SMALL LETTER I WITH BREVE; ibreve  
15538 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
15539 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
15540 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek  
15541 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E  
15542 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek  
15543 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
15544 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
15545 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent  
15546 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% U+0130  
15547 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
15548 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131  
15549 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ  
15550 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132  
15551 % U+0133 LATIN SMALL LIGATURE IJ; ij  
15552 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133  
15553 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex  
15554 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% U+0134  
15555 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex  
15556 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
15557 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
15558 % U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaac-  
cent  
15559 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136  
15560 % U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent  
15561 \DeclareTextCompositeCommand{\c}{PU}{k}{\81\067}% U+0137

The canonical name of U+0138, small letter kra, would be `\textkgreenlandic`, following the glyph naming convention. However `latex/base/inputenc.dtx` has choosen `\textkra`.

15562 % U+0138 LATIN SMALL LETTER KRA; kgreenlandic  
15563 \DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138  
15564 % U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute  
15565 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071}% U+0139  
15566 % U+013A LATIN SMALL LETTER L WITH ACUTE; lacute  
15567 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072}% U+013A  
15568 % U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaac-  
cent  
15569 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B  
15570 % U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent  
15571 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C  
15572 % U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron  
15573 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D  
15574 % U+013E LATIN SMALL LETTER L WITH CARON; lcaron  
15575 \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.`  
15576 % U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotaccent  
15577 \DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F  
15578 % U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent  
15579 \DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140  
15580 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
15581 \DeclareTextCommand{\L}{PU}{\81\101}% U+0141  
15582 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
15583 \DeclareTextCommand{\l}{PU}{\81\102}% U+0142  
15584 % U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute  
15585 \DeclareTextCompositeCommand{\'N}{PU}{N}{\81\103}% U+0143  
15586 % U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute  
15587 \DeclareTextCompositeCommand{\'n}{PU}{n}{\81\104}% U+0144  
15588 % U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaaccent  
15589 \DeclareTextCompositeCommand{\cN}{PU}{N}{\81\105}% U+0145  
15590 % U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent  
15591 \DeclareTextCompositeCommand{\cn}{PU}{n}{\81\106}% U+0146  
15592 % U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron  
15593 \DeclareTextCompositeCommand{\vN}{PU}{N}{\81\107}% U+0147  
15594 % U+0148 LATIN SMALL LETTER N WITH CARON; ncaron  
15595 \DeclareTextCompositeCommand{\vn}{PU}{n}{\81\110}% U+0148  
15596 % U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napostrophe, quoterightn  
15597 \DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149  
15598 % U+014A LATIN CAPITAL LETTER ENG; Eng  
15599 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A  
15600 % U+014B LATIN SMALL LETTER ENG; eng  
15601 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B  
15602 %\* \ng -> \eng (wsuipa)  
15603 %\* \ng -> \engma (phonetic)  
15604 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron  
15605 \DeclareTextCompositeCommand{\=O}{PU}{O}{\81\114}% U+014C  
15606 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron  
15607 \DeclareTextCompositeCommand{\=o}{PU}{o}{\81\115}% U+014D  
15608 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve  
15609 \DeclareTextCompositeCommand{\uO}{PU}{O}{\81\116}% U+014E  
15610 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve  
15611 \DeclareTextCompositeCommand{\uo}{PU}{o}{\81\117}% U+014F  
15612 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odblacute, Ohungarumlaut  
15613 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120}% U+0150  
15614 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odblacute, ohungarumlaut  
15615 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121}% U+0151  
15616 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
15617 \DeclareTextCommand{\OE}{PU}{\81\122}% U+0152  
15618 % U+0153 LATIN SMALL LIGATURE OE; oe  
15619 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153  
15620 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute  
15621 \DeclareTextCompositeCommand{\'R}{PU}{R}{\81\124}% U+0154  
15622 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute  
15623 \DeclareTextCompositeCommand{\'r}{PU}{r}{\81\125}% U+0155

15624 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcommaaccent  
\DeclareTextCompositeCommand{\c}{PU}{R}{\81\126}% U+0156  
15626 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcommaaccent  
\DeclareTextCompositeCommand{\c}{PU}{r}{\81\127}% U+0157  
15628 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron  
\DeclareTextCompositeCommand{\v}{PU}{R}{\81\130}% U+0158  
15630 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron  
\DeclareTextCompositeCommand{\v}{PU}{r}{\81\131}% U+0159  
15632 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute  
\DeclareTextCompositeCommand{\'}{PU}{S}{\81\132}% U+015A  
15634 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute  
\DeclareTextCompositeCommand{\'}{PU}{s}{\81\133}% U+015B  
15636 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex  
\DeclareTextCompositeCommand{\^}{PU}{S}{\81\134}% U+015C  
15638 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex  
\DeclareTextCompositeCommand{\^}{PU}{s}{\81\135}% U+015D  
15640 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla  
\DeclareTextCompositeCommand{\c}{PU}{S}{\81\136}% U+015E  
15642 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla  
\DeclareTextCompositeCommand{\c}{PU}{s}{\81\137}% U+015F  
15644 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
\DeclareTextCompositeCommand{\v}{PU}{S}{\81\140}% U+0160  
15646 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
\DeclareTextCompositeCommand{\v}{PU}{s}{\81\141}% U+0161  
15648 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcommaaccent  
\DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162  
15650 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcommaaccent  
\DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163  
15652 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron  
\DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164  
15654 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron  
\DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165  
15656 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar  
\DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166  
15658 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar  
\DeclareTextCommand{\texttslash}{PU}{\81\147}% U+0167  
15660 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde  
\DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168  
15662 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde  
\DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
15664 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron  
\DeclareTextCompositeCommand{\=}{PU}{U}{\81\152}% U+016A  
15666 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron  
\DeclareTextCompositeCommand{\=}{PU}{u}{\81\153}% U+016B  
15668 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve  
\DeclareTextCompositeCommand{\u}{PU}{U}{\81\154}% U+016C  
15670 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve  
\DeclareTextCompositeCommand{\u}{PU}{u}{\81\155}% U+016D  
15672 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring  
\DeclareTextCompositeCommand{\r}{PU}{U}{\81\156}% U+016E  
15674 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring  
\DeclareTextCompositeCommand{\r}{PU}{u}{\81\157}% U+016F

15676 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Udblacute, Uhungarumlaut  
15677 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160}% U+0170  
15678 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; udblacute, uhungarumlaut  
15679 \DeclareTextCompositeCommand{\h}{PU}{u}{\81\161}% U+0171  
15680 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek  
15681 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162}% U+0172  
15682 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek  
15683 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163}% U+0173  
15684 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex  
15685 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164}% U+0174  
15686 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex  
15687 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165}% U+0175  
15688 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex  
15689 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166}% U+0176  
15690 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex  
15691 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167}% U+0177  
15692 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
15693 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170}% U+0178  
15694 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute  
15695 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171}% U+0179  
15696 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute  
15697 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172}% U+017A  
15698 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent  
15699 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173}% U+017B  
15700 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent  
15701 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174}% U+017C  
15702 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
15703 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175}% U+017D  
15704 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
15705 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176}% U+017E  
15706 % U+017F LATIN SMALL LETTER LONG S; longs, slong  
15707 \DeclareTextCommand{\textlongS}{PU}{\81\177}% U+017F

#### 47.2.5 Latin Extended-B: U+0180 to U+024F

15708 % U+0180 LATIN SMALL LETTER B WITH STROKE; bstroke; \textcrb (tipa)  
15709 \DeclareTextCommand{\textcrb}{PU}{\81\200}% U+0180  
15710 %\* \textcrb -> \crossb (wsuipa)  
15711 % An alternate glyph with the stroke through the bowl:  
15712 %\* \textcrb -> \textbarb (tipa)  
15713 %\* \textcrb -> \barb (wsuipa)  
15714 % U+0181 LATIN CAPITAL LETTER B WITH HOOK; Bhook; \hausA (phonetic)  
15715 \DeclareTextCommand{\texthausA}{PU}{\81\201}%\* U+0181  
15716 % U+0188 LATIN SMALL LETTER C WITH HOOK; chook; \texthtc (tipa)  
15717 \DeclareTextCommand{\texthtc}{PU}{\81\210}% U+0188  
15718 % U+018A LATIN CAPITAL LETTER D WITH HOOK; Dhook; \hausD (phonetic)  
15719 \DeclareTextCommand{\texthausD}{PU}{\81\212}%\* U+018A  
15720 % U+018E LATIN CAPITAL LETTER REVERSED E; Ereversed  
15721 \DeclareTextCommand{\textEreversed}{PU}{\81\216}% U+018E  
15722 \DeclareTextCommand{\textrevE}{PU}{\81\216}% U+018E  
15723 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin

15724 \DeclareTextCommand{\textflorin}{PU}{\81\222}% U+0192  
15725 %\* \textflorin -> \Florin (marvosym)  
15726 % U+0195 LATIN SMALL LETTER HV; hv; \texthvlig (tipa)  
15727 \DeclareTextCommand{\texthvlig}{PU}{\81\225}% U+0195  
15728 %\* \texthvlig -> \hv (wsuipa)  
15729 % U+0198 LATIN CAPITAL LETTER K WITH HOOK; Khook; \hausaK (pho-  
netic)  
15730 \DeclareTextCommand{\texthausaK}{PU}{\81\230}%\* U+0198  
15731 % U+0199 LATIN SMALL LETTER K WITH HOOK; khook; \texthtk (tipa)  
15732 \DeclareTextCommand{\texthtk}{PU}{\81\231}% U+0199  
15733 %\* \texthtk -> \hausak (phonetic)  
15734 % U+019A LATIN SMALL LETTER L WITH BAR; lbar;  
15735 % \textbarl (tipa), \barl (wsuipa)  
15736 \DeclareTextCommand{\textbarl}{PU}{\81\232}%\* U+019A  
15737 % U+019B LATIN SMALL LETTER LAMBDA WITH STROKE/  
15738 % LATIN SMALL LETTER BARRED LAMBDA; lambdastroke;  
15739 % \textcrlambda (tipa)  
15740 \DeclareTextCommand{\textcrlambda}{PU}{\81\233}% U+019B  
15741 %\* \textcrlambda -> \crossnilambda (wsuipa)  
15742 %\* \textcrlambda -> \barlambd (phonetic)  
15743 %\* \textcrlambda -> \lambdabar (txfonts/pxfonts)  
15744 %\* \textcrlambda -> \lambdaslash (txfonts/pxfonts)  
15745 % U+019E LATIN SMALL LETTER N WITH LONG RIGHT LEG; nlegright-  
long;  
15746 % \textnrleg (tipx)  
15747 \DeclareTextCommand{\textPUnrleg}{PU}{\81\236}% U+019E  
15748 %\* \textPUnrleg -> \textnrleg (tipx)  
15749 % U+01A5 LATIN SMALL LETTER P WITH HOOK; phook; \texthtp (tipa)  
15750 \DeclareTextCommand{\texthtp}{PU}{\81\245}% U+01A5  
15751 % U+01AB LATIN SMALL LETTER T WITH PALATAL HOOK; tpalatalhook;  
15752 % \textlhookt (tipa)  
15753 \DeclareTextCommand{\textlhookt}{PU}{\81\253}% U+01AB  
15754 % U+01AD LATIN SMALL LETTER T WITH HOOK; thook; \texthtt (tipa)  
15755 \DeclareTextCommand{\texthtt}{PU}{\81\255}% U+01AD  
15756 % U+01B9 LATIN SMALL LETTER EZH REVERSED/  
15757 % LATIN SMALL LETTER REVERSED YOGH; \textrevyogh (tipa)  
15758 \DeclareTextCommand{\textrevyogh}{PU}{\81\271}% U+01B9  
15759 % U+01BB LATIN LETTER TWO WITH STROKE; twostroke; \textcrtwo (tipa)  
15760 \DeclareTextCommand{\textcrtwo}{PU}{\81\273}% U+01BB  
15761 % U+01BE LATIN LETTER INVERTED GLOTTAL STOP WITH STROKE;  
15762 % glottalinvertedstroke; \textcrinvglotstop (tipa)  
15763 \DeclareTextCommand{\textcrinvglotstop}{PU}{\81\276}% U+01BE  
15764 % U+01BF LATIN LETTER WYNN; wynn; \textwynn (tipa)  
15765 \DeclareTextCommand{\textwynn}{PU}{\81\277}% U+01BF  
15766 % U+01C0 LATIN LETTER DENTAL CLICK/LATIN LETTER PIPE; clickden-  
tal;  
15767 % \textpipe (tipa)  
15768 \DeclareTextCommand{\textpipe}{PU}{\81\300}% U+01C0  
15769 %\* \textpipe -> \textpipevar (tipx)  
15770 % U+01C1 LATIN LETTER LATERAL CLICK/LATIN LETTER  
15771 % DOUBLE PIPE; clicklateral; \textdoublepipe (tipa)  
15772 \DeclareTextCommand{\textdoublepipe}{PU}{\81\301}% U+01C1  
15773 %\* \textdoublepipe -> \textdoublepipevar (tipx)  
15774 % U+01C2 LATIN LETTER ALVEOLAR CLICK/LATIN LETTER PIPE DOU-

BLE BAR;

15775 % clickalveolar; \textdoublebarpipe (tipa)

15776 \DeclareTextCommand{\textdoublebarpipe}{PU}{\81\302}% U+01C2

15777 %\* \textdoublebarpipe -> \textdoublebarpipevar (tipx)

15778 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron

15779 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315}% U+01CD

15780 % U+01CE LATIN SMALL LETTER A WITH CARON; acaron

15781 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316}% U+01CE

15782 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icaron

15783 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317}% U+01CF

15784 % U+01D0 LATIN SMALL LETTER I WITH CARON; icaron

15785 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0

15786 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0

15787 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocaron

15788 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1

15789 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocaron

15790 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2

15791 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucaron

15792 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3

15793 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucaron

15794 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4

15795 % U+01DD LATIN SMALL LETTER TURNED E; eturned; \inve (wasysym)

15796 \DeclareTextCommand{\textinve}{PU}{\81\335}%\* U+01DD

15797 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke

15798 \DeclareTextCommand{\textGslash}{PU}{\81\344}% U+01E4

15799 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke

15800 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5

15801 %\* \textgslash -> \textcrg (tipa)

15802 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcaron

15803 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6

15804 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcaron

15805 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7

15806 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcaron

15807 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8

15808 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcaron

15809 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9

15810 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek

15811 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA

15812 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek

15813 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB

15814 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcaron

15815 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0

15816 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0

15817 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute

15818 \DeclareTextCompositeCommand{\'}{PU}{G}{\81\364}% U+01F4

15819 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute

15820 \DeclareTextCompositeCommand{\'}{PU}{g}{\81\365}% U+01F5

15821 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE

15822 \DeclareTextCompositeCommand{\`}{PU}{N}{\81\370}% U+01F8

15823 % U+01F9 LATIN SMALL LETTER N WITH GRAVE

15824 \DeclareTextCompositeCommand{\`}{PU}{n}{\81\371}% U+01F9

15825 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute

15826 \DeclareTextCompositeCommand{\'}{PU}{\AE}{\81\374}% U+01FC

15827 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute

15828 \DeclareTextCompositeCommand{\'}{PU}{\ae}{\81\375}% U+01FD  
15829 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE;  
15830 % \*Oslashacute, Ostrokeacut  
15831 \DeclareTextCompositeCommand{\'}{PU}{\o}{\81\376}% U+01FE  
15832 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE;  
15833 % \*oslashacute, ostrokeacute  
15834 \DeclareTextCompositeCommand{\'}{PU}{\o}{\81\377}% U+01FF  
15835 (/puenc)  
15836 (\*puextra)  
15837 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave  
15838 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200  
15839 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave  
15840 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201  
15841 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave  
15842 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204  
15843 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave  
15844 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205  
15845 (/puextra)  
15846 (\*puenc)  
15847 % U+0206 LATIN CAPITAL LETTER E WITH INVERTED BREVE; Einvert-  
edbreve  
15848 \DeclareTextCompositeCommand{\textinvbreve}{PU}{E}{\82\006}% U+0206  
15849 % U+0207 LATIN SMALL LETTER E WITH INVERTED BREVE; einvert-  
breve  
15850 \DeclareTextCompositeCommand{\textinvbreve}{PU}{e}{\82\007}% U+0207  
15851 (/puenc)  
15852 (\*puextra)  
15853 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; Idblgrave  
15854 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208  
15855 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave  
15856 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
15857 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
15858 (/puextra)  
15859 (\*puenc)  
15860 % U+020A LATIN CAPITAL LETTER I WITH INVERTED BREVE; Iinverted-  
breve  
15861 \DeclareTextCompositeCommand{\textinvbreve}{PU}{I}{\82\012}% U+020A  
15862 % U+020B LATIN SMALL LETTER I WITH INVERTED BREVE; iinverted-  
breve  
15863 \DeclareTextCompositeCommand{\textinvbreve}{PU}{i}{\82\013}% U+020B  
15864 \DeclareTextCompositeCommand{\textinvbreve}{PU}{i}{\82\013}% U+020B  
15865 (/puenc)  
15866 (\*puextra)  
15867 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave  
15868 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C  
15869 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave  
15870 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D  
15871 (/puextra)  
15872 (\*puenc)  
15873 % U+020E LATIN CAPITAL LETTER O WITH INVERTED BREVE; Oinvert-  
edbreve  
15874 \DeclareTextCompositeCommand{\textinvbreve}{PU}{O}{\82\016}% U+020E  
15875 % U+020F LATIN SMALL LETTER O WITH INVERTED BREVE; oinvert-  
breve

15876 \DeclareTextCompositeCommand{\textinvbreve}{PU}{o}{\82\017}% U+020F  
15877 (/puenc)  
15878 (\*puextra)  
15879 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave  
15880 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210  
15881 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave  
15882 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211  
15883 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave  
15884 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214  
15885 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave  
15886 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215  
15887 (/puextra)  
15888 (\*puenc)  
15889 % U+0216 LATIN CAPITAL LETTER U WITH INVERTED BREVE; Uinvert-  
edbreve  
15890 \DeclareTextCompositeCommand{\textinvbreve}{PU}{U}{\82\026}% U+0216  
15891 % U+0217 LATIN SMALL LETTER U WITH INVERTED BREVE; uinverted-  
breve  
15892 \DeclareTextCompositeCommand{\textinvbreve}{PU}{u}{\82\027}% U+0217  
15893 % U+021E LATIN CAPITAL LETTER H WITH CARON  
15894 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E  
15895 % U+021F LATIN SMALL LETTER H WITH CARON  
15896 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F  
15897 % U+0221 LATIN SMALL LETTER D WITH CURL; \textctd (tipa)  
15898 \DeclareTextCommand{\textctd}{PU}{\82\041}% U+0221  
15899 % U+0225 LATIN SMALL LETTER Z WITH HOOK; \textcommatailz (tipa)  
15900 \DeclareTextCommand{\textcommatailz}{PU}{\82\045}% U+0225  
15901 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE  
15902 \DeclareTextCompositeCommand{\.}{PU}{A}{\82\046}% U+0226  
15903 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE  
15904 \DeclareTextCompositeCommand{\.}{PU}{a}{\82\047}% U+0227  
15905 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA  
15906 \DeclareTextCompositeCommand{\c}{PU}{E}{\82\050}% U+0228  
15907 % U+0229 LATIN SMALL LETTER E WITH CEDILLA  
15908 \DeclareTextCompositeCommand{\c}{PU}{e}{\82\051}% U+0229  
15909 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE  
15910 \DeclareTextCompositeCommand{\.}{PU}{O}{\82\056}% U+022E  
15911 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE  
15912 \DeclareTextCompositeCommand{\.}{PU}{o}{\82\057}% U+022F  
15913 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON  
15914 \DeclareTextCompositeCommand{\=} {PU}{Y}{\82\062}% U+0232  
15915 % U+0233 LATIN SMALL LETTER Y WITH MACRON  
15916 \DeclareTextCompositeCommand{\=} {PU}{y}{\82\063}% U+0233  
15917 % U+0235 LATIN SMALL LETTER N WITH CURL; \textctn (tipa)  
15918 \DeclareTextCommand{\textctn}{PU}{\82\065}% U+0235  
15919 % U+0236 LATIN SMALL LETTER T WITH CURL; \textctt (tipa)  
15920 \DeclareTextCommand{\textctt}{PU}{\82\066}% U+0236  
15921 % U+0237 LATIN SMALL LETTER DOTLESS J  
15922 \DeclareTextCommand{\j}{PU}{\82\067}% U+0237  
15923 % U+0238 LATIN SMALL LETTER DB DIGRAPH; \textdblig (tipx)  
15924 \DeclareTextCommand{\textPUdblig}{PU}{\82\070}% U+0238  
15925 %\* \textPUdblig -> \textdblig (tipx)  
15926 % U+0239 LATIN SMALL LETTER QP DIGRAPH; \textqplig (tipx)  
15927 \DeclareTextCommand{\textPUqplig}{PU}{\82\071}% U+0239

15928 %\* \textPUqplig -> \textqplig (tipx)  
 15929 % U+023C LATIN SMALL LETTER C WITH STROKE; \slashc (wsuipa)  
 15930 \DeclareTextCommand{\textslashc}{PU}{\82\074}%\* U+023C  
 15931 %\* \textslashc -> \textcentoldstyle (textcomp)  
 15932 % With bar instead of stroke:  
 15933 %\* \textslashc -> \textbarc (tipa)

#### 47.2.6 IPA Extensions: U+0250 to U+02AF

15934 % U+0250 LATIN SMALL LETTER TURNED A; aturned; \textturna (tipa)  
 15935 \DeclareTextCommand{\textturna}{PU}{\82\120}% U+0250  
 15936 %\* \textturna -> \inva (wasysym)  
 15937 % U+0251 LATIN SMALL LETTER ALPHA/LATIN SMALL LETTER  
 15938 % SCRIPT A; ascript; \textscripta (tipa), \scripta (wsuipa)  
 15939 \DeclareTextCommand{\textscripta}{PU}{\82\121}%\* U+0251  
 15940 %\* \textscripta -> \vara (phonetic)  
 15941 % U+0252 LATIN SMALL LETTER TURNED ALPHA; ascriptturned;  
 15942 % \textturnscripta (tipa)  
 15943 \DeclareTextCommand{\textturnscripta}{PU}{\82\122}% U+0252  
 15944 %\* \textturnscripta -> \invscripta (wsuipa)  
 15945 %\* \textturnscripta -> \rotvara (phonetic)  
 15946 % U+0253 LATIN CAPITAL LETTER B WITH HOOK; bhook; \texthtb (tipa)  
 15947 \DeclareTextCommand{\texthtb}{PU}{\82\123}% U+0253  
 15948 %\* \texthtb -> \hookb (wsuipa)  
 15949 %\* \texthtb -> \hausab (phonetic)  
 15950 % U+0254 LATIN SMALL LETTER OPEN O; oopen;  
 15951 % \textopeno (tipa), \openo (wasysym)  
 15952 \DeclareTextCommand{\textopeno}{PU}{\82\124}%\* U+0254  
 15953 %\* \textopeno -> \varopeno (phonetic)  
 15954 % U+0255 LATIN SMALL LETTER C WITH CURL; ccurl; \textctc (tipa)  
 15955 \DeclareTextCommand{\textctc}{PU}{\82\125}% U+0255  
 15956 %\* \textctc -> \curlyc (wsuipa)  
 15957 % U+0256 LATIN SMALL LETTER D WITH TAIL; dtail; \textrtaid (tipa)  
 15958 \DeclareTextCommand{\textrtaid}{PU}{\82\126}%\* U+0256  
 15959 %\* \textrtaid -> \taid (wsuipa)  
 15960 % U+0257 LATIN SMALL LETTER D WITH HOOK; dhook; \texthtd (tipa)  
 15961 \DeclareTextCommand{\texthtd}{PU}{\82\127}% U+0257  
 15962 %\* \texthtd -> \hookd (wsuipa)  
 15963 %\* \texthtd -> \hausad (phonetic)  
 15964 % U+0258 LATIN SMALL LETTER REVERSED E; ereversed;  
 15965 % \textreve (tipa), \reve (wsuipa)  
 15966 \DeclareTextCommand{\textreve}{PU}{\82\130}%\* U+0258  
 15967 % U+0259 LATIN SMALL LETTER SCHWA; schwa;  
 15968 % \textschwa (tipa), \schwa (wsuipa, phonetic)  
 15969 \DeclareTextCommand{\textschwa}{PU}{\82\131}%\* U+0259  
 15970 % U+025A LATIN SMALL LETTER SCHWA WITH HOOK; schwahook;  
 15971 % \textrhookschwa (tipa)  
 15972 \DeclareTextCommand{\textrhookschwa}{PU}{\82\132}% U+025A  
 15973 %\* \textrhookschwa -> \er (wsuipa)  
 15974 % U+025B LATIN SMALL LETTER OPEN E/LATIN SMALL LETTER EP-  
 15975 % SILON; eopen;  
 15975 % \niepsilon (wsuipa)  
 15976 \DeclareTextCommand{\textniepsilon}{PU}{\82\133}%\* U+025B  
 15977 %\* \textniepsilon -> \epsi (phonetic)  
 15978 % U+025C LATIN SMALL LETTER REVERSED OPEN E; eopenreversed;



15979 % \textrepsilon (tipa), \repsilon (wsuipa)  
15980 \DeclareTextCommand{\textrepsilon}{PU}{\82\134}%\* U+025C  
15981 % U+025D LATIN SMALL LETTER REVERSED OPEN E WITH HOOK; eopen-reversedhook;  
15982 % \textrhoepsilon (tipa)  
15983 \DeclareTextCommand{\textrhoepsilon}{PU}{\82\135}%\* U+025D  
15984 %\* \textrhoepsilon -> \hookrepsilon (wsuipa)  
15985 % U+025E LATIN SMALL LETTER CLOSED REVERSED OPEN E; eopenreversedclosed;  
15986 % \textclosepsilon (tipa)  
15987 \DeclareTextCommand{\textclosepsilon}{PU}{\82\136}% U+025E  
15988 %\* \textclosepsilon -> \closedrepsilon (wsuipa)  
15989 % U+025F LATIN SMALL LETTER DOTLESS J WITH STROKE; jdotlessstroke;  
15990 % \textbardotlessj (tipa)  
15991 \DeclareTextCommand{\textbardotlessj}{PU}{\82\137}% U+025F  
15992 %\* \textbardotlessj -> \barj (phonetic)  
15993 % U+0260 LATIN SMALL LETTER G WITH HOOK; ghook; \texthtg (tipa)  
15994 \DeclareTextCommand{\texthtg}{PU}{\82\140}% U+0260  
15995 %\* \texthtg -> \hookg (wsuipa)  
15996 % U+0261 LATIN SMALL LETTER SCRIPT G; gscript;  
15997 % \textscriptg (tipa), \scriptg (wsuipa)  
15998 \DeclareTextCommand{\textscriptg}{PU}{\82\141}%\* U+0261  
15999 %\* \textscriptg -> \varg (phonetic)  
16000 % U+0262 LATIN LETTER SMALL CAPITAL G; \textscg (tipa), \scg (wsuipa)  
16001 \DeclareTextCommand{\textscg}{PU}{\82\142}%\* U+0262  
16002 % U+0263 LATIN SMALL LETTER GAMMA; gammalatinsmall;  
16003 % \ipagamma (wsuipa), \vod (phonetic)  
16004 \DeclareTextCommand{\textipagamma}{PU}{\82\143}%\* U+0263  
16005 %\* \textipagamma -> \vod (pnonetic)  
16006 % U+0264 LATIN SMALL LETTER RAMS HORN; ramshorn;  
16007 % \babygamma (wsuipa)  
16008 \DeclareTextCommand{\textbabygamma}{PU}{\82\144}%\* U+0264  
16009 % U+0265 LATIN SMALL LETTER TURNED H; hturned; \textturnh (tipa)  
16010 \DeclareTextCommand{\textturnh}{PU}{\82\145}% U+0265  
16011 %\* \textturnh -> \invh (wsuipa)  
16012 %\* \textturnh -> \udesc (phonetic)  
16013 % U+0266 LATIN SMALL LETTER H WITH HOOK; hhook; \texthth (tipa)  
16014 \DeclareTextCommand{\texthth}{PU}{\82\146}% U+0266  
16015 %\* \texthth -> \hookh (wsuipa)  
16016 %\* \texthth -> \voicedh (phonetic)  
16017 % U+0267 LATIN SMALL LETTER HENG WITH HOOK; henghook; \texththeng (tipa)  
16018 \DeclareTextCommand{\texththeng}{PU}{\82\147}% U+0267  
16019 %\* \texththeng -> \hookheng (wsuipa)  
16020 % U+0268 LATIN SMALL LETTER I WITH STROKE;  
16021 % \textbari (tipa), \bari (wsuipa)  
16022 \DeclareTextCommand{\textbari}{PU}{\82\150}%\* U+0268  
16023 %\* \textbari -> \ibar (phonetic)  
16024 % U+0269 LATIN SMALL LETTER IOTA; iotalatin; \niiota (wsuipa)  
16025 \DeclareTextCommand{\textniiota}{PU}{\82\151}%\* U+0269  
16026 %\* \textniiota -> \vari (phonetic)  
16027 % U+026A LATIN LETTER SMALL CAPITAL I; \textsci (tipa), \sci (wsuipa)  
16028 \DeclareTextCommand{\textsci}{PU}{\82\152}%\* U+026A

16029 % U+026B LATIN SMALL LETTER L WITH MIDDLE TILDE; lmiddletilde;  
16030 % \textltilde (tipa)  
16031 \DeclareTextCommand{\textltilde}{PU}{\82\153}% U+026B  
16032 %\* \textltilde -> \tildel (wsuipa)  
16033 % U+026C LATIN SMALL LETTER L WITH BELT; lbelt; \textbeltl (tipa)  
16034 \DeclareTextCommand{\textbeltl}{PU}{\82\154}% U+026C  
16035 %\* \textbeltl -> \latfric (wsuipa)  
16036 % U+026D LATIN SMALL LETTER L WITH RETROFLEX HOOK;  
16037 % lhookretroflex; \textrtaill (tipa)  
16038 \DeclareTextCommand{\textrtaill}{PU}{\82\155}% U+026D  
16039 %\* \textrtaill -> \taill (wsuipa)  
16040 % U+026E LATIN SMALL LETTER LEZH; lezh; \textlyoghlig (tipa)  
16041 \DeclareTextCommand{\textlyoghlig}{PU}{\82\156}% U+026E  
16042 %\* \textlyoghlig -> \lz (wsuipa)  
16043 % U+026F LATIN SMALL LETTER TURNED M; mturned; \textturnm (tipa)  
16044 \DeclareTextCommand{\textturnm}{PU}{\82\157}% U+026F  
16045 %\* \textturnm -> \invm (wsuipa)  
16046 %\* \textturnm -> \rotm (phonetic)  
16047 % U+0270 LATIN SMALL LETTER TURNED M WITH LONG LEG; mlongleg-  
turned;  
16048 % \textturnmrlleg (tipa)  
16049 \DeclareTextCommand{\textturnmrlleg}{PU}{\82\160}% U+0270  
16050 %\* \textturnmrlleg -> \legm (wsuipa)  
16051 % U+0271 LATIN SMALL LETTER M WITH HOOK; mhook; \textltailm (tipa)  
16052 \DeclareTextCommand{\textltailm}{PU}{\82\161}% U+0271  
16053 %\* \textltailm -> \labdentainas (wsuipa)  
16054 %\* \textltailm -> \emgma (phonetic)  
16055 % U+0272 LATIN SMALL LETTER N WITH LEFT HOOK; nhookleft; \textl-  
tailn (tipa)  
16056 \DeclareTextCommand{\textltailn}{PU}{\82\162}% U+0272  
16057 %\* \textltailn -> \nj (wsuipa)  
16058 %\* \textltailn -> \enya (phonetic)  
16059 % U+0273 LATIN SMALL LETTER N WITH RETROFLEX HOOK;  
16060 % nhookretroflex; \textrtailn (tipa)  
16061 \DeclareTextCommand{\textrtailn}{PU}{\82\163}% U+0273  
16062 %\* \textrtailn -> \tailn (wsuipa)  
16063 % U+0274 LATIN LETTER SMALL CAPITAL N; \textscn (tipa), \scn (wsuipa)  
16064 \DeclareTextCommand{\textscn}{PU}{\82\164}%\* U+0274  
16065 % U+0275 LATIN CAPITAL LETTER O WITH MIDDLE TILDE/  
16066 % LATIN CAPITAL LETTER BARRED O; obarred;  
16067 % \textbaro (tipa), \baro (wsuipa)  
16068 % But \baro from stmaryrd is different!  
16069 \DeclareTextCommand{\textbaro}{PU}{\82\165}% U+0275  
16070 % U+0276 LATIN LETTER SMALL CAPITAL OE; \textscnelig (tipa)  
16071 \DeclareTextCommand{\textscnelig}{PU}{\82\166}% U+0276  
16072 % U+0277 LATIN SMALL LETTER CLOSED OMEGA; omegalatinclosed;  
16073 % \textcloseomega (tipa)  
16074 \DeclareTextCommand{\textcloseomega}{PU}{\82\167}% U+0277  
16075 %\* \textcloseomega -> \closedniomega (wsuipa)  
16076 %\* \textcloseomega -> \varomega (phonetic)  
16077 % U+0278 LATIN SMALL LETTER PHI; philatin; \niph (wsuipa)  
16078 \DeclareTextCommand{\textniph}{PU}{\82\170}%\* U+0278  
16079 % U+0279 LATIN SMALL LETTER TURNED R; rturned; \textturnr (tipa)  
16080 \DeclareTextCommand{\textturnr}{PU}{\82\171}% U+0279

16081 %\* \textturnr -> \invr (wsuipa)  
16082 %\* \textturnr -> \rotr (phonetic)  
16083 % U+027A LATIN SMALL LETTER TURNED R WITH LONG LEG;  
16084 % rlonglegturned; \textturnlonglegr (tipa)  
16085 \DeclareTextCommand{\textturnlonglegr}{PU}{\82\172}% U+027A  
16086 %\* \textturnlonglegr -> \invlegr (wsuipa)  
16087 % U+027B LATIN SMALL LETTER TURNED R WITH HOOK; rhoorturned;  
16088 % \textturnrrtail (tipa)  
16089 \DeclareTextCommand{\textturnrrtail}{PU}{\82\173}% U+027B  
16090 %\* \textturnrrtail -> \tailinvr (wsuipa)  
16091 % U+027C LATIN SMALL LETTER R WITH LONG LEG; rlongleg; \textlonglegr (tipa)  
16092 \DeclareTextCommand{\textlonglegr}{PU}{\82\174}% U+027C  
16093 %\* \textlonglegr -> \legr (wsuipa)  
16094 % U+027D LATIN SMALL LETTER R WITH TAIL; rhoort; \textrtailr (tipa)  
16095 \DeclareTextCommand{\textrtailr}{PU}{\82\175}% U+027D  
16096 %\* \textrtailr -> \tailr (wsuipa)  
16097 % U+027E LATIN SMALL LETTER R WITH FISHHOOK; rfishhook;  
16098 % \textfishhookr (tipa)  
16099 \DeclareTextCommand{\textfishhookr}{PU}{\82\176}% U+027E  
16100 %\* \textfishhookr -> \flapr (wsuipa)  
16101 %\* \textfishhookr -> \flapr (phonetic)  
16102 % U+027F LATIN SMALL LETTER REVERSED R WITH FISHHOOK; rfishhookreversed;  
16103 % \textlhtlongi (tipa)  
16104 \DeclareTextCommand{\textlhtlongi}{PU}{\82\177}% U+027F  
16105 % U+0280 LATIN LETTER SMALL CAPITAL R; \textscr (tipa), \scr (wsuipa)  
16106 \DeclareTextCommand{\textscr}{PU}{\82\200}% U+0280  
16107 % U+0281 LATIN LETTER SMALL CAPITAL INVERTED R; Rsmallinverted;  
16108 % \textinvscr (tipa), \invscr (wsuipa)  
16109 \DeclareTextCommand{\textinvscr}{PU}{\82\201}% U+0281  
16110 % U+0282 LATIN SMALL LETTER S WITH HOOK; shook; \textrtails (tipa)  
16111 \DeclareTextCommand{\textrtails}{PU}{\82\202}% U+0282  
16112 %\* \textrtails -> \tails (wsuipa)  
16113 % U+0283 LATIN SMALL LETTER ESH; esh; \textesh (tipa), \esh (wsuipa)  
16114 \DeclareTextCommand{\textesh}{PU}{\82\203}% U+0283  
16115 % U+0284 LATIN SMALL LETTER DOTLESS J WITH STROKE AND HOOK;  
16116 % dotlessjstrokehook; \texthtbardotlessj (tipa)  
16117 \DeclareTextCommand{\texthtbardotlessj}{PU}{\82\204}% U+0284  
16118 % U+0285 LATIN SMALL LETTER SQUAT REVERSED ESH; eshsquatreversed;  
16119 % \textvibyi (tipa)  
16120 \DeclareTextCommand{\textvibyi}{PU}{\82\205}% U+0285  
16121 % U+0286 LATIN SMALL LETTER ESH WITH CURL; eshcurl; \textctesh (tipa)  
16122 \DeclareTextCommand{\textctesh}{PU}{\82\206}% U+0286  
16123 %\* \textctesh -> \curlyesh (wsuipa)  
16124 % U+0287 LATIN SMALL LETTER TURNED T; tturned; \textturnt (tipa)  
16125 \DeclareTextCommand{\textturnt}{PU}{\82\207}% U+0287  
16126 %\* \textturnt -> \clickt (wsuipa)  
16127 % U+0288 LATIN SMALL LETTER T WITH RETROFLEX HOOK; retroflexhook;  
16128 % \textrtailt (tipa)  
16129 \DeclareTextCommand{\textrtailt}{PU}{\82\210}% U+0288  
16130 %\* \textrtailt -> \tailt (wsuipa)

16131 % U+0289 LATIN SMALL LETTER U BAR; ubar;  
16132 % \textbaru (tipa), \baru (wsuipa)  
16133 \DeclareTextCommand{\textbaru}{PU}{\82\211}%\* U+0289  
16134 %\* \textbaru -> \ubar (phonetic)  
16135 % U+028A LATIN SMALL LETTER UPSILON; \niupsilon (wsuipa)  
16136 \DeclareTextCommand{\textniupsilon}{PU}{\82\212}%\* U+028A  
16137 %\* \textniupsilon -> \rotOmega (phonetic)  
16138 % U+028B LATIN SMALL LETTER V WITH HOOK/LATIN SMALL LETTER SCRIPT V;  
16139 % vhook; \textscriptv (tipa), \scriptv (wsuipa)  
16140 \DeclareTextCommand{\textscriptv}{PU}{\82\213}%\* U+028B  
16141 % U+028C LATIN SMALL LETTER TURNED V; vturned; \textturnv (tipa)  
16142 \DeclareTextCommand{\textturnv}{PU}{\82\214}%\* U+028C  
16143 %\* \textturnv -> \invv (wsuipa)  
16144 %\* \textturnv -> \pwedge (phonetic)  
16145 % U+028D LATIN SMALL LETTER TURNED W; wturned; \textturnw (tipa)  
16146 \DeclareTextCommand{\textturnw}{PU}{\82\215}%\* U+028D  
16147 %\* \textturnw -> \invw (wsuipa)  
16148 %\* \textturnw -> \rotw (phonetic)  
16149 % U+028E LATIN SMALL LETTER TURNED Y; yturned; \textturny (tipa)  
16150 \DeclareTextCommand{\textturny}{PU}{\82\216}%\* U+028E  
16151 %\* \textturny -> \invy (wsuipa)  
16152 %\* \textturny -> \roty (phonetic)  
16153 % U+028F LATIN LETTER SMALL CAPITAL Y; \textscy (tipa), \scy (wsuipa)  
16154 \DeclareTextCommand{\textscy}{PU}{\82\217}%\* U+028F  
16155 % U+0290 LATIN SMALL LETTER Z WITH RETROFLEX HOOK; zretroflex-hook;  
16156 % \textrtailz (tipa)  
16157 \DeclareTextCommand{\textrtailz}{PU}{\82\220}% U+0290  
16158 %\* \textrtailz -> \tailz (wsuipa)  
16159 % U+0291 LATIN SMALL LETTER Z WITH CURL; zcurl; \textctz (tipa)  
16160 \DeclareTextCommand{\textctz}{PU}{\82\221}% U+0291  
16161 %\* \textctz -> \curlyz (wsuipa)  
16162 % U+0292 LATIN SMALL LETTER EZH/LATIN SMALL LETTER YOGH; ezh;  
16163 % \textyogh (tipa), \yogh (wsuipa)  
16164 \DeclareTextCommand{\textyogh}{PU}{\82\222}%\* U+0292  
16165 % U+0293 LATIN SMALL LETTER EZH WITH CURL/LATIN SMALL LETTER YOGH CURL;  
16166 % ezhcurl; \textctyogh (tipa)  
16167 \DeclareTextCommand{\textctyogh}{PU}{\82\223}% U+0293  
16168 %\* \textctyogh -> \curlyyogh (wsuipa)  
16169 % U+0294 LATIN LETTER GLOTTAL STOP; glottalstop;  
16170 % \textglotstop (tipa), \glotstop (wsuipa)  
16171 \DeclareTextCommand{\textglotstop}{PU}{\82\224}%\* U+0294  
16172 %\* \textglotstop -> \ejective (wsuipa)  
16173 %\* \textglotstop -> \glottal (phonetic)  
16174 % U+0295 LATIN LETTER PHARYNGEAL VOICED FRICATIVE/  
16175 % LATIN LETTER REVERSED GLOTTAL STOP; glottalstopreversed;  
16176 % \textrevglotstop (tipa), \revglotstop (wsuipa)  
16177 \DeclareTextCommand{\textrevglotstop}{PU}{\82\225}%\* U+0295  
16178 %\* \textrevglotstop -> \reveject (wsuipa)  
16179 % U+0296 LATIN LETTER INVERTED GLOTTAL STOP; glottalstopinverted;  
16180 % \textinvglotstop (tipa), \invglotstop (wsuipa)  
16181 \DeclareTextCommand{\textinvglotstop}{PU}{\82\226}%\* U+0296

16182 % U+0297 LATIN LETTER STRETCHED C; cstretched; \textstretchc (tipa)  
16183 \DeclareTextCommand{\textstretchc}{PU}{\82\227}% U+0297  
16184 %\* \textstretchc -> \clickc (wsuipa)  
16185 %\* \textstretchc -> \textstretchcvar (tipx)  
16186 % U+0298 LATIN LETTER BILABIAL CLICK; bilabialclick;  
16187 % \textbullseye (tipa)  
16188 \DeclareTextCommand{\textbullseye}{PU}{\82\230}% U+0298  
16189 %\* \textbullseye -> \clickb (wsuipa)  
16190 %\* \textbullseye -> \textObullseye (tipx)  
16191 % U+0299 LATIN LETTER SMALL CAPITAL B; \textscb (tipa)  
16192 \DeclareTextCommand{\textscb}{PU}{\82\231}% U+0299  
16193 % U+029A LATIN SMALL LETTER CLOSED OPEN E; eopenclosed;  
16194 % \textcloseepsilon (tipa)  
16195 \DeclareTextCommand{\textcloseepsilon}{PU}{\82\232}% U+029A  
16196 % U+029B LATIN LETTER SMALL CAPITAL G WITH HOOK; Gsmallhook;  
16197 % \texthtscg (tipa)  
16198 \DeclareTextCommand{\texthtscg}{PU}{\82\233}% U+029B  
16199 % U+029C LATIN LETTER SMALL CAPITAL H; \textsch (tipa)  
16200 \DeclareTextCommand{\textsch}{PU}{\82\234}% U+029C  
16201 % U+029D LATIN SMALL LETTER J WITH CROSSED-TAIL; jcros-  
tail; \textcdj (tipa)  
16202 \DeclareTextCommand{\textctj}{PU}{\82\235}% U+029D  
16203 %\* \textctj -> \textctjvar (tipx)  
16204 % U+029E LATIN SMALL LETTER TURNED K; kturned; \textturnk (tipa)  
16205 \DeclareTextCommand{\textturnk}{PU}{\82\236}% U+029E  
16206 %\* \textturnk -> \textturnsck (tipx)  
16207 % U+029F LATIN LETTER SMALL CAPITAL L; \textscL (tipa)  
16208 \DeclareTextCommand{\textscL}{PU}{\82\237}% U+029F  
16209 % U+02A0 LATIN SMALL LETTER Q WITH HOOK; qhook; \texthtq (tipa)  
16210 \DeclareTextCommand{\texthtq}{PU}{\82\240}% U+02A0  
16211 % U+02A1 LATIN LETTER GLOTTAL STOP WITH STROKE; glottalstop-  
stroke;  
16212 % \textbarglotstop (tipa)  
16213 \DeclareTextCommand{\textbarglotstop}{PU}{\82\241}% U+02A1  
16214 % U+02A2 LATIN LETTER REVERSED GLOTTAL STOP WITH STROKE/  
16215 % LATIN LETTER REVERSED GLOTTAL STOP BAR; glottalstopstrokere-  
versed;  
16216 % \textbarrevglotstop (tipa)  
16217 \DeclareTextCommand{\textbarrevglotstop}{PU}{\82\242}% U+02A2  
16218 % U+02A3 LATIN SMALL LETTER DZ DIGRAPH; dzaltone; \textdzlig (tipa)  
16219 \DeclareTextCommand{\textdzlig}{PU}{\82\243}% U+02A3  
16220 %\* \textdzlig -> \dz (wsuipa)  
16221 % U+02A4 LATIN SMALL LETTER DEZH DIGRAPH; dezh; \textdyogh-  
lig (tipa)  
16222 \DeclareTextCommand{\textdyoghlig}{PU}{\82\244}% U+02A4  
16223 % U+02A5 LATIN SMALL LETTER DZ DIGRAPH WITH CURL; dzcurl;  
16224 % \textdctzlig (tipa)  
16225 \DeclareTextCommand{\textdctzlig}{PU}{\82\245}% U+02A5  
16226 % U+02A6 LATIN SMALL LETTER TS DIGRAPH; ts; \texttslig (tipa)  
16227 \DeclareTextCommand{\texttslig}{PU}{\82\246}% U+02A6  
16228 % U+02A7 LATIN SMALL LETTER TESH DIGRAPH; tesh; \textteshlig (tipa)  
16229 \DeclareTextCommand{\textteshlig}{PU}{\82\247}% U+02A7  
16230 %\* \textteshlig -> \tesh (wsuipa)  
16231 % U+02A8 LATIN SMALL LETTER TC DIGRAPH WITH CURL; tccurl;

16232 % \texttctclig (tipa)  
16233 \DeclareTextCommand{\texttctclig}{PU}{\82\250}% U+02A8  
16234 % U+02AE LATIN SMALL LETTER TURNED H WITH FISHHOOK;  
16235 % \textlhtlongy (tipa)  
16236 \DeclareTextCommand{\textlhtlongy}{PU}{\82\256}% U+02AE  
16237 % U+02AF LATIN SMALL LETTER TURNED H WITH FISHHOOK AND TAIL;  
16238 % \textvibyy (tipa)  
16239 \DeclareTextCommand{\textvibyy}{PU}{\82\257}% U+02AF

#### 47.2.7 Spacing Modifier Letters: U+02B0 to U+02FF

16240 % U+02BD MODIFIER LETTER REVERSED COMMA;  
16241 % commareversedmod, afi64937; \textrevapostrophe (tipa)  
16242 \DeclareTextCommand{\textrevapostrophe}{PU}{\82\275}% U+02BD  
16243 % U+02C0 MODIFIER LETTER GLOTTAL STOP; glottalstopmod;  
16244 % \textraiseplotstop (tipa)  
16245 \DeclareTextCommand{\textraiseplotstop}{PU}{\82\300}% U+02C0  
16246 % U+02C2 MODIFIER LETTER LEFT ARROWHEAD; arrowheadleftmod;  
16247 % \textlptr (tipa)  
16248 \DeclareTextCommand{\textlptr}{PU}{\82\302}% U+02C2  
16249 % U+02C3 MODIFIER LETTER RIGHT ARROWHEAD; arrowheadrightmod;  
16250 % \textrptr (tipa)  
16251 \DeclareTextCommand{\textrptr}{PU}{\82\303}% U+02C3  
16252 % U+02C7 CARON; caron  
16253 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7  
16254 % U+02C8 MODIFIER LETTER VERTICAL LINE; verticalinmod;  
16255 % \textprimstress (tipa)  
16256 \DeclareTextCommand{\textprimstress}{PU}{\82\310}% U+02C8  
16257 % U+02CC MODIFIER LETTER LOW VERTICAL LINE; verticalinlowmod;  
16258 % \textsecstress (tipa)  
16259 \DeclareTextCommand{\textsecstress}{PU}{\82\314}% U+02CC  
16260 % U+02D0 MODIFIER LETTER TRIANGULAR COLON; colontriangularmod;  
16261 % \textlengthmark (tipa)  
16262 \DeclareTextCommand{\textlengthmark}{PU}{\82\320}% U+02D0  
16263 % U+02D1 MODIFIER LETTER HALF TRIANGULAR COLON; colontriangularhalfmod;  
16264 % \texthalflength (tipa)  
16265 \DeclareTextCommand{\texthalflength}{PU}{\82\321}% U+02D1  
16266 % U+02D8 BREVE; breve  
16267 \DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8  
16268 % U+02D9 DOT ABOVE; dotaccent  
16269 \DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9  
16270 % U+02DA RING ABOVE; ring  
16271 \DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA  
16272 % U+02DB OGONEK; ogonek  
16273 \DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB  
16274 % U+02DC SMALL TILDE; ilde, \*tilde  
16275 \DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC  
16276 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
16277 \DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD  
16278 \DeclareTextCommand{\textacutedbl}{PU}{\82\335}% U+02DD  
16279 % U+02F3 MODIFIER LETTER LOWER RING  
16280 \DeclareTextCommand{\textringlow}{PU}{\82\363}% U+02F3  
16281 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT  
16282 \DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5

16283 % U+02F7 MODIFIER LETTER LOW TILDE  
16284 \DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7  
16285 % U+02F9 MODIFIER LETTER BEGIN HIGH TONE; \textopencorner (tipa)  
16286 \DeclareTextCommand{\textopencorner}{PU}{\82\371}% U+02F9  
16287 % U+02FA MODIFIER LETTER END HIGH TONE; \textcorner (tipa)  
16288 \DeclareTextCommand{\textcorner}{PU}{\82\372}% U+02FA

#### 47.2.8 Combining Diacritical Marks: U+0300 to U+036F

16289 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravemcmb  
16290 \DeclareTextCommand{\textdoublegrave}{PU}{ \83\017}% U+030F  
16291 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
16292 \DeclareTextCommand{\textnewtie}{PU}{ \83\021}% U+0311  
16293 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcmb  
16294 \DeclareTextCommand{\textdotbelow}{PU}{ \83\043}% U+0323  
16295 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
16296 \DeclareTextCommand{\textmacronbelow}{PU}{ \83\061}% U+0331  
16297 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddou-  
blecmb  
16298 \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.

16299 \ifx\textBeta\@undefined \else  
16300 \input{puenc-greek.def}  
16301 \fi  
16302 (/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.

16303 (\*puenc)  
16304 \ifx\CYRDZE\@undefined \else  
16305 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE  
16306 \DeclareTextCompositeCommand{\`}{PU}{\CYRE}{\84\000}% U+0400  
16307 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrillic, \*afii10023  
16308 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401  
16309 \DeclareTextCompositeCommand{\"}{PU}{\CYRE}{\84\001}% U+0401  
16310 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, \*afii10051  
16311 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402  
16312 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, \*afii10052  
16313 \DeclareTextCompositeCommand{\'}{PU}{\CYRG}{\84\003}% U+0403  
16314 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrillic, \*afii10053  
16315 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404  
16316 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzecyrillic, \*afii10054  
16317 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405  
16318 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I;  
16319 % Icyrillic, \*afii10055  
16320 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406  
16321 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrillic, \*afii10056  
16322 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407  
16323 \DeclareTextCompositeCommand{\"}{PU}{\CYRII}{\84\007}% U+0407  
16324 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, \*afii10057

16325 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408  
16326 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, \*afii10058  
16327 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409  
16328 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, \*afii10059  
16329 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A  
16330 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, \*afii10060  
16331 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B  
16332 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, \*afii10061  
16333 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% U+040C  
16334 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE  
16335 \DeclareTextCompositeCommand{\`}{PU}{\CYRI}{\84\015}% U+040D  
16336 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrillic, \*afii10062  
16337 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E  
16338 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\016}% U+040E  
16339 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, \*afii10145  
16340 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F  
16341 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, \*afii10017  
16342 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410  
16343 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrillic, \*afii10018  
16344 \DeclareTextCommand{\CYRB}{PU}{\84\021}% U+0411  
16345 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, \*afii10019  
16346 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412  
16347 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, \*afii10020  
16348 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413  
16349 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, \*afii10021  
16350 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414  
16351 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, \*afii10022  
16352 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415  
16353 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, \*afii10024  
16354 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416  
16355 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, \*afii10025  
16356 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417  
16357 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrillic, \*afii10026  
16358 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418  
16359 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; Iishortcyrillic, \*afii10027  
16360 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419  
16361 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}% U+0419  
16362 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, \*afii10028  
16363 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A  
16364 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, \*afii10029  
16365 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B  
16366 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, \*afii10030  
16367 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C  
16368 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, \*afii10031  
16369 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D  
16370 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, \*afii10032  
16371 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E  
16372 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, \*afii10033  
16373 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F  
16374 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, \*afii10034  
16375 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420  
16376 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, \*afii10035  
16377 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421  
16378 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, \*afii10036



16379 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422  
16380 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, \*afii10037  
16381 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423  
16382 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, \*afii10038  
16383 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424  
16384 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, \*afii10039  
16385 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425  
16386 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, \*afii10040  
16387 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426  
16388 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, \*afii10041  
16389 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427  
16390 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, \*afii10042  
16391 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428  
16392 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, \*afii10043  
16393 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429  
16394 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN;  
16395 % Hardsigncyrillic, \*afii10044  
16396 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A  
16397 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, \*afii10045  
16398 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B  
16399 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN;  
16400 % Softsigncyrillic, \*afii10046  
16401 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C  
16402 % U+042D CYRILLIC CAPITAL LETTER E; Ereversedcyrillic, \*afii10047  
16403 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D  
16404 % U+042E CYRILLIC CAPITAL LETTER YU; IUcyrillic, \*afii10048  
16405 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E  
16406 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, \*afii10049  
16407 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F  
16408 % U+0430 CYRILLIC SMALL LETTER A; acyrillic, \*afii10065  
16409 \DeclareTextCommand{\cyra}{PU}{\84\060}% U+0430  
16410 % U+0431 CYRILLIC SMALL LETTER BE; \*afii10066, becyrillic  
16411 \DeclareTextCommand{\cyrb}{PU}{\84\061}% U+0431  
16412 % U+0432 CYRILLIC SMALL LETTER VE; \*afii10067, vecyrillic  
16413 \DeclareTextCommand{\cyrv}{PU}{\84\062}% U+0432  
16414 % U+0433 CYRILLIC SMALL LETTER GHE; \*afii10068, gecyrillic  
16415 \DeclareTextCommand{\cyrg}{PU}{\84\063}% U+0433  
16416 % U+0434 CYRILLIC SMALL LETTER DE; \*afii10069, decyrillic  
16417 \DeclareTextCommand{\cyrd}{PU}{\84\064}% U+0434  
16418 % U+0435 CYRILLIC SMALL LETTER IE; \*afii10070, iecyrillic  
16419 \DeclareTextCommand{\cyre}{PU}{\84\065}% U+0435  
16420 % U+0436 CYRILLIC SMALL LETTER ZHE; \*afii10072, zhecyrillic  
16421 \DeclareTextCommand{\cyrzh}{PU}{\84\066}% U+0436  
16422 % U+0437 CYRILLIC SMALL LETTER ZE; \*afii10073, zecyrillic  
16423 \DeclareTextCommand{\cyrz}{PU}{\84\067}% U+0437  
16424 % U+0438 CYRILLIC SMALL LETTER I; \*afii10074, iicyrillic  
16425 \DeclareTextCommand{\cyri}{PU}{\84\070}% U+0438  
16426 % U+0439 CYRILLIC SMALL LETTER SHORT I; \*afii10075, iishortcyrillic  
16427 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% U+0439  
16428 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}% U+0439  
16429 % U+043A CYRILLIC SMALL LETTER KA; \*afii10076, kacyrillic  
16430 \DeclareTextCommand{\cyrk}{PU}{\84\072}% U+043A  
16431 % U+043B CYRILLIC SMALL LETTER EL; \*afii10077, elcyrillic  
16432 \DeclareTextCommand{\cyr}{PU}{\84\073}% U+043B

16433 % U+043C CYRILLIC SMALL LETTER EM; \*afii10078, emcyrillic  
16434 \DeclareTextCommand{\cyrm}{PU}{\84\074}% U+043C  
16435 % U+043D CYRILLIC SMALL LETTER EN; \*afii10079, encyirillic  
16436 \DeclareTextCommand{\cyrn}{PU}{\84\075}% U+043D  
16437 % U+043E CYRILLIC SMALL LETTER O; \*afii10080, ocyrillic  
16438 \DeclareTextCommand{\cyro}{PU}{\84\076}% U+043E  
16439 % U+043F CYRILLIC SMALL LETTER PE; \*afii10081, pecyirillic  
16440 \DeclareTextCommand{\cyrf}{PU}{\84\077}% U+043F  
16441 % U+0440 CYRILLIC SMALL LETTER ER; \*afii10082, ercyirillic  
16442 \DeclareTextCommand{\cyrr}{PU}{\84\100}% U+0440  
16443 % U+0441 CYRILLIC SMALL LETTER ES; \*afii10083, escyirillic  
16444 \DeclareTextCommand{\cyrs}{PU}{\84\101}% U+0441  
16445 % U+0442 CYRILLIC SMALL LETTER TE; \*afii10084, tecyirillic  
16446 \DeclareTextCommand{\cyrt}{PU}{\84\102}% U+0442  
16447 % U+0443 CYRILLIC SMALL LETTER U; \*afii10085, ucyirillic  
16448 \DeclareTextCommand{\cyru}{PU}{\84\103}% U+0443  
16449 % U+0444 CYRILLIC SMALL LETTER EF; \*afii10086, efcyirillic  
16450 \DeclareTextCommand{\cyrf}{PU}{\84\104}% U+0444  
16451 % U+0445 CYRILLIC SMALL LETTER HA; \*afii10087, khacyirillic  
16452 \DeclareTextCommand{\cyrh}{PU}{\84\105}% U+0445  
16453 % U+0446 CYRILLIC SMALL LETTER TSE; \*afii10088, tsecyirillic  
16454 \DeclareTextCommand{\cyrc}{PU}{\84\106}% U+0446  
16455 % U+0447 CYRILLIC SMALL LETTER CHE; \*afii10089, checyirillic  
16456 \DeclareTextCommand{\cyrch}{PU}{\84\107}% U+0447  
16457 % U+0448 CYRILLIC SMALL LETTER SHA; \*afii10090, shacyirillic  
16458 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% U+0448  
16459 % U+0449 CYRILLIC SMALL LETTER SHCHA; \*afii10091, shchacyirillic  
16460 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% U+0449  
16461 % U+044A CYRILLIC SMALL LETTER HARD SIGN; \*afii10092, hardsigncyrillic  
16462 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% U+044A  
16463 %\* \cyrhrdsn -> \hardsign (tipa)  
16464 % U+044B CYRILLIC SMALL LETTER YERU; \*afii10093, yericyirillic  
16465 \DeclareTextCommand{\cyry}{PU}{\84\113}% U+044B  
16466 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; \*afii10094, softsigncyirillic  
16467 \DeclareTextCommand{\cyrsoftsn}{PU}{\84\114}% U+044C  
16468 %\* \cyrsoftsn -> \softsign (tipa)  
16469 % U+044D CYRILLIC SMALL LETTER E; \*afii10095, ereversedcyirillic  
16470 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% U+044D  
16471 % U+044E CYRILLIC SMALL LETTER YU; \*afii10096, iucyirillic  
16472 \DeclareTextCommand{\cyryu}{PU}{\84\116}% U+044E  
16473 % U+044F CYRILLIC SMALL LETTER YA; \*afii10097, iacyirillic  
16474 \DeclareTextCommand{\cyrya}{PU}{\84\117}% U+044F  
16475 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE  
16476 \DeclareTextCompositeCommand{\cyrie}{PU}{\84\120}% U+0450  
16477 % U+0451 CYRILLIC SMALL LETTER IO; \*afii10071, iocyirillic  
16478 \DeclareTextCommand{\cyryo}{PU}{\84\121}% U+0451  
16479 \DeclareTextCompositeCommand{\cyrie}{PU}{\84\121}% U+0451  
16480 % U+0452 CYRILLIC SMALL LETTER DJE; \*afii10099, djecyirillic  
16481 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% U+0452  
16482 % U+0453 CYRILLIC SMALL LETTER GJE; \*afii10100, gjecyirillic  
16483 \DeclareTextCompositeCommand{\cyrgje}{PU}{\84\123}% U+0453  
16484 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; \*afii10101, ecyirillic  
16485 \DeclareTextCommand{\cyrie}{PU}{\84\124}% U+0454

16486 % U+0455 CYRILLIC SMALL LETTER DZE; \*afii10102, dzecyrillic  
16487 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% U+0455  
16488 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I;  
16489 % \*afii10103, icyrillic  
16490 \DeclareTextCommand{\cyrii}{PU}{\84\126}% U+0456  
16491 % U+0457 CYRILLIC SMALL LETTER YI; \*afii10104, yicyrillic  
16492 \DeclareTextCommand{\cyryi}{PU}{\84\127}% U+0457  
16493 \DeclareTextCompositeCommand{"}{PU}{\cyrii}{\84\127}% U+0457  
16494 % U+0458 CYRILLIC SMALL LETTER JE; \*afii10105, jecyrillic  
16495 \DeclareTextCommand{\cyrje}{PU}{\84\130}% U+0458  
16496 % U+0459 CYRILLIC SMALL LETTER LJE; \*afii10106, ljecyrillic  
16497 \DeclareTextCommand{\cyrlje}{PU}{\84\131}% U+0459  
16498 % U+045A CYRILLIC SMALL LETTER NJE; \*afii10107, njecyrillic  
16499 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% U+045A  
16500 % U+045B CYRILLIC SMALL LETTER TSHE; \*afii10108, tshecyrillic  
16501 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% U+045B  
16502 % U+045C CYRILLIC SMALL LETTER KJE; \*afii10109, kjecyrillic  
16503 \DeclareTextCompositeCommand{'}{PU}{\cyrk}{\84\134}% U+045C  
16504 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE  
16505 \DeclareTextCompositeCommand{`}{PU}{\cyri}{\84\135}% U+045D  
16506 % U+045E CYRILLIC SMALL LETTER SHORT U; \*afii10110, ushortcyrillic  
16507 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E  
16508 \DeclareTextCompositeCommand{\U}{PU}{\curu}{\84\136}% U+045E  
16509 % U+045F CYRILLIC SMALL LETTER DZHE; \*afii10193, dzhecyrillic  
16510 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% U+045F  
16511 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic  
16512 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460  
16513 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrillic  
16514 \DeclareTextCommand{\cyromega}{PU}{\84\141}% U+0461  
16515 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, \*afii10146  
16516 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462  
16517 % U+0463 CYRILLIC SMALL LETTER YAT; \*afii10194, yatcyrillic  
16518 \DeclareTextCommand{\cyryat}{PU}{\84\143}% U+0463  
16519 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic  
16520 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464  
16521 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrillic  
16522 \DeclareTextCommand{\cyriote}{PU}{\84\145}% U+0465  
16523 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslittlecyrillic  
16524 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466  
16525 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslittlecyrillic  
16526 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467  
16527 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslitlei-  
otifiedcyrillic  
16528 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468  
16529 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslitlei-  
otifiedcyrillic  
16530 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469  
16531 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbigcyrillic  
16532 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A  
16533 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbigcyrillic  
16534 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B  
16535 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbigiotified-  
cyrillic  
16536 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C

16537 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbigiotified-cyrillic  
 16538 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D  
 16539 % U+046E CYRILLIC CAPITAL LETTER KSI; Ksicyrillic  
 16540 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% U+046E  
 16541 % U+046F CYRILLIC SMALL LETTER KSI; ksicyrillic  
 16542 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F  
 16543 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psicyrillic  
 16544 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470  
 16545 % U+0471 CYRILLIC SMALL LETTER PSI; psicyrillic  
 16546 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471  
 16547 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, \*afii10147  
 16548 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472  
 16549 % U+0473 CYRILLIC SMALL LETTER FITA; \*afii10195, fitacyrillic  
 16550 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473  
 16551 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, \*afii10148  
 16552 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474  
 16553 % U+0475 CYRILLIC SMALL LETTER IZHITSA; \*afii10196, izhitsacyrillic  
 16554 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475  
 16555 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE GRAVE ACCENT; Izhitsadblgravecyrillic  
 16556 % GRAVE ACCENT; Izhitsadblgravecyrillic  
 16557 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% U+0476  
 16558 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE GRAVE ACCENT; izhitsadblgravecyrillic  
 16559 % GRAVE ACCENT; izhitsadblgravecyrillic  
 16560 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477  
 16561 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic  
 16562 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478  
 16563 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic  
 16564 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479  
 16565 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyrillic  
 16566 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A  
 16567 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic  
 16568 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B  
 16569 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatitlocyrillic  
 16570 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C  
 16571 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlocyrillic  
 16572 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D  
 16573 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic  
 16574 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E  
 16575 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic  
 16576 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F  
 16577 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic  
 16578 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480  
 16579 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic  
 16580 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481  
 16581 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic  
 16582 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% U+0482  
 \84\203: U+0483 COMBINING CYRILLIC TITLO; titlocyrilliccmb  
 \84\204: U+0484 COMBINING CYRILLIC PALATALIZATION; palatalization-cyrilliccmb

\84\205: U+0485 COMBINING CYRILLIC DASIA PNEUMATA; dasiapneu-  
 matacyrilliccmb  
 \84\206: U+0486 COMBINING CYRILLIC PSILI PNEUMATA; psilipneumat-  
 acyrilliccmb  
 \84\207: U+0487 COMBINING CYRILLIC POKRYTIE  
 \84\210: U+0488 COMBINING CYRILLIC HUNDRED THOUSANDS SIGN  
 \84\211: U+0489 COMBINING CYRILLIC MILLIONS SIGN  
 16583 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL  
 16584 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A  
 16585 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL  
 16586 \DeclareTextCommand{\cyrishrtdsc}{PU}{\84\213}% U+048B  
 16587 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN  
 16588 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C  
 16589 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN  
 16590 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D  
 16591 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK  
 16592 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E  
 16593 % U+048F CYRILLIC SMALL LETTER ER WITH TICK  
 16594 \DeclareTextCommand{\cyrrtick}{PU}{\84\217}% U+048F  
 16595 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturn-  
 cyrillic, \*afii10050  
 16596 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490  
 16597 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; \*afii10098, ghe-  
 upturncyrillic  
 16598 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491  
 16599 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestroke-  
 cyrillic  
 16600 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492  
 16601 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic  
 16602 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% U+0493  
 16603 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK;  
 16604 % Ghemiddlehookcyrillic  
 16605 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494  
 16606 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK;  
 16607 % ghemiddlehookcyrillic  
 16608 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495  
 16609 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER;  
 16610 % Zhedescendercyrillic  
 16611 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496  
 16612 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER;  
 16613 % zhedescendercyrillic  
 16614 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% U+0497  
 16615 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescen-  
 dercyrillic  
 16616 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498  
 16617 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498  
 16618 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescender-  
 cyrillic  
 16619 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% U+0499  
 16620 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499  
 16621 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescen-  
 dercyrillic  
 16622 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A

16623 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kadescendercyrillic  
16624 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% U+049B  
16625 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE;  
16626 % Kavertikalstrokecyrillic  
16627 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C  
16628 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE;  
16629 % kavertikalstrokecyrillic  
16630 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D  
16631 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic  
16632 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E  
16633 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic  
16634 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% U+049F  
16635 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic  
16636 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0  
16637 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic  
16638 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1  
16639 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescendercyrillic  
16640 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2  
16641 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endescendercyrillic  
16642 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3  
16643 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic  
16644 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4  
16645 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic  
16646 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5  
16647 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemiddlehookcyrillic  
16648 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6  
16649 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddlehookcyrillic  
16650 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7  
16651 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyrillic  
16652 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8  
16653 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic  
16654 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% U+04A9  
16655 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescendercyrillic  
16656 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA  
16657 \DeclareTextCompositeCommand{\k}{PU}{\CYRS}{\84\252}% U+04AA  
16658 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescendercyrillic  
16659 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% U+04AB  
16660 \DeclareTextCompositeCommand{\k}{PU}{\cyr}{\84\253}% U+04AB  
16661 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescendercyrillic  
16662 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC  
16663 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescendercyrillic  
16664 \DeclareTextCommand{\cyrtdsc}{PU}{\84\255}% U+04AD  
16665 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic  
16666 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE

16667 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; ustraightcyrillic  
16668 \DeclareTextCommand{\cyrj}{PU}{\84\257}% U+04AF  
16669 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Ustraightstrokecyrillic  
16670 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0  
16671 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; ustraightstrokecyrillic  
16672 \DeclareTextCommand{\cyrjhcrs}{PU}{\84\261}% U+04B1  
16673 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hadesdescendercyrillic  
16674 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% U+04B2  
16675 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadescendercyrillic  
16676 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% U+04B3  
16677 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetsecyrillic  
16678 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4  
16679 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetsecyrillic  
16680 \DeclareTextCommand{\cyr tetse}{PU}{\84\265}% U+04B5  
16681 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER;  
16682 % Chedescendercyrillic  
16683 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6  
16684 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescendercyrillic  
16685 \DeclareTextCommand{\cyrchr dsc}{PU}{\84\267}% U+04B7  
16686 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE;  
16687 % Cheverticalstrokecyrillic  
16688 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8  
16689 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE;  
16690 % cheverticalstrokecyrillic  
16691 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9  
16692 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic  
16693 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA  
16694 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic  
16695 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB  
16696 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasiancyrillic  
16697 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC  
16698 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyrillic  
16699 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% U+04BD  
16700 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCENDER; Chedescenderabkhasiancyrillic  
16701 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE  
16702 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE  
16703 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCENDER; chedescenderabkhasiancyrillic  
16704 \DeclareTextCommand{\cyrabhch dsc}{PU}{\84\277}% U+04BF  
16705 \DeclareTextCompositeCommand{\k}{PU}{\cyrabhch}{\84\277}% U+04BF  
16706 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic  
16707 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0  
16708 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic  
16709 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1  
16710 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic  
16711 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% U+04C2

16712 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic  
16713 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3  
16714 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic  
16715 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% U+04C4  
16716 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL  
16717 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5  
16718 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL  
16719 \DeclareTextCommand{\cyrldsc}{PU}{\84\306}% U+04C6  
16720 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic  
16721 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7  
16722 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic  
16723 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% U+04C8  
16724 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakas-  
siancyrillic  
16725 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB  
16726 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassian-  
cyrillic  
16727 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% U+04CC  
16728 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL  
16729 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD  
16730 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL  
16731 \DeclareTextCommand{\cyrmdsc}{PU}{\84\316}% U+04CE  
\84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA  
16732 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevecyrillic  
16733 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0  
16734 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevecyrillic  
16735 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% U+04D1  
16736 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyril-  
lic  
16737 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\322}% U+04D2  
16738 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresiscyrillic  
16739 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\323}% U+04D3  
16740 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aiecyrillic  
16741 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4  
16742 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aiecyrillic  
16743 \DeclareTextCommand{\cyrae}{PU}{\84\325}% U+04D5  
16744 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrevecyrillic  
16745 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6  
16746 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrevecyrillic  
16747 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% U+04D7  
16748 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwacyrillic  
16749 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8  
16750 % U+04D9 CYRILLIC SMALL LETTER SCHWA; \*afii10846, schwacyrillic  
16751 \DeclareTextCommand{\cyrschw}{PU}{\84\331}% U+04D9  
16752 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS;  
16753 % Schwadieresiscyrillic  
16754 \DeclareTextCompositeCommand{\U}{PU}{\CYRSCHWA}{\84\332}% U+04DA  
16755 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS;  
16756 % schwadieresiscyrillic  
16757 \DeclareTextCompositeCommand{\U}{PU}{\cyrschw}{\84\333}% U+04DB  
16758 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhediere-  
siscyrillic  
16759 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\334}% U+04DC  
16760 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedieresis-



cyrillic

16761 \DeclareTextCompositeCommand{\}{PU}{\cyrzh}{\84\335}% U+04DD  
16762 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedieresis-cyrillic

16763 \DeclareTextCompositeCommand{\}{PU}{\CYRZ}{\84\336}% U+04DE  
16764 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedieresis-cyrillic

16765 \DeclareTextCompositeCommand{\}{PU}{\cyrz}{\84\337}% U+04DF  
16766 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasian-cyrillic

16767 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0  
16768 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasian-cyrillic

16769 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% U+04E1  
16770 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Imacroncyrillic

16771 \DeclareTextCompositeCommand{\=}{PU}{\CYRI}{\84\342}% U+04E2  
16772 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacroncyrillic

16773 \DeclareTextCompositeCommand{\=}{PU}{\cyri}{\84\343}% U+04E3  
16774 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresis-cyrillic

16775 \DeclareTextCompositeCommand{\}{PU}{\CYRI}{\84\344}% U+04E4  
16776 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresis-cyrillic

16777 \DeclareTextCompositeCommand{\}{PU}{\cyri}{\84\345}% U+04E5  
16778 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresis-cyrillic

16779 \DeclareTextCompositeCommand{\}{PU}{\CYRO}{\84\346}% U+04E6  
16780 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresis-cyrillic

16781 \DeclareTextCompositeCommand{\}{PU}{\cyro}{\84\347}% U+04E7  
16782 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarredcyrillic

16783 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8  
16784 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarredcyrillic

16785 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9  
16786 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERESIS;  
16787 % Obarreddieresis-cyrillic

16788 \DeclareTextCompositeCommand{\}{PU}{\CYROTLD}{\84\352}% U+04EA  
16789 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS;  
16790 % obarreddieresis-cyrillic

16791 \DeclareTextCompositeCommand{\}{PU}{\cyrotld}{\84\353}% U+04EB  
16792 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS

16793 \DeclareTextCompositeCommand{\}{PU}{\CYREREV}{\84\354}% U+04EC  
16794 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS

16795 \DeclareTextCompositeCommand{\}{PU}{\cyrerev}{\84\355}% U+04ED  
16796 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacroncyrillic

16797 \DeclareTextCompositeCommand{\=}{PU}{\CYRU}{\84\356}% U+04EE  
16798 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacroncyrillic

16799 \DeclareTextCompositeCommand{\=}{PU}{\cyru}{\84\357}% U+04EF  
16800 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udieresis-cyrillic

16801 \DeclareTextCompositeCommand{\}{PU}{\CYRU}{\84\360}% U+04F0  
16802 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udieresis-cyrillic

16803 \DeclareTextCompositeCommand{\}{PU}{\cyru}{\84\361}% U+04F1  
16804 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhungarumlautcyrillic

16805 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U+04F2  
16806 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhun-

garumlautcyrillic  
16807 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% U+04F3  
16808 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chedieresiscyrillic  
16809 \DeclareTextCompositeCommand{\"}{PU}{\CYRCH}{\84\364}% U+04F4  
16810 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieresiscyrillic  
16811 \DeclareTextCompositeCommand{\"}{PU}{\cyrch}{\84\365}% U+04F5  
16812 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER  
16813 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6  
16814 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER  
16815 \DeclareTextCommand{\cyrigdsc}{PU}{\84\367}% U+04F7  
16816 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudieresiscyrillic  
16817 \DeclareTextCompositeCommand{\"}{PU}{\CYRERY}{\84\370}% U+04F8  
16818 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudieresiscyrillic  
16819 \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  
16820 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK  
16821 \DeclareTextCommand{\CYRHHK}{PU}{\84\374}% U+04FC  
16822 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK  
16823 \DeclareTextCommand{\cyrhkh}{PU}{\84\375}% U+04FD  
16824 \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

16825 \ifx\hebdalet\@undefined\else  
16826 % U+05C3 HEBREW PUNCTUATION SOF PASUQ  
16827 \DeclareTextCommand{\sofpasuq}{PU}{\85\303}% U+05C3  
16828 % U+05D0 HEBREW LETTER ALEF  
16829 \DeclareTextCommand{\hebalef}{PU}{\85\320}% U+05D0  
16830 % U+05D1 HEBREW LETTER BET  
16831 \DeclareTextCommand{\hebbet}{PU}{\85\321}% U+05D1  
16832 % U+05D2 HEBREW LETTER GIMEL  
16833 \DeclareTextCommand{\hebgimel}{PU}{\85\322}% U+05D2  
16834 % U+05D3 HEBREW LETTER DALET  
16835 \DeclareTextCommand{\hebdalet}{PU}{\85\323}% U+05D3  
16836 % U+05D4 HEBREW LETTER HE  
16837 \DeclareTextCommand{\hebhe}{PU}{\85\324}% U+05D4  
16838 % U+05D5 HEBREW LETTER VAV  
16839 \DeclareTextCommand{\hebvav}{PU}{\85\325}% U+05D5  
16840 % U+05D6 HEBREW LETTER ZAYIN  
16841 \DeclareTextCommand{\hebzayin}{PU}{\85\326}% U+05D6  
16842 % U+05D7 HEBREW LETTER HET

16843 \DeclareTextCommand{\hebhet}{PU}{\85\327}% U+05D7  
16844 % U+05D8 HEBREW LETTER TET  
16845 \DeclareTextCommand{\hebtet}{PU}{\85\330}% U+05D8  
16846 % U+05D9 HEBREW LETTER YOD  
16847 \DeclareTextCommand{\hebyod}{PU}{\85\331}% U+05D9  
16848 % U+05DA HEBREW LETTER FINAL KAF  
16849 \DeclareTextCommand{\hebfinalkaf}{PU}{\85\332}% U+05DA  
16850 % U+05DB HEBREW LETTER KAF  
16851 \DeclareTextCommand{\hebkaf}{PU}{\85\333}% U+05DB  
16852 % U+05DC HEBREW LETTER LAMED  
16853 \DeclareTextCommand{\heblamed}{PU}{\85\334}% U+05DC  
16854 % U+05DD HEBREW LETTER FINAL MEM  
16855 \DeclareTextCommand{\hebfinalmem}{PU}{\85\335}% U+05DD  
16856 % U+05DE HEBREW LETTER MEM  
16857 \DeclareTextCommand{\hebmeme}{PU}{\85\336}% U+05DE  
16858 % U+05DF HEBREW LETTER FINAL NUN  
16859 \DeclareTextCommand{\hebfinalnun}{PU}{\85\337}% U+05DF  
16860 % U+05E0 HEBREW LETTER NUN  
16861 \DeclareTextCommand{\hebnun}{PU}{\85\340}% U+05E0  
16862 % U+05E1 HEBREW LETTER SAMEKH  
16863 \DeclareTextCommand{\hebsamekh}{PU}{\85\341}% U+05E1  
16864 % U+05E2 HEBREW LETTER AYIN  
16865 \DeclareTextCommand{\hebayin}{PU}{\85\342}% U+05E2  
16866 % U+05E3 HEBREW LETTER FINAL PE  
16867 \DeclareTextCommand{\hebfinalpe}{PU}{\85\343}% U+05E3  
16868 % U+05E4 HEBREW LETTER PE  
16869 \DeclareTextCommand{\hebpe}{PU}{\85\344}% U+05E4  
16870 % U+05E5 HEBREW LETTER FINAL TSADI  
16871 \DeclareTextCommand{\hebfinaltsadi}{PU}{\85\345}% U+05E5  
16872 % U+05E6 HEBREW LETTER TSADI  
16873 \DeclareTextCommand{\hebtsadi}{PU}{\85\346}% U+05E6  
16874 % U+05E7 HEBREW LETTER QOF  
16875 \DeclareTextCommand{\hebqof}{PU}{\85\347}% U+05E7  
16876 % U+05E8 HEBREW LETTER RESH  
16877 \DeclareTextCommand{\hebresh}{PU}{\85\350}% U+05E8  
16878 % U+05E9 HEBREW LETTER SHIN  
16879 \DeclareTextCommand{\hebshin}{PU}{\85\351}% U+05E9  
16880 %\* \hebshin -> \hebsin (he8)  
16881 % U+05EA HEBREW LETTER TAV  
16882 \DeclareTextCommand{\hebtav}{PU}{\85\352}% U+05EA  
16883 % U+05F0 HEBREW LIGATURE YIDDISH DOUBLE VAV  
16884 \DeclareTextCommand{\doublevav}{PU}{\85\360}% U+05F0  
16885 % U+05F1 HEBREW LIGATURE YIDDISH VAV YOD  
16886 \DeclareTextCommand{\vavyod}{PU}{\85\361}% U+05F1  
16887 % U+05F2 HEBREW LIGATURE YIDDISH DOUBLE YOD  
16888 \DeclareTextCommand{\doubleyod}{PU}{\85\362}% U+05F2  
16889 \fi

#### 47.2.12 Thai: U+0E00 to U+0E7F

16890 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai  
16891 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

#### 47.2.13 Phonetic Extensions: U+1D00 to U+1D7F

16892 % U+1D00 LATIN LETTER SMALL CAPITAL A; \textscA (tipa)  
16893 \DeclareTextCommand{\textscA}{PU}{\9035\000}% U+1D00  
16894 % U+1D05 LATIN LETTER SMALL CAPITAL D; \textscD (wsuipa)  
16895 \DeclareTextCommand{\textscD}{PU}{\9035\005}%\* U+1D05  
16896 % U+1D07 LATIN LETTER SMALL CAPITAL E; \textscE (tipa)  
16897 \DeclareTextCommand{\textscE}{PU}{\9035\007}% U+1D07  
16898 % U+1D0A LATIN LETTER SMALL CAPITAL J; \textscJ (tipa)  
16899 \DeclareTextCommand{\textscJ}{PU}{\9035\012}% U+1D0A  
16900 % U+1D0B LATIN LETTER SMALL CAPITAL K; \textscK (tipx)  
16901 \DeclareTextCommand{\textscK}{PU}{\9035\013}% U+1D0B  
16902 %\* \textscK -> \textscK (tipx)  
16903 % U+1D0D LATIN LETTER SMALL CAPITAL M; \textscM (tipx)  
16904 \DeclareTextCommand{\textscM}{PU}{\9035\015}% U+1D0D  
16905 %\* \textscM -> \textscM (tipx)  
16906 % U+1D18 LATIN LETTER SMALL CAPITAL P; \textscP (tipx)  
16907 \DeclareTextCommand{\textscP}{PU}{\9035\030}% U+1D18  
16908 %\* \textscP -> \textscP (tipx)  
16909 % U+1D19 LATIN LETTER SMALL CAPITAL REVERSED R; \textscR (tipx)  
16910 \DeclareTextCommand{\textscR}{PU}{\9035\031}% U+1D19  
16911 %\* \textscR -> \textscR (tipx)  
16912 % U+1D1C LATIN LETTER SMALL CAPITAL U; \textscU (tipa), \textscU (wsuipa)  
16913 \DeclareTextCommand{\textscU}{PU}{\9035\034}%\* U+1D1C  
16914 % U+1D62 LATIN SUBSCRIPT SMALL LETTER I  
16915 \DeclareTextCommand{\textsubscriptI}{PU}{\9035\142}%\* U+1D62  
16916 % U+1D63 LATIN SUBSCRIPT SMALL LETTER R  
16917 \DeclareTextCommand{\textsubscriptR}{PU}{\9035\143}%\* U+1D63  
16918 % U+1D64 LATIN SUBSCRIPT SMALL LETTER U  
16919 \DeclareTextCommand{\textsubscriptU}{PU}{\9035\144}%\* U+1D64  
16920 % U+1D65 LATIN SUBSCRIPT SMALL LETTER V  
16921 \DeclareTextCommand{\textsubscriptV}{PU}{\9035\145}%\* U+1D65  
16922 % U+1D66 GREEK SUBSCRIPT SMALL LETTER BETA  
16923 \DeclareTextCommand{\textsubscriptBeta}{PU}{\9035\146}%\* U+1D66  
16924 % U+1D67 GREEK SUBSCRIPT SMALL LETTER GAMMA  
16925 \DeclareTextCommand{\textsubscriptGamma}{PU}{\9035\147}%\* U+1D67  
16926 % U+1D68 GREEK SUBSCRIPT SMALL LETTER RHO  
16927 \DeclareTextCommand{\textsubscriptRho}{PU}{\9035\150}%\* U+1D68  
16928 % U+1D69 GREEK SUBSCRIPT SMALL LETTER PHI  
16929 \DeclareTextCommand{\textsubscriptPhi}{PU}{\9035\151}%\* U+1D69  
16930 % U+1D6A GREEK SUBSCRIPT SMALL LETTER CHI  
16931 \DeclareTextCommand{\textsubscriptChi}{PU}{\9035\152}%\* U+1D6A  
16932 % U+1D7B LATIN SMALL CAPITAL LETTER I WITH STROKE;  
16933 % \textscI (wsuipa)  
16934 \DeclareTextCommand{\textscI}{PU}{\9035\173}%\* U+1D7B  
16935 % U+1D7D LATIN SMALL LETTER P WITH STROKE; \textscP (wsuipa)  
16936 \DeclareTextCommand{\textscP}{PU}{\9035\175}%\* U+1D7D  
16937 % U+1D7E LATIN SMALL CAPITAL LETTER U WITH STROKE;  
16938 % \textscU (wsuipa)  
16939 \DeclareTextCommand{\textscU}{PU}{\9035\176}%\* U+1D7E

#### 47.2.14 Phonetic Extensions Supplement: U+1D80 to U+1DBF

16940 % U+1D8F LATIN SMALL LETTER A WITH RETROFLEX HOOK; \textscA (tipx)  
16941 \DeclareTextCommand{\textscA}{PU}{\9035\217}% U+1D8F  
16942 %\* \textscA -> \textscA (tipx)

16943 % U+1D91 LATIN SMALL LETTER D WITH HOOK AND TAIL; \texthtrtaild (tipa)  
16944 \DeclareTextCommand{\texthtrtaild}{PU}{\9035\221}%\* U+1D91  
16945 % U+1D92 LATIN SMALL LETTER E WITH RETROFLEX HOOK; \textrhooko (tipx)  
16946 \DeclareTextCommand{\textPurhooko}{PU}{\9035\222}% U+1D92  
16947 %\* \textPurhooko -> \textrhooko (tipx)  
16948 % U+1D93 LATIN SMALL LETTER OPEN E WITH RETROFLEX HOOK;  
16949 % \textrhookoepsilon (tipx)  
16950 \DeclareTextCommand{\textPurhookoepsilon}{PU}{\9035\223}% U+1D93  
16951 %\* \textPurhookoepsilon -> \textrhookoepsilon (tipx)  
16952 % U+1D97 LATIN SMALL LETTER OPEN O WITH RETROFLEX HOOK;  
16953 % \textrhookopeno (tipx)  
16954 \DeclareTextCommand{\textPurhookopeno}{PU}{\9035\227}% U+1D97  
16955 %\* \textPurhookopeno -> \textrhookopeno (tipx)

#### 47.2.15 Latin Extended Additional: U+1E00 to U+1EFF

16956 % U+1E00 LATIN CAPITAL LETTER A WITH RING BELOW; Aringbelow  
16957 \DeclareTextCompositeCommand{\textsubring}{PU}{A}{\9036\000}% U+1E00  
16958 % U+1E01 LATIN SMALL LETTER A WITH RING BELOW; aringbelow  
16959 \DeclareTextCompositeCommand{\textsubring}{PU}{a}{\9036\001}% U+1E01  
16960 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent  
16961 \DeclareTextCompositeCommand{\.}{PU}{B}{\9036\002}% U+1E02  
16962 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent  
16963 \DeclareTextCompositeCommand{\.}{PU}{b}{\9036\003}% U+1E03  
16964 % U+1E04 LATIN CAPITAL LETTER B WITH DOT BELOW; Bdotbelow  
16965 \DeclareTextCompositeCommand{\d}{PU}{B}{\9036\004}% U+1E04  
16966 % U+1E05 LATIN SMALL LETTER B WITH DOT BELOW; bdotbelow  
16967 \DeclareTextCompositeCommand{\d}{PU}{b}{\9036\005}% U+1E05  
16968 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow  
16969 \DeclareTextCompositeCommand{\b}{PU}{B}{\9036\006}% U+1E06  
16970 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow  
16971 \DeclareTextCompositeCommand{\b}{PU}{b}{\9036\007}% U+1E07  
16972 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent  
16973 \DeclareTextCompositeCommand{\.}{PU}{D}{\9036\012}% U+1E0A  
16974 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent  
16975 \DeclareTextCompositeCommand{\.}{PU}{d}{\9036\013}% U+1E0B  
16976 % U+1E0C LATIN CAPITAL LETTER D WITH DOT BELOW; Ddotbelow  
16977 \DeclareTextCompositeCommand{\d}{PU}{D}{\9036\014}% U+1E0C  
16978 % U+1E0D LATIN SMALL LETTER D WITH DOT BELOW; ddotbelow  
16979 \DeclareTextCompositeCommand{\d}{PU}{d}{\9036\015}% U+1E0D  
16980 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow  
16981 \DeclareTextCompositeCommand{\b}{PU}{D}{\9036\016}% U+1E0E  
16982 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow  
16983 \DeclareTextCompositeCommand{\b}{PU}{d}{\9036\017}% U+1E0F  
16984 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla  
16985 \DeclareTextCompositeCommand{\c}{PU}{D}{\9036\020}% U+1E10  
16986 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla  
16987 \DeclareTextCompositeCommand{\c}{PU}{d}{\9036\021}% U+1E11  
16988 % U+1E12 LATIN CAPITAL LETTER D WITH CIRCUMFLEX BELOW; Dcircumflexbelow  
16989 \DeclareTextCompositeCommand{\textsubcircum}{PU}{D}{\9036\022}% U+1E12  
16990 % U+1E13 LATIN SMALL LETTER D WITH CIRCUMFLEX BELOW; dcircumflexbelow

16991 \DeclareTextCompositeCommand{\textsubcircum}{PU}{d}{\9036\023}% U+1E13  
16992 % U+1E14 LATIN CAPITAL LETTER E WITH MACRON AND GRAVE;  
16993 % Emacrongrave  
16994 \DeclareTextCompositeCommand{\textgravemacron}{PU}{E}{\9036\024}% U+1E14  
16995 % U+1E15 LATIN SMALL LETTER E WITH MACRON AND GRAVE;  
16996 % emacrongrave  
16997 \DeclareTextCompositeCommand{\textgravemacron}{PU}{e}{\9036\025}% U+1E15  
16998 % U+1E16 LATIN CAPITAL LETTER E WITH MACRON AND ACUTE;  
16999 % Emacronacute  
17000 \DeclareTextCompositeCommand{\textacutemacron}{PU}{E}{\9036\026}% U+1E16  
17001 % U+1E17 LATIN SMALL LETTER E WITH MACRON AND ACUTE;  
17002 % emacronacute  
17003 \DeclareTextCompositeCommand{\textacutemacron}{PU}{e}{\9036\027}% U+1E17  
17004 % U+1E18 LATIN CAPITAL LETTER E WITH CIRCUMFLEX BELOW; Ecir-  
cumflexbelow  
17005 \DeclareTextCompositeCommand{\textsubcircum}{PU}{E}{\9036\030}% U+1E18  
17006 % U+1E19 LATIN SMALL LETTER E WITH CIRCUMFLEX BELOW; ecir-  
cumflexbelow  
17007 \DeclareTextCompositeCommand{\textsubcircum}{PU}{e}{\9036\031}% U+1E19  
17008 % U+1E1A LATIN CAPITAL LETTER E WITH TILDE BELOW; Etildebelow  
17009 \DeclareTextCompositeCommand{\textsubtilde}{PU}{E}{\9036\032}% U+1E1A  
17010 % U+1E1B LATIN SMALL LETTER E WITH TILDE BELOW; etildebelow  
17011 \DeclareTextCompositeCommand{\textsubtilde}{PU}{e}{\9036\033}% U+1E1B  
17012 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent  
17013 \DeclareTextCompositeCommand{\.}{PU}{F}{\9036\036}% U+1E1E  
17014 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent  
17015 \DeclareTextCompositeCommand{\.}{PU}{f}{\9036\037}% U+1E1F  
17016 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron  
17017 \DeclareTextCompositeCommand{=} {PU}{G}{\9036\040}% U+1E20  
17018 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron  
17019 \DeclareTextCompositeCommand{=} {PU}{g}{\9036\041}% U+1E21  
17020 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent  
17021 \DeclareTextCompositeCommand{\.}{PU}{H}{\9036\042}% U+1E22  
17022 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent  
17023 \DeclareTextCompositeCommand{\.}{PU}{h}{\9036\043}% U+1E23  
17024 % U+1E24 LATIN CAPITAL LETTER H WITH DOT BELOW; Hdotbelow  
17025 \DeclareTextCompositeCommand{\d}{PU}{H}{\9036\044}% U+1E24  
17026 % U+1E25 LATIN SMALL LETTER H WITH DOT BELOW; hdotbelow  
17027 \DeclareTextCompositeCommand{\d}{PU}{h}{\9036\045}% U+1E25  
17028 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis  
17029 \DeclareTextCompositeCommand{\"} {PU}{H}{\9036\046}% U+1E26  
17030 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis  
17031 \DeclareTextCompositeCommand{\"} {PU}{h}{\9036\047}% U+1E27  
17032 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla  
17033 \DeclareTextCompositeCommand{\c}{PU}{H}{\9036\050}% U+1E28  
17034 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla  
17035 \DeclareTextCompositeCommand{\c}{PU}{h}{\9036\051}% U+1E29  
17036 % U+1E2A LATIN CAPITAL LETTER H WITH BREVE BELOW; Hbrevebelow  
17037 \DeclareTextCompositeCommand{\textsubbreve}{PU}{H}{\9036\052}% U+1E2A  
17038 % U+1E2B LATIN SMALL LETTER H WITH BREVE BELOW; hbrevebelow  
17039 \DeclareTextCompositeCommand{\textsubbreve}{PU}{h}{\9036\053}% U+1E2B  
17040 % U+1E2C LATIN CAPITAL LETTER I WITH TILDE BELOW; Itildebelow  
17041 \DeclareTextCompositeCommand{\textsubtilde}{PU}{I}{\9036\054}% U+1E2C  
17042 % U+1E2D LATIN SMALL LETTER I WITH TILDE BELOW; itildebelow

17043 \DeclareTextCompositeCommand{\textsubtilde}{PU}{i}{\9036\055}% U+1E2D  
17044 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute  
17045 \DeclareTextCompositeCommand{\'}{PU}{K}{\9036\060}% U+1E30  
17046 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute  
17047 \DeclareTextCompositeCommand{\'}{PU}{k}{\9036\061}% U+1E31  
17048 % U+1E32 LATIN CAPITAL LETTER K WITH DOT BELOW; Kdotbelow  
17049 \DeclareTextCompositeCommand{\d}{PU}{K}{\9036\062}% U+1E32  
17050 % U+1E33 LATIN SMALL LETTER K WITH DOT BELOW; kdotbelow  
17051 \DeclareTextCompositeCommand{\d}{PU}{k}{\9036\063}% U+1E33  
17052 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow  
17053 \DeclareTextCompositeCommand{\b}{PU}{K}{\9036\064}% U+1E34  
17054 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow  
17055 \DeclareTextCompositeCommand{\b}{PU}{k}{\9036\065}% U+1E35  
17056 % U+1E36 LATIN CAPITAL LETTER L WITH DOT BELOW; Ldotbelow  
17057 \DeclareTextCompositeCommand{\d}{PU}{L}{\9036\066}% U+1E36  
17058 % U+1E37 LATIN SMALL LETTER L WITH DOT BELOW; ldotbelow  
17059 \DeclareTextCompositeCommand{\d}{PU}{l}{\9036\067}% U+1E37  
17060 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow  
17061 \DeclareTextCompositeCommand{\b}{PU}{L}{\9036\072}% U+1E3A  
17062 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow  
17063 \DeclareTextCompositeCommand{\b}{PU}{l}{\9036\073}% U+1E3B  
17064 % U+1E3C LATIN CAPITAL LETTER L WITH CIRCUMFLEX BELOW; Lcircumflexbelow  
17065 \DeclareTextCompositeCommand{\textsubcircum}{PU}{L}{\9036\074}% U+1E3C  
17066 % U+1E3D LATIN SMALL LETTER L WITH CIRCUMFLEX BELOW; lcircumflexbelow  
17067 \DeclareTextCompositeCommand{\textsubcircum}{PU}{l}{\9036\075}% U+1E3D  
17068 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute  
17069 \DeclareTextCompositeCommand{\'}{PU}{M}{\9036\076}% U+1E3E  
17070 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute  
17071 \DeclareTextCompositeCommand{\'}{PU}{m}{\9036\077}% U+1E3F  
17072 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent  
17073 \DeclareTextCompositeCommand{\.}{PU}{M}{\9036\100}% U+1E40  
17074 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent  
17075 \DeclareTextCompositeCommand{\.}{PU}{m}{\9036\101}% U+1E41  
17076 % U+1E42 LATIN CAPITAL LETTER M WITH DOT BELOW; Mdotbelow  
17077 \DeclareTextCompositeCommand{\d}{PU}{M}{\9036\102}% U+1E42  
17078 % U+1E43 LATIN SMALL LETTER M WITH DOT BELOW; mdotbelow  
17079 \DeclareTextCompositeCommand{\d}{PU}{m}{\9036\103}% U+1E43  
17080 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent  
17081 \DeclareTextCompositeCommand{\.}{PU}{N}{\9036\104}% U+1E44  
17082 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent  
17083 \DeclareTextCompositeCommand{\.}{PU}{n}{\9036\105}% U+1E45  
17084 % U+1E46 LATIN CAPITAL LETTER N WITH DOT BELOW; Ndotbelow  
17085 \DeclareTextCompositeCommand{\d}{PU}{N}{\9036\106}% U+1E46  
17086 % U+1E47 LATIN SMALL LETTER N WITH DOT BELOW; ndotbelow  
17087 \DeclareTextCompositeCommand{\d}{PU}{n}{\9036\107}% U+1E47  
17088 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow  
17089 \DeclareTextCompositeCommand{\b}{PU}{N}{\9036\110}% U+1E48  
17090 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow  
17091 \DeclareTextCompositeCommand{\b}{PU}{n}{\9036\111}% U+1E49  
17092 % U+1E4A LATIN CAPITAL LETTER N WITH CIRCUMFLEX BELOW; Ncircumflexbelow  
17093 \DeclareTextCompositeCommand{\textsubcircum}{PU}{N}{\9036\112}% U+1E4A

17094 % U+1E4B LATIN SMALL LETTER N WITH CIRCUMFLEX BELOW; ncircumflexbelow  
17095 \DeclareTextCompositeCommand{\textsubcircum}{PU}{n}{\9036\113}% U+1E4B  
17096 % U+1E50 LATIN CAPITAL LETTER O WITH MACRON AND GRAVE;  
17097 % Omacrongrave  
17098 \DeclareTextCompositeCommand{\textgravemacron}{PU}{O}{\9036\120}% U+1E50  
17099 % U+1E51 LATIN SMALL LETTER O WITH MACRON AND GRAVE;  
17100 % omacrongrave  
17101 \DeclareTextCompositeCommand{\textgravemacron}{PU}{o}{\9036\121}% U+1E51  
17102 % U+1E52 LATIN CAPITAL LETTER O WITH MACRON AND ACUTE;  
17103 % Omacronacute  
17104 \DeclareTextCompositeCommand{\textacutemacron}{PU}{O}{\9036\122}% U+1E52  
17105 % U+1E53 LATIN SMALL LETTER O WITH MACRON AND ACUTE;  
17106 % omacronacute  
17107 \DeclareTextCompositeCommand{\textacutemacron}{PU}{o}{\9036\123}% U+1E53  
17108 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute  
17109 \DeclareTextCompositeCommand{\'}{PU}{P}{\9036\124}% U+1E54  
17110 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute  
17111 \DeclareTextCompositeCommand{\'}{PU}{p}{\9036\125}% U+1E55  
17112 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent  
17113 \DeclareTextCompositeCommand{\.}{PU}{P}{\9036\126}% U+1E56  
17114 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent  
17115 \DeclareTextCompositeCommand{\.}{PU}{p}{\9036\127}% U+1E57  
17116 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent  
17117 \DeclareTextCompositeCommand{\.}{PU}{R}{\9036\130}% U+1E58  
17118 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent  
17119 \DeclareTextCompositeCommand{\.}{PU}{r}{\9036\131}% U+1E59  
17120 % U+1E5A LATIN CAPITAL LETTER R WITH DOT BELOW; Rdotbelow  
17121 \DeclareTextCompositeCommand{\d}{PU}{R}{\9036\132}% U+1E5A  
17122 % U+1E5B LATIN SMALL LETTER R WITH DOT BELOW; rdotbelow  
17123 \DeclareTextCompositeCommand{\d}{PU}{r}{\9036\133}% U+1E5B  
17124 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow  
17125 \DeclareTextCompositeCommand{\b}{PU}{R}{\9036\136}% U+1E5E  
17126 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow  
17127 \DeclareTextCompositeCommand{\b}{PU}{r}{\9036\137}% U+1E5F  
17128 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent  
17129 \DeclareTextCompositeCommand{\.}{PU}{S}{\9036\140}% U+1E60  
17130 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent  
17131 \DeclareTextCompositeCommand{\.}{PU}{s}{\9036\141}% U+1E61  
17132 % U+1E62 LATIN CAPITAL LETTER S WITH DOT BELOW; Sdotbelow  
17133 \DeclareTextCompositeCommand{\d}{PU}{S}{\9036\142}% U+1E62  
17134 % U+1E63 LATIN SMALL LETTER S WITH DOT BELOW; sdotbelow  
17135 \DeclareTextCompositeCommand{\d}{PU}{s}{\9036\143}% U+1E63  
17136 % U+1E6A LATIN CAPITAL LETTER T WITH DOT ABOVE; Tdotaccent  
17137 \DeclareTextCompositeCommand{\.}{PU}{T}{\9036\152}% U+1E6A  
17138 % U+1E6B LATIN SMALL LETTER T WITH DOT ABOVE; tdotaccent  
17139 \DeclareTextCompositeCommand{\.}{PU}{t}{\9036\153}% U+1E6B  
17140 % U+1E6C LATIN CAPITAL LETTER T WITH DOT BELOW; Tdotbelow  
17141 \DeclareTextCompositeCommand{\d}{PU}{T}{\9036\154}% U+1E6C  
17142 % U+1E6D LATIN SMALL LETTER T WITH DOT BELOW; tdotbelow  
17143 \DeclareTextCompositeCommand{\d}{PU}{t}{\9036\155}% U+1E6D  
17144 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow  
17145 \DeclareTextCompositeCommand{\b}{PU}{T}{\9036\156}% U+1E6E  
17146 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow



17147 \DeclareTextCompositeCommand{\b}{PU}{t}{\9036\157}% U+1E6F  
17148 % U+1E70 LATIN CAPITAL LETTER T WITH CIRCUMFLEX BELOW; Tcircumflexbelow  
17149 \DeclareTextCompositeCommand{\textsubcircum}{PU}{T}{\9036\160}% U+1E70  
17150 % U+1E71 LATIN SMALL LETTER T WITH CIRCUMFLEX BELOW; tcircumflexbelow  
17151 \DeclareTextCompositeCommand{\textsubcircum}{PU}{t}{\9036\161}% U+1E71  
17152 % U+1E72 LATIN CAPITAL LETTER U WITH DIAERESIS BELOW; Udiere-sisbelow  
17153 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{U}{\9036\162}% U+1E72  
17154 % U+1E73 LATIN SMALL LETTER U WITH DIAERESIS BELOW; udiere-sisbelow  
17155 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{u}{\9036\163}% U+1E73  
17156 % U+1E74 LATIN CAPITAL LETTER U WITH TILDE BELOW; Utildebelow  
17157 \DeclareTextCompositeCommand{\textsubtilde}{PU}{U}{\9036\164}% U+1E74  
17158 % U+1E75 LATIN SMALL LETTER U WITH TILDE BELOW; utildebelow  
17159 \DeclareTextCompositeCommand{\textsubtilde}{PU}{u}{\9036\165}% U+1E75  
17160 % U+1E76 LATIN CAPITAL LETTER U WITH CIRCUMFLEX BELOW; Ucircumflexbelow  
17161 \DeclareTextCompositeCommand{\textsubcircum}{PU}{U}{\9036\166}% U+1E76  
17162 % U+1E77 LATIN SMALL LETTER U WITH CIRCUMFLEX BELOW; ucircumflexbelow  
17163 \DeclareTextCompositeCommand{\textsubcircum}{PU}{u}{\9036\167}% U+1E77  
17164 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde  
17165 \DeclareTextCompositeCommand{\~}{PU}{V}{\9036\174}% U+1E7C  
17166 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde  
17167 \DeclareTextCompositeCommand{\~}{PU}{v}{\9036\175}% U+1E7D  
17168 % U+1E7E LATIN CAPITAL LETTER V WITH DOT BELOW; Vdotbelow  
17169 \DeclareTextCompositeCommand{\d}{PU}{V}{\9036\176}% U+1E7E  
17170 % U+1E7F LATIN SMALL LETTER V WITH DOT BELOW; vdotbelow  
17171 \DeclareTextCompositeCommand{\d}{PU}{v}{\9036\177}% U+1E7F  
17172 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave  
17173 \DeclareTextCompositeCommand{\`}{PU}{W}{\9036\200}% U+1E80  
17174 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave  
17175 \DeclareTextCompositeCommand{\`}{PU}{w}{\9036\201}% U+1E81  
17176 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute  
17177 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\202}% U+1E82  
17178 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute  
17179 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\203}% U+1E83  
17180 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis  
17181 \DeclareTextCompositeCommand{\"}{PU}{W}{\9036\204}% U+1E84  
17182 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis  
17183 \DeclareTextCompositeCommand{\"}{PU}{w}{\9036\205}% U+1E85  
17184 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent  
17185 \DeclareTextCompositeCommand{\.}{PU}{W}{\9036\206}% U+1E86  
17186 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent  
17187 \DeclareTextCompositeCommand{\.}{PU}{w}{\9036\207}% U+1E87  
17188 % U+1E88 LATIN CAPITAL LETTER W WITH DOT BELOW; wdotbelow  
17189 \DeclareTextCompositeCommand{\d}{PU}{W}{\9036\210}% U+1E88  
17190 % U+1E89 LATIN SMALL LETTER W WITH DOT BELOW; wdotbelow  
17191 \DeclareTextCompositeCommand{\d}{PU}{w}{\9036\211}% U+1E89  
17192 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent  
17193 \DeclareTextCompositeCommand{\.}{PU}{X}{\9036\212}% U+1E8A  
17194 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent

17195 \DeclareTextCompositeCommand{\.}{PU}{x}{\9036\213}% U+1E8B  
17196 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis  
17197 \DeclareTextCompositeCommand{\"}{PU}{X}{\9036\214}% U+1E8C  
17198 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis  
17199 \DeclareTextCompositeCommand{\.}{PU}{x}{\9036\215}% U+1E8D  
17200 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent  
17201 \DeclareTextCompositeCommand{\.}{PU}{Y}{\9036\216}% U+1E8E  
17202 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent  
17203 \DeclareTextCompositeCommand{\.}{PU}{y}{\9036\217}% U+1E8F  
17204 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex  
17205 \DeclareTextCompositeCommand{\^}{PU}{Z}{\9036\220}% U+1E90  
17206 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex  
17207 \DeclareTextCompositeCommand{\^}{PU}{z}{\9036\221}% U+1E91  
17208 % U+1E92 LATIN CAPITAL LETTER Z WITH DOT BELOW; Zdotbelow  
17209 \DeclareTextCompositeCommand{\d}{PU}{Z}{\9036\222}% U+1E92  
17210 % U+1E93 LATIN SMALL LETTER Z WITH DOT BELOW; zdotbelow  
17211 \DeclareTextCompositeCommand{\d}{PU}{z}{\9036\223}% U+1E93  
17212 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow  
17213 \DeclareTextCompositeCommand{\b}{PU}{Z}{\9036\224}% U+1E94  
17214 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow  
17215 \DeclareTextCompositeCommand{\b}{PU}{z}{\9036\225}% U+1E95  
17216 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow  
17217 \DeclareTextCompositeCommand{\b}{PU}{h}{\9036\226}% U+1E96  
17218 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis  
17219 \DeclareTextCompositeCommand{\"}{PU}{t}{\9036\227}% U+1E97  
17220 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring  
17221 \DeclareTextCompositeCommand{\r}{PU}{w}{\9036\230}% U+1E98  
17222 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring  
17223 \DeclareTextCompositeCommand{\r}{PU}{y}{\9036\231}% U+1E99  
17224 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdo-  
taccent  
17225 \DeclareTextCompositeCommand{\.}{PU}{\textlongs}{\9036\233}% U+1E9B  
17226 % U+1EA0 LATIN CAPITAL LETTER A WITH DOT BELOW; Adotbelow  
17227 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}% U+1EA0  
17228 % U+1EA1 LATIN SMALL LETTER A WITH DOT BELOW; adotbelow  
17229 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}% U+1EA1  
17230 % U+1EB8 LATIN CAPITAL LETTER E WITH DOT BELOW; Edotbelow  
17231 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}% U+1EB8  
17232 % U+1EB9 LATIN SMALL LETTER E WITH DOT BELOW; edotbelow  
17233 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}% U+1EB9  
17234 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde  
17235 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
17236 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde  
17237 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
17238 % U+1ECA LATIN CAPITAL LETTER I WITH DOT BELOW; Idotbelow  
17239 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}% U+1ECA  
17240 % U+1ECB LATIN SMALL LETTER I WITH DOT BELOW; idotbelow  
17241 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}% U+1ECB  
17242 % U+1ECC LATIN CAPITAL LETTER O WITH DOT BELOW; Odotbelow  
17243 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}% U+1ECC  
17244 % U+1ECD LATIN SMALL LETTER O WITH DOT BELOW; odotbelow  
17245 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}% U+1ECD  
17246 % U+1EE4 LATIN CAPITAL LETTER U WITH DOT BELOW; Udotbelow  
17247 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4

17248 % U+1EE5 LATIN SMALL LETTER U WITH DOT BELOW; udotbelow  
 17249 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}% U+1EE5  
 17250 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave  
 17251 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2  
 17252 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave  
 17253 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3  
 17254 % U+1EF4 LATIN CAPITAL LETTER Y WITH DOT BELOW; Ydotbelow  
 17255 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4  
 17256 % U+1EF5 LATIN SMALL LETTER Y WITH DOT BELOW; ydotbelow  
 17257 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}% U+1EF5  
 17258 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde  
 17259 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8  
 17260 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde  
 17261 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9

#### 47.2.16 General Punctuation: U+2000 to U+206F

17262 % U+200C ZERO WIDTH NON-JOINER; \*afii61664, zerowidthnonjoiner  
 17263 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C  
 17264 % U+2013 EN DASH; endash  
 17265 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013  
 17266 % U+2014 EM DASH; emdash  
 17267 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014  
 17268 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar  
 17269 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016  
 17270 %\* \textbardbl -> \textdoublevertline (tipa)  
 17271 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 17272 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018  
 17273 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 17274 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019  
 17275 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 17276 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A  
 17277 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 17278 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034}% U+201C  
 17279 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 17280 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035}% U+201D  
 17281 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 17282 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E  
 17283 % U+2020 DAGGER; dagger  
 17284 \DeclareTextCommand{\textdagger}{PU}{\9040\040}%\* U+2020  
 17285 %\* \textdagger -> \dag (LaTeX)  
 17286 % U+2021 DOUBLE DAGGER; daggerdbl; \ddagger (LaTeX)  
 17287 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021  
 17288 %\* \textdaggerdbl -> \ddagger (LaTeX)  
 17289 %\* \textdaggerdbl -> \ddag (LaTeX)  
 17290 % U+2022 BULLET; bullet  
 17291 \DeclareTextCommand{\textbullet}{PU}{\9040\042}%\* U+2022  
 17292 % U+2025 TWO DOT LEADER; \hdotfor (MnSymbol)  
 17293 \DeclareTextCommand{\texthdotfor}{PU}{\9040\045}%\* U+2025  
 17294 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 17295 \DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026  
 17296 %\* \textellipsis -> \mathellipsis  
 17297 % U+2030 PER MILLE SIGN; perthousand  
 17298 \DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030  
 17299 % U+2031 PER TEN THOUSAND SIGN

17300 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031  
17301 % U+2032 PRIME; minute; \prime (MnSymbol)  
17302 \DeclareTextCommand{\textprime}{PU}{\9040\062}%\* U+2032  
17303 % U+2033 DOUBLE PRIME; \second (mathabx)  
17304 \DeclareTextCommand{\textsecond}{PU}{\9040\063}%\* U+2033  
17305 % U+2034 TRIPLE PRIME; \third (mathabx)  
17306 \DeclareTextCommand{\textthird}{PU}{\9040\064}%\* U+2034  
17307 % U+2035 REVERSED PRIME; \backprime (AmS)  
17308 \DeclareTextCommand{\textbackprime}{PU}{\9040\065}%\* U+2035  
17309 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
ingleft  
17310 \DeclareTextCommand{\guilingleft}{PU}{\9040\071}% U+2039  
17311 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
ingright  
17312 \DeclareTextCommand{\guilsingright}{PU}{\9040\072}% U+203A  
17313 % U+203B REFERENCE MARK; referencemark  
17314 \DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B  
17315 % U+203D INTERROBANG  
17316 \DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D  
17317 % U+2044 FRACTION SLASH; fraction  
17318 \DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044  
17319 % U+2045 LEFT SQUARE BRACKET WITH QUILL  
17320 \DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045  
17321 % U+2046 RIGHT SQUARE BRACKET WITH QUILL  
17322 \DeclareTextCommand{\textrquill}{PU}{\9040\106}% U+2046  
17323 % U+2052 COMMERCIAL MINUS SIGN  
17324 \DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052  
17325 % U+2056 THREE DOT PUNCTUATION; \lefttherefore (MnSymbol)  
17326 \DeclareTextCommand{\textlefttherefore}{PU}{\9040\126}%\* U+2056  
17327 % U+2057 QUADRUPLE PRIME; \fourth (mathabx)  
17328 \DeclareTextCommand{\textfourth}{PU}{\9040\127}%\* U+2057  
17329 % U+2058 FOUR DOT PUNCTUATION; \diamonddots (MnSymbol)  
17330 \DeclareTextCommand{\textdiamonddots}{PU}{\9040\130}%\* U+2058

#### 47.2.17 Superscripts and Subscripts: U+2070 to U+209F

17331 % U+2070 SUPERSCRIPT ZERO; zerosuperior  
17332 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}%\* U+2070  
17333 % U+2071 SUPERSCRIPT LATIN SMALL LETTER I  
17334 \DeclareTextCommand{\textisuperior}{PU}{\9040\161}%\* U+2071  
17335 % U+2074 SUPERSCRIPT FOUR; foursuperior  
17336 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}%\* U+2074  
17337 % U+2075 SUPERSCRIPT FIVE; fivesuperior  
17338 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}%\* U+2075  
17339 % U+2076 SUPERSCRIPT SIX; sixsuperior  
17340 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}%\* U+2076  
17341 % U+2077 SUPERSCRIPT SEVEN; sevensuperior  
17342 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}%\* U+2077  
17343 % U+2078 SUPERSCRIPT EIGHT; eightsuperior  
17344 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170}%\* U+2078  
17345 % U+2079 SUPERSCRIPT NINE; ninesuperior  
17346 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171}%\* U+2079  
17347 % U+207A SUPERSCRIPT PLUS SIGN; plussuperior  
17348 \DeclareTextCommand{\textplussuperior}{PU}{\9040\172}%\* U+207A  
17349 % U+207B SUPERSCRIPT MINUS

17350 \DeclareTextCommand{\textminussuperior}{PU}{\9040\173}%\* U+207B  
17351 % U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior  
17352 \DeclareTextCommand{\textequalsuperior}{PU}{\9040\174}%\* U+207C  
17353 % U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftsuperior  
17354 \DeclareTextCommand{\textparenleftsuperior}{PU}{\9040\175}%\* U+207D  
17355 % U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightsuperior  
17356 \DeclareTextCommand{\textparenrightsuperior}{PU}{\9040\176}%\* U+207E  
17357 % U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior  
17358 \DeclareTextCommand{\textnsuperior}{PU}{\9040\177}%\* U+207F  
17359 % U+2080 SUBSCRIPT ZERO; zeroinferior  
17360 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}%\* U+2080  
17361 % U+2081 SUBSCRIPT ONE; oneinferior  
17362 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201}%\* U+2081  
17363 % U+2082 SUBSCRIPT TWO; twoinferior  
17364 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}%\* U+2082  
17365 % U+2083 SUBSCRIPT THREE; threeinferior  
17366 \DeclareTextCommand{\textthreeinferior}{PU}{\9040\203}%\* U+2083  
17367 % U+2084 SUBSCRIPT FOUR; fourinferior  
17368 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204}%\* U+2084  
17369 % U+2085 SUBSCRIPT FIVE; fiveinferior  
17370 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}%\* U+2085  
17371 % U+2086 SUBSCRIPT SIX; sixinferior  
17372 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}%\* U+2086  
17373 % U+2087 SUBSCRIPT SEVEN; seveninferior  
17374 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}%\* U+2087  
17375 % U+2088 SUBSCRIPT EIGHT; eightinferior  
17376 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}%\* U+2088  
17377 % U+2089 SUBSCRIPT NINE; nineinferior  
17378 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}%\* U+2089  
17379 % U+208A SUBSCRIPT PLUS SIGN  
17380 \DeclareTextCommand{\textplusinferior}{PU}{\9040\212}%\* U+208A  
17381 % U+208B SUBSCRIPT MINUS  
17382 \DeclareTextCommand{\textminusinferior}{PU}{\9040\213}%\* U+208B  
17383 % U+208C SUBSCRIPT EQUALS SIGN  
17384 \DeclareTextCommand{\textequalsinferior}{PU}{\9040\214}%\* U+208C  
17385 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior  
17386 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}%\* U+208D  
17387 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior  
17388 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}%\* U+208E  
17389 % U+2090 LATIN SUBSCRIPT SMALL LETTER A  
17390 \DeclareTextCommand{\textainferior}{PU}{\9040\220}%\* U+2090  
17391 % U+2091 LATIN SUBSCRIPT SMALL LETTER E  
17392 \DeclareTextCommand{\texteinferior}{PU}{\9040\221}%\* U+2091  
17393 % U+2092 LATIN SUBSCRIPT SMALL LETTER O  
17394 \DeclareTextCommand{\textoinferior}{PU}{\9040\222}%\* U+2092  
17395 % U+2093 LATIN SUBSCRIPT SMALL LETTER X  
17396 \DeclareTextCommand{\textxinferior}{PU}{\9040\223}%\* U+2093  
17397 % U+2094 LATIN SUBSCRIPT SMALL LETTER SCHWA  
17398 \DeclareTextCommand{\textschwainferior}{PU}{\9040\224}%\* U+2094  
17399 % U+2095 LATIN SUBSCRIPT SMALL LETTER H  
17400 \DeclareTextCommand{\texthinferior}{PU}{\9040\225}%\* U+2095  
17401 % U+2096 LATIN SUBSCRIPT SMALL LETTER K  
17402 \DeclareTextCommand{\textkinferior}{PU}{\9040\226}%\* U+2096  
17403 % U+2097 LATIN SUBSCRIPT SMALL LETTER L

17404 \DeclareTextCommand{\textlinferior}{PU}{\9040\227}%\* U+2097  
 17405 % U+2098 LATIN SUBSCRIPT SMALL LETTER M  
 17406 \DeclareTextCommand{\textminferior}{PU}{\9040\230}%\* U+2098  
 17407 % U+2099 LATIN SUBSCRIPT SMALL LETTER N  
 17408 \DeclareTextCommand{\textninferior}{PU}{\9040\231}%\* U+2099  
 17409 % U+209A LATIN SUBSCRIPT SMALL LETTER P  
 17410 \DeclareTextCommand{\textpinferior}{PU}{\9040\232}%\* U+209A  
 17411 % U+209B LATIN SUBSCRIPT SMALL LETTER S  
 17412 \DeclareTextCommand{\textsinferior}{PU}{\9040\233}%\* U+209B  
 17413 % U+209C LATIN SUBSCRIPT SMALL LETTER T  
 17414 \DeclareTextCommand{\texttinferior}{PU}{\9040\234}%\* U+209C

#### 47.2.18 Currency Symbols: U+20A0 to U+20CF

17415 % U+20A1 COLON SIGN; \*colonmonetary, colonsign  
 17416 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1  
 17417 % U+20A4 LIRA SIGN; afii08941, \*lira  
 17418 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4  
 17419 % U+20A6 NAIRA SIGN  
 17420 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6  
 17421 % U+20A7 PESETA SIGN; peseta  
 17422 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7  
 17423 % U+20A9 WON SIGN; won  
 17424 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9  
 17425 % U+20AB DONG SIGN; dong  
 17426 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB  
 17427 % U+20AC EURO SIGN; \*Euro, euro  
 17428 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC  
 17429 %\* \texteuro -> \EurDig (marvosym)  
 17430 %\* \texteuro -> \EURdig (marvosym)  
 17431 %\* \texteuro -> \EurHv (marvosym)  
 17432 %\* \texteuro -> \EURhv (marvosym)  
 17433 %\* \texteuro -> \EurCr (marvosym)  
 17434 %\* \texteuro -> \EURcr (marvosym)  
 17435 %\* \texteuro -> \EurTm (marvosym)  
 17436 %\* \texteuro -> \EURtm (marvosym)  
 17437 %\* \texteuro -> \Eur (marvosym)  
 17438 % U+20B0 GERMAN PENNY SIGN; \Deleatur (marvosym)  
 17439 \DeclareTextCommand{\textDeleatur}{PU}{\9040\260}%\* U+20B0  
 17440 %\* \textDeleatur -> \Denarius (marvosym)  
 17441 % U+20B1 PESO SIGN  
 17442 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1  
 17443 % U+20B2 GUARANI SIGN  
 17444 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

#### 47.2.19 Letterlike Symbols: U+2100 to U+214F

17445 % U+2103 DEGREE CELSIUS; centigrade  
 17446 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103  
 17447 % U+210F PLANCK CONSTANT OVER TWO PI; \hslash (AmS)  
 17448 \DeclareTextCommand{\texthslash}{PU}{\9041\017}%\* U+210F  
 17449 % U+2111 BLACK-LETTER CAPITAL I (=imaginary part); Ifraktur; \Im (LaTeX)  
 17450 \DeclareTextCommand{\textIm}{PU}{\9041\021}%\* U+2111  
 17451 % U+2113 SCRIPT SMALL L (=ell, liter); afii61289, lsquare; \ell (LaTeX)  
 17452 \DeclareTextCommand{\textell}{PU}{\9041\023}%\* U+2113

17453 % U+2116 NUMERO SIGN; \*afii61352, numero  
17454 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116  
17455 % U+2117 SOUND RECORDING COPYRIGHT  
17456 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117  
17457 % U+2118 SCRIPT CAPITAL P (=Weierstrass elliptic function);  
17458 % weierstrass; \wp (LaTeX)  
17459 \DeclareTextCommand{\textwjp}{PU}{\9041\030}%\* U+2118  
17460 % U+211C BLACK-LETTER CAPITAL R (=real part); Rfraktur; \Re (LaTeX)  
17461 \DeclareTextCommand{\textRe}{PU}{\9041\034}%\* U+211C  
17462 % U+211E PRESCRIPTION TAKE; prescription  
17463 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E  
17464 % U+2120 SERVICE MARK  
17465 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120  
17466 % U+2122 TRADE MARK SIGN; trademark  
17467 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122  
17468 % U+2126 OHM SIGN; Ohm, Omega  
17469 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126  
17470 % U+2127 INVERTED OHM SIGN  
17471 \DeclareTextCommand{\textmho}{PU}{\9041\047}%\* U+2127  
17472 %\* \textmho -> \agemO (wasysym)  
17473 % U+2129 TURNED GREEK SMALL LETTER IOTA; \riota (phonetic)  
17474 \DeclareTextCommand{\textriota}{PU}{\9041\051}%\* U+2129  
17475 % U+212B ANGSTROM SIGN; angstrom  
17476 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B  
17477 % U+212E ESTIMATED SYMBOL; estimated  
17478 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E  
17479 %\* \textestimated -> \EstimatedSign (marvosym)  
17480 %\* \textestimated -> \Ecommerce (marvosym)  
17481 % U+2132 TURNED CAPITAL F; \Finv (AmS)  
17482 \DeclareTextCommand{\textFinv}{PU}{\9041\062}%\* U+2132  
17483 % U+2135 ALEF SYMBOL; aleph; \aleph (LaTeX)  
17484 \DeclareTextCommand{\textaleph}{PU}{\9041\065}%\* U+2135  
17485 % U+2136 BET SYMBOL; \beth (AmS, MnSymbol)  
17486 \DeclareTextCommand{\textbeth}{PU}{\9041\066}%\* U+2136  
17487 % U+2137 GIMEL SYMBOL; \gimel (AmS, MnSymbol)  
17488 \DeclareTextCommand{\textgimel}{PU}{\9041\067}%\* U+2137  
17489 % U+2138 DALET SYMBOL; \daleth (AmS, MnSymbol)  
17490 \DeclareTextCommand{\textdaleth}{PU}{\9041\070}%\* U+2138  
17491 % U+213B FACSIMILE SIGN; \fax (marvosym)  
17492 \DeclareTextCommand{\textfax}{PU}{\9041\073}%\* U+213B  
17493 % U+2141 TURNED SANS-SERIF CAPITAL G (=game); \Game  
17494 \DeclareTextCommand{\textGame}{PU}{\9041\101}%\* U+2141  
17495 % U+214B TURNED AMPERSAND; \invamp (txfonts/pxfonts)  
17496 \DeclareTextCommand{\textinvamp}{PU}{\9041\113}% U+214B  
17497 %\* \textinvamp -> \bindnasrepma (stmaryrd)  
17498 %\* \textinvamp -> \parr (cml)

#### 47.2.20 Number Forms: U+2150 to U+218F

17499 % U+2150 VULGAR FRACTION ONE SEVENTH  
17500 \DeclareTextCommand{\textoneseventh}{PU}{\9041\120}% U+2150  
17501 % U+2151 VULGAR FRACTION ONE NINTH  
17502 \DeclareTextCommand{\textoneninth}{PU}{\9041\121}% U+2151  
17503 % U+2152 VULGAR FRACTION ONE TENTH  
17504 \DeclareTextCommand{\textonetenth}{PU}{\9041\122}% U+2152

17505 % U+2153 VULGAR FRACTION ONE THIRD; onethird  
17506 \DeclareTextCommand{\textonethird}{PU}{\9041\123}% U+2153  
17507 % U+2154 VULGAR FRACTION TWO THIRDS; twothirds  
17508 \DeclareTextCommand{\texttwothirds}{PU}{\9041\124}% U+2154  
17509 % U+2155 VULGAR FRACTION ONE FIFTH  
17510 \DeclareTextCommand{\textonefifth}{PU}{\9041\125}% U+2155  
17511 % U+2156 VULGAR FRACTION TWO FIFTHS  
17512 \DeclareTextCommand{\texttwofifths}{PU}{\9041\126}% U+2156  
17513 % U+2157 VULGAR FRACTION THREE FIFTHS  
17514 \DeclareTextCommand{\textthreefifths}{PU}{\9041\127}% U+2157  
17515 % U+2158 VULGAR FRACTION FOUR FIFTHS  
17516 \DeclareTextCommand{\textfourfifths}{PU}{\9041\130}% U+2158  
17517 % U+2159 VULGAR FRACTION ONE SIXTH  
17518 \DeclareTextCommand{\textonesixth}{PU}{\9041\131}% U+2159  
17519 % U+215A VULGAR FRACTION FIVE SIXTHS  
17520 \DeclareTextCommand{\textfivesixths}{PU}{\9041\132}% U+215A  
17521 % U+215B VULGAR FRACTION ONE EIGHTH; oneeighth  
17522 \DeclareTextCommand{\textoneeighth}{PU}{\9041\133}% U+215B  
17523 % U+215C VULGAR FRACTION THREE EIGHTHS; threeeighths  
17524 \DeclareTextCommand{\textthreeeighths}{PU}{\9041\134}% U+215C  
17525 % U+215D VULGAR FRACTION FIVE EIGHTHS; fiveeighths  
17526 \DeclareTextCommand{\textfiveeighths}{PU}{\9041\135}% U+215D  
17527 % U+215E VULGAR FRACTION SEVEN EIGHTHS; seveneighths  
17528 \DeclareTextCommand{\textseveneighths}{PU}{\9041\136}% U+215E  
17529 % U+2184 LATIN SMALL LETTER REVERSED C  
17530 \DeclareTextCommand{\textrevc}{PU}{\9041\204}% U+2184  
17531 % U+2189 VULGAR FRACTION ZERO THIRDS  
17532 \DeclareTextCommand{\textzerthirds}{PU}{\9041\211}% U+2189

#### 47.2.21 Arrows: U+2190 to U+21FF

17533 % U+2190 LEFTWARDS ARROW; arrowleft  
17534 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}%\* U+2190  
17535 % U+2191 UPWARDS ARROW; arrowup  
17536 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}%\* U+2191  
17537 % U+2192 RIGHTWARDS ARROW; arrowright  
17538 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}%\* U+2192  
17539 %\* \textrightarrow -> \MVRightArrow (marvosym)  
17540 %\* \textrightarrow -> \MVRightarrow (marvosym)  
17541 % U+2193 DOWNWARDS ARROW; arrowdown  
17542 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}%\* U+2193  
17543 %\* \textdownarrow -> \MVArrowDown (marvosym)  
17544 %\* \textdownarrow -> \Force (marvosym)  
17545 % U+2194 LEFT RIGHT ARROW; arrowboth; \leftrightarrow (LaTeX)  
17546 \DeclareTextCommand{\textleftrightarrow}{PU}{\9041\224}%\* U+2194  
17547 % U+2195 UP DOWN ARROW; arrowupdn; \updownarrow (LaTeX)  
17548 \DeclareTextCommand{\textupdownarrow}{PU}{\9041\225}%\* U+2195  
17549 % U+2196 NORTH WEST ARROW; arrowupleft; \nwarrow (LaTeX)  
17550 \DeclareTextCommand{\textnwarrow}{PU}{\9041\226}%\* U+2196  
17551 % U+2197 NORTH EAST ARROW; arrowupright; \nearrow (LaTeX)  
17552 \DeclareTextCommand{\textnearrow}{PU}{\9041\227}%\* U+2197  
17553 %\* \textnearrow -> \textglobe (tipa)  
17554 % U+2198 SOUTH EAST ARROW; arrowdownright; \searrow (LaTeX)  
17555 \DeclareTextCommand{\textsearrow}{PU}{\9041\230}%\* U+2198  
17556 %\* \textsearrow -> \textglobfall (tipa)



17557 % U+2199 SOUTH WEST ARROW; arrowdownleft; \swarrow (LaTeX)  
17558 \DeclareTextCommand{\textswarrow}{PU}{\9041\231}%\* U+2199  
17559 % U+219A LEFTWARDS ARROW WITH STROKE; \leftarrow (AmS)  
17560 \DeclareTextCommand{\textleftarrow}{PU}{\9041\232}%\* U+219A  
17561 % U+219B RIGHTWARDS ARROW WITH STROKE; \rightarrow (AmS)  
17562 \DeclareTextCommand{\textrightarrow}{PU}{\9041\233}%\* U+219B  
17563 % U+219E LEFTWARDS TWO HEADED ARROW; \twoheadleftarrow (AmS)  
17564 \DeclareTextCommand{\texttwoheadleftarrow}{PU}{\9041\236}%\* U+219E  
17565 % \twoheadleftarrow (txfonts/pxfonts)  
17566 \DeclareTextCommand{\textntwoheadleftarrow}{PU}{\9041\236\83\070}%\* U+219E U+0338  
17567 % U+219F UPWARDS TWO HEADED ARROW; \twoheaduparrow (MnSymbol)  
17568 \DeclareTextCommand{\texttwoheaduparrow}{PU}{\9041\237}%\* U+219F  
17569 % U+21A0 RIGHTWARDS TWO HEADED ARROW;  
17570 % \twoheadrightarrow (AmS)  
17571 \DeclareTextCommand{\texttwoheadrightarrow}{PU}{\9041\240}%\* U+21A0  
17572 % \twoheadrightarrow (txfonts/pxfonts)  
17573 \DeclareTextCommand{\textntwoheadrightarrow}{PU}{\9041\240\83\070}%\* U+21A0 U+0338  
17574 % U+21A1 DOWNWARDS TWO HEADED ARROW; \twoheaddownarrow (Mn-  
Symbol)  
17575 \DeclareTextCommand{\texttwoheaddownarrow}{PU}{\9041\241}%\* U+21A1  
17576 % U+21A2 LEFTWARDS ARROW WITH TAIL; \leftarrowtail (AmS)  
17577 \DeclareTextCommand{\textleftarrowtail}{PU}{\9041\242}%\* U+21A2  
17578 % U+21A3 RIGHTWARDS ARROW WITH TAIL; \rightarrowtail (AmS)  
17579 \DeclareTextCommand{\textrightarrowtail}{PU}{\9041\243}%\* U+21A3  
17580 % U+21A6 RIGHTWARDS ARROW FROM BAR; \mapsto (LaTeX)  
17581 \DeclareTextCommand{\textmapsto}{PU}{\9041\246}%\* U+21A6  
17582 % U+21A9 LEFTWARDS ARROW WITH HOOK; \hookleftarrow (LaTeX)  
17583 \DeclareTextCommand{\texthookleftarrow}{PU}{\9041\251}%\* U+21A9  
17584 % U+21AA RIGHTWARDS ARROW WITH HOOK; \hookrightarrow (LaTeX)  
17585 \DeclareTextCommand{\texthookrightarrow}{PU}{\9041\252}%\* U+21AA  
17586 % U+21AB LEFTWARDS ARROW WITH LOOP; \looparrowleft (AmS)  
17587 \DeclareTextCommand{\textlooparrowleft}{PU}{\9041\253}%\* U+21AB  
17588 % U+21AC RIGHTWARDS ARROW WITH LOOP; \looparrowright (AmS)  
17589 \DeclareTextCommand{\textlooparrowright}{PU}{\9041\254}%\* U+21AC  
17590 % U+21AE LEFT RIGHT ARROW WITH STROKE; \leftrightarrow (AmS)  
17591 \DeclareTextCommand{\textleftrightarrow}{PU}{\9041\256}%\* U+21AE  
17592 % U+21AF DOWNWARDS ZIGZAG ARROW; \lightning (stmaryrd)  
17593 \DeclareTextCommand{\textlightning}{PU}{\9041\257}%\* U+21AF  
17594 %\* \textlightning -> \Lightning (marvosym)  
17595 % U+21B5 DOWNWARDS ARROW WITH CORNER LEFTWARDS;  
17596 % \dls (mathabx)  
17597 \DeclareTextCommand{\textdls}{PU}{\9041\265}%\* U+21B5  
17598 % U+21B6 ANTICLOCKWISE TOP SEMICIRCLE ARROW;  
17599 % \curvearrowleft (AmS)  
17600 \DeclareTextCommand{\textcurvearrowleft}{PU}{\9041\266}%\* U+21B6  
17601 % U+21B7 CLOCKWISE TOP SEMICIRCLE ARROW; \curvearrowright (AmS)  
17602 \DeclareTextCommand{\textcurvearrowright}{PU}{\9041\267}%\* U+21B7  
17603 % U+21BC LEFTWARDS HARPOON WITH BARB UPWARDS; harpoonleft-  
barbup;  
17604 % \leftharpoonup (LaTeX)  
17605 \DeclareTextCommand{\textleftharpoonup}{PU}{\9041\274}%\* U+21BC  
17606 % U+21BD LEFTWARDS HARPOON WITH BARB DOWNWARDS;  
17607 % \leftharpoondown (LaTeX)  
17608 \DeclareTextCommand{\textleftharpoondown}{PU}{\9041\275}%\* U+21BD

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17609 % U+21BE UPWARDS HARPOON WITH BARB RIGHTWARDS;
17610 % \upharpoonright (AmS)
17611 \DeclareTextCommand{\textupharpoonright}{PU}{\9041\276}%* U+21BE
17612 % U+21BF UPWARDS HARPOON WITH BARB LEFTWARDS;
17613 % \upharpoonleft (AmS)
17614 \DeclareTextCommand{\textupharpoonleft}{PU}{\9041\277}%* U+21BF
17615 % U+21C0 RIGHTWARDS HARPOON WITH BARB UPWARDS; harpoonright-
barbup
17616 % \rightharpoonup (LaTeX)
17617 \DeclareTextCommand{\textrightharpoonup}{PU}{\9041\300}%* U+21C0
17618 % U+21C1 RIGHTWARDS HARPOON WITH BARB DOWNWARDS;
17619 % \rightharpoondown (LaTeX)
17620 \DeclareTextCommand{\textrightharpoondown}{PU}{\9041\301}%* U+21C1
17621 % U+21C2 DOWNWARDS HARPOON WITH BARB RIGHTWARDS;
17622 % \downharpoonright (AmS)
17623 \DeclareTextCommand{\textdownharpoonright}{PU}{\9041\302}%* U+21C2
17624 % U+21C3 DOWNWARDS HARPOON WITH BARB LEFTWARDS;
17625 % \downharpoonleft (AmS)
17626 \DeclareTextCommand{\textdownharpoonleft}{PU}{\9041\303}%* U+21C3
17627 % U+21C4 RIGHTWARDS ARROW OVER LEFTWARDS ARROW;
17628 % arrowrightoverleft; \rightleftarrows (MnSymbol)
17629 \DeclareTextCommand{\textrightleftarrows}{PU}{\9041\304}%* U+21C4
17630 % U+21C5 UPWARDS ARROW LEFTWARDS OF DOWNWARDS ARROW; ar-
rowupleftofdown;
17631 % \updownarrows (MnSymbol)
17632 \DeclareTextCommand{\textupdownarrows}{PU}{\9041\305}%* U+21C5
17633 % U+21C6 LEFTWARDS ARROW OVER RIGHTWARDS ARROW; arrowleft-
overright;
17634 % \leftrightarrows (AmS)
17635 \DeclareTextCommand{\textleftrightarrows}{PU}{\9041\306}%* U+21C6
17636 % U+21C7 LEFTWARDS PAIRED ARROWS; \leftleftarrows (AmS)
17637 \DeclareTextCommand{\textleftleftarrows}{PU}{\9041\307}%* U+21C7
17638 % U+21C8 UPWARDS PAIRED ARROWS; \upuparrows (AmS)
17639 \DeclareTextCommand{\textupuparrows}{PU}{\9041\310}%* U+21C8
17640 % U+21C9 RIGHTWARDS PAIRED ARROWS; \rightrightarrows (AmS)
17641 \DeclareTextCommand{\textrightarrows}{PU}{\9041\311}%* U+21C9
17642 % U+21CA DOWNWARDS PAIRED ARROWS; \downdownarrows (AmS)
17643 \DeclareTextCommand{\textdowndownarrows}{PU}{\9041\312}%* U+21CA
17644 % U+21CB LEFTWARDS HARPOON OVER RIGHTWARDS HARPOON;
17645 % \leftrightharpoons (AmS);
17646 \DeclareTextCommand{\textleftrightharpoons}{PU}{\9041\313}%* U+21CB
17647 % U+21CC RIGHTWARDS HARPOON OVER LEFTWARDS HARPOON;
17648 % \rightleftharpoons (LaTeX, AmS)
17649 \DeclareTextCommand{\textrightleftharpoons}{PU}{\9041\314}%* U+21CC
17650 % U+21CD LEFTWARDS DOUBLE ARROW WITH STROKE; arrowleftd-
blstroke;
17651 % \nLeftarrow (AmS)
17652 \DeclareTextCommand{\textnLeftarrow}{PU}{\9041\315}%* U+21CD
17653 % U+21CE LEFT RIGHT DOUBLE ARROW WITH STROKE; \nLeftrightarrow
(AmS)
17654 \DeclareTextCommand{\textnLeftrightarrow}{PU}{\9041\316}%* U+21CE
17655 % U+21CF RIGHTWARDS DOUBLE ARROW WITH STROKE; arrowrightd-
blstroke;
17656 % \nrightarrow (AmS)

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17657 \DeclareTextCommand{\textnRightarrow}{PU}{\9041\317}%* U+21CF
17658 % U+21D0 LEFTWARDS DOUBLE ARROW; arrowdblleft, arrowleftdbl;
17659 % \Leftarrow (LaTeX)
17660 \DeclareTextCommand{\textLeftarrow}{PU}{\9041\320}%* U+21D0
17661 % U+21D1 UPWARDS DOUBLE ARROW; arrowdblup; \Uparrow (LaTeX)
17662 \DeclareTextCommand{\textUparrow}{PU}{\9041\321}%* U+21D1
17663 % U+21D2 RIGHTWARDS DOUBLE ARROW; arrowdblright, dblarrowright;
17664 % \rightarrow (LaTeX)
17665 \DeclareTextCommand{\textRightarrow}{PU}{\9041\322}%* U+21D2
17666 %* \textRightarrow -> \Conclusion (marvosym)
17667 % U+21D3 DOWNWARDS DOUBLE ARROW; arrowdblDOWN; \Downarrow (La-
TeX)
17668 \DeclareTextCommand{\textDownarrow}{PU}{\9041\323}%* U+21D3
17669 % U+21D4 LEFT RIGHT DOUBLE ARROW; arrowdblboth;
17670 % \Leftrightarrow (LaTeX)
17671 \DeclareTextCommand{\textLeftrightarrow}{PU}{\9041\324}%* U+21D4
17672 %* \textLeftrightarrow -> \Equivalence (marvosym)
17673 % U+21D5 UP DOWN DOUBLE ARROW; \Updownarrow (LaTeX)
17674 \DeclareTextCommand{\textUpdownarrow}{PU}{\9041\325}%* U+21D5
17675 % U+21D6 NORTH WEST DOUBLE ARROW; \Nwarrow (MnSymbol)
17676 \DeclareTextCommand{\textNwarrow}{PU}{\9041\326}%* U+21D6
17677 % U+21D7 NORTH EAST DOUBLE ARROW; \Nearrow (MnSymbol)
17678 \DeclareTextCommand{\textNearrow}{PU}{\9041\327}%* U+21D7
17679 % U+21D8 SOUTH EAST DOUBLE ARROW; \Searrow (MnSymbol)
17680 \DeclareTextCommand{\textSearrow}{PU}{\9041\330}%* U+21D8
17681 % U+21D9 SOUTH WEST DOUBLE ARROW; \Swarrow (MnSymbol)
17682 \DeclareTextCommand{\textSwarrow}{PU}{\9041\331}%* U+21D9
17683 % U+21DA LEFTWARDS TRIPLE ARROW; \Lleftarrow (AmS)
17684 \DeclareTextCommand{\textLleftarrow}{PU}{\9041\332}%* U+21DA
17685 % U+21DB RIGHTWARDS TRIPLE ARROW; \Rrightarrow (MnSymbol)
17686 \DeclareTextCommand{\textRrightarrow}{PU}{\9041\333}%* U+21DB
17687 % U+21DC LEFTWARDS SQUIGGLE ARROW; \leftsquigarrow (mathabx)
17688 \DeclareTextCommand{\textleftsquigarrow}{PU}{\9041\334}%* U+21DC
17689 % U+21DD RIGHTWARDS SQUIGGLE ARROW; \rightsquigarrow (mathabx)
17690 \DeclareTextCommand{\textright squigarrow}{PU}{\9041\335}%* U+21DD
17691 % U+21E0 LEFTWARDS DASHED ARROW; arrowdashleft;
17692 % \dashleftarrow (AmS)
17693 \DeclareTextCommand{\textdashleftarrow}{PU}{\9041\340}%* U+21E0
17694 %* \textdashleftarrow -> \dashedleftarrow (MnSymbol)
17695 % U+21E1 UPWARDS DASHED ARROW; arrowdashup; \dasheduparrow (Mn-
Symbol)
17696 \DeclareTextCommand{\textdasheduparrow}{PU}{\9041\341}%* U+21E1
17697 % U+21E2 RIGHTWARDS DASHED ARROW; arrowdashright; \dashrightar-
row (AmS)
17698 \DeclareTextCommand{\textdashrightarrow}{PU}{\9041\342}%* U+21E2
17699 %* \textdashrightarrow -> \dashedrightarrow (MnSymbol)
17700 % U+21E3 DOWNWARDS DASHED ARROW; arrowdashdown; \dasheddownar-
row (MnSymbol)
17701 \DeclareTextCommand{\textdasheddownarrow}{PU}{\9041\343}%* U+21E3
17702 % U+21E8 RIGHTWARDS WHITE ARROW; \pointer (wasysym)
17703 \DeclareTextCommand{\textpointer}{PU}{\9041\350}%* U+21E8
17704 % U+21F5 DOWNWARDS ARROW LEFTWARDS OF UPWARDS ARROW;
17705 % \downuparrows (MnSymbol)
17706 \DeclareTextCommand{\textdownuparrows}{PU}{\9041\365}%* U+21F5

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17707 % U+21FD LEFTWARDS OPEN-HEADED ARROW; \leftarrowtriangle (stmaryrd)  
17708 \DeclareTextCommand{\textleftarrowtriangle}{PU}{\9041\375}%\* U+21FD  
17709 % U+21FE RIGHTWARDS OPEN-HEADED ARROW; \rightarrowtriangle (stmaryrd)  
17710 \DeclareTextCommand{\textrightarrowtriangle}{PU}{\9041\376}%\* U+21FE  
17711 % U+21FF LEFT RIGHT OPEN-HEADED ARROW; \leftrightarrowtriangle  
(stmaryrd)  
17712 \DeclareTextCommand{\textleftrightarrowtriangle}{PU}{\9041\377}%\* U+21FF

#### 47.2.22 Mathematical Operators: U+2200 to U+22FF

17713 % U+2200 FOR ALL; forall; \forall (LaTeX)  
17714 \DeclareTextCommand{\textforall}{PU}{\9042\000}%\* U+2200  
17715 % U+2201 COMPLEMENT; \complement (AmS)  
17716 \DeclareTextCommand{\textcomplement}{PU}{\9042\001}%\* U+2201  
17717 % U+2202 PARTIAL DIFFERENTIAL; partialdiff; \partial (LaTeX)  
17718 \DeclareTextCommand{\textpartial}{PU}{\9042\002}%\* U+2202  
17719 % U+2203 THERE EXISTS; existential; \exists (LaTeX)  
17720 \DeclareTextCommand{\textexists}{PU}{\9042\003}%\* U+2203  
17721 % U+2204 THERE DOES NOT EXIST; \nexists (AmS)  
17722 \DeclareTextCommand{\textnexists}{PU}{\9042\004}%\* U+2204  
17723 % U+2205 EMPTY SET; emptyset; \emptyset (LaTeX), \varnothing (AmS)  
17724 \DeclareTextCommand{\textemptyset}{PU}{\9042\005}%\* U+2205  
17725 %\* \textemptyset -> \varnothing (AmS)  
17726 % U+2206 INCREMENT; increment, Delta; \triangle (LaTeX)  
17727 \DeclareTextCommand{\texttriangle}{PU}{\9042\006}%\* U+2206  
17728 % U+2207 NABLA; nabla, gradient; \nabla (LaTeX)  
17729 \DeclareTextCommand{\textnabla}{PU}{\9042\007}%\* U+2207  
17730 % U+2208 ELEMENT OF; element; \in (LaTeX)  
17731 \DeclareTextCommand{\textin}{PU}{\9042\010}%\* U+2208  
17732 % U+2209 NOT AN ELEMENT OF; notelement, notelementof; \notin (LaTeX)  
17733 \DeclareTextCommand{\textnotin}{PU}{\9042\011}%\* U+2209  
17734 % U+220A SMALL ELEMENT OF; \smallin (mathdesign)  
17735 \DeclareTextCommand{\textsmallin}{PU}{\9042\012}%\* U+220A  
17736 % U+220B CONTAINS AS MEMBER; suchthat; \ni (LaTeX)  
17737 \DeclareTextCommand{\textni}{PU}{\9042\013}%\* U+220B  
17738 %\* \textni -> \owns (mathabx)  
17739 % U+220C DOES NOT CONTAIN AS MEMBER; \notowner (mathabx)  
17740 \DeclareTextCommand{\textnotowner}{PU}{\9042\014}%\* U+220C  
17741 %\* \textnotowner -> \notin (txfonts/pxfonts)  
17742 % U+220D SMALL CONTAINS AS MEMBER; \smallowns (mathdesign)  
17743 \DeclareTextCommand{\textsmallowns}{PU}{\9042\015}%\* U+220D  
17744 % U+220F N-ARY PRODUCT; \prod (LaTeX)  
17745 \DeclareTextCommand{\textprod}{PU}{\9042\017}%\* U+220F  
17746 % U+2210 N-ARY COPRODUCT; \amalg (LaTeX)  
17747 \DeclareTextCommand{\textamalg}{PU}{\9042\020}%\* U+2210  
17748 % U+2211 N-ARY SUMMATION; summation; \sum (LaTeX)  
17749 \DeclareTextCommand{\textsum}{PU}{\9042\021}%\* U+2211  
17750 % U+2212 MINUS SIGN; minus  
17751 \DeclareTextCommand{\textminus}{PU}{\9042\022}%\* U+2212  
17752 % U+2213 MINUS-OR-PLUS SIGN; minusplus; \mp (LaTeX)  
17753 \DeclareTextCommand{\textmp}{PU}{\9042\023}%\* U+2213  
17754 % U+2214 DOT PLUS; \dotplus (AmS)  
17755 \DeclareTextCommand{\textdotplus}{PU}{\9042\024}%\* U+2214  
17756 % U+2215 DIVISION SLASH; divisionslash; \Divides (marvosym)  
17757 \DeclareTextCommand{\textDivides}{PU}{\9042\025}%\* U+2215

17758 % \DividesNot (marvosym)  
17759 \DeclareTextCommand{\textDividesNot}{PU}{\9042\025\9040\322}%\* U+2215 U+20D2  
17760 % U+2216 SET MINUS; \setminus (LaTeX)  
17761 \DeclareTextCommand{\textsetminus}{PU}{\9042\026}%\* U+2216  
17762 % U+2217 ASTERISK OPERATOR; asteriskmath; \ast (LaTeX)  
17763 \DeclareTextCommand{\textast}{PU}{\9042\027}%\* U+2217  
17764 % U+2218 RING OPERATOR; \circ (LaTeX)  
17765 \DeclareTextCommand{\textcirc}{PU}{\9042\030}%\* U+2218  
17766 % U+2219 BULLET OPERATOR; bulletoperator; \bullet (LaTeX)  
17767 \DeclareTextCommand{\textbulletoperator}{PU}{\9042\031}% U+2219  
17768 % U+221A SQUARE ROOT; radical  
17769 \DeclareTextCommand{\textsurd}{PU}{\9042\032}%\* U+221A  
17770 % U+221D PROPORTIONAL TO; proportional; \propto (LaTeX)  
17771 \DeclareTextCommand{\textpropto}{PU}{\9042\035}%\* U+221D  
17772 %\* \textpropto -> \varprop (wasysym)  
17773 % U+221E INFINITY; infinity; \infty (LaTeX)  
17774 \DeclareTextCommand{\textinfty}{PU}{\9042\036}%\* U+221E  
17775 % U+2220 ANGLE; angle; \angle (LaTeX)  
17776 \DeclareTextCommand{\textangle}{PU}{\9042\040}%\* U+2220  
17777 % U+2221 MEASURED ANGLE; \measuredangle (mathabx, MnSymbol)  
17778 \DeclareTextCommand{\textmeasuredangle}{PU}{\9042\041}%\* U+2221  
17779 % U+2222 SPHERICAL ANGLE; \sphericalangle (Ams)  
17780 \DeclareTextCommand{\textsphericalangle}{PU}{\9042\042}%\* U+2222  
17781 %\* \textsphericalangle -> \varangle (wasysym)  
17782 %\* \textsphericalangle -> \Anglesign (marvosym)  
17783 %\* \textsphericalangle -> \AngleSign (marvosym)  
17784 % U+2223 DIVIDES; divides; \mid (LaTeX)  
17785 \DeclareTextCommand{\textmid}{PU}{\9042\043}%\* U+2223  
17786 % U+2224 DOES NOT DIVIDE; \nmid (AmS)  
17787 \DeclareTextCommand{\textnmid}{PU}{\9042\044}%\* U+2224  
17788 %\* \textnmid -> \notdivides (mathabx)  
17789 % U+2225 PARALLEL TO; parallel; \parallel (LaTeX)  
17790 \DeclareTextCommand{\textparallel}{PU}{\9042\045}%\* U+2225  
17791 % U+2226 NOT PARALLEL TO; notparallel; \nparallel (AmS)  
17792 \DeclareTextCommand{\textnparallel}{PU}{\9042\046}%\* U+2226  
17793 %\* \textnparallel -> nUpdownline (MnSymbol)  
17794 % U+2227 LOGICAL AND; logicaland; \wedge (LaTeX)  
17795 \DeclareTextCommand{\textwedge}{PU}{\9042\047}%\* U+2227  
17796 % \wedge (stmaryrd)  
17797 \DeclareTextCommand{\textowedge}{PU}{\9042\047\9040\335}%\* U+2227 U+20DD  
17798 %\* \textowedge -> \varowedge (stmaryrd)  
17799 % U+2228 LOGICAL OR; logicalor; \vee (LaTeX)  
17800 \DeclareTextCommand{\textvee}{PU}{\9042\050}%\* U+2228  
17801 % \vee (stmaryrd)  
17802 \DeclareTextCommand{\textovee}{PU}{\9042\050\9040\335}%\* U+2228 U+20DD  
17803 %\* \textovee -> \varovee (stmaryrd)  
17804 % U+2229 INTERSECTION; intersection; \cap (LaTeX)  
17805 \DeclareTextCommand{\textcap}{PU}{\9042\051}%\* U+2229  
17806 % U+222A UNION; union; \cup (LaTeX)  
17807 \DeclareTextCommand{\textcup}{PU}{\9042\052}%\* U+222A  
17808 % U+222B INTEGRAL; integral; \int (LaTeX)  
17809 \DeclareTextCommand{\textint}{PU}{\9042\053}%\* U+222B  
17810 %\* \textint -> \varint (wasysym)  
17811 % U+222C DOUBLE INTEGRAL; dblintegral; \iint (AmS)

17812 \DeclareTextCommand{\textiint}{PU}{\9042\054}%\* U+222C  
17813 % U+222D TRIPLE INTEGRAL; \iiint (AmS)  
17814 \DeclareTextCommand{\textiiiint}{PU}{\9042\055}%\* U+222D  
17815 % U+222E CONTOUR INTEGRAL; contourintegral; \oint (LaTeX)  
17816 \DeclareTextCommand{\textoint}{PU}{\9042\056}%\* U+222E  
17817 %\* \textoint -> \varoint (wasysym)  
17818 % U+222F SURFACE INTEGRAL; \oiint (wasysym)  
17819 \DeclareTextCommand{\textoiint}{PU}{\9042\057}%\* U+222F  
17820 % U+2232 CLOCKWISE CONTOUR INTEGRAL;  
17821 % \ointclockwise (txfonts/pxfonts)  
17822 \DeclareTextCommand{\textointclockwise}{PU}{\9042\062}%\* U+2232  
17823 % U+2233 ANTICLOCKWISE CONTOUR INTEGRAL; \ointctrclockwise (tx-  
fonts/pxfonts)  
17824 \DeclareTextCommand{\textointctrclockwise}{PU}{\9042\063}%\* U+2233  
17825 % U+2234 THEREFORE; therefore; \therefore (AmS)  
17826 \DeclareTextCommand{\texttherefore}{PU}{\9042\064}%\* U+2234  
17827 %\* \texttherefore -> uptherefore (MnSymbol)  
17828 % U+2235 BECAUSE; because; \because (AmS)  
17829 \DeclareTextCommand{\textbecause}{PU}{\9042\065}%\* U+2235  
17830 %\* \textbecause -> \downtherefore (MnSymbol)  
17831 % U+2236 RATIO; \vdotdot (MnSymbol)  
17832 \DeclareTextCommand{\textvdotdot}{PU}{\9042\066}%\* U+2236  
17833 % U+2237 PROPORTION; \squaredots (MnSymbol)  
17834 \DeclareTextCommand{\textsquaredots}{PU}{\9042\067}%\* U+2237  
17835 % U+2238 DOT MINUS; \dotminus (MnSymbol)  
17836 \DeclareTextCommand{\textdotminus}{PU}{\9042\070}%\* U+2238  
17837 %\* \textdotminus -> \textdotdiv (mathabx)  
17838 % U+2239 EXCESS; \eqcolon (txfonts/pxfonts)  
17839 \DeclareTextCommand{\texteqcolon}{PU}{\9042\071}%\* U+2239  
17840 % U+223C TILDE OPERATOR; similar; \sim (LaTeX)  
17841 \DeclareTextCommand{\textsim}{PU}{\9042\074}%\* U+223C  
17842 %\* \textsim -> \AC (wasysym)  
17843 % U+223D REVERSED TILDE; reversedtilde; \backsim (AmS)  
17844 \DeclareTextCommand{\textbacksim}{PU}{\9042\075}%\* U+223D  
17845 % \nbacksim (txfonts/pxfonts)  
17846 \DeclareTextCommand{\textnbacksim}{PU}{\9042\075\83\070}%\* U+223D U+0338  
17847 % U+2240 WREATH PRODUCT; \wr (LaTeX)  
17848 \DeclareTextCommand{\textwr}{PU}{\9042\100}%\* U+2240  
17849 %\* \textwr -> \wreath (MnSymbol)  
17850 % U+2241 NOT TILDE; \nsim (AmS)  
17851 \DeclareTextCommand{\textnsim}{PU}{\9042\101}%\* U+2241  
17852 % U+2242 MINUS TILDE; \eqsim (MnSymbol)  
17853 \DeclareTextCommand{\texteqsim}{PU}{\9042\102}%\* U+2242  
17854 % \neqsim (MnSymbol)  
17855 \DeclareTextCommand{\textneqsim}{PU}{\9042\102\83\070}%\* U+2242 U+0338  
17856 % U+2243 ASYMPTOTICALLY EQUAL TO; asymptoticallyequal; \simeq (La-  
TeX)  
17857 \DeclareTextCommand{\textsimeq}{PU}{\9042\103}%\* U+2243  
17858 % U+2244 NOT ASYMPTOTICALLY EQUAL TO; \nsimeq (txfonts/pxfonts)  
17859 \DeclareTextCommand{\textnsimeq}{PU}{\9042\104}%\* U+2244  
17860 % U+2245 APPROXIMATELY EQUAL TO; approximatelyequal; \cong (LaTeX)  
17861 \DeclareTextCommand{\textcong}{PU}{\9042\105}%\* U+2245  
17862 % U+2247 NEITHER APPROXIMATELY NOR ACTUALLY EQUAL TO;  
17863 % \ncong (AmS)

17864 \DeclareTextCommand{\textncong}{PU}{\9042\107}%\* U+2247  
17865 % U+2248 ALMOST EQUAL TO; approxequal; \approx (LaTeX)  
17866 \DeclareTextCommand{\textapprox}{PU}{\9042\110}%\* U+2248  
17867 % U+2249 NOT ALMOST EQUAL TO; \naprox (txfonts/pxfonts0  
17868 \DeclareTextCommand{\textnapprox}{PU}{\9042\111}%\* U+2249  
17869 %\* \textnapprox -> \nthickapprox (txfonts/pxfonts)  
17870 % U+224A ALMOST EQUAL OR EQUAL TO; \approxeq (AmS)  
17871 \DeclareTextCommand{\textapproxeq}{PU}{\9042\112}%\* U+224A  
17872 % \naproxeq (txfonts/pxfonts)  
17873 \DeclareTextCommand{\textnapproxeq}{PU}{\9042\112\83\070}%\* U+224A U+0338  
17874 % U+224B TRIPLE TILDE; \triplesim (MnSymbol)  
17875 \DeclareTextCommand{\texttriplesim}{PU}{\9042\113}%\* U+224B  
17876 %\* \texttriplesim -> \VHF (wasysym)  
17877 % \ntriplesim (MnSymbol)  
17878 \DeclareTextCommand{\textntriplesim}{PU}{\9042\113\83\070}%\* U+224B U+0338  
17879 % U+224C ALL EQUAL TO; allequal; \backcong (MnSymbol)  
17880 \DeclareTextCommand{\textbackcong}{PU}{\9042\114}%\* U+224C  
17881 % \nbackcong (MnSymbol)  
17882 \DeclareTextCommand{\textnbackcong}{PU}{\9042\114\83\070}%\* U+224C U+0338  
17883 % U+224D EQUIVALENT TO; \asymp (LaTeX)  
17884 \DeclareTextCommand{\textasymp}{PU}{\9042\115}%\* U+224D  
17885 % \nasymp (txfonts/pxfonts)  
17886 \DeclareTextCommand{\textnasymp}{PU}{\9042\115\83\070}%\* U+224D U+0338  
17887 %\* \textnasymp -> \notasymp (mathabx)  
17888 % U+224E GEOMETRICALLY EQUIVALENT TO; \Bumpeq (AmS)  
17889 \DeclareTextCommand{\textBumpeq}{PU}{\9042\116}%\* U+224E  
17890 % \nBumpeq (txfonts/pxfonts)  
17891 \DeclareTextCommand{\textnBumpeq}{PU}{\9042\116\83\070}%\* U+224E U+0338  
17892 % U+224F DIFFERENCE BETWEEN; \bumpeq (AmS)  
17893 \DeclareTextCommand{\textbumpeq}{PU}{\9042\117}%\* U+224F  
17894 % \nbumpeq (txfonts/pxfonts)  
17895 \DeclareTextCommand{\textnbumpeq}{PU}{\9042\117\83\070}%\* U+224F U+0338  
17896 % U+2250 APPROACHES THE LIMIT; approaches; \doteq (LaTeX)  
17897 \DeclareTextCommand{\textdoteq}{PU}{\9042\120}%\* U+2250  
17898 % \ndoteq (MnSymbol)  
17899 \DeclareTextCommand{\textndoteq}{PU}{\9042\120\83\070}%\* U+2250 U+0338  
17900 % U+2251 GEOMETRICALLY EQUAL TO; geometricallyequal;  
17901 % \doteqdot (AmS)  
17902 \DeclareTextCommand{\textdoteqdot}{PU}{\9042\121}%\* U+2251  
17903 %\* \textdoteqdot -> \Doteq (MnSymbol)  
17904 % \nDoteq (MnSymbol)  
17905 \DeclareTextCommand{\textnDoteq}{PU}{\9042\121\83\070}%\* U+2251 U+0338  
17906 % U+2252 APPROXIMATELY EQUAL TO OR THE IMAGE OF; approx-  
equalorimage;  
17907 % \fallingdotseq (AmS)  
17908 \DeclareTextCommand{\textfallingdotseq}{PU}{\9042\122}%\* U+2252  
17909 % \nfallingdotseq (MnSymbol)  
17910 \DeclareTextCommand{\textnfallingdotseq}{PU}{\9042\122\83\070}%\* U+2252 U+0338  
17911 % U+2253 IMAGE OF OR APPROXIMATELY EQUAL TO; imageorapprox-  
imatelyequal;  
17912 % \risingdotseq (AmS)  
17913 \DeclareTextCommand{\textrisingdotseq}{PU}{\9042\123}%\* U+2253  
17914 % \nrisingdotseq (MnSymbol)  
17915 \DeclareTextCommand{\textnrisingdotseq}{PU}{\9042\123\83\070}%\* U+2253 U+0338

17916 % U+2254 COLON EQUALS; \colonequals (colonequals)  
17917 \DeclareTextCommand{\textcolonequals}{PU}{\9042\124}%\* U+2254  
17918 % U+2255 EQUALS COLON; \equalscolon (colonequals)  
17919 \DeclareTextCommand{\textequalscolon}{PU}{\9042\125}%\* U+2255  
17920 % U+2256 RING IN EQUAL TO; \eqcirc (AmS)  
17921 \DeclareTextCommand{\texteqcirc}{PU}{\9042\126}%\* U+2256  
17922 % \neqcirc (MnSymbol)  
17923 \DeclareTextCommand{\textneqcirc}{PU}{\9042\126\83\070}%\* U+2256 U+0338  
17924 % U+2257 RING EQUAL TO; \circeq (AmS)  
17925 \DeclareTextCommand{\textcirceq}{PU}{\9042\127}%\* U+2257  
17926 % \ncirceq (MnSymbol)  
17927 \DeclareTextCommand{\textncirceq}{PU}{\9042\127\83\070}%\* U+2257 U+0338  
17928 % U+2259 ESTIMATES; \hateq (MnSymbol)  
17929 \DeclareTextCommand{\texthateq}{PU}{\9042\131}%\* U+2259  
17930 %\* \texthateq -> \corresponds (mathabx)  
17931 %\* \texthateq -> \Corresponds (marvosym)  
17932 % \nhateq (MnSymbol)  
17933 \DeclareTextCommand{\textnhateq}{PU}{\9042\131\83\070}%\* U+2259 U+0338  
17934 % U+225C DELTA EQUAL TO; \triangleeq (AmS)  
17935 \DeclareTextCommand{\texttriangleeq}{PU}{\9042\134}%\* U+225C  
17936 % U+2260 NOT EQUAL TO; notequal; \ne (LaTeX), \neq (LaTeX)  
17937 \DeclareTextCommand{\textneq}{PU}{\9042\140}%\* U+2260  
17938 \DeclareTextCommand{\textne}{PU}{\9042\140}%\* U+2260  
17939 %\* \textneq -> \nequal (MnSymbol)  
17940 % U+2261 IDENTICAL TO; equivalence; \equiv (LaTeX)  
17941 \DeclareTextCommand{\textequiv}{PU}{\9042\141}%\* U+2261  
17942 %\* \textequiv -> \Congruent (marvosym)  
17943 % U+2262 NOT IDENTICAL TO; notidentical; \notequiv (txfonts/pxfonts)  
17944 \DeclareTextCommand{\textnotequiv}{PU}{\9042\142}%\* U+2262  
17945 %\* \textnotequiv -> \NotCongruent (marvosym)  
17946 %\* \textnotequiv -> \notequiv (mathabx)  
17947 % U+2264 LESS-THAN OR EQUAL TO; lessequal; \le (LaTeX), \leq (LaTeX)  
17948 \DeclareTextCommand{\textleq}{PU}{\9042\144}%\* U+2264  
17949 \DeclareTextCommand{\textle}{PU}{\9042\144}%\* U+2264  
17950 %\* \textleq -> \LessOrEqual (marvosym)  
17951 % U+2265 GREATER-THAN OR EQUAL TO; greaterequal;  
17952 % \ge (LaTeX), \geq (LaTeX)  
17953 \DeclareTextCommand{\textgeq}{PU}{\9042\145}%\* U+2265  
17954 \DeclareTextCommand{\textge}{PU}{\9042\145}%\* U+2265  
17955 %\* \textgeq -> \LargerOrEqual (marvosym)  
17956 % U+2266 LESS-THAN OVER EQUAL TO; lessoverequal; \leqq (AmS)  
17957 \DeclareTextCommand{\textleqq}{PU}{\9042\146}%\* U+2266  
17958 % \nleqq (txfonts/pxfonts)  
17959 \DeclareTextCommand{\textnleqq}{PU}{\9042\146\83\070}%\* U+2266 U+0338  
17960 % U+2267 GREATER-THAN OVER EQUAL TO; greateroverequal; \geqq (AmS)  
17961 \DeclareTextCommand{\textgeqq}{PU}{\9042\147}%\* U+2267  
17962 % \ngeqq (txfonts/pxfonts)  
17963 \DeclareTextCommand{\textngeqq}{PU}{\9042\147\83\070}%\* U+2267 U+0338  
17964 % U+2268 LESS-THAN BUT NOT EQUAL TO; \lneqq (AmS)  
17965 \DeclareTextCommand{\textlneqq}{PU}{\9042\150}%\* U+2268  
17966 % U+2269 GREATER-THAN BUT NOT EQUAL TO; \gneqq (AmS)  
17967 \DeclareTextCommand{\textgneqq}{PU}{\9042\151}%\* U+2269  
17968 % U+226A MUCH LESS-THAN; muchless; \ll (LaTeX)  
17969 \DeclareTextCommand{\textll}{PU}{\9042\152}%\* U+226A



17970 % \nll (txfonts/pxfonts)  
17971 \DeclareTextCommand{\textnll}{PU}{\9042\152\83\070}%\* U+226A U+0338  
17972 % U+226B MUCH GREATER-THAN; muchgreater; \gg (LaTeX)  
17973 \DeclareTextCommand{\textgg}{PU}{\9042\153}%\* U+226B  
17974 % \ngg (txfonts/pxfonts)  
17975 \DeclareTextCommand{\textngg}{PU}{\9042\153\83\070}%\* U+226B U+0338  
17976 % U+226C BETWEEN; \between (AmS)  
17977 \DeclareTextCommand{\textbetween}{PU}{\9042\154}%\* U+226C  
17978 % U+226E NOT LESS-THAN; notless; \nless (AmS)  
17979 \DeclareTextCommand{\textnless}{PU}{\9042\156}%\* U+226E  
17980 % U+226F NOT GREATER-THAN; notgreater; \ngtr (AmS)  
17981 \DeclareTextCommand{\textngtr}{PU}{\9042\157}%\* U+226F  
17982 % U+2270 NEITHER LESS-THAN NOR EQUAL TO; notlessnorequal;  
17983 % \nleq (AmS)  
17984 \DeclareTextCommand{\textnleq}{PU}{\9042\160}%\* U+2270  
17985 % U+2271 NEITHER GREATER-THAN NOR EQUAL TO; notgreaternorequal;  
17986 % \ngeq (AmS)  
17986 \DeclareTextCommand{\textngeq}{PU}{\9042\161}%\* U+2271  
17987 % U+2272 LESS-THAN OR EQUIVALENT TO; lessorequivalent; \lessim (AmS)  
17988 \DeclareTextCommand{\textlessim}{PU}{\9042\162}%\* U+2272  
17989 %\* \textlessim -> \apprle (wasysym)  
17990 % U+2273 GREATER-THAN OR EQUIVALENT TO; greaterorequivalent; \gtrsim (AmS)  
17991 \DeclareTextCommand{\textgtrsim}{PU}{\9042\163}%\* U+2273  
17992 %\* \textgtrsim -> \apprge (wasysym)  
17993 % U+2274 NEITHER LESS-THAN NOR EQUIVALENT TO; \nlessim (txfonts/pxfonts)  
17994 \DeclareTextCommand{\textnlessim}{PU}{\9042\164}%\* U+2274  
17995 % U+2275 NEITHER GREATER-THAN NOR EQUIVALENT TO; \ngtrsim (txfonts/pxfonts)  
17996 \DeclareTextCommand{\textngtrsim}{PU}{\9042\165}%\* U+2275  
17997 % U+2276 LESS-THAN OR GREATER-THAN; lessorgreater; \lessgtr (AmS)  
17998 \DeclareTextCommand{\textlessgtr}{PU}{\9042\166}%\* U+2276  
17999 % U+2277 GREATER-THAN OR LESS-THAN; greaterorless; \gtrless (AmS)  
18000 \DeclareTextCommand{\textgtrless}{PU}{\9042\167}%\* U+2277  
18001 % U+2278 NEITHER LESS-THAN NOR GREATER-THAN; \ngtrless (txfonts/pxfonts)  
18002 \DeclareTextCommand{\textngtrless}{PU}{\9042\170}%\* U+2278  
18003 % U+2279 NEITHER GREATER-THAN NOR LESS-THAN; \nlessgtr (txfonts/pxfonts)  
18004 \DeclareTextCommand{\textnlessgtr}{PU}{\9042\171}%\* U+2279  
18005 % U+227A PRECEDES; precedes; \prec (LaTeX)  
18006 \DeclareTextCommand{\textprec}{PU}{\9042\172}%\* U+227A  
18007 % U+227B SUCCEEDS; succeeds; \succ (LaTeX)  
18008 \DeclareTextCommand{\textsucc}{PU}{\9042\173}%\* U+227B  
18009 % U+227C PRECEDES OR EQUAL TO; \preccurlyeq (AmS)  
18010 \DeclareTextCommand{\textpreccurlyeq}{PU}{\9042\174}%\* U+227C  
18011 % U+227D SUCCEEDS OR EQUAL TO; \succcurlyeq (AmS)  
18012 \DeclareTextCommand{\textsuccurlyeq}{PU}{\9042\175}%\* U+227D  
18013 % U+227E PRECEDES OR EQUIVALENT TO; \precsim (AmS)  
18014 \DeclareTextCommand{\textprecsim}{PU}{\9042\176}%\* U+227E  
18015 % \nprecsim (txfonts/pxfonts)  
18016 \DeclareTextCommand{\textnprecsim}{PU}{\9042\176\83\070}%\* U+227E U+0338  
18017 % U+227F SUCCEEDS OR EQUIVALENT TO; \succsim (AmS)

18018 \DeclareTextCommand{\textsuccsim}{PU}{\9042\177}%\* U+227F  
18019 % \nsuccsim (txfonts/pxfonts)  
18020 \DeclareTextCommand{\textnsuccsim}{PU}{\9042\177\83\070}%\* U+227F U+0338  
18021 % U+2280 DOES NOT PRECEDE; notprecedes; \nprec (AmS)  
18022 \DeclareTextCommand{\textnprec}{PU}{\9042\200}%\* U+2280  
18023 % U+2281 DOES NOT SUCCEED; notsucceds; \succ (AmS)  
18024 \DeclareTextCommand{\textnsucc}{PU}{\9042\201}%\* U+2281  
18025 % U+2282 SUBSET OF; propersubset; \subset (LaTeX)  
18026 \DeclareTextCommand{\textsubset}{PU}{\9042\202}%\* U+2282  
18027 % U+2283 SUPERSET OF; propersuperset; \supset (LaTeX)  
18028 \DeclareTextCommand{\textsupset}{PU}{\9042\203}%\* U+2283  
18029 % U+2284 NOT A SUBSET OF; notsubset; \nsubset (mathabx)  
18030 \DeclareTextCommand{\textnsubset}{PU}{\9042\204}%\* U+2284  
18031 % U+2285 NOT A SUPERSET OF; notsuperset; \nsupset (mathabx)  
18032 \DeclareTextCommand{\textnsupset}{PU}{\9042\205}%\* U+2285  
18033 % U+2286 SUBSET OF OR EQUAL TO; reflexsubset; \subseteq (LaTeX)  
18034 \DeclareTextCommand{\textsubseteq}{PU}{\9042\206}%\* U+2286  
18035 % U+2287 SUPERSET OF OR EQUAL TO; reflexsuperset; \supseteq (LaTeX)  
18036 \DeclareTextCommand{\textsupseteq}{PU}{\9042\207}%\* U+2287  
18037 % U+2288 NEITHER A SUBSET OF NOR EQUAL TO; \nsubseteq (AmS)  
18038 \DeclareTextCommand{\textnsubseteq}{PU}{\9042\210}%\* U+2288  
18039 % U+2289 NEITHER A SUPERSET OF NOR EQUAL TO; \nsupseteq (AmS)  
18040 \DeclareTextCommand{\textnsupseteq}{PU}{\9042\211}%\* U+2289  
18041 % U+228A SUBSET OF WITH NOT EQUAL TO; subsetnotequal; \subsetneq (AmS)  
18042 \DeclareTextCommand{\textsubsetneq}{PU}{\9042\212}%\* U+228A  
18043 % U+228B SUPERSET OF WITH NOT EQUAL TO; supersetnotequal; \supsetneq (AmS)  
18044 \DeclareTextCommand{\textsupsetneq}{PU}{\9042\213}%\* U+228B  
18045 % U+228D MULTISSET MULTIPLICATION; \cupdot (MnSymbol)  
18046 \DeclareTextCommand{\textcupdot}{PU}{\9042\215}%\* U+228D  
18047 % U+228E MULTISSET UNION; \cupplus (MnSymbol)  
18048 \DeclareTextCommand{\textcupplus}{PU}{\9042\216}%\* U+228E  
18049 % U+228F SQUARE IMAGE OF; \sqsubset (latexsym, ...)  
18050 \DeclareTextCommand{\textsqsubset}{PU}{\9042\217}%\* U+228F  
18051 % \nsqsubset (txfonts/pxfonts)  
18052 \DeclareTextCommand{\textnsqsubset}{PU}{\9042\217\83\070}%\* U+228F U+0338  
18053 % U+2290 SQUARE ORIGINAL OF; \sqsupset (latexsym, ...)  
18054 \DeclareTextCommand{\textsqsupset}{PU}{\9042\220}%\* U+2290  
18055 % \nsqsupset (txfonts/pxfonts)  
18056 \DeclareTextCommand{\textnsqsupset}{PU}{\9042\220\83\070}%\* U+2290 U+0338  
18057 % U+2291 SQUARE IMAGE OF OR EQUAL TO; \sqsubseteq (LaTeX)  
18058 \DeclareTextCommand{\textsqsubseteq}{PU}{\9042\221}%\* U+2291  
18059 % \nsqsubseteq (txfonts/pxfonts)  
18060 \DeclareTextCommand{\textnsqsubseteq}{PU}{\9042\221\83\070}%\* U+2291 U+0338  
18061 % U+2292 SQUARE ORIGINAL OF OR EQUAL TO; \sqsupseteq (LaTeX)  
18062 \DeclareTextCommand{\textsqsupseteq}{PU}{\9042\222}%\* U+2292  
18063 % \nsqsupseteq (txfonts/pxfonts)  
18064 \DeclareTextCommand{\textnsqsupseteq}{PU}{\9042\222\83\070}%\* U+2292 U+0338  
18065 % U+2293 SQUARE CAP; \sqcap (LaTeX)  
18066 \DeclareTextCommand{\textsqcap}{PU}{\9042\223}%\* U+2293  
18067 % U+2294 SQUARE CUP; \sqcup (LaTeX)  
18068 \DeclareTextCommand{\textsqcup}{PU}{\9042\224}%\* U+2294  
18069 % U+2295 CIRCLED PLUS; circleplus; \oplus (LaTeX)

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18070 \DeclareTextCommand{\textoplus}{PU}{\9042\225}%* U+2295
18071 %* \textoplus -> \varoplus (stmaryrd)
18072 % U+2296 CIRCLED MINUS; minuscircle; \ominus (LaTeX)
18073 \DeclareTextCommand{\textominus}{PU}{\9042\226}%* U+2296
18074 %* \textominus -> \varominus (stmaryrd)
18075 % U+2297 CIRCLED TIMES; circlemultiply; \otimes (LaTeX)
18076 \DeclareTextCommand{\textotimes}{PU}{\9042\227}%* U+2297
18077 %* \textotimes -> \varotimes (stmaryrd)
18078 % U+2298 CIRCLED DIVISION SLASH; \oslash (LaTeX)
18079 \DeclareTextCommand{\textoslash}{PU}{\9042\230}%* U+2298
18080 %* \textoslash -> \varoslash (stmaryrd)
18081 % U+2299 CIRCLED DOT OPERATOR; circle(d?)ot; \odot (LaTeX)
18082 \DeclareTextCommand{\textodot}{PU}{\9042\231}%* U+2299
18083 %* \textodot -> \varodot (stmaryrd)
18084 % U+229A CIRCLED RING OPERATOR; \circledcirc (AmS)
18085 \DeclareTextCommand{\textcircledcirc}{PU}{\9042\232}%* U+229A
18086 %* \textcircledcirc -> \ocirc (mathabx)
18087 %* \textcircledcirc -> \varocircle (stmaryrd)
18088 % U+229B CIRCLED ASTERISK OPERATOR; \circledast (AmS)
18089 \DeclareTextCommand{\textcircledast}{PU}{\9042\233}%* U+229B
18090 %* \textcircledast -> \varoast (stmaryrd)
18091 %* \textcircledast -> \oasterisk (mathabx)
18092 % U+229D CIRCLED DASH; \circleddash (AmS)
18093 \DeclareTextCommand{\textcircleddash}{PU}{\9042\235}%* U+229D
18094 % U+229E SQUARED PLUS; \boxplus (AmS)
18095 \DeclareTextCommand{\textboxplus}{PU}{\9042\236}%* U+229E
18096 % U+229F SQUARED MINUS; \boxminus (AmS)
18097 \DeclareTextCommand{\textboxminus}{PU}{\9042\237}%* U+229F
18098 % U+22A0 SQUARED TIMES; \boxtimes (AmS)
18099 \DeclareTextCommand{\textboxtimes}{PU}{\9042\240}%* U+22A0
18100 % U+22A1 SQUARED DOT OPERATOR; \boxdot (AmS)
18101 \DeclareTextCommand{\textboxdot}{PU}{\9042\241}%* U+22A1
18102 % U+22A2 RIGHT TACK; \vdash (LaTeX)
18103 \DeclareTextCommand{\textvdash}{PU}{\9042\242}%* U+22A2
18104 %* \textvdash -> \rightvdash (MnSymbol)
18105 % U+22A3 LEFT TACK; \dashleftarrow; \dashv (LaTeX)
18106 \DeclareTextCommand{\textdashv}{PU}{\9042\243}%* U+22A3
18107 %* \textdashv -> \leftvdash (MnSymbol)
18108 % \ndashv (mathabx)
18109 \DeclareTextCommand{\textndashv}{PU}{\9042\243\83\070}%* U+22A3 U+0338
18110 %* \textndashv -> \leftvdash (MnSymbol)
18111 % U+22A4 DOWN TACK (=top); \tackdown; \top (LaTeX)
18112 \DeclareTextCommand{\texttop}{PU}{\9042\244}%* U+22A4
18113 %* \texttop -> \downvdash (MnSymbol)
18114 % \ndownvdash (MnSymbol)
18115 \DeclareTextCommand{\textndownvdash}{PU}{\9042\244\83\070}%* U+22A4 U+0338
18116 % U+22A5 UP TACK (=base, bottom); \bot (LaTeX)
18117 \DeclareTextCommand{\textbot}{PU}{\9042\245}%* U+22A5
18118 %* \textbot -> \upvdash (MnSymbol)
18119 % \nupvdash (MnSymbol)
18120 \DeclareTextCommand{\textnupvdash}{PU}{\9042\245\83\070}%* U+22A5 U+0338
18121 %* \textnupvdash -> \nperp (MnSymbol)
18122 % U+22A8 TRUE; \vDash (AmS)
18123 \DeclareTextCommand{\textvDash}{PU}{\9042\250}%* U+22A8

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18124 %* \textvDash -> \models (LaTeX)
18125 %* \textvDash -> \rightmodels (MnSymbol)
18126 % U+22A9 FORCES; \Vdash (AmS)
18127 \DeclareTextCommand{\textVdash}{PU}{\9042\251}%* U+22A9
18128 %* \textVdash -> \rightVdash (MnSymbol)
18129 % U+22AA TRIPLE VERTICAL BAR RIGHT TURNSTILE; \Vvdash (AmS)
18130 \DeclareTextCommand{\textVvdash}{PU}{\9042\252}%* U+22AA
18131 % \nVvash (mathabx)
18132 \DeclareTextCommand{\textnVvash}{PU}{\9042\252\83\070}%* U+22AA U+0338
18133 % U+22AB DOUBLE VERTICAL BAR DOUBLE RIGHT TURNSTILE;
18134 % \VDash (mathabx)
18135 \DeclareTextCommand{\textVDash}{PU}{\9042\253}%* U+22AB
18136 %* \textVDash -> \rightModels (MnSymbol)
18137 % U+22AC DOES NOT PROVE; \nvDash (AmS)
18138 \DeclareTextCommand{\textnvDash}{PU}{\9042\254}%* U+22AC
18139 %* \textnvDash -> \nrighnvDash (MnSymbol)
18140 % U+22AD NOT TRUE; \nvDash (AmS)
18141 \DeclareTextCommand{\textnVDash}{PU}{\9042\255}%* U+22AD
18142 %* \textnVDash -> \nrighModels (MnSymbol)
18143 %* \textnVDash -> \nmodels (MnSymbol)
18144 % U+22AE DOES NOT FORCE; \nVdash (txfonts/pxfonts)
18145 \DeclareTextCommand{\textnVdash}{PU}{\9042\256}%* U+22AE
18146 %* \textnVdash -> \nrighVdash (MnSymbol)
18147 % U+22AF NEGATED DOUBLE VERTICAL BAR DOUBLE RIGHT TURN-
STILE; \nVDash (AmS)
18148 \DeclareTextCommand{\textnVDash}{PU}{\9042\257}%* U+22AF
18149 %* \textnVDash -> \nrighModels (MnSymbol)
18150 % U+22B2 NORMAL SUBGROUP OF; \lhd (latexsym, ...)
18151 \DeclareTextCommand{\textlhd}{PU}{\9042\262}%* U+22B2
18152 %* \textlhd -> \lessclosed (MnSymbol)
18153 % U+22B3 CONTAINS AS NORMAL SUBGROUP; \rhd (latexsym, ...)
18154 \DeclareTextCommand{\textrhd}{PU}{\9042\263}%* U+22B3
18155 %* \textrhd -> \gtrclosed (MnSymbol)
18156 % U+22B4 NORMAL SUBGROUP OF OR EQUAL TO; \unlhd (latexsym, ...)
18157 \DeclareTextCommand{\textunlhd}{PU}{\9042\264}%* U+22B4
18158 %* \textunlhd -> \leqclosed (MnSymbol)
18159 %* \textunlhd -> \trianglelefteq (MnSymbol)
18160 % U+22B5 CONTAINS AS NORMAL SUBGROUP OR EQUAL TO; \unrhd (la-
texsym, ...)
18161 \DeclareTextCommand{\textunrhd}{PU}{\9042\265}%* U+22B5
18162 %* \textunrhd -> \geqclosed (MnSymbol)
18163 %* \textunrhd -> \trianglerighteq (MnSymbol)
18164 % U+22B6 ORIGINAL OF; \multimapdotbothA (txfonts/pxfonts)
18165 \DeclareTextCommand{\textmultimapdotbothA}{PU}{\9042\266}%* U+22B6
18166 % U+22B7 IMAGE OF; \multimapdotbothB (txfonts/pxfonts)
18167 \DeclareTextCommand{\textmultimapdotbothB}{PU}{\9042\267}%* U+22B7
18168 % U+22B8 MULTIMAP; \multimap (AmS, txfonts/pxfonts)
18169 \DeclareTextCommand{\textmultimap}{PU}{\9042\270}%* U+22B8
18170 % U+22BB XOR; \veebar (AmS)
18171 \DeclareTextCommand{\textveebar}{PU}{\9042\273}%* U+22BB
18172 % U+22BC NAND; \barwedge (mathabx)
18173 \DeclareTextCommand{\textbarwedge}{PU}{\9042\274}%* U+22BC
18174 % U+22C6 STAR OPERATOR; \star (LaTeX)
18175 \DeclareTextCommand{\textstar}{PU}{\9042\306}%* U+22C6

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18176 % U+22C7 DIVISION TIMES; \divideontimes (AmS)  
18177 \DeclareTextCommand{\textdivideontimes}{PU}{\9042\307}%\* U+22C7  
18178 % U+22C8 BOWTIE; \bowtie (LaTeX)  
18179 \DeclareTextCommand{\textbowtie}{PU}{\9042\310}%\* U+22C8  
18180 %\* \textbowtie -> \Bowtie (wasysym)  
18181 % U+22C9 LEFT NORMAL FACTOR SEMIDIRECT PRODUCT; \ltimes (AmS)  
18182 \DeclareTextCommand{\textltimes}{PU}{\9042\311}%\* U+22C9  
18183 % U+22CA RIGHT NORMAL FACTOR SEMIDIRECT PRODUCT;  
18184 % \rtimes (AmS)  
18185 \DeclareTextCommand{\textrtimes}{PU}{\9042\312}%\* U+22CA  
18186 % U+22CB LEFT SEMIDIRECT PRODUCT; \leftthreetimes (AmS)  
18187 \DeclareTextCommand{\textleftthreetimes}{PU}{\9042\313}%\* U+22CB  
18188 % U+22CC RIGHT SEMIDIRECT PRODUCT; \rightthreetimes (AmS)  
18189 \DeclareTextCommand{\textrightthreetimes}{PU}{\9042\314}%\* U+22CC  
18190 % U+22CD REVERSED TILDE EQUALS; \backsimeq (AmS)  
18191 \DeclareTextCommand{\textbacksimeq}{PU}{\9042\315}%\* U+22CD  
18192 % \nbacksimeq (txfonts/pxfonts)  
18193 \DeclareTextCommand{\textnbacksimeq}{PU}{\9042\315\83\070}%\* U+22CD U+0338  
18194 % U+22CE CURLY LOGICAL OR; curlyor; \curlyvee (AmS)  
18195 \DeclareTextCommand{\textcurlyvee}{PU}{\9042\316}%\* U+22CE  
18196 %\* \textcurlyvee -> \varcurlyvee (stmaryrd)  
18197 % U+22CF CURLY LOGICAL AND; curlyand; \curlywedge (AmS)  
18198 \DeclareTextCommand{\textcurlywedge}{PU}{\9042\317}%\* U+22CF  
18199 %\* \textcurlywedge -> \varcurlywedge (stmaryrd)  
18200 % U+22D0 DOUBLE SUBSET; \Subset (AmS)  
18201 \DeclareTextCommand{\textSubset}{PU}{\9042\320}%\* U+22D0  
18202 % \nSubset (txfonts/pxfonts)  
18203 \DeclareTextCommand{\textnSubset}{PU}{\9042\320\83\070}%\* U+22D0 U+0338  
18204 % U+22D1 DOUBLE SUPERSET; \Supset (AmS)  
18205 \DeclareTextCommand{\textSupset}{PU}{\9042\321}%\* U+22D1  
18206 % \nSupset (txfonts/pxfonts)  
18207 \DeclareTextCommand{\textnSupset}{PU}{\9042\321\83\070}%\* U+22D1 U+0338  
18208 % U+22D2 DOUBLE INTERSECTION; \Cap (AmS)  
18209 \DeclareTextCommand{\textCap}{PU}{\9042\322}%\* U+22D2  
18210 %\* \textCap -> \doublecap (mathabx)  
18211 % U+22D3 DOUBLE UNION; \Cup (AmS)  
18212 \DeclareTextCommand{\textCup}{PU}{\9042\323}%\* U+22D3  
18213 %\* \textCup -> \doublecup (mathabx)  
18214 % U+22D4 PITCHFORK; \pitchfork (mathabx)  
18215 \DeclareTextCommand{\textpitchfork}{PU}{\9042\324}%\* U+22D4  
18216 % U+22D6 LESS-THAN WITH DOT; \lessdot (AmS)  
18217 \DeclareTextCommand{\textlessdot}{PU}{\9042\326}%\* U+22D6  
18218 % U+22D7 GREATER-THAN WITH DOT; \gtrdot (AmS)  
18219 \DeclareTextCommand{\textgtrdot}{PU}{\9042\327}%\* U+22D7  
18220 % U+22D8 VERY MUCH LESS-THAN; \lll (AmS)  
18221 \DeclareTextCommand{\textlll}{PU}{\9042\330}%\* U+22D8  
18222 % U+22D9 VERY MUCH GREATER-THAN; \ggg (AmS)  
18223 \DeclareTextCommand{\textggg}{PU}{\9042\331}%\* U+22D9  
18224 % U+22DA LESS-THAN EQUAL TO OR GREATER-THAN; lesseqqualorgreater;  
18225 % \lesseqgtr (AmS)  
18226 \DeclareTextCommand{\textlesseqgtr}{PU}{\9042\332}%\* U+22DA  
18227 % U+22DB GREATER-THAN EQUAL TO OR LESS-THAN; greaterequalorless;  
18228 % \gtreqless (AmS)  
18229 \DeclareTextCommand{\textgtreqless}{PU}{\9042\333}%\* U+22DB

18230 % U+22DE EQUAL TO OR PRECEDES; \curlyeqprec (MnSymbol)  
18231 \DeclareTextCommand{\textcurlyeqprec}{PU}{\9042\336}%\* U+22DE  
18232 % \ncurlyeqprec (mathabx)  
18233 \DeclareTextCommand{\textncurlyeqprec}{PU}{\9042\336\83\070}%\* U+22DE U+0338  
18234 % U+22DF EQUAL TO OR SUCCEEDS; \curlyeqsucc (MnSymbol)  
18235 \DeclareTextCommand{\textcurlyeqsucc}{PU}{\9042\337}%\* U+22DF  
18236 % \ncurlyeqsucc (mathabx)  
18237 \DeclareTextCommand{\textncurlyeqsucc}{PU}{\9042\337\83\070}%\* U+22DF U+0338  
18238 % U+22E0 DOES NOT PRECEDE OR EQUAL; \npreccurlyeq (txfonts/pxfonts)  
18239 \DeclareTextCommand{\textnpreccurlyeq}{PU}{\9042\340}%\* U+22E0  
18240 % U+22E1 DOES NOT SUCCEED OR EQUAL; \nsucccurlyeq (txfonts/pxfonts)  
18241 \DeclareTextCommand{\textnsucccurlyeq}{PU}{\9042\341}%\* U+22E1  
18242 % U+22E2 NOT SQUARE IMAGE OF OR EQUAL TO; \nqssubseteq (tx-  
fonts/pxfonts)  
18243 \DeclareTextCommand{\textnqssubseteq}{PU}{\9042\342}%\* U+22E2  
18244 % U+22E3 NOT SQUARE ORIGINAL OF OR EQUAL TO; \nqsupseteq (tx-  
fonts/pxfonts)  
18245 \DeclareTextCommand{\textnqsupseteq}{PU}{\9042\343}%\* U+22E3  
18246 % U+22E4 SQUARE IMAGE OF OR NOT EQUAL TO; \sqsubseteq (mathabx)  
18247 \DeclareTextCommand{\textsqsubseteq}{PU}{\9042\344}%\* U+22E4  
18248 %\* \textsqsubseteq -> \varsqsubseteq (mathabx)  
18249 % U+22E5 SQUARE ORIGINAL OF OR NOT EQUAL TO; \sqsupseteq (math-  
abx)  
18250 \DeclareTextCommand{\textsqsupseteq}{PU}{\9042\345}%\* U+22E5  
18251 %\* \textsqsupseteq -> \varsqsupseteq (mathabx)  
18252 % U+22E6 LESS-THAN BUT NOT EQUIVALENT TO; \lnsim (AmS)  
18253 \DeclareTextCommand{\textlnsim}{PU}{\9042\346}%\* U+22E6  
18254 % U+22E7 GREATER-THAN BUT NOT EQUIVALENT TO; \gnsim (AmS)  
18255 \DeclareTextCommand{\textgnsim}{PU}{\9042\347}%\* U+22E7  
18256 % U+22E8 PRECEDES BUT NOT EQUIVALENT TO; \preccsim (AmS)  
18257 \DeclareTextCommand{\textpreccsim}{PU}{\9042\350}%\* U+22E8  
18258 % U+22E9 SUCCEEDS BUT NOT EQUIVALENT TO; \succsim (AmS)  
18259 \DeclareTextCommand{\textsuccsim}{PU}{\9042\351}%\* U+22E9  
18260 % U+22EA NOT NORMAL SUBGROUP OF; \ntriangleleft (AmS)  
18261 \DeclareTextCommand{\textntriangleleft}{PU}{\9042\352}%\* U+22EA  
18262 %\* \textntriangleleft -> \nlessclosed (MnSymbol)  
18263 % U+22EB DOES NOT CONTAIN AS NORMAL SUBGROUP; \ntriangleright  
(AmS)  
18264 \DeclareTextCommand{\textntriangleright}{PU}{\9042\353}%\* U+22EB  
18265 %\* \textntriangleright -> \ngtrclosed (MnSymbol)  
18266 % U+22EC NOT NORMAL SUBGROUP OF OR EQUAL TO;  
18267 % \ntrianglelefteq (AmS)  
18268 \DeclareTextCommand{\textntrianglelefteq}{PU}{\9042\354}%\* U+22EC  
18269 % U+22ED DOES NOT CONTAIN AS NORMAL SUBGROUP OR EQUAL;  
18270 % \ntrianglerighteq (AmS)  
18271 \DeclareTextCommand{\textntrianglerighteq}{PU}{\9042\355}%\* U+22ED  
18272 %\* \textntrianglerighteq -> \textngeqclosed  
18273 % U+22EE VERTICAL ELLIPSIS; \vdots (LaTeX)  
18274 \DeclareTextCommand{\textvdots}{PU}{\9042\356}%\* U+22EE  
18275 % U+22EF MIDLINE HORIZONTAL ELLIPSIS; \cdots (LaTeX)  
18276 \DeclareTextCommand{\textcdots}{PU}{\9042\357}%\* U+22EF  
18277 % U+22F0 UP RIGHT DIAGONAL ELLIPSIS; \udots (MnSymbol)  
18278 \DeclareTextCommand{\textudots}{PU}{\9042\360}%\* U+22F0  
18279 % U+22F1 DOWN RIGHT DIAGONAL ELLIPSIS; \ddots (LaTeX)

18280 \DeclareTextCommand{\textddots}{PU}{\9042\361}%\* U+22F1  
 18281 % U+22F6 ELEMENT OF WITH OVERBAR; \barin (mathabx)  
 18282 \DeclareTextCommand{\textbarin}{PU}{\9042\366}%\* U+22F6

#### 47.2.23 Miscellaneous Technical: U+2300 to U+23FF

18283 % U+2300 DIAMETER SIGN; \diameter (mathabx,wasysym)  
 18284 \DeclareTextCommand{\textdiameter}{PU}{\9043\000}%\* U+2300  
 18285 % U+2310 REVERSED NOT SIGN; \backneg (MnSymbol)  
 18286 \DeclareTextCommand{\textbackneg}{PU}{\9043\020}%\* U+2310  
 18287 % U+2311 SQUARE LOZENGE; \wasylozenge (wasysym)  
 18288 \DeclareTextCommand{\textwasylozenge}{PU}{\9043\021}%\* U+2311  
 18289 % U+2319 TURNED NOT SIGN; \invbackneg (MnSymbol)  
 18290 \DeclareTextCommand{\textinvbackneg}{PU}{\9043\031}%\* U+2319  
 18291 % U+231A WATCH; \clock (wasysym)  
 18292 \DeclareTextCommand{\textclock}{PU}{\9043\032}%\* U+231A  
 18293 %\* \textclock -> \Clocklogo (marvosym)  
 18294 %\* \textclock -> \ClockLogo (marvosym)  
 18295 % U+231C TOP LEFT CORNER; \ulcorner (AmS)  
 18296 \DeclareTextCommand{\textulcorner}{PU}{\9043\034}%\* U+231C  
 18297 % U+231D TOP RIGHT CORNER; \urcorner (AmS)  
 18298 \DeclareTextCommand{\texturcorner}{PU}{\9043\035}%\* U+231D  
 18299 % U+231E BOTTOM LEFT CORNER; \llcorner (AmS)  
 18300 \DeclareTextCommand{\textllcorner}{PU}{\9043\036}%\* U+231E  
 18301 % U+231F BOTTOM RIGHT CORNER; \lrcorner (AmS)  
 18302 \DeclareTextCommand{\textlrcorner}{PU}{\9043\037}%\* U+231F  
 18303 % U+2322 FROWN; \frown (LaTeX)  
 18304 \DeclareTextCommand{\textfrown}{PU}{\9043\042}%\* U+2322  
 18305 % U+2323 SMILE; \smile (LaTeX)  
 18306 \DeclareTextCommand{\textsmile}{PU}{\9043\043}%\* U+2323  
 18307 % U+2328 KEYBOARD; \Keyboard (marvosym)  
 18308 \DeclareTextCommand{\textKeyboard}{PU}{\9043\050}%\* U+2328  
 18309 % U+2329 LEFT-POINTING ANGLE BRACKET; \angleleft; \langle (LaTeX)  
 18310 \DeclareTextCommand{\textlangle}{PU}{\9043\051}%\* U+2329  
 18311 % U+232A RIGHT-POINTING ANGLE BRACKET; \angleright; \rangle (LaTeX)  
 18312 \DeclareTextCommand{\textrightangle}{PU}{\9043\052}%\* U+232A  
 18313 % U+2339 APL FUNCTIONAL SYMBOL QUAD DIVIDE; \APLinv (wasysym)  
 18314 \DeclareTextCommand{\textAPLinv}{PU}{\9043\071}%\* U+2339  
 18315 % U+233C APL FUNCTIONAL SYMBOL QUAD CIRCLE; \Tumbler (marvosym)  
 18316 \DeclareTextCommand{\textTumbler}{PU}{\9043\074}%\* U+233C  
 18317 % U+233D APL FUNCTIONAL SYMBOL CIRCLE STILE; \baro (stmaryrd)  
 18318 \DeclareTextCommand{\textstmaryrdbaro}{PU}{\9043\075}%\* U+233D  
 18319 %\* \textstmaryrdbaro -> \baro (stmaryrd)  
 18320 % U+233F APL FUNCTIONAL SYMBOL SLASH BAR; \notslash (wasysym)  
 18321 \DeclareTextCommand{\textnotslash}{PU}{\9043\077}%\* U+233F  
 18322 % U+2340 APL FUNCTIONAL SYMBOL BACKSLASH BAR;  
 18323 % \notbackslash (wasysym)  
 18324 \DeclareTextCommand{\textnotbackslash}{PU}{\9043\100}%\* U+2340  
 18325 % U+2342 APL FUNCTIONAL SYMBOL QUAD BACKSLASH; \boxbackslash (mathabx)  
 18326 \DeclareTextCommand{\textboxbackslash}{PU}{\9043\102}%\* U+2342  
 18327 % U+2347 APL FUNCTIONAL SYMBOL QUAD LEFTWARDS ARROW;  
 18328 % \APLleftarrowbox (wasysym)  
 18329 \DeclareTextCommand{\textAPLleftarrowbox}{PU}{\9043\107}%\* U+2347

18330 % U+2348 APL FUNCTIONAL SYMBOL QUAD RIGHTWARDS ARROW;  
 18331 % \APLrightarrowbox (wasysym)  
 18332 \DeclareTextCommand{\textAPLrightarrowbox}{PU}{\9043\110}%\* U+2348  
 18333 % U+2350 APL FUNCTIONAL SYMBOL QUAD UPWARDS ARROW; \APLu-  
 parrowbox (wasysym)  
 18334 \DeclareTextCommand{\textAPLuparrowbox}{PU}{\9043\120}%\* U+2350  
 18335 % U+2357 APL FUNCTIONAL SYMBOL QUAD DOWNWARDS ARROW;  
 18336 % \APLdownarrowbox (wasysym)  
 18337 \DeclareTextCommand{\textAPLdownarrowbox}{PU}{\9043\127}%\* U+2357  
 18338 % U+235E APL FUNCTIONAL SYMBOL QUOTE QUAD;  
 18339 % \APLinput (wasysym)  
 18340 \DeclareTextCommand{\textAPLinput}{PU}{\9043\136}%\* U+235E  
 18341 % U+2370 APL FUNCTIONAL SYMBOL QUAD QUESTION; \Request (china2e)  
 18342 \DeclareTextCommand{\textRequest}{PU}{\9043\160}%\* U+2370  
 18343 % U+2393 DIRECT CURRENT SYMBOL FORM TWO; \Beam (marvosym)  
 18344 \DeclareTextCommand{\textBeam}{PU}{\9043\223}%\* U+2393  
 18345 % U+2394 SOFTWARE-FUNCTION SYMBOL; \hexagon (wasysym)  
 18346 \DeclareTextCommand{\texthexagon}{PU}{\9043\224}%\* U+2394  
 18347 % U+2395 APL FUNCTIONAL SYMBOL QUAD; \APLbox (wasysym)  
 18348 \DeclareTextCommand{\textAPLbox}{PU}{\9043\225}%\* U+2395  
 18349 % U+23ED BLACK RIGHT-POINTING DOUBLE TRIANGLE WITH VERTI-  
 CAL BAR;  
 18350 % \ForwardToIndex (marvosym)  
 18351 \DeclareTextCommand{\textForwardToIndex}{PU}{\9043\355}%\* U+23ED  
 18352 % U+23EE BLACK LEFT-POINTING DOUBLE TRIANGLE WITH VERTI-  
 CAL BAR;  
 18353 % \RewindToIndex (marvosym)  
 18354 \DeclareTextCommand{\textRewindToIndex}{PU}{\9043\356}%\* U+23EE

#### 47.2.24 Control Pictures: U+2400 to U+243F

18355 % U+2422 BLANK SYMBOL  
 18356 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422  
 18357 % U+2423 OPEN BOX; blank  
 18358 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

#### 47.2.25 Optical Character Recognition: U+2440 to U+245F

18359 % U+244A OCR DOUBLE BACKSLASH; \bbslash (stmaryrd)  
 18360 \DeclareTextCommand{\textbbslash}{PU}{\9044\112}%\* U+244A  
 18361 %\* \textbbslash -> \varparallelinv (txfonts/pxfonts)

#### 47.2.26 Enclosed Alphanumerics: U+2460 to U+24FF

18362 % U+2460 CIRCLED DIGIT ONE; onecircle  
 18363 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460  
 18364 % U+2461 CIRCLED DIGIT TWO; twocircle  
 18365 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461  
 18366 % U+2462 CIRCLED DIGIT THREE; threecircle  
 18367 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462  
 18368 % U+2463 CIRCLED DIGIT FOUR; fourcircle  
 18369 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463  
 18370 % U+2464 CIRCLED DIGIT FIVE; fivecircle  
 18371 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464  
 18372 % U+2465 CIRCLED DIGIT SIX; sixcircle  
 18373 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465  
 18374 % U+2466 CIRCLED DIGIT SEVEN; sevenscircle



18375 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466  
18376 % U+2467 CIRCLED DIGIT EIGHT; eightcircle  
18377 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467  
18378 % U+2468 CIRCLED DIGIT NINE; ninecircle  
18379 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468  
18380 % U+2469 CIRCLED NUMBER TEN; tencircle  
18381 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469  
18382 % U+246A CIRCLED NUMBER ELEVEN; elevencircle  
18383 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A  
18384 % U+246B CIRCLED NUMBER TWELVE; twelvecircle  
18385 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B  
18386 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle  
18387 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C  
18388 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle  
18389 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D  
18390 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle  
18391 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E  
18392 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle  
18393 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F  
18394 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle  
18395 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470  
18396 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle  
18397 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471  
18398 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle  
18399 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472  
18400 % U+2473 CIRCLED NUMBER TWENTY; twentycircle  
18401 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473  
18402 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle  
18403 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6  
18404 % \CircledA (marvosym)  
18405 \DeclareTextCommand{\textCircledA}{PU}{\9044\266}%\* U+24B6  
18406 %\* \textCircledA -> \CleaningA  
18407 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle  
18408 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7  
18409 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle  
18410 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8  
18411 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle  
18412 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9  
18413 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle  
18414 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA  
18415 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle  
18416 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB  
18417 % \CleaningF (marvosym)  
18418 \DeclareTextCommand{\textCleaningF}{PU}{\9044\273}%\* U+24BB  
18419 % \CleaningFF (marvosym)  
18420 \DeclareTextCommand{\textCleaningFF}{PU}{\9044\273\83\062}%\* U+24BB U+0332  
18421 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle  
18422 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC  
18423 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle  
18424 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD  
18425 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle  
18426 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE  
18427 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle  
18428 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF

18429 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle  
18430 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0  
18431 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle  
18432 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1  
18433 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle  
18434 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2  
18435 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle  
18436 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3  
18437 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle  
18438 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4  
18439 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle  
18440 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5  
18441 % \CleaningP (marvosym)  
18442 \DeclareTextCompositeCommand{\textCleaningP}{PU}{\9044\305}%\* U+24C5  
18443 % \CleaningPP (marvosym)  
18444 \DeclareTextCompositeCommand{\textCleaningPP}{PU}{\9044\305\83\062}%\* U+24C5 U+0332  
18445 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle  
18446 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6  
18447 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle  
18448 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7  
18449 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle  
18450 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8  
18451 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle  
18452 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9  
18453 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle  
18454 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA  
18455 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle  
18456 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB  
18457 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle  
18458 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC  
18459 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle  
18460 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD  
18461 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle  
18462 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE  
18463 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle  
18464 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF  
18465 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle  
18466 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0  
18467 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle  
18468 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1  
18469 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle  
18470 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2  
18471 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle  
18472 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3  
18473 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle  
18474 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4  
18475 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle  
18476 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5  
18477 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle  
18478 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6  
18479 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle  
18480 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7  
18481 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle  
18482 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8

18483 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcircle  
 18484 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9  
 18485 % U+24DA CIRCLED LATIN SMALL LETTER K; kcircle  
 18486 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA  
 18487 % U+24DB CIRCLED LATIN SMALL LETTER L; lcircle  
 18488 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB  
 18489 % U+24DC CIRCLED LATIN SMALL LETTER M; mcircle  
 18490 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC  
 18491 % U+24DD CIRCLED LATIN SMALL LETTER N; ncircle  
 18492 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD  
 18493 % U+24DE CIRCLED LATIN SMALL LETTER O; ocircle  
 18494 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE  
 18495 % U+24DF CIRCLED LATIN SMALL LETTER P; pcircle  
 18496 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF  
 18497 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcircle  
 18498 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0  
 18499 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcircle  
 18500 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1  
 18501 % U+24E2 CIRCLED LATIN SMALL LETTER S; scircle  
 18502 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2  
 18503 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcircle  
 18504 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3  
 18505 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucircle  
 18506 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4  
 18507 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcircle  
 18508 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5  
 18509 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcircle  
 18510 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6  
 18511 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcircle  
 18512 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7  
 18513 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycircle  
 18514 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8  
 18515 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcircle  
 18516 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9  
 18517 % U+24EA CIRCLED DIGIT ZERO  
 18518 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

#### 47.2.27 Box Drawing: U+2500 to 257F

18519 % U+2504 BOX DRAWINGS LIGHT TRIPLE DASH HORIZONTAL; \Cutting-  
 Line (marvosym)  
 18520 \DeclareTextCommand{\textCuttingLine}{PU}{\9045\004}%\* U+2504  
 18521 %\* \textCuttingLine -> \Kutline (marvosym)  
 18522 %\* \textCuttingLine -> \CutLine (marvosym)  
 18523 %\* \textCuttingLine -> \Cutline (marvosym)

#### 47.2.28 Geometric Shapes: U+25A0 to U+25FF

18524 % U+25B2 BLACK UP-POINTING TRIANGLE; \UParrow (wasysym)  
 18525 \DeclareTextCommand{\textUParrow}{PU}{\9045\262}%\* U+25B2  
 18526 %\* \textUParrow -> \MoveUp (marvosym)  
 18527 % U+25B3 WHITE UP-POINTING TRIANGLE; whiteuppointingtriangle;  
 18528 % \bigtriangleup (LaTeX)  
 18529 \DeclareTextCommand{\textbigtriangleup}{PU}{\9045\263}%\* U+25B3  
 18530 %\* \textbigtriangleup -> \APLup (wasysym)  
 18531 %\* \textbigtriangleup -> \Bleech (marvosym)

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18532 % U+25B6 BLACK RIGHT-POINTING TRIANGLE; \Forward (marvosym)
18533 \DeclareTextCommand{\textForward}{PU}{\9045\266}%* U+25B6
18534 % U+25B7 WHITE RIGHT-POINTING TRIANGLE (= z notation range restric-
tion);
18535 % whiterightpointingtriangle; \triangleright (LaTeX)
18536 \DeclareTextCommand{\texttriangleright}{PU}{\9045\267}%* U+25B7
18537 % U+25BA BLACK RIGHT-POINTING POINTER; \RHD (wasysym)
18538 \DeclareTextCommand{\textRHD}{PU}{\9045\272}%* U+25BA
18539 % U+25BC BLACK DOWN-POINTING TRIANGLE; \DOWNarrow (wasysym)
18540 \DeclareTextCommand{\textDOWNarrow}{PU}{\9045\274}%* U+25BC
18541 %* \textDOWNarrow -> \MoveDown (marvosym)
18542 % U+25BD WHITE DOWN-POINTING TRIANGLE; whitedownpointingtrian-
gle;
18543 % \bigtriangledown (LaTeX)
18544 \DeclareTextCommand{\textbigtriangledown}{PU}{\9045\275}%* U+25BD
18545 %* \textbigtriangledown -> \APLdown (wasysym)
18546 % U+25C0 BLACK LEFT-POINTING TRIANGLE; \Rewind (marvosym)
18547 \DeclareTextCommand{\textRewind}{PU}{\9045\300}%* U+25C0
18548 % U+25C1 WHITE RIGHT-POINTING TRIANGLE (= z notation domain re-
striction);
18549 % whiteleftpointingtriangle; \triangleleft (LaTeX)
18550 \DeclareTextCommand{\texttriangleleft}{PU}{\9045\301}%* U+25C1
18551 % U+25C4 BLACK LEFT-POINTING POINTER; \LHD (wasysym)
18552 \DeclareTextCommand{\textLHD}{PU}{\9045\304}%* U+25C4
18553 % U+25C7 WHITE DIAMOND; whitediamond; \diamond (LaTeX)
18554 \DeclareTextCommand{\textdiamond}{PU}{\9045\307}%* U+25C7
18555 %* \textdiamond -> \Diamond (wasysym)
18556 % U+25CA LOZENGE; lozenge; \lozenge (AmS)
18557 \DeclareTextCommand{\textlozenge}{PU}{\9045\312}%* U+25CA
18558 % U+25D6 LEFT HALF BLACK CIRCLE; \LEFTCIRCLE (wasysym)
18559 \DeclareTextCommand{\textLEFTCIRCLE}{PU}{\9045\326}%* U+25D6
18560 % U+25D7 RIGHT HALF BLACK CIRCLE; \RIGHTCIRCLE (wasysym)
18561 \DeclareTextCommand{\textRIGHTCIRCLE}{PU}{\9045\327}%* U+25D7
18562 % U+25E6 WHITE BULLET; *openbullet, whitebullet
18563 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}%* U+25E6
18564 % U+25EB WHITE SQUARE WITH VERTICAL BISECTING LINE;
18565 % \boxbar (stmaryrd)
18566 \DeclareTextCommand{\textboxbar}{PU}{\9045\353}%* U+25EB
18567 % U+25EF LARGE CIRCLE; largecircle
18568 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}%* U+25EF
18569 %* \textbigcircle -> \varbigcirc (stmaryrd)
18570 %

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#### 47.2.29 Miscellaneous Symbols: U+2600 to U+26FF

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18571 % U+2601 CLOUD; \Cloud (ifsym)
18572 \DeclareTextCommand{\textCloud}{PU}{\9046\001}%* U+2601
18573 % U+2605 BLACK STAR; \FiveStar (bbding)
18574 \DeclareTextCommand{\textFiveStar}{PU}{\9046\005}%* U+2605
18575 % U+2606 WHITE STAR; \FiveStarOpen (bbding)
18576 \DeclareTextCommand{\textFiveStarOpen}{PU}{\9046\006}%* U+2606
18577 % U+260E BLACK TELEPHONE; telephoneblack; \Phone (bbding)
18578 \DeclareTextCommand{\textPhone}{PU}{\9046\016}%* U+260E
18579 %* \textPhone -> \Telefon (marvosym)
18580 % U+2610 BALLOT BOX; \boxempty (stmaryrd)

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18581 \DeclareTextCommand{\textboxempty}{PU}{\9046\020}%\* U+2610  
18582 %\* \textboxempty -> \Box (wasysym)  
18583 % U+2611 BALLOT BOX WITH CHECK; \Checkedbox (marvosym)  
18584 \DeclareTextCommand{\textCheckedbox}{PU}{\9046\021}%\* U+2611  
18585 %\* \textCheckedbox -> \CheckedBox (marvosym)  
18586 % U+2612 BALLOT BOX WITH X; \Crossedbox (marvosym)  
18587 \DeclareTextCommand{\textCrossedbox}{PU}{\9046\022}%\* U+2612  
18588 %\* \textCrossedbox -> \XBox (wasysym)  
18589 %\* \textCrossedbox -> \CrossedBox (marvosym)  
18590 % U+2615 HOT BEVERAGE; \Coffeecup (marvosym)  
18591 \DeclareTextCommand{\textCoffeecup}{PU}{\9046\025}%\* U+2615  
18592 % U+261A BLACK LEFT POINTING INDEX; \HandCuffLeft (bding)  
18593 \DeclareTextCommand{\textHandCuffLeft}{PU}{\9046\032}%\* U+261A  
18594 % U+261B BLACK RIGHT POINTING INDEX; \HandCuffRight (bding)  
18595 \DeclareTextCommand{\textHandCuffRight}{PU}{\9046\033}%\* U+261B  
18596 % U+261C WHITE LEFT POINTING INDEX; \HandLeft (bding)  
18597 \DeclareTextCommand{\textHandLeft}{PU}{\9046\034}%\* U+261C  
18598 %\* \textHandLeft -> \rightpointleft (fourier)  
18599 % U+261E WHITE RIGHT POINTING INDEX; \HandRight (bding)  
18600 \DeclareTextCommand{\textHandRight}{PU}{\9046\036}%\* U+261E  
18601 %\* \textHandRight -> \leftpointright (fourier)  
18602 %\* \textHandRight -> \PointingHand (marvosym)  
18603 %\* \textHandRight -> \Pointinghand (marvosym)  
18604 % U+2622 RADIOACTIVE SIGN; \Radioactivity (marvosym)  
18605 \DeclareTextCommand{\textRadioactivity}{PU}{\9046\042}%\* U+2622  
18606 %\* \textRadioactivity -> \Radiation (ifsym)  
18607 % U+2623 BIOHAZARD SIGN; \Biohazard (marvosym)  
18608 \DeclareTextCommand{\textBiohazard}{PU}{\9046\043}%\* U+2623  
18609 % U+2625 ANKH; \Ankh (marvosym)  
18610 \DeclareTextCommand{\textAnkh}{PU}{\9046\045}%\* U+2625  
18611 % U+262F YIN YANG; \YinYang (marvosym)  
18612 \DeclareTextCommand{\textYinYang}{PU}{\9046\057}%\* U+262F  
18613 %\* \textYinYang -> \Yinyang (marvosym)  
18614 %\* \textYinYang -> \YingYang (marvosym)  
18615 %\* \textYinYang -> \Yingyang (marvosym)  
18616 % U+2639 WHITE FROWNING FACE; \frownie (wasysym)  
18617 \DeclareTextCommand{\textfrownie}{PU}{\9046\071}%\* U+2639  
18618 %\* \textfrownie -> \Frowny (marvosym)  
18619 % U+263A WHITE SMILING FACE; \smiley (wasysym)  
18620 \DeclareTextCommand{\textsmiley}{PU}{\9046\072}%\* U+263A  
18621 %\* \textsmiley -> \Smiley (marvosym)  
18622 % U+263B BLACK SMILING FACE; \blacksmiley (wasysym)  
18623 \DeclareTextCommand{\textblacksmiley}{PU}{\9046\073}%\* U+263B  
18624 % U+263C WHITE SUN WITH RAYS; \sun (wasysym)  
18625 \DeclareTextCommand{\textsun}{PU}{\9046\074}%\* U+263C  
18626 %\* \textsun -> \Sun (marvosym)  
18627 % U+263D FIRST QUARTER MOON; \leftmoon (wasysym, mathabx)  
18628 \DeclareTextCommand{\textleftmoon}{PU}{\9046\075}%\* U+263D  
18629 % U+263E LAST QUARTER MOON; \rightmoon (wasysym, mathabx)  
18630 \DeclareTextCommand{\textrightmoon}{PU}{\9046\076}%\* U+263E  
18631 % U+263F MERCURY; \mercury (wasysym)  
18632 \DeclareTextCommand{\textmercury}{PU}{\9046\077}%\* U+263F  
18633 %\* \textmercury -> \Mercury (marvosym)  
18634 % U+2640 FEMALE SIGN; female; \female (wasysym)

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18635 \DeclareTextCommand{\textPUfemale}{PU}{\9046\100}% U+2640
18636 %* \textPUfemale -> \textfemale (tipx)
18637 %* \textPUfemale -> \female (wasysym)
18638 %* \textPUfemale -> \venus (wasysym)
18639 %* \textPUfemale -> \Venus (marvosym)
18640 %* \textPUfemale -> \Female (marvosym)
18641 % U+2641 EARTH; \earth (wasysym)
18642 \DeclareTextCommand{\textearth}{PU}{\9046\101}%* U+2641
18643 %* \textearth -> \Earth (marvosym)
18644 % U+2642 MALE SIGN; male, mars; \male (wasysym)
18645 \DeclareTextCommand{\textmale}{PU}{\9046\102}%* U+2642
18646 %* \textmale -> \mars (wasysym)
18647 %* \textmale -> \Mars (marvosym)
18648 %* \textmale -> \Male (marvosym)
18649 % U+2643 JUPITER; \jupiter (wasysym)
18650 \DeclareTextCommand{\textjupiter}{PU}{\9046\103}%* U+2643
18651 %* \textjupiter -> \Jupiter (marvosym)
18652 % U+2644 SATURN; \saturn (wasysym)
18653 \DeclareTextCommand{\textsaturn}{PU}{\9046\104}%* U+2644
18654 %* \textsaturn -> \Saturn (marvosym)
18655 % U+2645 URANUS; \uranus (wasysym)
18656 \DeclareTextCommand{\texturanus}{PU}{\9046\105}%* U+2645
18657 %* \texturanus -> \Uranus (marvosym)
18658 % U+2646 NEPTUNE; \neptune (wasysym)
18659 \DeclareTextCommand{\textneptune}{PU}{\9046\106}%* U+2646
18660 %* \textneptune -> \Neptune (marvosym)
18661 % U+2647 PLUTO; \pluto (wasysym)
18662 \DeclareTextCommand{\textpluto}{PU}{\9046\107}%* U+2647
18663 %* \textpluto -> \Pluto (marvosym)
18664 % U+2648 ARIES; \aries (wasysym)
18665 \DeclareTextCommand{\textaries}{PU}{\9046\110}%* U+2648
18666 %* \textaries -> \Aries (marvosym)
18667 % U+2649 TAURUS; \taurus (wasysym)
18668 \DeclareTextCommand{\texttaurus}{PU}{\9046\111}%* U+2649
18669 %* \texttaurus -> \Taurus (marvosym)
18670 % U+264A GEMINI; \gemini (wasysym)
18671 \DeclareTextCommand{\textgemini}{PU}{\9046\112}%* U+264A
18672 %* \textgemini -> \Gemini (marvosym)
18673 % U+264B CANCER; \cancer (wasysym)
18674 \DeclareTextCommand{\textcancer}{PU}{\9046\113}%* U+264B
18675 %* \textcancer -> \Cancer (marvosym)
18676 % U+264C LEO; \leo (wasysym)
18677 \DeclareTextCommand{\textleo}{PU}{\9046\114}%* U+264C
18678 %* \textleo -> \Leo (marvosym)
18679 % U+264D VIRGO; \virgo (wasysym)
18680 \DeclareTextCommand{\textvirgo}{PU}{\9046\115}%* U+264D
18681 %* \textvirgo -> \Virgo (marvosym)
18682 % U+264E LIBRA; \libra (wasysym)
18683 \DeclareTextCommand{\textlibra}{PU}{\9046\116}%* U+264E
18684 %* \textlibra -> \Libra (marvosym)
18685 % U+264F SCORPIO; \scorpio (wasysym)
18686 \DeclareTextCommand{\textscorpio}{PU}{\9046\117}%* U+264F
18687 %* \textscorpio -> \Scorpio (marvosym)
18688 % U+2650 SAGITTARIUS; \sagittarius (wasysym)

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18689 \DeclareTextCommand{\textsagittarius}{PU}{\9046\120}%\* U+2650  
18690 %\* \textsagittarius -> \Sagittarius (marvosym)  
18691 % U+2651 CAPRICORN; \capricornus (wasysym)  
18692 \DeclareTextCommand{\textcapricornus}{PU}{\9046\121}%\* U+2651  
18693 %\* \textcapricornus -> \Capricorn (marvosym)  
18694 % U+2652 AQUARIUS; \aquarius (wasysym)  
18695 \DeclareTextCommand{\textaquarius}{PU}{\9046\122}%\* U+2652  
18696 %\* \textaquarius -> \Aquarius (marvosym)  
18697 % U+2653 PISCES; \pisces (wasysym)  
18698 \DeclareTextCommand{\textpisces}{PU}{\9046\123}%\* U+2653  
18699 %\* \textpisces -> \Pisces (marvosym)  
18700 % U+2660 BLACK SPADE SUIT; spade, spadesuitblack; \spadesuit (LaTeX)  
18701 \DeclareTextCommand{\textspadesuitblack}{PU}{\9046\140}% U+2660  
18702 %\* \textspadesuitblack -> \spadesuit (MnSymbol)  
18703 % U+2661 WHITE HEART SUIT; heartsuitwhite; \heartsuit (LaTeX)  
18704 \DeclareTextCommand{\textheartsuitwhite}{PU}{\9046\141}% U+2661  
18705 %\* \textheartsuitwhite -> \Heart (marvosym)  
18706 %\* \textheartsuitwhite -> \heartsuit (MnSymbol)  
18707 % U+2662 WHITE DIAMOND SUIT; diamondsuitwhite; \diamondsuit (LaTeX)  
18708 \DeclareTextCommand{\textdiamondsuitwhite}{PU}{\9046\142}% U+2662  
18709 %\* \textdiamondsuitwhite -> \diamondsuit (MnSymbol)  
18710 % U+2663 BLACK CLUB SUIT; club, clubsuitblack; \clubsuit (LaTeX)  
18711 \DeclareTextCommand{\textclubsuitblack}{PU}{\9046\143}% U+2663  
18712 %\* \textclubsuitblack -> \clubsuit (MnSymbol)  
18713 % U+2664 WHITE SPADE SUIT; spadesuitwhite  
18714 \DeclareTextCommand{\textspadesuitwhite}{PU}{\9046\144}% U+2664  
18715 % U+2665 BLACK HEART SUIT; heartsuitblack, heart  
18716 \DeclareTextCommand{\textheartsuitblack}{PU}{\9046\145}% U+2665  
18717 % U+2666 BLACK DIAMOND SUIT; diamond  
18718 \DeclareTextCommand{\textdiamondsuitblack}{PU}{\9046\146}% U+2666  
18719 % U+2667 WHITE CLUB SUIT; clubsuitwhite  
18720 \DeclareTextCommand{\textclubsuitwhite}{PU}{\9046\147}% U+2667  
18721 % U+2669 QUARTER NOTE; quarternote; \quarternote (wasysym, arev)  
18722 \DeclareTextCommand{\textquarternote}{PU}{\9046\151}%\* U+2669  
18723 % U+266A EIGHTH NOTE; musicalnote; \textmusicalnote (textcomp)  
18724 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}%\* U+266A  
18725 %\* \textmusicalnote -> \eighthnote (wasysym, arev)  
18726 % U+266B BEAMED EIGHTH NOTES; eighthnotebeamed; \twonotes (wasysym)  
18727 \DeclareTextCommand{\texttwonotes}{PU}{\9046\153}%\* U+266B  
18728 % U+266C BEAMED SIXTEENTH NOTES; beamedsixteenthnotes; \sixteenth-  
note (arev)  
18729 \DeclareTextCommand{\textsixteenthnote}{PU}{\9046\154}%\* U+266C  
18730 % U+266D MUSIC FLAT SIGN; musicflatsign; \flat (LaTeX)  
18731 \DeclareTextCommand{\textflat}{PU}{\9046\155}%\* U+266D  
18732 % U+266E MUSIC NATURAL SIGN; \natural (LaTeX)  
18733 \DeclareTextCommand{\textnatural}{PU}{\9046\156}%\* U+266E  
18734 % U+266F MUSIC SHARP SIGN; musicsharpsign; \sharp (LaTeX)  
18735 \DeclareTextCommand{\textsharp}{PU}{\9046\157}%\* U+266F  
18736 % U+2672 UNIVERSAL RECYCLING SYMBOL; \recycle (recycle)  
18737 \DeclareTextCommand{\textrecycle}{PU}{\9046\162}%\* U+2672  
18738 %\* \textrecycle -> \Recycling (marvosym)  
18739 % U+267F WHEELCHAIR SYMBOL; \Wheelchair (marvosym)  
18740 \DeclareTextCommand{\textWheelchair}{PU}{\9046\177}%\* U+267F  
18741 % U+2691 BLACK FLAG; \Flag (ifsym)

18742 \DeclareTextCommand{\textFlag}{PU}{\9046\221}%\* U+2691  
18743 %\* \textFlag -> \VarFlag (ifsym)  
18744 % U+2692 HAMMER AND PICK; \MineSign (marvosym)  
18745 \DeclareTextCommand{\textMineSign}{PU}{\9046\222}%\* U+2692  
18746 % U+2694 CROSSED SWORDS; \dsmilitary (dictsym)  
18747 \DeclareTextCommand{\textdsmilitary}{PU}{\9046\224}%\* U+2694  
18748 %\* \textdsmilitary -> \textxswup (fourier)  
18749 % U+2695 STAFF OF AESCULAPIUS; \dsmedical (dictsym)  
18750 \DeclareTextCommand{\textdsmedical}{PU}{\9046\225}%\* U+2695  
18751 % U+2696 SCALES; \dsjuridical (dictsym)  
18752 \DeclareTextCommand{\textdsjuridical}{PU}{\9046\226}%\* U+2696  
18753 % U+2697 ALEMBIC; \dschemical (dictsym)  
18754 \DeclareTextCommand{\textdschemical}{PU}{\9046\227}%\* U+2697  
18755 % U+2698 FLOWER; \dsbiological (dictsym)  
18756 \DeclareTextCommand{\textdsbiological}{PU}{\9046\230}%\* U+2698  
18757 % U+269A STAFF OF HERMES; \dscommercial (dictsym)  
18758 \DeclareTextCommand{\textdscommercial}{PU}{\9046\232}%\* U+269A  
18759 % U+269D OUTLINED WHITE STAR; \manstar (manfnt)  
18760 \DeclareTextCommand{\textmanstar}{PU}{\9046\235}%\* U+269D  
18761 % U+26A0 WARNING SIGN; \danger (fourier)  
18762 \DeclareTextCommand{\textdanger}{PU}{\9046\240}%\* U+26A0  
18763 % U+26A2 DOUBLED FEMALE SIGN; \FemaleFemale (marvosym)  
18764 \DeclareTextCommand{\textFemaleFemale}{PU}{\9046\242}%\* U+26A2  
18765 % U+26A3 DOUBLED MALE SIGN; \MaleMale (marvosym)  
18766 \DeclareTextCommand{\textMaleMale}{PU}{\9046\243}%\* U+26A3  
18767 % U+26A4 INTERLOCKED FEMALE AND MALE SIGN; \FemaleMale (marvosym)  
18768 \DeclareTextCommand{\textFemaleMale}{PU}{\9046\244}%\* U+26A4  
18769 % U+26A5 MALE AND FEMALE SIGN; \Hermaphrodite (marvosym)  
18770 \DeclareTextCommand{\textHermaphrodite}{PU}{\9046\245}%\* U+26A5  
18771 % U+26AA MEDIUM WHITE CIRCLE; \Neural (marvosym)  
18772 \DeclareTextCommand{\textNeutral}{PU}{\9046\252}%\* U+26AA  
18773 % U+26AD MARRIAGE SYMBOL  
18774 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD  
18775 % U+26AE DIVORCE SYMBOL  
18776 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE  
18777 % U+26B2 NEUTER; \textunconfemale (tipx)  
18778 \DeclareTextCommand{\textPUunconfemale}{PU}{\9046\262}% U+26B2  
18779 %\* \textPUunconfemale -> \textunconfemale (tipx)  
18780 % U+26B9 SEXTILE; \hexstar (wasysym)  
18781 \DeclareTextCommand{\texthexstar}{PU}{\9046\271}%\* U+26B9  
18782 % U+26BD SOCCER BALL; \Football (marvosym)  
18783 \DeclareTextCommand{\textSoccerBall}{PU}{\9046\275}% U+26BD  
18784 %\* \textSoccerBall -> \Football (marvosym)  
18785 % U+26C5 SUN BEHIND CLOUD; \SunCloud (ifsym)  
18786 \DeclareTextCommand{\textSunCloud}{PU}{\9046\305}%\* U+26C5  
18787 % U+26C6 RAIN; \Rain (ifsym)  
18788 \DeclareTextCommand{\textRain}{PU}{\9046\306}%\* U+26C6  
18789 % U+26D4 NO ENTRY; \noway (fourier)  
18790 \DeclareTextCommand{\textnoway}{PU}{\9046\324}%\* U+26D4  
18791 % U+26F0 MOUNTAIN; \Mountain (ifsym)  
18792 \DeclareTextCommand{\textMountain}{PU}{\9046\360}%\* U+26F0  
18793 % U+26FA TENT; \Tent (ifsym)  
18794 \DeclareTextCommand{\textTent}{PU}{\9046\372}%\* U+26FA



### 47.2.30 Dingbats: U+2700 to U+27BF

18795 % U+2701 UPPER BLADE SCISSORS; \ScissorRightBrokenBottom (bding)  
18796 \DeclareTextCommand{\textScissorRightBrokenBottom}{PU}{\9047\001}% U+2701  
18797 %\* \textScissorRightBrokenBottom -> \CutLeft (marvosym)  
18798 %\* \textScissorRightBrokenBottom -> \Cutright (marvosym)  
18799 % U+2702 BLACK SCISSORS; \ScissorRight (bding)  
18800 \DeclareTextCommand{\textScissorRight}{PU}{\9047\002}%\* U+2702  
18801 %\* \textScissorRight -> \RightScissors (marvosym)  
18802 %\* \textScissorRight -> \Leftscissors (marvosym)  
18803 % U+2703 LOWER BLADE SCISSORS; \ScissorRightBrokenTop (bding)  
18804 \DeclareTextCommand{\textScissorRightBrokenTop}{PU}{\9047\003}%\* U+2703  
18805 % U+2704 WHITE SCISSORS; \ScissorHollowRight (bding)  
18806 \DeclareTextCommand{\textScissorHollowRight}{PU}{\9047\004}%\* U+2704  
18807 % U+2706 TELEPHONE LOCATION SIGN; \PhoneHandset (bding)  
18808 \DeclareTextCommand{\textPhoneHandset}{PU}{\9047\006}%\* U+2706  
18809 % U+2707 TAPE DRIVE; \Tape (bding)  
18810 \DeclareTextCommand{\textTape}{PU}{\9047\007}%\* U+2707  
18811 % U+2708 AIRPLANE; \Plane (bding)  
18812 \DeclareTextCommand{\textPlane}{PU}{\9047\010}%\* U+2708  
18813 % U+2709 ENVELOPE; \Envelope (bding),  
18814 \DeclareTextCommand{\textEnvelope}{PU}{\9047\011}%\* U+2709  
18815 %\* \textEnvelope -> \Letter (marvosym)  
18816 % U+270C VICTORY HAND; \Peace (bding)  
18817 \DeclareTextCommand{\textPeace}{PU}{\9047\014}%\* U+270C  
18818 % U+270D WRITING HAND; \WritingHand (marvosym)  
18819 \DeclareTextCommand{\textWritingHand}{PU}{\9047\015}%\* U+270D  
18820 %\* \textWritingHand -> \Writinghand (marvosym)  
18821 % U+270E LOWER RIGHT PENCIL; \PencilRightDown (bding)  
18822 \DeclareTextCommand{\textPencilRightDown}{PU}{\9047\016}%\* U+270E  
18823 % U+270F PENCIL; \PencilRight (bding)  
18824 \DeclareTextCommand{\textPencilRight}{PU}{\9047\017}%\* U+270F  
18825 % U+2710 UPPER RIGHT PENCIL; \PencilRightUp (bding)  
18826 \DeclareTextCommand{\textPencilRightUp}{PU}{\9047\020}%\* U+2710  
18827 % U+2711 WHITE NIB; \NibRight (bding)  
18828 \DeclareTextCommand{\textNibRight}{PU}{\9047\021}%\* U+2711  
18829 % U+2712 BLACK NIB; \NibSolidRight (bding)  
18830 \DeclareTextCommand{\textNibSolidRight}{PU}{\9047\022}%\* U+2712  
18831 % U+2713 CHECK MARK; checkmark; \Checkmark (bding)  
18832 \DeclareTextCommand{\textCheckmark}{PU}{\9047\023}%\* U+2713  
18833 %\* \textCheckmark -> \checkmark (MnSymbol)  
18834 % U+2714 HEAVY CHECK MARK; \CheckmarkBold (bding)  
18835 \DeclareTextCommand{\textCheckmarkBold}{PU}{\9047\024}%\* U+2714  
18836 % U+2715 MULTIPLICATION X; \XSolid (bding)  
18837 \DeclareTextCommand{\textXSolid}{PU}{\9047\025}%\* U+2715  
18838 % U+2716 HEAVY MULTIPLICATION X; \XSolidBold (bding)  
18839 \DeclareTextCommand{\textXSolidBold}{PU}{\9047\026}%\* U+2716  
18840 % U+2717 BALLOT X; \XSolidBrush (bding)  
18841 \DeclareTextCommand{\textXSolidBrush}{PU}{\9047\027}%\* U+2717  
18842 % U+2719 OUTLINED GREEK CROSS; \PlusOutline (bding)  
18843 \DeclareTextCommand{\textPlusOutline}{PU}{\9047\031}%\* U+2719  
18844 % U+271A HEAVY GREEK CROSS; \Plus (bding)  
18845 \DeclareTextCommand{\textPlus}{PU}{\9047\032}%\* U+271A  
18846 % U+271B OPEN CENTRE CROSS; \PlusThinCenterOpen (bding)

18847 \DeclareTextCommand{\textPlusThinCenterOpen}{PU}{\9047\033}%\* U+271B  
18848 % U+271C HEAVY OPEN CENTRE CROSS; \PlusCenterOpen (bding)  
18849 \DeclareTextCommand{\textPlusCenterOpen}{PU}{\9047\034}%\* U+271C  
18850 % U+271D LATIN CROSS; \Cross (bding)  
18851 \DeclareTextCommand{\textCross}{PU}{\9047\035}%\* U+271D  
18852 % U+271E SHADOWED WHITE LATIN CROSS; \CrossOpenShadow (bding)  
18853 \DeclareTextCommand{\textCrossOpenShadow}{PU}{\9047\036}%\* U+271E  
18854 % U+271F OUTLINED LATIN CROSS; \CrossOutline (bding)  
18855 \DeclareTextCommand{\textCrossOutline}{PU}{\9047\037}%\* U+271F  
18856 % U+2720 MALTESE CROSS; \CrossMaltese (bding)  
18857 \DeclareTextCommand{\textCrossMaltese}{PU}{\9047\040}%\* U+2720  
18858 % U+2721 STAR OF DAVID; \DavidStar (bding)  
18859 \DeclareTextCommand{\textDavidStar}{PU}{\9047\041}%\* U+2721  
18860 %\* \textDavidStar -> \davidstar (wasysym)  
18861 % U+2722 FOUR TEARDROP-SPOKED ASTERISK; \FourAsterisk (bding)  
18862 \DeclareTextCommand{\textFourAsterisk}{PU}{\9047\042}%\* U+2722  
18863 % U+2723 FOUR BALLOON-SPOKED ASTERISK; \JackStar (bding)  
18864 \DeclareTextCommand{\textJackStar}{PU}{\9047\043}%\* U+2723  
18865 % U+2724 HEAVY FOUR BALLOON-SPOKED ASTERISK; \JackStarBold (bding)  
18866 \DeclareTextCommand{\textJackStarBold}{PU}{\9047\044}%\* U+2724  
18867 % U+2725 FOUR CLUB-SPOKED ASTERISK; \CrossClowerTips (bding)  
18868 \DeclareTextCommand{\textClowerTips}{PU}{\9047\045}%\* U+2725  
18869 % U+2726 BLACK FOUR POINTED STAR; \FourStar (bding)  
18870 \DeclareTextCommand{\textFourStar}{PU}{\9047\046}%\* U+2726  
18871 % U+2727 WHITE FOUR POINTED STAR; \FourStarOpen (bding)  
18872 \DeclareTextCommand{\textFourStarOpen}{PU}{\9047\047}%\* U+2727  
18873 % U+2728 CIRCLED WHITE STAR; \FiveStarOpenCircled (bding)  
18874 \DeclareTextCommand{\textFiveStarOpenCircled}{PU}{\9047\052}%\* U+2728  
18875 % U+2729 OPEN CENTRE BLACK STAR; \FiveStarCenterOpen (bding)  
18876 \DeclareTextCommand{\textFiveStarCenterOpen}{PU}{\9047\053}%\* U+2729  
18877 % U+272A BLACK CENTRE WHITE STAR; \FiveStarOpenDotted (bding)  
18878 \DeclareTextCommand{\textFiveStarOpenDotted}{PU}{\9047\054}%\* U+272A  
18879 % U+272B OUTLINED BLACK STAR; \FiveStarOutline (bding)  
18880 \DeclareTextCommand{\textFiveStarOutline}{PU}{\9047\055}%\* U+272B  
18881 % U+272C HEAVY OUTLINED BLACK STAR; \FiveStarOutlineHeavy (bding)  
18882 \DeclareTextCommand{\textFiveStarOutlineHeavy}{PU}{\9047\056}%\* U+272C  
18883 % U+272D PINWHEEL STAR; \FiveStarConvex (bding)  
18884 \DeclareTextCommand{\textFiveStarConvex}{PU}{\9047\057}%\* U+272D  
18885 % U+272E SHADOWED WHITE STAR; \FiveStarShadow (bding)  
18886 \DeclareTextCommand{\textFiveStarShadow}{PU}{\9047\060}%\* U+272E  
18887 % U+272F HEAVY ASTERISK; \AsteriskBold (bding)  
18888 \DeclareTextCommand{\textAsteriskBold}{PU}{\9047\061}%\* U+272F  
18889 % U+2730 OPEN CENTRE ASTERISK; \AsteriskCenterOpen (bding)  
18890 \DeclareTextCommand{\textAsteriskCenterOpen}{PU}{\9047\062}%\* U+2730  
18891 % U+2731 EIGHT POINTED BLACK STAR; \EightStarTaper (bding)  
18892 \DeclareTextCommand{\textEightStarTaper}{PU}{\9047\064}%\* U+2731  
18893 % U+2732 EIGHT POINTED PINWHEEL STAR; \EightStarConvex (bding)  
18894 \DeclareTextCommand{\textEightStarConvex}{PU}{\9047\065}%\* U+2732  
18895 % U+2733 SIX POINTED BLACK STAR; \SixStar (bding)  
18896 \DeclareTextCommand{\textSixStar}{PU}{\9047\066}%\* U+2733  
18897 % U+2734 EIGHT POINTED RECTILINEAR BLACK STAR; \EightStar (bding)  
18898 \DeclareTextCommand{\textEightStar}{PU}{\9047\067}%\* U+2734

18899 % U+2738 HEAVY EIGHT POINTED RECTILINEAR BLACK STAR; \EightStarBold (bding)

18900 \DeclareTextCommand{\textEightStarBold}{PU}{\9047\070}%\* U+2738

18901 % U+2739 TWELVE POINTED BLACK STAR; \TwelveStar (bding)

18902 \DeclareTextCommand{\textTwelveStar}{PU}{\9047\071}%\* U+2739

18903 % U+273A SIXTEEN POINTED ASTERISK; \SixteenStarLight (bding)

18904 \DeclareTextCommand{\textSixteenStarLight}{PU}{\9047\072}%\* U+273A

18905 % U+273B TEARDROP-SPOKED ASTERISK; \SixFlowerPetalRemoved (bding)

18906 \DeclareTextCommand{\textSixFlowerPetalRemoved}{PU}{\9047\073}%\* U+273B

18907 % U+273C OPEN CENTRE TEARDROP-SPOKED ASTERISK;

18908 % \SixFlowerOpenCenter (bding)

18909 \DeclareTextCommand{\textSixFlowerOpenCenter}{PU}{\9047\074}%\* U+273C

18910 % U+273D HEAVY TEARDROP-SPOKED ASTERISK; \Asterisk (bding)

18911 \DeclareTextCommand{\textAsterisk}{PU}{\9047\075}%\* U+273D

18912 % U+273E SIX PETALLED BLACK AND WHITE FLORETTE; \SixFlowerAlternate (bding)

18913 \DeclareTextCommand{\textSixFlowerAlternate}{PU}{\9047\076}%\* U+273E

18914 % U+273F BLACK FLORETTE; \FiveFlowerPetal (bding)

18915 \DeclareTextCommand{\textFiveFlowerPetal}{PU}{\9047\077}%\* U+273F

18916 % U+2740 WHITE FLORETTE; \FiveFlowerOpen (bding)

18917 \DeclareTextCommand{\textFiveFlowerOpen}{PU}{\9047\100}%\* U+2740

18918 % U+2741 EIGHT PETALLED OUTLINED BLACK FLORETTE; \EightFlowerPetal (bding)

18919 \DeclareTextCommand{\textEightFlowerPetal}{PU}{\9047\101}%\* U+2741

18920 % U+2742 CIRCLED OPEN CENTRE EIGHT POINTED STAR; \SunshineOpenCircled (bding)

18921 \DeclareTextCommand{\textSunshineOpenCircled}{PU}{\9047\102}%\* U+2742

18922 % U+2743 HEAVY TEARDROP-SPOKED PINWHEEL ASTERISK; \SixFlowerAltPetal (bding)

18923 \DeclareTextCommand{\textSixFlowerAltPetal}{PU}{\9047\103}%\* U+2743

18924 % U+2744 SNOWFLAKE; \SnowflakeChevron (bding)

18925 \DeclareTextCommand{\textSnowflakeChevron}{PU}{\9047\104}%\* U+2744

18926 % U+2745 TIGHT TRIFOLIATE SNOWFLAKE; \Snowflake (bding)

18927 \DeclareTextCommand{\textSnowflake}{PU}{\9047\105}%\* U+2745

18928 % U+2746 HEAVY CHEVRON SNOWFLAKE; \SnowflakeChevronBold (bding)

18929 \DeclareTextCommand{\textSnowflakeChevronBold}{PU}{\9047\106}%\* U+2746

18930 % U+2747 SPARKLE; \Sparkle (bding)

18931 \DeclareTextCommand{\textSparkle}{PU}{\9047\107}%\* U+2747

18932 % U+2748 HEAVY SPARKLE; \SparkleBold (bding)

18933 \DeclareTextCommand{\textSparkleBold}{PU}{\9047\110}%\* U+2748

18934 % U+2749 BALLOON-SPOKED ASTERISK; \AsteriskRoundedEnds (bding)

18935 \DeclareTextCommand{\textAsteriskRoundedEnds}{PU}{\9047\111}%\* U+2749

18936 % U+274A EIGHT TEARDROP-SPOKED PROPELLER ASTERISK;

18937 % \EightFlowerPetalRemoved (bding)

18938 \DeclareTextCommand{\textEightFlowerPetalRemoved}{PU}{\9047\112}%\* U+274A

18939 % U+274B HEAVY EIGHT TEARDROP-SPOKED PROPELLER ASTERISK;

18940 % \EightAsterisk (bding)

18941 \DeclareTextCommand{\textEightAsterisk}{PU}{\9047\113}%\* U+274B

18942 % U+274D SHADOWED WHITE CIRCLE; \CircleShadow (bding)

18943 \DeclareTextCommand{\textCircleShadow}{PU}{\9047\115}%\* U+274D

18944 % U+274F LOWER RIGHT DROP-SHADOWED WHITE SQUARE;

18945 % \SquareShadowBottomRight (bding)

18946 \DeclareTextCommand{\textSquareShadowBottomRight}{PU}{\9047\117}%\* U+274F

18947 % U+2750 UPPER RIGHT DROP-SHADOWED WHITE SQUARE;  
 18948 % \SquareShadowTopRight (bding)  
 18949 \DeclareTextCommand{\textSquareTopRight}{PU}{\9047\120}%\* U+2750  
 18950 % U+2751 LOWER RIGHT SHADOWED WHITE SQUARE;  
 18951 % \SquareCastShadowBottomRight (bding)  
 18952 \DeclareTextCommand{\textSquareCastShadowBottomRight}{PU}{\9047\121}%\* U+2751  
 18953 % U+2752 UPPER RIGHT SHADOWED WHITE SQUARE;  
 18954 % \SquareCastShadowTopRight (bding)  
 18955 \DeclareTextCommand{\textSquareCastShadowTopRight}{PU}{\9047\122}%\* U+2752  
 18956 % U+2756 BLACK DIAMOND MINUS WHITE X; \OrnamentDiamondSolid (bding)  
 18957 \DeclareTextCommand{\textDiamondSolid}{PU}{\9047\126}%\* U+2756  
 18958 % U+2758 LIGHT VERTICAL BAR; \RectangleThin (bding)  
 18959 \DeclareTextCommand{\textRectangleThin}{PU}{\9047\130}%\* U+2758  
 18960 % U+2759 MEDIUM VERTICAL BAR; \Rectangle (bding)  
 18961 \DeclareTextCommand{\textRectangle}{PU}{\9047\131}%\* U+2759  
 18962 % U+275A HEAVY VERTICAL BAR; \RectangleBold (bding)  
 18963 \DeclareTextCommand{\textRectangleBold}{PU}{\9047\132}%\* U+275A

#### 47.2.31 Miscellaneous Mathematical Symbols-A: U+27C0 to U+27EF

18964 % U+27C2 PERPENDICULAR; perpendicular; \perp (LaTeX)  
 18965 \DeclareTextCommand{\textperp}{PU}{\9047\302}%\* U+27C2  
 18966 % \notperp (mathabx)  
 18967 \DeclareTextCommand{\textnotperp}{PU}{\9047\302\83\070}%\* U+27C2 U+0338  
 18968 % U+27C7 OR WITH DOT INSIDE; \veedot (MnSymbol)  
 18969 \DeclareTextCommand{\textveedot}{PU}{\9047\307}%\* U+27C7  
 18970 % U+27D1 AND WITH DOT; \wedgedot (MnSymbol)  
 18971 \DeclareTextCommand{\textwedgedot}{PU}{\9047\321}%\* U+27D1  
 18972 % U+27DC LEFT MULTIMAP; \leftspoon (MnSymbol)  
 18973 \DeclareTextCommand{\textleftspoon}{PU}{\9047\334}%\* U+27DC  
 18974 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET  
 18975 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}%\* U+27E6  
 18976 %\* \textlbrackdbl -> \lbracket (stmaryrd)  
 18977 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET  
 18978 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}%\* U+27E7  
 18979 %\* \textrbrackdbl -> \rrbracket (stmaryrd)

#### 47.2.32 Supplemental Arrows-A: U+27F0 to U+27FF

18980 % U+27F2 ANTICLOCKWISE GAPPED CIRCLE ARROW;  
 18981 % \circlearrowleft (AmS)  
 18982 \DeclareTextCommand{\textcirclearrowleft}{PU}{\9047\362}%\* U+27F2  
 18983 % U+27F3 CLOCKWISE GAPPED CIRCLE ARROW; \circlearrowright (AmS)  
 18984 \DeclareTextCommand{\textcirclearrowright}{PU}{\9047\363}%\* U+27F3  
 18985 % U+27F5 LONG LEFTWARDS ARROW; \longleftarrow (AmS)  
 18986 \DeclareTextCommand{\textlongleftarrow}{PU}{\9047\365}%\* U+27F5  
 18987 % U+27F6 LONG RIGHTWARDS ARROW; \longrightarrow (AmS)  
 18988 \DeclareTextCommand{\textlongrightarrow}{PU}{\9047\366}%\* U+27F6  
 18989 % U+27F7 LONG LEFT RIGHT ARROW; \longlefttrightarrow (AmS)  
 18990 \DeclareTextCommand{\textlonglefttrightarrow}{PU}{\9047\367}%\* U+27F7  
 18991 % U+27F8 LONG LEFTWARDS DOUBLE ARROW; \Longleftarrow (AmS)  
 18992 \DeclareTextCommand{\textLongleftarrow}{PU}{\9047\370}%\* U+27F8  
 18993 % U+27F9 LONG RIGHTWARDS DOUBLE ARROW; \Longrightarrow (AmS)  
 18994 \DeclareTextCommand{\textLongrightarrow}{PU}{\9047\371}%\* U+27F9  
 18995 % U+27FA LONG LEFT RIGHT DOUBLE ARROW; \Longlefttrightarrow (AmS)

18996 \DeclareTextCommand{\textLongleftarrow}{PU}{\9047\372}%\* U+27FA  
18997 % U+27FC LONG RIGHTWARDS ARROW FROM BAR; \longmapsto (AmS)  
18998 \DeclareTextCommand{\textlongmapsto}{PU}{\9047\374}%\* U+27FC  
18999 % U+27FD LONG LEFTWARDS DOUBLE ARROW FROM BAR; \Longmaps-  
from (stmaryrd)  
19000 \DeclareTextCommand{\textLongmapsfrom}{PU}{\9047\375}%\* U+27FD  
19001 % U+27FE LONG RIGHTWARDS DOUBLE ARROW FROM BAR; \Longmap-  
sto (stmaryrd)  
19002 \DeclareTextCommand{\textLongmapsto}{PU}{\9047\376}%\* U+27FE

### 47.2.33 Supplemental Arrows-B: U+2900 to U+297F

19003 % U+2921 NORTH WEST AND SOUTH EAST ARROW; \nwsearrow (MnSym-  
bol)  
19004 \DeclareTextCommand{\textnwsearrow}{PU}{\9051\041}%\* U+2921  
19005 % U+2922 NORTH EAST AND SOUTH WEST ARROW; \neswarrow (MnSym-  
bol)  
19006 \DeclareTextCommand{\textneswarrow}{PU}{\9051\042}%\* U+2922  
19007 % U+2923 NORTH WEST ARROW WITH HOOK; \hooknwarrow (MnSymbol)  
19008 \DeclareTextCommand{\textlhooknwarrow}{PU}{\9051\043}%\* U+2923  
19009 % U+2924 NORTH EAST ARROW WITH HOOK; \rhooknearrow (MnSymbol)  
19010 \DeclareTextCommand{\textrhooknearrow}{PU}{\9051\044}%\* U+2924  
19011 % U+2925 SOUTH EAST ARROW WITH HOOK; \hooksearrow (MnSymbol)  
19012 \DeclareTextCommand{\textlhooksearrow}{PU}{\9051\045}%\* U+2925  
19013 % U+2926 SOUTH WEST ARROW WITH HOOK; \rhookswarrow (MnSymbol)  
19014 \DeclareTextCommand{\textrhookswarrow}{PU}{\9051\046}%\* U+2926  
19015 % U+2933 WAVE ARROW POINTING DIRECTLY RIGHT; \leadsto (wasysym)  
19016 \DeclareTextCommand{\textleadsto}{PU}{\9051\063}%\* U+2933  
19017 % U+2934 ARROW POINTING RIGHTWARDS THEN CURVING UPWARDS;  
19018 % \rcurvearrowne (MnSymbol)  
19019 \DeclareTextCommand{\textrcurvearrowne}{PU}{\9051\064}%\* U+2934  
19020 % U+2935 ARROW POINTING RIGHTWARDS THEN CURVING DOWN-  
WARDS;  
19021 % \lcurvearrowse (MnSymbol)  
19022 \DeclareTextCommand{\textlcurvearrowse}{PU}{\9051\065}%\* U+2935  
19023 % U+2936 ARROW POINTING DOWNWARDS THEN CURVING LEFT-  
WARDS;  
19024 % \lcurvearrowsw (MnSymbol)  
19025 \DeclareTextCommand{\textlcurvearrowsw}{PU}{\9051\066}%\* U+2936  
19026 % U+2937 ARROW POINTING DOWNWARDS THEN CURVING RIGHT-  
WARDS;  
19027 % \rcurvearrowse (MnSymbol)  
19028 \DeclareTextCommand{\textrcurvearrowse}{PU}{\9051\067}%\* U+2937  
19029 % U+2938 RIGHT-SIDE ARC CLOCKWISE ARROW; \lcurvearrowdown (Mn-  
Symbol)  
19030 \DeclareTextCommand{\textlcurvearrowdown}{PU}{\9051\070}%\* U+2938  
19031 %\* \textlcurvearrowdown -> \RightTorque (marvosym)  
19032 %\* \textlcurvearrowdown -> \Righttorque (marvosym)  
19033 % U+2939 LEFT-SIDE ARC ANTICLOCKWISE ARROW;  
19034 % \rcurvearrowdown (MnSymbol)  
19035 \DeclareTextCommand{\textrcurvearrowdown}{PU}{\9051\071}%\* U+2939  
19036 %\* \textrcurvearrowdown -> \LeftTorque (marvosym)  
19037 %\* \textrcurvearrowdown -> \Lefttorque (marvosym)  
19038 % U+293A TOP ARC ANTICLOCKWISE ARROW; \rcurvearrowleft (MnSym-  
bol)

19039 \DeclareTextCommand{\texttrcurvearrowleft}{PU}{\9051\072}%\* U+293A  
19040 % U+293B BOTTOM ARC ANTICLOCKWISE ARROW;  
19041 % \rcurvearrowright (MnSymbol)  
19042 \DeclareTextCommand{\texttrcurvearrowright}{PU}{\9051\073}%\* U+293B  
19043 % U+294A LEFT BARB UP RIGHT BARB DOWN HARPOON; \leftrightharpoon (mathabx)  
19044 \DeclareTextCommand{\textlefttrightharpoon}{PU}{\9051\112}%\* U+294A  
19045 % U+294B LEFT BARB DOWN RIGHT BARB UP HARPOON; \rightleftharpoon (mathabx)  
19046 \DeclareTextCommand{\textrightleftharpoon}{PU}{\9051\113}%\* U+294B  
19047 % U+294C UP BARB RIGHT DOWN BARB LEFT HARPOON;  
19048 % \updownharpoonrightleft (MnSymbol)  
19049 \DeclareTextCommand{\textupdownharpoonrightleft}{PU}{\9051\114}%\* U+294C  
19050 % U+294D UP BARB LEFT DOWN BARB RIGHT HARPOON;  
19051 % \updownharpoonleftright (MnSymbol)  
19052 \DeclareTextCommand{\textupdownharpoonleftright}{PU}{\9051\115}%\* U+294D  
19053 % U+2962 LEFTWARDS HARPOON WITH BARB UP ABOVE LEFTWARDS  
19054 % HARPOON WITH BARB DOWN; \leftleftharpoons (mathabx)  
19055 \DeclareTextCommand{\textleftleftharpoons}{PU}{\9051\142}%\* U+2962  
19056 % U+2963 UPWARDS HARPOON WITH BARB LEFT BESIDE UPWARDS  
19057 % HARPOON WITH BARB RIGHT; \upupharpoons (mathabx)  
19058 \DeclareTextCommand{\textupupharpoons}{PU}{\9051\143}%\* U+2963  
19059 % U+2964 RIGHTWARDS HARPOON WITH BARB UP ABOVE RIGHTWARDS HARPOON  
19060 % WITH BARB DOWN; \rightrightarpoons (mathabx)  
19061 \DeclareTextCommand{\textrightrightarpoons}{PU}{\9051\144}%\* U+2964  
19062 % U+2965 DOWNWARDS HARPOON WITH BARB LEFT BESIDE DOWNWARDS HARPOON  
19063 % WITH BARB RIGHT; \downdownharpoons (mathabx)  
19064 \DeclareTextCommand{\textdowndownharpoons}{PU}{\9051\145}%\* U+2965  
19065 % U+296A LEFTWARDS HARPOON WITH BARB UP ABOVE LONG DASH;  
19066 % \leftbarharpoon (mathabx)  
19067 \DeclareTextCommand{\textleftbarharpoon}{PU}{\9051\152}%\* U+296A  
19068 % U+296B LEFTWARDS HARPOON WITH BARB DOWN BELOW  
19069 % LONG DASH; \barleftharpoon (mathabx)  
19070 \DeclareTextCommand{\textbarleftharpoon}{PU}{\9051\153}%\* U+296B  
19071 % U+296C RIGHTWARDS HARPOON WITH BARB UP ABOVE  
19072 % LONG DASH; \rightbarharpoon (mathabx)  
19073 \DeclareTextCommand{\textrightbarharpoon}{PU}{\9051\154}%\* U+296C  
19074 % U+296D RIGHTWARDS HARPOON WITH BARB DOWN BELOW  
19075 % LONG DASH; \barrightharpoon (mathabx)  
19076 \DeclareTextCommand{\textbarrightharpoon}{PU}{\9051\155}%\* U+296D  
19077 % U+296E UPWARDS HARPOON WITH BARB LEFT BESIDE DOWNWARDS HARPOON  
19078 % WITH BARB RIGHT; \updownharpoons (mathabx)  
19079 \DeclareTextCommand{\textupdownharpoons}{PU}{\9051\156}%\* U+296E  
19080 % U+296F DOWNWARDS HARPOON WITH BARB LEFT BESIDE UPWARDS HARPOON  
19081 % WITH BARB RIGHT; \downupharpoons (mathabx)  
19082 \DeclareTextCommand{\textdownupharpoons}{PU}{\9051\157}%\* U+296F  
19083 % U+297F DOWN FISH TAIL  
19084 \DeclareTextCommand{\textmoo}{PU}{\9051\177\83\066}%\* U+297F U+0336

#### 47.2.34 Miscellaneous Mathematical Symbols-B: U+2980 to U+29FF

19085 % U+2987 Z NOTATION LEFT IMAGE BRACKET; \lparentesis (stmaryrd)  
19086 \DeclareTextCommand{\textlparentesis}{PU}{\9051\207}%\* U+2987  
19087 % U+2988 Z NOTATION RIGHT IMAGE BRACKET; \rparentesis (stmaryrd)  
19088 \DeclareTextCommand{\textrparentesis}{PU}{\9051\210}%\* U+2988  
19089 % U+29B0 REVERSED EMPTY SET; \invdiameter (wasysym)  
19090 \DeclareTextCommand{\textinvdiameter}{PU}{\9051\260}%\* U+29B0  
19091 % U+29B6 CIRCLED VERTICAL BAR; \obar (stmaryrd)  
19092 \DeclareTextCommand{\textobar}{PU}{\9051\266}%\* U+29B6  
19093 %\* \textobar -> \textvarobar (stmaryrd)  
19094 % U+29B8 CIRCLED REVERSE SOLIDUS; \obslash (stmaryrd)  
19095 \DeclareTextCommand{\textobslash}{PU}{\9051\270}%\* U+29B8  
19096 %\* \textobslash -> \circledbslash (txfonts/pxfonts)  
19097 %\* \textobslash -> \obackslash (mathabx)  
19098 %\* \textobslash -> \varobslash (stmaryrd)  
19099 % U+29BA CIRCLE DIVIDED BY HORIZONTAL BAR AND TOP HALF  
19100 % DIVIDED BY VERTICAL BAR; \obot (mathabx)  
19101 \DeclareTextCommand{\textobot}{PU}{\9051\272}%\* U+29BA  
19102 %\* \textobot -> \odplus (ulsy)  
19103 % U+29BB CIRCLE WITH SUPERIMPOSED X; \NoChemicalCleaning (marvosym)  
19104 \DeclareTextCommand{\textNoChemicalCleaning}{PU}{\9051\273}%\* U+29BB  
19105 % U+29C0 CIRCLED LESS-THAN; \olessthan (stmaryrd)  
19106 \DeclareTextCommand{\textolessthan}{PU}{\9051\300}%\* U+29C0  
19107 %\* \textolessthan -> \varolessthan (stmaryrd)  
19108 % U+29C1 CIRCLED GREATER-THAN; \ogreaterthan (stmaryrd)  
19109 \DeclareTextCommand{\textogreaterthan}{PU}{\9051\301}%\* U+29C1  
19110 %\* \textogreaterthan -> \varogreaterthan (stmaryrd)  
19111 % U+29C4 SQUARED RISING DIAGONAL SLASH; \boxslash (mathabx, stmaryrd)  
19112 \DeclareTextCommand{\textboxslash}{PU}{\9051\304}%\* U+29C4  
19113 % U+29C5 SQUARED FALLING DIAGONAL SLASH; \boxbslash (stmaryrd)  
19114 \DeclareTextCommand{\textboxbslash}{PU}{\9051\305}%\* U+29C5  
19115 % U+29C6 SQUARED ASTERISK; \boxast (stmaryrd)  
19116 \DeclareTextCommand{\textboxast}{PU}{\9051\306}%\* U+29C6  
19117 % U+29C7 SQUARED SMALL CIRCLE; \boxcircle (stmaryrd)  
19118 \DeclareTextCommand{\textboxcircle}{PU}{\9051\307}%\* U+29C7  
19119 % U+29C8 SQUARED SQUARE; \boxbox (stmaryrd)  
19120 \DeclareTextCommand{\textboxbox}{PU}{\9051\310}%\* U+29C8  
19121 % U+29D3 BLACK BOWTIE; \Valve (marvosym)  
19122 \DeclareTextCommand{\textValve}{PU}{\9051\323}%\* U+29D3  
19123 % U+29DF DOUBLE-ENDED MULTIMAP; \multimapboth (txfonts/pxfonts)  
19124 \DeclareTextCommand{\textmultimapboth}{PU}{\9051\337}%\* U+29DF  
19125 % U+29E2 SHUFFLE PRODUCT; \shuffle (shuffle)  
19126 \DeclareTextCommand{\textshuffle}{PU}{\9051\342}%\* U+29E2

#### 47.2.35 Supplemental Mathematical Operators: U+2A00 to U+2AFF

19127 % U+2A04 N-ARY UNION OPERATOR WITH PLUS; \uplus (LaTeX)  
19128 \DeclareTextCommand{\textuplus}{PU}{\9052\004}%\* U+2A04  
19129 % U+2A07 TWO LOGICAL AND OPERATOR; \bigdoublewedge (MnSymbol)  
19130 \DeclareTextCommand{\textbigdoublewedge}{PU}{\9052\007}%\* U+2A07  
19131 % U+2A08 TWO LOGICAL OR OPERATOR; \bigdoublevee (MnSymbol)  
19132 \DeclareTextCommand{\textbigdoublevee}{PU}{\9052\010}%\* U+2A08  
19133 % U+2A1D JOIN; \Join (latexsym, amsfonts, amssymb, mathabx, txfonts,  
19134 % pxfonts, wasysym)  
19135 \DeclareTextCommand{\textJoin}{PU}{\9052\035}%\* U+2A1D

19136 % U+2A1F Z NOTATION SCHEMA COMPOSITION; \fatsemi (stmaryrd)  
19137 \DeclareTextCommand{\textfatsemi}{PU}{\9052\037}%\* U+2A1F  
19138 % U+2A22 PLUS SIGN WITH SMALL CIRCLE ABOVE; \circplus (mathabx)  
19139 \DeclareTextCommand{\textcircplus}{PU}{\9052\042}%\* U+2A22  
19140 % U+2A2A MINUS SIGN WITH DOT BELOW; \minusdot (MnSymbol)  
19141 \DeclareTextCommand{\textminusdot}{PU}{\9052\052}%\* U+2A2A  
19142 %\* \textminusdot -> \divdot (mathabx)  
19143 % U+2A30 MULTIPLICATION SIGN WITH DOT ABOVE; \dottimes (mathabx)  
19144 \DeclareTextCommand{\textdottimes}{PU}{\9052\060}%\* U+2A30  
19145 % U+2A32 SEMIDIRECT PRODUCT WITH BOTTOM CLOSED;  
19146 % \dtimes (mathdesign)  
19147 \DeclareTextCommand{\textdtimes}{PU}{\9052\062}%\* U+2A32  
19148 % U+2A38 CIRCLED DIVISION SIGN; \odiv (mathabx)  
19149 \DeclareTextCommand{\textodiv}{PU}{\9052\070}%\* U+2A38  
19150 % U+2A3C INTERIOR PRODUCT; \invneg (MnSymbol)  
19151 \DeclareTextCommand{\textinvneg}{PU}{\9052\074}%\* U+2A3C  
19152 % U+2A4E DOUBLE SQUARE INTERSECTION; \sqdoublecap (mathabx)  
19153 \DeclareTextCommand{\textsqdoublecap}{PU}{\9052\116}%\* U+2A4E  
19154 %\* \textsqdoublecap -> \doublesqcap (MnSymbol)  
19155 % U+2A40 INTERSECTION WITH DOT; \capdot (MnSymbol)  
19156 \DeclareTextCommand{\textcapdot}{PU}{\9052\100}%\* U+2A40  
19157 % U+2A4F DOUBLE SQUARE UNION; \sqdoublecup (mathabx)  
19158 \DeclareTextCommand{\textsqdoublecup}{PU}{\9052\117}%\* U+2A4F  
19159 %\* \textsqdoublecup -> \doublesqcup (MnSymbol)  
19160 % U+2A55 TWO INTERSECTING LOGICAL AND; \doublewedge (MnSymbol)  
19161 \DeclareTextCommand{\textdoublewedge}{PU}{\9052\125}%\* U+2A55  
19162 % U+2A56 TWO INTERSECTING LOGICAL OR; \doublevee (MnSymbol)  
19163 \DeclareTextCommand{\textdoublevee}{PU}{\9052\126}%\* U+2A56  
19164 %\* \textdoublevee -> \merge (stmaryrd)  
19165 % U+2A5E LOGICAL AND WITH DOUBLE OVERBAR;  
19166 % \doublebarwedge (AmS)  
19167 \DeclareTextCommand{\textdoublebarwedge}{PU}{\9052\136}%\* U+2A5E  
19168 % U+2A63 LOGICAL OR WITH DOUBLE UNDERBAR;  
19169 % \veedoublebar (mahtabx)  
19170 \DeclareTextCommand{\textveedoublebar}{PU}{\9052\143}%\* U+2A63  
19171 % U+2A66 EQUALS SIGN WITH DOT BELOW; \eqdot (MnSymbol)  
19172 \DeclareTextCommand{\texteqdot}{PU}{\9052\146}%\* U+2A66  
19173 % \neqdot (MnSymbol)  
19174 \DeclareTextCommand{\textneqdot}{PU}{\9052\146\83\070}%\* U+2A66 U+0338  
19175 % U+2A74 DOUBLE COLON EQUAL; \coloncolonequals (colonequals)  
19176 \DeclareTextCommand{\textcoloncolonequals}{PU}{\9052\164}%\* U+2A74  
19177 % U+2A7D LESS-THAN OR SLANTED EQUAL TO; \leqslant (AmS)  
19178 \DeclareTextCommand{\textleqslant}{PU}{\9052\175}%\* U+2A7D  
19179 % \nleqslant (txfonts/pxfonts)  
19180 \DeclareTextCommand{\textnleqslant}{PU}{\9052\175\83\070}%\* U+2A7D U+0338  
19181 % U+2A7E GREATER-THAN OR SLANTED EQUAL TO; \geqslant (AmS)  
19182 \DeclareTextCommand{\textgeqslant}{PU}{\9052\176}%\* U+2A7E  
19183 % \ngeqslant (txfonts/pxfonts)  
19184 \DeclareTextCommand{\textngeqslant}{PU}{\9052\176\83\070}%\* U+2A7E U+0338  
19185 % U+2A85 LESS-THAN OR APPROXIMATE; \lessapprox (AmS)  
19186 \DeclareTextCommand{\textlessapprox}{PU}{\9052\205}%\* U+2A85  
19187 % \nlessapprox (txfonts/pxfonts)  
19188 \DeclareTextCommand{\textnlessapprox}{PU}{\9052\205\83\070}%\* U+2A85 U+0338  
19189 % U+2A86 GREATER-THAN OR APPROXIMATE; \gtrapprox (AmS)



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19190 \DeclareTextCommand{\textgtrapprox}{PU}{\9052\206}%* U+2A86
19191 % \ngtrapprox (txfonts/pxfonts)
19192 \DeclareTextCommand{\textngtrapprox}{PU}{\9052\206\83\070}%* U+2A86 U+0338
19193 % U+2A87 LESS-THAN AND SINGLE-LINE NOT EQUAL TO; \lneq (AmS)
19194 \DeclareTextCommand{\textlneq}{PU}{\9052\207}%* U+2A87
19195 % U+2A88 GREATER-THAN AND SINGLE-LINE NOT EQUAL TO;
19196 % \gneq (AmS)
19197 \DeclareTextCommand{\textgneq}{PU}{\9052\210}%* U+2A88
19198 % U+2A89 LESS-THAN AND NOT APPROXIMATE; \lnapprox (AmS)
19199 \DeclareTextCommand{\textlnapprox}{PU}{\9052\211}%* U+2A89
19200 % U+2A8A GREATER-THAN AND NOT APPROXIMATE; \gnapprox (AmS)
19201 \DeclareTextCommand{\textgnapprox}{PU}{\9052\212}%* U+2A8A
19202 % U+2A8B LESS-THAN ABOVE DOUBLE-LINE EQUAL ABOVE GREATER-
    THAN;
19203 % \lesseqgtr (AmS)
19204 \DeclareTextCommand{\textlesseqgtr}{PU}{\9052\213}%* U+2A8B
19205 % U+2A8C GREATER-THAN ABOVE DOUBLE-LINE EQUAL ABOVE LESS-
    THAN;
19206 % \gtreqless (AmS)
19207 \DeclareTextCommand{\textgtreqless}{PU}{\9052\214}%* U+2A8C
19208 % U+2A95 SLANTED EQUAL TO OR LESS-THAN; \eqslantless (AmS)
19209 \DeclareTextCommand{\texteqslantless}{PU}{\9052\225}%* U+2A95
19210 % U+2A96 SLANTED EQUAL TO OR GREATER-THAN; \eqslantgtr (AmS)
19211 \DeclareTextCommand{\texteqslantgtr}{PU}{\9052\226}%* U+2A96
19212 % U+2AA6 LESS-THAN CLOSED BY CURVE; \leftslice (stmaryrd)
19213 \DeclareTextCommand{\textleftslice}{PU}{\9052\246}%* U+2AA6
19214 % U+2AA7 GREATER-THAN CLOSED BY CURVE; \rightslice (stmaryrd)
19215 \DeclareTextCommand{\textright slice}{PU}{\9052\247}%* U+2AA7
19216 % U+2AAF PRECEDES ABOVE SINGLE-LINE EQUALS SIGN; \preceq (Mn-
    Symbol)
19217 \DeclareTextCommand{\textpreceq}{PU}{\9052\257}%* U+2AAF
19218 % \npreceq (txfonts/pxfonts)
19219 \DeclareTextCommand{\textnpreceq}{PU}{\9052\257\83\070}%* U+2AAF U+0338
19220 % U+2AB0 SUCCEEDS ABOVE SINGLE-LINE EQUALS SIGN; \succeq (Mn-
    Symbol)
19221 \DeclareTextCommand{\textsucceq}{PU}{\9052\260}%* U+2AB0
19222 % \nsucceq (txfonts/pxfonts)
19223 \DeclareTextCommand{\textnsucceq}{PU}{\9052\260\83\070}%* U+2AB0 U+0338
19224 % U+2AB1 PRECEDES ABOVE SINGLE-LINE NOT EQUAL TO; \prec-
    neq (mathabx)
19225 \DeclareTextCommand{\textprecneq}{PU}{\9052\261}%* U+2AB1
19226 % U+2AB2 SUCCEEDS ABOVE SINGLE-LINE NOT EQUAL TO; \succ-
    neq (mathabx)
19227 \DeclareTextCommand{\textsuccneq}{PU}{\9052\262}%* U+2AB2
19228 % U+2AB3 PRECEDES ABOVE EQUALS SIGN; \preceqq (txfonts/pxfonts)
19229 \DeclareTextCommand{\textpreceqq}{PU}{\9052\263}%* U+2AB3
19230 % \npreceqq (txfonts/pxfonts)
19231 \DeclareTextCommand{\textnpreceqq}{PU}{\9052\263\83\070}%* U+2AB3 U+0338
19232 % U+2AB4 SUCCEEDS ABOVE EQUALS SIGN; \succeqq (txfonts/pxfonts)
19233 \DeclareTextCommand{\textsucceqq}{PU}{\9052\264}%* U+2AB4
19234 % \nsucceqq (txfonts/pxfonts)
19235 \DeclareTextCommand{\textnsucceqq}{PU}{\9052\264\83\070}%* U+2AB4 U+0338
19236 % U+2AB5 PRECEDES ABOVE NOT EQUAL TO; \precneqq (txfonts/pxfonts)
19237 \DeclareTextCommand{\textprecneqq}{PU}{\9052\265}%* U+2AB5

```

19238 % U+2AB6 SUCCEEDS ABOVE NOT EQUAL TO; \succneqq (txfonts/pxfonts)  
19239 \DeclareTextCommand{\textsuccneqq}{PU}{\9052\266}%\* U+2AB6  
19240 % U+2AB7 PRECEDES ABOVE ALMOST EQUAL TO; \preccapprox (AmS)  
19241 \DeclareTextCommand{\textpreccapprox}{PU}{\9052\267}%\* U+2AB7  
19242 % \npreccapprox (txfonts/pxfonts)  
19243 \DeclareTextCommand{\textnpreccapprox}{PU}{\9052\267\83\070}%\* U+2AB7 U+0338  
19244 % U+2AB8 SUCCEEDS ABOVE ALMOST EQUAL TO; \succapprox (AmS)  
19245 \DeclareTextCommand{\textsuccapprox}{PU}{\9052\270}%\* U+2AB8  
19246 % \nsuccapprox (txfonts/pxfonts)  
19247 \DeclareTextCommand{\textnsuccapprox}{PU}{\9052\270\83\070}%\* U+2AB8 U+0338  
19248 % U+2AB9 PRECEDES ABOVE NOT ALMOST EQUAL TO; \precnapprox (AmS)  
19249 \DeclareTextCommand{\textprecnapprox}{PU}{\9052\271}%\* U+2AB9  
19250 % U+2ABA SUCCEEDS ABOVE NOT ALMOST EQUAL TO; \succnapprox (AmS)  
19251 \DeclareTextCommand{\textsuccnapprox}{PU}{\9052\272}%\* U+2ABA  
19252 % U+2AC5 SUBSET OF ABOVE EQUALS SIGN; \subseteqq (AmS)  
19253 \DeclareTextCommand{\textsubseteqq}{PU}{\9052\305}%\* U+2AC5  
19254 % \nsubseteqq (txfonts/pxfonts, mathabx)  
19255 \DeclareTextCommand{\textnsubseteqq}{PU}{\9052\305\83\070}%\* U+2AC5 U+0338  
19256 % U+2AC6 SUPERSET OF ABOVE EQUALS SIGN; \supseteqq (AmS)  
19257 \DeclareTextCommand{\textsupseteqq}{PU}{\9052\306}%\* U+2AC6  
19258 % \nsupseteqq (mathabx)  
19259 \DeclareTextCommand{\textnsupseteqq}{PU}{\9052\306\83\070}%\* U+2AC6 U+0338  
19260 % U+2AE3 DOUBLE VERTICAL BAR LEFT TURNSTILE  
19261 \DeclareTextCommand{\textdashV}{PU}{\9052\343}%\* U+2AE3  
19262 %\* \textdashV -> \leftVdash (MnSymbol)  
19263 % \ndashV (mathabx)  
19264 \DeclareTextCommand{\textndashV}{PU}{\9052\343\83\070}%\* U+2AE3 U+0338  
19265 %\* \textndashV -> \nleftVdash (MnSymbol)  
19266 % U+2AE4 VERTICAL BAR DOUBLE LEFT TURNSTILE; \Dashv (mathabx)  
19267 \DeclareTextCommand{\textDashv}{PU}{\9052\344}%\* U+2AE4  
19268 %\* \textDashv -> \leftmodels (MnSymbol)  
19269 % \nDashv (mathabx)  
19270 \DeclareTextCommand{\textnDashv}{PU}{\9052\344\83\070}%\* U+2AE4 U+0338  
19271 %\* \textnDashv -> \nleftmodels (MnSymbol)  
19272 % U+2AE5 DOUBLE VERTICAL BAR DOUBLE LEFT TURNSTILE;  
19273 % \DashV (mathabx)  
19274 \DeclareTextCommand{\textDashV}{PU}{\9052\345}%\* U+2AE5  
19275 %\* \textDashV -> \leftModels (MnSymbol)  
19276 % \nDashV (mathabx)  
19277 \DeclareTextCommand{\textnDashV}{PU}{\9052\345\83\070}%\* U+2AE5 U+0338  
19278 %\* \textnDashV -> \nleftModels (MnSymbol)  
19279 % U+2AEA DOUBLE DOWN TACK; \downmodels (MnSymbol)  
19280 \DeclareTextCommand{\textdownmodels}{PU}{\9052\352}%\* U+2AEA  
19281 % \ndownmodels (MnSymbol)  
19282 \DeclareTextCommand{\textndownmodels}{PU}{\9052\352\83\070}%\* U+2AEA U+0338  
19283 % U+2AEB DOUBLE UP TACK; \upmodels (MnSymbol)  
19284 \DeclareTextCommand{\textupmodels}{PU}{\9052\353}%\* U+2AEB  
19285 % \nupmodels (MnSymbol)  
19286 \DeclareTextCommand{\textnupmodels}{PU}{\9052\353\83\070}%\* U+2AEB U+0338  
19287 % U+2AEF VERTICAL LINE WITH CIRCLE ABOVE; \upspoon (MnSymbol)  
19288 \DeclareTextCommand{\textupspoon}{PU}{\9052\357}%\* U+2AEF  
19289 % U+2AF4 TRIPLE VERTICAL BAR BINARY RELATION;

19290 % \interleave (stmaryrd)  
 19291 \DeclareTextCommand{\textinterleave}{PU}{\9052\364}%\* U+2AF4  
 19292 % U+2AFD DOUBLE SOLIDUS OPERATOR; \sslash (stmaryrd)  
 19293 \DeclareTextCommand{\textsslash}{PU}{\9052\375}%\* U+2AFD  
 19294 %\* \textsslash -> \varparallel (txfonts\pxfonts)

#### 47.2.36 Miscellaneous Symbols and Arrows: U+2B00 to U+2BFF

19295 % U+2B20 WHITE PENTAGON; \pentagon (wasysym)  
 19296 \DeclareTextCommand{\textpentagon}{PU}{\9053\040}%\* U+2B20  
 19297 % U+2B21 WHITE HEXAGON; \varhexagon (wasysym)  
 19298 \DeclareTextCommand{\textvarhexagon}{PU}{\9053\041}%\* U+2B21

#### 47.2.37 Latin Extended-C: U+2C60 to U+2C7F

19299 % U+2C7C LATIN SUBSCRIPT SMALL LETTER J  
 19300 \DeclareTextCommand{\textjinferior}{PU}{\9054\174}%\* U+2C7C

#### 47.2.38 Supplemental Punctuation: U+2E00 to U+2E7F

19301 % U+2E13 DOTTED OBELOS; \slashdiv (MnSymbol)  
 19302 \DeclareTextCommand{\textslashdiv}{PU}{\9056\023}%\* U+2E13  
 19303 % U+2E18 INVERTED INTERROBANG; \textinterrobangdown (textcomp)  
 19304 \DeclareTextCommand{\textinterrobangdown}{PU}{\9056\030}% U+2E18  
 19305 % U+2E2D FIVE DOT MARK; \fivedots (MnSymbol)  
 19306 \DeclareTextCommand{\textfivedots}{PU}{\9056\055}%\* U+2E2D

#### 47.2.39 Modifier Tone Letters: U+A700 to U+A71F

19307 % U+A71B MODIFIER LETTER RAISED UP ARROW; \textupstep (tipa)  
 19308 \DeclareTextCommand{\textupstep}{PU}{\9247\033}% U+A71B  
 19309 % U+A71C MODIFIER LETTER RAISED DOWN ARROW;  
 19310 % \textdownstep (tipa)  
 19311 \DeclareTextCommand{\textdownstep}{PU}{\9247\034}% U+A71C

#### 47.2.40 Latin Extended-D: U+A720 to U+A7FF

19312 % U+A727 LATIN SMALL LETTER HENG; \textheng (tipx)  
 19313 \DeclareTextCommand{\textPUheng}{PU}{\9247\047}% U+A727  
 19314 %\* \textPUheng -> \textheng (tipx)  
 19315 % U+A72C LATIN CAPITAL LETTER CUATRILLO; \textlhookfour (tipx)  
 19316 \DeclareTextCommand{\textPULhookfour}{PU}{\9247\054}% U+A72C  
 19317 %\* \textPULhookfour -> \textlhookfour (tipx)  
 19318 % U+A730 LATIN LETTER SMALL CAPITAL F; \textscf (tipx)  
 19319 \DeclareTextCommand{\textPUScf}{PU}{\9247\060}% U+A730  
 19320 %\* \textPUScf -> \textscf (tipx)  
 19321 % U+A735 LATIN SMALL LETTER AO; \textaoilig (tipx)  
 19322 \DeclareTextCommand{\textPUaolig}{PU}{\9247\065}% U+A735  
 19323 %\* \textPUaolig -> \textaoilig (tipx)  
 19324 % U+A74F LATIN SMALL LETTER OO; \oo (wsuipa)  
 19325 \DeclareTextCommand{\textoo}{PU}{\9247\117}%\* U+A74F  
 19326 % U+A788 MODIFIER LETTER LOW CIRCUMFLEX ACCENT  
 19327 \DeclareTextCommand{\textcircumlw}{PU}{\9247\210}% U+A788

#### 47.2.41 Alphabetic Presentation Forms: U+FB00 to U+FB4F

19328 % U+FB01 LATIN SMALL LIGATURE FI; fi  
 19329 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01  
 19330 % U+FB02 LATIN SMALL LIGATURE FL; fl  
 19331 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02

#### 47.2.42 Musical Symbols: U+1D100 to U+1D1FF

19332 % U+1D13B MUSICAL SYMBOL WHOLE REST; \GaPa (harmony)  
19333 \DeclareTextCommand{\textGaPa}{PU}{\9330\064\9335\073}%\* U+1D13B  
19334 % U+1D13C MUSICAL SYMBOL HALF REST; \HaPa (harmony)  
19335 \DeclareTextCommand{\textHaPa}{PU}{\9330\064\9335\074}%\* U+1D13C  
19336 % U+1D13D MUSICAL SYMBOL QUARTER REST; \ViPa (harmony)  
19337 \DeclareTextCommand{\textViPa}{PU}{\9330\064\9335\075}%\* U+1D13D  
19338 % U+1D13E MUSICAL SYMBOL EIGHTH REST; \AcPa (harmony)  
19339 \DeclareTextCommand{\textAcPa}{PU}{\9330\064\9335\076}%\* U+1D13E  
19340 % U+1D13F MUSICAL SYMBOL SIXTEENTH REST; \SePa (harmony)  
19341 \DeclareTextCommand{\textSePa}{PU}{\9330\064\9335\077}%\* U+1D13F  
19342 % U+1D140 MUSICAL SYMBOL THIRTY-SECOND REST; \ZwPa (harmony)  
19343 \DeclareTextCommand{\textZwPa}{PU}{\9330\064\9335\100}%\* U+1D140  
19344 % U+1D15D MUSICAL SYMBOL WHOLE NOTE; \fullnote (wasysym)  
19345 \DeclareTextCommand{\textfullnote}{PU}{\9330\064\9335\135}%\* U+1D15D  
19346 %\* \textfullnote -> \Ganz (harmony)  
19347 % U+1D15E MUSICAL SYMBOL HALF NOTE; \halfnote (wasysym)  
19348 \DeclareTextCommand{\texthalfnote}{PU}{\9330\064\9335\136}%\* U+1D15E  
19349 %\* \texthalfnote -> \Halb (harmony)  
19350 % U+1D15F MUSICAL SYMBOL QUARTER NOTE; \Vier (harmony)  
19351 \DeclareTextCommand{\textVier}{PU}{\9330\064\9335\137}%\* U+1D15F  
19352 % U+1D160 MUSICAL SYMBOL EIGHTH NOTE; \Acht (harmony)  
19353 \DeclareTextCommand{\textAcht}{PU}{\9330\064\9335\140}%\* U+1D160  
19354 % U+1D161 MUSICAL SYMBOL SIXTEENTH NOTE; \Sech (harmony)  
19355 \DeclareTextCommand{\textSech}{PU}{\9330\064\9335\141}%\* U+1D161  
19356 % U+1D162 MUSICAL SYMBOL THIRTY-SECOND NOTE; \Zwdr (harmony)  
19357 \DeclareTextCommand{\textZwdr}{PU}{\9330\064\9335\142}%\* U+1D162

#### 47.2.43 Miscellaneous Symbols and Pictographs: U+1F300 to U+1F5FF

19358 % U+1F30D EARTH GLOBE EUROPE-AFRICA; \Mundus (marvosym)  
19359 \DeclareTextCommand{\textMundus}{PU}{\9330\074\9337\015}%\* U+1F30D  
19360 % U+1F319 CRESCENT MOON; \Moon (marvosym)  
19361 \DeclareTextCommand{\textMoon}{PU}{\9330\074\9337\031}%\* U+1F319  
19362 % U+1F468 MAN; \ManFace (marvosym)  
19363 \DeclareTextCommand{\textManFace}{PU}{\9330\075\9334\150}%\* U+1F468  
19364 % U+1F469 WOMAN; \WomanFace (marvosym)  
19365 \DeclareTextCommand{\textWomanFace}{PU}{\9330\075\9334\151}%\* U+1F469  
19366 %\* \textWomanFace -> \Womanface (marvosym)  
19367 % U+1F4E0 FAX MACHINE; \Fax (marvosym)  
19368 \DeclareTextCommand{\textFax}{PU}{\9330\075\9334\340}%\* U+1F4E0  
19369 %\* \textFax -> \Faxmachine (marvosym)  
19370 % U+1F525 FIRE; \Fire (ifsym)  
19371 \DeclareTextCommand{\textFire}{PU}{\9330\075\9335\045}%\* U+1F525

#### 47.2.44 Transport and Map Symbols: U+1F680 to U+1F6FF

19372 % U+1F6B2 BICYCLE; \Bicycle (marvosym)  
19373 \DeclareTextCommand{\textBicycle}{PU}{\9330\075\9336\262}%\* U+1F6B2  
19374 % U+1F6B9 MENS SYMBOL; \Gentsroom (marvosym)  
19375 \DeclareTextCommand{\textGentsroom}{PU}{\9330\075\9336\271}%\* U+1F6B9  
19376 % U+1F6BA WOMENS SYMBOL; \Ladiesroom (marvosym)  
19377 \DeclareTextCommand{\textLadiesroom}{PU}{\9330\075\9336\272}%\* U+1F6BA

#### 47.2.45 Miscellaneous

```

19378 \DeclareTextCommand{\SS}{PU}{SS}%
19379 % \textcopyleft (textcomp)
19380 \DeclareTextCommand{\textcopyleft}{PU}{\9041\204\9040\335}% U+2184 U+20DD
19381 % \ccnc (ccllicenses)
19382 \DeclareTextCommand{\textccnc}{PU}{\80\044\9040\340}%* U+0024 U+20E0
19383 % \ccnd (ccllicenses)
19384 \DeclareTextCommand{\textccnd}{PU}{=\9040\335}%* U+003D U+20DD
19385 % \ccsa (ccllicenses)
19386 \DeclareTextCommand{\textccsa}{PU}{\9047\362\9040\335}%* U+27F2 U+20DD
19387 % \Info (marvosym, china2e)
19388 \DeclareTextCommand{\textInfo}{PU}{\9330\065\9334\042\9040\336}%* U+1D422 U+20DE
19389 % \CESign (marvosym)
19390 \DeclareTextCommand{\textCESign}{PU}{\80\103\80\105}%* U+0043 U+0045
19391 %* \textCESign -> \CESign (marvosym)

```

#### 47.2.46 Aliases

Aliases (german.sty)

```

19392 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}%
19393 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}%
19394 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}%
19395 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}%
19396 \DeclareTextCommand{\textflqq}{PU}{\guillemetleft}%
19397 \DeclareTextCommand{\textfrqq}{PU}{\guillemetright}%
19398 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}%
19399 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}%

```

Aliases (math names)

```

19400 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}%*
19401 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}%*
19402 \DeclareTextCommand{\textdiv}{PU}{\textdivide}%*
19403 \DeclareTextCommand{\textpm}{PU}{\textplusminus}%*
19404 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}%*
19405 </puenc>

```

### 47.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```

19406 (*puvnenc)
19407 \DeclareTextCommand{\abreve}{PU}{\81\003}% U+0103
19408 \DeclareTextCommand{\acircumflex}{PU}{\80\342}% U+00E2
19409 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}% U+00EA
19410 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}% U+00F4
19411 \DeclareTextCommand{\ohorn}{PU}{\81\241}% U+01A1
19412 \DeclareTextCommand{\uhorn}{PU}{\81\260}% U+01B0
19413 \DeclareTextCommand{\ABREVE}{PU}{\81\002}% U+0102
19414 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}% U+00C2
19415 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}% U+00CA
19416 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}% U+00D4
19417 \DeclareTextCommand{\OHORN}{PU}{\81\240}% U+01A0
19418 \DeclareTextCommand{\UHORN}{PU}{\81\257}% U+01AF
19419 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1
19420 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}% U+1EA1

```

19421 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0  
19422 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}% U+1EA3  
19423 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
19424 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}% U+1EAF  
19425 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}% U+1EB7  
19426 \DeclareTextCompositeCommand{\`}{PU}{\abreve}{\9036\261}% U+1EB1  
19427 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}% U+1EB3  
19428 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}% U+1EB5  
19429 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}% U+1EA5  
19430 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}% U+1EAD  
19431 \DeclareTextCompositeCommand{\`}{PU}{\acircumflex}{\9036\247}% U+1EA7  
19432 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}% U+1EA9  
19433 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}% U+1EAB  
19434 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
19435 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}% U+1EB9  
19436 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8  
19437 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}% U+1EBB  
19438 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
19439 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}% U+1EBF  
19440 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}% U+1EC7  
19441 \DeclareTextCompositeCommand{\`}{PU}{\ecircumflex}{\9036\301}% U+1EC1  
19442 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}% U+1EC3  
19443 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}% U+1EC5  
19444 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
19445 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}% U+1ECB  
19446 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
19447 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}% U+1EC9  
19448 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
19449 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
19450 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}% U+1ECD  
19451 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
19452 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}% U+1ECF  
19453 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
19454 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}% U+1ED1  
19455 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}% U+1ED9  
19456 \DeclareTextCompositeCommand{\`}{PU}{\ocircumflex}{\9036\323}% U+1ED3  
19457 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}% U+1ED5  
19458 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}% U+1ED7  
19459 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}% U+1EDB  
19460 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}% U+1EE3  
19461 \DeclareTextCompositeCommand{\`}{PU}{\ohorn}{\9036\335}% U+1EDD  
19462 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}% U+1EDF  
19463 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}% U+1EE1  
19464 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
19465 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}% U+1EE5  
19466 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
19467 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}% U+1EE7  
19468 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
19469 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}% U+1EE9  
19470 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}% U+1EF1  
19471 \DeclareTextCompositeCommand{\`}{PU}{\uhorn}{\9036\353}% U+1EEB  
19472 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}% U+1EED  
19473 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}% U+1EEF  
19474 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD

19475 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}% U+1EF5  
19476 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3  
19477 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}% U+1EF7  
19478 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9  
19479 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
19480 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}% U+1EA0  
19481 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
19482 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}% U+1EA2  
19483 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
19484 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}% U+1EAE  
19485 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}% U+1EB6  
19486 \DeclareTextCompositeCommand{\`}{PU}{\ABREVE}{\9036\260}% U+1EB0  
19487 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}% U+1EB2  
19488 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}% U+1EB4  
19489 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}% U+1EA4  
19490 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}% U+1EAC  
19491 \DeclareTextCompositeCommand{\`}{PU}{\ACIRCUMFLEX}{\9036\246}% U+1EA6  
19492 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}% U+1EA8  
19493 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}% U+1EA  
19494 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
19495 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}% U+1EB8  
19496 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
19497 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}% U+1EBA  
19498 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
19499 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\276}% U+1EBE  
19500 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}% U+1EC6  
19501 \DeclareTextCompositeCommand{\`}{PU}{\ECIRCUMFLEX}{\9036\300}% U+1EC0  
19502 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}% U+1EC2  
19503 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}% U+1EC4  
19504 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
19505 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}% U+1ECA  
19506 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
19507 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}% U+1EC8  
19508 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128  
19509 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
19510 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}% U+1ECC  
19511 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
19512 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}% U+1ECE  
19513 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
19514 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}% U+1ED0  
19515 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}% U+1ED8  
19516 \DeclareTextCompositeCommand{\`}{PU}{\OCIRCUMFLEX}{\9036\322}% U+1ED2  
19517 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}% U+1ED4  
19518 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}% U+1ED6  
19519 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\332}% U+1EDA  
19520 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}% U+1EE2  
19521 \DeclareTextCompositeCommand{\`}{PU}{\OHORN}{\9036\334}% U+1EDC  
19522 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}% U+1EDE  
19523 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}% U+1EE0  
19524 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA  
19525 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4  
19526 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9  
19527 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}% U+1EE6  
19528 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168

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19529 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}% U+1EE8
19530 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}% U+1EF0
19531 \DeclareTextCompositeCommand{\`}{PU}{\UHORN}{\9036\352}% U+1EEA
19532 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}% U+1EEC
19533 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}% U+1EEE
19534 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD
19535 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4
19536 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2
19537 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}% U+1EF6
19538 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8
19539 (/puvnenc)

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## 47.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

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19540 (*puarenc)
19541 % U+0621;afii57409;ARABIC LETTER HAMZA
19542 \DeclareTextCommand{\hamza}{PU}{\86\041}% U+0621
19543 % U+0622;afii57410;ARABIC LETTER ALEF WITH MADDA ABOVE
19544 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% U+0622
19545 % U+0623;afii57411;ARABIC LETTER ALEF WITH HAMZA ABOVE
19546 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% U+0623
19547 % U+0624;afii57412;ARABIC LETTER WAW WITH HAMZA ABOVE
19548 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% U+0624
19549 % U+0625;afii57413;ARABIC LETTER ALEF WITH HAMZA BELOW
19550 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% U+0625
19551 % U+0626;afii57414;ARABIC LETTER YEH WITH HAMZA ABOVE
19552 \DeclareTextCommand{\yahamza}{PU}{\86\046}% U+0626
19553 % U+0627;afii57415;ARABIC LETTER ALEF
19554 \DeclareTextCommand{\alef}{PU}{\86\047}% U+0627
19555 % U+0628;afii57416;ARABIC LETTER BEH
19556 \DeclareTextCommand{\baa}{PU}{\86\050}% U+0628
19557 % U+0629;afii57417;ARABIC LETTER TEH MARBUTA
19558 \DeclareTextCommand{\T}{PU}{\86\051}% U+0629
19559 % U+062A;afii57418;ARABIC LETTER TEH
19560 \DeclareTextCommand{\taa}{PU}{\86\052}% U+062A
19561 % U+062B;afii57419;ARABIC LETTER THEH
19562 \DeclareTextCommand{\thaa}{PU}{\86\053}% U+062B
19563 % U+062C;afii57420;ARABIC LETTER JEEM
19564 \DeclareTextCommand{\jeem}{PU}{\86\054}% U+062C
19565 % U+062D;afii57421;ARABIC LETTER HAH
19566 \DeclareTextCommand{\Haa}{PU}{\86\055}% U+062D
19567 % U+062E;afii57422;ARABIC LETTER KHAH
19568 \DeclareTextCommand{\kha}{PU}{\86\056}% U+062E
19569 % U+062F;afii57423;ARABIC LETTER DAL
19570 \DeclareTextCommand{\dal}{PU}{\86\057}% U+062F
19571 % U+0630;afii57424;ARABIC LETTER THAL
19572 \DeclareTextCommand{\dhal}{PU}{\86\060}% U+0630
19573 % U+0631;afii57425;ARABIC LETTER REH
19574 \DeclareTextCommand{\ra}{PU}{\86\061}% U+0631
19575 % U+0632;afii57426;ARABIC LETTER ZAIN
19576 \DeclareTextCommand{\zay}{PU}{\86\062}% U+0632
19577 % U+0633;afii57427;ARABIC LETTER SEEN

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19578 \DeclareTextCommand{\seen}{PU}{\86\063}% U+0633  
19579 % U+0634;afii57428;ARABIC LETTER SHEEN  
19580 \DeclareTextCommand{\sheen}{PU}{\86\064}% U+0634  
19581 % U+0635;afii57429;ARABIC LETTER SAD  
19582 \DeclareTextCommand{\sad}{PU}{\86\065}% U+0635  
19583 % U+0636;afii57430;ARABIC LETTER DAD  
19584 \DeclareTextCommand{\dad}{PU}{\86\066}% U+0636  
19585 % U+0637;afii57431;ARABIC LETTER TAH  
19586 \DeclareTextCommand{\Ta}{PU}{\86\067}% U+0637  
19587 % U+0638;afii57432;ARABIC LETTER ZAH  
19588 \DeclareTextCommand{\za}{PU}{\86\070}% U+0638  
19589 % U+0639;afii57433;ARABIC LETTER AIN  
19590 \DeclareTextCommand{\ayn}{PU}{\86\071}% U+0639  
19591 % U+063A;afii57434;ARABIC LETTER GHAIN  
19592 \DeclareTextCommand{\ghayn}{PU}{\86\072}% U+063A  
19593 % U+0640;afii57440;ARABIC TATWEEL  
19594 \DeclareTextCommand{\tatweel}{PU}{\86\100}% U+0640  
19595 % U+0641;afii57441;ARABIC LETTER FEH  
19596 \DeclareTextCommand{\fa}{PU}{\86\101}% U+0641  
19597 % U+0642;afii57442;ARABIC LETTER QAF  
19598 \DeclareTextCommand{\qaf}{PU}{\86\102}% U+0642  
19599 % U+0643;afii57443;ARABIC LETTER KAF  
19600 \DeclareTextCommand{\kaf}{PU}{\86\103}% U+0643  
19601 % U+0644;afii57444;ARABIC LETTER LAM  
19602 \DeclareTextCommand{\lam}{PU}{\86\104}% U+0644  
19603 % U+0645;afii57445;ARABIC LETTER MEEM  
19604 \DeclareTextCommand{\meem}{PU}{\86\105}% U+0645  
19605 % U+0646;afii57446;ARABIC LETTER NOON  
19606 \DeclareTextCommand{\nun}{PU}{\86\106}% U+0646  
19607 % U+0647;afii57470;ARABIC LETTER HEH  
19608 \DeclareTextCommand{\ha}{PU}{\86\107}% U+0647  
19609 % U+0648;afii57448;ARABIC LETTER WAW  
19610 \DeclareTextCommand{\waw}{PU}{\86\110}% U+0648  
19611 % U+0649;afii57449;ARABIC LETTER ALEF MAKSURA  
19612 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% U+0649  
19613 % U+064A;afii57450;ARABIC LETTER YEH  
19614 \DeclareTextCommand{\ya}{PU}{\86\112}% U+064A  
19615 % U+064B;afii57451;ARABIC FATHATAN  
19616 \DeclareTextCommand{\nasb}{PU}{\86\113}% U+064B  
19617 % U+064C;afii57452;ARABIC DAMMATAN  
19618 \DeclareTextCommand{\raff}{PU}{\86\114}% U+064C  
19619 % U+064D;afii57453;ARABIC KASRATAN  
19620 \DeclareTextCommand{\jarr}{PU}{\86\115}% U+064D  
19621 % U+064E;afii57454;ARABIC FATHA  
19622 \DeclareTextCommand{\fatha}{PU}{\86\116}% U+064E  
19623 % U+064F;afii57455;ARABIC DAMMA  
19624 \DeclareTextCommand{\damma}{PU}{\86\117}% U+064F  
19625 % U+0650;afii57456;ARABIC KASRA  
19626 \DeclareTextCommand{\kasra}{PU}{\86\120}% U+0650  
19627 % U+0651;afii57457;ARABIC SHADDA  
19628 \DeclareTextCommand{\shadda}{PU}{\86\121}% U+0651  
19629 % U+0652;afii57458;ARABIC SUKUN  
19630 \DeclareTextCommand{\sukun}{PU}{\86\122}% U+0652

Farsi

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19631 % U+067E ARABIC LETTER PEH; afii57506
19632 \DeclareTextCommand{\peh}{PU}{\86\176}% U+067E
19633 % U+0686 ARABIC LETTER TCHEH; afii57507
19634 \DeclareTextCommand{\tcheh}{PU}{\86\206}% U+0686
19635 % U+0698 ARABIC LETTER JEH; afii57508
19636 \DeclareTextCommand{\jeh}{PU}{\86\230}% U+0698
19637 % U+06A9 ARABIC LETTER KEHEH
19638 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% U+06A9
19639 % U+06AF ARABIC LETTER GAF; afii57509
19640 \DeclareTextCommand{\gaf}{PU}{\86\257}% U+06AF
19641 % U+06CC ARABIC LETTER FAR.SI YEH
19642 \DeclareTextCommand{\farsiya}{PU}{\86\314}% U+06CC

19643 % U+200C ZERO WIDTH NON-JOINER; afii61664
19644 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% U+200C
19645 % U+200D ZERO WIDTH JOINER; afii301
19646 \DeclareTextCommand{\textEncodingNoboundary}{PU}{\9040\015}% U+200D

19647 (/puarenc)
19648 (*psdextra)
19649 \Hy@VersionCheck{psdextra.def}
19650 \DeclareTextCommand{\textGamma}{PU}{\83\223}%* U+0393
19651 \DeclareTextCommand{\textDelta}{PU}{\83\224}%* U+0394
19652 \DeclareTextCommand{\textTheta}{PU}{\83\230}%* U+0398
19653 \DeclareTextCommand{\textLambda}{PU}{\83\233}%* U+039B
19654 \DeclareTextCommand{\textXi}{PU}{\83\236}%* U+039E
19655 \DeclareTextCommand{\textPi}{PU}{\83\240}%* U+03A0
19656 \DeclareTextCommand{\textSigma}{PU}{\83\243}%* U+03A3
19657 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}%* U+03A5
19658 \DeclareTextCommand{\textPhi}{PU}{\83\246}%* U+03A6
19659 \DeclareTextCommand{\textChi}{PU}{\83\247}% U+03A7
19660 \DeclareTextCommand{\textPsi}{PU}{\83\250}%* U+03A8
19661 \DeclareTextCommand{\textOmega}{PU}{\83\251}%* U+03A9
19662 \DeclareTextCommand{\textalpha}{PU}{\83\261}%* U+03B1
19663 \DeclareTextCommand{\textbeta}{PU}{\83\262}%* U+03B2
19664 \DeclareTextCommand{\textgamma}{PU}{\83\263}%* U+03B3
19665 \DeclareTextCommand{\textdelta}{PU}{\83\264}%* U+03B4
19666 \DeclareTextCommand{\textepsilon}{PU}{\83\265}%* U+03B5
19667 \DeclareTextCommand{\textzeta}{PU}{\83\266}%* U+03B6
19668 \DeclareTextCommand{\texteta}{PU}{\83\267}%* U+03B7
19669 \DeclareTextCommand{\texttheta}{PU}{\83\270}%* U+03B8
19670 \DeclareTextCommand{\textiota}{PU}{\83\271}%* U+03B9
19671 \DeclareTextCommand{\textkappa}{PU}{\83\272}%* U+03BA
19672 \DeclareTextCommand{\textlambda}{PU}{\83\273}%* U+03BB
19673 \DeclareTextCommand{\textmugreek}{PU}{\83\274}%* U+03BC
19674 \DeclareTextCommand{\textnu}{PU}{\83\275}%* U+03BD
19675 \DeclareTextCommand{\textxi}{PU}{\83\276}%* U+03BE
19676 \DeclareTextCommand{\textpi}{PU}{\83\300}%* U+03C0
19677 \DeclareTextCommand{\textrho}{PU}{\83\301}%* U+03C1
19678 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}%* U+03C2
19679 \DeclareTextCommand{\textsigma}{PU}{\83\303}%* U+03C3
19680 \DeclareTextCommand{\texttau}{PU}{\83\304}%* U+03C4
19681 \DeclareTextCommand{\textupsilon}{PU}{\83\305}%* U+03C5
19682 \DeclareTextCommand{\textphi}{PU}{\83\306}%* U+03C6

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19683 \DeclareTextCommand{\textchi}{PU}{\83\307}%* U+03C7
19684 \DeclareTextCommand{\textpsi}{PU}{\83\310}%* U+03C8
19685 \DeclareTextCommand{\textomega}{PU}{\83\311}%* U+03C9
19686 \newcommand*{\psdmapshortnames}{%
19687 \let\MVPlus\textMVPlus
19688 \let\MVComma\textMVComma
19689 \let\MVMinus\textMVMinus
19690 \let\MVPeriod\textMVPeriod
19691 \let\MVDivision\textMVDivision
19692 \let\MVZero\textMVZero
19693 \let\MVOne\textMVOne
19694 \let\MVTwo\textMVTwo
19695 \let\MVThree\textMVThree
19696 \let\MVFour\textMVFour
19697 \let\MVFive\textMVFive
19698 \let\MVSix\textMVSix
19699 \let\MVSeven\textMVSeven
19700 \let\MVEight\textMVEight
19701 \let\MVNine\textMVNine
19702 \let\MVAt\textMVAt
19703 \let\copyright\textcopyright
19704 \let\twosuperior\texttwosuperior
19705 \let\treesuperior\texttreesuperior
19706 \let\onesuperior\textonesuperior
19707 \let\Thorn\textThorn
19708 \let\thorn\textthorn
19709 \let\hbar\texthbar
19710 \let\hausaB\texthausaB
19711 \let\hausaD\texthausaD
19712 \let\hausaK\texthausaK
19713 \let\barl\textbarl
19714 \let\inve\textinve
19715 \let\slashc\textslashc
19716 \let\scripta\textscripta
19717 \let\openo\textopeno
19718 \let\rtaild\textrtaild
19719 \let\reve\textreve
19720 \let\schwa\textschwa
19721 \let\niepsilon\textniepsilon
19722 \let\repsilon\textrepsilon
19723 \let\rhookrepsilon\texthookrepsilon
19724 \let\scriptg\textscriptg
19725 \let\scg\textscg
19726 \let\ipagamma\textipagamma
19727 \let\babygamma\textbabygamma
19728 \let\bari\textbari
19729 \let\niiota\textniiota
19730 \let\sci\textsci
19731 \let\scn\textscn
19732 \let\niphi\textniphi
19733 \let\longlegr\textlonglegr
19734 \let\scr\textscr
19735 \let\invscr\textinvscr
19736 \let\esh\textesh

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19737 \let\baru\textbaru  
19738 \let\niupsilon\textniupsilon  
19739 \let\scriptv\textscriptv  
19740 \let\turnv\textturnv  
19741 \let\turnw\textturnw  
19742 \let\turny\textturny  
19743 \let\scy\textscy  
19744 \let\yogh\textyogh  
19745 \let\glotstop\textglotstop  
19746 \let\revglotstop\textrevglotstop  
19747 \let\invglotstop\textinvglotstop  
19748 \let\Gamma\textGamma  
19749 \let\Delta\textDelta  
19750 \let\Theta\textTheta  
19751 \let\Lambda\textLambda  
19752 \let\Xi\textXi  
19753 \let\Pi\textPi  
19754 \let\Sigma\textSigma  
19755 \let\Upsilon\textUpsilon  
19756 \let\Phi\textPhi  
19757 \let\Psi\textPsi  
19758 \let\Omega\textOmega  
19759 \let\alpha\textalpha  
19760 \let\beta\textbeta  
19761 \let\gamma\textgamma  
19762 \let\delta\textdelta  
19763 \let\epsilon\textepsilon  
19764 \let\zeta\textzeta  
19765 \let\eta\texteta  
19766 \let\theta\texttheta  
19767 \let\iota\textiota  
19768 \let\kappa\textkappa  
19769 \let\lambda\textlambda  
19770 \let\mu\textmu  
19771 \let\mugreek\textmugreek  
19772 \let\nu\textnu  
19773 \let\xi\textxi  
19774 \let\pi\textpi  
19775 \let\rho\textrho  
19776 \let\varsigma\textvarsigma  
19777 \let\sigma\textsigma  
19778 \let\tau\texttau  
19779 \let\upsilon\textupsilon  
19780 \let\phi\textphi  
19781 \let\chi\textchi  
19782 \let\psi\textpsi  
19783 \let\omega\textomega  
19784 \let\scd\textscd  
19785 \let\scu\textscu  
19786 \let\iinferior\textiinferior  
19787 \let\rinferior\textrinferior  
19788 \let\uinferior\textuinferior  
19789 \let\vinferior\textvinferior  
19790 \let\betainferior\textbetainferior

19791 \let\gammainferior\textgammainferior  
19792 \let\rhoinferior\textrhoinferior  
19793 \let\phiinferior\textphiinferior  
19794 \let\chiinferior\textchiinferior  
19795 \let\barsci\textbarsci  
19796 \let\barp\textbarp  
19797 \let\barscu\textbarscu  
19798 \let\htrtaild\texthtrtaild  
19799 \let\dagger\textdagger  
19800 \let\bullet\textbullet  
19801 \let\hdotfor\texthdotfor  
19802 \let\prime\textprime  
19803 \let\second\textsecond  
19804 \let\third\textthird  
19805 \let\backprime\textbackprime  
19806 \let\lefttherefore\textlefttherefore  
19807 \let\fourth\textfourth  
19808 \let\diamonddots\textdiamonddots  
19809 \let\zerosuperior\textzerosuperior  
19810 \let\isuperior\textisuperior  
19811 \let\foursuperior\textfoursuperior  
19812 \let\fivesuperior\textfivesuperior  
19813 \let\sixsuperior\textsixsuperior  
19814 \let\sevensuperior\textsevensuperior  
19815 \let\eightsuperior\texteightsuperior  
19816 \let\ninesuperior\textninesuperior  
19817 \let\plussuperior\textplussuperior  
19818 \let\minussuperior\textminussuperior  
19819 \let\equalsuperior\textequalsuperior  
19820 \let\parenleftsuperior\textparenleftsuperior  
19821 \let\parenrightsuperior\textparenrightsuperior  
19822 \let\nsuperior\textnsuperior  
19823 \let\zeroinferior\textzeroinferior  
19824 \let\oneinferior\textoneinferior  
19825 \let\twoinferior\texttwoinferior  
19826 \let\threeinferior\textthreeinferior  
19827 \let\fourinferior\textfourinferior  
19828 \let\fiveinferior\textfiveinferior  
19829 \let\sixinferior\textsixinferior  
19830 \let\seveninferior\textseveninferior  
19831 \let\eightinferior\texteightinferior  
19832 \let\nineinferior\textnineinferior  
19833 \let\plusinferior\textplusinferior  
19834 \let\minusinferior\textminusinferior  
19835 \let\equalsinferior\textequalsinferior  
19836 \let\parenleftinferior\textparenleftinferior  
19837 \let\parenrightinferior\textparenrightinferior  
19838 \let\ainferior\textainferior  
19839 \let\einferior\texteinferior  
19840 \let\oinferior\textoinferior  
19841 \let\xinferior\textxinferior  
19842 \let\schwainferior\textschwainferior  
19843 \let\hinferior\texthinferior  
19844 \let\kinferior\textkinferior

19845 \let\linferior\textlinferior  
19846 \let\minferior\textminferior  
19847 \let\ninferior\textninferior  
19848 \let\pinferior\textpinferior  
19849 \let\sinferior\textsinferior  
19850 \let\tinferior\texttinferior  
19851 \let\Deleatur\textDeleatur  
19852 \let\hslash\texthslash  
19853 \let\Im\textIm  
19854 \let\ell\textell  
19855 \let\wp\textwp  
19856 \let\Re\textRe  
19857 \let\mho\textmho  
19858 \let\riota\textriota  
19859 \let\Finv\textFinv  
19860 \let\aleph\textaleph  
19861 \let\beth\textbeth  
19862 \let\gimel\textgimel  
19863 \let\daleth\textdaleth  
19864 \let\fax\textfax  
19865 \let\Game\textGame  
19866 \let\leftarrow\textleftarrow  
19867 \let\uparrow\textuparrow  
19868 \let\rightarrow\textrightarrow  
19869 \let\downarrow\textdownarrow  
19870 \let\leftrightarrow\textleftrightarrow  
19871 \let\updownarrow\textupdownarrow  
19872 \let\nwarrow\textnwarrow  
19873 \let\nearrow\textnearrow  
19874 \let\searrow\textsearrow  
19875 \let\swarrow\textswarrow  
19876 \let\nleftarrow\textnleftarrow  
19877 \let\nrightarrow\textnrightarrow  
19878 \let\twoheadleftarrow\texttwoheadleftarrow  
19879 \let\ntwoheadleftarrow\textntwoheadleftarrow  
19880 \let\twoheaduparrow\texttwoheaduparrow  
19881 \let\twoheadrightarrow\texttwoheadrightarrow  
19882 \let\ntwoheadrightarrow\textntwoheadrightarrow  
19883 \let\twoheaddownarrow\texttwoheaddownarrow  
19884 \let\leftarrowtail\textleftarrowtail  
19885 \let\rightarrowtail\textrightarrowtail  
19886 \let\mapsto\textmapsto  
19887 \let\hookleftarrow\texthookleftarrow  
19888 \let\hookrightarrow\texthookrightarrow  
19889 \let\looparrowleft\textlooparrowleft  
19890 \let\looparrowright\textlooparrowright  
19891 \let\leftrightharrow\textleftrightharrow  
19892 \let\lightning\textlightning  
19893 \let\dslsh\textdslsh  
19894 \let\curvearrowleft\textcurvearrowleft  
19895 \let\curvearrowright\textcurvearrowright  
19896 \let\leftharpoonup\textleftharpoonup  
19897 \let\leftharpoondown\textleftharpoondown  
19898 \let\upharpoonright\textupharpoonright

19899  $\backslash\text{upharpoonleft}$   
19900  $\backslash\text{rightharpoonup}$   
19901  $\backslash\text{rightharpoondown}$   
19902  $\backslash\text{downharpoonright}$   
19903  $\backslash\text{downharpoonleft}$   
19904  $\backslash\text{rightleftarrows}$   
19905  $\backslash\text{updownarrows}$   
19906  $\backslash\text{leftrightarrows}$   
19907  $\backslash\text{leftleftarrows}$   
19908  $\backslash\text{upuparrows}$   
19909  $\backslash\text{rightrightarrows}$   
19910  $\backslash\text{downdownarrows}$   
19911  $\backslash\text{leftrightharpoons}$   
19912  $\backslash\text{rightleftharpoons}$   
19913  $\backslash\text{nLeftarrow}$   
19914  $\backslash\text{nLeftrightarrow}$   
19915  $\backslash\text{nRrightarrow}$   
19916  $\backslash\text{Leftarrow}$   
19917  $\backslash\text{Uparrow}$   
19918  $\backslash\text{Rrightarrow}$   
19919  $\backslash\text{Downarrow}$   
19920  $\backslash\text{Leftrightarrow}$   
19921  $\backslash\text{Updownarrow}$   
19922  $\backslash\text{Nwarrow}$   
19923  $\backslash\text{Nearrow}$   
19924  $\backslash\text{Searrow}$   
19925  $\backslash\text{Swarrow}$   
19926  $\backslash\text{Lleftarrow}$   
19927  $\backslash\text{Rrightarrow}$   
19928  $\backslash\text{leftsquigarrow}$   
19929  $\backslash\text{rightsquigarrow}$   
19930  $\backslash\text{dashleftarrow}$   
19931  $\backslash\text{dasheduparrow}$   
19932  $\backslash\text{dashrightarrow}$   
19933  $\backslash\text{dasheddownarrow}$   
19934  $\backslash\text{pointer}$   
19935  $\backslash\text{downuparrows}$   
19936  $\backslash\text{leftarrowtriangle}$   
19937  $\backslash\text{rightarrowtriangle}$   
19938  $\backslash\text{leftrightarrowtriangle}$   
19939  $\backslash\text{forall}$   
19940  $\backslash\text{complement}$   
19941  $\backslash\text{partial}$   
19942  $\backslash\text{exists}$   
19943  $\backslash\text{nexists}$   
19944  $\backslash\text{emptyset}$   
19945  $\backslash\text{triangle}$   
19946  $\backslash\text{nabla}$   
19947  $\backslash\text{in}$   
19948  $\backslash\text{notin}$   
19949  $\backslash\text{smallin}$   
19950  $\backslash\text{ni}$   
19951  $\backslash\text{notowner}$   
19952  $\backslash\text{smallowns}$

19953 \let\prod\textprod  
19954 \let\amalg\textamalg  
19955 \let\sum\textsum  
19956 \let\mp\textmp  
19957 \let\dotplus\textdotplus  
19958 \let\Divides\textDivides  
19959 \let\DividesNot\textDividesNot  
19960 \let\setminus\textsetminus  
19961 \let\ast\textast  
19962 \let\circ\textcirc  
19963 \let\surd\textsurd  
19964 \let\propto\textpropto  
19965 \let\infty\textinfty  
19966 \let\angle\textangle  
19967 \let\measuredangle\textmeasuredangle  
19968 \let\sphericalangle\textsphericalangle  
19969 \let\mid\textmid  
19970 \let\nmid\textnmid  
19971 \let\parallel\textparallel  
19972 \let\nparallel\textnparallel  
19973 \let\wedge\textwedge  
19974 \let\owedge\textowedge  
19975 \let\vee\textvee  
19976 \let\ovee\textovee  
19977 \let\cap\textcap  
19978 \let\cup\textcup  
19979 \let\int\textint  
19980 \let\iint\textiint  
19981 \let\iiint\textiiint  
19982 \let\oint\textoint  
19983 \let\oiint\textoiint  
19984 \let\ointclockwise\textointclockwise  
19985 \let\ointctrlockwise\textointctrlockwise  
19986 \let\therefore\texttherefore  
19987 \let\because\textbecause  
19988 \let\vdots\textvdots  
19989 \let\squaredots\textsquaredots  
19990 \let\dotminus\textdotminus  
19991 \let\eqcolon\texteqcolon  
19992 \let\sim\textsim  
19993 \let\backsim\textbacksim  
19994 \let\nbacksim\textnbacksim  
19995 \let\wr\textwr  
19996 \let\sim\textnsim  
19997 \let\eqsim\texteqsim  
19998 \let\neqsim\textneqsim  
19999 \let\simeq\textsimeq  
20000 \let\nsimeq\textnsimeq  
20001 \let\cong\textcong  
20002 \let\ncong\textncong  
20003 \let\approx\textapprox  
20004 \let\napprox\textnapprox  
20005 \let\approxeq\textapproxeq  
20006 \let\napproxeq\textnapproxeq



20007 \let\triplesim\texttriplesim  
 20008 \let\ntriplesim\textntriplesim  
 20009 \let\backcong\textbackcong  
 20010 \let\backcong\textnbackcong  
 20011 \let\asymp\textasymp  
 20012 \let\nasymp\textnasymp  
 20013 \let\Bumpeq\textBumpeq  
 20014 \let\NBumpeq\textNBumpeq  
 20015 \let\bumpeq\textbumpeq  
 20016 \let\Nbumpeq\textNbumpeq  
 20017 \let\doteq\textdoteq  
 20018 \let\ndoteq\textndoteq  
 20019 \let\doteqdot\textdoteqdot  
 20020 \let\NDoteq\textNDoteq  
 20021 \let\fallingdoteq\textfallingdoteq  
 20022 \let\Nfallingdoteq\textNfallingdoteq  
 20023 \let\risingdoteq\extrisingdoteq  
 20024 \let\Nrisingdoteq\textNrisingdoteq  
 20025 \let\colonequals\textcolonequals  
 20026 \let\equalscolon\textequalscolon  
 20027 \let\eqcirc\texteqcirc  
 20028 \let\neqcirc\textneqcirc  
 20029 \let\circeq\textcirceq  
 20030 \let\ncirceq\textncirceq  
 20031 \let\hateq\texthateq  
 20032 \let\Nhateq\textNhateq  
 20033 \let\triangleeq\texttriangleeq  
 20034 \let\neq\textneq  
 20035 \let\ne\textne  
 20036 \let\equiv\textequiv  
 20037 \let\nequiv\textnequiv  
 20038 \let\leq\textleq  
 20039 \let\le\textle  
 20040 \let\geq\textgeq  
 20041 \let\ge\textge  
 20042 \let\leqq\textleqq  
 20043 \let\Nleqq\textNleqq  
 20044 \let\geqq\textgeqq  
 20045 \let\Ngeqq\textNgeqq  
 20046 \let\lneqq\textlneqq  
 20047 \let\gneqq\textgneqq  
 20048 \let\ll\textll  
 20049 \let\nll\textnll  
 20050 \let\gg\textgg  
 20051 \let\ngg\textngg  
 20052 \let\between\textbetween  
 20053 \let\nless\textnless  
 20054 \let\ngtr\textngtr  
 20055 \let\lneq\textlneq  
 20056 \let\gneq\textgneq  
 20057 \let\lesssim\textlesssim  
 20058 \let\gtrsim\textgtrsim  
 20059 \let\nlesssim\textnlesssim  
 20060 \let\ngtrsim\textngtrsim

20061 \let\lessgtr\textlessgtr  
 20062 \let\gtrless\textgtrless  
 20063 \let\ngtrless\textngtrless  
 20064 \let\nlessgtr\textnlessgtr  
 20065 \let\prec\textprec  
 20066 \let\succ\textsucc  
 20067 \let\preccurlyeq\textpreccurlyeq  
 20068 \let\succcurlyeq\textsucccurlyeq  
 20069 \let\precsim\textprecsim  
 20070 \let\nprecsim\textnprecsim  
 20071 \let\succsim\textsuccsim  
 20072 \let\nsuccsim\textnsuccsim  
 20073 \let\nprec\textnprec  
 20074 \let\nsucc\textnsucc  
 20075 \let\subset\textsubset  
 20076 \let\supset\textsupset  
 20077 \let\nsubset\textnsubset  
 20078 \let\nsupset\textnsupset  
 20079 \let\subseteq\textsubseteq  
 20080 \let\supseteq\textsupseteq  
 20081 \let\nsubsubseteq\textnsubsubseteq  
 20082 \let\nsupseteq\textnsupseteq  
 20083 \let\subsetneq\textsubsetneq  
 20084 \let\supsetneq\textsupsetneq  
 20085 \let\cupdot\textcupdot  
 20086 \let\cupplus\textcupplus  
 20087 \let\sqssubset\textsqssubset  
 20088 \let\nsqssubset\textnsqssubset  
 20089 \let\sqsupset\textsqsupset  
 20090 \let\nsqsupset\textnsqsupset  
 20091 \let\sqssubseteq\textsqssubseteq  
 20092 \let\nsqssubseteq\textnsqssubseteq  
 20093 \let\sqsupseteq\textsqsupseteq  
 20094 \let\nsqsupseteq\textnsqsupseteq  
 20095 \let\sqcap\textsqcap  
 20096 \let\sqcup\textsqcup  
 20097 \let\oplus\textoplus  
 20098 \let\ominus\textominus  
 20099 \let\otimes\textotimes  
 20100 \let\oslash\textoslash  
 20101 \let\odot\textodot  
 20102 \let\circledcirc\textcircledcirc  
 20103 \let\circledast\textcircledast  
 20104 \let\circleddash\textcircleddash  
 20105 \let\boxplus\textboxplus  
 20106 \let\boxminus\textboxminus  
 20107 \let\boxtimes\textboxtimes  
 20108 \let\boxdot\textboxdot  
 20109 \let\vdash\textvdash  
 20110 \let\dashv\textdashv  
 20111 \let\ndashv\textndashv  
 20112 \let\top\texttop  
 20113 \let\ndownvdash\textndownvdash  
 20114 \let\bot\textbot

20115 `\let\nupvdash\textnupvdash`  
20116 `\let\vDash\textvDash`  
20117 `\let\Vdash\textVdash`  
20118 `\let\Vvdash\textVvdash`  
20119 `\let\nVdash\textnVdash`  
20120 `\let\VDash\textVDash`  
20121 `\let\nvdash\textnvdash`  
20122 `\let\nvDash\textnvDash`  
20123 `\let\nVdash\textnVdash`  
20124 `\let\nVDash\textnVDash`  
20125 `\let\lhd\textlhd`  
20126 `\let\rhd\textrhd`  
20127 `\let\unlhd\textunlhd`  
20128 `\let\unrhd\textunrhd`  
20129 `\let\multimapdotbothA\textmultimapdotbothA`  
20130 `\let\multimapdotbothB\textmultimapdotbothB`  
20131 `\let\multimap\textmultimap`  
20132 `\let\veebar\textveebar`  
20133 `\let\barwedge\textbarwedge`  
20134 `\let\star\textstar`  
20135 `\let\divideontimes\textdivideontimes`  
20136 `\let\bowtie\textbowtie`  
20137 `\let\ltimes\textltimes`  
20138 `\let\rtimes\textrtimes`  
20139 `\let\leftthreetimes\textleftthreetimes`  
20140 `\let\rightthreetimes\textrightthreetimes`  
20141 `\let\backsimeq\textbacksimeq`  
20142 `\let\nbacksimeq\textnbacksimeq`  
20143 `\let\curlyvee\textcurlyvee`  
20144 `\let\curlywedge\textcurlywedge`  
20145 `\let\Subset\textSubset`  
20146 `\let\nSubset\textnSubset`  
20147 `\let\Supset\textSupset`  
20148 `\let\nSupset\textnSupset`  
20149 `\let\Cap\textCap`  
20150 `\let\Cup\textCup`  
20151 `\let\pitchfork\textpitchfork`  
20152 `\let\lessdot\textlessdot`  
20153 `\let\gtrdot\textgtrdot`  
20154 `\let\lll\textlll`  
20155 `\let\ggg\textggg`  
20156 `\let\lesseqgtr\textlesseqgtr`  
20157 `\let\gtreqless\textgtreqless`  
20158 `\let\curlyeqprec\textcurlyeqprec`  
20159 `\let\ncurlyeqprec\textncurlyeqprec`  
20160 `\let\curlyeqsucc\textcurlyeqsucc`  
20161 `\let\ncurlyeqsucc\textncurlyeqsucc`  
20162 `\let\npreccurlyeq\textnpreccurlyeq`  
20163 `\let\nsuccurlyeq\textnsuccurlyeq`  
20164 `\let\nqsubseteq\textnqsubseteq`  
20165 `\let\nqsupseteq\textnqsupseteq`  
20166 `\let\sqsubsetneq\textsqsubsetneq`  
20167 `\let\sqsupsetneq\textsqsupsetneq`  
20168 `\let\lnsim\textlnsim`

20169 `\let\gnsim\textgnsim`  
20170 `\let\precnsim\textprecnsim`  
20171 `\let\succnsim\textsuccnsim`  
20172 `\let\ntriangleleft\textntriangleleft`  
20173 `\let\ntriangleright\textntriangleright`  
20174 `\let\ntrianglelefteq\textntrianglelefteq`  
20175 `\let\ntrianglerighteq\textntrianglerighteq`  
20176 `\let\vdots\textvdots`  
20177 `\let\cdots\textcdots`  
20178 `\let\udots\textudots`  
20179 `\let\ddots\textddots`  
20180 `\let\barin\textbarin`  
20181 `\let\diameter\textdiameter`  
20182 `\let\backneg\textbackneg`  
20183 `\let\wasylozenge\textwasylozenge`  
20184 `\let\invbackneg\textinvbackneg`  
20185 `\let\clock\textclock`  
20186 `\let\ulcorner\textulcorner`  
20187 `\let\urcorner\texturcorner`  
20188 `\let\llcorner\textllcorner`  
20189 `\let\lrcorner\textlrcorner`  
20190 `\let\frown\textfrown`  
20191 `\let\smile\textsmile`  
20192 `\let\Keyboard\textKeyboard`  
20193 `\let\langle\textlangle`  
20194 `\let\rangle\textrangle`  
20195 `\let\APLin\textAPLin`  
20196 `\let\Tumbler\textTumbler`  
20197 `\let\notslash\textnotslash`  
20198 `\let\notbackslash\textnotbackslash`  
20199 `\let\boxbackslash\textboxbackslash`  
20200 `\let\APLleftarrowbox\textAPLleftarrowbox`  
20201 `\let\APLrightarrowbox\textAPLrightarrowbox`  
20202 `\let\APLuparrowbox\textAPLuparrowbox`  
20203 `\let\APLdownarrowbox\textAPLdownarrowbox`  
20204 `\let\APLin\textAPLin`  
20205 `\let\Request\textRequest`  
20206 `\let\Beam\textBeam`  
20207 `\let\hexagon\texthexagon`  
20208 `\let\APLbox\textAPLbox`  
20209 `\let\ForwardToIndex\textForwardToIndex`  
20210 `\let\RewindToIndex\textRewindToIndex`  
20211 `\let\bbslash\textbbslash`  
20212 `\let\CircledA\textCircledA`  
20213 `\let\CleaningF\textCleaningF`  
20214 `\let\CleaningFF\textCleaningFF`  
20215 `\let\CleaningP\textCleaningP`  
20216 `\let\CleaningPP\textCleaningPP`  
20217 `\let\CuttingLine\textCuttingLine`  
20218 `\let\UParrow\textUParrow`  
20219 `\let\bigtriangleup\textbigtriangleup`  
20220 `\let\Forward\textForward`  
20221 `\let\triangleright\texttriangleright`  
20222 `\let\RHD\textRHD`

20223 \let\DOWNarrow\textDOWNarrow  
20224 \let\bigtriangledown\textbigtriangledown  
20225 \let\Rewind\textRewind  
20226 \let\triangleleft\texttriangleleft  
20227 \let\LHD\textLHD  
20228 \let\diamond\textdiamond  
20229 \let\lozenge\textlozenge  
20230 \let\LEFTCIRCLE\textLEFTCIRCLE  
20231 \let\RIGHTCIRCLE\textRIGHTCIRCLE  
20232 \let\openbullet\textopenbullet  
20233 \let\boxbar\textboxbar  
20234 \let\bigcircle\textbigcircle  
20235 \let\Cloud\textCloud  
20236 \let\FiveStar\textFiveStar  
20237 \let\FiveStarOpen\textFiveStarOpen  
20238 \let\Phone\textPhone  
20239 \let\boxempty\textboxempty  
20240 \let\Checkedbox\textCheckedbox  
20241 \let\Crossedbox\textCrossedbox  
20242 \let\Coffeecup\textCoffeecup  
20243 \let\HandCuffLeft\textHandCuffLeft  
20244 \let\HandCuffRight\textHandCuffRight  
20245 \let\HandLeft\textHandLeft  
20246 \let\HandRight\textHandRight  
20247 \let\Radioactivity\textRadioactivity  
20248 \let\Biohazard\textBiohazard  
20249 \let\Ankh\textAnkh  
20250 \let\YinYang\textYinYang  
20251 \let\frownie\textfrownie  
20252 \let\smiley\textsmiley  
20253 \let\blacksmiley\textblacksmiley  
20254 \let\sun\textsun  
20255 \let\leftmoon\textleftmoon  
20256 \let\rightmoon\textrightmoon  
20257 \let\mercury\textmercury  
20258 \let\earth\textearth  
20259 \let\male\textmale  
20260 \let\jupiter\textjupiter  
20261 \let\saturn\textsaturn  
20262 \let\uranus\texturanus  
20263 \let\neptune\textneptune  
20264 \let\pluto\textpluto  
20265 \let\aries\textaries  
20266 \let\taurus\texttaurus  
20267 \let\gemini\textgemini  
20268 \let\cancer\textcancer  
20269 \let\leo\textleo  
20270 \let\virgo\textvirgo  
20271 \let\libra\textlibra  
20272 \let\scorpio\textscorpio  
20273 \let\sagittarius\textsagittarius  
20274 \let\capricornus\textcapricornus  
20275 \let\aquarius\textaquarius  
20276 \let\pisces\textpisces

20277 \let\quarternote\textquarternote  
20278 \let\twonotes\texttwonotes  
20279 \let\sixteenthnote\textsixteenthnote  
20280 \let\flat\textflat  
20281 \let\natural\textnatural  
20282 \let\sharp\textsharp  
20283 \let\recycle\textrecycle  
20284 \let\Wheelchair\textWheelchair  
20285 \let\Flag\textFlag  
20286 \let\MineSign\textMineSign  
20287 \let\ds military\textds military  
20288 \let\ds medical\textds medical  
20289 \let\ds juridical\textds juridical  
20290 \let\ds chemical\textds chemical  
20291 \let\ds biological\textds biological  
20292 \let\ds commercial\textds commercial  
20293 \let\manstar\textmanstar  
20294 \let\danger\textdanger  
20295 \let\FemaleFemale\textFemaleFemale  
20296 \let\MaleMale\textMaleMale  
20297 \let\FemaleMale\textFemaleMale  
20298 \let\Hermaphrodite\textHermaphrodite  
20299 \let\Neutral\textNeutral  
20300 \let\hexstar\texthexstar  
20301 \let\SunCloud\textSunCloud  
20302 \let\Rain\textRain  
20303 \let\noway\textnoway  
20304 \let\Mountain\textMountain  
20305 \let\Tent\textTent  
20306 \let\ScissorRight\textScissorRight  
20307 \let\ScissorRightBrokenTop\textScissorRightBrokenTop  
20308 \let\ScissorHollowRight\textScissorHollowRight  
20309 \let\PhoneHandset\textPhoneHandset  
20310 \let\Tape\textTape  
20311 \let\Plane\textPlane  
20312 \let\Envelope\textEnvelope  
20313 \let\Peace\textPeace  
20314 \let\WritingHand\textWritingHand  
20315 \let\PencilRightDown\textPencilRightDown  
20316 \let\PencilRight\textPencilRight  
20317 \let\PencilRightUp\textPencilRightUp  
20318 \let\NibRight\textNibRight  
20319 \let\NibSolidRight\textNibSolidRight  
20320 \let\Checkmark\textCheckmark  
20321 \let\CheckmarkBold\textCheckmarkBold  
20322 \let\XSolid\textXSolid  
20323 \let\XSolidBold\textXSolidBold  
20324 \let\XSolidBrush\textXSolidBrush  
20325 \let\PlusOutline\textPlusOutline  
20326 \let\Plus\textPlus  
20327 \let\PlusThinCenterOpen\textPlusThinCenterOpen  
20328 \let\PlusCenterOpen\textPlusCenterOpen  
20329 \let\Cross\textCross  
20330 \let\CrossOpenShadow\textCrossOpenShadow

20331 \let\CrossOutline\textCrossOutline  
20332 \let\CrossMaltese\textCrossMaltese  
20333 \let\DavidStar\textDavidStar  
20334 \let\FourAsterisk\textFourAsterisk  
20335 \let\JackStar\textJackStar  
20336 \let\JackStarBold\textJackStarBold  
20337 \let\ClowerTips\textClowerTips  
20338 \let\FourStar\textFourStar  
20339 \let\FourStarOpen\textFourStarOpen  
20340 \let\FiveStarOpenCircled\textFiveStarOpenCircled  
20341 \let\FiveStarCenterOpen\textFiveStarCenterOpen  
20342 \let\FiveStarOpenDotted\textFiveStarOpenDotted  
20343 \let\FiveStarOutline\textFiveStarOutline  
20344 \let\FiveStarOutlineHeavy\textFiveStarOutlineHeavy  
20345 \let\FiveStarConvex\textFiveStarConvex  
20346 \let\FiveStarShadow\textFiveStarShadow  
20347 \let\AsteriskBold\textAsteriskBold  
20348 \let\AsteriskCenterOpen\textAsteriskCenterOpen  
20349 \let\EightStarTaper\textEightStarTaper  
20350 \let\EightStarConvex\textEightStarConvex  
20351 \let\SixStar\textSixStar  
20352 \let\EightStar\textEightStar  
20353 \let\EightStarBold\textEightStarBold  
20354 \let\TwelveStar\textTwelveStar  
20355 \let\SixteenStarLight\textSixteenStarLight  
20356 \let\SixFlowerPetalRemoved\textSixFlowerPetalRemoved  
20357 \let\SixFlowerOpenCenter\textSixFlowerOpenCenter  
20358 \let\Asterisk\textAsterisk  
20359 \let\SixFlowerAlternate\textSixFlowerAlternate  
20360 \let\FiveFlowerPetal\textFiveFlowerPetal  
20361 \let\FiveFlowerOpen\textFiveFlowerOpen  
20362 \let\EightFlowerPetal\textEightFlowerPetal  
20363 \let\SunshineOpenCircled\textSunshineOpenCircled  
20364 \let\SixFlowerAltPetal\textSixFlowerAltPetal  
20365 \let\SnowflakeChevron\textSnowflakeChevron  
20366 \let\Snowflake\textSnowflake  
20367 \let\SnowflakeChevronBold\textSnowflakeChevronBold  
20368 \let\Sparkle\textSparkle  
20369 \let\SparkleBold\textSparkleBold  
20370 \let\AsteriskRoundedEnds\textAsteriskRoundedEnds  
20371 \let\EightFlowerPetalRemoved\textEightFlowerPetalRemoved  
20372 \let\EightAsterisk\textEightAsterisk  
20373 \let\CircleShadow\textCircleShadow  
20374 \let\SquareShadowBottomRight\textSquareShadowBottomRight  
20375 \let\SquareTopRight\textSquareTopRight  
20376 \let\SquareCastShadowBottomRight\textSquareCastShadowBottomRight  
20377 \let\SquareCastShadowTopRight\textSquareCastShadowTopRight  
20378 \let\DiamondSolid\textDiamondSolid  
20379 \let\RectangleThin\textRectangleThin  
20380 \let\Rectangle\textRectangle  
20381 \let\RectangleBold\textRectangleBold  
20382 \let\perp\textperp  
20383 \let\notperp\textnotperp  
20384 \let\veedot\textveedot

20385 \let\wedgedot\textwedgedot  
20386 \let\leftspoon\textleftspoon  
20387 \let\lbrackdbl\textlbrackdbl  
20388 \let\rbrackdbl\textrbrackdbl  
20389 \let\circlearrowleft\textcirclearrowleft  
20390 \let\circlearrowright\textcirclearrowright  
20391 \let\longleftarrow\textlongleftarrow  
20392 \let\longrightarrow\textlongrightarrow  
20393 \let\longleftarrow\textlongleftarrow  
20394 \let\Longleftarrow\textLongleftarrow  
20395 \let\Longrightarrow\textLongrightarrow  
20396 \let\Longleftarrow\textLongleftarrow  
20397 \let\longmapsto\textlongmapsto  
20398 \let\Longmapsfrom\textLongmapsfrom  
20399 \let\Longmapsto\textLongmapsto  
20400 \let\nwsearrow\textnwsearrow  
20401 \let\neswarrow\textneswarrow  
20402 \let\lhooknarrow\textlhooknarrow  
20403 \let\rhooknarrow\textrhooknarrow  
20404 \let\lhooksearrow\textlhooksearrow  
20405 \let\rhooksearrow\textrhooksearrow  
20406 \let\leadsto\textleadsto  
20407 \let\rcurvearrowne\textrcurvearrowne  
20408 \let\lcurvearrowse\textlcurvearrowse  
20409 \let\lcurvearrowsw\textlcurvearrowsw  
20410 \let\rcurvearrowse\textrcurvearrowse  
20411 \let\lcurvearrowdown\textlcurvearrowdown  
20412 \let\rcurvearrowdown\textrcurvearrowdown  
20413 \let\rcurvearrowleft\textrcurvearrowleft  
20414 \let\rcurvearrowright\textrcurvearrowright  
20415 \let\leftrightharpoon\textleftrightharpoon  
20416 \let\rightharpoonleft\textlightharpoonleft  
20417 \let\updownharpoonrightleft\textupdownharpoonrightleft  
20418 \let\updownharpoonleftright\textupdownharpoonleftright  
20419 \let\leftleftharpoons\textleftleftharpoons  
20420 \let\upupharpoons\textupupharpoons  
20421 \let\rightleftharpoons\textrightleftharpoons  
20422 \let\downdownharpoons\textdowndownharpoons  
20423 \let\leftbarharpoon\textleftbarharpoon  
20424 \let\barleftharpoon\textbarleftharpoon  
20425 \let\rightbarharpoon\textrightbarharpoon  
20426 \let\barrightharpoon\textbarrightharpoon  
20427 \let\updownharpoons\textupdownharpoons  
20428 \let\downupharpoons\textdownupharpoons  
20429 \let\moo\textmoo  
20430 \let\llparenthesis\textllparenthesis  
20431 \let\rrparenthesis\textrrparenthesis  
20432 \let\invdiameter\textinvdiameter  
20433 \let\obar\textobar  
20434 \let\obslash\textobslash  
20435 \let\obot\textobot  
20436 \let\NoChemicalCleaning\textNoChemicalCleaning  
20437 \let\olessthan\textolessthan  
20438 \let\ogreaterthan\textogreaterthan



20439  $\backslash\text{boxslash}$   
20440  $\backslash\text{boxbslash}$   
20441  $\backslash\text{boxast}$   
20442  $\backslash\text{boxcircle}$   
20443  $\backslash\text{boxbox}$   
20444  $\backslash\text{Valve}$   
20445  $\backslash\text{multimapboth}$   
20446  $\backslash\text{shuffle}$   
20447  $\backslash\text{uplus}$   
20448  $\backslash\text{bigdoublewedge}$   
20449  $\backslash\text{bigdoublevee}$   
20450  $\backslash\text{Join}$   
20451  $\backslash\text{fatsemi}$   
20452  $\backslash\text{circplus}$   
20453  $\backslash\text{minusdot}$   
20454  $\backslash\text{dottimes}$   
20455  $\backslash\text{dtimes}$   
20456  $\backslash\text{odiv}$   
20457  $\backslash\text{invneg}$   
20458  $\backslash\text{sqdoublecap}$   
20459  $\backslash\text{capdot}$   
20460  $\backslash\text{sqdoublecup}$   
20461  $\backslash\text{doublewedge}$   
20462  $\backslash\text{doublevee}$   
20463  $\backslash\text{doublebarwedge}$   
20464  $\backslash\text{veedoublebar}$   
20465  $\backslash\text{eqdot}$   
20466  $\backslash\text{neqdot}$   
20467  $\backslash\text{coloncolonequals}$   
20468  $\backslash\text{leqslant}$   
20469  $\backslash\text{nleqslant}$   
20470  $\backslash\text{geqslant}$   
20471  $\backslash\text{ngeqslant}$   
20472  $\backslash\text{lessapprox}$   
20473  $\backslash\text{nlessapprox}$   
20474  $\backslash\text{gtrapprox}$   
20475  $\backslash\text{ngtrapprox}$   
20476  $\backslash\text{lneq}$   
20477  $\backslash\text{gneq}$   
20478  $\backslash\text{lnapprox}$   
20479  $\backslash\text{gnapprox}$   
20480  $\backslash\text{lesseqgtr}$   
20481  $\backslash\text{gtreqqlless}$   
20482  $\backslash\text{eqslantless}$   
20483  $\backslash\text{eqslantgtr}$   
20484  $\backslash\text{leftslice}$   
20485  $\backslash\text{rightslice}$   
20486  $\backslash\text{preceq}$   
20487  $\backslash\text{npreceq}$   
20488  $\backslash\text{succeq}$   
20489  $\backslash\text{nsucceq}$   
20490  $\backslash\text{precneq}$   
20491  $\backslash\text{succneq}$   
20492  $\backslash\text{preceqq}$

20493 \let\npreceqq\textnpreceqq  
 20494 \let\succeqq\textsucceqq  
 20495 \let\nsucceqq\textnsucceqq  
 20496 \let\precneqq\textprecneqq  
 20497 \let\succneqq\textsuccneqq  
 20498 \let\precapprox\textprecapprox  
 20499 \let\nprecapprox\textnprecapprox  
 20500 \let\succapprox\textsuccapprox  
 20501 \let\nsuccapprox\textnsuccapprox  
 20502 \let\precnapprox\textprecnapprox  
 20503 \let\succnapprox\textsuccnapprox  
 20504 \let\subseteqq\textsubseteqq  
 20505 \let\nsubseteqq\textnsubseteqq  
 20506 \let\supseteqq\textsupteqq  
 20507 \let\nsupseteqq\textnsupseteqq  
 20508 \let\dashV\textdashV  
 20509 \let\ndashV\textndashV  
 20510 \let\Dashv\textDashv  
 20511 \let\ndashv\textndashv  
 20512 \let\DashV\textDashV  
 20513 \let\ndashV\textndashV  
 20514 \let\downmodels\textdownmodels  
 20515 \let\ndownmodels\textndownmodels  
 20516 \let\upmodels\textupmodels  
 20517 \let\nupmodels\textnupmodels  
 20518 \let\upspoon\textupspoon  
 20519 \let\interleave\textinterleave  
 20520 \let\sslash\textsslash  
 20521 \let\pentagon\textpentagon  
 20522 \let\varhexagon\textvarhexagon  
 20523 \let\jinferior\textjinferior  
 20524 \let\slashdiv\textslashdiv  
 20525 \let\fivedots\textfivedots  
 20526 \let\oo\textoo  
 20527 \let\GaPa\textGaPa  
 20528 \let\HaPa\textHaPa  
 20529 \let\ViPa\textViPa  
 20530 \let\AcPa\textAcPa  
 20531 \let\SePa\textSePa  
 20532 \let\ZwPa\textZwPa  
 20533 \let\fullnote\textfullnote  
 20534 \let\halfnote\texthalfnote  
 20535 \let\Vier\textVier  
 20536 \let\Acht\textAcht  
 20537 \let\Sech\textSech  
 20538 \let\Zwdr\textZwdr  
 20539 \let\Mundus\textMundus  
 20540 \let\Moon\textMoon  
 20541 \let\ManFace\textManFace  
 20542 \let\WomanFace\textWomanFace  
 20543 \let\Fax\textFax  
 20544 \let\Fire\textFire  
 20545 \let\Bicycle\textBicycle  
 20546 \let\Gentsroom\textGentsroom

20547 \let\Ladiesroom\textLadiesroom  
20548 \let\ccnc\textccnc  
20549 \let\ccsa\textccsa  
20550 \let\Info\textInfo  
20551 \let\CESign\textCESign  
20552 \let\neg\textneg  
20553 \let\times\texttimes  
20554 \let\div\textdiv  
20555 \let\pm\textpm  
20556 \let\cdot\textcdot  
20557 }% \psdmapshortnames  
20558 \newcommand\*{\psdaliasnames}{%  
20559 \let\epsdice\HyPsd@DieFace  
20560 \let\fcdice\HyPsd@DieFace  
20561 \let\MoonPha\HyPsd@MoonPha  
20562 \let\mathdollar\textdollar  
20563 \let\EyesDollar\textdollar  
20564 \let\binampersand\textampersand  
20565 \let\with\textampersand  
20566 \let\mathunderscore\textunderscore  
20567 \let\textvertline\textbar  
20568 \let\mathsterling\textsterling  
20569 \let\pounds\textsterling  
20570 \let\brokenvert\textbrokenbar  
20571 \let\mathsection\textsection  
20572 \let\S\textsection  
20573 \let\mathparagraph\textparagraph  
20574 \let\MultiplicationDot\textperiodcentered  
20575 \let\Squaredot\textperiodcentered  
20576 \let\vartimes\textmultiply  
20577 \let\MVMultiplication\textmultiply  
20578 \let\eth\dh  
20579 \let\crossd\textcrd  
20580 \let\textbard\textcrd  
20581 \let\bard\textcrd  
20582 \let\textcrh\texthbar  
20583 \let\crossh\texthbar  
20584 \let\planck\texthbar  
20585 \let\eng\ng  
20586 \let\engma\ng  
20587 \let\crossb\textcrb  
20588 \let\textbarb\textcrb  
20589 \let\barb\textcrb  
20590 \let\Florin\textflorin  
20591 \let\hv\texthvlig  
20592 \let\hausak\texthtk  
20593 \let\crossnilambda\textcrlambda  
20594 \let\barlambda\textcrlambda  
20595 \let\lambdabar\textcrlambda  
20596 \let\lambdaslash\textcrlambda  
20597 \let\textnrleg\textPUnrleg  
20598 \let\textpipevar\textpipe  
20599 \let\textdoublepipevar\textdoublepipe  
20600 \let\textdoublebarpipevar\textdoublebarpipe

20601 \let\textcrg\textgslash  
20602 \let\textdblig\textPUdblig  
20603 \let\textqplig\textPUqplig  
20604 \let\textcentoldstyle\textslashc  
20605 \let\textbarc\textslashc  
20606 \let\inva\textturna  
20607 \let\vara\textscripta  
20608 \let\invscripta\textturnscripta  
20609 \let\rotvara\textturnscripta  
20610 \let\hookb\texthtb  
20611 \let\hausab\texthtb  
20612 \let\varopeno\textopeno  
20613 \let\curlyc\textctc  
20614 \let\taild\textrtaild  
20615 \let\hookd\texthtd  
20616 \let\hausad\texthtd  
20617 \let\er\textrhookschwa  
20618 \let\epsi\textniepsilon  
20619 \let\hookrepsilon\texthookrepsilon  
20620 \let\closedrepsilon\textcloserepsilon  
20621 \let\barj\textbardotlessj  
20622 \let\hookg\texthtg  
20623 \let\varg\textscriptg  
20624 \let\vod\textipagamma  
20625 \let\invh\textturnh  
20626 \let\udesc\textturnh  
20627 \let\hookh\texthth  
20628 \let\voicedh\texthth  
20629 \let\hookheng\texththeng  
20630 \let\ibar\textbari  
20631 \let\vari\textniota  
20632 \let\tildel\textltilde  
20633 \let\latfric\textbeltl  
20634 \let\tail\textrtail  
20635 \let\lz\textlyoghlig  
20636 \let\invm\textturnm  
20637 \let\rotm\textturnm  
20638 \let\legm\textturnmleg  
20639 \let\labdentalnas\textltailm  
20640 \let\emgma\textltailm  
20641 \let\nj\textltailn  
20642 \let\enya\textltailn  
20643 \let\tailn\textrtailn  
20644 \let\closedniomega\textcloseomega  
20645 \let\varomega\textcloseomega  
20646 \let\invr\textturnr  
20647 \let\rotr\textturnr  
20648 \let\invlegr\textturnlonglegr  
20649 \let\tailinvr\textturnrrtail  
20650 \let\legr\textlonglegr  
20651 \let\tailr\textrtailr  
20652 \let\flapr\textfishhookr  
20653 \let\flap\textfishhookr  
20654 \let\tails\textrtails

20655 \let\curlyesh\textctesh  
20656 \let\clickt\textturnt  
20657 \let\tailt\texttrtailt  
20658 \let\ubar\textbaru  
20659 \let\rotOmega\textniupsilon  
20660 \let\invv\textturnv  
20661 \let\pwedge\textturnv  
20662 \let\invw\textturnw  
20663 \let\rotw\textturnw  
20664 \let\invy\textturny  
20665 \let\roty\textturny  
20666 \let\tailz\texttrtailz  
20667 \let\curlyz\textctz  
20668 \let\curlyyogh\textctyogh  
20669 \let\ejective\textglotstop  
20670 \let\glottal\textglotstop  
20671 \let\reject\textrevglotstop  
20672 \let\clickc\textstretchc  
20673 \let\textstretchcvar\textstretchc  
20674 \let\clickb\textbullseye  
20675 \let\textObullseye\textbullseye  
20676 \let\textctjvar\textctj  
20677 \let\textturnsck\textturnk  
20678 \let\dz\textdzlig  
20679 \let\tesh\textteshlig  
20680 \let\digamma\textdigammagreek  
20681 \let\hardsign\cyrhrdsn  
20682 \let\softsign\cyrsoftsn  
20683 \let\hebsin\hebshin  
20684 \let\textsck\textPUscck  
20685 \let\textscm\textPUscm  
20686 \let\textscp\textPUscp  
20687 \let\textrevscr\textPUrevscr  
20688 \let\textrhooca\textPURhooka  
20689 \let\textrhooke\textPURhooko  
20690 \let\textrhookepsilon\textPURhookoepsilon  
20691 \let\textrhookepsilon\textPURhookoepsilon  
20692 \let\textdoublevertline\textbardbl  
20693 \let\dag\textdagger  
20694 \let\ddagger\textdaggerdbl  
20695 \let\ddag\textdaggerdbl  
20696 \let\mathellipsis\textellipsis  
20697 \let\EurDig\texteuro  
20698 \let\EURdig\texteuro  
20699 \let\EurHv\texteuro  
20700 \let\EURhv\texteuro  
20701 \let\EurCr\texteuro  
20702 \let\EURcr\texteuro  
20703 \let\EurTm\texteuro  
20704 \let\EURtm\texteuro  
20705 \let\Eur\texteuro  
20706 \let\Denarius\textDeleatur  
20707 \let\agemO\textmho  
20708 \let\EstimatedSign\textestimated

20709 `\let\Ecommerce\textestimated`  
20710 `\let\bindnasrepma\textinvamp`  
20711 `\let\parr\textinvamp`  
20712 `\let\MVRightArrow\textrightarrow`  
20713 `\let\MVRightarrow\textrightarrow`  
20714 `\let\MVArrowDown\textdownarrow`  
20715 `\let\Force\textdownarrow`  
20716 `\let\textglobrise\textnearrow`  
20717 `\let\textglobfall\textsearrow`  
20718 `\let\Lightning\textlightning`  
20719 `\let\Conclusion\textRightarrow`  
20720 `\let\dashedleftarrow\textdashleftarrow`  
20721 `\let\dashedrightarrow\textdashrightarrow`  
20722 `\let\varnothing\textemptyset`  
20723 `\let\owns\textni`  
20724 `\let\notni\textnotowner`  
20725 `\let\varprop\textpropto`  
20726 `\let\varangle\textsphericalangle`  
20727 `\let\Anglesign\textsphericalangle`  
20728 `\let\AngleSign\textsphericalangle`  
20729 `\let\notdivides\textnmid`  
20730 `\let\varowedge\textowedge`  
20731 `\let\varovee\textovee`  
20732 `\let\varint\textint`  
20733 `\let\varoint\textoint`  
20734 `\let\downtherefore\textbecause`  
20735 `\let\textdotdiv\textdotminus`  
20736 `\let\AC\textsim`  
20737 `\let\wreath\textwr`  
20738 `\let\nthickapprox\textnapprox`  
20739 `\let\VHF\texttriplesim`  
20740 `\let\notasymp\textnasymp`  
20741 `\let\Doteq\textdoteqdot`  
20742 `\let\corresponds\texthateq`  
20743 `\let\Corresponds\texthateq`  
20744 `\let\nequal\textneq`  
20745 `\let\Congruent\textequiv`  
20746 `\let\NotCongruent\textnequiv`  
20747 `\let\notequiv\textnequiv`  
20748 `\let\LessOrEqual\textleq`  
20749 `\let\LargerOrEqual\textgeq`  
20750 `\let\apprle\textlesssim`  
20751 `\let\apprge\textgtrsim`  
20752 `\let\varoplus\textoplus`  
20753 `\let\varominus\textominus`  
20754 `\let\varotimes\textotimes`  
20755 `\let\varoslash\textoslash`  
20756 `\let\varodot\textodot`  
20757 `\let\ocirc\textcircledcirc`  
20758 `\let\varocircle\textcircledcirc`  
20759 `\let\varoast\textcircledast`  
20760 `\let\oasterisk\textcircledast`  
20761 `\let\rightvdash\textvdash`  
20762 `\let\leftvdash\textdashv`

20763 \let\leftvdash\textndashv  
20764 \let\downvdash\texttop  
20765 \let\upvdash\textbot  
20766 \let\nperp\textnupvdash  
20767 \let\models\textvDash  
20768 \let\rightmodels\textvDash  
20769 \let\rightVdash\textVdash  
20770 \let\rightModels\textVDash  
20771 \let\nrightvdash\textnvdash  
20772 \let\nrightmodels\textnvDash  
20773 \let\nmodels\textnvDash  
20774 \let\nrightVdash\textnVdash  
20775 \let\nrightModels\textnVDash  
20776 \let\lessclosed\textlhd  
20777 \let\gtrclosed\textrhd  
20778 \let\leqclosed\textunlhd  
20779 \let\trianglelefteq\textunlhd  
20780 \let\geqclosed\textunrhd  
20781 \let\trianglerighteq\textunrhd  
20782 \let\Bowtie\textbowtie  
20783 \let\varcurlyvee\textcurlyvee  
20784 \let\varcurlywedge\textcurlywedge  
20785 \let\doublecap\textCap  
20786 \let\doublecup\textCup  
20787 \let\varsqsubsetneq\textsqssubsetneq  
20788 \let\varsqsupsetneq\textsqsupsetneq  
20789 \let\nlessclosed\textntriangleleft  
20790 \let\ngtrclosed\textntriangleright  
20791 \let\Clocklogo\textclock  
20792 \let\ClockLogo\textclock  
20793 \let\baro\textstmaryrdbaro  
20794 \let\varparallelinv\textbbslash  
20795 \let\CleaningA\textCircledA  
20796 \let\Kutline\textCuttingLine  
20797 \let\CutLine\textCuttingLine  
20798 \let\Cutline\textCuttingLine  
20799 \let\MoveUp\textUParrow  
20800 \let\APLup\textbigtriangleup  
20801 \let\Bleech\textbigtriangleup  
20802 \let\MoveDown\textDOWNarrow  
20803 \let\APLdown\textbigtriangledown  
20804 \let\Diamond\textdiamond  
20805 \let\varbigcirc\textbigcircle  
20806 \let\Telefon\textPhone  
20807 \let\Box\textboxempty  
20808 \let\CheckedBox\textCheckedbox  
20809 \let\XBox\textCrossedbox  
20810 \let\CrossedBox\textCrossedbox  
20811 \let\rightpointleft\textHandLeft  
20812 \let\leftpointright\textHandRight  
20813 \let\PointingHand\textHandRight  
20814 \let\Pointinghand\textHandRight  
20815 \let\Radiation\textRadioactivity  
20816 \let\Yinyang\textYinYang

20817 \let\YingYang\textYinYang  
20818 \let\Yingyang\textYinYang  
20819 \let\Frowny\textfrownie  
20820 \let\Smiley\textsmiley  
20821 \let\Sun\textsun  
20822 \let\Mercury\textmercury  
20823 \let\textfemale\textPUfemale  
20824 \let\female\textPUfemale  
20825 \let\venus\textPUfemale  
20826 \let\Venus\textPUfemale  
20827 \let\Female\textPUfemale  
20828 \let\Earth\textearth  
20829 \let\mars\textmale  
20830 \let\Mars\textmale  
20831 \let\Male\textmale  
20832 \let\Jupiter\textjupiter  
20833 \let\Saturn\textsaturn  
20834 \let\Uranus\texturanus  
20835 \let\Neptune\textneptune  
20836 \let\Pluto\textpluto  
20837 \let\Aries\textaries  
20838 \let\Taurus\texttaurus  
20839 \let\Gemini\textgemini  
20840 \let\Cancer\textcancer  
20841 \let\Leo\textleo  
20842 \let\Virgo\textvirgo  
20843 \let\Libra\textlibra  
20844 \let\Scorpio\textscorpio  
20845 \let\Sagittarius\textsagittarius  
20846 \let\Capricorn\textcapricornus  
20847 \let\Aquarius\textaquarius  
20848 \let\Pisces\textpisces  
20849 \let\spadesuit\textspadesuitblack  
20850 \let\Heart\textheartsuitwhite  
20851 \let\heartsuit\textheartsuitwhite  
20852 \let\diamondsuit\textdiamondsuitwhite  
20853 \let\clubsuit\textclubsuitblack  
20854 \let\eighthnote\textmusicalnote  
20855 \let\Recycling\textrecycle  
20856 \let\VarFlag\textFlag  
20857 \let\textxswup\textdsmilitary  
20858 \let\textuncrfemale\textPUuncrfemale  
20859 \let\Football\textSoccerBall  
20860 \let\CutLeft\textScissorRightBrokenBottom  
20861 \let\Cutright\textScissorRightBrokenBottom  
20862 \let\RightScissors\textScissorRight  
20863 \let\Leftscissors\textScissorRight  
20864 \let\Letter\textEnvelope  
20865 \let\Writinghand\textWritingHand  
20866 \let\checkmark\textCheckmark  
20867 \let\davidstar\textDavidStar  
20868 \let\llbracket\textlbrackdbl  
20869 \let\rrbracket\textrrbrackdbl  
20870 \let\RightTorque\textlcurvearrowdown



```

20871 \let\Righttorque\textlcurvearrowdown
20872 \let\LeftTorque\textrcurvearrowdown
20873 \let\Lefttorque\textrcurvearrowdown
20874 \let\textvarobar\textobar
20875 \let\circledbslash\textobslash
20876 \let\obackslash\textobslash
20877 \let\varobslash\textobslash
20878 \let\odplus\textobot
20879 \let\varolessthan\textolessthan
20880 \let\varogreaterthan\textogreaterthan
20881 \let\divdot\textminusdot
20882 \let\doublesqcap\textsqdoublecap
20883 \let\doublesqcup\textsqdoublecup
20884 \let\merge\textdoublevee
20885 \let\leftVdash\textdashV
20886 \let\nleftVdash\textndashV
20887 \let\leftmodels\textDashv
20888 \let\nleftmodels\textnDashv
20889 \let\leftModels\textDashV
20890 \let\nleftModels\textnDashV
20891 \let\varparallel\textsslash
20892 \let\textheng\textPUheng
20893 \let\textlhookfour\textPUhookfour
20894 \let\textscf\textPUscf
20895 \let\texttaolig\textPUaolig
20896 \let\Ganz\textfullnote
20897 \let\Halb\texthalfnote
20898 \let\Womanface\textWomanFace
20899 \let\Faxmachine\textFax
20900 \let\CEsign\textCESign
20901 }% \psdaliasnames
20902 </psdextra>

```

## 48 End of file hyccheck.tex

```

20903 < *check >
20904 \typeout{}
20905 \begin{document}
20906 \end{document}
20907 < /check >

```

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