

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

Sebastian Rahtz (deceased)

Heiko Oberdiek (inactive)

The L<sup>A</sup>T<sub>E</sub>X Project

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

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## 1 Documentation overview for hyperref

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

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

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

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

**Bookmark talk, paper** The paper version of the talk.

Source code documentation:

☞ **hyperref.dtx** This is the source code documentation for `hyperref` (this file).

**backref.dtx** “Back referencing from bibliographical citations”

**nameref.dtx** “Section name references in L<sup>A</sup>T<sub>E</sub>X”

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### 3 File hyccheck.tex

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

```
1 (*check)
2 \documentclass{article}
3 \makeatletter
```

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

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

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

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

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

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

`\HyC@checkPackage`

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

```

37 \space\space Loaded: `\'HyC@package' %
38 \csname ver@\'HyC@package.sty\endcsname
39 }%
40 }%
41 }

```

`\checkcommand` The macro `\checkcommand` parses the next tokens as a L<sup>A</sup>T<sub>E</sub>X definition and compares this definition with the current meaning of that command.

```

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

```

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

```

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

```

`\HyC@checkcommand` The optional star of L<sup>A</sup>T<sub>E</sub>X's definitions is parsed.

```

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

```

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

```

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

```



```

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

```

`\HyC@noValue`

```

85 \def\HyC@noValue{NoValue}

```

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

```

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

```

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

```

90 \newtoks\HyC@Toks

```

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

```

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

```

`\HyC@nc@opt` This macro scans the first optional argument of a `LATEX` definition (number of arguments).

```

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

```

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

```

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

```

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

```

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

```

```

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

```

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

```

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

```

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

```

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

```

`\HyC@checkItem` A single check.

```

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

```

`\HyC@string` Some shorthands.

```

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

```

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

```

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

```

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

```

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

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

```

## 4 Package options and setup

### 4.1 Save catcodes

There are many packages that change the standard catcodes.

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

```

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

```

\Hy@SetCatcodes

```

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

```

```

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

```

\Hy@RestoreCatcodes

```

205 \begingroup
206 \def\x#1{\catcode`\noexpand#1=\the\catcode`#1\relax}%
207 \xdef\Hy@RestoreCatcodes{%
208   \the\toks@
209   \x\$$%
210   \x\&%
211   \x\^%
212   \x\_%
213   \x\|%
214   \x\:%
215   \x\(%
216   \x\)%
217   \x\[%
218   \x\]%
219   \x\/%
220   \x\!%
221   \x\<%
222   \x\>%
223   \x\.%
224   \x\;%
225   \x\+%
226   \x\-%
227   \x\"%
228   \x\'%
229 }%
230 \endgroup

```

231 \Hy@SetCatcodes

change 2020-07-24: require newer pdftexcmds and remove fallback code for version older than 2010. change 2021-08-14: require expl3 change 2023-11-26: no longer require pdftexcmds change 2023-11-26: no longer require expl3, we assume kernel is new enough. change 2024-05-23: load stringenc always (for pdfx)

```

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

```

```

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

```

## 4.2 Version check

\Hy@VersionChecked

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

\Hy@VersionCheck

```

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

```

```

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

```

\Hy@@VersionCheck

```

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

```

### 4.3 Checks with regular expressions

```

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

```

## 4.4 Compatibility with format dumps

`\AfterBeginDocument` For use with pre-compiled formats, created using the `ldump` package, there needs to be 2 hooks for adding material delayed until `\begin{document}`. These are called `\AfterBeginDocument` and `\AtBeginDocument`. If `ldump` is not loaded, then a single hook suffices for normal L<sup>A</sup>T<sub>E</sub>X processing.

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

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

`\Hy@AtBeginDocument` For the case that package ‘hyperref’ is loaded using `\AtBeginDocument`, we have to wrap the calls of `\AtBeginDocument`/`\AfterBeginDocument` in `\AtEndOfPackage`. However, packages must be loaded in `\AtEndOfPackage` *before* package ‘kvoptions’ has to perform its option cleanup. Therefore we use a hook.

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

`\Hy@AtEndOfPackage`

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

`\Hy@AtBeginDocumentHook`

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

`\Hy@AtEndOfPackageHook`

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

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

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

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

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

## 4.5 Switches

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

Defaults for the switches are now set.

```
414 \Hy@backreffalse
```



```

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

```

## 5 Common help macros

\Hy@StepCount

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

\Hy@GlobalStepCount

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

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

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

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

```

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

```

## 5.1 Macros for recursions

```

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

```

## 5.2 Babel's protection of shorthand characters

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

```

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

```

## 5.3 Coordinate transformations

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

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

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

- It cannot be used inside `\usepackage`, because LaTeX expands the options before package `hyperref` is loaded and `\hypercalcbp` is defined.
- With the now required e-TeX extensions an expandable implementation is very easy; `\hypercalcbp` can be used everywhere and is expanded at use.

Example (TeX):

```

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

```

`\hypercalcbp`

```

474 \def\hypercalcbp#1{%
475   \strip@pt\dimexpr 0.99626401\dimexpr(#1)\relax\relax
476 }%
477 \def\hypercalcbpdef{\def}%

```

## 6 Dealing with PDF strings

The PDF string stuff done by Heiko Oberdiek.

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

## 6.1 Description of PDF strings

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

- They are surrounded by parentheses. The hexadecimal form is not supported.
- Like PostScript language strings they use the same escaping mechanism:
  - `\\` the backslash itself
  - `\), \()` unbalanced parentheses
  - `\n, \r, \t, \b, \f` special white space escape sequences
  - `\ddd` octal character code `ddd`
- Strings are stored either in PDFDocEncoding, which is a superset of ISO-Latin1 and is compatible with Unicode with character codes below 256, or in Unicode.

## 6.2 Definition of `\pdfstringdef`

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

Important: In T<sub>E</sub>X's view PDF strings are written to a file and are expanded only in its mouth. Stomach commands that cannot be expanded further aren't executed, they are written verbatim. But the PDF reader that reads such a string isn't a T<sub>E</sub>X interpreter!

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

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

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

`ppercaseUnsupportedInPdfStrings`  
`owercaseUnsupportedInPdfStrings`

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

```

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

```

`\pdfstringdef` `\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 this 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) <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##2{\@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 LATEX as follows:
```

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

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

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

```
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@unicodetofalse
779     }{}}%
780     \fi
781 \fi
782 \fi

```

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

```

783 \pdfstringdefPostHook#1%
784 \endgroup
785 }

```

`\Hy@pdfstringdef`

```

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

```

## 6.3 Encodings

### 6.3.1 XeTeX

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

### 6.3.2 Workaround for package linguex

```

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

```



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

\Hy@SaveCatcodeSettings

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

\Hy@RestoreCatcodeSettings

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

### 6.3.4 PD1 encoding

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

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

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

### 6.3.5 PU encoding

The PU encoding implements the Unicode encoding for use with L<sup>A</sup>T<sub>E</sub>X's NFSS. Because of large memory requirements the encoding file for Unicode support is only loaded, if option unicode is specified as package option. change 2020-08-14: Starting with version v7.00f the file is always loaded and unicode is the default option.

`\HyPsd@LoadUnicode` Because the file puenc.def takes a lot of memory, the loading is defined in the macro `\HyPsd@LoadUnicode` called by the package option `unicode`.

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

`\HyPsd@LoadExtra`

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

```

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

```

## 6.4 Additional user commands

### 6.4.1 `\texorpdfstring`

`\texorpdfstring` While expanding the string in `\pdfstringdef` the switch `\ifHy@pdfstring` is set. This is used by the full expandible macro `\texorpdfstring`. It expects two arguments, the first contains the string that will be set and processed by T<sub>E</sub>X's stomach, the second contains the replacement for PDF strings.

```

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

```

### 6.4.2 Hooks for `\pdfstringdef`

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

```

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

```

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

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

```

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

```

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

```

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

```

`\HyPsd@DisableCommands`

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

`\pdfstringdefWarn` The purpose of `\pdfstringdefWarn` is to produce a warning message, so the user can see, that something can go wrong with the conversion to PDF strings.

The prefix `\<>`- is added to the token. `\noexpand` protects the probably undefined one during the first expansion step. Then `\HyPsd@CheckCatcodes` can detect the not allowed token, `\HyPsd@CatcodeWarning` prints a warning message, after `\HyPsd@RemovePrefix` has removed the prefix.

`\pdfstringdefWarn` is intended for document authors or package writers, examples for use can be seen in the definition of `\HyPsd@ifnextchar` or `\HyPsd@protected@testopt`.

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

## 6.5 Help macros for expansion

### 6.5.1 `\ignorespaces`

`\HyPsd@ignorespaces` With the help of a trick using `\romannumeral` the effect of `\ignorespaces` can be simulated a little, In a special case using an alphabetic constant `\romannumeral` eats an optional space. If the constant is zero, then the `\romannumeral` expression vanishes. The following macro uses this trick twice, thus `\HyPsd@ignorespaces` eats up to two following spaces.

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

### 6.5.2 Babel languages

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

```
926 \newif\ifHy@next
927 </package>
```

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

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

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

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

```
928 <*package>
```

### 6.5.3 CJK patch

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

```
\HyPsd@CJKhook
```

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

### 6.5.4 CJK bookmarks

```
\HyPsd@CJKhook
```

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

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

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

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

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

```

952 }%
953 % ... ?
954 \ifHy@unicode
955 \def\Hy@cjkpu{\80}%
956 \else
957 \let\Hy@cjkpu\@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@cjkpu\string#1}%
979 \fi
980 \HyPsd@CJKActiveChars
981 }

```

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

```

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

```

```

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

```

### 6.5.5 CJK unicode

\HyPsd@CJKhook@unicode

```

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

```

\HyPsd@CJK@Unicode

```

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

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

```

```

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

```



```

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

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

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

```

```

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

```

```

1210 \HyPsd@@CJKnumber{\IntCalcDiv#1!100!}%
1211 \CJK@hundred
1212 \expandafter\expandafter\expandafter\HyPsd@CJKnumberTwo
1213 \IntCalcMod#1!100!%
1214 !\CJK@zero{10}%
1215 \fi
1216 \fi
1217 }
1218 \def\HyPsd@CJKnumberTwo#1!#2#3{%
1219 \ifnum#1=\z@
1220 \else
1221 \ifnum#1<#3 %
1222 #2%
1223 \HyPsd@@CJKnumber{#1}%
1224 \else
1225 \HyPsd@@CJKnumber{\IntCalcDiv#1!10!}%
1226 \CJK@ten
1227 \ifnum\IntCalcMod#1!10!=\z@
1228 \else
1229 \HyPsd@@CJKnumber{\IntCalcMod#1!10!}%
1230 \fi
1231 \fi
1232 }
1233 }
1234 \def\HyPsd@CJKdigits#1{%
1235 \ifx*#1\relax
1236 \expandafter\HyPsd@@CJKdigits\expandafter\CJK@zero
1237 \else
1238 \HyPsd@@CJKdigits\CJK@null{#1}%
1239 \fi
1240 }
1241 \def\HyPsd@@CJKdigits#1#2{%
1242 \ifx\#2\%
1243 \else
1244 \HyPsd@@@CJKdigits#1#2\@nil
1245 \fi
1246 }%
1247 \def\HyPsd@@@CJKdigits#1#2#3\@nil{%
1248 \HyPsd@CJKdigit#1{#2}%
1249 \ifx\#3\%
1250 \expandafter\@gobble
1251 \else
1252 \expandafter\@firstofone
1253 \fi
1254 {%
1255 \HyPsd@@@CJKdigits#1#3\@nil
1256 }%
1257 }
1258 \def\HyPsd@CJKdigit#1#2{%
1259 \ifcase#2 %
1260 #1\or
1261 \CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1262 \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine
1263 \fi

```

### 6.5.6 \@inmathwarn-Patch

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

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

```

\def\@current@cmd#1{%
  \ifx\protect\@typeset@protect
    \@inmathwarn#1%
  \else
    \noexpand#1\expandafter\@gobble
  \fi}
\def\@changed@cmd#1#2{%
  \ifx\protect\@typeset@protect
    \@inmathwarn#1%
    \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
      \expandafter\ifx\csname?\string#1\endcsname\relax
        \expandafter\def\csname?\string#1\endcsname{%
          \TextSymbolUnavailable#1%
        }%
      \fi
    \global\expandafter\let
      \csname\cf@encoding\string#1\endcsname\expandafter\endcsname
      \csname?\string#1\endcsname
    \fi
    \csname\cf@encoding\string#1%
      \expandafter\endcsname
  \else
    \noexpand#1%
  \fi}
\gdef\TextSymbolUnavailable#1{%
  \@latex@error{%
    Command \protect#1 unavailable in encoding \cf@encoding%
  }\@eha}
\def\@inmathwarn#1{%
  \ifmmode
    \@latex@warning{Command \protect#1 invalid in math mode}%
  \fi}

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

```

```

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

```

`\HyPsd@add@accent`

```

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

```

### 6.5.7 Unexpandable spaces

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

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

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

```

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

```

`\HyPsd@UnexpandableSpace` `\HyPsd@UnexpandableSpace` is used in `\HyPsd@@ProtectSpaces`. In `\HyPsd@@ProtectSpaces` the space tokens are replaced by unexpandable commands `\HyPsd@UnexpandableSpace`, but that have the effect of spaces.

```

1288 \HyPsd@LetUnexpandableSpace\HyPsd@UnexpandableSpace

```

### 6.5.8 Marker for commands

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

```

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

```

### 6.5.9 `\hspace` fix

`\HyPsd@hspace`

```

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

```

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

```

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

```

```

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

```

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

```

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

```

### 6.5.10 Fix for AMS classes

```

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

```

### 6.5.11 Reference commands

`\HyPsd@href`

```

1318 \def\HyPsd@href#1#{\@secondoftwo}

```

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

```

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

```

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

```

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

```

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

```

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

```

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

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

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

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

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

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

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

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

`\HyPsd@@@autorefname`

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

### 6.5.12 Redefining the defining commands

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



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

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

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

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

To avoid unmached `\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{\@inpencl@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 10ccddd (B) must be converted into octal numbers 00a and bcd. The result is `\8a\bcd` (with a, b, c, d as octal numbers). The conversion equations.

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

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

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

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

$$\tag{5}$$

```

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

```

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

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

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

```

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

```

Surrogates: 4 octets in UTF-8, a surrogate pair in UTF-16. High surrogate range: U+D800-U+DBFF, low surrogate range: U+DC00-U+DFFF.

```

UTF-8: 11110uuu 10uuzzzz 10yyyyyy 10xxxxxx
www = uuuuu - 1
UTF-16: 110110ww wwzzzzyy 110111yy yyxxxxxx
octal: 011 011 0ww 0ww zzz zyy 011 011 1yy 0yy xxx xxx

```

```

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

```

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```



```

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

```

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

```

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

```

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

`\HyPsd@DieFace` Die faces are provided by

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

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

```

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

```

```

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

```

`\HyPsd@DieFaceLarge`

```

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

```

### 6.6.11 Support for moon phases of package china2e

```

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

```

### 6.6.12 Support for package pifont

`\HyPsd@ding`

```

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

```

```

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

```

\HyPsd@@ding

```

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

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

```

```

2157 % U+25B2 BLACK UP-POINTING TRIANGLE
2158 \@namedef{HyPsd@ding@115}{\9045\262}% U+25B2
2159 % U+25BC BLACK DOWN-POINTING TRIANGLE
2160 \@namedef{HyPsd@ding@116}{\9045\274}% U+25BC
2161 % U+25C6 BLACK DIAMOND
2162 \@namedef{HyPsd@ding@117}{\9045\306}% U+25C6
2163 % U+25D7 RIGHT HALF BLACK CIRCLE
2164 \@namedef{HyPsd@ding@119}{\9045\327}% U+25D7
2165 \@namedef{HyPsd@ding@168}{\textclubsuitblack}%
2166 \@namedef{HyPsd@ding@169}{\textdiamondsuitblack}%
2167 \@namedef{HyPsd@ding@170}{\textheartsuitblack}%
2168 \@namedef{HyPsd@ding@171}{\textspadesuitblack}%
2169 \@namedef{HyPsd@ding@213}{\textrightarrow}%
2170 \@namedef{HyPsd@ding@214}{\textleftarrow}%
2171 \@namedef{HyPsd@ding@215}{\textupdownarrow}%
2172 \@namedef{HyPsd@ding@240}{\HyPsd@UnicodeReplacementCharacter}

```

## 7 Support of other packages

### 7.1 Package subfigure

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

```

2173 \@ifpackageloaded{subfigure}{%
2174   \@ifundefined{sub@label}{%
2175     \Hy@hypertexnamesfalse
2176   }{%
2177     \renewcommand*{\sub@label}[1]{%
2178       \@bsphack
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   \@esphack
2200 }%
2201 }%
2202 }{}

```

## 7.2 Package xr and xr-hyper

The beta version of xr that supports `\XR@addURL` is called `xr-hyper`. If reading external aux files check whether they have a non zero fourth field in `\newlabel` and if so, add the URL as the fifth field. Change 2023-05-14: `xr-hyper` adds the field.

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

    Providing dummy definitions.
2205 \let\literalps@out\@gobble
2206 \newcommand\pdfbookmark[3][]{ }
2207 \def\Acrobatmenu#1#2{\leavevmode#2}
2208 \def\Hy@writebookmark#1#2#3#4#5{ }%
```

## 8 Help macros for links

anchors get created on the baseline of where they occur. If an XYZ PDF view is set, this means that the link places the top of the screen *on the baseline* of the target. If this is an equation, for instance, it means that you cannot see anything. Some links, of course, are created at the start of environments, and so it works. To allow for this, anchors are raised, where possible, by some small amount. This defaults to `\baselineskip`, but users can set it to something else in two ways (thanks to Heiko Oberdiek for suggesting this):

1. Redefine `\HyperRaiseLinkDefault` to be eg the height of a `\strut`
2. Redefine `\HyperRaiseLinkHook` to do something complicated; it must give a value to `\HyperRaiseLinkLength`, which is what actually gets used

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

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

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

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

```

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

```

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

```

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

```

```

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

```

## 9 Options

```

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

```

### 9.1 Help macros

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

```

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

\IfHyperBooleanExists

```

```

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

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

```

#### \IfHyperBoolean

```

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

```

#### \Hy@boolkey

```

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

```

#### \Hy@WarnOptionValue

```

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

```

#### \Hy@DisableOption

```

2365 \def\Hy@DisableOption#1{%

```



```

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

```

`\Hy@WarnOptionDisabled`

```

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

```

`\Hy@CheckOptionValue` Some options take a string value out of a limited set of values. Macro `\Hy@CheckOptionValue` checks whether the given value `#1` for option `#2` is a member of the value list `#3`.

```

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

```

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

```

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

```

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

```

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

```

\Hy@UseNameKey

```

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

```

## 9.2 Defining the options

```

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

```

```

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

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

```

If we are going to PDF via HyperTeX \special commands, the dvips (-z option) processor does not know the *height* of a link, as it works solely on the position of the closing \special. If we use this option, the \special is raised up by the right amount, to fool the dvi processor.

```

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

```

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

```

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

```

```

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

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

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

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

Are the page links done as plain arabic numbers, or do they follow the formatting
of the package? The latter loses if you put in typesetting like \textbf or the like.
2525 \define@key{Hyp}{plainpages}[true]{%
2526   \Hy@boolkey{plainpages}{#1}%
2527 }

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

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

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

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

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

```

```

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

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

```

```

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

```

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

```

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

```

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

```

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

```

Legacy name, earlier releases assumed 1.x

```

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

```

if pdfminorversion is defined, make sure pdfmajorversion is too.

```

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

```

```

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

```

## 10 Options for different drivers

```

2640 \newif\ifHy@DviMode
2641 \let\Hy@DviErrMsg\@empty
2642 \ifpdf
2643 \def\Hy@DviErrMsg{pdfTeX or LuaTeX is running in PDF mode}%
2644 \else
2645 \ifxetex
2646 \def\Hy@DviErrMsg{XeTeX is running}%
2647 \else
2648 \ifvtex
2649 \ifnum\OpMode=\z@
2650 \Hy@DviModetrue
2651 \else
2652 \def\Hy@DviErrMsg{VTeX is running, but not in DVI mode}%
2653 \fi
2654 \else
2655 \Hy@DviModetrue
2656 \fi
2657 \fi
2658 \fi
2659 \def\HyOpt@CheckDvi#1{%
2660 \ifHy@DviMode
2661 \expandafter\@firstofone
2662 \else
2663 \Hy@Error{%
2664 Wrong DVI mode driver option `#1',\MessageBreak
2665 because \Hy@DviErrMsg
2666 }\@ehc
2667 \expandafter\@gobble
2668 \fi
2669 }

2670 \DeclareVoidOption{tex4ht}{%
2671 \Hy@texhttrue
2672 \kvsetkeys{Hyp}{colorlinks=true}%
2673 \def\BeforeTeXIVht{\RequirePackage{color}}%
2674 \def\Hy@driver{htex4ht}%
2675 \def\MaybeStopEarly{%
2676 \Hy@Message{Stopped early}%
2677 \Hy@AtBeginDocument{%
2678 \PDF@FinishDoc
2679 \gdef\PDF@FinishDoc{}}%
2680 }%
2681 \endinput
2682 }%
2683 }

```

```

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

```



```

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

```

```

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

```

```

2846 }

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

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

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

```

## 11 Options to add extra features

Make included figures (assuming they use the standard graphics package) be hypertext links. Off by default. Needs more work.

```

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

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

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

```

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

```

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

```

```

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

```

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

```

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

```

```

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

```

## 12 Language options

The \autoref feature depends on the language.

```

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

```

```

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

```

```

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

```

Next commented section for Russian is provided by Olga Lapko.

Next follow the checked reference names with commented variants and explanations. All they are abbreviated and they won't create a grammatical problems in the *middle* of sentences.

The most weak points in these abbreviations are the `\equationautorefname`, `\theoremautorefname` and the `\FancyVerbLineautorefname`. But those three, and also the `\footnoteautorefname` are not *too* often referenced. Another rather weak point is the `\appendixautorefname`.

```
3070 \def\HyLang@russian{%
```

The abbreviated reference to the equation: it is not for “the good face of the book”, but maybe it will be better to get the company for the `\theoremautorefname`?

```
3071 \def\equationautorefname{\cyr\cyrv\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\cyrl.}%
3090 \def\sectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%

```

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

```

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

```

The sectioning command have stable (almost standard) and common abbreviation form for all levels (the meaning of these references visible from the section number). No problem.

```

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

```

The names of references to paragraphs also have stable (almost standard) and common abbreviation form for all levels (the meaning of these references is visible from the section number). No problem in the middle of sentence.

```

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

```

Commented variant can be used in books but since it has common form for both nominative and accusative but it changes in other forms, like “of \autoref{auto}” etc.



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

The name of verbatim line. Here could be a standard of the abbreviation (used very rare). But the author preprint publications (which have not any editor or corrector) can use this abbreviation for the page reference. So the meaning of the line reference can be read as reference to the page.

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

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

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

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

3104 % \def\FancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyrk.}%

The names of theorem: if we want have “the good face of the book”, so the theorem reference must have the full name (like equation reference). But ...

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

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

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

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

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

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

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

```

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

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

```

Greek, see github issue 52

```

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

```

```

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

```

Allow the user to use `\ExecuteOptions` in the `cfg` file even though this package does not use the normal option mechanism. Use `\hyper@normalise` as a scratch macro, since it is going to be defined in a couple of lines anyway.

```

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

```

To add flexibility, we will not use the ordinary processing of package options, but put them through the *keyval* package. This section was written by David Carlisle.

```

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

```

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

```

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

```

```

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

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

```

After processing options.

## 15.1 Package xspace support

```

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

```

## 15.2 Option draft

```

4226 \Hy@AtBeginDocument{%

```

```

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

```

### 15.3 PDF/A

```

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

```



```

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

```

## 15.4 Patch for babel's \texttilde

Babel does not define `\texttilde` in NFSS2 manner, so the NFSS2 definitions of PD1 or PU encoding is not compatible. To fix this, `\texttilde` is defined in babel manner.

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

```

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

```

```

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

```

#### 15.4.1 Driver loading

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

```

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

```

```

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

```

Some drivers can be detected. Check for these drivers, whether the given driver option is ok. Otherwise force the right driver or use the default driver.

```

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

```

```

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

```

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

```

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

```

```

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

```

```

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

```

Support for open outlines is enabled for XeTeX  $\geq 0.9995$ . I don't know, if older versions also support this. AFAIK older dviPDFmx versions will break, thus the switch cannot be turned on by default.

```

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

```

#### 15.4.2 Bookmarks

```

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

```

```
4579 \ifHy@bookmarksopen
```

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

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

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

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

```

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

```

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

```

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

```

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}{$4}%
4854 \endgroup
4855 }%
4856 \endgroup

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

```

4879 \fi

If a next action is set, then also a new window should be opened. Otherwise AR  
reclaims that it closes the current file with discarding the next actions.

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

Option ‘pdfremotestartview’.

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

Option ‘pdfnewwindow’.

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

Option ‘ismap’.

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

Option ‘nextactionraw’.

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

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

```

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

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

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

```

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

```

4940 \DeclareRobustCommand*\hyperref{%
4941   \@ifnextchar[{\Hy@babelnormalise\label@hyperref}\@hyperref
4942 }
4943 \def\Hy@babelnormalise#1[#2]{%
4944   \begingroup
4945     \Hy@safe@activestrue
4946     \let\protect\@unexpandable@protect
4947     \edef\Hy@tempa{%
4948       \endgroup
4949       \noexpand#1[#2]}%
4950   }%
4951   \Hy@tempa
4952 }
4953 \def\@hyperref{\hyper@normalise\@hyperref}
4954 \def\@hyperref#1#2#3{%
4955   \edef\ref@one{\ifx\#2\#1\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\#2\#3\%
4964     \def\Hy@AnchorName{#2}%
4965   \else
4966     \def\Hy@AnchorName{#1.#2}%

```

```

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

```

We also have a need to give a L<sup>A</sup>T<sub>E</sub>X *label* to a hyper reference, to ease the pain of referring to it later. `\hyperrefundefinedlink` may be redefined by a user to add colour or other formatting.

```

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

```

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

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

To make this easier, we define `\hyperget`

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

## 16.1 Link box support for XeTeX

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



```

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

```

## 17 Underlying basic hypertext macros

Links have an optional type, a filename (possibly a URL), an internal name, and some marked text. (Caution: the internal name may contain babel shorthand characters.) If the second parameter is empty, its an internal link, otherwise we need to open another file or a URL. A link start has a type, and a URL.

```

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

```

```

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

```

The problem here is that the first (URL) parameter may be a local file: reference (in which case some browsers treat it differently) or a genuine URL, in which case we'll have to activate a real Web browser. Note that a simple name is also a URL, as that is interpreted as a relative file name. We have to worry about # signs in a local file as well.

```

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

```

Parameters are:

1. The URL or file name
2. The type
3. The internal name
4. The link string

We need to get the 1st parameter properly expanded, so we delimit the arguments rather than passing it inside a group.

```
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@Hy@tempa{#1}%
5820   \ifx\Fld@Hy@tempa\enc@html
5821     \Form@htmltrue
5822     \def\Fld@export{html}%
5823   \else
5824     \Hy@Warning{%
5825       Form `encoding' key with \MessageBreak
5826       unknown value `#1'%
5827     }%
5828   \Form@htmlfalse
5829   \fi
5830 }
5831 \define@key{Form}{method}{%
5832   \lowercase{\def\Fld@Hy@temp{#1}}%
5833   \@ifundefined{Form@method@\Hy@temp}{%
5834     \@onelevel@sanitize\Fld@Hy@temp
5835     \Hy@Error{%
5836       Unknown method `#1'.\MessageBreak
5837       Known values are `post' and `get'%
5838     }\@ehc

```

```

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

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

```

```

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

```

```

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

```

```

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

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

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

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

```

```

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

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

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

```

```

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

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

```



```

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

```

Default options for the types of \ChoiceMenu.

```

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

```

## 20 Setup

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

## 21 Low-level utility macros

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

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

Support \label before \begin{document}.

```
6250 \def\@currentHref{Doc-Start}
6251 \let\Hy@footnote@currentHref\@empty
```

We give the start of document a special label; this is used in backreferencing-by-section, to allow for cites before any sectioning commands. Set up PDF info.

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

```

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

```

## 22 Localized nullifying of package

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

```

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

```

```

6301 \def\hyper@link##1##2##3{##3\Hy@xspace@end}%
6302 \let\hyper@anchor@gobble
6303 \let\hyper@anchorstart@gobble
6304 \def\hyper@anchorend{\Hy@xspace@end}%
6305 \let\hyper@linkstart@gobbletwo
6306 \def\hyper@linkend{\Hy@xspace@end}%
6307 \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%
6308 \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
6309 }
6310 \def\endNoHyper{%
6311 \global\let\hyper@link\hyper@livelink
6312 }
6313 </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{#1}%
6324 \let\PDF@SetupDoc@empty
6325 \let\PDF@FinishDoc@empty
6326 \def\nohyperpage#1{#1}

```

Some top-level commands:

```

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

```

```
6343 \let\hyperpage\@empty
6344 \</nohyperref>
```

## 24 The Mangling Of Aux and Toc Files

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

```
6345 \*package
6346 \if@t@r\fmtversion{2023-06-01}{-}
6347 {
6348   \Hy@AtBeginDocument{%
```

First the code to deal with removing the hyperref package from a document.

Write some stuff into the aux file so if the next run is done without hyperref, then `\newlabel` is defined to cope with the extra arguments. change 2022-03-28: removed the code for `\contentsline`, it is no longer needed as `\contentsline` has now always four arguments.

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

But the new aux file will be read again at the end, with the normal definitions expected, so better put things back as they were.

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

If the document is being run with hyperref put this definition into the aux file, so we can spot it on the next run.

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

Now the code to deal with adding the hyperref package to a document with aux and toc written the standard way.

If hyperref was used last time, do nothing. change 2022-03-28: removed the test for an old toc. \contentsline has now always four arguments.

```

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

```

## 25 Title strings

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

```

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

```

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

```

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

```

```
6415 \fi
6416 \Hy@DisableOption{pdfusetitle}
```

Macro `\Hy@UseMaketitleInfos` is used in the driver files, before the information entries are used.

The newline macro `\newline` or `\\` is much more complicate. In the title a good replacement can be a space, but can be already a space after `\\` in the title string. So this space is removed by scanning for the next non-empty argument.

In the macro `\author` the newline can perhaps separate the different authors, so the newline expands here to a comma with space.

The possible arguments such as space or the optional argument after the newline macros are not detected.

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

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

## 26 Page numbers

This stuff is done by Heiko Oberdiek.

## 27 Every page

```
6442 \RequirePackage{atbegshi}[2007/09/09]
6443 \let\Hy@EveryPageHook\@empty
6444 \let\Hy@EveryPageBoxHook\@empty
6445 \let\Hy@FirstPageHook\@empty
6446 \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 }
```



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

```

6822 \IfFormatAtLeastTF{2024-11-01}{-}
6823 {
6824   \Hy@CounterExists{section}{%
6825     \providecommand\theHequation{\theHsection.\arabic{equation}}%
6826   }
6827   \providecommand\theHequation{\arabic{equation}}%
6828   \Hy@CounterExists{part}{%
6829     \providecommand\theHpart{\arabic{part}}%
6830   }
6831   \@ifundefined{thechapter}{%
6832     \providecommand\theHsection  {\arabic{section}}%
6833     \providecommand\theHfigure   {\arabic{figure}}%
6834     \providecommand\theHtable    {\arabic{table}}%
6835   }{%
6836     \providecommand\theHchapter  {\arabic{chapter}}%
6837     \providecommand\theHfigure   {\theHchapter.\arabic{figure}}%
6838     \providecommand\theHtable    {\theHchapter.\arabic{table}}%
6839     \providecommand\theHsection  {\theHchapter.\arabic{section}}%
6840   }
6841   \providecommand\theHsubsection {\theHsection.\arabic{subsection}}
6842   \providecommand\theHsubsubsection{\theHsubsection.\arabic{subsubsec-
tion}}
6843   \providecommand\theHparagraph  {\theHsubsubsection.\arabic{paragraph}}
6844   \providecommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
6845   \providecommand\theHtheorem    {\theHsection.\arabic{theorem}}
6846   \providecommand\theHthm        {\theHsection.\arabic{thm}}
6847 }

```

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.

```

6848 \let\H@item\item
6849 \newcounter{Item}
6850 \IfFormatAtLeastTF{2024-11-01}{-}
6851 {\def\theHItem{\arabic{Item}}}
6852 \def\item{%
6853   \@hyper@itemfalse
6854   \if@nmbriest\@hyper@itemtrue\fi
6855   \H@item
6856 }

6857 \IfFormatAtLeastTF{2024-11-01}{-}
6858 {
6859   \providecommand\theHenumi    {\theHItem}
6860   \providecommand\theHenumii   {\theHItem}
6861   \providecommand\theHenumiii  {\theHItem}
6862   \providecommand\theHenumiv   {\theHItem}
6863   \providecommand\theHHfootnote {\arabic{Hfootnote}}
6864   \providecommand\theHmpfootnote{\arabic{mpfootnote}}
6865 }

```

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.

```
6866 \let\H@refstepcounter\@kernel@refstepcounter
6867 \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`

```
6868 \newif\if@hyper@item
6869 \newif\if@skiphyperref
6870 \@hyper@itemfalse
6871 \@skiphyperreffalse
6872 \ExplSyntaxOn
6873 \IfFormatAtLeastTF{2024-11-01}
6874 {
6875   \NewSocketPlug{refstepcounter}{hyperref}{\ifHy@pdfstring\else#1\fi}
6876   \AssignSocketPlug{refstepcounter}{hyperref}
```

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

```
6877 \AddToHook{package/cleveref/after}
6878 {
6879   \@ifpackagelater{cleveref}{2018/03/28}{
6880     {
6881       \NewSocketPlug{refstepcounter}{hyperref/fixcleveref}
6882       {\ifHy@pdfstring\else
6883         #1%
6884         {\firstaid@cref@updatelabeldata{\@currentcounter}}%
6885         \fi}
6886       \AssignSocketPlug{refstepcounter}{hyperref/fixcleveref}
6887     }
6888   }
6889   \NewSocketPlug{refstepcounter/target}{hyperref}
6890   {
6891     \bool_lazy_and:nnT
6892     { \l__hyp_target_create_bool }
6893     { ! \legacy_if_p:n{@skiphyperref} }
6894     {
6895       \legacy_if:nTF {@hyper@item}
6896       {
6897         \stepcounter{Item}%
6898         \hyper@refstepcounter{Item}%
6899         \@hyper@itemfalse
6900       }
6901       {
6902         \hyper@refstepcounter{\@currentcounter}%
6903       }
6904     }
6905   }
6906   \AssignSocketPlug{refstepcounter/target}{hyperref}
6907 }
6908 {
6909   \def\refstepcounter#1{%
6910     \legacy_if:nF {Hy@pdfstring}
```

```

6911 {
6912   \H@refstepcounter{#1}%
6913   \bool_lazy_and:nnT
6914     { \l__hyp_target_create_bool }
6915     { ! \legacy_if_p:n{@skiphyperref} }
6916   {
6917     \legacy_if:nTF {@hyper@item}
6918     {
6919       \stepcounter{Item}%
6920       \hyper@refstepcounter{Item}%
6921       \@hyper@itemfalse
6922     }
6923     {
6924       \hyper@refstepcounter{#1}%
6925     }
6926   }
6927 }
6928 }
6929 }
6930 \ExplSyntaxOff
6931 \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.

```

6932 \newif\ifmeasuring@\measuring@false
6933 \newcommand\Hy@ifnotmeasuring[1]{#1}
6934 \AddToHook{package/amsmath/after}
6935 {
6936   \renewcommand\Hy@ifnotmeasuring[1]
6937     {\ifmeasuring@ \else #1\fi}
6938 }

```

`\hyper@refstepcounter`

```

6939 \def\hyper@refstepcounter#1{%
6940   \HyCnt@ProvideTheHCounter{#1}%
6941   \hyper@makecurrent{#1}%
6942   \Hy@ifnotmeasuring
6943     {\Hy@raisedlink{%
6944       \hyper@anchorstart{\@currentHref}\hyper@anchorend
6945     }}%
6946 }

```

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

```

6947 \def\HyCnt@ProvideTheHCounter#1{%
6948   \@ifundefined{theH#1}{%
6949     \expandafter\def\csname theH#1\endcsname{}%
6950     \def\Hy@temp{\@elt{#1}}%

```

```

6951 \@onelevel@sanitize\Hy@temp
6952 \let\HyOrg@elt\@elt
6953 \edef\@elt{%
6954 \noexpand\HyCnt@LookForParentCounter
6955 \expandafter\noexpand\csname theH#1\endcsname
6956 }%
6957 \cl@@ckpt
6958 \let\@elt\HyOrg@elt
6959 \expandafter
6960 \Hy@LocalAppendToMacro\csname theH#1\expandafter\endcsname
6961 \expandafter{%
6962 \expandafter\@arabic\csname c@#1\endcsname
6963 }%
6964 }{}%
6965 }

```

\Hy@LookForParentCounter

```

6966 \def\HyCnt@LookForParentCounter#1#2{%
6967 \expandafter\let\expandafter\Hy@temp@A\csname cl@#2\endcsname
6968 \@ifundefined{cl@#2}{%
6969 }{%
6970 \@onelevel@sanitize\Hy@temp@A
6971 \edef\Hy@temp@A{%
6972 \noexpand\in@{\Hy@temp}{\Hy@temp@A}%
6973 }\Hy@temp@A
6974 \ifin@
6975 \@ifundefined{theH#2}{%
6976 \expandafter\Hy@LocalAppendToMacro\expandafter#1%
6977 \expandafter{%
6978 \expandafter\@arabic\csname c@#2\endcsname.%
6979 }%
6980 }{%
6981 \expandafter\Hy@LocalAppendToMacro\expandafter#1%
6982 \expandafter{%
6983 \csname theH#2\endcsname.%
6984 }%
6985 }%
6986 \fi
6987 }%
6988 }

```

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`.

```

6989 \begingroup\expandafter\expandafter\expandafter\endgroup
6990 \expandafter\ifx\csname chapter\endcsname\relax
6991 \def\Hy@chapterstring{section}%
6992 \else
6993 \def\Hy@chapterstring{chapter}%
6994 \fi
6995 \def\Hy@appendixstring{appendix}

```

```

6996 \def\Hy@chapapp{\Hy@chapterstring}
6997 \@ifundefined{appendix}{%
6998 }{%
6999 \let\HyOrg@appendix\appendix
7000 \def\Hy@AlphNoErr#1{%
7001 \ifnum\value{#1}>26 %
7002   Alph\number\value{#1}%
7003 \else
7004 \ifnum\value{#1}<1 %
7005   Alph\number\value{#1}%
7006 \else
7007   \Alph{#1}%
7008 \fi
7009 \fi
7010 }%
7011 \def\appendix{%
7012 \@ifundefined{chapter}{%
7013 \gdef\theHsection{\Hy@AlphNoErr{section}}%
7014 }{%
7015 \gdef\theHchapter{\Hy@AlphNoErr{chapter}}%
7016 }%
7017 \xdef\Hy@chapapp{\Hy@appendixstring}%
7018 \HyOrg@appendix
7019 }%
7020 }

```

\Hy@Test@alph

```

7021 \def\Hy@Test@alph#1{%
7022 \ifcase#1\or
7023 a\or b\or c\or d\or e\or f\or g\or h\or i\or j\or
7024 k\or l\or m\or n\or o\or p\or q\or r\or s\or t\or
7025 u\or v\or w\or x\or y\or z%
7026 \else
7027 \@ctrerr
7028 \fi
7029 }

```

\Hy@Test@Alph

```

7030 \def\Hy@Test@Alph#1{%
7031 \ifcase#1\or
7032 A\or B\or C\or D\or E\or F\or G\or H\or I\or J\or
7033 K\or L\or M\or N\or O\or P\or Q\or R\or S\or T\or
7034 U\or V\or W\or X\or Y\or Z%
7035 \else
7036 \@ctrerr
7037 \fi
7038 }

```

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

```

7039 \NewHook{__hyp/target/setname }
7040 \define@key{Hyp}{next-anchor}{%
7041 \AddToHookNext{__hyp/target/setname}%
7042 {\Hy@MakeCurrentHref{#1}}%
7043 }

```

`\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.

```

7044 \def\hyper@makecurrent#1{%
7045   \begingroup
7046   \Hy@safe@activestrue
7047   \edef\Hy@param{#1}%
7048   \ifx\Hy@param\Hy@chapterstring
7049     \let\Hy@param\Hy@chapapp
7050   \fi
7051   \ifHy@hypertextnames
7052     \let\@number\@firstofone
7053     \def\@fnsymbol##1{fnsymbol\number##1}%
7054     \def\@arabic##1{\number##1}%
7055     \ifx\@alph\Hy@Test@alph
7056     \else
7057       \def\@alph{alph\number}%
7058     \fi
7059     \ifx\@Alph\Hy@Test@Alph
7060     \else
7061       \def\@Alph{Alph\number}%
7062     \fi
7063     \ifHy@naturalnames
7064       \let\textlatin\@firstofone
7065       \xdef\HyperGlobalCurrentHref{\csname the#1\endcsname}%
7066     \else
7067       \xdef\HyperGlobalCurrentHref{%
7068         \csname
7069           the%
7070           \expandafter\ifx\csname theH#1\endcsname\relax\else H\fi
7071           #1%
7072         \endcsname
7073       }%
7074     \fi
7075     \xdef\HyperGlobalCurrentHref{%
7076       \Hy@param.\expandafter\strip@prefix\meaning\HyperGlobalCurrentHref
7077     }%
7078   \else
7079     \Hy@GlobalStepCount\Hy@linkcounter
7080     \xdef\HyperGlobalCurrentHref{\Hy@param.\the\Hy@linkcounter}%
7081   \fi
7082 \endgroup
7083 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
7084 \ifHy@localanchorname
7085   \let\@currentHref\HyperLocalCurrentHref
7086 \else
7087   \global\let\@currentHref\HyperGlobalCurrentHref
7088 \fi
7089 \UseHook{__hyp/target/setname}%
7090 }
```

`\Hy@MakeCurrentHref`

```

7091 \def\Hy@MakeCurrentHref#1{%
7092   \edef\HyperLocalCurrentHref{#1}%

```

```

7093 \@onelevel@sanitize\HyperLocalCurrentHref
7094 \global\let\HyperGlobalCurrentHref\HyperLocalCurrentHref
7095 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
7096 \ifHy@localanchorname
7097   \let\@currentHref\HyperLocalCurrentHref
7098 \else
7099   \global\let\@currentHref\HyperGlobalCurrentHref
7100 \fi
7101 }

```

`\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.

```

7102 \def\Hy@MakeCurrentHrefAuto#1{%
7103   \Hy@GlobalStepCount\Hy@linkcounter
7104   \Hy@MakeCurrentHref{#1.\the\Hy@linkcounter}%
7105   \UseHook{__hyp/target/setname}}

```

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

```

7106 \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.

```

7107 \def\hypergetref#1{\getrefbykeydefault{#1}{}{??}}
7108 \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.

```

7109 \@if@t@r\fmtversion{2023-11-01}
7110 {
7111   \AddToHook{package/varwidth/after}
7112   {
7113     \NewSocketPlug{hyp/raisedlink}{varwidth}{\@vwid@wrap{#1}}
7114     \appto\@vwid@setup{\AssignSocketPlug{hyp/raisedlink}{varwidth}}
7115   }
7116 }{}

```

## 31 Package titlesec and titletoc support

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

Package `titlesec` support:

```

7117 \@ifpackageloaded{titlesec}{%
7118   \def\ttl@Hy@steplink#1{%
7119     \Hy@MakeCurrentHrefAuto{#1*}%

```

```

7120 \edef\ttl@Hy@saveanchor{%
7121 \noexpand\Hy@raisedlink{%
7122 \noexpand\hyper@anchorstart{\@currentHref}%
7123 \noexpand\hyper@anchorend
7124 \def\noexpand\ttl@Hy@SavedCurrentHref{\@currentHref}%
7125 \noexpand\ttl@Hy@PatchSaveWrite
7126 }%
7127 }%
7128 }%
7129 \def\ttl@Hy@PatchSaveWrite{%
7130 \begingroup
7131 \toks@\expandafter{\ttl@savewrite}%
7132 \edef\x{\endgroup
7133 \def\noexpand\ttl@savewrite{%
7134 \let\noexpand\@currentHref
7135 \noexpand\ttl@Hy@SavedCurrentHref
7136 \the\toks@
7137 }%
7138 }%
7139 \x
7140 }%
7141 \def\ttl@Hy@refstepcounter#1{%
7142 \let\ttl@b\Hy@raisedlink
7143 \def\Hy@raisedlink##1{%
7144 \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
7145 }%
7146 \refstepcounter{#1}%
7147 \let\Hy@raisedlink\ttl@b
7148 }%
7149 }{}

```

## 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

```

7150 \@ifpackageloaded{longtable}{%
7151 \@ifundefined{hyper@nopatch@longtable}{%
7152 \begingroup
7153 \def\y{\LT@array}%
7154 \@ifundefined{scr@LT@array}{%
7155 \@ifundefined{adl@LT@array}{\def\y{\adl@LT@array}}%
7156 }{\def\y{\scr@LT@array}}%
7157 \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
7158 \expandafter\endgroup
7159 \expandafter\def\y[##1]##2{%
7160 \H@refstepcounter{#1}%
7161 \hyper@makecurrent{table}%
7162 \let\Hy@LT@currentHref\@currentHref
7163 #2\@sharp###4%

```



```

7164 }%
7165 }%
7166 \expandafter\expandafter\expandafter\x\y[#{#1}]{#2}\@nil
Patch of \LT@start: add anchor before first line after \vskip\LTpre
7167 \begingroup
7168 \def\x#1\ifvoid\LT@foot#2\fi#3\@nil{%
7169 \endgroup
7170 \def\LT@start{%
7171 #1%
7172 \ifvoid\LT@foot#2\fi
7173 \let\@currentHref\Hy@LT@currentHref
7174 \Hy@raisedlink{%
7175 \hyper@anchorstart{\@currentHref}\hyper@anchorend
7176 }%
7177 #3%
7178 }%
7179 }%
7180 \expandafter\x\LT@start\@nil
7181 }{}
7182 }{}

```

### 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`

```

7183 \let\new@refstepcounter\refstepcounter
7184 \let\H@equation\equation
7185 \let\H@endequation\endequation
7186 \@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.

```

7187 \@ifpackageloaded{amsmath}{}{}%
7188 \def\equation{%
7189 \let\refstepcounter\H@refstepcounter
7190 \H@equation
7191 \hyper@makecurrent{equation}%

```

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

```

7192 \mathopen{%
7193 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
7194 }%
7195 \let\refstepcounter\new@refstepcounter
7196 }%
7197 \def\endequation{%

```

```

7198 \ifx\Hy@raisedlink\@empty
7199 \hyper@anchorend
7200 \else
7201 \mathclose{\Hy@raisedlink{\hyper@anchorend}}%
7202 \fi
7203 \H@endequation
7204 }%
7205 }
7206 }-{}

```

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.

```

7207 \newif\if@eqnstar
7208 \@eqnstarfalse
7209 \let\H@eqnarray\eqnarray
7210 \let\H@endeqnarray\endeqnarray
7211 \@ifundefined{hyper@nopatch@mathenv}{%
7212 \def\eqnarray{%
7213 \let\Hy@reserved@a\relax
7214 \def\@currentHref{}%
7215 \H@eqnarray
7216 \if@eqnstar
7217 \else
7218 \ifx\\\@currentHref\\%
7219 \else
7220 \hyper@makecurrent{equation}%
7221 \mathopen{%
7222 \Hy@raisedlink{%
7223 \hyper@anchorstart{\@currentHref}\hyper@anchorend
7224 }%
7225 }%
7226 \fi
7227 \fi
7228 }
7229 \def\endeqnarray{%
7230 \H@endeqnarray
7231 }
7232 }-{}

```

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.

```

7233 \@namedef{eqnarray*}{%
7234 \protected\def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
7235 }
7236 \@namedef{endeqnarray*}{%
7237 \nonumber\endeqnarray\@eqnstarfalse
7238 }

```

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

```

7239 \@ifundefined{subeqnarray}{-}{}

```

```

7240 \let\H@subeqnarray\subeqnarray
7241 \let\H@endsubeqnarray\endsubeqnarray
7242 \def\subeqnarray{%
7243   \let\Hy@reserved@a\relax
7244   \H@subeqnarray
7245   \hyper@makecurrent{equation}%
7246   \hyper@anchorstart{\@currentHref}{\hyper@anchorend
7247 }%
7248 \def\endsubeqnarray{%
7249   \H@endsubeqnarray
7250 }%
7251 \providecommand\theHsubequation{\theHequation\alph{subequation}}%
7252 }

```

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

```

7253 \def\make@stripped@name#1{%
7254   \begingroup
7255   \escapechar\m@ne
7256   \global\let\newname\@empty
7257   \protected@edef\Hy@tempa{#1}%
7258   \edef\@tempb{%
7259     \noexpand\@tfor\noexpand\Hy@tempa:=%
7260     \expandafter\strip@prefix\meaning\Hy@tempa
7261   }%
7262   \@tempb\do{%
7263     \if\Hy@tempa\else
7264     \if\Hy@tempa\else
7265       \xdef\newname{\newname\Hy@tempa}%
7266     \fi
7267   \fi
7268   }%
7269 \endgroup
7270 }

```

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.

```

7271 \AddToHook{cmd/subequations/before}
7272 {%
7273   \stepcounter{equation}%
7274   \protected@edef\theHparentequation{\theHequation}%
7275   \addtocounter{equation}{-1}%
7276 }
7277
7278 \AddToHook{cmd/subequations/after}
7279 {%
7280   \def\theHequation{\theHparentequation\alph{equation}}%
7281   \ignorespaces
7282 }

```

## 34 Support for theorems

Hyperlink support in theorems has to resolve typically three problems:

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

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

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

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

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

```

7283 \newcommand\Hy@theorem@refstepcounter[1]
7284  {%
7285   \H@refstepcounter{#1}%
7286   \hyper@makecurrent{#1}%
7287   \global\let\Hy@dth@currentHref\@currentHref
7288   \Hy@theorem@makelinktarget{\Hy@dth@currentHref}%
7289  }
7290 \newcommand\Hy@theorem@makelinktarget[1]
7291  {
7292   \AddToHookNext{cmd/item/before}
7293   {\AddToHookNext{para/begin}
7294    {\let\Hy@tempa\@currentHref
7295     \MakeLinkTarget*{#1}% \Hy@dth@currentHref
7296     \global\let\@currentHref\Hy@tempa
7297    }%
7298   }%
7299  }

```

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.

```

7300 \AddToHook{begindocument}
7301 {%
7302 \ifundefined{deferred@thm@head}{%
7303   {%
7304     \let\Hy@deferred@thm@head\deferred@thm@head
7305     \def\deferred@thm@head#1{\Hy@deferred@thm@head{#1}}%
7306     \renewcommand\Hy@theorem@makelinktarget[1]
7307       {%
7308         \AddToHookNext{cmd/deferred@thm@head/before}
7309           {\AddToHookNext{para/begin}
7310             {\let\Hy@tempa\@currentHref
7311               \MakeLinkTarget*{#1}}%
7312             \global\let\@currentHref\Hy@tempa
7313             }%
7314           }%
7315         }%
7316       }%
7317   }
7318 \ifundefined{hyper@nopatch@thm}{%
7319 \AtBeginDocument{%
7320 \ifpackageloaded{cleveref}
7321   {\AddToHook{cmd/@thm/before}{\ifhmode\unskip\fi}}
7322   {%
7323     \ifpatchable\@thm{\refstepcounter}
7324       {\patchcmd\@thm{\refstepcounter}{\Hy@theorem@refstepcounter}{}}
7325       {}%
7326     }}{}

```

## 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.

```

7327 \ifundefined{hyper@nopatch@footnote}{%
7328 \ifHy@hyperfootnotes
7329 \ifundefined{theHfootnote}
7330   {\newcounter{Hfootnote}}
7331   {\let\H@@theHfootnote\theHfootnote
7332     \let\theHfootnote\undefined
7333     \newcounter{Hfootnote}
7334     \let\theHfootnote\H@@theHfootnote
7335   }%

```

where is this used?

```

7336 \ifundefined{theHHmpfootnote}{%
7337 \let\theHHmpfootnote\theHHfootnote
7338 }{}

```

```

7339 \let\H@@footnotetext\@footnotetext
7340 \let\H@@footnotemark\@footnotemark
7341 \def\@xfootnotenext[#1]{%
7342   \begingroup
7343     \csname c@\@mpfn\endcsname #1\relax
7344     \unrestored@protected@xdef\@thefnmark{\thempfn}%
7345   \endgroup
7346   \ifx\@footnotetext\@mpfootnotetext
7347     \expandafter\H@\@mpfootnotetext
7348   \else
7349     \expandafter\H@@@footnotetext
7350   \fi
7351 }%
7352 \def\@xfootnotemark[#1]{%
7353   \begingroup
7354     \c@footnote #1\relax
7355     \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7356   \endgroup
7357   \H@@@footnotemark
7358 }%
7359 \let\H@\@mpfootnotetext\@mpfootnotetext
7360 \long\def\@mpfootnotetext#1{%
7361   \H@\@mpfootnotetext{%
7362     \ifHy@nesting
7363       \expandafter\@firstoftwo
7364     \else
7365       \expandafter\@secondoftwo
7366     \fi
7367   }%
7368   \expandafter\hyper@@anchor\expandafter{%
7369     \Hy@footnote@currentHref
7370   }\ignorespaces #1}%
7371 }{%
7372   \Hy@raisedlink{%
7373     \expandafter\hyper@@anchor\expandafter{%
7374       \Hy@footnote@currentHref
7375     }\relax}%
7376   }\ignorespaces #1%
7377 }%
7378 }%
7379 }%
7380 \long\def\@footnotetext#1{%
7381   \H@@@footnotetext{%
7382     \ifHy@nesting
7383       \expandafter\@firstoftwo
7384     \else
7385       \expandafter\@secondoftwo
7386     \fi
7387   }%
7388   \expandafter\hyper@@anchor\expandafter{%
7389     \Hy@footnote@currentHref
7390   }\ignorespaces #1}%
7391 }{%
7392   \Hy@raisedlink{%

```

```

7393     \expandafter\hyper@@anchor\expandafter{%
7394       \Hy@footnote@currentHref
7395     }{\relax}%
7396   }%
7397   \let\@currentHref\Hy@footnote@currentHref
7398   \let\@currentlabelname\@empty
7399   \ignorespaces #1%
7400 }%
7401 }%
7402 }%

```

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.

```

7403 \def\@footnotemark{%
7404   \leavevmode
7405   \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7406   \stepcounter{Hfootnote}%
7407   \global\let\Hy@saved@currentHref\@currentHref
7408   \hyper@makecurrent{Hfootnote}%
7409   \global\let\Hy@footnote@currentHref\@currentHref
7410   \global\let\@currentHref\Hy@saved@currentHref
7411   \hyper@linkstart{link}{\Hy@footnote@currentHref}%
7412   \@makefnmark
7413   \hyper@linkend
7414   \ifhmode\spacefactor\@x@sf\fi
7415   \relax
7416 }%

```

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

```

7417 \@ifpackageloaded{tabularx}{%
7418   \let\HyOrg@TX@endtabularx\TX@endtabularx
7419   \def\Hy@tabularx@hook{%
7420     \let\@footnotetext\H@@footnotetext
7421     \let\@footnotemark\H@@footnotemark
7422     \let\@mpfootnotetext\H@@mpfootnotetext
7423   }%
7424   \begingroup
7425     \toks@\expandafter{\TX@endtabularx}%
7426     \xdef\Hy@gtemp{%
7427       \noexpand\Hy@tabularx@hook
7428       \the\toks@
7429     }%
7430   \endgroup
7431   \let\TX@endtabularx\Hy@gtemp
7432 }{}%

```

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

```

7433 \@ifpackageloaded{longtable}{%

```

```

7434 \CheckCommand{\LT@p@ftntext}[1]{%
7435 \edef\@tempa{%
7436 \the\LT@p@ftn
7437 \noexpand\footnotetext[\the\c@footnote]%
7438 }%
7439 \global\LT@p@ftn\expandafter{\@tempa{#1}}%
7440 }%
7441 \long\def\LT@p@ftntext#1{%
7442 \edef\@tempa{%
7443 \the\LT@p@ftn
7444 \begingroup
7445 \noexpand\c@footnote=\the\c@footnote\relax
7446 \noexpand\protected@xdef\noexpand\@thefnmark{%
7447 \noexpand\thempfn
7448 }%
7449 \noexpand\Hy@LT@footnotetext{%
7450 \Hy@footnote@currentHref
7451 }%
7452 }%
7453 \global\LT@p@ftn\expandafter{%
7454 \@tempa{#1}}%
7455 \endgroup
7456 }%
7457 }%
7458 \long\def\Hy@LT@footnotetext#1#2{%
7459 \H@C@footnotetext{%
7460 \ifHy@nesting
7461 \hyper@@anchor{#1}{#2}%
7462 \else
7463 \Hy@raisedlink{%
7464 \hyper@@anchor{#1}{\relax}}%
7465 }%
7466 \def\@currentHref{#1}%
7467 \let\@currentlabelname\@empty
7468 #2%
7469 \fi
7470 }%
7471 }%
7472 }{}%

```

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

```

7473 \@ifpackageloaded{fancyvrb}{%
7474 \def\V@C@footnotetext{%
7475 \insert\footins\bgroup
7476 \csname reset@font\endcsname
7477 \footnotesize
7478 \interlinepenalty\interfootnotelinepenalty
7479 \splittopskip\footnotesep
7480 \splitmaxdepth\dp\strutbox
7481 \floatingpenalty \@MM
7482 \hsize\columnwidth
7483 \@parboxrestore
7484 \def\@currentcounter{footnote}%
7485 \protected@edef\@currentlabel{\csname p@footnote\endcsname\@thefn-
mark}%

```



```

7486 \@makefn-text{}%
7487 \rule{\z@}{\footnotesep}%
7488 \bgroup
7489 \aftergroup\H@@@footnotetext
7490 \Hy@raisedlink{%
7491 \expandafter\hyper@@anchor\expandafter{%
7492 \Hy@footnote@currentHref
7493 }\relax}%
7494 }%
7495 \let\@currentHref\Hy@footnote@currentHref
7496 \let\@currentlabelname\@empty
7497 \ignorespaces
7498 }%
7499 }{}%

```

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

```

7500 \def\Hy@temp#1{%
7501 \begingroup
7502 \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7503 \endgroup
7504 \@footnotemark
7505 }%
7506 \ifx\Hy@temp\footref
7507 \def\footref#1{%
7508 \begingroup
7509 \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7510 \endgroup
7511 \H@@@footnotemark
7512 }%
7513 \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.

```

7514 \let\HyOrg@maketitle\maketitle
7515 \def\maketitle{%
7516 \let\Hy@saved@footnotemark\@footnotemark
7517 \let\Hy@saved@footnotetext\@footnotetext
7518 \let\@footnotemark\H@@@footnotemark
7519 \let\@footnotetext\H@@@footnotetext
7520 \@ifnextchar[\Hy@maketitle@optarg{% ]
7521 \HyOrg@maketitle
7522 \Hy@maketitle@end
7523 }%
7524 }%
7525 \def\Hy@maketitle@optarg[#1]{%
7526 \HyOrg@maketitle[#1]}%
7527 \Hy@maketitle@end
7528 }%
7529 \def\Hy@maketitle@end{%
7530 \ifx\@footnotemark\H@@@footnotemark
7531 \let\@footnotemark\Hy@saved@footnotemark
7532 \fi
7533 \ifx\@footnotetext\H@@@footnotetext

```

```

7534 \let\@footnotetext\Hy@saved@footnotetext
7535 \fi
7536 }%

```

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

```

7537 \def\realfootnote{%
7538 \@ifnextchar[\@xfootnote%]
7539 {\stepcounter{\@mpfn}%
7540 \protected@xdef\@thefnmark{\thempfn}%
7541 \H@\@footnotemark\H@\@footnotetext
7542 }%
7543 }%

7544 \fi
7545 }{}
7546 \Hy@DisableOption{hyperfootnotes}

7547 \</packageEnd>
7548 \*check)
7549 \checklatex
7550 \checkcommand\def\@xfootnotenext[#1]{%
7551 \begingroup
7552 \csname c@\@mpfn\endcsname #1\relax
7553 \unrestored@protected@xdef\@thefnmark{\thempfn}%
7554 \endgroup
7555 \@footnotetext
7556 }
7557 \checkcommand\def\@xfootnotemark[#1]{%
7558 \begingroup
7559 \c@footnote #1\relax
7560 \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7561 \endgroup
7562 \@footnotemark
7563 }
7564 \checkcommand\def\@footnotemark{%
7565 \leavevmode
7566 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7567 \@makefnmark
7568 \ifhmode\spacefactor\@x@sf\fi
7569 \relax
7570 }
7571 \</check)
7572 \*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.

```

7573 \@ifundefined{hyper@nopatch@caption}{%
7574 \def\caption{%
7575 \ifx\@capttype\@undefined
7576 \latex@error{\noexpand\caption outside float}\@ehd
7577 \expandafter\@gobble

```

```

7578 \else
7579 \H@refstepcounter\@capttype
7580 \let\Hy@tempa\@caption
7581 \@ifundefined{float@caption}{%
7582 }{%
7583 \expandafter\ifx\csname @float@c@\@capttype\endcsname
7584 \float@caption
7585 \let\Hy@tempa\Hy@float@caption
7586 \fi
7587 }%
7588 \expandafter\@firstofone
7589 \fi
7590 {\@dblarg{\Hy@tempa\@capttype}}%
7591 }
7592 \long\def\@caption#1[#2]#3{%
7593 \expandafter\ifx\csname if@capstart\expandafter\endcsname
7594 \csname iftrue\endcsname
7595 \global\let\@currentHref\hc@currentHref
7596 \else
7597 \hyper@makecurrent{\@capttype}%
7598 \fi
7599 \@ifundefined{NR@gettitle}{%
7600 \def\@currentlabelname{#2}%
7601 }{%
7602 \NR@gettitle{#2}%
7603 }%
7604 \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
7605 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7606 }%
7607 \begingroup
7608 \@parboxrestore
7609 \if@minipage
7610 \@setminipage
7611 \fi
7612 \normalsize
7613 \expandafter\ifx\csname if@capstart\expandafter\endcsname
7614 \csname iftrue\endcsname
7615 \global\@capstartfalse
7616 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
7617 \else
7618 \@makecaption{\csname fnum@#1\endcsname}{%
7619 \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

7620 \ifHy@nesting
7621 \expandafter\hyper@@anchor\expandafter{\@currentHref}{#3}%
7622 \else
7623 \Hy@raisedlink{%
7624 \expandafter\hyper@@anchor\expandafter{%
7625 \@currentHref
7626 }{\relax}%
7627 }%
7628 #3%
7629 \fi

```

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

```

7630     \IfFormatAtLeastTF{2024-11-01}{\UseTaggingSocket{recordtarget}}{}%
7631     }%
7632     \fi
7633     \par
7634 \endgroup
7635 }-{}%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’.

```

7636 \let\Hy@float@caption\@caption
7637 \newcommand{\HyNew@float@makebox}[1]{%
7638   \HyOrg@float@makebox{%
7639     #1\relax
7640     \ifx\Hy@float@currentHref\@undefined
7641       \else
7642         \expandafter\hyper@@anchor\expandafter{%
7643           \Hy@float@currentHref
7644           }{\relax}%
7645         \global\let\Hy@float@currentHref\@undefined
7646       \fi
7647     }%
7648   }%
7649 \@ifpackageloaded{float}{%
7650   \def\Hy@float@caption{%
7651     \ifx\Hy@float@currentHref\@undefined
7652       \hyper@makecurrent{\@capttype}%
7653       \global\let\Hy@float@currentHref\@currentHref
7654     \else
7655       \let\@currentHref\Hy@float@currentHref
7656     \fi
7657     \float@caption
7658   }%
7659   \let\HyOrg@float@makebox\float@makebox
7660   \let\float@makebox\HyNew@float@makebox
7661 }-{}

7662 \</packageEnd>
7663 < *check >
7664 \checklatex[1999/06/01 - 2000/06/01]
7665 \checkcommand\def\caption{%
7666   \ifx\@capttype\@undefined
7667     \@latex@error{\noexpand\caption outside float}\@ehd
7668     \expandafter\@gobble
7669   \else
7670     \refstepcounter\@capttype
7671     \expandafter\@firstofone
7672   \fi
7673   {\@dblarg{\@caption\@capttype}}%
7674 }

```

```

7675 \checkcommand\long\def\@caption#1[#2]#3{%
7676 \par
7677 \addcontentsline{\csname ext@#1\endcsname}{#1}{%
7678 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7679 }%
7680 \begingroup
7681 \@parboxrestore
7682 \if@minipage
7683 \@setminipage
7684 \fi
7685 \normalsize
7686 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
7687 \endgroup
7688 }
7689 </check>
7690 <*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.

```

7691 \def\hyper@natlinkstart#1{%
7692 \Hy@backout{#1}%
7693 \hyper@linkstart{cite}{cite.#1}%
7694 \def\hyper@nat@current{#1}%
7695 }
7696 \def\hyper@natlinkend{%
7697 \hyper@linkend
7698 }
7699 \def\hyper@natlinkbreak#1#2{%
7700 \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
7701 }
7702 \def\hyper@natanchorstart#1{%
7703 \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
7704 }
7705 \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.

```

7706 \@ifundefined{hyper@nopatch@bib}
7707 {%
7708 \@ifundefined{NAT@parse}{%
7709 \providecommand*\@extra@binfo{}%
7710 \providecommand*\@extra@b@citeb{}}%

```

```

7711 \def\bibcite#1#2{%
7712   \@newl@bel{b}{#1\@extra@binfo}{%
7713     \hyper@link[cite]{cite.#1\@extra@b@citeb}{#2}%
7714   }%
7715 }%
7716 \gdef\@extra@binfo{}%

```

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

```

7717 \let\Hy@bibcite\bibcite
7718 \begingroup
7719 \ifundefined{bbl@cite@choice}{}{%
7720   \g@addto@macro\bbl@cite@choice{%
7721     \let\bibcite\Hy@bibcite
7722   }%
7723 }%
7724 \endgroup

```

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

```

7725 \providecommand*\@BIBLABEL{\@biblabel}%
7726 \def\@bibitem[#1]#2{%
7727   \@skiphyperreftrue
7728   \H@item{%
7729     \ifx\Hy@raisedlink\@empty
7730       \hyper@anchorstart{cite.#2\@extra@b@citeb}%
7731       \@BIBLABEL{#1}%
7732     \hyper@anchorend
7733   \else
7734     \Hy@raisedlink{%
7735       \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
7736     }%
7737     \@BIBLABEL{#1}%
7738   \fi
7739   \hfill
7740 }%
7741 \@skiphyperreffalse
7742 \if@filesw
7743   \begingroup
7744     \let\protect\noexpand
7745     \immediate\write\@auxout{%
7746       \string\bibcite{#2}{#1}%
7747     }%
7748   \endgroup
7749 \fi
7750 \ignorespaces
7751 }%

```

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

```

7752 \def\@bibitem#1{%
7753   \@skiphyperreftrue\H@item\@skiphyperreffalse
7754   \Hy@raisedlink{%
7755     \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
7756   }%
7757   \if@filesw

```

```

7758     \begingroup
7759     \let\protect\noexpand
7760     \immediate\write\@auxout{%
7761       \string\bibcite{#1}{\the\value{\@listctr}}%
7762     }%
7763     \endgroup
7764     \fi
7765     \ignorespaces
7766   }%
7767 }-}%
7768 }-}

7769 </packageEnd>
7770 <*check>
7771 \checklatex
7772 \checkcommand\def\@bibitem[#1]#2{%
7773   \item[\@biblabel{#1}\hfill]%
7774   \if@filesw
7775     {%
7776       \let\protect\noexpand
7777       \immediate\write\@auxout{%
7778         \string\bibcite{#2}{#1}%
7779       }%
7780     }%
7781   \fi
7782   \ignorespaces
7783 }
7784 \checkcommand\def\@bibitem#1{%
7785   \item
7786   \if@filesw
7787     \immediate\write\@auxout{%
7788       \string\bibcite{#1}{\the\value{\@listctr}}%
7789     }%
7790   \fi
7791   \ignorespaces
7792 }
7793 </check>
7794 <*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.

```

7795 \ifpackageloaded{harvard}{%
7796   \Hy@AtBeginDocument{%
7797     \Hy@Info{*** compatibility with harvard **** }%
7798     \Hy@raiselinksfalse
7799     \def\harvardcite#1#2#3#4{%
7800       \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{cite.#1}{#2}}%

```

```

7801 \global\@namedef{HAR@an@#1}{\hyper@@link[cite]{}{cite.#1}{#3}}%
7802 \global\@namedef{HAR@yr@#1}{\hyper@@link[cite]{}{cite.#1}{#4}}%
7803 \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
7804 }%
7805 \def\HAR@citetoaux#1{%
7806 \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
7807 \ifHy@backref
7808 \ifx\@empty\@currentlabel
7809 \else
7810 \@bsphack
7811 \if@filesw
7812 \protected@write\@auxout{}{%
7813 \string\@writefile{brf}{%
7814 \string\backcite{#1}{%
7815 {\thepage}{\@currentlabel}{\@currentHref}%
7816 }%
7817 }%
7818 }%
7819 \fi
7820 \@esphack
7821 \fi
7822 \fi
7823 }%
7824 \def\harvarditem{%
7825 \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
7826 }%
7827 \def\@harvarditem[#1]#2#3#4#5\par{%
7828 \item[]%
7829 \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
7830 \if@filesw
7831 \begingroup
7832 \def\protect##1{\string ##1\space}%
7833 \ifthenelse{\equal{#1}{\null}}%
7834 {\def\next{{#4}{#2}{#2}{#3}}}%
7835 {\def\next{{#4}{#2}{#1}{#3}}}%
7836 \immediate\write\@auxout{\string\harvardcite\codeof\next}%
7837 \endgroup
7838 \fi
7839 \protect\hspace*{-\labelwidth}%
7840 \protect\hspace*{-\labelsep}%
7841 \ignorespaces
7842 #5%
7843 \ifHy@backref
7844 \newblock
7845 \backref{\csname br@#4\endcsname}%
7846 \fi
7847 \par
7848 }%

```

\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:

```

7849 \long\def\HAR@checkcitations#1#2#3#4{%
7850 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%

```



```

7851 \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
7852 \def\HAR@tempa{\hyper@link[cite]{cite.#1}{#3}}%
7853 \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
7854 \def\HAR@tempa{\hyper@link[cite]{cite.#1}{#4}}%
7855 \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
7856 \else
7857 \@tempwatrue
7858 \fi
7859 \else
7860 \@tempwatrue
7861 \fi
7862 \else
7863 \@tempwatrue
7864 \fi
7865 }%
7866 }%

7867 }{}

```

## 37.2 Package chicago

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

```
7868 \@ifpackageloaded{chicago}{%
```

`\citeN`

```

7869 \def\citeN{%
7870 \def\@citesep{-1000}%
7871 \def\@cite##1##2{##1}%
7872 \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
7873 \@citedata@opt
7874 }%

```

`\shortciteN`

```

7875 \def\shortciteN{%
7876 \def\@citesep{-1000}%
7877 \def\@cite##1##2{##1}%
7878 \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
7879 \@citedata@opt
7880 }%

```

`\@citedata@opt`

```

7881 \def\@citedata@opt{%
7882 \let\@cite@opt\@empty
7883 \@ifnextchar [{%
7884 \@tempwatrue
7885 \@citedatax@opt
7886 }{%
7887 \@tempwafalse
7888 \@citedatax[]%
7889 }%
7890 }%

```

`\@citedatax@opt`

```

7891 \def\@citedatax@opt[#1]{%
7892 \def\@cite@opt{, #1}%
7893 \@citedatax[#1]}%
7894 }%

7895 }{}

```

## 38 Page numbers

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

This where we supply a destination for each page.

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

```

7896 \def\@currentHpage{Doc-Start}

7897 \@ifclassloaded{slides}{%
7898 \def\Hy@SlidesFormatOptionalPage#1{(#1)}%
7899 \def\Hy@PageAnchorSlidesPlain{%
7900 \advance\c@page\@ne
7901 \xdef\@currentHpage{page.\the\c@slide.\the\c@overlay.\the\c@note%
7902 \ifnum\c@page=\@ne
7903 \else
7904 \the\c@page
7905 \fi}%
7906 \edef\Hy@TempPageAnchor{%
7907 \noexpand\hyper@@anchor{%
7908 \@currentHpage
7909 }%
7910 }%
7911 \advance\c@page-\@ne
7912 }%
7913 \def\Hy@PageAnchorSlide{%
7914 \advance\c@page\@ne
7915 \ifnum\c@page>\@ne
7916 \@ifundefined{theHpage}{%
7917 \protected@edef\Hy@TheSlideOptionalPage{%
7918 \Hy@SlidesFormatOptionalPage{\thepage}%
7919 }%
7920 }{%
7921 \protected@edef\Hy@TheSlideOptionalPage{%
7922 \Hy@SlidesFormatOptionalPage{\theHpage}%
7923 }%
7924 }%
7925 \else
7926 \def\Hy@TheSlideOptionalPage{}%
7927 \fi
7928 \advance\c@page-\@ne
7929 \pdfstringdef\@the@H@page{%

```

Experimental!

```

7930 \csname
7931 the%
7932 \@ifundefined{theH\Hy@SlidesPage}{H}%
7933 \Hy@SlidesPage
7934 \endcsname
7935 \Hy@TheSlideOptionalPage
7936 }%
7937 \@gobblethree
7938 }%
7939 \def\Hy@SlidesPage{slide}%
7940 \g@addto@macro\slide{%
7941 \def\Hy@SlidesPage{slide}%
7942 }%
7943 \g@addto@macro\overlay{%
7944 \def\Hy@SlidesPage{overlay}%
7945 }%
7946 \g@addto@macro\note{%
7947 \def\Hy@SlidesPage{note}%
7948 }%
7949 }-%
7950 \def\Hy@PageAnchorSlidesPlain{}%
7951 \def\Hy@PageAnchorSlide{}%
7952 }
7953 \def\Hy@EveryPageAnchor{%
7954 \Hy@DistillerDestFix
7955 \ifHy@pageanchor
7956 \ifHy@hypertextnames
7957 \ifHy@plainpages
7958 \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
7959 \xdef\@currentHpage{page.\the\c@page}%
7960 \Hy@PageAnchorSlidesPlain
7961 \else
7962 \begingroup
7963 \let\@number\@firstofone
7964 \Hy@unicodedefalse
7965 \Hy@PageAnchorSlide
7966 \pdfstringdef\@the@H@page{\thepage}%
7967 \endgroup
7968 \EdefUnescapeString\@the@H@page{\@the@H@page}%
7969 \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
7970 \xdef\@currentHpage{page.\@the@H@page}%
7971 \fi
7972 \else
7973 \Hy@GlobalStepCount\Hy@pagecounter
7974 \def\Hy@TempPageAnchor{%
7975 \hyper@@anchor{page.\the\Hy@pagecounter}%
7976 }%
7977 \xdef\@currentHpage{page.\the\Hy@pagecounter}%
7978 \fi
7979 \vbox to 0pt{%
7980 \kern\voffset
7981 \kern\topmargin
7982 \kern-1bp\relax
7983 \hbox to 0pt{%

```

```

7984 \kern\hoffset
7985 \kern\ifodd\value{page}%
7986 \oddsidemargin
7987 \else
7988 \evensidemargin
7989 \fi
7990 \kern-1bp\relax
7991 \Hy@TempPageAnchor\relax
7992 \hss
7993 }%
7994 \vss
7995 }%
7996 \fi
7997 }
7998 \g@addto@macro\Hy@EveryPageBoxHook{%
7999 \Hy@EveryPageAnchor
8000 }

```

## 39 Table of contents

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

```

8001 \providecommand\protected@file@percent{}
8002 \ifundefined{hyper@nopatch@toc}{%
8003 \def\addcontentsline#1#2#3{% toc extension, type, tag
8004 \begingroup
8005 \let\label\@gobble
8006 \ifx\@currentHref\@empty
8007 \Hy@Warning{%
8008 No destination for bookmark of \string\addcontentsline,%
8009 \MessageBreak destination is added%
8010 }%
8011 \phantomsection
8012 \fi
8013 \expandafter\ifx\csname toplevel@#2\endcsname\relax
8014 \begingroup
8015 \def\Hy@tempa{#1}%
8016 \ifx\Hy@tempa\Hy@bookmarkstype
8017 \Hy@WarningNoLine{%
8018 bookmark level for unknown #2 defaults to 0%
8019 }%
8020 \else
8021 \Hy@Info{bookmark level for unknown #2 defaults to 0}%
8022 \fi
8023 \endgroup
8024 \expandafter\gdef\csname toplevel@#2\endcsname{0}%
8025 \fi
8026 \edef\Hy@toplevel{\csname toplevel@#2\endcsname}%
8027 \Hy@writebookmark{\csname the#2\endcsname}%

```

```

8028     {#3}%
8029     {\@currentHref}%
8030     {\Hy@toclevel}%
8031     {#1}%
8032     \ifHy@verbose
8033     \begingroup
8034     \def\Hy@tempa{#3}%
8035     \@onelevel@sanitize\Hy@tempa
8036     \let\temp@online\on@line
8037     \let\on@line\@empty
8038     \Hy@Info{%
8039     bookmark\temp@online:\MessageBreak
8040     thecounter {\csname the#2\endcsname}\MessageBreak
8041     text {\Hy@tempa}\MessageBreak
8042     reference {\@currentHref}\MessageBreak
8043     toclevel {\Hy@toclevel}\MessageBreak
8044     type {#1}%
8045     }%
8046     \endgroup
8047     \fi
8048     \addtocontents{#1}{%
8049     \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}\protected@file@per-
cent
8050     }%
8051     \endgroup
8052     }
8053     }{}

```

`\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:

```

8054 \protected\def\Hy@toclinkstart{\hyper@linkstart{link}{\Hy@tocdestname}}
8055 \protected\def\Hy@toclinkend{\hyper@linkend}
8056
8057 \@ifundefined{hyper@nopatch@toc}{%
8058 \def\contentsline#1#2#3#4{%
8059 \begingroup
8060 \Hy@safe@activestrue
8061 \edef\x{\endgroup
8062 \def\noexpand\Hy@tocdestname{#4}%
8063 }\x
8064 \ifx\Hy@tocdestname\@empty
8065 \csname l@#1\endcsname{#2}{#3}%
8066 \else
8067 \ifcase\Hy@linktoc % none
8068 \csname l@#1\endcsname{#2}{#3}%
8069 \or % section
8070 \csname l@#1\endcsname{%
8071 \Hy@toclinkstart{#2}\Hy@toclinkend
8072 }{#3}%
8073 \or % page
8074 \def\Hy@temp{#3}%
8075 \ifx\Hy@temp\@empty

```

```

8076     \csname l@#1\endcsname{#2}{#3}%
8077     \else
8078     \csname l@#1\endcsname{#2}{%
8079     \Hy@toclinkstart{#3}\Hy@toclinkend
8080     }%
8081     \fi
8082 \else % all
8083 \def\Hy@temp{#3}%
8084 \ifx\Hy@temp\@empty
8085     \csname l@#1\endcsname{%
8086     \Hy@toclinkstart{#2}\Hy@toclinkend
8087     }{}%
8088 \else
8089     \csname l@#1\endcsname{%
8090     \Hy@toclinkstart{#2}\Hy@toclinkend
8091     }{%
8092     \Hy@toclinkstart{#3}\Hy@toclinkend
8093     }%
8094     \fi
8095 \fi
8096 \fi
8097 }
8098 }{}

8099 </packageEnd>
8100 <*check>
8101 \checklatex
8102 \checkcommand\def\addcontentsline#1#2#3{%
8103 \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
8104 }
8105 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
8106 </check>
8107 <*packageEnd>

```

## 40 New counters

The whole theorem business makes up new counters on the fly; we are going to intercept this. Sigh. Do it at the level where new counters are defined. change 2024-02-14: use a csname to handle counter names with commands, see issue #330 change 2024-10-13: disable patches in new format 2024-11-01.

```

8108 \IfFormatAtLeastTF{2024-11-01}{\def\hyper@nopatch@counter{}}{}
8109 \@ifundefined{hyper@nopatch@counter}
8110 {
8111 \let\H@definecounter\@definecounter
8112 \def\@definecounter#1{%
8113 \H@definecounter{#1}%
8114 \expandafter
8115 \gdef\csname theH#1\expandafter\endcsname\expandafter
8116 {\expandafter\@arabic\csname c@#1\endcsname}}%
8117 }{}

```

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.

```

8118 \@ifundefined{hyper@nopatch@counter}
8119 {
8120   \let\H@newctr\@newctr
8121   \def\@newctr#1[#2]{%
8122     \H@newctr#1[#2]}%
8123   \expandafter\gdef\csname theH#1\endcsname{%
8124     \csname the\@ifundefined{theH#2}{H}#2\endcsname.\arabic{#1}%
8125   }%
8126 }
8127 }{}

```

## 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.

```

8128 \@ifundefined{hyper@nopatch@amsmath@tag}
8129 {%
8130   \AddToHook{package/amsmath/after}{%
8131     \def\Hy@make@anchor{%
8132       \Hy@MakeCurrentHrefAuto{AMS}%
8133       \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
8134     }%
8135     \def\Hy@make@df@tag@@#1{%
8136       \gdef\df@tag{%
8137         \maketag@@@{\Hy@make@anchor#1}%
8138         \def\@currentlabel{#1}%
8139       }%
8140     }%
8141     \def\Hy@make@df@tag@@@#1{%
8142       \gdef\df@tag{%
8143         \tagform@{\Hy@make@anchor#1}%
8144         \toks@\@xp{\p@equation{#1}}%
8145         \edef\@currentlabel{\the\toks@}%
8146       }%
8147     }%
8148     \let\HyOrg@make@df@tag@@\make@df@tag@@
8149     \let\HyOrg@make@df@tag@@@\make@df@tag@@@
8150     \let\make@df@tag@@\Hy@make@df@tag@@
8151     \let\make@df@tag@@@\Hy@make@df@tag@@@
8152   }{}
8153 }{}

```

This code I simply cannot remember what I was trying to achieve. The final result seems to do nothing anyway.

```
\let\H@tagform@\tagform@
```

```

\def\tagform@#1{%
  \maketag@@@{\hyper@@anchor{\@currentHref}%
  {(\ignorespaces#1\unskip)}}%
}
\def\eqref#1{\textup{H\tagform@{\ref{#1}}}}

```

#### 41.1 \@addtoreset and \numberwithin patches

\@addtoreset puts a counter to the reset list of another counter. After a reset the counter starts again with perhaps already used values. Therefore the hyperref version of the counter print command \theHcounter is redefined in order to add the parent counter. change 2024-07-10: define \HyOrg@addtoreset always for cleveref compability with tagging code, see <https://github.com/latex3/tagging-project/issues/2>

```

8154 \def\HyOrg@addtoreset#1#2{\expandafter\@cons\csname cl@#2\endcsname {{#1}}}
8155 \@ifundefined{hyper@nopatch@counter}
8156 {
8157   \let\HyOrg@addtoreset\@addtoreset
8158   \def\@addtoreset#1#2{%
8159     \HyOrg@addtoreset{#1}{#2}%
8160     \expandafter\xdef\csname theH#1\endcsname{%
8161       \expandafter\noexpand
8162       \csname the\@ifundefined{theH#2}{}H#2\endcsname
8163       .\noexpand\the\noexpand\value{#1}%
8164     }%
8165   }
8166 }{}

```

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

```

8167 </packageEnd>
8168 <*check>
8169 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
8170 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
8171   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
8172     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
8173       \@addtoreset{#2}{#3}%
8174       \@xp\xdef\csname the#2\endcsname{%
8175         \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8176       }%
8177     }%
8178   }%
8179 }%
8180 </check>

```

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

```

8181 <*packageEnd>
8182 \@ifundefined{hyper@nopatch@counter}
8183 {
8184   \AddToHook{package/amsmath/after}{%
8185     \renewcommand*\numberwithin}[3][\arabic]{%
8186       \@ifundefined{c@#2}{\@nocounterr{#2}}{%
8187         \@ifundefined{c@#3}{\@nocnterr{#3}}{%

```



```

8188     \HyOrg@addtoreset{#2}{#3}%
8189     \@xp\xdef\csname the#2\endcsname{%
8190       \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8191     }%
8192     \@xp\xdef\csname theH#2\endcsname{%
8193       \@xp\@nx
8194       \csname the\@ifundefined{theH#3}{}H#3\endcsname
8195       .\@nx#1{#2}%
8196     }%
8197   }%
8198 }%
8199 }%
8200 }{}
8201 }{}

```

## 42 Included figures

Simply intercept the low level graphics package macro.

```

8202 \ifHy@hyperfigures
8203   \let\Hy@Gin@setfile\Gin@setfile
8204   \def\Gin@setfile#1#2#3{%
8205     \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
8206   }%
8207 \fi
8208 \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.

```

8209 \ifHy@hyperindex
8210   \def\HyInd@ParenLeft{()}%
8211   \def\HyInd@ParenRight{}}%
8212   \def\hyperindexformat#1#2{%
8213     \let\HyOrg@hyperpage\hyperpage
8214     \let\hyperpage\@firstofone
8215     #1{\HyOrg@hyperpage{#2}}%
8216     \let\hyperpage\HyOrg@hyperpage
8217   }%
8218   \Hy@nextfalse
8219   \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
8220   \@ifpackageloaded{index}{\Hy@nexttrue}{}%
8221   \@ifpackageloaded{amsmidx}{\Hy@nexttrue}{}%
8222   \begingroup

```

```

8223 \lccode`|= \expandafter` \HyInd@EncapChar\relax
8224 \lccode`\/=` \relax
8225 \lowercase{\endgroup
8226 \ifHy@next
8227 \let\HyInd@org@wrindex\@wrindex
8228 \def\@wrindex#1#2{\HyInd@@wrindex{#1}#2||\}%
8229 \def\HyInd@@wrindex#1#2|#3|#4\{\%
8230 \ifx\|#3\%
8231 \HyInd@org@wrindex{#1}{#2|hyperpage}%
8232 \else
8233 \HyInd@@@wrindex{#1}{#2}#3\%
8234 \fi
8235 }%
8236 \def\HyInd@@@wrindex#1#2#3#4\{\%
8237 \def\Hy@temp@A{#3}%
8238 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8239 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8240 \relax
8241 \HyInd@org@wrindex{#1}{%
8242 #2|hyperindexformat{/#3#4}%
8243 }%
8244 \else
8245 \ifx\|#4\%
8246 \ifx\Hy@temp@A\HyInd@ParenRight
8247 \HyInd@org@wrindex{#1}{#2|#3}%
8248 \else
8249 \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
8250 \fi
8251 \else
8252 \HyInd@org@wrindex{#1}{%
8253 #2|#3hyperindexformat{/#4}%
8254 }%
8255 \fi
8256 \fi
8257 }%
8258 \else
8259 \def\@wrindex#1{\@@wrindex#1||\}%
8260 \def\@@wrindex#1|#2|#3\{\%
8261 \if@filesw
8262 \ifx\|#2\%
8263 \protected@write\@indexfile{}{%
8264 \string\indexentry{#1|hyperpage}{\thepage}%
8265 }%
8266 \else
8267 \HyInd@@@wrindex{#1}#2\%
8268 \fi
8269 \fi
8270 \endgroup
8271 \@esphack
8272 }%
8273 \def\HyInd@@@wrindex#1#2#3\{\%
8274 \def\Hy@temp@A{#2}%
8275 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8276 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi

```

```

8277         \relax
8278     \protected@write\@indexfile{}{%
8279         \string\indexentry{%
8280             #1|hyperindexformat{/#2#3}%
8281         }\thepage}%
8282     }%
8283 \else
8284 \ifx\#3\%
8285     \ifx\Hy@temp@A\HyInd@ParenRight
8286         \HyInd@DefKey{#1}%
8287         \@ifundefined{HyInd@(\HyInd@key)}{%
8288             \let\Hy@temp\@empty
8289         }{%
8290             \expandafter\let\expandafter\Hy@temp
8291                 \csname HyInd@(\HyInd@key)\endcsname
8292         }%
8293     \protected@write\@indexfile{}{%
8294         \string\indexentry{#1|#2\Hy@temp}\thepage}%
8295     }%
8296 \else
8297     \protected@write\@indexfile{}{%
8298         \string\indexentry{#1|#2hyperpage}\thepage}%
8299     }%
8300     \HyInd@DefKey{#1}%
8301     \expandafter
8302     \gdef\csname HyInd@(\HyInd@key)\endcsname{%
8303         hyperpage%
8304     }%
8305 \fi
8306 \else
8307     \protected@write\@indexfile{}{%
8308         \string\indexentry{%
8309             #1|#2hyperindexformat{/#3}%
8310         }\thepage}%
8311     }%
8312     \ifx\Hy@temp@A\HyInd@ParenLeft
8313         \HyInd@DefKey{#1}%
8314         \expandafter
8315         \gdef\csname HyInd@(\HyInd@key)\endcsname{%
8316             hyperindexformat{/#3}%
8317         }%
8318     \fi
8319 \fi
8320 \fi
8321 }%
8322 \def\HyInd@DefKey#1{%
8323     \begingroup
8324     \let\protect\@unexpandable@protect
8325     \edef\Hy@temp{#1}%
8326     \@onelevel@sanitize\Hy@temp
8327     \global\let\HyInd@key\Hy@temp
8328 \endgroup
8329 }%
8330 \fi

```

```

8331 }%
8332 \fi
8333 \Hy@DisableOption{hyperindex}
8334 \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.

```
8335 \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.

```

8336 \def\hyperpage#1{%
8337   \HyInd@hyperpage#1\nohyperpage{ }\@nil
8338 }
8339 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{%
8340   \HyInd@@hyperpage{#1}%
8341   #2%
8342   \def\Hy@temp{#3}%
8343   \ifx\Hy@temp\@empty
8344     \else
8345     \Hy@ReturnAfterFi{%
8346       \HyInd@hyperpage#3\@nil
8347     }%
8348   \fi
8349 }
8350 \def\HyInd@@hyperpage#1{\@hyperpage#1----\}
8351 \def\@hyperpage#1--#2--#3\{\%
8352   \ifx\#2\%
8353     \@commahyperpage{#1}%
8354   \else
8355     \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
8356   \fi
8357 }
8358 \def\@commahyperpage#1{\@commahyperpage#1, \}
8359 \def\@commahyperpage#1, #2, #3\{\%
8360   \ifx\#2\%
8361     \HyInd@pagelink{#1}%
8362   \else
8363     \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
8364   \fi
8365 }

```

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

```

8366 \def\HyInd@pagelink#1{%
8367   \begingroup
8368   \toks@={}%
8369   \HyInd@removespaces#1 \@nil
8370   \endgroup
8371 }
8372 \def\HyInd@removespaces#1 #2\@nil{%
8373   \toks@=\expandafter{\the\toks@#1}%
8374   \ifx\#2\%
8375     \edef\x{\the\toks@}%

```

```

8376 \ifx\x\@empty
8377 \else
8378 \hyperlink{page.\the\toks@}{\the\toks@}%
8379 \fi
8380 \else
8381 \Hy@ReturnAfterFi{%
8382 \HyInd@removespaces#2\@nil
8383 }%
8384 \fi
8385 }

```

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.

```

8386 \ifHy@texht
8387 \expandafter\endinput
8388 \fi
8389 \let\real@setref\@setref
8390 \def\@setref#1#2#3{% csname, extract group, refname
8391 \ifx#1\relax
8392 \protect\G@refundefinedtrue
8393 \nfss@text{\reset@font\bfseries ??}%
8394 \@latex@warning{%
8395 Reference `#3' on page \thepage \space undefined%
8396 }%
8397 \else
8398 \expandafter\Hy@setref@link#1\@empty\@empty\@empty\@nil{#2}%
8399 \fi
8400 }

```

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

```

8401 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
8402 \begingroup
8403 \toks0={\hyper@@link{#5}{#4}}%
8404 \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
8405 \edef\x{\endgroup
8406 \the\toks0 \the\toks1 }%
8407 }%
8408 \x
8409 }
8410 \def\@pagesetref#1#2#3{% csname, extract macro, ref
8411 \ifx#1\relax
8412 \protect\G@refundefinedtrue
8413 \nfss@text{\reset@font\bfseries ??}%
8414 \@latex@warning{%
8415 Reference `#3' on page \thepage \space undefined%
8416 }%
8417 \else
8418 \protect\hyper@@link
8419 {\expandafter\@fifthoffive#1}%
8420 {page.\expandafter\@secondoffive#1}%
8421 {\expandafter\@secondoffive#1}%
8422 \fi

```

```

8423 }
8424 </packageEnd>
8425 <*check>
8426 \checklatex
8427 \checkcommand\def\@setref#1#2#3{%
8428   \ifx#1\relax
8429     \protect\G@refundefinedtrue
8430     \nfss@text{\reset@font\bfseries ??}%
8431     \@latex@warning{%
8432       Reference `#3' on page \thepage\space undefined%
8433     }%
8434   \else
8435     \expandafter#2#1\null
8436   \fi
8437 }
8438 </check>
8439 <*packageEnd>

```

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

```

8440 \def\HyRef@StarSetRef#1{%
8441   \begingroup
8442   \Hy@safe@activestru
8443   \let\protect\@unexpandable@protect
8444   \edef\x{#1}%
8445   \@onelevel@sanitize\x
8446   \edef\x{\endgroup
8447     \noexpand\HyRef@@StarSetRef
8448     \expandafter\noexpand\csname r@\x\endcsname{\x}%
8449   }%
8450   \x
8451 }
8452 \def\HyRef@@StarSetRef#1#2#3{%
8453   \ifx#1\@undefined
8454     \let#1\relax
8455   \fi
8456   \real@setref#1#3{#2}%
8457 }
8458 \def\@refstar#1{%
8459   \HyRef@StarSetRef{#1}\@firstoffive
8460 }
8461 \def\@pagerefstar#1{%
8462   \HyRef@StarSetRef{#1}\@secondoffive
8463 }
8464 \def\@namerefstar#1{%
8465   \HyRef@StarSetRef{#1}\@thirdoffive
8466 }
8467 \def\@Refstar#1{%
8468   \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
8469 }%
8470 \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
8471   \MakeUppercase#1%
8472 }%
8473 \def\HyRef@Ref#1{%

```

```

8474 \hyperref[ $\#1$ ]{\Ref* $\#1$ }%
8475 }%
8476 \Hy@AtBeginDocument{%
8477 \@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.

```

8478 \@ifundefined{hyper@nopatch@varioref}
8479 {
8480 \renewcommand\Vref@star[2][]{%
8481 \begingroup
8482 \let\T@pageref\@pagerefstar
8483 \Ref* $\#2$ 
8484 \vpageref $\#1$ { $\#2$ }%
8485 \endgroup
8486 }%
8487 \renewcommand\Vr@f[2][]{%
8488 \begingroup
8489 \let\T@pageref\@pagerefstar
8490 \hyperref[ $\#2$ ]{%
8491 \Ref* $\#2$ 
8492 \vpageref $\#1$ { $\#2$ }%
8493 }%
8494 \endgroup
8495 }%
8496 \renewcommand\vr@f[2][]{%
8497 \begingroup
8498 \let\T@pageref\@pagerefstar
8499 \hyperref[ $\#2$ ]{%
8500 \ref* $\#2$ 
8501 \vpageref $\#1$ { $\#2$ }%
8502 }%
8503 \endgroup
8504 }%
8505 \renewcommand\vref@star[2][]{%
8506 \begingroup
8507 \let\T@pageref\@pagerefstar
8508 \ref* $\#2$ 
8509 \vpageref $\#1$ { $\#2$ }%
8510 \endgroup
8511 }%
8512 }{}%
8513 }{}%
8514 }

8515 \DeclareRobustCommand*\autopageref}{%
8516 \@ifstar{%
8517 \HyRef@autopagerefname\pageref*%
8518 }\HyRef@autopageref
8519 }
8520 \def\HyRef@autopageref#1{%
8521 \hyperref[ $\#1$ ]{\HyRef@autopagerefname\pageref* $\#1$ }%
8522 }
8523 \def\HyRef@autopagerefname{%

```

```

8524 \@ifundefined{pageautorefname}{%
8525   \@ifundefined{pagename}{%
8526     \Hy@Warning{No autoref name for `page'}%
8527   }{%
8528     \pagename\nobreakspace
8529   }%
8530 }{%
8531   \pageautorefname\nobreakspace
8532 }%
8533 }

```

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

```

8534 \NewDocumentCommand\autoref{s}
8535   {\leavevmode
8536   \IfBooleanTF{#1}{\HyRef@autoref\@gobbletwo}{\HyRef@autoref\hyper@@link}}
8537 \def\HyRef@autoref#1#2{%
8538   \begingroup
8539   \Hy@safe@activestrue
8540   \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
8541   \endgroup
8542 }
8543 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
8544   \HyRef@ShowKeysRef{#2}%
8545   \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref\undefined 1\fi\relax
8546   \edef\HyRef@thisref{%
8547     \expandafter\@fourthoffive#1\@empty\@empty\@empty
8548   }%
8549   \expandafter\HyRef@testreftype\HyRef@thisref.\.%
8550   \Hy@safe@activesfalse
8551   #3{%
8552     \expandafter\@fifthoffive#1\@empty\@empty\@empty
8553   }{%
8554     \expandafter\@fourthoffive#1\@empty\@empty\@empty
8555   }{%
8556     \HyRef@currentHtag
8557     \expandafter\@firstoffive#1\@empty\@empty\@empty
8558     \null
8559   }%
8560   \else
8561     \protect\G@refundefinedtrue
8562     \nfss@text{\reset@font\bfseries ??}%
8563     \@latex@warning{%
8564       Reference `#2' on page \thepage\space undefined%
8565     }%
8566     \fi
8567 }
8568 \def\HyRef@testreftype#1.#2\{\%
8569   \@ifundefined{#1autorefname}{%
8570     \@ifundefined{#1name}{%
8571       \HyRef@StripStar#1\*\@nil{#1}%
8572     \@ifundefined{\HyRef@name autorefname}{%
8573       \@ifundefined{\HyRef@name name}{%
8574         \def\HyRef@currentHtag{}}%

```



```

8575     \Hy@Warning{No autoref name for `#1'}%
8576   }{%
8577   \edef\HyRef@currentHtag{%
8578     \expandafter\noexpand\csname\HyRef@name name\endcsname
8579     \noexpand~%
8580   }%
8581   }%
8582 }{%
8583 \edef\HyRef@currentHtag{%
8584   \expandafter\noexpand
8585   \csname\HyRef@name autorefname\endcsname
8586   \noexpand~%
8587   }%
8588   }%
8589 }{%
8590 \edef\HyRef@currentHtag{%
8591   \expandafter\noexpand\csname#1name\endcsname
8592   \noexpand~%
8593   }%
8594   }%
8595 }{%
8596 \edef\HyRef@currentHtag{%
8597   \expandafter\noexpand\csname#1autorefname\endcsname
8598   \noexpand~%
8599   }%
8600 }%
8601 }
8602 \def\HyRef@StripStar#1*\#2\@nil#3{%
8603 \def\HyRef@name{#2}%
8604 \ifx\HyRef@name\HyRef@CaseStar
8605 \def\HyRef@name{#1}%
8606 \else
8607 \def\HyRef@name{#3}%
8608 \fi
8609 }
8610 \def\HyRef@CaseStar{*\\}
8611 \def\HyRef@currentHtag{}

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

8612 \let\HyRef@ShowKeysRef@gobble
8613 \def\HyRef@ShowKeysInit{%
8614 \@ifundefined{SK@@label}{}
8615   {%
8616   \ifx\SK@ref\@empty
8617   \else
8618   \def\HyRef@ShowKeysRef{%
8619     \SK@\SK@@ref
8620   }%
8621   \fi
8622   }%
8623 }
8624 \AddToHook{package/showkeys/after}{\HyRef@ShowKeysInit}

```

Defaults for the names that `\autoref` uses.

```

8625 \providecommand*\AMSautorefname{\equationautorefname}
8626 \providecommand*\Hfootnoteautorefname{\footnoteautorefname}
8627 \providecommand*\Itemautorefname{\itemautorefname}
8628 \providecommand*\itemautorefname{item}
8629 \providecommand*\equationautorefname{Equation}
8630 \providecommand*\footnoteautorefname{footnote}
8631 \providecommand*\itemautorefname{item}
8632 \providecommand*\figureautorefname{Figure}
8633 \providecommand*\tableautorefname{Table}
8634 \providecommand*\partautorefname{Part}
8635 \providecommand*\appendixautorefname{Appendix}
8636 \providecommand*\chapterautorefname{chapter}
8637 \providecommand*\sectionautorefname{section}
8638 \providecommand*\subsectionautorefname{subsection}
8639 \providecommand*\subsubsectionautorefname{subsubsection}
8640 \providecommand*\paragraphautorefname{paragraph}
8641 \providecommand*\subparagraphautorefname{subparagraph}
8642 \providecommand*\FancyVerbLineautorefname{line}
8643 \providecommand*\theoremautorefname{Theorem}
8644 \providecommand*\pageautorefname{page}
8645 </packageEnd>

```

## 44 Configuration files

### 44.1 PS/PDF strings

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

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

```

8646 (*pdfTEX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo)
8647 \begingroup\expandafter\expandafter\expandafter\endgroup
8648 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
8649   \begingroup
8650     \catcode`\|=0 %
8651     \@makeother\|%
8652     |@firstofone{|endgroup
8653     |def|Hy@pstringdef#1#2{%
8654       |begingroup
8655         |edef~{|string~}%
8656         |xdef|Hy@gtemp{#2}%
8657         |endgroup
8658         |let#1|Hy@gtemp
8659         |@onelevel@sanitize#1%
8660         |edef#1{|expandafter|Hy@ExchangeBackslash#1\|@nil}%
8661         |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
8662         |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
8663       }%

```

```

8664 |def|Hy@ExchangeBackslash#1\#2|@nil{%
8665 #1%
8666 |ifx|\#2|\%%
8667 |else
8668 \\\%
8669 |Hy@ReturnAfterFi{%
8670 |Hy@ExchangeBackslash#2|@nil
8671 }%
8672 |fi
8673 }%
8674 }%
8675 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
8676 #1%
8677 \ifx\#2\%%
8678 \else
8679 \@backslashchar(%
8680 \Hy@ReturnAfterFi{%
8681 \Hy@ExchangeLeftParenthesis#2\@nil
8682 }%
8683 \fi
8684 }%
8685 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
8686 #1%
8687 \ifx\#2\%%
8688 \else
8689 \@backslashchar)%
8690 \Hy@ReturnAfterFi{%
8691 \Hy@ExchangeRightParenthesis#2\@nil
8692 }%
8693 \fi
8694 }%
8695 \else
8696 \def\Hy@pstringdef#1#2{%
8697 \begingroup
8698 \edef~{\string~}%
8699 \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
8700 \endgroup
8701 \let#1\Hy@gtemp
8702 }%
8703 \fi
8704 </pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo)

```

## 44.2 pdftex

```

8705 (*pdftex)
8706 \providecommand*\XR@ext}{pdf}
8707 \Hy@setbreaklinks{true}
8708 \def\HyPat@ObjRef{%
8709 [0-9]*[1-9][0-9]* 0 R%
8710 }

```

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

```
8711 \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
8712 \def\Hy@pdfminorversion{\pdfminorversion}%
8713 \ifHy@ocgcolorlinks
8714 \ifnum\Hy@pdfmajorminor@version<105 %
8715   \kvsetkeys{Hyp}{pdfversion=1.5}%
8716 \fi
8717 \fi
8718 \ifHy@setpdfversion
8719 \ifnum\Hy@pdf@majorminor@version<105 %
8720   \@ifundefined{pdfobjcompresslevel}{%
8721     }{%
8722     \ifHy@verbose
8723       \Hy@InfoNoLine{%
8724         PDF object streams are disabled, because they are%
8725         \MessageBreak
8726         not supported in requested PDF version %
8727         \Hy@pdf@majorversion.\Hy@pdf@minorversion
8728       }%
8729       \fi
8730       \pdfobjcompresslevel=\z@
8731     }%
8732   \fi
8733 \ifnum\Hy@pdfmajorminor@version=\Hy@pdf@majorminor@version\relax
8734 \else
8735   \let\Hy@temp@empty
8736   \def\Hy@temp@A#1#2{%
8737     \ifnum#1>\z@
8738     \edef\Hy@temp{%
8739       \Hy@temp
8740       \space\space
8741       \the#1\space #2%
8742     \ifnum#1=\@one\else s\fi
8743     \MessageBreak
8744     }%
8745     \fi
8746   }%
8747   \Hy@temp@A\pdflastobj{PDF object}%
8748   \Hy@temp@A\pdflastxform{form XObject}%
8749   \Hy@temp@A\pdflastximage{image XObject}%
8750   \Hy@temp@A\pdflastannot{annotation}%
8751   \@ifundefined{pdflastlink}{%
8752     }{%
8753     \Hy@temp@A\pdflastlink{link}%
8754   }%
8755 \fi\Hy@temp@empty
8756 \Hy@pdfmajorversion=\Hy@pdf@majorversion\relax
8757 \Hy@pdfminorversion=\Hy@pdf@minorversion\relax
8758 \else
8759   \let\Hy@temp@A\@empty
8760 \ifnum\Hy@pdf@majorminor@version=104 %
```

```

8761 \IfFileExists{pdf14.sty}{%
8762 \def\Hy@temp@A{%
8763 \MessageBreak
8764 Or \string\RequirePackage{pdf14} can be used%
8765 \MessageBreak
8766 before \string\documentclass\space as shortcut%
8767 }%
8768 }{}%
8769 \fi
8770 \Hy@WarningNoLine{%
8771 The PDF version number could not be set,\MessageBreak
8772 because some PDF objects are already written:%
8773 \MessageBreak
8774 \Hy@temp
8775 The version should be set as early as possible:%
8776 \MessageBreak
8777 \space\space
8778 \expandafter\string\Hy@pdfmajorversion=\Hy@pdf@majorversion, %
8779 \expandafter\string\Hy@pdfminorversion=\Hy@pdf@minorversion
8780 \string\relax
8781 \ifnum\Hy@pdf@majorminor@version<105 %
8782 \@ifundefined{pdfobjcompresslevel}{%
8783 }{%
8784 \MessageBreak
8785 \space\space
8786 \string\pdfobjcompresslevel=0\string\relax
8787 }%
8788 \fi
8789 \Hy@temp@A
8790 }%
8791 \fi
8792 \fi
8793 \PackageInfo{hyperref}{%
8794 \expandafter\string\Hy@pdfmajorversion.%
8795 \expandafter\string\Hy@pdfminorversion
8796 :=\number\Hy@pdf@majorversion.\number\Hy@pdf@minorversion\space
8797 }%
8798 \fi
8799 \edef\Hy@pdf@majorversion{\number\Hy@pdfmajorversion}%
8800 \edef\Hy@pdf@minorversion{\number\Hy@pdfminorversion}%
8801 \Hy@DisableOption{pdfversion}%

8802 \ifHy@ocgcolorlinks
8803 \pdf@ifdraftmode{}{%
8804 \immediate\pdfobj{%
8805 <<%
8806 /Type/OCG%
8807 /Name(View)%
8808 /Usage<<%
8809 /Print<<%
8810 /PrintState/OFF%
8811 >>%
8812 /View<<%
8813 /ViewState/ON%
8814 >>%

```

```

8815     >>%
8816     >>%
8817 }%
8818 \edef\OBJ@OCG@view{\the\pdflastobj\space 0 R}%
8819 \immediate\pdfobj{%
8820   <<%
8821     /Type/OCG%
8822     /Name(Print)%
8823     /Usage<<%
8824     /Print<<%
8825     /PrintState/ON%
8826     >>%
8827     /View<<%
8828     /ViewState/OFF%
8829     >>%
8830     >>%
8831     >>%
8832 }%
8833 \edef\OBJ@OCG@print{\the\pdflastobj\space 0 R}%
8834 \immediate\pdfobj{%
8835   [%
8836     \OBJ@OCG@view\space\OBJ@OCG@print
8837   ]%
8838 }%
8839 \edef\OBJ@OCGs{\the\pdflastobj\space 0 R}%
8840 \pdfcatalog{%
8841   /OCProperties<<%
8842     /OCGs \OBJ@OCGs
8843     /D<<%
8844     /OFF[\OBJ@OCG@print]%
8845     /AS[%
8846       <<%
8847         /Event/View%
8848         /OCGs \OBJ@OCGs
8849         /Category[/View]%
8850       >>%
8851       <<%
8852         /Event/Print%
8853         /OCGs \OBJ@OCGs
8854         /Category[/Print]%
8855       >>%
8856       <<%
8857         /Event/Export%
8858         /OCGs \OBJ@OCGs
8859         /Category[/Print]%
8860       >>%
8861     ]%
8862   >>%
8863 >>%
8864 }%
8865 \begingroup
8866 \edef\x{\endgroup
8867 \pdfpageresources{%
8868   \the\pdfpageresources

```

```

8869     /Properties<<%
8870     /OCView \OBJ@OCG@view
8871     /OCPrint \OBJ@OCG@print
8872     >>%
8873   }%
8874 }%
8875 \x
8876 }%
8877 \Hy@AtBeginDocument{%
8878   \def\Hy@colorlink#1{%
8879     \begingroup
8880     \ifHy@ocgcolorlinks
8881     \def\Hy@ocgcolor{#1}%
8882     \setbox0=\hbox\bgroup\color@begingroup
8883     \else
8884     \HyColor@UseColor#1%
8885     \fi
8886   }%
8887   \def\Hy@endcolorlink{%
8888     \ifHy@ocgcolorlinks
8889     \color@endgroup\egroup
8890     \mbox{%
8891       \pdfliteral page{/OC/OCPrint BDC}%
8892       \rlap{\copy0}%
8893       \pdfliteral page{EMC/OC/OCView BDC}%
8894       \begingroup
8895       \expandafter\HyColor@UseColor\Hy@ocgcolor
8896       \box0 %
8897       \endgroup
8898       \pdfliteral page{EMC}%
8899     }%
8900   \fi
8901   \endgroup
8902 }%
8903 }%
8904 \else
8905 \Hy@DisableOption{ocgcolorlinks}%
8906 \fi

```

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

```

8907 \def\setpdfinkmargin#1{%
8908   \begingroup
8909   \setlength{\dimen@}{#1}%
8910   \expandafter\endgroup
8911   \expandafter\pdfinkmargin\the\dimen@\relax
8912 }
8913 \pdfinkmargin1pt %

```

First set up the default linking

```
8914 \providecommand*\pdfview{XYZ}
```

First define the anchors:

```

8915 \Hy@WrapperDef\new@pdfink#1{%
8916   \ifhmode
8917   \@savsf\spacefactor

```

```

8918 \fi
8919 \Hy@SaveLastskip
8920 \Hy@VerboseAnchor{#1}%
8921 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
8922 \Hy@DestName\Hy@pstringDest\@pdfview
8923 \Hy@RestoreLastskip
8924 \ifhmode
8925   \spacefactor\@savs
8926 \fi
8927 }
8928 \let\pdf@endanchor\@empty

```

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

```

8929 \def\Hy@DestName#1#2{%
8930   \pdfdest name{#1}#2\relax
8931 }

```

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.

```

8932 \providecommand*\@pdfborder{0 0 1}
8933 \providecommand*\@pdfborderstyle{}
8934 \def\Hy@undefinedname{UNDEFINED}
8935 \def\find@pdfink#1#2{%
8936   \leavevmode
8937   \protected@edef\Hy@testname{#2}%
8938   \ifx\Hy@testname\@empty
8939     \Hy@Warning{%
8940       Empty destination name,\MessageBreak
8941       using ``\Hy@undefinedname'%
8942     }%
8943     \let\Hy@testname\Hy@undefinedname
8944   \else
8945     \Hy@pstringdef\Hy@testname{%
8946       \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
8947     }%
8948   \fi
8949   \Hy@StartlinkName{%
8950     \ifHy@pdfa /F 4\fi
8951     \Hy@setpdfborder
8952     \Hy@setpdfhighlight
8953     \ifx\CurrentBorderColor\relax
8954       \else
8955         /C[\CurrentBorderColor]%
8956     \fi
8957   }\Hy@testname
8958   \expandafter\Hy@colorlink\csmame @#1color\endcsmame
8959 }
8960 \def\Hy@StartlinkName#1#2{%
8961   \pdfstartlink attr{#1}goto name{#2}\relax
8962 }
8963 \def\close@pdfink{%

```



```

8964 \Hy@endcolorlink
8965 \Hy@VerboseLinkStop
8966 \pdfendlink
8967 }
8968 \def\hyper@anchor#1{%
8969 \new@pdfink{#1}\anchor@spot\pdf@endanchor
8970 }
8971 \def\hyper@anchorstart#1{%
8972 \new@pdfink{#1}%
8973 \Hy@activeanchortrue
8974 }
8975 \def\hyper@anchorend{%
8976 \pdf@endanchor
8977 \Hy@activeanchorfalse
8978 }
8979 \def\hyper@linkstart#1#2{%
8980 \Hy@VerboseLinkStart{#1}{#2}%
8981 \@ifundefined{@#1bordercolor}{%
8982 \let\CurrentBorderColor\relax
8983 }{%
8984 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8985 }%
8986 \find@pdfink{#1}{#2}%
8987 }
8988 \def\hyper@linkend{\close@pdfink}
8989 \def\hyper@link#1#2#3{%
8990 \Hy@VerboseLinkStart{#1}{#2}%
8991 \@ifundefined{@#1bordercolor}{%
8992 \let\CurrentBorderColor\relax
8993 }{%
8994 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8995 }%
8996 \find@pdfink{#1}{#2}#3\Hy@xspace@end
8997 \close@pdfink
8998 }
8999 \let\CurrentBorderColor\@linkbordercolor
9000 \def\hyper@linkurl#1#2{%
9001 \begingroup
9002 \Hy@pstringdef\Hy@pstringURI{#2}%
9003 \hyper@chars
9004 \leavevmode
9005 \pdfstartlink
9006 attr{%
9007 \Hy@setpdfborder
9008 \Hy@setpdfhighlight
9009 \ifx\@urlbordercolor\relax
9010 \else
9011 /C[\@urlbordercolor]%
9012 \fi
9013 }%
9014 user{%
9015 /Subtype/Link%
9016 \ifHy@pdfa /F 4\fi
9017 /A<<%

```

```

9018     /Type/Action%
9019     /S/URI%
9020     /URI(\Hy@pstringURI)%
9021     \ifHy@href@ismap
9022         /IsMap true%
9023     \fi
9024     \Hy@href@nextactionraw
9025     >>%
9026     }%
9027     \relax
9028     \Hy@colorlink\@urlcolor#1\Hy@xspace@end
9029     \close@pdfink
9030 \endgroup
9031 }
9032 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
9033 \begingroup
9034   \def\Hy@pstringF{#2}%
9035   \Hy@CleanupFile\Hy@pstringF
9036   \Hy@pstringdef\Hy@pstringF\Hy@pstringF
9037   \Hy@pstringdef\Hy@pstringD{#3}%
9038   \Hy@MakeRemoteAction
9039   \leavevmode
9040   \pdfstartlink
9041   attr{%
9042     \Hy@setpdfborder
9043     \Hy@setpdfhighlight
9044     \ifx\@filebordercolor\relax
9045       \else
9046         /C[\@filebordercolor]%
9047     \fi
9048   }%
9049   user {%
9050     /Subtype/Link%
9051     \ifHy@pdfa /F 4\fi
9052     /A<<%
9053     /F(\Hy@pstringF)%
9054     /S/GoToR%
9055     \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}

```

```

9056     \ifx\#3\%
9057     /D[\Hy@href@page\@pdfremotestartview]%
9058     \else
9059     /D(\Hy@pstringD)%

```

```

9060     \fi
9061     \Hy@href@nextactionraw
9062     >>%
9063   }%
9064   \relax
9065   \Hy@colorlink\@filecolor#1\Hy@xspace@end
9066   \close@pdfink
9067 \endgroup
9068 }
9069 \def\@hyper@launch run:#1\|#2#3{% filename, anchor text linkname
9070 \begingroup
9071   \Hy@pstringdef\Hy@pstringF{#1}%
9072   \Hy@pstringdef\Hy@pstringP{#3}%
9073   \leavevmode
9074   \pdfstartlink
9075   attr{%
9076     \Hy@setpdfborder
9077     \Hy@setpdfhighlight
9078     \ifx\@runbordercolor\relax
9079     \else
9080     /C[\@runbordercolor]%
9081     \fi
9082   }%
9083   user {%
9084     /Subtype/Link%
9085     \ifHy@pdfa /F 4\fi
9086     /A<<%
9087     /F(\Hy@pstringF)%
9088     /S/Launch%
9089     \Hy@SetNewWindow
9090     \ifx\|#3\|%
9091     \else
9092     /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
9093     \fi
9094     \Hy@href@nextactionraw
9095     >>%
9096   }%
9097   \relax
9098   \Hy@colorlink\@runcolor#2\Hy@xspace@end
9099   \close@pdfink
9100 \endgroup
9101 }

```

\PDF@SetupDox

```

9102 \def\PDF@SetupDoc{%
9103   \ifx\@pdfpagescrop\@empty
9104   \else
9105     \edef\process@me{%
9106       \pdfpagesattr={%
9107         /CropBox[\@pdfpagescrop]%
9108         \expandafter\ifx\expandafter\|the\pdfpagesattr\|%
9109         \else
9110         ^^J\the\pdfpagesattr
9111         \fi

```

```

9112 }%
9113 }%
9114 \process@me
9115 \fi
9116 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9117 \pdfcatalog{%
9118 /PageMode/\@pdfpagemode
9119 \ifx\@baseurl\@empty
9120 \else
9121 /URI<</Base(\Hy@pstringB)>>%
9122 \fi
9123 }%
9124 \ifx\@pdfstartpage\@empty
9125 \else
9126 \ifx\@pdfstartview\@empty
9127 \else
9128 openaction goto page\@pdfstartpage{\@pdfstartview}%
9129 \fi
9130 \fi
9131 \edef\Hy@temp{%
9132 \ifHy@pdftoolbar\else /HideToolbar true\fi
9133 \ifHy@pdfmenubar\else /HideMenubar true\fi
9134 \ifHy@pdfwindowui\else /HideWindowUI true\fi
9135 \ifHy@pdffitwindow /FitWindow true\fi
9136 \ifHy@pdfcenterwindow /CenterWindow true\fi
9137 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9138 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9139 \Hy@UseNameKey{Direction}\@pdfdirection
9140 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9141 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9142 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9143 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9144 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9145 \Hy@UseNameKey{Duplex}\@pdfduplex
9146 \ifx\@pdfpicktraybypdfsize\@empty
9147 \else
9148 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9149 \fi
9150 \ifx\@pdfprintpagerange\@empty
9151 \else
9152 /PrintPageRange[\@pdfprintpagerange]%
9153 \fi
9154 \ifx\@pdfnumcopies\@empty
9155 \else
9156 /NumCopies \@pdfnumcopies
9157 \fi
9158 }%
9159 \pdfcatalog{%
9160 \ifx\Hy@temp\@empty
9161 \else
9162 /ViewerPreferences<<\Hy@temp>>%
9163 \fi
9164 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9165 \ifx\@pdflang\relax

```

```

9166 \else
9167 /Lang(\@pdflang)%
9168 \fi
9169 }%
9170 }

\PDF@FinishDoc

9171 \def\PDF@FinishDoc{%
9172 \pdf@ifdraftmode{}{%
9173 \Hy@UseMaketitleInfos
9174 \HyInfo@GenerateAddons
9175 \pdfinfo{%
9176 /Author(\@pdfauthor)%
9177 /Title(\@pdftitle)%
9178 /Subject(\@pdfsubject)%
9179 /Creator(\@pdfcreator)%
9180 \ifx\@pdfcreationdate\@empty
9181 \else
9182 /CreationDate(\@pdfcreationdate)%
9183 \fi
9184 \ifx\@pdfmoddate\@empty
9185 \else
9186 /ModDate(\@pdfmoddate)%
9187 \fi
9188 \ifx\@pdfproducer\relax
9189 \else
9190 /Producer(\@pdfproducer)%
9191 \fi
9192 /Keywords(\@pdfkeywords)%
9193 \ifx\@pdftrapped\@empty
9194 \else
9195 /Trapped/\@pdftrapped
9196 \fi
9197 \HyInfo@Addons
9198 }%
9199 }%
9200 \Hy@DisableOption{pdfauthor}%
9201 \Hy@DisableOption{pdftitle}%
9202 \Hy@DisableOption{pdfsubject}%
9203 \Hy@DisableOption{pdfcreator}%
9204 \Hy@DisableOption{addtopdfcreator}%
9205 \Hy@DisableOption{pdfcreationdate}%
9206 \Hy@DisableOption{pdfmoddate}%
9207 \Hy@DisableOption{pdfproducer}%
9208 \Hy@DisableOption{pdfkeywords}%
9209 \Hy@DisableOption{pdftrapped}%
9210 \Hy@DisableOption{pdfinfo}%
9211 }

```

`\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`.

```

9212 \def\hyper@pagetransition{%
9213 \ifx\@pdfpagetransition\relax

```

```

9214 \else
9215 \expandafter\Hy@RemoveTransPageAttr
9216 \the\pdfpageattr^^J/Trans{}}>>\END
9217 \ifx\@pdfpagetransition\@empty
9218 \else
9219 \edef\@processme{%
9220 \global\pdfpageattr{%
9221 \the\pdfpageattr
9222 ^^J/Trans << /S /\@pdfpagetransition\space >>%
9223 }%
9224 }%
9225 \@processme
9226 \fi
9227 \fi
9228 }

```

`\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.

```

9229 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
9230 \ifx\#2\%
9231 \global\pdfpageattr{#1}%
9232 \else
9233 \Hy@RemoveTransPageAttr#1#4\END
9234 \fi
9235 }

```

`\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`.

```

9236 \def\hyper@pageduration{%
9237 \ifx\@pdfpageduration\relax
9238 \else
9239 \expandafter
9240 \Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
9241 \ifx\@pdfpageduration\@empty
9242 \else
9243 \edef\@processme{%
9244 \global\pdfpageattr{%
9245 \the\pdfpageattr
9246 ^^J/Dur \@pdfpageduration\space
9247 }%
9248 }%
9249 \@processme
9250 \fi
9251 \fi
9252 }

```

`\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.

```

9253 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
9254   \ifx\|#2\|%
9255     \global\pdfpageattr{#1}%
9256   \else
9257     \Hy@RemoveDurPageAttr#1#4\END
9258   \fi
9259 }

9260 \pdf@ifdraftmode{}{%
9261   \g@addto@macro\Hy@EveryPageHook{%
9262     \hyper@pagetransition
9263     \hyper@pageduration
9264   }%
9265 }

```

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

```

9266 </pdfTeX>
9267 <*pdfTeX | xetex>
9268 \Hy@AtBeginDocument{%
9269   \ifHy@setpagesize
9270     \expandafter\@firstofone
9271   \else
9272     \expandafter\@gobble
9273   \fi
9274 }%
9275 \@ifclassloaded{seminar}{%
9276 *pdfTeX>
9277   \setlength{\pdfhorigin}{1truein}%
9278   \setlength{\pdfvorigin}{1truein}%
9279 </pdfTeX>
9280   \ifportrait
9281     \ifdim\paperwidth=\z@
9282     \else
9283       \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
9284     \fi
9285     \ifdim\paperheight=\z@
9286     \else
9287       \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
9288     \fi
9289   \else
9290     \ifdim\paperheight=\z@
9291     \else
9292       \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
9293     \fi
9294     \ifdim\paperwidth=\z@
9295     \else
9296       \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
9297     \fi
9298   \fi
9299 }{%
9300   \ifnum\mag=\@m

```

```

9301 \ifdim\stockwidth>\z@
9302 \ifdim\stockheight>\z@
9303 \setlength{\pdfpagewidth}{\stockwidth}%
9304 \setlength{\pdfpageheight}{\stockheight}%
9305 \else
9306 \ifdim\paperwidth>\z@
9307 \ifdim\paperheight>\z@
9308 \setlength{\pdfpagewidth}{\paperwidth}%
9309 \setlength{\pdfpageheight}{\paperheight}%
9310 \fi
9311 \fi
9312 \fi
9313 \else
9314 \ifdim\stockwidth=\z@
9315 \ifdim\paperwidth>\z@
9316 \ifdim\paperheight>\z@
9317 \setlength{\pdfpagewidth}{\paperwidth}%
9318 \setlength{\pdfpageheight}{\paperheight}%
9319 \fi
9320 \fi
9321 \fi
9322 \fi
9323 \fi
9324 }%
9325 }%
9326 \Hy@DisableOption{setpagesize}%
9327 }
9328 </pdfTeX | xetex>
9329 <*pdfTeX>
9330 \def\Acrobatmenu#1#2{%
9331 \Hy@Acrobatmenu{#1}{#2}{%
9332 \leavevmode
9333 \EdefEscapeName\Hy@temp@menu{#1}%
9334 \pdfstartlink
9335 attr{%
9336 \Hy@setpdfborder
9337 \Hy@setpdfhighlight
9338 \ifx\@menubordercolor\relax
9339 \else
9340 /C[\@menubordercolor]%
9341 \fi
9342 }%
9343 user{%
9344 /Subtype/Link%
9345 \ifHy@pdfa /F 4\fi
9346 /A<<%
9347 /S/Named%
9348 /N/\Hy@temp@menu
9349 \Hy@href@nextactionraw
9350 >>%
9351 }%
9352 \relax
9353 \Hy@colorlink\@menucolor#2%
9354 \close@pdflink

```



```
9355 }%
9356 }
```

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

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

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

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

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

```
9357 </pdfTeX>
```

### 44.3 `hypertex`

The Hyper $\TeX$  specification (this is borrowed from an article by Arthur Smith) says that conformant viewers/translators must recognize the following set of `\special` commands:

**href:** `html:<a href = "href_string">`

**name:** `html:<a name = "name_string">`

**end:** `html:</a>`

**image:** `html:<img src = "href_string">`

**base\_name:** `html:<base href = "href_string">`

The *href*, *name* and *end* commands are used to do the basic hypertext operations of establishing links between sections of documents. The *image* command is intended (as with current html viewers) to place an image of arbitrary graphical format on the page in the current location. The *base\_name* command is used to communicate to the *dvi* viewer the full (URL) location of the current document so that files specified by relative URL's may be retrieved correctly.

The *href* and *name* commands must be paired with an *end* command later in the  $\TeX$  file — the  $\TeX$  commands between the two ends of a pair form an *anchor* in the document. In the case of an *href* command, the *anchor* is to be highlighted in the *dvi* viewer, and when clicked on will cause the scene to shift to the destination specified by *href\_string*. The *anchor* associated with a name command represents a possible location to which other hypertext links may refer, either as local references (of the form `href="#name_string"` with the *name\_string* identical to the one in the name command) or as part of a URL (of the form `URL#name_string`). Here *href\_string* is a valid URL or local identifier, while *name\_string* could be any string at all: the only caveat is that " characters should be escaped with a backslash (`\`), and if it looks like a URL name it may cause problems.

```
9358 <*hypertex>
```

```

9359 \providecommand*\XR@ext}{dvi}
9360 \let\PDF@FinishDoc\@empty
9361 \def\PDF@SetupDoc{%
9362   \ifx\@baseurl\@empty
9363   \else
9364     \special{html:<base href="\@baseurl">}%
9365   \fi
9366 }
9367 \Hy@WrapperDef\hyper@anchor#1{%
9368   \Hy@SaveLastskip
9369   \Hy@VerboseAnchor{#1}%
9370   \begingroup
9371     \let\protect=\string
9372     \hyper@chars
9373     \special{html:<a name=%
9374       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9375   \endgroup
9376   \Hy@activeanchortrue
9377   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9378   \special{html:</a>}%
9379   \Hy@activeanchorfalse
9380   \Hy@RestoreLastskip
9381 }
9382 \Hy@WrapperDef\hyper@anchorstart#1{%
9383   \Hy@SaveLastskip
9384   \Hy@VerboseAnchor{#1}%
9385   \begingroup
9386     \hyper@chars
9387     \special{html:<a name=%
9388       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9389   \endgroup
9390   \Hy@activeanchortrue
9391 }
9392 \def\hyper@anchorend{%
9393   \special{html:</a>}%
9394   \Hy@activeanchorfalse
9395   \Hy@RestoreLastskip
9396 }
9397 \def\@urltype{url}
9398 \def\hyper@linkstart#1#2{%
9399   \Hy@VerboseLinkStart{#1}{#2}%
9400   \expandafter\Hy@colorlink\csname @#1color\endcsname
9401   \def\Hy@tempa{#1}%
9402   \ifx\Hy@tempa\@urltype
9403     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9404   \else
9405     \begingroup
9406       \hyper@chars
9407       \special{html:<a href=%
9408         \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
9409     \endgroup
9410   \fi
9411 }
9412 \def\hyper@linkend{%

```

```

9413 \special{html:</a>}%
9414 \Hy@endcolorlink
9415 }
9416 \def\hyper@linkfile#1#2#3{%
9417 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
9418 }
9419 \def\hyper@linkurl#1#2{%

```

If we want to raise up the final link `\special`, we need to get its height; ask me why  $\LaTeX$  constructs make this totally foul up, and make us revert to basic  $\TeX$ . I do not know.

```

9420 \leavevmode
9421 \ifHy@raiselinks
9422 \Hy@SaveSpaceFactor
9423 \Hy@SaveSavedSpaceFactor
9424 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9425 \Hy@RestoreSavedSpaceFactor
9426 \@linkdim\dp\@tempboxa
9427 \lower\@linkdim\hbox{%
9428 \hyper@chars
9429 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9430 }%
9431 \Hy@colorlink\@urlcolor
9432 \Hy@RestoreSpaceFactor
9433 #1%
9434 \Hy@SaveSpaceFactor
9435 \@linkdim\ht\@tempboxa

```

Because of the interaction with the `dvilips` 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).

```

9436 \advance\@linkdim by -6.5\p@
9437 \raise\@linkdim\hbox{\special{html:</a>}}%
9438 \Hy@endcolorlink
9439 \Hy@RestoreSpaceFactor
9440 \else
9441 \begingroup
9442 \hyper@chars
9443 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9444 \Hy@colorlink\@urlcolor#1\Hy@xspace@end
9445 \special{html:</a>}%
9446 \Hy@endcolorlink
9447 \endgroup
9448 \fi
9449 }

```

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

```

9450 \def\hyper@link#1#2#3{%
9451 \Hy@VerboseLinkStart{#1}{#2}%
9452 \hyper@linkurl{#3}{\##\Hy@HyperDestNameFilter{#2}}%
9453 }
9454 \def\hyper@image#1#2{%
9455 \begingroup
9456 \hyper@chars

```

```

9457 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
9458 \endgroup
9459 }
9460 </hypertex>
9461 <*\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.

```

9462 \providecommand*\XR@ext}{dvi}
9463 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
9464 \Hy@WrapperDef\hyper@anchor#1{%
9465 \Hy@SaveLastskip
9466 \Hy@VerboseAnchor{#1}%
9467 \begingroup
9468 \let\protect=\string
9469 \special{mark: #1}%
9470 \endgroup
9471 \Hy@activeanchortrue
9472 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9473 \Hy@activeanchorfalse
9474 \Hy@RestoreLastskip
9475 }
9476 \Hy@WrapperDef\hyper@anchorstart#1{%
9477 \Hy@SaveLastskip
9478 \Hy@VerboseAnchor{#1}%
9479 \special{mark: #1}%
9480 \Hy@activeanchortrue
9481 }
9482 \def\hyper@anchorend{%
9483 \Hy@activeanchorfalse
9484 \Hy@RestoreLastskip
9485 }
9486 \def\hyper@linkstart#1#2{%
9487 \Hy@VerboseLinkStart{#1}{#2}%
9488 \expandafter\Hy@colorlink\csname @#1color\endcsname
9489 \special{button: %
9490 10000000 %
9491 \number\baselineskip\space
9492 #2%
9493 }%
9494 }
9495 \def\hyper@linkend{%

```

```

9496 \Hy@endcolorlink
9497 }
9498 \def\hyper@link#1#2#3{%
9499 \Hy@VerboseLinkStart{#1}{#2}%
9500 \leavevmode
9501 \ifHy@raiselinks
9502 \Hy@SaveSpaceFactor
9503 \Hy@SaveSavedSpaceFactor
9504 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#3}%
9505 \Hy@RestoreSavedSpaceFactor
9506 \@linkdim\dp\@tempboxa
9507 \lower\@linkdim\hbox{%
9508 \special{button: %
9509 \number\wd\@tempboxa\space
9510 \number\ht\@tempboxa\space
9511 #2%
9512 }%
9513 \expandafter\Hy@colorlink\csname @#1color\endcsname
9514 \Hy@RestoreSpaceFactor
9515 #3\Hy@xspace@end
9516 \Hy@SaveSpaceFactor
9517 \Hy@endcolorlink
9518 }%
9519 \@linkdim\ht\@tempboxa
9520 \advance\@linkdim by -6.5\p@
9521 \raise\@linkdim\hbox{%
9522 \Hy@RestoreSpaceFactor
9523 \else
9524 \special{button: %
9525 \number\wd\@tempboxa\space
9526 \number\ht\@tempboxa\space
9527 #2%
9528 }%
9529 \expandafter\Hy@colorlink\csname @#1color\endcsname
9530 #3\Hy@xspace@end
9531 \Hy@endcolorlink
9532 \fi
9533 }
9534 \def\hyper@linkurl#1#2{%
9535 \begingroup
9536 \hyper@chars
9537 \leavevmode
9538 \ifHy@raiselinks
9539 \Hy@SaveSpaceFactor
9540 \Hy@SaveSavedSpaceFactor
9541 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9542 \Hy@RestoreSavedSpaceFactor
9543 \@linkdim\dp\@tempboxa
9544 \lower\@linkdim\hbox{%
9545 \special{button: %
9546 \number\wd\@tempboxa\space
9547 \number\ht\@tempboxa\space
9548 launch: \wwwbrowser\space
9549 #2%

```

```

9550     }%
9551     \Hy@colorlink \@urlcolor
9552     \Hy@RestoreSpaceFactor
9553     #1\Hy@xspace@end
9554     \Hy@SaveSpaceFactor
9555     \Hy@endcolorlink
9556     }%
9557     \@linkdim\ht\@tempboxa
9558     \advance\@linkdim by -6.5\p@
9559     \raise\@linkdim\hbox{ }%
9560     \Hy@RestoreSpaceFactor
9561     \else
9562     \special{button: %
9563     \number\wd\@tempboxa\space
9564     \number\ht\@tempboxa\space
9565     launch: \wwwbrowser\space
9566     #2%
9567     }%
9568     \Hy@colorlink \@urlcolor
9569     #1\Hy@xspace@end
9570     \Hy@endcolorlink
9571     \fi
9572     \endgroup
9573     }
9574     \def\hyper@linkfile#1#2#3{%
9575     \begingroup
9576     \hyper@chars
9577     \leavevmode
9578     \ifHy@raiselinks
9579     \Hy@SaveSpaceFactor
9580     \Hy@SaveSavedSpaceFactor
9581     \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9582     \Hy@RestoreSavedSpaceFactor
9583     \@linkdim\dp\@tempboxa
9584     \lower\@linkdim\hbox{%
9585     \special{button: %
9586     \number\wd\@tempboxa\space
9587     \number\ht\@tempboxa\space
9588     #3,%
9589     file: #2%
9590     }%
9591     \Hy@colorlink \@filecolor
9592     \Hy@RestoreSpaceFactor
9593     #1\Hy@xspace@end
9594     \Hy@SaveSpaceFactor
9595     \Hy@endcolorlink
9596     }%
9597     \@linkdim\ht\@tempboxa
9598     \advance\@linkdim by -6.5\p@
9599     \raise\@linkdim\hbox{ }%
9600     \Hy@RestoreSpaceFactor
9601     \else
9602     \special{button: %
9603     \number\wd\@tempboxa\space

```

```

9604     \number\ht\@tempboxa\space
9605     #3,%
9606     file: #2%
9607   }%
9608   \Hy@colorlink\@filecolor
9609     #1\Hy@xspace@end
9610   \Hy@endcolorlink
9611   \fi
9612 \endgroup
9613 }
9614 \HyInfo@AddonUnsupportedtrue
9615 \def\PDF@FinishDoc{%
9616   \Hy@UseMaketitleInfos
9617   \HyInfo@TrappedUnsupported
9618   \special{PDF: Keywords \@pdfkeywords}%
9619   \special{PDF: Title \@pdftitle}%
9620   \special{PDF: Creator \@pdfcreator}%
9621   \ifx\@pdfcreationdate\@empty
9622   \else
9623     \special{PDF: CreationDate \@pdfcreationdate}%
9624   \fi
9625   \ifx\@pdfmoddate\@empty
9626   \else
9627     \special{PDF: ModDate \@pdfmoddate}%
9628   \fi
9629   \special{PDF: Author \@pdfauthor}%
9630   \ifx\@pdfproducer\relax
9631   \else
9632     \special{PDF: Producer \@pdfproducer}%
9633   \fi
9634   \special{PDF: Subject \@pdfsubject}%
9635   \Hy@DisableOption{pdfauthor}%
9636   \Hy@DisableOption{pdftitle}%
9637   \Hy@DisableOption{pdfsubject}%
9638   \Hy@DisableOption{pdfcreator}%
9639   \Hy@DisableOption{addtopdfcreator}%
9640   \Hy@DisableOption{pdfcreationdate}%
9641   \Hy@DisableOption{pdfcreationdate}%
9642   \Hy@DisableOption{pdfmoddate}%
9643   \Hy@DisableOption{pdfproducer}%
9644   \Hy@DisableOption{pdfkeywords}%
9645   \Hy@DisableOption{pdftrapped}%
9646   \Hy@DisableOption{pdfinfo}%
9647 }
9648 \def\PDF@SetupDoc{%
9649   \ifx\@baseurl\@empty
9650   \else
9651     \special{PDF: Base \@baseurl}%
9652   \fi
9653   \ifx\@pdfpagescrop\@empty\else
9654     \special{PDF: BBox \@pdfpagescrop}%
9655   \fi
9656   \def\Hy@temp{ }%
9657   \ifx\@pdfstartpage\@empty

```

```

9658 \else
9659 \ifx\@pdfstartview\@empty
9660 \else
9661 \edef\Hy@temp{%
9662   ,Page=\@pdfstartpage
9663   ,View=\@pdfstartview
9664 }%
9665 \fi
9666 \fi
9667 \edef\Hy@temp{%
9668 \noexpand\pdfmark{%
9669   pdfmark=/DOCVIEW,%
9670   PageMode=/\@pdfpagemode
9671   \Hy@temp
9672 }%
9673 }%
9674 \Hy@temp
9675 \ifx\@pdfpagescrop\@empty
9676 \else
9677 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9678 \fi
9679 \edef\Hy@temp{%
9680 \ifHy@pdftoolbar\else /HideToolbar true\fi
9681 \ifHy@pdfmenubar\else /HideMenubar true\fi
9682 \ifHy@pdfwindowui\else /HideWindowUI true\fi
9683 \ifHy@pdffitwindow /FitWindow true\fi
9684 \ifHy@pdfcenterwindow /CenterWindow true\fi
9685 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9686 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9687 \Hy@UseNameKey{Direction}\@pdfdirection
9688 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9689 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9690 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9691 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9692 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9693 \Hy@UseNameKey{Duplex}\@pdfduplex
9694 \ifx\@pdfpicktraybypdfsize\@empty
9695 \else
9696 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9697 \fi
9698 \ifx\@pdfprintpagerange\@empty
9699 \else
9700 /PrintPageRange[\@pdfprintpagerange]%
9701 \fi
9702 \ifx\@pdfnumcopies\@empty
9703 \else
9704 /NumCopies \@pdfnumcopies
9705 \fi
9706 }%
9707 \pdfmark{pdfmark=/PUT,%
9708 Raw={%
9709 \string{Catalog\string}<<%
9710 \ifx\Hy@temp\@empty
9711 \else

```



```

9712     /ViewerPreferences<<\Hy@temp>>%
9713     \fi
9714     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9715     \ifx\@pdflang\relax
9716     \else
9717     /Lang(\@pdflang)%
9718     \fi
9719     >>%
9720   }%
9721 }%
9722 }
9723 </dviwindo>
9724 <*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.

```

9725 \special{dvipdfmx:config C 0x0010}
9726 \providecommand*\XR@ext}{pdf}
9727 \Hy@setbreaklinks{true}
9728 \def\HyPat@ObjRef{%
9729   @[\^ ]+%
9730 }
9731 \newsavebox{\pdfm@box}
9732 \def\@pdfm@mark#1{\special{pdf:#1}}
9733 \Hy@WrapperDef\@pdfm@dest#1{%
9734   \Hy@SaveLastskip
9735   \Hy@VerboseAnchor{#1}%
9736   \begingroup
9737   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9738   \def\x{XYZ}%
9739   \ifx\x\@pdfview
9740     \def\x{XYZ @xpos @ypos null}%
9741   \else
9742     \def\x{FitH}%
9743     \ifx\x\@pdfview
9744       \def\x{FitH @ypos}%
9745     \else
9746       \def\x{FitBH}%
9747       \ifx\x\@pdfview
9748         \def\x{FitBH @ypos}%
9749       \else
9750         \def\x{FitV}%
9751         \ifx\x\@pdfview
9752           \def\x{FitV @xpos}%
9753         \else
9754           \def\x{FitBV}%
9755           \ifx\x\@pdfview
9756             \def\x{FitBV @xpos}%
9757           \else

```

```

9758     \def\x{Fit}%
9759     \ifx\x\@pdfview
9760         \let\x\@pdfview
9761     \else
9762         \def\x{FitB}%
9763         \ifx\x\@pdfview
9764             \let\x\@pdfview
9765         \else
9766             \def\x{FitR}%
9767             \ifx\x\@pdfview
9768                 \Hy@Warning{\`pdfview=FitR' is not supported}%
9769             \def\x{XYZ @xpos @ypos null}%
9770         \else
9771             \@onelevel@sanitize\@pdfview
9772             \Hy@Warning{%
9773                 Unknown value `\'@pdfview' for pdfview%
9774             }%
9775             \def\x{XYZ @xpos @ypos null}%
9776         \fi
9777     \fi
9778 \fi
9779 \fi
9780 \fi
9781 \fi
9782 \fi
9783 \fi
9784 \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
9785 \endgroup
9786 \Hy@RestoreLastskip
9787 }
9788 \providecommand*\@pdfview{XYZ}
9789 \providecommand*\@pdfborder{0 0 1}
9790 \providecommand*\@pdfborderstyle{}
9791 \def\hyper@anchor#1{%
9792     \@pdfm@dest{#1}%
9793 }
9794 \def\hyper@anchorstart#1{%
9795     \Hy@activeanchortrue
9796     \@pdfm@dest{#1}%
9797 }
9798 \def\hyper@anchorend{%
9799     \Hy@activeanchorfalse
9800 }

9801 \newcounter{Hy@AnnotLevel}

9802 \ifHy@ocgcolorlinks
9803     \def\OBJ@OCG@view{@OCG@view}%
9804     \@pdfm@mark{%
9805         obj \OBJ@OCG@view <<%
9806         /Type/OCG%
9807         /Name(View)%
9808         /Usage<<%
9809         /Print<<%
9810         /PrintState/OFF%

```

```

9811     >>%
9812     /View<<%
9813     /ViewState/ON%
9814     >>%
9815     >>%
9816     >>%
9817     }%
9818     \@pdfm@mark{close \OBJ@OCG@view}%
9819     \def\OBJ@OCG@print{@OCG@print}%
9820     \@pdfm@mark{%
9821     obj \OBJ@OCG@print <<%
9822     /Type/OCG%
9823     /Name(Print)%
9824     /Usage<<%
9825     /Print<<%
9826     /PrintState/ON%
9827     >>%
9828     /View<<%
9829     /ViewState/OFF%
9830     >>%
9831     >>%
9832     >>%
9833     }%
9834     \@pdfm@mark{close \OBJ@OCG@print}%
9835     \def\OBJ@OCGs{@OCGs}%
9836     \@pdfm@mark{%
9837     obj \OBJ@OCGs [%
9838     \OBJ@OCG@view\space\OBJ@OCG@print
9839     ]%
9840     }%
9841     \@pdfm@mark{close \OBJ@OCGs}%
9842     \@pdfm@mark{%
9843     put @catalog <<%
9844     /OCProperties<<%
9845     /OCGs \OBJ@OCGs
9846     /D<<%
9847     /OFF[\OBJ@OCG@print]%
9848     /AS[%
9849     <<%
9850     /Event/View%
9851     /OCGs \OBJ@OCGs
9852     /Category[/View]%
9853     >>%
9854     <<%
9855     /Event/Print%
9856     /OCGs \OBJ@OCGs
9857     /Category[/Print]%
9858     >>%
9859     <<%
9860     /Event/Export%
9861     /OCGs \OBJ@OCGs
9862     /Category[/Print]%
9863     >>%
9864     ]%

```

```

9865     >>%
9866     >>%
9867     >>%
9868 }%
9869 \AtBeginShipout{%
9870   \setbox\AtBeginShipoutBox=\hbox{%
9871     \copy\AtBeginShipoutBox
9872     \@pdfm@mark{%
9873       put @resources <<%
9874         /Properties<<%
9875         /OCView \OBJ@OCG@view
9876         /OCPrint \OBJ@OCG@print
9877       >>%
9878     >>%
9879   }%
9880 }%
9881 }%
9882 \Hy@AtBeginDocument{%
9883   \def\Hy@colorlink#1{%
9884     \begingroup
9885     \ifHy@ocgcolorlinks
9886       \def\Hy@ocgcolor{#1}%
9887       \setbox0=\hbox\bgroup\color@begingroup
9888     \else
9889       \HyColor@UseColor#1%
9890     \fi
9891   }%
9892   \def\Hy@endcolorlink{%
9893     \ifHy@ocgcolorlinks
9894       \color@endgroup\egroup
9895       \mbox{%
9896         \@pdfm@mark{content /OC/OCPrint BDC}%
9897         \rlap{\copy0}%
9898         \@pdfm@mark{content EMC/OC/OCView BDC}%
9899         \begingroup
9900         \expandafter\HyColor@UseColor\Hy@ocgcolor
9901         \box0 %
9902         \endgroup
9903         \@pdfm@mark{content EMC}%
9904       }%
9905     \fi
9906   \endgroup
9907 }%
9908 }%
9909 \else
9910 \Hy@DisableOption{ocgcolorlinks}%
9911 \fi

```

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

```

9912 \def\Hy@BeginAnnot#1{%
9913   \global\advance\c@Hy@AnnotLevel\@ne
9914   \ifnum\c@Hy@AnnotLevel=\@ne
9915     #1%

```

```

9916 \fi
9917 }
9918 \def\Hy@EndAnnot{%
9919 \ifnum\value{Hy@AnnotLevel}=\@ne
9920 \Hy@endcolorlink
9921 \@pdfm@mark{eann}%
9922 \fi
9923 \global\advance\c@Hy@AnnotLevel\m@ne
9924 }

9925 \def\Hy@undefinedname{UNDEFINED}
9926 \def\hyper@linkstart#1#2{%
9927 \Hy@VerboseLinkStart{#1}{#2}%
9928 \leavevmode
9929 \Hy@BeginAnnot{%
9930 \protected@edef\Hy@testname{#2}%
9931 \ifx\Hy@testname\@empty
9932 \Hy@Warning{%
9933 Empty destination name,\MessageBreak
9934 using \Hy@undefinedname'
9935 }%
9936 \let\Hy@testname\Hy@undefinedname
9937 \else
9938 \Hy@pstringdef\Hy@testname{%
9939 \expandafter\HyperDestNameFilter\expandafter{%
9940 \Hy@testname
9941 }%
9942 }%
9943 \fi
9944 \@pdfm@mark{%
9945 bann<<%
9946 /Type/Annot%
9947 /Subtype/Link%
9948 \ifHy@pdfa /F 4\fi
9949 \Hy@setpdfborder
9950 \Hy@setpdfhighlight
9951 \expandafter\ifx\csname @#1bordercolor\endcsname\relax
9952 \else
9953 /C[\csname @#1bordercolor\endcsname]%
9954 \fi
9955 /A<<%
9956 /S/GoTo%
9957 /D(\Hy@testname)%
9958 \Hy@href@nextactionraw
9959 >>%
9960 >>%
9961 }%
9962 \expandafter\Hy@colorlink\csname @#1color\endcsname
9963 }%
9964 }
9965 \def\hyper@linkend{\Hy@EndAnnot}%
9966 \def\hyper@link#1#2#3{%
9967 \hyper@linkstart{#1}{#2}#3\Hy@xspace@end\hyper@linkend
9968 }
9969 \def\hyper@linkfile#1#2#3{%

```

```

9970 \leavevmode
9971 \Hy@BeginAnnot{%
9972   \def\Hy@pstringF{#2}%
9973   \Hy@CleanupFile\Hy@pstringF
9974   \Hy@pstringdef\Hy@pstringF\Hy@pstringF
9975   \Hy@pstringdef\Hy@pstringD{#3}%
9976   \Hy@MakeRemoteAction
9977   \@pdfm@mark{%
9978     bann<<%
9979     /Type/Annot%
9980     /Subtype/Link%
9981     \ifHy@pdfa /F 4\fi
9982     \Hy@setpdfborder
9983     \Hy@setpdfhighlight
9984     \ifx\@filebordercolor\relax
9985     \else
9986       /C[\@filebordercolor]%
9987     \fi
9988     /A<<%
9989     /S/GoToR%
9990     /F(\Hy@pstringF)%
9991     /D%
9992     \ifx\#3\%
9993       [\Hy@href@page\@pdfremotestartview]%
9994     \else
9995       (\Hy@pstringD)%
9996     \fi
9997     \Hy@SetNewWindow
9998     \Hy@href@nextactionraw
9999     >>%
10000   >>%
10001   }%
10002   \Hy@colorlink\@filecolor
10003 }%
10004 #1\Hy@xspace@end
10005 \Hy@EndAnnot
10006 }
10007 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
10008 \leavevmode
10009 \Hy@BeginAnnot{%
10010   \Hy@pstringdef\Hy@pstringF{#1}%
10011   \Hy@pstringdef\Hy@pstringP{#3}%
10012   \@pdfm@mark{%
10013     bann<<%
10014     /Type/Annot%
10015     /Subtype/Link%
10016     \ifHy@pdfa /F 4\fi
10017     \Hy@setpdfborder
10018     \Hy@setpdfhighlight
10019     \ifx\@runbordercolor\relax
10020     \else
10021       /C[\@runbordercolor]%
10022     \fi
10023     /A<<%

```

```

10024      /F(\Hy@pstringF)%
10025      /S/Launch%
10026      \Hy@SetNewWindow
10027      \ifx\#3\%
10028      \else
10029      /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
10030      \fi
10031      \Hy@href@nextactionraw
10032      >>%
10033      >>%
10034      }%
10035      \Hy@colorlink\@runcolor
10036      }%
10037      #2\Hy@xspace@end
10038      \Hy@EndAnnot
10039      }
10040      \def\hyper@linkurl#1#2{%
10041      \leavevmode
10042      \Hy@BeginAnnot{%
10043      \Hy@pstringdef\Hy@pstringURI{#2}%
10044      \@pdfm@mark{%
10045      bann<<%
10046      /Type/Annot%
10047      /Subtype/Link%
10048      \ifHy@pdfa /F 4\fi
10049      \Hy@setpdfborder
10050      \Hy@setpdfhighlight
10051      \ifx\@urlbordercolor\relax
10052      \else
10053      /C[\@urlbordercolor]%
10054      \fi
10055      /A<<%
10056      /S/URI%
10057      /URI(\Hy@pstringURI)%
10058      \ifHy@href@ismap
10059      /IsMap true%
10060      \fi
10061      \Hy@href@nextactionraw
10062      >>%
10063      >>%
10064      }%
10065      \Hy@colorlink\@urlcolor
10066      }%
10067      #1\Hy@xspace@end
10068      \Hy@EndAnnot
10069      }
10070      \def\Acrobatmenu#1#2{%
10071      \Hy@Acrobatmenu{#1}{#2}{%
10072      \Hy@BeginAnnot{%
10073      \EdefEscapeName\Hy@temp@menu{#1}%
10074      \@pdfm@mark{%
10075      bann<<%
10076      /Type/Annot%
10077      /Subtype/Link%

```

```

10078     \ifHy@pdfa /F 4\fi
10079     \Hy@setpdfborder
10080     \Hy@setpdfhighlight
10081     \ifx\@menubordercolor\relax
10082     \else
10083     /C[\@menubordercolor]%
10084     \fi
10085     /A<<%
10086     /S/Named%
10087     /N/\Hy@temp@menu
10088     \Hy@href@nextactionraw
10089     >>%
10090     >>%
10091     }%
10092     \Hy@colorlink\@menucolor
10093     }%
10094     #2\Hy@xspace@end
10095     \Hy@EndAnnot
10096     }%
10097 }
10098
10099 \def\PDF@FinishDoc{%
10100 \Hy@UseMaketitleInfos
10101 \HyInfo@GenerateAddons
10102 \@pdfm@mark{%
10103 docinfo<<%
10104 /Title(\@pdftitle)%
10105 /Subject(\@pdfsubject)%
10106 /Creator(\@pdfcreator)%
10107 \ifx\@pdfcreationdate\@empty
10108 \else
10109 /CreationDate(\@pdfcreationdate)%
10110 \fi
10111 \ifx\@pdfmoddate\@empty
10112 \else
10113 /ModDate(\@pdfmoddate)%
10114 \fi
10115 /Author(\@pdfauthor)%
10116 \ifx\@pdfproducer\relax
10117 \else
10118 /Producer(\@pdfproducer)%
10119 \fi
10120 /Keywords(\@pdfkeywords)%
10121 \ifx\@pdftrapped\@empty
10122 \else
10123 /Trapped/\@pdftrapped
10124 \fi
10125 \HyInfo@Addons
10126 >>%
10127 }%
10128 \Hy@DisableOption{pdfauthor}%
10129 \Hy@DisableOption{pdftitle}%
10130 \Hy@DisableOption{pdfsubject}%
10131 \Hy@DisableOption{pdfcreator}%

```



```

10132 \Hy@DisableOption{addtopdfcreator}%
10133 \Hy@DisableOption{pdfcreationdate}%
10134 \Hy@DisableOption{pdfcreationdate}%
10135 \Hy@DisableOption{pdfmoddate}%
10136 \Hy@DisableOption{pdfproducer}%
10137 \Hy@DisableOption{pdfkeywords}%
10138 \Hy@DisableOption{pdftrapped}%
10139 \Hy@DisableOption{pdfinfo}%
10140 }

10141 \def\PDF@SetupDoc{%
10142 \edef\Hy@temp{%
10143 \ifHy@pdftoolbar\else /HideToolbar true\fi
10144 \ifHy@pdfmenubar\else /HideMenubar true\fi
10145 \ifHy@pdfwindowui\else /HideWindowUI true\fi
10146 \ifHy@pdffitwindow /FitWindow true\fi
10147 \ifHy@pdfcenterwindow /CenterWindow true\fi
10148 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10149 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10150 \Hy@UseNameKey{Direction}\@pdfdirection
10151 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10152 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10153 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10154 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10155 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10156 \Hy@UseNameKey{Duplex}\@pdfduplex
10157 \ifx\@pdfpicktraybypdfsize\@empty
10158 \else
10159 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10160 \fi
10161 \ifx\@pdfprintpagerange\@empty
10162 \else
10163 /PrintPageRange[\@pdfprintpagerange]%
10164 \fi
10165 \ifx\@pdfnumcopies\@empty
10166 \else
10167 /NumCopies \@pdfnumcopies
10168 \fi
10169 }%
10170 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10171 \@pdfm@mark{%
10172 docview<<%
10173 \ifx\@pdfstartpage\@empty
10174 \else
10175 \ifx\@pdfstartview\@empty
10176 \else
10177 /OpenAction[@page\@pdfstartpage\@pdfstartview]%
10178 \fi
10179 \fi
10180 \ifx\@baseurl\@empty
10181 \else
10182 /URI<</Base(\Hy@pstringB)>>%
10183 \fi
10184 /PageMode/\@pdfpagemode
10185 \ifx\Hy@temp\@empty

```

```

10186 \else
10187 /ViewerPreferences<<\Hy@temp>>%
10188 \fi
10189 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10190 \ifx\@pdflang\relax
10191 \else
10192 /Lang(\@pdflang)%
10193 \fi
10194 >>%
10195 }%
10196 \ifx\@pdfpagescrop\@empty
10197 \else
10198 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}%
10199 \fi
10200 }
10201 </dvi-pdfm | xetex>
10202 < *dvi-pdfm | xetex>

```

\hyper@pagetransition

```

10203 \def\hyper@pagetransition{%
10204 \ifx\@pdfpagetransition\relax
10205 \else
10206 \ifx\@pdfpagetransition\@empty
10207 \else
10208 \special{pdf:put @thispage %
10209 <</Trans<</S/\@pdfpagetransition>>>>%
10210 }%
10211 \fi
10212 \fi
10213 }

```

\hyper@pageduration

```

10214 \def\hyper@pageduration{%
10215 \ifx\@pdfpageduration\relax
10216 \else
10217 \ifx\@pdfpageduration\@empty
10218 \else
10219 \special{pdf:put @thispage %
10220 <</Dur \@pdfpageduration>>%
10221 }%
10222 \fi
10223 \fi
10224 }

10225 \g@addto@macro\Hy@EveryPageBoxHook{%
10226 \hyper@pagetransition
10227 \hyper@pageduration
10228 }

```

```

10229 </dvi-pdfm | xetex>

```

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

```

10230 < *dvi-pdfm>

```

```

10231 \AtBeginShipoutFirst{%
10232   \ifHy@setpagesize
10233     \begingroup
10234     \ifnum\mag=\@m
10235       \ifdim\stockwidth>\z@
10236         \ifdim\stockheight>\z@
10237           \special{papersize=\the\stockwidth,\the\stockheight}%
10238         \else
10239           \ifdim\paperwidth>\z@
10240             \ifdim\paperheight>\z@
10241               \special{papersize=\the\paperwidth,\the\paperheight}%
10242             \fi
10243           \fi
10244         \fi
10245       \else
10246         \ifdim\stockwidth=\z@
10247           \ifdim\paperwidth>\z@
10248             \ifdim\paperheight>\z@
10249               \special{papersize=\the\paperwidth,\the\paperheight}%
10250             \fi
10251           \fi
10252         \fi
10253       \fi
10254     \fi
10255   \endgroup
10256 \fi
10257 \Hy@DisableOption{setpagesize}%
10258 }
10259 </dviptfm>

```

## 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.

```

10260 (*vtexhtml)
10261 \providecommand*\XR@ext}{htm}
10262 \RequirePackage{vtexhtml}
10263 \newif\if@Localurl
10264 \let\PDF@FinishDoc\@empty
10265 \def\PDF@SetupDoc{%
10266   \ifx\@baseurl\@empty
10267     \else
10268     \special{!direct <base href="\@baseurl">}%
10269   \fi
10270 }
10271 \def\@urltype{url}
10272 \def\hyper@link#1#2#3{%
10273   \Hy@VerboseLinkStart{#1}{#2}%
10274   \leavevmode
10275   \special{!direct <a href=%
10276     \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
10277   #3\Hy@xspace@end
10278   \special{!direct </a>}%
10279 }

```

```

10280 \def\hyper@linkurl#1#2{%
10281   \begingroup
10282   \hyper@chars
10283   \leavevmode
10284   \MathBSuppress=1\relax
10285   \special{!direct <a href=%
10286     \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}%
10287   #1\Hy@xspace@end
10288   \MathBSuppress=0\relax
10289   \special{!direct </a>}%
10290 \endgroup
10291 }
10292 \def\hyper@linkfile#1#2#3{%
10293   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi}%
10294 }
10295 \def\hyper@linkstart#1#2{%
10296   \Hy@VerboseLinkStart{#1}{#2}%
10297   \def\Hy@tempa{#1}\ifx\Hy@tempa\@urlltype
10298     \@Localurltrue
10299     \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
10300   \else
10301     \@Localurlfalse
10302     \begingroup
10303     \hyper@chars
10304     \special{!aref \HyperDestNameFilter{#2}}%
10305   \endgroup
10306   \fi
10307 }
10308 \def\hyper@linkend{%
10309   \if@Localurl
10310     \special{!endaref}%
10311   \else
10312     \special{!direct </a>}%
10313   \fi
10314 }
10315 \Hy@WrapperDef\hyper@anchorstart#1{%
10316   \Hy@SaveLastskip
10317   \Hy@VerboseAnchor{#1}%
10318   \begingroup
10319   \hyper@chars
10320   \special{!aname #1}%
10321   \special{!direct <a name=%
10322     \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10323   \endgroup
10324   \Hy@activeanchortrue
10325 }
10326 \def\hyper@anchorend{%
10327   \special{!direct </a>}%
10328   \Hy@activeanchorfalse
10329   \Hy@RestoreLastskip
10330 }
10331 \Hy@WrapperDef\hyper@anchor#1{%
10332   \Hy@SaveLastskip
10333   \Hy@VerboseAnchor{#1}%

```

```

10334 \begingroup
10335   \let\protect=\string
10336   \hyper@chars
10337   \leavevmode
10338   \special{!aname #1}%
10339   \special{!direct <a name=%
10340     \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10341 \endgroup
10342 \Hy@activeanchortrue
10343 \bgroup\anchor@spot\egroup
10344 \special{!direct </a>}%
10345 \Hy@activeanchorfalse
10346 \Hy@RestoreLastskip
10347 }
10348 \def\@Form[#1]{%
10349   \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10350 }
10351 \let\@endForm\@empty
10352 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10353   \Hy@Message{Sorry, TeXpider does not yet support FORM gauges}%
10354 }
10355 \def\@TextField[#1]#2{% parameters, label
10356   \Hy@Message{Sorry, TeXpider does not yet support FORM text fields}%
10357 }
10358 \def\@CheckBox[#1]#2{% parameters, label
10359   \Hy@Message{Sorry, TeXpider does not yet support FORM checkboxes}%
10360 }
10361 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10362   \Hy@Message{Sorry, TeXpider does not yet support FORM choice menus}%
10363 }
10364 \def\@PushButton[#1]#2{% parameters, label
10365   \Hy@Message{Sorry, TeXpider does not yet support FORM pushbuttons}%
10366 }
10367 \def\@Reset[#1]#2{%
10368   \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10369 }
10370 \def\@Submit[#1]#2{%
10371   \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10372 }
10373 </vtexhtml>
10374 <*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.

```

10375 \ifcsname mediaheight\endcsname
10376   \ifHy@setpagesize
10377     \providecommand*\VTeXInitMediaSize{%
10378       \ifnum\mag=\@m
10379         \ifdim\stockwidth>\z@
10380           \ifdim\stockheight>\z@
10381             \setlength\mediaheight\stockheight
10382             \setlength\mediawidth\stockwidth
10383           \else

```

```

10384     \ifdim\paperwidth>\z@
10385     \ifdim\paperheight>\z@
10386         \setlength\mediaheight\paperheight
10387         \setlength\mediawidth\paperwidth
10388     \fi
10389 \fi
10390 \fi
10391 \else
10392     \ifdim\stockwidth=\z@
10393     \ifdim\paperwidth>\z@
10394     \ifdim\paperheight>\z@
10395         \setlength\mediaheight\paperheight
10396         \setlength\mediawidth\paperwidth
10397     \fi
10398 \fi
10399 \fi
10400 \fi
10401 \fi
10402 }%
10403 \Hy@AtBeginDocument{\VTeXInitMediaSize}%
10404 \fi
10405 \Hy@DisableOption{setpagesize}%
10406 \fi

```

Older versions of VTeX require xyz in lower case.

```

10407 \providecommand*\@pdfview{xyz}
10408 \providecommand*\@pdfborder{0 0 1}
10409 \providecommand*\@pdfborderstyle{}
10410 \let\CurrentBorderColor\@linkbordercolor
10411 \Hy@WrapperDef\hyper@anchor#1{%
10412     \Hy@SaveLastskip
10413     \Hy@VerboseAnchor{#1}%
10414     \begingroup
10415     \let\protect=\string
10416     \hyper@chars
10417     \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10418     \endgroup
10419     \Hy@activeanchortrue
10420     \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
10421     \Hy@activeanchorfalse
10422     \Hy@RestoreLastskip
10423 }
10424 \Hy@WrapperDef\hyper@anchorstart#1{%
10425     \Hy@SaveLastskip
10426     \Hy@VerboseAnchor{#1}%
10427     \begingroup
10428     \hyper@chars
10429     \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10430     \endgroup
10431     \Hy@activeanchortrue
10432 }
10433 \def\hyper@anchorend{%
10434     \Hy@activeanchorfalse
10435     \Hy@RestoreLastskip
10436 }

```

```

10437 \def\@urltype{url}
10438 \def\Hy@undefinedname{UNDEFINED}
10439 \def\hyper@linkstart#1#2{%
10440   \Hy@VerboseLinkStart{#1}{#2}%
10441   \Hy@pstringdef\Hy@pstringURI{#2}%
10442   \expandafter\Hy@colorlink\csname @#1color\endcsname
10443   \@ifundefined{#@1bordercolor}{%
10444     \let\CurrentBorderColor\relax
10445   }{%
10446     \edef\CurrentBorderColor{%
10447       \csname @#1bordercolor\endcsname
10448     }%
10449   }%
10450   \def\Hy@tempa{#1}%
10451   \ifx\Hy@tempa\@urltype
10452     \special{!%
10453       aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10454         \ifHy@href@ismap
10455           /IsMap true%
10456         \fi
10457         \Hy@href@nextactionraw
10458         >;%
10459         a=<%
10460         \ifHy@pdfa /F 4\fi
10461         \Hy@setpdfborder
10462         \ifx\CurrentBorderColor\relax
10463           \else
10464             /C [\CurrentBorderColor]%
10465           \fi
10466         >%
10467       }%
10468     \else
10469       \protected@edef\Hy@testname{#2}%
10470       \ifx\Hy@testname\@empty
10471         \Hy@Warning{%
10472           Empty destination name,\MessageBreak
10473           using ` \Hy@undefinedname'%
10474         }%
10475         \let\Hy@testname\Hy@undefinedname
10476       \fi
10477       \special{!%
10478         aref \expandafter\HyperDestNameFilter
10479           \expandafter{\Hy@testname};%
10480         a=<%
10481         \ifHy@pdfa /F 4\fi
10482         \Hy@setpdfborder
10483         \ifx\CurrentBorderColor\relax
10484           \else
10485             /C [\CurrentBorderColor]%
10486           \fi
10487         >%
10488       }%
10489     \fi
10490   }

```

```

10491 \def\hyper@linkend{%
10492 \special{!endaref}%
10493 \Hy@endcolorlink
10494 }
10495 \def\hyper@linkfile#1#2#3{%
10496 \leavevmode
10497 \def\Hy@pstringF{#2}%
10498 \Hy@CleanupFile\Hy@pstringF
10499 \special{!%
10500 aref <%
10501 \ifnum\Hy@VTeXversion>753 \ifHy@pdfnewwindow n\fi
10502 f=\Hy@pstringF>#3;%
10503 a=<%
10504 \ifHy@pdfa /F 4\fi
10505 \Hy@setpdfborder
10506 \ifx\@filebordercolor\relax
10507 \else
10508 /C [\@filebordercolor]%
10509 \fi
10510 >%
10511 }%
10512 \Hy@colorlink\@filecolor
10513 #1\Hy@xspace@end
10514 \Hy@endcolorlink
10515 \special{!endaref}%
10516 }
10517 \def\hyper@linkurl#1#2{%
10518 \begingroup
10519 \Hy@pstringdef\Hy@pstringURI{#2}%
10520 \hyper@chars
10521 \leavevmode
10522 \special{!%
10523 aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10524 \ifHy@href@ismap
10525 /IsMap true%
10526 \fi
10527 \Hy@href@nextactionraw
10528 >,%
10529 a=<%
10530 \ifHy@pdfa /F 4\fi
10531 \Hy@setpdfborder
10532 \ifx\@urlbordercolor\relax
10533 \else
10534 /C [\@urlbordercolor]%
10535 \fi
10536 >%
10537 }%
10538 \Hy@colorlink\@urlcolor
10539 #1\Hy@xspace@end
10540 \Hy@endcolorlink
10541 \special{!endaref}%
10542 \endgroup
10543 }
10544 \def\hyper@link#1#2#3{%

```



```

10545 \Hy@VerboseLinkStart{#1}{#2}%
10546 \@ifundefined{#1bordercolor}{%
10547   \let\CurrentBorderColor\relax
10548 }{%
10549   \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
10550 }%
10551 \leavevmode
10552 \protected@edef\Hy@testname{#2}%
10553 \ifx\Hy@testname\@empty
10554   \Hy@Warning{%
10555     Empty destination name,\MessageBreak
10556     using `\'Hy@undefinedname'%
10557   }%
10558   \let\Hy@testname\Hy@undefinedname
10559 \fi
10560 \special{!%
10561   aref \expandafter\HyperDestNameFilter
10562     \expandafter{\Hy@testname};%
10563   a=<%
10564     \ifHy@pdfa /F 4\fi
10565     \Hy@setpdfborder
10566     \ifx\CurrentBorderColor\relax
10567     \else
10568       /C [\CurrentBorderColor]%
10569     \fi
10570   >%
10571 }%
10572 \expandafter
10573 \Hy@colorlink\csname @#1color\endcsname
10574   #3\Hy@xspace@end
10575 \Hy@endcolorlink
10576 \special{!endaref}%
10577 }
10578 \def\hyper@image#1#2{%
10579 \hyper@linkurl{#2}{#1}%
10580 }
10581 \def\@hyper@launch run:#1\|#2#3{%
10582 \Hy@pstringdef\Hy@pstringF{#1}%
10583 \Hy@pstringdef\Hy@pstringP{#3}%
10584 \leavevmode
10585 \special{!aref %
10586   <u=%
10587     /Type/Action%
10588     /S/Launch%
10589     /F(\Hy@pstringF)%
10590     \Hy@SetNewWindow
10591     \ifx\|#3\|%
10592     \else
10593       /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>%
10594     \fi
10595     \Hy@href@nextactionraw
10596   >,%
10597   a=<%
10598     \ifHy@pdfa /F 4\fi

```

```

10599 \Hy@setpdfborder
10600 \ifx\@runbordercolor\relax
10601 \else
10602 /C[\@runbordercolor]%
10603 \fi
10604 >%
10605 }%
10606 \Hy@colorlink\@runcolor
10607 #2\Hy@xspace@end
10608 \Hy@endcolorlink
10609 \special{!endaref}%
10610 }
10611 \def\Acrobatmenu#1#2{%
10612 \EdefEscapeName\Hy@temp@menu{#1}%
10613 \Hy@Acrobatmenu{#1}{#2}{%
10614 \special{!%
10615 aref <u=/S /Named /N /\Hy@temp@menu>;%
10616 a=<%
10617 \ifHy@pdfa /F 4\fi
10618 \Hy@setpdfborder
10619 \ifx\@menubordercolor\relax
10620 \else
10621 /C[\@menubordercolor]%
10622 \fi
10623 >%
10624 }%
10625 \Hy@colorlink\@menucolor
10626 #2\Hy@xspace@end
10627 \Hy@endcolorlink
10628 \special{!endaref}%
10629 }%
10630 }

```

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

The code below makes sense for V<sub>T</sub>E<sub>X</sub> 7.02 or later.

Please never use `\@ifundefined{VTeXversion}{..}{..}` *globally*.

```

10631 \ifnum\Hy@VTeXversion<702 %
10632 \else
10633 \def\hyper@pagetransition{%
10634 \ifx\@pdfpagetransition\relax
10635 \else
10636 \ifx\@pdfpagetransition\@empty

```

Standard incantation.

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

```

10637 \else
10638 \hvtex@parse@trans\@pdfpagetransition
10639 \fi
10640 \fi
10641 }%

```

I have to write an “honest” parser to convert raw PDF code into V<sub>T</sub>E<sub>X</sub> `\special`. (AVK)

Syntax of V<sub>T</sub>E<sub>X</sub> `\special{!trans <transition_effect>}`:

`<transition_effect> ::= <transition_style>[,<transition_duration>]`

```

<transition_style> ::= <Blinds_effect> | <Box_effect> |
                    <Dissolve_effect> | <Glitter_effect> |
                    <Split_effect> | <Wipe_effect>
<Blinds_effect> ::= B[<effect_dimension>]
<Box_effect> ::= X[<effect_motion>]
<Dissolve_effect> ::= D
<Glitter_effect> ::= G[<effect_direction>]
<Split_effect> ::= S[<effect_motion>][<effect_dimension>]
<Wipe_effect> ::= W[<effect_direction>]
<Replace_effect> ::= R
<effect_direction> ::= <number>
<effect_dimension> ::= H | V
<effect_motion> ::= I | O
<transition_duration> ::= <number>

```

Transition codes:

```

10642 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
10643 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
10644 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
10645 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
10646 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
10647 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
10648 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%

```

Optional parameters:

```

10649 \def\hvtex@par@dimension{/Dm}%
10650 \def\hvtex@par@direction{/Di}%
10651 \def\hvtex@par@duration{/D}%
10652 \def\hvtex@par@motion{/M}%

```

Tokenizer:

```

10653 \def\hvtex@gettoken{%
10654   \expandafter\hvtex@gettoken@\hvtex@buffer\@nil
10655 }%

```

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

```

10656 \def\hvtex@gettoken@#1 #2\@nil{%
10657   \edef\hvtex@token{#1}%
10658   \edef\hvtex@buffer{#2}%
10659 }%
10660 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

10661 \let\hvtex@trans@code\@empty
10662 \let\hvtex@param@dimension\@empty
10663 \let\hvtex@param@direction\@empty
10664 \let\hvtex@param@duration\@empty
10665 \let\hvtex@param@motion\@empty
10666 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

10667 \hvtex@gettoken
10668 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

10669 \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```
10670   \else
10671     \hvtex@gettoken
10672   \fi
10673 \fi
10674 \csname hvtex@trans@effect@\hvtex@token\endcsname
```

Now is time to parse optional parameters.

```
10675 \hvtex@trans@params
10676 }%
```

Reentrant macro to parse optional parameters.

```
10677 \def\hvtex@trans@params{%
10678   \ifx\hvtex@buffer\@empty
10679   \else
10680     \hvtex@gettoken
10681     \let\hvtex@trans@par\hvtex@token
10682     \ifx\hvtex@buffer\@empty
10683     \else
10684       \hvtex@gettoken
10685       \ifx\hvtex@trans@par\hvtex@par@duration
/D is the effect duration in seconds. VTEX special takes it in milliseconds.
10686         \let\hvtex@param@duration\hvtex@token
10687         \else \ifx\hvtex@trans@par\hvtex@par@motion
/M can be either /I or /O
10688           \expandafter\edef\expandafter\hvtex@param@motion
10689             \expandafter{\expandafter\@gobble\hvtex@token}%
10690           \else \ifx\hvtex@trans@par\hvtex@par@dimension
/Dm can be either /H or /V
10691             \expandafter\edef\expandafter\hvtex@param@dimension
10692               \expandafter{\expandafter\@gobble\hvtex@token}%
10693             \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).

```
10694       \let\hvtex@param@direction\hvtex@token
10695       \fi\fi\fi\fi
10696     \fi
10697   \fi
10698   \ifx\hvtex@buffer\@empty
10699     \let\next\hvtex@produce@trans
10700   \else
10701     \let\next\hvtex@trans@params
10702   \fi
10703 \next
10704 }%
```

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

```
10705 \def\hvtex@produce@trans{%
10706   \let\vtex@trans@special\@empty
10707   \if S\hvtex@trans@code
10708     \edef\vtex@trans@special{\hvtex@trans@code
```

```

10709     \hvtex@param@dimension\hvtex@param@motion}%
10710 \else\if B\hvtex@trans@code
10711     \edef\vtex@trans@special{%
10712     \hvtex@trans@code\hvtex@param@dimension
10713     }%
10714 \else\if X\hvtex@trans@code
10715     \edef\vtex@trans@special{%
10716     \hvtex@trans@code\hvtex@param@motion
10717     }%
10718 \else\if W\hvtex@trans@code
10719     \edef\vtex@trans@special{%
10720     \hvtex@trans@code\hvtex@param@direction
10721     }%
10722 \else\if D\hvtex@trans@code
10723     \let\vtex@trans@special\hvtex@trans@code
10724 \else\if R\hvtex@trans@code
10725     \let\vtex@trans@special\hvtex@trans@code
10726 \else\if G\hvtex@trans@code
10727     \edef\vtex@trans@special{%
10728     \hvtex@trans@code\hvtex@param@direction
10729     }%
10730 \fi\fi\fi\fi\fi\fi
10731 \ifx\vtex@trans@special\@empty
10732 \else
10733     \ifx\hvtex@param@duration\@empty
10734     \else
10735         \setlength{\dimen@}{\hvtex@param@duration\p@}%

```

I'm not guilty of possible overflow.

```

10736     \multiply\dimen@\@m
10737     \edef\vtex@trans@special{%
10738     \vtex@trans@special,\strip@pt\dimen@
10739     }%
10740 \fi

```

And all the mess is just for this.

```

10741     \special{!trans \vtex@trans@special}%
10742 \fi
10743 }%

10744 \def\hyper@pageduration{%
10745 \ifx\@pdfpageduration\relax
10746 \else
10747     \ifx\@pdfpageduration\@empty
10748     \special{!duration-}%
10749     \else
10750     \special{!duration \@pdfpageduration}%
10751     \fi
10752 \fi
10753 }%
10754 \g@addto@macro\Hy@EveryPageBoxHook{%
10755     \hyper@pagetransition
10756     \hyper@pageduration
10757 }%
10758 \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

```

10759 \ifx\@pdfproducer\relax
10760 \def\@pdfproducer{VTeX}%
10761 \ifnum\Hy@VTeXversion>\z@
10762 \count@\VTeXversion
10763 \divide\count@ 100 %
10764 \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
10765 \multiply\count@ -100 %
10766 \advance\count@\VTeXversion
10767 \edef\@pdfproducer{%
10768 \@pdfproducer
10769 .\ifnum\count@<10 0\fi\the\count@
10770 \ifx\VTeXOS\@undefined\else
10771 \ifnum\VTeXOS>0 %
10772 \ifnum\VTeXOS<6 %
10773 \space(%
10774 \ifcase\VTeXOS
10775 \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
10776 \fi
10777 )%
10778 \fi
10779 \fi
10780 \fi
10781 ,\space
10782 \ifnum\OpMode=\@ne PDF\else PS\fi
10783 \space backend%
10784 \ifx\gexmode\@undefined\else
10785 \ifnum\gexmode>\z@\space with GeX\fi
10786 \fi
10787 }%
10788 \fi
10789 \fi

```

Current `!pdfinfo` key syntax:

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

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

```

10790 \def\PDF@SetupDoc{%
10791   \ifx\@pdfpagescrop\@empty
10792   \else
10793     \special{!pdfinfo b=<\@pdfpagescrop>}%
10794   \fi
10795   \ifx\@pdfstartpage\@empty
10796   \else
10797     \ifx\@pdfstartview\@empty
10798     \else
10799       \special{!onopen Page\@pdfstartpage}%
10800     \fi
10801   \fi
10802   \special{!pdfinfo p=<\/\@pdfpagemode>}%
10803   \ifx\@baseurl\@empty
10804   \else
10805     \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
10806   \fi
10807   \special{!pdfinfo v=<<<%
10808     \ifHy@pdftoolbar\else /HideToolbar true\fi
10809     \ifHy@pdfmenubar\else /HideMenubar true\fi
10810     \ifHy@pdfwindowui\else /HideWindowUI true\fi
10811     \ifHy@pdfwindow /FitWindow true\fi
10812     \ifHy@pdfcenterwindow /CenterWindow true\fi
10813     \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10814     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10815     \Hy@UseNameKey{Direction}\@pdfdirection
10816     \Hy@UseNameKey{ViewArea}\@pdfviewarea
10817     \Hy@UseNameKey{ViewClip}\@pdfviewclip
10818     \Hy@UseNameKey{PrintArea}\@pdfprintarea
10819     \Hy@UseNameKey{PrintClip}\@pdfprintclip
10820     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10821     \Hy@UseNameKey{Duplex}\@pdfduplex
10822     \ifx\@pdfpicktraybypdfsize\@empty
10823     \else
10824       /PickTrayByPDFSize \@pdfpicktraybypdfsize
10825     \fi
10826     \ifx\@pdfprintpagerange\@empty
10827     \else
10828       /PrintPageRange[\@pdfprintpagerange]%
10829     \fi

```

```

10830 \ifx\@pdfnumcopies\@empty
10831 \else
10832 /NumCopies \@pdfnumcopies
10833 \fi
10834 >>>}%
10835 \ifx\@pdfpagelayout\@empty
10836 \else
10837 \special{!pdffinfo l=</\@pdfpagelayout\space>}%
10838 \fi
10839 }%
10840 \HyInfo@AddonUnsupportedtrue
10841 \define@key{Hyp}{pdfcreationdate}{%
10842 \Hy@Warning{%
10843 VTeX does not support pdfcreationdate.\MessageBreak
10844 Therefore its setting is ignored%
10845 }%
10846 }
10847 \define@key{Hyp}{pdfmoddate}{%
10848 \Hy@Warning{%
10849 VTeX does not support pdfmoddate.\MessageBreak
10850 Therefore its setting is ignored%
10851 }%
10852 }
10853 \def\PDF@FinishDoc{%
10854 \Hy@UseMaketitleInfos
10855 \HyInfo@TrappedUnsupported
10856 \special{!pdffinfo a=<\@pdfauthor>}%
10857 \special{!pdffinfo t=<\@pdftitle>}%
10858 \special{!pdffinfo s=<\@pdfsubject>}%
10859 \special{!pdffinfo c=<\@pdfcreator>}%
10860 \ifx\@pdfproducer\relax
10861 \else
10862 \special{!pdffinfo r=<\@pdfproducer>}%
10863 \fi
10864 \special{!pdffinfo k=<\@pdfkeywords>}%
10865 \Hy@DisableOption{pdfauthor}%
10866 \Hy@DisableOption{pdftitle}%
10867 \Hy@DisableOption{pdfsubject}%
10868 \Hy@DisableOption{pdfcreator}%
10869 \Hy@DisableOption{addtopdfcreator}%
10870 \Hy@DisableOption{pdfcreationdate}%
10871 \Hy@DisableOption{pdfcreationdate}%
10872 \Hy@DisableOption{pdfmoddate}%
10873 \Hy@DisableOption{pdfproducer}%
10874 \Hy@DisableOption{pdfkeywords}%
10875 \Hy@DisableOption{pdftrapped}%
10876 \Hy@DisableOption{pdffinfo}%
10877 }
10878 </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.

```
10879 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%  
10880 <packageEnd>\providecommand*\Hy@DistillerDestFix{}  
10881 <*pdfmark | dviwindo>  
10882 \def\Hy@DistillerDestFix{%  
10883   \begingroup  
10884     \let\x\literalps@out
```

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

```
10885   \ifnum \@ifundefined{OpMode}{0}{%  
10886     \@ifundefined{gexmode}{0}{%  
10887       \ifnum\gexmode>0 \OpMode\else 0\fi  
10888     }>1 %  
10889   \def\x##1{%  
10890     \immediate\special{!##1}}%  
10891   }%  
10892   \fi  
10893   \x{%  
10894     /product where{%  
10895       pop %  
10896       product(Distiller)search{%  
10897         pop pop pop %  
10898         version(.)search{%  
10899           exch pop exch pop%  
10900         (3011)eq{%  
10901           gsave %  
10902           newpath 0 0 moveto closepath clip%  
10903           /Courier findfont 10 scalefont setfont %  
10904           72 72 moveto(.)show %  
10905           grestore%  
10906         }if%  
10907       }{pop}ifelse%  
10908     }{pop}ifelse%  
10909   }if%  
10910   }%  
10911 \endgroup  
10912 }  
10913 </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

```

10914 (*pdfmark)
10915 \Hy@breaklinks@unsupported
10916 \def\HyPat@ObjRef{%
10917   \[~{}]+\}%
10918 }
10919 \Hy@WrapperDef\hyper@anchor#1{%
10920   \Hy@SaveLastskip
10921   \Hy@VerboseAnchor{#1}%
10922   \begingroup
10923     \pdfmark[\anchor@spot]{%
10924       pdfmark=/DEST,%
10925       linktype=anchor,%
10926       View=/\@pdfview \@pdfviewparams,%
10927       DestAnchor={#1}%
10928     }%
10929   \endgroup
10930   \Hy@RestoreLastskip
10931 }
10932 \ifundefined{hyper@anchorstart}{\endinput}
10933 \Hy@WrapperDef\hyper@anchorstart#1{%
10934   \Hy@SaveLastskip
10935   \Hy@VerboseAnchor{#1}%
10936   \literalps@out{H.S}%
10937   \Hy@AllowHyphens
10938   \xdef\hyper@currentanchor{#1}%
10939   \Hy@activeanchortrue
10940 }
10941 \def\hyper@anchorend{%
10942   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
10943   \pdfmark{%
10944     pdfmark=/DEST,%
10945     linktype=anchor,%
10946     View=/\@pdfview \@pdfviewparams,%
10947     DestAnchor=\hyper@currentanchor,%
10948   }%
10949   \Hy@activeanchorfalse
10950   \Hy@RestoreLastskip
10951 }
10952 \def\hyper@linkstart#1#2{%
10953   \Hy@VerboseLinkStart{#1}{#2}%
10954   \ifHy@breaklinks
10955     \else
10956     \leavevmode

```

```

10957 \ifmmode
10958   \def\Hy@LinkMath{${}%
10959 \else
10960   \let\Hy@LinkMath\@empty
10961 \fi
10962 \Hy@SaveSpaceFactor
10963 \hbox\bgroup
10964 \Hy@RestoreSpaceFactor
10965 \Hy@LinkMath
10966 \fi
10967 \expandafter\Hy@colorlink\csname @#1color\endcsname
10968 \literalps@out{H.S}%
10969 \Hy@AllowHyphens
10970 \xdef\hyper@currentanchor{#2}%
10971 \gdef\hyper@currentlinktype{#1}%
10972 }
10973 \def\hyper@linkend{%
10974 \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
10975 \@ifundefined{@\hyper@currentlinktype bordercolor}{%
10976   \let\Hy@tempcolor\relax
10977 }{%
10978   \edef\Hy@tempcolor{%
10979     \csname @\hyper@currentlinktype bordercolor\endcsname
10980   }%
10981 }%
10982 \pdfmark{%
10983   pdfmark=/ANN,%
10984   linktype=link,%
10985   Subtype=/Link,%
10986   PDFAFflags=4,%
10987   Dest=\hyper@currentanchor,%
10988   AcroHighlight=\@pdfhighlight,%
10989   Border=\@pdfborder,%
10990   BorderStyle=\@pdfborderstyle,%
10991   Color=\Hy@tempcolor,%
10992   Raw=H.B%
10993 }%
10994 \Hy@endcolorlink
10995 \ifHy@breaklinks
10996 \else
10997   \Hy@LinkMath
10998   \Hy@SaveSpaceFactor
10999   \egroup
11000   \Hy@RestoreSpaceFactor
11001 \fi
11002 }

```

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.

```

11003 \begingroup
11004 \catcode`P=12 %
11005 \catcode`T=12 %
11006 \lowercase{\endgroup

```

```

11007 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
11008 }
11009 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

#### \hyper@pagetransition

```

11010 \def\hyper@pagetransition{%
11011 \ifx\@pdfpagetransition\relax
11012 \else
11013 \ifx\@pdfpagetransition\@empty
11014 % 1. Does an old entry have to be deleted?
11015 % 2. If 1=yes, how to delete?
11016 \else
11017 \pdfmark{%
11018 pdfmark=/PUT,%
11019 Raw={%
11020 \string{ThisPage\string}%
11021 <</Trans << /S /\@pdfpagetransition\space >> >>%
11022 }%
11023 }%
11024 \fi
11025 \fi
11026 }

```

#### \hyper@pageduration

```

11027 \def\hyper@pageduration{%
11028 \ifx\@pdfpageduration\relax
11029 \else
11030 \ifx\@pdfpageduration\@empty
11031 % 1. Does an old entry have to be deleted?
11032 % 2. If 1=yes, how to delete?
11033 \else
11034 \pdfmark{%
11035 pdfmark=/PUT,%
11036 Raw={%
11037 \string{ThisPage\string}%
11038 <</Dur \@pdfpageduration>>%
11039 }%
11040 }%
11041 \fi
11042 \fi
11043 }

11044 \g@addto@macro\Hy@EveryPageBoxHook{%
11045 \hyper@pagetransition
11046 \hyper@pageduration
11047 }

11048 \def\hyper@image#1#2{%
11049 \hyper@linkurl{#2}{#1}%
11050 }
11051 \def\Hy@undefinedname{UNDEFINED}
11052 \def\hyper@link#1#2#3{%
11053 \Hy@VerboseLinkStart{#1}{#2}%
11054 \@ifundefined{@#1bordercolor}{%
11055 \let\Hy@tempcolor\relax

```

```

11056 }{%
11057   \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
11058 }%
11059 \begingroup
11060   \protected@edef\Hy@testname{#2}%
11061   \ifx\Hy@testname\@empty
11062     \Hy@Warning{%
11063       Empty destination name,\MessageBreak
11064       using '\Hy@undefinedname'%
11065     }%
11066     \let\Hy@testname\Hy@undefinedname
11067   \fi
11068   \pdfmark[#{3}]{%
11069     Color=\Hy@tempcolor,%
11070     linktype={#1},%
11071     AcroHighlight=\@pdfhighlight,%
11072     Border=\@pdfborder,%
11073     BorderStyle=\@pdfborderstyle,%
11074     pdfmark=/ANN,%
11075     Subtype=/Link,%
11076     PDFAFlags=4,%
11077     Dest=\Hy@testname
11078   }%
11079 \endgroup
11080 }
11081 \newtoks\pdf@docset
11082 \def\PDF@FinishDoc{%
11083   \Hy@UseMaketitleInfos
11084   \Hy@Info@GenerateAddons
11085   \let\Hy@temp\@empty
11086   \ifx\@pdfcreationdate\@empty
11087   \else
11088     \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
11089   \fi
11090   \ifx\@pdfmoddate\@empty
11091   \else
11092     \expandafter\def\expandafter\Hy@temp\expandafter{%
11093       \Hy@temp
11094       ModDate=\@pdfmoddate,%
11095     }%
11096   \fi
11097   \ifx\@pdfproducer\relax
11098   \else
11099     \expandafter\def\expandafter\Hy@temp\expandafter{%
11100       \Hy@temp
11101       Producer=\@pdfproducer,%
11102     }%
11103   \fi
11104   \expandafter
11105   \pdfmark\expandafter{%
11106     \Hy@temp
11107     pdfmark=/DOCINFO,%
11108     Title=\@pdftitle,%
11109     Subject=\@pdfsubject,%

```

```

11110   Creator=\@pdfcreator,%
11111   Author=\@pdfauthor,%
11112   Keywords=\@pdfkeywords,%
11113   Trapped=\@pdftrapped
11114 }%
11115 \ifx\HyInfo@Addons\@empty
11116 \else
11117   \pdfmark{%
11118     pdfmark=/DOCINFO,%
11119     Raw={\HyInfo@Addons}%
11120   }%
11121 \fi
11122 \Hy@DisableOption{pdfauthor}%
11123 \Hy@DisableOption{pdftitle}%
11124 \Hy@DisableOption{pdfsubject}%
11125 \Hy@DisableOption{pdfcreator}%
11126 \Hy@DisableOption{addtopdfcreator}%
11127 \Hy@DisableOption{pdfcreationdate}%
11128 \Hy@DisableOption{pdfcreationdate}%
11129 \Hy@DisableOption{pdfmoddate}%
11130 \Hy@DisableOption{pdfproducer}%
11131 \Hy@DisableOption{pdfkeywords}%
11132 \Hy@DisableOption{pdftrapped}%
11133 \Hy@DisableOption{pdfinfo}%
11134 }
11135 \def\PDF@SetupDoc{%
11136 \def\Hy@temp{}%
11137 \ifx\@pdfstartpage\@empty
11138 \else
11139   \ifx\@pdfstartview\@empty
11140   \else
11141     \edef\Hy@temp{%
11142       ,Page=\@pdfstartpage
11143       ,View=\@pdfstartview
11144     }%
11145   \fi
11146 \fi
11147 \edef\Hy@temp{%
11148   \noexpand\pdfmark{%
11149     pdfmark=/DOCVIEW,%
11150     PageMode=/\@pdfpagemode
11151     \Hy@temp
11152   }%
11153 }%
11154 \Hy@temp
11155 \ifx\@pdfpagescrop\@empty
11156 \else
11157   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
11158 \fi
11159 \edef\Hy@temp{%
11160   \ifHy@pdftoolbar\else /HideToolbar true\fi
11161   \ifHy@pdfmenubar\else /HideMenubar true\fi
11162   \ifHy@pdfwindowui\else /HideWindowUI true\fi
11163   \ifHy@pdffitwindow /FitWindow true\fi

```

```

11164 \ifHy@pdfcenterwindow /CenterWindow true\fi
11165 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
11166 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
11167 \Hy@UseNameKey{Direction}\@pdfdirection
11168 \Hy@UseNameKey{ViewArea}\@pdfviewarea
11169 \Hy@UseNameKey{ViewClip}\@pdfviewclip
11170 \Hy@UseNameKey{PrintArea}\@pdfprintarea
11171 \Hy@UseNameKey{PrintClip}\@pdfprintclip
11172 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
11173 \Hy@UseNameKey{Duplex}\@pdfduplex
11174 \ifx\@pdfpicktraybypdfsize\@empty
11175 \else
11176 /PickTrayByPDFSize \@pdfpicktraybypdfsize
11177 \fi
11178 \ifx\@pdfprintpagerange\@empty
11179 \else
11180 /PrintPageRange[\@pdfprintpagerange]%
11181 \fi
11182 \ifx\@pdfnumcopies\@empty
11183 \else
11184 /NumCopies \@pdfnumcopies
11185 \fi
11186 }%
11187 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
11188 \pdfmark{%
11189 pdfmark=/PUT,%
11190 Raw={%
11191 \string{Catalog\string}<<%
11192 \ifx\Hy@temp\@empty
11193 \else
11194 /ViewerPreferences<<\Hy@temp>>%
11195 \fi
11196 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
11197 \ifx\@pdflang\relax
11198 \else
11199 /Lang(\@pdflang)%
11200 \fi
11201 \ifx\@baseurl\@empty
11202 \else
11203 /URI<</Base(\Hy@pstringB)>>%
11204 \fi
11205 >>%
11206 }%
11207 }%
11208 }
11209 </pdfmark>
11210 (*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.

```

11211 \newif\ifHy@pdfmarkerror
11212 \def\pdfmark{\@ifnextchar{\pdfmark@}{\pdfmark@[]}}
11213 \def\pdfmark@[#1]#2{%
11214   \Hy@pdfmarkerrorfalse
11215   \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
11216   \@processme
11217   \let\pdf@type\relax
11218   \let\pdf@objdef\@empty
11219   \kvsetkeys{PDF}{#2}%
11220   \ifHy@pdfmarkerror
11221   \else
11222     \ifx\pdf@type\relax
11223       \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
11224       \ifx\#1\%
11225         \else
11226           \pdf@rect{#1}%
11227           \fi
11228         \else
11229           \ifx\#1\%
11230             \literalps@out{%
11231               [%
11232               \ifx\pdf@objdef\@empty
11233               \else
11234                 /_objdef\string{\pdf@objdef\string}%
11235               \fi
11236               \the\pdf@toks\space\pdf@type\space pdfmark%
11237             ]%
11238             \else
11239             \@ifundefined{@\pdf@linktype color}{%
11240               \Hy@colorlink\@linkcolor
11241             }{%
11242               \expandafter\Hy@colorlink
11243               \csname @\pdf@linktype color\endcsname
11244             }%
11245             \pdf@rect{#1}%
11246             \literalps@out{%
11247               [%
11248               \ifx\pdf@objdef\@empty
11249               \else
11250                 /_objdef\string{\pdf@objdef\string}%
11251               \fi
11252               \the\pdf@toks\space\pdf@type\space pdfmark%
11253             ]%
11254             \Hy@endcolorlink
11255           \fi
11256         \fi
11257       \fi
11258 }

```

The complicated bit is working out the right enclosing rectangle of some piece of  $\TeX$  text, needed by the `/Rect` key. This solution originates with Toby Thain ([toby@netspace.net.au](mailto:toby@netspace.net.au)).

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



text twice.

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

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

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

```
11259 \newsavebox{\pdf@box}  
11260 \providecommand*\Hy@setouterhbox}{\sbox}  
11261 \providecommand*\Hy@breaklinksunhbox}{\unhbox}  
11262 \def\Hy@DEST{/DEST}  
11263 \def\pdf@rect#1{%  
11264   \begingroup  
11265     \chardef\x=1 %  
11266     \def\Hy@temp{#1}%  
11267     \ifx\Hy@temp\@empty  
11268       \chardef\x=0 %  
11269     \else  
11270       \def\y{\anchor@spot}%  
11271       \ifx\Hy@temp\y  
11272         \def\y{\relax}%  
11273       \ifx\anchor@spot\y  
11274         \chardef\x=0 %  
11275       \fi  
11276     \fi  
11277   \fi  
11278 \expandafter\endgroup  
11279 \ifcase\x  
11280   \literalps@out{H.S}%  
11281   \literalps@out{H.R}%  
11282 \else  
11283   \leavevmode  
11284   \Hy@SaveSpaceFactor  
11285   \ifmmode  
11286     \def\Hy@LinkMath{$}%  
11287   \else  
11288     \let\Hy@LinkMath\@empty  
11289   \fi  
11290 \ifHy@breaklinks  
11291   \Hy@setouterhbox\pdf@box{%  
11292     \Hy@RestoreSpaceFactor  
11293     \Hy@LinkMath  
11294     \Hy@AllowHyphens#1\Hy@xspace@end  
11295     \Hy@LinkMath  
11296     \Hy@SaveSpaceFactor  
11297   }%  
11298 \else  
11299   \sbox\pdf@box{%  
11300     \Hy@RestoreSpaceFactor  
11301     \Hy@LinkMath  
11302     #1\Hy@xspace@end  
11303     \Hy@LinkMath  
11304     \Hy@SaveSpaceFactor
```

```

11305 }%
11306 \fi
11307 \dimen@ \ht \pdf@box
11308 \ifdim \dp \pdf@box = \z@
11309 \literalps@out{H.S}%
11310 \else
11311 \lower \dp \pdf@box \hbox{\literalps@out{H.S}}%
11312 \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...).

```

11313 \ifHy@breaklinks
11314 \ifhmode
11315 \Hy@breaklinksunhbox \pdf@box
11316 \else
11317 \box \pdf@box
11318 \fi
11319 \else
11320 \expandafter \box \pdf@box
11321 \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

11322 \ifdim \dimen@ = \z@
11323 \literalps@out{H.R}%
11324 \else
11325 \raise \dimen@ \hbox{\literalps@out{H.R}}%
11326 \fi
11327 \Hy@RestoreSpaceFactor
11328 \fi
11329 \ifx \pdf@type \Hy@DEST
11330 \else
11331 \pdf@addtoksx{H.B}%
11332 \fi
11333 }

```

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.

```

11334 \newtoks \pdf@toks
11335 \newtoks \pdf@defaulttoks
11336 \pdf@defaulttoks = {}%
11337 \def \pdf@addtoks#1#2{%
11338 \edef \@processme{\pdf@toks{\the\pdf@toks/#2 #1}}%
11339 \@processme
11340 }
11341 \def \pdf@addtoksx#1{%
11342 \edef \@processme{\pdf@toks{\the\pdf@toks\space #1}}%
11343 \@processme
11344 }
11345 \def \PDFdefaults#1{%

```

```

11346 \pdf@defaulttoks={#1}%
11347 }
This is the list of allowed keys. See the Acrobat manual for an explanation.
11348 % what is the type of pdfmark?
11349 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
11350 % what is the link type?
11351 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
11352 \def\pdf@linktype{link}
11353 % named object?
11354 \define@key{PDF}{objdef}{\edef\pdf@objdef{#1}}
11355 \let\pdf@objdef\@empty
11356 % parameter is a stream of PDF
11357 \define@key{PDF}{Raw}{\pdf@addtoks{#1}}
11358 % parameter is a name
11359 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
11360 % parameter is a array
11361 \define@key{PDF}{Border}{%
11362 \edef\Hy@temp{#1}%
11363 \ifx\Hy@temp\@empty
11364 \else
11365 \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
11366 \fi
11367 }
11368 \let\Hy@BorderArrayPatch\@empty
11369 % parameter is a dictionary
11370 \define@key{PDF}{BorderStyle}{%
11371 \edef\Hy@temp{#1}%
11372 \ifx\Hy@temp\@empty
11373 \else
11374 \pdf@addtoks{<<#1>>}{BS}%
11375 \fi
11376 }
11377 % parameter is a array
11378 \define@key{PDF}{Color}{%
11379 \ifx\relax#1\relax
11380 \else
11381 \pdf@addtoks{[#1]}{Color}% hash-ok
11382 \fi
11383 }
11384 % parameter is a string
11385 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
11386 % parameter is a integer
11387 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
11388 % parameter is a array
11389 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
11390 % parameter is a string
11391 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
11392 % parameter is a string or file
11393 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
11394 % parameter is a destination
11395 \define@key{PDF}{Dest}{%
11396 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11397 \ifx\Hy@pstringDest\@empty
11398 \Hy@pdfmarkerrortrue

```

```

11399 \Hy@Warning{Destination with empty name ignored}%
11400 \else
11401 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11402 \fi
11403 }
11404 \define@key{PDF}{DestAnchor}{%
11405 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11406 \ifx\Hy@pstringDest\@empty
11407 \Hy@pdfmarkerrortrue
11408 \Hy@Warning{Destination with empty name ignored}%
11409 \else
11410 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11411 \fi
11412 }
11413 % parameter is a string
11414 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
11415 % parameter is a string
11416 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
11417 % parameter is a int
11418 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
11419 \define@key{PDF}{PDFAFlags}{%
11420 \ifHy@pdfa
11421 \pdf@addtoks{#1}{F}%
11422 \fi
11423 }
11424 % parameter is a name
11425 \define@key{PDF}{AcroHighlight}{%
11426 \begingroup
11427 \edef\x{#1}%
11428 \expandafter\endgroup\ifx\x\@empty
11429 \else
11430 \pdf@addtoks{#1}{H}%
11431 \fi
11432 }
11433 % parameter is a string
11434 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
11435 % parameter is a string
11436 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
11437 % parameter is a string
11438 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11439 % parameter is a string
11440 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
11441 % parameter is a Boolean
11442 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
11443 % parameter is a integer or name
11444 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
11445 % parameter is a name
11446 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
11447 % parameter is a string
11448 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
11449 % parameter is a array
11450 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
11451 % parameter is a integer
11452 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}

```

```

11453 % parameter is a name
11454 \define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
11455 % parameter is a string
11456 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
11457 % parameter is a string
11458 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
11459 % parameter is a string
11460 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
11461 % parameter is an array
11462 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
11463 % parameter is a string
11464 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

11465 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
11466 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
11467 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
11468 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11469 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
11470 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
11471 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
11472 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11473 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
11474 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}
11475 \define@key{PDF}{Trapped}{%
11476   \edef\Hy@temp{#1}%
11477   \ifx\Hy@temp\@empty
11478     \else
11479     \pdf@addtoks{/#1}{Trapped}%
11480   \fi
11481 }
11482
11483 </pdfmarkbase>
11484 (*pdfmark)
11485 \def\Acrobatmenu#1#2{%
11486   \EdefEscapeName\Hy@temp@menu{#1}%
11487   \Hy@Acrobatmenu{#1}{#2}{%
11488     \pdfmark{#2}{%
11489       linktype=menu,%
11490       pdfmark=/ANN,%
11491       AcroHighlight=\@pdfhighlight,%
11492       Border=\@pdfborder,%
11493       BorderStyle=\@pdfborderstyle,%
11494       Color=\@menubordercolor,%
11495       Action={<</Subtype/Named/N/\Hy@temp@menu>>},%
11496       Subtype=/Link,%
11497       PDFAFlags=4%
11498     }%
11499   }%
11500 }

```

And now for some useful examples:

```

11501 \def\PDFNextPage{\@ifnextchar{\PDFNextPage@}{\PDFNextPage@[]}}
11502 \def\PDFNextPage@[#1]#2{%
11503   \pdfmark{#2}{%

```

```

11504   #1,%
11505   Border=\@pdfborder,%
11506   BorderStyle=\@pdfborderstyle,%
11507   Color=.2 .1 .5,%
11508   pdfmark=/ANN,%
11509   Subtype=/Link,%
11510   PDFAFlags=4,%
11511   Page=/Next%
11512 }%
11513 }
11514 \def\PDFPreviousPage{%
11515   \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
11516 }
11517 \def\PDFPreviousPage@[#1]#2{%
11518   \pdfmark[#{#2}]{%
11519     #1,%
11520     Border=\@pdfborder,%
11521     BorderStyle=\@pdfborderstyle,%
11522     Color=.4 .4 .1,%
11523     pdfmark=/ANN,%
11524     Subtype=/Link,%
11525     PDFAFlags=4,%
11526     Page=/Prev%
11527   }%
11528 }
11529 \def\PDFOpen#1{%
11530   \pdfmark{#1,pdfmark=/DOCVIEW}%
11531 }
This will only work if you use Distiller 2.1 or higher.
11532 \def\hyper@linkurl#1#2{%
11533   \begingroup
11534   \Hy@pstringdef\Hy@pstringURI{#2}%
11535   \hyper@chars
11536   \leavevmode
11537   \pdfmark[#{#1}]{%
11538     pdfmark=/ANN,%
11539     linktype=url,%
11540     AcroHighlight=\@pdfhighlight,%
11541     Border=\@pdfborder,%
11542     BorderStyle=\@pdfborderstyle,%
11543     Color=\@urlbordercolor,%
11544     Action={<<%
11545       /Subtype/URI%
11546       /URI(\Hy@pstringURI)%
11547       \ifHy@href@ismap
11548         /IsMap true%
11549       \fi
11550     >>},%
11551     Subtype=/Link,%
11552     PDFAFlags=4%
11553   }%
11554   \endgroup
11555 }
11556 \def\hyper@linkfile#1#2#3{%

```

```

11557 \begingroup
11558 \def\Hy@pstringF{#2}%
11559 \Hy@CleanupFile\Hy@pstringF
11560 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
11561 \Hy@pstringdef\Hy@pstringD{#3}%
11562 \Hy@MakeRemoteAction
11563 \leavevmode
11564 \pdfmark[#{#1}]{%
11565 pdfmark=/ANN,%
11566 Subtype=/Link,%
11567 PDFAFlags=4,%
11568 AcroHighlight=\@pdfhighlight,%
11569 Border=\@pdfborder,%
11570 BorderStyle=\@pdfborderstyle,%
11571 linktype=file,%
11572 Color=\@filebordercolor,%
11573 Action={%
11574 <<%
11575 /S/GoToR%
11576 \Hy@SetNewWindow
11577 /F(\Hy@pstringF)%
11578 /D%
11579 \ifx\#3\%
11580 [\Hy@href@page\@pdfremotestartview]%
11581 \else
11582 (\Hy@pstringD)cvn%
11583 \fi
11584 \Hy@href@nextactionraw
11585 >>%
11586 }%
11587 }%
11588 \endgroup
11589 }
11590 \def\@hyper@launch run:#{1}\#2#3{%
11591 \begingroup
11592 \Hy@pstringdef\Hy@pstringF{#1}%
11593 \Hy@pstringdef\Hy@pstringP{#3}%
11594 \leavevmode
11595 \pdfmark[#{#2}]{%
11596 pdfmark=/ANN,%
11597 Subtype=/Link,%
11598 PDFAFlags=4,%
11599 AcroHighlight=\@pdfhighlight,%
11600 Border=\@pdfborder,%
11601 BorderStyle=\@pdfborderstyle,%
11602 linktype=run,%
11603 Color=\@runbordercolor,%
11604 Action={%
11605 <<%
11606 /S/Launch%
11607 \Hy@SetNewWindow
11608 /F(\Hy@pstringF)%
11609 \ifx\#3\%
11610 \else

```

```

11611         /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
11612         \fi
11613         \Hy@href@nextactionraw
11614         >>%
11615     }%
11616 }%
11617 \endgroup
11618 }
11619 </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.

```

11620 (*dvips)
11621 \providecommand*\XR@ext}{pdf}
11622 \let\Hy@raisedlink\@empty
11623 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
11624 \def\headerps@out#1{\special{! #1}}%
11625 \input{pdfmark.def}%
11626 \ifx\@pdfproducer\relax
11627   \def\@pdfproducer{dvips + Distiller}%
11628 \fi
11629 \providecommand*\@pdfborder{0 0 1}
11630 \providecommand*\@pdfborderstyle{}
11631 \providecommand*\@pdfview{XYZ}
11632 \providecommand*\@pdfviewparams{ H.V}
11633 \def\Hy@BorderArrayPatch{BorderArrayPatch}
11634 \g@addto@macro\Hy@FirstPageHook{%
11635   \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.

```

11636 /DvipsToPDF{72.27 mul Resolution div} def%
11637 /PDFToDvips{72.27 div Resolution mul} def%
11638 /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.

```

11639 product (Ghostscript) search {pop pop pop revision 927 gt}%
11640 {pop false} ifelse%
11641 {%
11642   /BorderArrayPatch{} def%
11643 }%
11644 {%
11645   /BorderArrayPatch{%
11646     [exch{%
11647       dup dup type/integertype eq exch type/realttype eq or%
11648       {BPToDvips}if%
11649     }forall]%
11650   }def%
11651 } 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.

```

11652 /HyperBorder {1 PDFToDvips} def%
11653 /H.V {pdf@hoff pdf@voff null} def%
11654 /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

```

11655 /H.S {%
11656   currentpoint %
11657   HyperBorder add /pdf@lly exch def %
11658   dup DvipsToPDF 72 add /pdf@hoff exch def %
11659   HyperBorder sub /pdf@llx exch def%
11660 } def%

```

The calculation of upper left  $y$  is done without raising the point in  $\text{\TeX}$ , by simply adding on the current `\baselineskip` to the current  $y$ . This is usually too much, so we remove a notional 2 points.

We have to see what the current baselineskip is, and convert it to the dvips coordinate system.

Argument: baselineskip in pt. The  $x$  and  $y$  coordinates of the current point, minus the baselineskip

```

11661 /H.L {%
11662   2 sub dup%
11663   /HyperBasePt exch def %
11664   PDFToDvips /HyperBaseDvips exch def %
11665   currentpoint %
11666   HyperBaseDvips sub /pdf@ury exch def%
11667   /pdf@urx exch def%
11668 } def%
11669 /H.A {%
11670   H.L %
11671 % |pdf@voff| = the distance from the top of the page to a point

```

```

11672 % |\baselineskip| above the current point in PDF coordinates
11673     currentpoint exch pop %
11674     vsize 72 sub exch DvipsToPDF %
11675     HyperBasePt sub % baseline skip
11676     sub /pdf@voff exch def%
11677 } def%
11678 /H.R {%
11679     currentpoint %
11680     HyperBorder sub /pdf@ury exch def %
11681     HyperBorder add /pdf@urx exch def %
11682 % |/pdf@voff| = the distance from the top of the page to the current point, in
11683 % PDF coordinates
11684     currentpoint exch pop vsize 72 sub %
11685     exch DvipsToPDF sub /pdf@voff exch def%
11686 } def%
11687 }%
11688 }
11689 \AtBeginShipoutFirst{%
11690     \ifHy@setpagesize
11691     \begingroup
11692     \ifnum\mag=\@m
11693     \ifdim\stockwidth>\z@
11694     \ifdim\stockheight>\z@
11695     \special{papersize=\the\stockwidth,\the\stockheight}%
11696     \else
11697     \ifdim\paperwidth>\z@
11698     \ifdim\paperheight>\z@
11699     \special{papersize=\the\paperwidth,\the\paperheight}%
11700     \fi
11701     \fi
11702     \fi
11703     \else
11704     \ifdim\stockwidth=\z@
11705     \ifdim\paperwidth>\z@
11706     \ifdim\paperheight>\z@
11707     \special{papersize=\the\paperwidth,\the\paperheight}%
11708     \fi
11709     \fi
11710     \fi
11711     \fi
11712     \fi
11713     \endgroup
11714     \fi
11715     \Hy@DisableOption{setpagesize}%
11716 }
11717 \def\setpdfinkmargin#1{%
11718     \begingroup
11719     \setlength{\dimen@}{#1}%
11720     \literalps@out{%
11721         /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
11722     }%
11723     \endgroup
11724 }

```

```
11725 </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.

```
11726 (*vtexpdfmark)
11727 \providecommand*\XR@ext}{pdf}
11728 \let\Hy@raisedlink\@empty
11729 \def\literalps@out#1{\special{pS:#1}}%
11730 \def\headerps@out#1{\immediate\special{pS:#1}}%
11731 \input{pdfmark.def}%
11732 \ifx\@pdfproducer\relax
11733   \ifnum\OpMode=\@ne
11734     \def\@pdfproducer{VTeX}%
11735   \else
11736     \def\@pdfproducer{VTeX + Distiller}%
11737   \fi
11738 \fi
11739 \providecommand*\@pdfborder{0 0 1}
11740 \providecommand*\@pdfborderstyle{}
11741 \providecommand*\@pdfview{XYZ}
11742 \providecommand*\@pdfviewparams{ H.V}
11743 \g@addto@macro\Hy@FirstPageHook{%
11744   \headerps@out{%
11745     /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.

```
11746   /HyperBorder {1} def%
11747   /H.V {pdf@hoff pdf@voff null} def%
11748   /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:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```
11749   /H.S {%
11750     currentpoint %
11751     HyperBorder sub%
11752     /pdf@lly exch def %
11753     dup 72 add /pdf@hoff exch def %
11754     HyperBorder sub%
11755     /pdf@llx exch def%
11756   } def%
```

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

```
11757   /H.L {%
11758     2 sub%
11759     /HyperBasePt exch def %
11760     currentpoint %
```

```

11761   HyperBasePt add HyperBorder add%
11762   /pdf@ury exch def %
11763   HyperBorder add%
11764   /pdf@urx exch def%
11765   } def%
11766   /H.A {%
11767     H.L %
11768     currentpoint exch pop %
11769     vsize 72 sub exch %
11770     HyperBasePt add add%
11771     /pdf@voff exch def%
11772   } def%
pdf@ury =  $Y_c$  + HyperBorder, pdf@urx =  $X_c$  + HyperBorder
11773   /H.R {%
11774     currentpoint %
11775     HyperBorder add%
11776     /pdf@ury exch def %
11777     HyperBorder add%
11778     /pdf@urx exch def %
11779     currentpoint exch pop vsize 72 sub add%
11780     /pdf@voff exch def%
11781   } def%
11782 }%
11783 }

11784 \def\setpdfinkmargin#1{%
11785   \begingroup
11786   \setlength{\dimen@}{#1}%
11787   \literalps@out{%
11788     /HyperBorder{\strip@pt\dimen@}def%
11789   }%
11790   \endgroup
11791 }

11792 </vtexpdfmark>

```

## 44.11 Textures

```

11793 (*textures)
11794 \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.

```

11795 \begingroup
11796   \obeylines %
11797   \gdef\Hy@ps@CR{\noexpand
11798   }%
11799 \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`.

```
11800 \def\literalps@out#1{%
11801  \special{postscript 0 0 transform}%
11802  \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
11803 }%
11804 %
```

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.

```
11805 \def\headerps@out#1{%
11806  \special{%
11807    prepostscript TeXdictionary begin\Hy@ps@CR
11808    #1\Hy@ps@CR
11809    end%
11810  }%
11811 }%
11812 %
```

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.

```
11813 \g@addto@macro\Hy@FirstPageHook{%
11814  \headerps@out{%
11815    /betterpdfmark {%
11816      systemdict begin %
11817      dup /BP eq%
11818      {cleartomark gsave nulldevice []}%
11819      {dup /EP eq%
11820        {cleartomark cleartomark grestore}%
11821        {cleartomark}%
11822        ifelse%
11823      }ifelse %
11824    end%
11825  }def\Hy@ps@CR
11826  ___pdfmark___ not{/pdfmark /betterpdfmark load def}if%
11827 }% end of \headerps@out
11828 }% end of \AtBeginShipoutFirst
11829 %
11830 \input{pdfmark.def}%
11831 %
11832 \ifx\@pdfproducer\relax
11833  \def\@pdfproducer{Textures + Distiller}%
11834 \fi
```

```

11835 \providecommand*\@pdfborder{0 0 1}
11836 \providecommand*\@pdfborderstyle{}
11837 \providecommand*\@pdfview{XYZ}
11838 \providecommand*\@pdfviewparams{ H.V}
11839 %

```

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  $\TeX$ .

```

11840 \Hy@AtBeginDocument{%
11841   \headerps@out{%

```

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

```

11842   /vsize {\Hy@pageheight} def%
11843   /DvipsToPDF {} def%
11844   /PDFToDvips {} def%
11845   /BPToDvips {} def%
11846   /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
11847   /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
11848   /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
11849   /H.S {%
11850     currentpoint %
11851     HyperBorder add /pdf@lly exch def %
11852     dup DvipsToPDF 72 add /pdf@hoff exch def %
11853     HyperBorder sub /pdf@llx exch def%
11854   } def\Hy@ps@CR
11855   /H.L {%
11856     2 sub %
11857     PDFToDvips /HyperBase exch def %
11858     currentpoint %
11859     HyperBase sub /pdf@ury exch def%
11860     /pdf@urx exch def%
11861   } def\Hy@ps@CR
11862   /H.A {%
11863     H.L %
11864     currentpoint exch pop %
11865     vsize 72 sub exch DvipsToPDF %
11866     HyperBase sub % baseline skip
11867     sub /pdf@voff exch def%
11868   } def\Hy@ps@CR
11869   /H.R {%
11870     currentpoint %
11871     HyperBorder sub /pdf@ury exch def %
11872     HyperBorder add /pdf@urx exch def %
11873     currentpoint exch pop vsize 72 sub %
11874     exch DvipsToPDF sub /pdf@voff exch def%
11875   } def\Hy@ps@CR
11876 }%
11877 }

11878 \def\setpdfinkmargin#1{%
11879   \begingroup

```

```

11880 \setlength{\dimen@}{#1}%
11881 \literalps@out{%
11882   /HyperBorder{\stripOpt\dimen@\space PDFToDvips}def%
11883 }%
11884 \endgroup
11885 }

11886 \Hy@AtBeginDocument{%
11887   \ifHy@colorlinks
11888     \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
11889   \fi
11890 }

```

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.

```

11891 \expandafter\let\expandafter\keepPDF@SetupDoc
11892 \csname PDF@SetupDoc\endcsname
11893 \def\PDF@SetupDoc{%
11894   \ifx\@baseurl\@empty
11895   \else
11896     \special{html:<base href="\@baseurl">}%
11897   \fi
11898   \keepPDF@SetupDoc
11899 }

11900 \Hy@WrapperDef\hyper@anchor#1{%
11901   \Hy@SaveLastskip
11902   \Hy@VerboseAnchor{#1}%
11903   \begingroup
11904     \let\protect=\string
11905     \special{html:<a name=%
11906       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11907   \endgroup
11908   \Hy@activeanchortrue
11909   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
11910   \special{html:</a>}%
11911   \Hy@activeanchorfalse
11912   \Hy@RestoreLastskip
11913 }

11914 \Hy@WrapperDef\hyper@anchorstart#1{%
11915   \Hy@SaveLastskip
11916   \Hy@VerboseAnchor{#1}%
11917   \begingroup
11918     \hyper@chars
11919     \special{html:<a name=%
11920       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11921   \endgroup
11922   \Hy@activeanchortrue
11923 }

11924 \def\hyper@anchorend{%
11925   \special{html:</a>}%
11926   \Hy@activeanchorfalse
11927   \Hy@RestoreLastskip
11928 }

11929 \def\@urltype{url}

```

```

11930 \def\hyper@linkstart#1#2{%
11931 \Hy@VerboseLinkStart{#1}{#2}%
11932 \expandafter\Hy@colorlink\csname @#1color\endcsname
11933 \def\Hy@tempa{#1}%
11934 \ifx\Hy@tempa\urltype
11935 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11936 \else
11937 \begingroup
11938 \hyper@chars
11939 \special{%
11940 html:<a href=%
11941 \hyper@quote#\Hy@HyperDestNameFilter{#2}\hyper@quote>%
11942 }%
11943 \endgroup
11944 \fi
11945 }
11946 \def\hyper@linkend{%
11947 \special{html:</a>}%
11948 \Hy@endcolorlink
11949 }
11950 \def\hyper@linkfile#1#2#3{%
11951 \hyper@linkurl{#1}{%
11952 \Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi
11953 }%
11954 }
11955 \def\hyper@linkurl#1#2{%
11956 \leavevmode
11957 \ifHy@raiselinks
11958 \Hy@SaveSpaceFactor
11959 \Hy@SaveSavedSpaceFactor
11960 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
11961 \Hy@RestoreSavedSpaceFactor
11962 \@linkdim\dp\@tempboxa
11963 \lower\@linkdim\hbox{%
11964 \hyper@chars
11965 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11966 }%
11967 \Hy@colorlink\@urlcolor
11968 \Hy@RestoreSpaceFactor
11969 #1\Hy@xspace@end
11970 \Hy@SaveSpaceFactor
11971 \@linkdim\ht\@tempboxa
11972 \advance\@linkdim by -6.5\p@
11973 \raise\@linkdim\hbox{\special{html:</a>}}%
11974 \Hy@endcolorlink
11975 \Hy@RestoreSpaceFactor
11976 \else
11977 \begingroup
11978 \hyper@chars
11979 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11980 \Hy@colorlink\@urlcolor#1\Hy@xspace@end
11981 \special{html:</a>}%
11982 \Hy@endcolorlink
11983 \endgroup

```



```

11984 \fi
11985 }
Very poor implementation of \hyper@link without considering #1.
11986 \def\hyper@link#1#2#3{%
11987 \Hy@VerboseLinkStart{#1}{#2}%
11988 \hyper@linkurl{#3}{\#\HyperDestNameFilter{#2}}%
11989 }
11990 \def\hyper@image#1#2{%
11991 \begingroup
11992 \hyper@chars
11993 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
11994 \endgroup
11995 }
11996 </textures>

```

## 44.12 dvipsone

```

11997 % \subsection{dvipsone driver}
11998 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
11999 % |\special| commands.
12000 (*dvipsone)
12001 \providecommand*\XR@ext{pdf}
12002 \let\Hy@raisedlink\@empty
12003 \providecommand*\@pdfborder{0 0 1}
12004 \providecommand*\@pdfborderstyle{}
12005 \def\literalps@out#1{\special{ps:#1}}%
12006 \def\headerps@out#1{\special{headertext=#1}}%
12007 \input{pdfmark.def}%
12008 \HyInfo@AddonUnsupportedtrue
12009 \def\PDF@FinishDoc{%
12010 \Hy@UseMaketitleInfos
12011 \HyInfo@TrappedUnsupported
12012 \special{PDF: Keywords \@pdfkeywords}%
12013 \special{PDF: Title \@pdftitle}%
12014 \special{PDF: Creator \@pdfcreator}%
12015 \ifx\@pdfcreationdate\@empty
12016 \else
12017 \special{PDF: CreationDate \@pdfcreationdate}%
12018 \fi
12019 \ifx\@pdfmoddate\@empty
12020 \else
12021 \special{PDF: ModDate \@pdfmoddate}%
12022 \fi
12023 \special{PDF: Author \@pdfauthor}%
12024 \ifx\@pdfproducer\relax
12025 \else
12026 \special{PDF: Producer \@pdfproducer}%
12027 \fi
12028 \special{PDF: Subject \@pdfsubject}%
12029 \Hy@DisableOption{pdfauthor}%
12030 \Hy@DisableOption{pdftitle}%
12031 \Hy@DisableOption{pdfsubject}%
12032 \Hy@DisableOption{pdfcreator}%

```

```

12033 \Hy@DisableOption{addtopdfcreator}%
12034 \Hy@DisableOption{pdfcreationdate}%
12035 \Hy@DisableOption{pdfcreationdate}%
12036 \Hy@DisableOption{pdfmoddate}%
12037 \Hy@DisableOption{pdfproducer}%
12038 \Hy@DisableOption{pdfkeywords}%
12039 \Hy@DisableOption{pdftrapped}%
12040 \Hy@DisableOption{pdfinfo}%
12041 }
12042 \def\PDF@SetupDoc{%
12043 \def\Hy@temp{}%
12044 \ifx\@pdfstartpage\@empty
12045 \else
12046 \ifx\@pdfstartview\@empty
12047 \else
12048 \edef\Hy@temp{%
12049 ,Page=\@pdfstartpage
12050 ,View=\@pdfstartview
12051 }%
12052 \fi
12053 \fi
12054 \edef\Hy@temp{%
12055 \noexpand\pdfmark{%
12056 pdfmark=/DOCVIEW,%
12057 PageMode=/\@pdfpagemode
12058 \Hy@temp
12059 }%
12060 }%
12061 \Hy@temp
12062 \ifx\@pdfpagescrop\@empty
12063 \else
12064 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
12065 \fi
12066 \edef\Hy@temp{%
12067 \ifHy@pdftoolbar\else /HideToolbar true\fi
12068 \ifHy@pdfmenubar\else /HideMenubar true\fi
12069 \ifHy@pdfwindowui\else /HideWindowUI true\fi
12070 \ifHy@pdffitwindow /FitWindow true\fi
12071 \ifHy@pdfcenterwindow /CenterWindow true\fi
12072 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
12073 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
12074 \Hy@UseNameKey{Direction}\@pdfdirection
12075 \Hy@UseNameKey{ViewArea}\@pdfviewarea
12076 \Hy@UseNameKey{ViewClip}\@pdfviewclip
12077 \Hy@UseNameKey{PrintArea}\@pdfprintarea
12078 \Hy@UseNameKey{PrintClip}\@pdfprintclip
12079 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
12080 \Hy@UseNameKey{Duplex}\@pdfduplex
12081 \ifx\@pdfpicktraybypdfsize\@empty
12082 \else
12083 /PickTrayByPDFSize \@pdfpicktraybypdfsize
12084 \fi
12085 \ifx\@pdfprintpagerange\@empty
12086 \else

```

```

12087 /PrintPageRange{\@pdfprintpagerange}%
12088 \fi
12089 \ifx\@pdfnumcopies\@empty
12090 \else
12091 /NumCopies \@pdfnumcopies
12092 \fi
12093 }%
12094 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
12095 \pdfmark{%
12096 pdfmark=/PUT,%
12097 Raw={%
12098 \string{Catalog\string}<<%
12099 \ifx\Hy@temp\@empty
12100 \else
12101 /ViewerPreferences<<\Hy@temp>>%
12102 \fi
12103 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
12104 \ifx\@pdflang\relax
12105 \else
12106 /Lang(\@pdflang)%
12107 \fi
12108 \ifx\@baseurl\@empty
12109 \else
12110 /URI<</Base(\Hy@pstringB)>>%
12111 \fi
12112 >>%
12113 }%
12114 }%
12115 }
12116 \providecommand*\@pdfview{XYZ}
12117 \providecommand*\@pdfviewparams{ %
12118 gsave revscl currentpoint grestore %
12119 72 add exch pop null exch null%
12120 }
12121 \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  $\TeX$ .

```

12122 \g@addto@macro\Hy@FirstPageHook{%
12123 \headerps@out{%

```

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

```

12124 /DvipsToPDF { 65781 div } def%
12125 /PDFToDvips { 65781 mul } def%
12126 /BPToDvips{65781 mul}def%
12127 /HyperBorder { 1 PDFToDvips } def%
12128 /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.

```

12129 /BorderArrayPatch{%

```

```

12130 [exch{%
12131   dup dup type/integertype eq exch type/realttype eq or%
12132   {BPToDvips}if%
12133 }forall]%
12134 }def%
12135 /H.S {%
12136   currentpoint %
12137   HyperBorder add /pdf@lly exch def %
12138   dup DvipsToPDF 72 add /pdf@hoff exch def %
12139   HyperBorder sub /pdf@llx exch def%
12140 } def%
12141 /H.L {%
12142   2 sub %
12143   PDFToDvips /HyperBase exch def %
12144   currentpoint %
12145   HyperBase sub /pdf@ury exch def%
12146   /pdf@urx exch def%
12147 } def%
12148 /H.A {%
12149   H.L %
12150   currentpoint exch pop %
12151   HyperBase sub % baseline skip
12152   DvipsToPDF /pdf@voff exch def%
12153 } def%
12154 /H.R {%
12155   currentpoint %
12156   HyperBorder sub /pdf@ury exch def %
12157   HyperBorder add /pdf@urx exch def %
12158   currentpoint exch pop DvipsToPDF /pdf@voff exch def%
12159 } def%
12160 }%
12161 }

12162 \def\setpdfinkmargin#1{%
12163   \begingroup
12164   \setlength{\dimen@}{#1}%
12165   \literalps@out{%
12166     /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
12167   }%
12168   \endgroup
12169 }

12170 </dvipsone>

```

### 44.13 TeX4ht

```

12171 (*tex4ht)
12172 \providecommand*\XR@ext}{html}
12173 \let\Hy@raisedlink\@empty
12174 \@ifpackageloaded{tex4ht}{%
12175   \Hy@InfoNoLine{tex4ht is already loaded}%
12176 }{%
12177   \RequirePackage[htex4ht]{tex4ht}%
12178 }
12179 \hyperlinkfileprefix{}
12180 \let\PDF@FinishDoc\@empty

```

```

12181 \def\PDF@SetupDoc{%
12182   \ifx\@baseurl\@empty
12183   \else
12184     \special{t4ht=<base href="\@baseurl">}%
12185   \fi
12186 }
12187 \Hy@WrapperDef\hyper@anchor#1{%
12188   \Hy@SaveLastskip
12189   \Hy@VerboseAnchor{#1}%
12190   \begingroup
12191     \let\protect=\string
12192     \special{t4ht=<a name=%
12193       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12194   \endgroup
12195   \Hy@activeanchortrue
12196   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
12197   \special{t4ht=</a>}%
12198   \Hy@activeanchorfalse
12199   \Hy@RestoreLastskip
12200 }
12201 \Hy@WrapperDef\hyper@anchorstart#1{%
12202   \Hy@SaveLastskip
12203   \Hy@VerboseAnchor{#1}%
12204   \begingroup
12205     \hyper@chars\special{t4ht=<a name=%
12206       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12207   \endgroup
12208   \Hy@activeanchortrue
12209 }
12210 \def\hyper@anchorend{%
12211   \special{t4ht=</a>}%
12212   \Hy@activeanchorfalse
12213   \Hy@RestoreLastskip
12214 }
12215 \def\@urltype{url}
12216 \def\hyper@linkstart#1#2{%
12217   \Hy@VerboseLinkStart{#1}{#2}%
12218   \expandafter\Hy@colorlink\csname @#1color\endcsname
12219   \def\Hy@tempa{#1}%
12220   \ifx\Hy@tempa\@urltype
12221     \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12222   \else
12223     \begingroup
12224       \hyper@chars
12225       \special{t4ht=<a href=%
12226         \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
12227     \endgroup
12228   \fi
12229 }
12230 \def\hyper@linkend{%
12231   \special{t4ht=</a>}%
12232   \Hy@endcolorlink
12233 }
12234 \def\hyper@linkfile#1#2#3{%

```

```

12235 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi}%
12236 }
12237 \def\hyper@linkurl#1#2{%
12238 \leavevmode
12239 \ifHy@raiselinks
12240 \Hy@SaveSpaceFactor
12241 \Hy@SaveSavedSpaceFactor
12242 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
12243 \Hy@RestoreSavedSpaceFactor
12244 \@linkdim\dp\@tempboxa
12245 \lower\@linkdim\hbox{%
12246 \begingroup
12247 \hyper@chars
12248 \special{%
12249 t4ht=<a href=\hyper@quote#2\hyper@quote>%
12250 }%
12251 \endgroup
12252 }%
12253 \Hy@colorlink\@urlcolor
12254 \Hy@RestoreSpaceFactor
12255 #1\Hy@xspace@end
12256 \Hy@SaveSpaceFactor
12257 \Hy@endcolorlink
12258 \@linkdim\ht\@tempboxa
12259 \advance\@linkdim by -6.5\p@
12260 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
12261 \Hy@RestoreSpaceFactor
12262 \else
12263 \begingroup
12264 \hyper@chars
12265 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12266 \Hy@colorlink\@urlcolor
12267 #1\Hy@xspace@end
12268 \Hy@endcolorlink
12269 \special{t4ht=</a>}%
12270 \endgroup
12271 \fi
12272 }

```

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

```

12273 \def\hyper@link#1#2#3{%
12274 \Hy@VerboseLinkStart{#1}{#2}%
12275 \hyper@linkurl{#3}{\# \Hy@HyperDestNameFilter{#2}}%
12276 }
12277 \def\hyper@image#1#2{%
12278 \begingroup
12279 \hyper@chars
12280 \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
12281 \endgroup
12282 }
12283 \let\autoref\ref
12284 \ifx \rEFLiNK \UnDef
12285 \def\rEFLiNK #1#2{#2}%
12286 \fi
12287 \let\backref\@gobble

```

```

Fix for tex4ht.
12288 \AtBeginDocument{%
12289   \expandafter
12290   \let\expandafter\Hy@OrgMakeLabel\csname Make:Label\endcsname
12291   \expandafter\def\csname Make:Label\endcsname#1#2{%
12292     \ifhmode
12293       \Hy@SaveSpaceFactor
12294     \else
12295       \global\Hy@SavedSpaceFactor=1000 %
12296     \fi
12297     \Hy@OrgMakeLabel{#1}{%
12298       \Hy@RestoreSpaceFactor
12299       #2\Hy@xspace@end%
12300     \Hy@SaveSpaceFactor
12301   }%
12302   \Hy@RestoreSpaceFactor
12303 }%
12304 }
12305 </tex4ht>
12306 <{*tex4htcfg>
12307 \IfFileExists{\jobname.cfg}{\endinput}{}
12308 \Preamble{html}
12309   \begin{document}%
12310 \EndPreamble
12311 \def\TeX{TeX}
12312 \def\OMEGA{Omega}
12313 \def\LaTeX{LaTeX}
12314 \def\LaTeXe{LaTeX2e}
12315 \def\eTeX{e-TeX}
12316 \def\MF{Metafont}
12317 \def\MP{MetaPost}
12318 </tex4htcfg>

```

## 45 Driver-specific form support

### 45.1 pdfmarks

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

```

12319 <{*pdfmark>
12320 \long\def\@Form[#1]{%
12321 \g@addto@macro\Hy@FirstPageHook{%
12322   \headerps@out{%
12323 [%
12324   /_objdef{pdfDocEncoding}%
12325   /type/dict%
12326 /OBJ pdfmark%
12327 [%
12328   {pdfDocEncoding}%
12329   <<%
12330   /Type/Encoding%
12331   /Differences[%
12332     24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
12333     /tilde %
12334     39/quotesingle %

```

12335 96/grave %  
12336 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%  
12337 /fraction/guilsingleft/guilsingright/minus/perthousand%  
12338 /quotedblbase/quotedblleft/quotedblright/quoteleft%  
12339 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%  
12340 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %  
12341 160/Euro %  
12342 164/currency %  
12343 166/brokenbar %  
12344 168/dieresis/copyright/ordfeminine %  
12345 172/logicalnot/.notdef/registered/macron/degree/plusminus%  
12346 /twosuperior/threesuperior/acute/mu %  
12347 183/periodcentered/cedilla/onesuperior/ordmasculine %  
12348 188/onequarter/onehalf/threequarters %  
12349 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%  
12350 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%  
12351 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%  
12352 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%  
12353 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%  
12354 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%  
12355 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%  
12356 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%  
12357 /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%  
12358 /ucircumflex/udieresis/yacute/thorn/ydieresis%  
12359 ]%  
12360 >>%  
12361 /PUT pdfmark%  
12362 [%  
12363 /\_objdef{ZaDb}%  
12364 /type/dict%  
12365 /OBJ pdfmark%  
12366 [%  
12367 {ZaDb}%  
12368 <<%  
12369 /Type/Font%  
12370 /Subtype/Type1%  
12371 /Name/ZaDb%  
12372 /BaseFont/ZapfDingbats%  
12373 >>%  
12374 /PUT pdfmark%  
12375 [%  
12376 /\_objdef{Helv}%  
12377 /type/dict%  
12378 /OBJ pdfmark%  
12379 [%  
12380 {Helv}%  
12381 <<%  
12382 /Type/Font%  
12383 /Subtype/Type1%  
12384 /Name/Helv%  
12385 /BaseFont/Helvetica%  
12386 /Encoding{pdfDocEncoding}%  
12387 >>%  
12388 /PUT pdfmark%



12389 [%  
12390 /\_objdef{aform}%  
12391 /type/dict%  
12392 /OBJ pdfmark%  
12393 [%  
12394 /\_objdef{afields}%  
12395 /type/array%  
12396 /OBJ pdfmark%  
12397 [%  
12398 /\_objdef{corder}%  
12399 /type/array%  
12400 /OBJ pdfmark%  
12401 {%  
12402 [%  
12403 /BBox[0 0 100 100]%  
12404 /\_objdef{Check}%  
12405 /BP pdfmark %  
12406 1 0 0 setrgbcolor%  
12407 /ZapfDingbats 80 selectfont %  
12408 20 20 moveto%  
12409 (4)show%  
12410 [/EP pdfmark%  
12411 [%  
12412 /BBox[0 0 100 100]%  
12413 /\_objdef{Cross}%  
12414 /BP pdfmark %  
12415 1 0 0 setrgbcolor%  
12416 /ZapfDingbats 80 selectfont %  
12417 20 20 moveto%  
12418 (8)show%  
12419 [/EP pdfmark%  
12420 [%  
12421 /BBox[0 0 250 100]%  
12422 /\_objdef{Submit}%  
12423 /BP pdfmark %  
12424 0.6 setgray %  
12425 0 0 250 100 rectfill %  
12426 1 setgray %  
12427 2 2 moveto %  
12428 2 98 lineto %  
12429 248 98 lineto %  
12430 246 96 lineto %  
12431 4 96 lineto %  
12432 4 4 lineto %  
12433 fill %  
12434 0.34 setgray %  
12435 248 98 moveto %  
12436 248 2 lineto %  
12437 2 2 lineto %  
12438 4 4 lineto %  
12439 246 4 lineto %  
12440 246 96 lineto %  
12441 fill%  
12442 /Helvetica 76 selectfont %

```

12443 0 setgray %
12444 8 22.5 moveto%
12445 (Submit)show%
12446 [/EP pdfmark%
12447 [%
12448 /BBox[0 0 250 100]%
12449 /_objdef{SubmitP}%
12450 /BP pdfmark %
12451 0.6 setgray %
12452 0 0 250 100 rectfill %
12453 0.34 setgray %
12454 2 2 moveto %
12455 2 98 lineto %
12456 248 98 lineto %
12457 246 96 lineto %
12458 4 96 lineto %
12459 4 4 lineto %
12460 fill %
12461 1 setgray %
12462 248 98 moveto %
12463 248 2 lineto %
12464 2 2 lineto %
12465 4 4 lineto %
12466 246 4 lineto %
12467 246 96 lineto %
12468 fill%
12469 /Helvetica 76 selectfont %
12470 0 setgray %
12471 10 20.5 moveto%
12472 (Submit)show%
12473 [/EP pdfmark%
12474 } ?pdfmark%
12475 [%
12476 {aform}%
12477 <<%
12478 /Fields{afields}%
12479 /DR<<%
12480 /Font<<%
12481 /ZaDb{ZaDb}%
12482 /Helv{Helv}%
12483 >>%
12484 >>%
12485 /DA(/Helv 10 Tf 0 g)%
12486 /CO{corder}%
12487 \ifHy@pdfa
12488 \else
12489 \ifHyField@NeedAppearances
12490 /NeedAppearances true%
12491 \fi
12492 \fi
12493 >>%
12494 /PUT pdfmark%
12495 [%
12496 {Catalog}%

```

```

12497 <<%
12498   /AcroForm{aform}%
12499 >>%
12500 /PUT pdfmark%
12501 }}%
12502 \kvsetkeys{Form}{#1}%
12503 }
12504 \let\@endForm\@empty
12505 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12506   \Hy@Message{Sorry, pdfmark drivers do not support FORM gauges}%
12507 }

12508 \newcount\HyField@AnnotCount
12509 \HyField@AnnotCount=\z@
12510 \def\HyField@AdvanceAnnotCount{%
12511   \global\advance\HyField@AnnotCount\@ne
12512 }
12513 \def\HyField@TheAnnotCount{%
12514   \the\HyField@AnnotCount
12515 }

12516 \edef\Fld@pageobjref{/P\string{ThisPage\string}}
12517 \def\HyField@AddToFields#1{%
12518   \pdfmark{%
12519     pdfmark=/APPEND,%
12520     Raw={%
12521       \string{afields\string}%
12522       \string{#1\HyField@TheAnnotCount\string}%
12523     }%
12524   }%
12525   \if\Fld@calculate@code\@empty
12526   \else
12527     \pdfmark{%
12528       pdfmark=/APPEND,%
12529       Raw={%
12530         \string{corder\string}%
12531         \string{#1\HyField@TheAnnotCount\string}%
12532       }%
12533     }%
12534   \fi
12535 }

12536 \def\@TextField[#1]#2{% parameters, label
12537   \def\Fld@name{#2}%
12538   \let\Fld@default\@empty
12539   \let\Fld@value\@empty
12540   \def\Fld@width{\DefaultWidthofText}%
12541   \def\Fld@height{%
12542     \if\Fld@multiline
12543       \DefaultHeightofTextMultiline
12544     \else
12545       \DefaultHeightofText
12546     \fi
12547   }%
12548   \begingroup
12549   \expandafter\HyField@SetKeys\expandafter{%

```

```

12550     \DefaultOptionsofText,#1%
12551 }%
12552 \HyField@FlagsText
12553 \ifFld@hidden\def\Fld@width{1sp}\fi
12554 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12555 \HyField@AdvanceAnnotCount
12556 \LayoutTextField{#2}{%
12557     \leavevmode
12558     \Hy@escapeform\PDFForm@Text
12559     \pdfmark{\MakeTextField{\Fld@width}{\Fld@height}}{%
12560         pdfmark=/ANN,%
12561         objdef=text\HyField@TheAnnotCount,%
12562         Raw={\PDFForm@Text}%
12563     }%
12564 }%
12565 \HyField@AddToFields{text}%
12566 \endgroup
12567 }
12568 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12569     \def\Fld@name{#2}%
12570     \let\Fld@default\relax
12571     \let\Fld@value\relax
12572     \def\Fld@width{\DefaultWidthofChoiceMenu}%
12573     \def\Fld@height{\DefaultHeightofChoiceMenu}%
12574     \begingroup
12575     \Fld@menulength=0 %
12576     \@tempdima\z@
12577     \@for\@curropt:=#3\do{%
12578         \expandafter\Fld@checkequals\@curropt==\%
12579         \Hy@StepCount\Fld@menulength
12580         \settowidth{\@tempdimb}{\@currDisplay}%
12581         \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12582     }%
12583     \advance\@tempdima by 15\p@
12584     \begingroup
12585     \HyField@SetKeys{#1}%
12586     \edef\x{\endgroup
12587     \noexpand\expandafter
12588     \noexpand\HyField@SetKeys
12589     \noexpand\expandafter{%
12590     \expandafter\noexpand\cname DefaultOptionsof%
12591     \ifFld@radio
12592         Radio%
12593     \else
12594         \ifFld@combo
12595         \ifFld@popdown
12596             PopdownBox%
12597         \else
12598             ComboBox%
12599         \fi
12600     \else
12601         ListBox%
12602     \fi
12603     \fi

```

```

12604     \endcsname
12605   }%
12606 } \x
12607 \HyField@SetKeys{#1}%
12608 \ifFld@hidden\def\Fld@width{1sp}\fi
12609 \ifx\Fld@value\relax
12610   \let\Fld@value\Fld@default
12611 \fi
12612 \LayoutChoiceField{#2}{%
12613   \ifFld@radio
12614     \HyField@FlagsRadioButton
12615     \@@Radio{#3}%
12616   \else
12617     \begingroup
12618     \HyField@FlagsChoice
12619     \ifdim\Fld@width<\@tempdima
12620       \ifdim\@tempdima<1cm\@tempdima1cm\fi
12621       \edef\Fld@width{\the\@tempdima}%
12622     \fi
12623     \ifFld@combo
12624     \else
12625       \@tempdima=\the\Fld@menulength\Fld@charsize
12626       \advance\@tempdima by \Fld@borderwidth bp %
12627       \advance\@tempdima by \Fld@borderwidth bp %
12628       \edef\Fld@height{\the\@tempdima}%
12629     \fi
12630     \@@ListBox{#3}%
12631   \endgroup
12632 \fi
12633 }%
12634 \endgroup
12635 }
12636 \def\@@Radio#1{%
12637   \Fld@listcount=0 %
12638   \EdefEscapeName\Fld@default{\Fld@default}%
12639   \@for\@curropt:=#1\do{%
12640     \expandafter\Fld@checkequals\@curropt==\%
12641     \EdefEscapeName\@currValue{\@currValue}%
12642     \Hy@StepCount\Fld@listcount
12643     \@currDisplay\space
12644     \Hy@escapeform\PDFForm@Radio
12645     \ifnum\Fld@listcount=1 %
12646       \HyField@AdvanceAnnotCount
12647     \fi
12648     \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
12649       pdfmark=/ANN,%
12650       objdef=\ifnum\Fld@listcount=1 radio\HyField@TheAnnotCount\fi,%
12651       Raw={%
12652         \PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>%
12653       }%
12654   } % deliberate space between radio buttons
12655   \ifnum\Fld@listcount=1 %
12656     \HyField@AddToFields{radio}%
12657   \fi

```

```

12658 }%
12659 }
12660 \newcount\Fld@listcount
12661 \def\@@ListBox#1{%
12662 \HyField@PDFChoices{#1}%
12663 \Hy@escapeform\PDFForm@List
12664 \HyField@AdvanceAnnotCount
12665 \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
12666 pdfmark=/ANN,%
12667 objdef=list\HyField@TheAnnotCount,%
12668 Raw={\PDFForm@List}%
12669 }%
12670 \HyField@AddToFields{list}%
12671 }
12672 \def\@PushButton[#1]#2{% parameters, label
12673 \def\Fld@name{#2}%
12674 \begingroup
12675 \expandafter\HyField@SetKeys\expandafter{%
12676 \DefaultOptionsofPushButton,#1%
12677 }%
12678 \ifHy@pdfa
12679 \Hy@Error{%
12680 PDF/A: Push button with JavaScript is prohibited%
12681 } \@ehc
12682 \LayoutPushButtonField{%
12683 \leavevmode
12684 \MakeButtonField{#2}%
12685 }%
12686 \else
12687 \HyField@FlagsPushButton
12688 \ifFld@hidden\def\Fld@width{1sp}\fi
12689 \HyField@AdvanceAnnotCount
12690 \LayoutPushButtonField{%
12691 \leavevmode
12692 \Hy@escapeform\PDFForm@Push
12693 \pdfmark[\MakeButtonField{#2}]{%
12694 pdfmark=/ANN,%
12695 objdef=push\HyField@TheAnnotCount,%
12696 Raw={\PDFForm@Push}%
12697 }%
12698 }%
12699 \HyField@AddToFields{push}%
12700 \fi
12701 \endgroup
12702 }
12703 \def\@Submit[#1]#2{%
12704 \def\Fld@width{\DefaultWidthofSubmit}%
12705 \def\Fld@height{\DefaultHeightofSubmit}%
12706 \begingroup
12707 \expandafter\HyField@SetKeys\expandafter{%
12708 \DefaultOptionsofSubmit,#1%
12709 }%
12710 \HyField@FlagsPushButton
12711 \HyField@FlagsSubmit

```

```

12712 \ifFld@hidden\def\Fld@width{1sp}\fi
12713 \Hy@escapeform\PDFForm@Submit
12714 \HyField@AdvanceAnnotCount
12715 \pdfmark[\MakeButtonField{#2}]{%
12716 pdfmark=/ANN,%
12717 objdef=submit\HyField@TheAnnotCount,%
12718 Raw={\PDFForm@Submit /AP<</N{Submit}/D{SubmitP}>>}}%
12719 }%
12720 \HyField@AddToFields{submit}%
12721 \endgroup
12722 }
12723 \def\@Reset[#1]#2{%
12724 \def\Fld@width{\DefaultWidthofReset}%
12725 \def\Fld@height{\DefaultHeightofReset}%
12726 \begingroup
12727 \expandafter\HyField@SetKeys\expandafter{%
12728 \DefaultOptionsofReset,#1%
12729 }%
12730 \leavevmode
12731 \ifHy@pdfa
12732 \Hy@Error{%
12733 PDF/A: Reset action is prohibited%
12734 } \@ehc
12735 \MakeButtonField{#2}%
12736 \else
12737 \HyField@FlagsPushButton
12738 \ifFld@hidden\def\Fld@width{1sp}\fi
12739 \Hy@escapeform\PDFForm@Reset
12740 \HyField@AdvanceAnnotCount
12741 \pdfmark[\MakeButtonField{#2}]{%
12742 pdfmark=/ANN,%
12743 objdef=reset\HyField@TheAnnotCount,%
12744 Raw={\PDFForm@Reset}%
12745 }%
12746 \HyField@AddToFields{reset}%
12747 \fi
12748 \endgroup
12749 }%
12750 \def\@CheckBox[#1]#2{% parameters, label
12751 \def\Fld@name{#2}%
12752 \def\Fld@default{0}%
12753 \begingroup
12754 \def\Fld@width{\DefaultWidthofCheckBox}%
12755 \def\Fld@height{\DefaultHeightofCheckBox}%
12756 \expandafter\HyField@SetKeys\expandafter{%
12757 \DefaultOptionsofCheckBox,#1%
12758 }%
12759 \HyField@FlagsCheckBox
12760 \ifFld@hidden\def\Fld@width{1sp}\fi
12761 \HyField@AdvanceAnnotCount
12762 \LayoutCheckField{#2}{%
12763 \leavevmode
12764 \Hy@escapeform\PDFForm@Check
12765 \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%

```

```

12766     pdfmark=/ANN,%
12767     objdef=check\HyField@TheAnnotCount,%
12768     Raw={\PDFForm@Check}%
12769     }%
12770   }%
12771   \HyField@AddToFields{check}%
12772 \endgroup
12773 }
12774 </pdfmark>

```

## 45.2 HyperTeX

```

12775 (*hypertex)
12776 \def\@Form[#1]{%
12777   \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12778 }
12779 \let\@endForm\@empty
12780 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12781   \Hy@Message{Sorry, HyperTeX does not support FORM gauges}%
12782 }
12783 \def\@TextField[#1]#2{% parameters, label
12784   \Hy@Message{Sorry, HyperTeX does not support FORM text fields}%
12785 }
12786 \def\@CheckBox[#1]#2{% parameters, label
12787   \Hy@Message{Sorry, HyperTeX does not support FORM checkboxes}%
12788 }
12789 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12790   \Hy@Message{Sorry, HyperTeX does not support FORM choice menus}%
12791 }
12792 \def\@PushButton[#1]#2{% parameters, label
12793   \Hy@Message{Sorry, HyperTeX does not support FORM pushbuttons}%
12794 }
12795 \def\@Reset[#1]#2{%
12796   \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12797 }
12798 \def\@Submit[#1]#2{%
12799   \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12800 }
12801 </hypertex>

```

## 45.3 TeX4ht

```

12802 (*tex4ht)
12803 \def\@Form[#1]{%
12804   \kvsetkeys{Form}{#1}%
12805   \HCode{<form action="\Form@action" method="\Form@method">}%
12806 }
12807 \def\@endForm{\HCode{</form>}}
12808 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12809   \Hy@Message{Sorry, TeX4ht does not support gauges}%
12810 }
12811 \def\@TextField[#1]#2{% parameters, label
12812   \let\Hy@reserved@a\@empty
12813   \def\Fld@name{#2}%
12814   \let\Fld@default\@empty

```



```

12815 \bgroup
12816 \Field@toks={ }%
12817 \kvsetkeys{Field}{#1}%
12818 \HCode{<label for="\Fld@name">#2</label>}%
12819 \ifFld@password
12820 \@@PasswordField
12821 \else
12822 \@@TextField
12823 \fi
12824 \egroup
12825 }
12826 \def\@@PasswordField{%
12827 \HCode{%
12828 <input type="password" %
12829 id="\Fld@name" %
12830 name="\Fld@name" %
12831 \ifFld@hidden type="hidden" \fi
12832 value="\Fld@default" %
12833 \the\Field@toks
12834 >%
12835 }%
12836 }
12837 \def\@@TextField{%
12838 \ifFld@multiline
12839 \HCode{<textarea %
12840 \ifFld@readonly readonly \fi
12841 id="\Fld@name" %
12842 name="\Fld@name" %
12843 \ifFld@hidden type="hidden" \fi
12844 \the\Field@toks>%
12845 }%
12846 \Fld@default
12847 \HCode{</textarea>}%
12848 \else
12849 \HCode{<input type="text" %
12850 \ifFld@readonly readonly \fi
12851 id="\Fld@name" %
12852 name="\Fld@name" %
12853 \ifFld@hidden type="hidden" \fi
12854 value="\Fld@default" %
12855 \the\Field@toks>%
12856 }%
12857 \fi
12858 }
12859 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12860 \def\Fld@name{#2}%
12861 \let\Fld@default\@empty
12862 \let\Hy@reserved@a\relax
12863 \begingroup
12864 \expandafter\Fld@findlength#3\%
12865 \Field@toks={ }%
12866 \kvsetkeys{Field}{#1}%
12867 #2%
12868 \ifFld@radio

```

```

12869     \expandafter\@@Radio#3\}%
12870     \else
12871     \expandafter\@@Menu#3\}%
12872     \fi
12873 \endgroup
12874 }
12875 \def\Fld@findlength#1\{%
12876   \Fld@menulength=0 %
12877   \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
12878 }
12879 \def\@@Menu#1\{%
12880   \HCode{<select size="\the\Fld@menulength" %
12881     name="\Fld@name" %
12882     \the\Field@toks>%
12883   }%
12884   \@for\@curropt:=#1\do{%
12885     \expandafter\Fld@checkequals\@curropt==\}%
12886     \HCode{<option %
12887       \ifx\@curropt\Fld@default selected \fi
12888       value="\@currValue">\@currDisplay</option>%
12889     }%
12890   }%
12891   \HCode{</select>}%
12892 }
12893 \def\@@Radio#1\{%
12894   \@for\@curropt:=#1\do{%
12895     \expandafter\Fld@checkequals\@curropt==\}%
12896     \HCode{<input type="radio" %
12897       \ifx\@curropt\Fld@default checked \fi
12898       name="\Fld@name" %
12899       value="\@currValue" %
12900       \the\Field@toks>%
12901     }%
12902     \@currDisplay
12903   }%
12904 }
12905 \def\@PushButton[#1]#2{% parameters, label
12906   \def\Fld@name{#2}%
12907   \bgroup
12908     \Field@toks={ }%
12909     \kvsetkeys{Field}{#1}%
12910     \HCode{<input type="button" %
12911       name="\Fld@name" %
12912       value="#2" %
12913       \the\Field@toks>%
12914     }%
12915     \HCode{</button>}%
12916   \egroup
12917 }
12918 \def\@Submit[#1]#2{%
12919   \HCode{<button type="submit">#2</button>}%
12920 }
12921 \def\@Reset[#1]#2{%
12922   \HCode{<button type="reset">#2</button>}%

```

```

12923 }
12924 \def\@CheckBox[#1]#2{% parameters, label
12925 \let\Hy@reserved@a\@empty
12926 \def\Fld@name{#2}%
12927 \def\Fld@default{0}%
12928 \bgroup
12929 \Field@toks={ }%
12930 \kvsetkeys{Field}{#1}%
12931 \HCode{<input type="checkbox" %
12932 \ifFld@checked checked \fi
12933 \ifFld@disabled disabled \fi
12934 \ifFld@readonly readonly \fi
12935 name="\Fld@name" %
12936 \ifFld@hidden type="hidden" \fi
12937 value="\Fld@default" %
12938 \the\Fld@toks>%
12939 #2%
12940 }%
12941 \egroup
12942 }
12943 </tex4ht>

```

## 45.4 pdfTeX

```

12944 (*pdftex)
12945 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12946 \Hy@Message{Sorry, pdftex does not support FORM gauges}%
12947 }
12948 \def\MakeFieldObject#1#2{\sbox0{#1}%
12949 \immediate\pdfxform0 %
12950 \expandafter\edef\csname #2Object\endcsname{%
12951 \the\pdfastxform\space 0 R%
12952 }%
12953 % \hbox to 0pt{\hskip-\maxdimen{\pdfrefxform \the\pdfastxform}}%
12954 }%
12955 \let\HyField@afields\@empty
12956 \let\HyField@cofields\@empty
12957 \@ifundefined{pdfastlink}
12958 {%
12959 \let\HyField@AddToFields\relax
12960 \PackageInfo{hyperref}{%
12961 You need pdfTeX 1.40.0 for setting the /Fields entry.%
12962 \MessageBreak
12963 Adobe Reader/Acrobat accepts an empty /Field array,%
12964 \MessageBreak
12965 but other PDF viewers might complain%
12966 }}%
12967 {%
12968 \let\HyField@AuxAddToFields@gobble
12969 \let\HyField@AuxAddToCoFields@gobbletwo
12970 \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.

```

12971 \def\HyField@ABD@AuxAddToCoFields#1#2{%

```

```

12972 \begingroup
12973 \Hy@safe@activestru e
12974 \let\@secondoftwo\relax
12975 \ifx\HyField@cofields\@empty
12976 \xdef\HyField@cofields{%
12977 \@secondoftwo{#1}{ #2 0 R}%
12978 }%
12979 \else
12980 \let\@secondoftwo\relax
12981 \def\HyField@AddCoField###1##2###3{%
12982 \ifx##1\@empty
12983 \@secondoftwo{#1}{ #2 0 R}%
12984 \expandafter\@gobble
12985 \else
12986 \ifnum\pdfstrcmp{##2}{#1}>\z@
12987 \@secondoftwo{#1}{ #2 0 R}%
12988 \@secondoftwo{##2}{##3}%
12989 \expandafter\expandafter\expandafter\@gobble
12990 \else
12991 \@secondoftwo{##2}{##3}%
12992 \fi
12993 \fi
12994 \HyField@AddCoField
12995 }%
12996 \xdef\HyField@cofields{%
12997 \expandafter\HyField@AddCoField
12998 \HyField@cofields\@empty\@empty\@empty
12999 }%
13000 \fi
13001 \endgroup
13002 }%
13003 \Hy@AtBeginDocument{%
13004 \if@filesw
13005 \immediate\write\@mainaux{%
13006 \string\providecommand\string\HyField@AuxAddToFields[1]{}%
13007 }%
13008 \immediate\write\@mainaux{%
13009 \string\providecommand\string\HyField@AuxAddToCoFields[2]{}%
13010 }%
13011 \fi
13012 \let\HyField@AfterAuxOpen\@firstofone
13013 \def\HyField@AuxAddToFields#1{%
13014 \xdef\HyField@afields{%
13015 \ifx\HyField@afields\@empty
13016 \else
13017 \HyField@afields
13018 \space
13019 \fi
13020 #1 0 R.%
13021 }%
13022 }%
13023 \let\HyField@AuxAddToCoFields\HyField@ABD@AuxAddToCoFields
13024 }%
13025 \def\HyField@AddToFields{%

```

```

13026 \expandafter\HyField@@AddToFields\expandafter{%
13027 \the\pdflastlink
13028 }%
13029 \ifx\Fld@calculate@code\@empty
13030 \else
13031 \begingroup
13032 \Hy@safe@activetrue
13033 \edef\Hy@temp{%
13034 \endgroup
13035 \if@filesw
13036 \write\@mainaux{%
13037 \string\HyField@AuxAddToCoFields{%
13038 \Fld@calculate@sortkey
13039 }{%
13040 \the\pdflastlink
13041 }%
13042 }%
13043 \fi
13044 }%
13045 \Hy@temp
13046 \fi
13047 }%
13048 \def\HyField@@AddToFields#1{%
13049 \HyField@AfterAuxOpen{%
13050 \if@filesw
13051 \write\@mainaux{%
13052 \string\HyField@AuxAddToFields{#1}%
13053 }%
13054 \fi
13055 }%
13056 }%
13057 }
13058 \def\@Form[#1]{%
13059 \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13060 \kvsetkeys{Form}{#1}%
13061 \pdf@ifdraftmode{}{%
13062 \Hy@FormObjects
13063 \ifnum\pdftexversion>13 %
13064 \pdfrefobj\OBJ@pdfdocencoding
13065 \pdfrefobj\OBJ@ZaDb
13066 \pdfrefobj\OBJ@Helv
13067 \fi
13068 \AtVeryEndDocument{%
13069 \immediate\pdfobj{%
13070 <<%
13071 /Fields[\HyField@afields]%
13072 \ifx\HyField@cofields\@empty
13073 \else
13074 /CO[\romannumeral-`Q\HyField@cofields]%
13075 \fi
13076 /DR<<%
13077 /Font<<%
13078 /ZaDb \OBJ@ZaDb\space 0 R%
13079 /Helv \OBJ@Helv\space 0 R%

```

```

13080     >>%
13081     >>%
13082     /DA(/Helv 10 Tf 0 g)%
13083     \ifHy@pdfa
13084     \else
13085     \ifHyField@NeedAppearances
13086     /NeedAppearances true%
13087     \fi
13088     \fi
13089     >>%
13090     }%
13091     \edef\OBJ@acroform{\the\pdfastobj}%
13092     \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
13093     }%
13094 }%
13095 \MakeFieldObject{%
Same as \ding{123} of package pifont.
13096 \begingroup
13097 \fontfamily{pzd}%
13098 \fontencoding{U}%
13099 \fontseries{m}%
13100 \fontshape{n}%
13101 \selectfont
13102 \char123 %
13103 \endgroup
13104 }{Ding}%
13105 \MakeFieldObject{%
13106 \fbox{\textcolor{yellow}{\textsf{Submit}}}%
13107 }{Submit}%
13108 \MakeFieldObject{%
13109 \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
13110 }{SubmitP}%
13111 }
13112 \let\@endForm\@empty
13113 \let\HyAnn@AbsPageLabel\@empty
13114 \let\Fld@pageobjref\@empty
13115 \@ifundefined{pdfpageref}{%
13116 }{%
13117 \@ifpackageloaded{zref-abspage}{%
13118 \newcount\HyAnn@Count
13119 \HyAnn@Count=\z@
13120 \def\HyAnn@AbsPageLabel{%
13121 \global\advance\HyAnn@Count by\@ne
13122 \zref@labelbyprops{HyAnn@\the\HyAnn@Count}{abspage}%
13123 \zref@refused{HyAnn@\the\HyAnn@Count}%
13124 }%
13125 \def\Fld@pageobjref{%
13126 \zref@ifrefundefined{HyAnn@\the\HyAnn@Count}{%
13127 }{%
13128 \zref@ifrefcontainsprop{HyAnn@\the\HyAnn@Count}{abspage}{%
13129 /P \pdfpageref
13130 \zref@extractdefault{HyAnn@\the\HyAnn@Count}{abspage}{1} %
13131 \space 0 R%
13132 }%

```

```

13133     }%
13134     }%
13135     }%
13136   }{%
13137   }%
13138 }

13139 \def\@TextField[#1]#2{% parameters, label
13140   \def\Fld@name{#2}%
13141   \let\Fld@default\@empty
13142   \let\Fld@value\@empty
13143   \def\Fld@width{\DefaultWidthofText}%
13144   \def\Fld@height{%
13145     \ifFld@multiline
13146       \DefaultHeightofTextMultiline
13147     \else
13148       \DefaultHeightofText
13149     \fi
13150   }%
13151   \begingroup
13152     \expandafter\HyField@SetKeys\expandafter{%
13153       \DefaultOptionsofText,#1%
13154     }%
13155     \PDFForm@Name
13156     \HyField@FlagsText
13157     \ifFld@hidden\def\Fld@width{1sp}\fi
13158     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13159     \LayoutTextField{#2}{%
13160       \leavevmode
13161       \HyAnn@AbsPageLabel
13162       \Hy@escapeform\PDFForm@Text
13163       \pdfstartlink user {\PDFForm@Text}\relax
13164       \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
13165       \HyField@AddToFields
13166     }%
13167   \endgroup
13168 }

13169 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13170   \def\Fld@name{#2}%
13171   \let\Fld@default\relax
13172   \let\Fld@value\relax
13173   \def\Fld@width{\DefaultWidthofChoiceMenu}%
13174   \def\Fld@height{\DefaultHeightofChoiceMenu}%
13175   \begingroup
13176     \Fld@menulength=0 %
13177     \@tempdima\z@
13178     \@for\@curropt:=#3\do{%
13179       \expandafter\Fld@checkequals\@curropt==\%
13180       \Hy@StepCount\Fld@menulength
13181       \settowidth{\@tempdimb}{\@currDisplay}%
13182       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13183     }%
13184     \advance\@tempdima by 15\p@
13185     \begingroup
13186     \HyField@SetKeys{#1}%

```

```

13187 \edef\x{\endgroup
13188 \noexpand\expandafter
13189 \noexpand\HyField@SetKeys
13190 \noexpand\expandafter{%
13191 \expandafter\noexpand\csname DefaultOptionsof%
13192 \ifFld@radio
13193 Radio%
13194 \else
13195 \ifFld@combo
13196 \ifFld@popdown
13197 PopdownBox%
13198 \else
13199 ComboBox%
13200 \fi
13201 \else
13202 ListBox%
13203 \fi
13204 \fi
13205 \endcsname
13206 }%
13207 }\x
13208 \HyField@SetKeys{#1}%
13209 \PDFForm@Name
13210 \ifFld@hidden\def\Fld@width{1sp}\fi
13211 \ifx\Fld@value\relax
13212 \let\Fld@value\Fld@default
13213 \fi
13214 \LayoutChoiceField{#2}{%
13215 \ifFld@radio
13216 \HyField@FlagsRadioButton
13217 \@@Radio{#3}%
13218 \else
13219 \beginngroup
13220 \HyField@FlagsChoice
13221 \ifdim\Fld@width<\@tempdima
13222 \ifdim\@tempdima<1cm\@tempdima1cm\fi
13223 \edef\Fld@width{\the\@tempdima}%
13224 \fi
13225 \ifFld@combo
13226 \else
13227 \@tempdima=\the\Fld@menulength\Fld@charsize
13228 \advance\@tempdima by \Fld@borderwidth bp %
13229 \advance\@tempdima by \Fld@borderwidth bp %
13230 \edef\Fld@height{\the\@tempdima}%
13231 \fi
13232 \@@ListBox{#3}%
13233 \endgroup
13234 \fi
13235 }%
13236 \endgroup
13237 }
13238 \def\@@Radio#1{%
13239 \Fld@listcount=0 %
13240 \EdefEscapeName\Fld@default{\Fld@default}%

```



```

13241 \@for\@curropt:=#1\do{%
13242 \expandafter\Fld@checkequals\@curropt==\%
13243 \EdefEscapeName\@currValue{\@currValue}%
13244 \Hy@StepCount\Fld@listcount
13245 \@currDisplay\space
13246 \leavevmode
13247 \HyAnn@AbsPageLabel
13248 \Hy@escapeform\PDFForm@Radio
13249 \pdfstartlink user {%
13250 \PDFForm@Radio
13251 /AP<<%
13252 /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.

```

13253 \/\@currValue\space \DingObject
13254 >>%
13255 >>%
13256 }%
13257 \relax
13258 \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
13259 \ifnum\Fld@listcount=1 %
13260 \HyField@AddToFields
13261 \fi
13262 \space % deliberate space between radio buttons
13263 }%
13264 }
13265 \newcount\Fld@listcount
13266 \def\@@Listbox#1{%
13267 \HyField@PDFChoices{#1}%
13268 \leavevmode
13269 \HyAnn@AbsPageLabel
13270 \Hy@escapeform\PDFForm@List
13271 \pdfstartlink user {\PDFForm@List}\relax
13272 \MakeChoiceField{\Fld@width}{\Fld@height}%
13273 \pdfendlink
13274 \HyField@AddToFields
13275 }
13276 \def\@PushButton[#1]#2{% parameters, label
13277 \def\Fld@name{#2}%
13278 \begingroup
13279 \expandafter\HyField@SetKeys\expandafter{%
13280 \DefaultOptionsofPushButton,#1%
13281 }%
13282 \PDFForm@Name
13283 \ifHy@pdfa
13284 \Hy@Error{%
13285 PDF/A: Push button with JavaScript is prohibited%
13286 }\@ehc
13287 \LayoutPushButtonField{%
13288 \leavevmode
13289 \MakeButtonField{#2}%
13290 }%

```

```

13291 \else
13292 \HyField@FlagsPushButton
13293 \ifFld@hidden\def\Fld@width{1sp}\fi
13294 \LayoutPushButtonField{%
13295 \leavevmode
13296 \HyAnn@AbsPageLabel
13297 \Hy@escapeform\PDFForm@Push
13298 \pdfstartlink user {\PDFForm@Push}\relax
13299 \MakeButtonField{#2}%
13300 \pdfendlink
13301 \HyField@AddToFields
13302 }%
13303 \fi
13304 \endgroup
13305 }
13306 \def\@Submit[#1]#2{%
13307 \def\Fld@width{\DefaultWidthofSubmit}%
13308 \def\Fld@height{\DefaultHeightofSubmit}%
13309 \begingroup
13310 \expandafter\HyField@SetKeys\expandafter{%
13311 \DefaultOptionsofSubmit,#1%
13312 }%
13313 \HyField@FlagsPushButton
13314 \HyField@FlagsSubmit
13315 \ifFld@hidden\def\Fld@width{1sp}\fi
13316 \leavevmode
13317 \HyAnn@AbsPageLabel
13318 \Hy@escapeform\PDFForm@Submit
13319 \pdfstartlink user {%
13320 \PDFForm@Submit
13321 /AP<</N \SubmitObject/D \SubmitPObject>>%
13322 }%
13323 \relax
13324 \MakeButtonField{#2}%
13325 \pdfendlink
13326 \HyField@AddToFields
13327 \endgroup
13328 }
13329 \def\@Reset[#1]#2{%
13330 \def\Fld@width{\DefaultWidthofReset}%
13331 \def\Fld@height{\DefaultHeightofReset}%
13332 \begingroup
13333 \expandafter\HyField@SetKeys\expandafter{%
13334 \DefaultOptionsofReset,#1%
13335 }%
13336 \leavevmode
13337 \ifHy@pdfa
13338 \Hy@Error{%
13339 PDF/A: Reset action is prohibited%
13340 }\@ehc
13341 \MakeButtonField{#2}%
13342 \else
13343 \HyField@FlagsPushButton
13344 \ifFld@hidden\def\Fld@width{1sp}\fi

```

```

13345 \HyAnn@AbsPageLabel
13346 \Hy@escapeform\PDFForm@Reset
13347 \pdfstartlink user {\PDFForm@Reset}\relax
13348 \MakeButtonField{#2}%
13349 \pdfendlink
13350 \HyField@AddToFields
13351 \fi
13352 \endgroup
13353 }
13354 \def\@CheckBox[#1]#2{% parameters, label
13355 \def\Fld@name{#2}%
13356 \def\Fld@default{0}%
13357 \begingroup
13358 \def\Fld@width{\DefaultWidthofCheckBox}%
13359 \def\Fld@height{\DefaultHeightofCheckBox}%
13360 \expandafter\HyField@SetKeys\expandafter{%
13361 \DefaultOptionsofCheckBox,#1%
13362 }%
13363 \PDFForm@Name
13364 \HyField@FlagsCheckBox
13365 \ifFld@hidden\def\Fld@width{1sp}\fi
13366 \LayoutCheckField{#2}{%
13367 \leavevmode
13368 \HyAnn@AbsPageLabel
13369 \Hy@escapeform\PDFForm@Check
13370 \pdfstartlink user {\PDFForm@Check}\relax
13371 \MakeCheckField{\Fld@width}{\Fld@height}%
13372 \pdfendlink
13373 \HyField@AddToFields
13374 }%
13375 \endgroup
13376 }
13377 \def\Hy@FormObjects{%
13378 \pdfobj {%
13379 <<%
13380 /Type/Encoding%
13381 /Differences{%
13382 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
13383 /ring/tilde %
13384 39/quotesingle %
13385 96/grave %
13386 128/bullet/dagger/daggerdbl/ellipsis/emdash/enddash/florin%
13387 /fraction/guilsingleft/guilsingright/minus/perthousand%
13388 /quotedblbase/quotedblleft/quotedblright/quoteleft%
13389 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
13390 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13391 160/Euro %
13392 164/currency %
13393 166/brokenbar %
13394 168/dieresis/copyright/ordfeminine %
13395 172/logicalnot/.notdef/registered/macron/degree/plusminus%
13396 /twosuperior/threesuperior/acute/mu %
13397 183/periodcentered/cedilla/onesuperior/ordmasculine %
13398 188/onequarter/onehalf/threequarters %

```

```

13399     192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13400     /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
13401     /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
13402     /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
13403     /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
13404     /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
13405     /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
13406     /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
13407     /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
13408     /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
13409     ]%
13410     >>%
13411     }%
13412     \xdef\OBJ@pdfdocencoding{\the\pdfastobj}%
13413     \pdfobj{%
13414     <<%
13415     /Type/Font%
13416     /Subtype/Type1%
13417     /Name/ZaDb%
13418     /BaseFont/ZapfDingbats%
13419     >>%
13420     }%
13421     \xdef\OBJ@ZaDb{\the\pdfastobj}%
13422     \pdfobj{%
13423     <<%
13424     /Type/Font%
13425     /Subtype/Type1%
13426     /Name/Helv%
13427     /BaseFont/Helvetica%
13428     /Encoding \OBJ@pdfdocencoding\space 0 R%
13429     >>%
13430     }%
13431     \xdef\OBJ@Helv{\the\pdfastobj}%
13432     \global\let\Hy@FormObjects\relax
13433     }
13434     </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.

```
13435 <*dvipdfm | xetex>
```

\@Gauge

```

13436 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
13437   \Hy@Message{Sorry, dvipdfm/XeTeX does not support FORM gauges}%
13438 }

```

\@Form

```

13439 \def\@Form[#1]{%
13440   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13441   \kvsetkeys{Form}{#1}%
13442   \Hy@FormObjects
13443   \@pdfm@mark{obj @afields []}%

```

```

13444 \@pdfm@mark{obj @corder []}%
13445 \@pdfm@mark{%
13446   obj @aform <<%
13447   /Fields @afields%
13448   /DR<<%
13449   /Font<<%
13450   /ZaDb @OBJZaDb%
13451   /Helv @OBJHelv%
13452   >>%
13453   >>%
13454   /DA(/Helv 10 Tf 0 g)%
13455   /CO @corder%
13456   \ifHy@pdfa
13457   \else
13458     \ifHyField@NeedAppearances
13459       /NeedAppearances true%
13460     \fi
13461     \fi
13462   >>%
13463 }%
13464 \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
13465 }

```

\@endForm

```
13466 \let\@endForm\@empty
```

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

```

13467 \def\dvipdfm@setdim{%
13468   height \the\ht\pdfm@box\space
13469   width \the\wd\pdfm@box\space
13470   depth \the\dp\pdfm@box\space
13471 }

```

\HyField@AnnotCount

```

13472 \newcount\HyField@AnnotCount
13473 \HyField@AnnotCount=\z@

```

\HyField@AdvanceAnnotCount

```

13474 \def\HyField@AdvanceAnnotCount{%
13475   \global\advance\HyField@AnnotCount\@ne
13476 }

```

\HyField@TheAnnotCount

```

13477 \def\HyField@TheAnnotCount{%
13478   \the\HyField@AnnotCount
13479 }

```

\Fld@pageobjref

```
13480 \def\Fld@pageobjref{/P @thispage}%
```

\HyField@AddToFields

```

13481 \def\HyField@AddToFields#1{%
13482   \@pdfm@mark{put @afields @#1\HyField@TheAnnotCount}%

```

```

13483 \ifx\Fld@calculate@code\@empty
13484 \else
13485 \@pdfm@mark{put @corder @#1\HyField@TheAnnotCount}%
13486 \fi
13487 }

```

#### \@TextField

```

13488 \def\@TextField[#1]#2{% parameters, label
13489 \def\Fld@name{#2}%
13490 \let\Fld@default\@empty
13491 \let\Fld@value\@empty
13492 \def\Fld@width{\DefaultWidthofText}%
13493 \def\Fld@height{%
13494 \ifFld@multiline
13495 \DefaultHeightofTextMultiline
13496 \else
13497 \DefaultHeightofText
13498 \fi
13499 }%
13500 \begingroup
13501 \expandafter\HyField@SetKeys\expandafter{%
13502 \DefaultOptionsofText,#1%
13503 }%
13504 \PDFForm@Name
13505 \HyField@FlagsText
13506 \ifFld@hidden\def\Fld@width{1sp}\fi
13507 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13508 \setbox\pdfm@box=\hbox{%
13509 \MakeTextField{\Fld@width}{\Fld@height}%
13510 }%
13511 \HyField@AdvanceAnnotCount
13512 \LayoutTextField{#2}{%
13513 \leavevmode
13514 \Hy@escapeform\PDFForm@Text
13515 \@pdfm@mark{%
13516 ann @text\HyField@TheAnnotCount\space
13517 \dvi@pdfm@setdim << \PDFForm@Text >>%
13518 }%
13519 }%
13520 \unhbox\pdfm@box
13521 \HyField@AddToFields{text}%
13522 % record in @afields array
13523 \endgroup
13524 }

```

#### \@ChoiceMenu

```

13525 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13526 \def\Fld@name{#2}%
13527 \let\Fld@default\relax
13528 \let\Fld@value\relax
13529 \def\Fld@width{\DefaultWidthofChoiceMenu}%
13530 \def\Fld@height{\DefaultHeightofChoiceMenu}%
13531 \begingroup
13532 \Fld@menulength=0 %

```

```

13533 \@tempdima\z@
13534 \@for\@curropt:=#3\do{%
13535 \expandafter\Fld@checkequals\@curropt==\\%
13536 \Hy@StepCount\Fld@menulength
13537 \settowidth{\@tempdimb}{\@currDisplay}%
13538 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13539 }%
13540 \advance\@tempdima by 15\p@
13541 \begingroup
13542 \HyField@SetKeys{#1}%
13543 \edef\x{\endgroup
13544 \noexpand\expandafter
13545 \noexpand\HyField@SetKeys
13546 \noexpand\expandafter{%
13547 \expandafter\noexpand\csname DefaultOptionsof%
13548 \ifFld@radio
13549 Radio%
13550 \else
13551 \ifFld@combo
13552 \ifFld@popdown
13553 PopdownBox%
13554 \else
13555 ComboBox%
13556 \fi
13557 \else
13558 ListBox%
13559 \fi
13560 \fi
13561 \endcsname
13562 }%
13563 }\x
13564 \HyField@SetKeys{#1}%
13565 \PDFForm@Name
13566 \ifFld@hidden\def\Fld@width{1sp}\fi
13567 \ifx\Fld@value\relax
13568 \let\Fld@value\Fld@default
13569 \fi
13570 \LayoutChoiceField{#2}{%
13571 \ifFld@radio
13572 \HyField@FlagsRadioButton
13573 \@@Radio{#3}%
13574 \else
13575 \begingroup
13576 \HyField@FlagsChoice
13577 \ifdim\Fld@width<\@tempdima
13578 \ifdim\@tempdima<1cm\@tempdima1cm\fi
13579 \edef\Fld@width{\the\@tempdima}%
13580 \fi
13581 \ifFld@combo
13582 \else
13583 \@tempdima=\the\Fld@menulength\Fld@charsize
13584 \advance\@tempdima by \Fld@borderwidth bp %
13585 \advance\@tempdima by \Fld@borderwidth bp %
13586 \edef\Fld@height{\the\@tempdima}%

```

```

13587     \fi
13588     \@@ListBox{#3}%
13589     \endgroup
13590     \fi
13591   }%
13592 \endgroup
13593 }

```

#### \@@Radio

```

13594 \def\@@Radio#1{%
13595   \Fld@listcount=0 %
13596   \EdefEscapeName\Fld@default{\Fld@default}%
13597   \setbox\pdfm@box=\hbox{%
13598     \MakeRadioField{\Fld@width}{\Fld@height}%
13599   }%
13600   \@for\@curropt:=#1\do{%
13601     \expandafter\Fld@checkequals\@curropt==\%
13602     \EdefEscapeName\@currValue{\@currValue}%
13603     \Hy@StepCount\Fld@listcount
13604     \@currDisplay\space
13605     \leavevmode
13606     \Hy@escapeform\PDFForm@Radio
13607     \ifnum\Fld@listcount=1 %
13608       \HyField@AdvanceAnnotCount
13609     \fi
13610     \@pdfm@mark{%
13611       ann %
13612       \ifnum\Fld@listcount=1 %
13613         @radio\HyField@TheAnnotCount%
13614       \space
13615     \fi
13616     \dvipdfm@setdim
13617     <<%
13618     \PDFForm@Radio
13619     /AP<</N<</\@currValue /null>>>>%
13620     >>%
13621   }%
13622   \unhcopy\pdfm@box\space% deliberate space between radio buttons
13623   \ifnum\Fld@listcount=1 %
13624     \HyField@AddToFields{radio}%
13625   \fi
13626 }%
13627 }

```

#### \Fld@listcount

```

13628 \newcount\Fld@listcount

```

#### \@@ListBox

```

13629 \def\@@ListBox#1{%
13630   \HyField@PDFChoices{#1}%
13631   \setbox\pdfm@box=\hbox{%
13632     \MakeChoiceField{\Fld@width}{\Fld@height}%
13633   }%
13634   \leavevmode

```



```

13635 \Hy@escapeform\PDFForm@List
13636 \HyField@AdvanceAnnotCount
13637 \@pdfm@mark{%
13638   ann @list\HyField@TheAnnotCount\space
13639   \dvipdfm@setdim
13640   <<\PDFForm@List>>%
13641 }%
13642 \unhbox\pdfm@box
13643 \HyField@AddToFields{list}%
13644 }

```

#### \@PushButton

```

13645 \def\@PushButton[#1]#2{% parameters, label
13646 \def\Fld@name{#2}%
13647 \begingroup
13648 \expandafter\HyField@SetKeys\expandafter{%
13649   \DefaultOptionsofPushButton,#1%
13650 }%
13651 \PDFForm@Name
13652 \ifHy@pdfa
13653   \Hy@Error{%
13654     PDF/A: Push button with JavaScript is prohibited%
13655   } \@ehc
13656   \LayoutPushButtonField{%
13657     \leavevmode
13658     \MakeButtonField{#2}%
13659   }%
13660 \else
13661   \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13662   \HyField@FlagsPushButton
13663   \ifFld@hidden\def\Fld@width{1sp}\fi
13664   \HyField@AdvanceAnnotCount
13665   \LayoutPushButtonField{%
13666     \leavevmode
13667     \Hy@escapeform\PDFForm@Push
13668     \@pdfm@mark{%
13669       ann @push\HyField@TheAnnotCount\space
13670       \dvipdfm@setdim
13671       <<\PDFForm@Push>>%
13672     }%
13673   }%
13674   \unhbox\pdfm@box
13675   \HyField@AddToFields{push}%
13676 \fi
13677 \endgroup
13678 }

```

#### \@Submit

```

13679 \def\@Submit[#1]#2{%
13680 \def\Fld@width{\DefaultWidthofSubmit}%
13681 \def\Fld@height{\DefaultHeightofSubmit}%
13682 \begingroup
13683 \expandafter\HyField@SetKeys\expandafter{%
13684   \DefaultOptionsofSubmit,#1%

```

```

13685 }%
13686 \HyField@FlagsPushButton
13687 \HyField@FlagsSubmit
13688 \ifFld@hidden\def\Fld@width{1sp}\fi
13689 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13690 \leavevmode
13691 \Hy@escapeform\PDFForm@Submit
13692 \HyField@AdvanceAnnotCount
13693 \@pdfm@mark{%
13694   ann @submit\HyField@TheAnnotCount\space
13695   \dviPDFForm@setdim
13696   <<\PDFForm@Submit>>%
13697 }%
13698 \unhbox\pdfm@box%
13699 \HyField@AddToFields{submit}%
13700 \endgroup
13701 }

```

#### \@Reset

```

13702 \def\@Reset[#1]#2{%
13703   \def\Fld@width{\DefaultWidthofReset}%
13704   \def\Fld@height{\DefaultHeightofReset}%
13705   \begingroup
13706     \expandafter\HyField@SetKeys\expandafter{%
13707       \DefaultOptionsofReset,#1%
13708     }%
13709     \leavevmode
13710     \ifHy@pdfa
13711       \Hy@Error{%
13712         PDF/A: Reset action is prohibited%
13713       }\@ehc
13714       \MakeButtonField{#2}%
13715     \else
13716       \HyField@FlagsPushButton
13717       \ifFld@hidden\def\Fld@width{1sp}\fi
13718       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13719       \Hy@escapeform\PDFForm@Reset
13720       \HyField@AdvanceAnnotCount
13721       \@pdfm@mark{%
13722         ann @reset\HyField@TheAnnotCount\space
13723         \dviPDFForm@setdim
13724         <<\PDFForm@Reset>>%
13725       }%
13726       \unhbox\pdfm@box
13727       \HyField@AddToFields{reset}%
13728     \fi
13729   \endgroup
13730 }

```

#### \@CheckBox

```

13731 \def\@CheckBox[#1]#2{% parameters, label
13732   \def\Fld@name{#2}%
13733   \def\Fld@default{0}%
13734   \begingroup

```

```

13735 \def\Fld@width{\DefaultWidthofCheckBox}%
13736 \def\Fld@height{\DefaultHeightofCheckBox}%
13737 \expandafter\HyField@SetKeys\expandafter{%
13738   \DefaultOptionsofCheckBox,#1%
13739 }%
13740 \PDFForm@Name
13741 \HyField@FlagsCheckBox
13742 \ifFld@hidden\def\Fld@width{1sp}\fi
13743 \setbox\pdfm@box=\hbox{%
13744   \MakeCheckField{\Fld@width}{\Fld@height}%
13745 }%
13746 \HyField@AdvanceAnnotCount
13747 \LayoutCheckField{#2}{%
13748   \leavevmode
13749   \Hy@escapeform\PDFForm@Check
13750   \@pdfm@mark{%
13751     ann @check\HyField@TheAnnotCount\space
13752     \dvi pdfm@setdim
13753     <<\PDFForm@Check>>%
13754   }%
13755   \unhbox\pdfm@box
13756   \HyField@AddToFields{check}%
13757 }%
13758 \endgroup
13759 }

13760 \def\Hy@FormObjects{%
13761   \@pdfm@mark{obj @OBJpdfdocencoding%
13762     <<%
13763       /Type/Encoding%
13764       /Differences[%
13765         24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
13766         39/quotesingle %
13767         96/grave %
13768         128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13769         /fraction/guilsingleft/guilsingright/minus/perthousand%
13770         /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
13771         /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
13772         /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13773         160/Euro %
13774         164/currency %
13775         166/brokenbar %
13776         168/dieresis/copyright/ordfeminine %
13777         172/logicalnot/.notdef/registered/macron/degree/plusminus%
13778         /twosuperior/threesuperior/acute/mu %
13779         183/periodcentered/cedilla/onesuperior/ordmasculine %
13780         188/onequarter/onehalf/threequarters %
13781         192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13782         /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
13783         /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
13784         /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
13785         /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
13786         /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
13787         /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%

```

```

13788      /eth/ntilde/ograve/oacute/ocircumflex/otilde/odieresis%
13789      /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
13790      /thorn/ydieresis%
13791      ]%
13792      >>%
13793      }%
13794      \@pdfm@mark{obj @OBJZaDb%
13795      <<%
13796      /Type/Font%
13797      /Subtype/Type1%
13798      /Name/ZaDb%
13799      /BaseFont/ZapfDingbats%
13800      >>%
13801      }%
13802      \@pdfm@mark{obj @OBJHelv%
13803      <<%
13804      /Type/Font%
13805      /Subtype/Type1%
13806      /Name/Helv%
13807      /BaseFont/Helvetica%
13808      /Encoding @OBJpdfdocencoding%
13809      >>%
13810      }%
13811      \global\let\Hy@FormObjects\relax
13812      }
13813      </dvi-pdfm | xetex>

```

## 45.6 Common forms part

```

13814 (*pdfform)

\Fld@pageobjref
13815 \providecommand*{\Fld@pageobjref}{}

\Hy@escapestring
13816 \@ifundefined{pdf@escapestring}
13817 {%
13818   \let\Hy@escapestring\@firstofone
13819   \def\Hy@escapeform#1{%
13820     \ifHy@pdfescapeform
13821       \def\Hy@escapestring##1{%
13822         \noexpand\Hy@escapestring{\noexpand##1}%
13823       }%
13824       \edef\Hy@temp{#1}%
13825       \expandafter\Hy@@escapeform\Hy@temp\Hy@escapestring{}\@nil
13826     \def\Hy@escapestring##1{%
13827       \@ifundefined{Hy@esc@\string##1}{%
13828         ##1%
13829         \ThisShouldNotHappen
13830       }{%
13831         \csname Hy@esc@\string##1\endcsname
13832       }%
13833     }%
13834   \else

```

```

13835   \let\Hy@escapestring\@firstofone
13836   \fi
13837 }%
13838 \def\Hy@@escapeform#1\Hy@escapestring#2#3\@nil{%
13839   \ifx\|#3\|
13840   \else
13841     \expandafter
13842     \Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
13843     \Hy@ReturnAfterFi{%
13844       \Hy@@escapeform#3\@nil
13845     }%
13846   \fi
13847 }%
13848 }{%
13849 \def\Hy@escapeform#1{%
13850   \ifHy@pdfescapeform
13851     \let\Hy@escapestring\pdfescapestring
13852   \else
13853     \let\Hy@escapestring\@firstofone
13854   \fi
13855 }%
13856 \Hy@escapeform{}%
13857 }

```

#### \PDFForm@Name

```

13858 \def\PDFForm@Name{%
13859   \PDFForm@@Name\Fld@name
13860   \ifx\Fld@altname\relax
13861   \else
13862     \PDFForm@@Name\Fld@altname
13863   \fi
13864   \ifx\Fld@mappingname\relax
13865   \else
13866     \PDFForm@@Name\Fld@mappingname
13867   \fi
13868 }

```

#### \PDFForm@@Name

```

13869 \def\PDFForm@@Name#1{%
13870   \begingroup
13871   \ifnum\Hy@pdf@major@minor@version<105 % implementation note 117, PDF spec 1.7
13872     \ifHy@unicode
13873       \Hy@unicodedefalse
13874     \fi
13875   \fi
13876   \pdfstringdef\Hy@gtemp#1%
13877   \endgroup
13878   \let#1\Hy@gtemp
13879 }

```

#### \Fld@additionalactions

```

13880 \def\Fld@@additionalactions{%
K input (keystroke) format

```

```

13881 \ifx\Fld@keystroke@code\@empty
13882 \else
13883 /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
13884 \fi

F display format
13885 \ifx\Fld@format@code\@empty
13886 \else
13887 /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
13888 \fi

V validation
13889 \ifx\Fld@validate@code\@empty
13890 \else
13891 /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
13892 \fi

C calculation
13893 \ifx\Fld@calculate@code\@empty
13894 \else
13895 /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
13896 \fi

Fo receiving the input focus
13897 \ifx\Fld@onfocus@code\@empty
13898 \else
13899 /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
13900 \fi

Bl loosing the input focus (blurred)
13901 \ifx\Fld@onblur@code\@empty
13902 \else
13903 /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
13904 \fi

D pressing the mouse button (down)
13905 \ifx\Fld@onmousedown@code\@empty
13906 \else
13907 /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
13908 \fi

U releasing the mouse button (up)
13909 \ifx\Fld@onmouseup@code\@empty
13910 \else
13911 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
13912 \fi

E cursor enters the annotation's active area.
13913 \ifx\Fld@onenter@code\@empty
13914 \else
13915 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
13916 \fi

X cursor exits the annotation's active area.
13917 \ifx\Fld@onexit@code\@empty
13918 \else
13919 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
13920 \fi

```

```

13921 }
13922 \def\Fld@additionalactions{%
13923 \if-\Fld@@additionalactions-%
13924 \else
13925 \ifHy@pdfa
13926 \else
13927 /AA<<\Fld@@additionalactions>>%
13928 \fi
13929 \fi
13930 }

```

#### \Fld@annotnames

```

13931 \def\Fld@annotnames{%
13932 /T(\Fld@name)%
13933 \ifx\Fld@altname\relax
13934 \else
13935 /TU(\Fld@altname)%
13936 \fi
13937 \ifx\Fld@mappingname\relax
13938 \else
13939 /TM(\Fld@mappingname)%
13940 \fi
13941 }

```

#### \PDFForm@Check

```

13942 \def\PDFForm@Check{%
13943 /Subtype/Widget%
13944 \Fld@annotflags
13945 \Fld@pageobjref
13946 \Fld@annotnames
13947 /FT/Btn%
13948 \Fld@flags
13949 /Q \Fld@align
13950 /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
13951 /AP<< /N <</Yes<<>>>> >> %new string /Yes is from below
13952 /MK<<%
13953 \ifnum\Fld@rotation=\z@
13954 \else
13955 /R \Fld@rotation
13956 \fi
13957 \ifx\Fld@bordercolor\relax
13958 \else
13959 /BC[\Fld@bordercolor]%
13960 \fi
13961 \ifx\Fld@bcolor\relax
13962 \else
13963 /BG[\Fld@bcolor]%
13964 \fi
13965 /CA(\Hy@escapestring{\Fld@cbsymbol})%
13966 >>%
13967 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13968 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13969 /H/P%
13970 \ifFld@checked /V/Yes/AS/Yes\else /V/Off/AS/Off\fi

```

```
13971 \Fld@additionalactions
13972 }
```

#### \PDFForm@Push

```
13973 \ifHy@pdfa
13974 \else
13975 \def\PDFForm@Push{%
13976 /Subtype/Widget%
13977 \Fld@annotflags
13978 \Fld@pageobjref
13979 \Fld@annotnames
13980 /FT/Btn%
13981 \Fld@flags
13982 /H/P%
13983 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13984 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13985 \ifx\Fld@bordercolor\relax\else 1\fi
13986 \space
13987 \else
13988 /MK<<%
13989 \ifnum\Fld@rotation=\z@
13990 \else
13991 /R \Fld@rotation
13992 \fi
13993 \ifx\Fld@bordercolor\relax
13994 \else
13995 /BC[\Fld@bordercolor]%
13996 \fi
13997 >>%
13998 \fi
13999 /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick@code})>>%
14000 \Fld@additionalactions
14001 }%
14002 \fi
```

#### \PDFForm@List

```
14003 \def\PDFForm@List{%
14004 /Subtype/Widget%
14005 \Fld@annotflags
14006 \Fld@pageobjref
14007 \Fld@annotnames
14008 /FT/Ch%
14009 \Fld@flags
14010 /Q \Fld@align
14011 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14012 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14013 \ifx\Fld@bordercolor\relax\else 1\fi
14014 \ifx\Fld@bcolor\relax \else 1\fi
14015 \space
14016 \else
14017 /MK<<%
14018 \ifnum\Fld@rotation=\z@
14019 \else
14020 /R \Fld@rotation
```



```

14021 \fi
14022 \ifx\Fld@bordercolor\relax
14023 \else
14024 /BC[\Fld@bordercolor]%
14025 \fi
14026 \ifx\Fld@bcolor\relax
14027 \else
14028 /BG[\Fld@bcolor]%
14029 \fi
14030 >>%
14031 \fi
14032 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
14033 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14034 \Fld@choices
14035 \Fld@additionalactions
14036 }

```

#### \PDFForm@Radio

```

14037 \def\PDFForm@Radio{%
14038 /Subtype/Widget%
14039 \Fld@annotflags
14040 \Fld@pageobjref
14041 \Fld@annotnames
14042 /FT/Btn%
14043 \Fld@flags
14044 /H/P%
14045 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14046 /MK<<%
14047 \ifnum\Fld@rotation=\z@
14048 \else
14049 /R \Fld@rotation
14050 \fi
14051 \ifx\Fld@bordercolor\relax
14052 \else
14053 /BC[\Fld@bordercolor]%
14054 \fi
14055 \ifx\Fld@bcolor\relax
14056 \else
14057 /BG[\Fld@bcolor]%
14058 \fi
14059 /CA(\Hy@escapestring{\Fld@radiosymbol})%
14060 >>%
14061 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
14062 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%

```

New code, the default value is used for all buttons

```

14063 \ifx\Fld@default\@empty
14064 /V/Off%
14065 /DV/Off%
14066 \else
14067 /V/\Fld@default
14068 /DV/\Fld@default
14069 \fi
14070 \Fld@additionalactions
14071 }

```

\PDFForm@Text

```
14072 \def\PDFForm@Text{%
14073 /Subtype/Widget%
14074 \Fld@annotflags
14075 \Fld@pageobjref
14076 \Fld@annotnames
14077 /FT/Tx%
14078 \Fld@flags
14079 /Q \Fld@align
14080 /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
14081 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14082     \ifx\Fld@bordercolor\relax\else 1\fi
14083     \ifx\Fld@bcolor\relax \else 1\fi
14084     \space
14085 \else
14086 /MK<<%
14087     \ifnum\Fld@rotation=\z@
14088     \else
14089     /R \Fld@rotation
14090     \fi
14091     \ifx\Fld@bordercolor\relax
14092     \else
14093     /BC[\Fld@bordercolor]%
14094     \fi
14095     \ifx\Fld@bcolor\relax
14096     \else
14097     /BG[\Fld@bcolor]%
14098     \fi
14099 >>%
14100 \fi
14101 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
14102     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14103 /DV(\Hy@escapestring{\Fld@default})%
14104 /V(\Hy@escapestring{\Fld@value})%
14105 \Fld@additionalactions
14106 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
14107 }
```

\PDFForm@Submit

```
14108 \def\PDFForm@Submit{%
14109 /Subtype/Widget%
14110 \Fld@annotflags
14111 \Fld@pageobjref
14112 \Fld@annotnames
14113 /FT/Btn%
14114 \Fld@flags
14115 /H/P%
14116 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14117 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14118     \ifx\Fld@bordercolor\relax\else 1\fi
14119     \space
14120 \else
14121 /MK<<%
14122     \ifnum\Fld@rotation=\z@
```

```

14123 \else
14124 /R \Fld@rotation
14125 \fi
14126 \ifx\Fld@bordercolor\relax
14127 \else
14128 /BC[\Fld@bordercolor]%
14129 \fi
14130 >>%
14131 \fi
14132 /A<<%
14133 /S/SubmitForm%
14134 /F<<%
14135 /FS/URL%
14136 /F(\Hy@escapestring{\Form@action})%
14137 >>%
14138 \Fld@submitflags
14139 >>%
14140 \Fld@additionalactions
14141 }

```

#### \PDFForm@Reset

```

14142 \ifHy@pdfa
14143 \else
14144 \def\PDFForm@Reset{%
14145 /Subtype/Widget%
14146 \Fld@annotflags
14147 \Fld@pageobjref
14148 \Fld@annotnames
14149 /FT/Btn%
14150 \Fld@flags
14151 /H/P%
14152 /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
14153 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14154 \ifx\Fld@bordercolor\relax\else 1\fi
14155 \space
14156 \else
14157 /MK<<%
14158 \ifnum\Fld@rotation=\z@
14159 \else
14160 /R \Fld@rotation
14161 \fi
14162 \ifx\Fld@bordercolor\relax
14163 \else
14164 /BC[\Fld@bordercolor]%
14165 \fi
14166 % /CA (Clear)
14167 % /AC (Done)
14168 >>%
14169 \fi
14170 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14171 /A<</S/ResetForm>>%
14172 \Fld@additionalactions
14173 }%
14174 \fi

```

```
14175 </pdfform>
14176 <*packageEnd>
```

## 46 Bookmarks in the PDF file

This was originally developed by Yannis Haralambous (it was the separate `repere.sty`); it needed the `repere` or `makebook.pl` post-processor to work properly. Now redundant, as it is done entirely in  $\LaTeX$  macros.

To write out the current section title, and its rationalized number, we have to intercept the `\@sect` command, which is rather dangerous. But how else to see the information we need? We do the *same* for `\@ssect`, giving anchors to unnumbered sections. This allows things like bibliographies to get bookmarks when used with a manual `\addcontentsline`

```
14177 \def\phantomsection{%
14178   \Hy@MakeCurrentHrefAuto{section*}%
14179   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
14180 }
14181 </packageEnd>
```

### 46.1 Bookmarks

```
14182 <*outlines>
```

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

The first part of bookmark code is in section 6. Further documentation is available as paper and slides of the talk, that Heiko Oberdiek has given at the EuroTeX'99 meeting in Heidelberg. See `paper.pdf` and `slides.pdf` in the `doc` directory of `hyperref`.

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

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

```
14183 \def\Hy@writebookmark#1#2#3#4#5{%
14184   % section number, text, label, level, file
14185   \ifx\WriteBookmarks\relax%
14186     \else
14187     \ifnum#4>\Hy@bookmarksdepth\relax
14188     \else
14189     \@writetorep{#1}{#2}{#3}{#4}{#5}%
14190     \fi
14191   \fi
14192 }
14193 \def\Hy@currentbookmarklevel{0}
14194 \def\Hy@numberline#1{#1 }
```

```

14195 \def\@@writetorep#1#2#3#4#5{%
14196   \begingroup
14197     \edef\Hy@tempa{#5}%
14198     \ifx\Hy@tempa\Hy@bookmarkstype
14199       \edef\Hy@level{#4}%
14200       \ifx\Hy@levelcheck Y%
14201         \@tempcnta\Hy@level\relax
14202         \advance\@tempcnta by -1 %
14203         \ifnum\Hy@currentbookmarklevel<\@tempcnta
14204           \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
14205           \advance\@tempcnta by 1 %
14206           \Hy@Warning{%
14207             Difference (\the\@tempcnta) between bookmark levels is %
14208             greater \MessageBreak than one, level fixed%
14209           }%
14210           \@tempcnta\Hy@currentbookmarklevel
14211           \advance\@tempcnta by 1 %
14212           \edef\Hy@level{\the\@tempcnta}%
14213         \fi
14214       \else
14215         \global\let\Hy@levelcheck Y%
14216       \fi
14217       \global\let\Hy@currentbookmarklevel\Hy@level
14218       \@tempcnta\Hy@level\relax
14219       \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
14220       \advance\@tempcnta by -1 %
14221       \edef\Hy@tempa{#3}%
14222       \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
14223       \ifx\Hy@tempa\Hy@tempb
14224         \Hy@Warning{%
14225           The anchor of a bookmark and its parent's must not%
14226           \MessageBreak be the same. Added a new anchor%
14227         }%
14228       \phantomsection
14229     \fi
14230     \ifHy@bookmarksnumbered
14231       \let\numberline\Hy@numberline
14232       \let\booknumberline\Hy@numberline
14233       \let\partnumberline\Hy@numberline
14234       \let\chapternumberline\Hy@numberline
14235     \else
14236       \let\numberline\@gobble
14237       \let\booknumberline\@gobble
14238       \let\partnumberline\@gobble
14239       \let\chapternumberline\@gobble
14240     \fi
14241     \pdfstringdef\Hy@tempa{#2}%
14242     \HyPsd@SanitizeForOutFile\Hy@tempa
14243     \if@filesw
14244       \stepcounter{bookmark@seq@number}%
14245       \@ifundefined{@outlinefile}{%
14246         }{%
14247           \protected@write\@outlinefile}{%
14248             \protect\BOOKMARK

```

```

14249      [\Hy@level][\@bookmarkopenstatus{\Hy@level}]{#3}%
14250      {\Hy@tempa}{\Hy@tempb}%
14251      \@percentchar\space\thebookmark@seq@number
14252      }%
14253      }%
14254      \fi
14255      \fi
14256      \endgroup
14257      }
14258      \newcounter{bookmark@seq@number}

14259      \begingroup
14260      \lccode`(`=`{%
14261      \lccode`)`=`}%
14262      \lccode`1`=\z@
14263      \lccode`2`=\z@
14264      \lccode`3`=\z@
14265      \lccode`5`=\z@
14266      \lccode`7`=\z@
14267      \lccode`\#`=\z@
14268      \lccode`\` `=\z@
14269      \lccode`\{`=\z@
14270      \lccode`\}`=\z@
14271      \lowercase{%
14272      \endgroup
14273      \def\HyPsd@SanitizeForOutFile#1{%
14274      \@onelevel@sanitize\Hy@tempa
14275      \escapechar`\\%
14276      \edef\Hy@tempa{%
14277      \expandafter\HyPsd@SanitizeOut@BraceLeft\Hy@tempa(\@nil
14278      }%
14279      \edef\Hy@tempa{%
14280      \expandafter\HyPsd@SanitizeOut@BraceRight\Hy@tempa)\@nil
14281      }%
14282      }%
14283      \def\HyPsd@SanitizeOut@BraceLeft#1(#2\@nil{%
14284      #1%
14285      \ifx\#2\%
14286      \expandafter\@gobble
14287      \else
14288      \expandafter\@firstofone
14289      \fi
14290      {%
14291      \string\173%
14292      \HyPsd@SanitizeOut@BraceLeft#2\@nil
14293      }%
14294      }%
14295      \def\HyPsd@SanitizeOut@BraceRight#1)#2\@nil{%
14296      #1%
14297      \ifx\#2\%
14298      \expandafter\@gobble
14299      \else
14300      \expandafter\@firstofone
14301      \fi
14302      {%

```

```

14303   \string\175%
14304   \HyPsd@SanitizeOut@BraceRight#2\@nil
14305   }%
14306 }%
14307 }

```

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

```

14308 \newcommand{\currentpdfbookmark}{%
14309   \pdfbookmark[\Hy@currentbookmarklevel]%
14310 }
14311 \newcommand{\subpdfbookmark}{%
14312   \@tempcnta\Hy@currentbookmarklevel
14313   \Hy@StepCount\@tempcnta
14314   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
14315 }
14316 \newcommand{\belowpdfbookmark}[2]{%
14317   \@tempcnta\Hy@currentbookmarklevel
14318   \Hy@StepCount\@tempcnta
14319   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
14320   \advance\@tempcnta by -1 %
14321   \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
14322 }

```

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.

```

14323 \renewcommand\pdfbookmark[3][0]{%
14324   \Hy@writebookmark}{#2}{#3.#1}{#1}{toc}%
14325   \hyper@anchorstart{#3.#1}\hyper@anchorend
14326 }
14327 \def\BOOKMARK{%
14328   \@ifnextchar{\@BOOKMARK}{\@BOOKMARK[1][-]}%
14329 }
14330 \def\@BOOKMARK[#1]{%
14331   \@ifnextchar{\@BOOKMARK[{#1}]}{\@BOOKMARK[{#1}][-]}%
14332 }

```

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`

```

14333 \RequirePackage{rerunfilecheck}[2009/12/10]
14334 \def\Hy@OutlineRerunCheck{%
14335   \RerunFileCheck{\jobname.out}{%
14336     \immediate\closeout\@outlinefile
14337   }{%
14338     Rerun to get outlines right\MessageBreak
14339     or use package `bookmark'%
14340   }%
14341 }

```

### 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.

```
14342 <*vtex>
```

```
14343 \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.

```
14344 \begingroup
14345 \catcode\`=12 %
14346 \ifnum\Hy@VTeXversion<650 %
14347 \catcode\`=12 %
14348 \gdef\hv@pdf@char#1#2#3{%
14349 \char
14350 \ifcase'#1#2#3 %
14351 "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
14352 \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
14353 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
14354 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
14355 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
14356 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
14357 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
14358 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
14359 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
14360 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
14361 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
14362 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
14363 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
14364 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
14365 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
14366 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
14367 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
14368 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
14369 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
14370 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
14371 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
14372 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
14373 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
14374 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
14375 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
14376 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
14377 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
14378 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
14379 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
14380 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
14381 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
14382 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
14383 \fi
14384 }%
```



```

14385 \else
14386 \gdef\hv@pdf@char{\char'}%
14387 \fi
14388 \endgroup

```

#### \@@BOOKMARK

```

14389 \def\@@BOOKMARK[#1][#2]#3#4#5{%
14390 \expandafter\edef\csname @count@#3\endcsname{%
14391 \the\@serial@counter
14392 }%
14393 \edef\@mycount{\the\@serial@counter}%
14394 \Hy@StepCount\@serial@counter
14395 \edef\@parcount{%
14396 \expandafter\ifx\csname @count@#5\endcsname\relax
14397 0%
14398 \else
14399 \csname @count@#5\endcsname
14400 \fi
14401 }%
14402 \immediate\special{%
14403 !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
14404 s=\ifx#2-c\else o\fi,t=#4%
14405 }%
14406 }%

```

#### \ReadBookmarks

```

14407 \def\ReadBookmarks{%
14408 \begingroup
14409 \def\0{\hv@pdf@char 0}%
14410 \def\1{\hv@pdf@char 1}%
14411 \def\2{\hv@pdf@char 2}%
14412 \def\3{\hv@pdf@char 3}%
14413 \def\({}%
14414 \def\)}%
14415 \def\do##1{%
14416 \ifnum\catcode`##1=\active
14417 \@makeother##1%
14418 \else
14419 \ifnum\catcode`##1=6 %
14420 \@makeother##1%
14421 \fi
14422 \fi
14423 }%
14424 \dospecials
14425 \Hy@safe@activestrue
14426 \InputIfFileExists{\jobname.out}{-}{-}%
14427 \endgroup
14428 \ifx\WriteBookmarks\relax
14429 \else
14430 \if@filesw
14431 \newwrite\@outlinefile
14432 \Hy@OutlineRerunCheck
14433 \immediate\openout\@outlinefile=\jobname.out\relax
14434 \fi

```

```

14435 \fi
14436 }

14437 </vtex>
14438 (*!vtex)
14439 \def\ReadBookmarks{%
14440 \pdf@ifdraftmode{}{%
14441 \begingroup
14442 \def\do###1{%
14443 \ifnum\catcode`###1=\active
14444 \@makeother###1%
14445 \else
14446 \ifnum\catcode`###1=6 %
14447 \@makeother###1%
14448 \fi
14449 }%
14450 }%
14451 \dospecials
14452 \Hy@safe@activetrue
14453 \escapechar=`\%
14454 \def@@@BOOKMARK[##1][##2]##3##4##5{%
14455 \calc@bm@number{##5}%
14456 }%
14457 \InputIfFileExists{jobname.out}{-}{-}%
14458 \if\WriteBookmarks\relax
14459 \global\let\WriteBookmarks\relax
14460 \fi
14461 \def@@@BOOKMARK[##1][##2]##3##4##5{%
14462 \def\Hy@temp{##4}%
14463 (*pdfTeX)
14464 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14465 \Hy@OutlineName{}\Hy@pstringName{%
14466 ##2\check@bm@number{##3}}%
14467 }{%
14468 \expandafter\strip@prefix\meaning\Hy@temp
14469 }%
14470 </pdfTeX>
14471 (*pdfmark)
14472 \pdfmark{%
14473 pdfmark=/OUT,%
14474 Count={##2\check@bm@number{##3}},%
14475 Dest={##3},%
14476 Title=\expandafter\strip@prefix\meaning\Hy@temp
14477 }%
14478 </pdfmark>
14479 (*dvipdfm|xetex)
14480 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14481 \@pdfm@mark{%
14482 outline \ifHy@DvipdfmxOutlineOpen
14483 [%
14484 \ifnum##21>\z@
14485 \else
14486 -%
14487 \fi

```

```

14488         l %
14489         \fi
14490         ##1<<%
14491         /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
14492         /A<<%
14493         /S/GoTo%
14494         /D(\Hy@pstringName)%
14495         >>%
14496         >>%
14497     }%
14498 </dviptfm | xetex>
14499 }%
14500 \begingroup
14501 \def\WriteBookmarks{0}%
14502 \InputIfFileExists{\jobname.out}{-}{-}%
14503 \endgroup
14504 %{\escapechar\m@ne\InputIfFileExists{\jobname.out}{-}{-}}%
14505 \endgroup
14506 }%
14507 \ifx\WriteBookmarks\relax
14508 \else
14509 \if@filesw
14510 \newwrite\@outlinefile
14511 \Hy@OutlineRerunCheck
14512 \immediate\openout\@outlinefile=\jobname.out\relax
14513 \fi
14514 \fi
14515 }
14516 (*pdfptex)
14517 \def\Hy@OutlineName#1#2#3#4{%
14518 \pdfoutline goto name{#2}count#3{#4}%
14519 }
14520 </pdfptex>
14521 \def\check@bm@number#1{%
14522 \expandafter\ifx\csname B_#1\endcsname\relax
14523 0%
14524 \else
14525 \csname B_#1\endcsname
14526 \fi
14527 }
14528 \def\calc@bm@number#1{%
14529 \@tempcnta=\check@bm@number{#1}\relax
14530 \advance\@tempcnta by 1 %
14531 \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
14532 }
14533 </!vtex>
14534 \ifHy@implicit
14535 \else
14536 \expandafter\endinput
14537 \fi
14538 </outlines>
14539 (*outlines | hypertex)
14540 \newlength\Hy@SectionHShift

```

```

14541 \def\Hy@SectionAnchorHref#1{%
14542   \ifx\protect\@typeset@protect
14543     \Hy@@SectionAnchor{#1}%
14544   \fi
14545 }
14546 \DeclareRobustCommand*\Hy@@SectionAnchor}[1]{%
14547   \leavevmode
14548   \hbox to Opt{%
14549     \kern-\Hy@SectionHShift
14550     \Hy@raisedlink{%
14551       \hyper@anchorstart{#1}\hyper@anchorend
14552     }%
14553     \hss
14554   }%
14555 }
14556 \AddToNoCaseChangeList{\Hy@@SectionAnchor}
14557 \@ifundefined{hyper@nopatch@sectioning}
14558 {
14559   \let\H@old@ssect\@ssect
14560   \def\@ssect#1#2#3#4#5{%
14561     \Hy@MakeCurrentHrefAuto{section*}%
14562     \setlength{\Hy@SectionHShift}{#1}%
14563     \begingroup
14564     \toks@{\H@old@ssect{#1}{#2}{#3}{#4}}%
14565     \toks\tw@\expandafter{%
14566       \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14567       #5%
14568     }%
14569     \edef\x{\endgroup
14570       \the\toks@\the\toks\tw@}%
14571   }\x
14572 }
14573 \let\H@old@schapter\@schapter
14574 \def\@schapter#1{%
14575   \begingroup
14576   \let\@mkboth\@gobbletwo
14577   \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14578   \Hy@raisedlink{%
14579     \hyper@anchorstart{\@currentHref}\hyper@anchorend
14580   }%
14581   \endgroup
14582   \H@old@schapter{#1}%
14583 }

```

If there is no chapter number (`\frontmatter` or `\backmatter`) then the counting by `\refstepcounter{chapter}` is not executed, so there will be no destination for `\ddcontentsline`. So `\@chapter` is overloaded to avoid this:

```

14584 \@ifundefined{chapter}{-}{%
14585   \let\Hy@org@chapter\@chapter
14586   \def\@chapter{%
14587     \def\Hy@next{%
14588       \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14589       \Hy@raisedlink{%
14590         \hyper@anchorstart{\@currentHref}\hyper@anchorend

```

```

14591 }%
14592 }%
14593 \ifnum\c@secnumdepth>\m@ne
14594 \@ifundefined{if@mainmatter}%
14595 \iftrue{\csname if@mainmatter\endcsname}%
14596 \let\Hy@next\relax
14597 \fi
14598 \fi
14599 \Hy@next
14600 \Hy@org@chapter
14601 }%
14602 }

14603 \let\H@old@part\@part
14604 \@ifundefined{chapter}
14605 {\let\Hy@secnum@part\z@}
14606 {\let\Hy@secnum@part\m@ne}
14607 \def\@part{%
14608 \ifnum\Hy@secnum@part>\c@secnumdepth
14609 \phantomsection
14610 \fi
14611 \H@old@part
14612 }

14613 \let\H@old@spart\@spart
14614 \def\@spart#1{%
14615 \Hy@MakeCurrentHrefAuto{part*}%
14616 \Hy@raisedlink{%
14617 \hyper@anchorstart{\@currentHref}\hyper@anchorend
14618 }%
14619 \H@old@spart{#1}%
14620 }

14621 \let\H@old@sect\@sect
14622 \def\@sect#1#2#3#4#5#6[#7]#8{%
14623 \ifnum #2>\c@secnumdepth
14624 \expandafter\@firstoftwo
14625 \else
14626 \expandafter\@secondoftwo
14627 \fi
14628 {%
14629 \Hy@MakeCurrentHrefAuto{section*}%
14630 \setlength{\Hy@SectionHShift}{#3}%
14631 \begingroup
14632 \toks@{\H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}}%
14633 \toks\tw@\expandafter{%
14634 \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14635 #8%
14636 }%
14637 \edef\x{\endgroup
14638 \the\toks@\the\toks\tw@}%
14639 }\x
14640 }{%
14641 \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}{#8}%
14642 }%
14643 }

```

```

14644 }{}
14645 </outlines | hypertext>
14646 < *outlines>

14647 \expandafter\def\csname Parent-4\endcsname{}
14648 \expandafter\def\csname Parent-3\endcsname{}
14649 \expandafter\def\csname Parent-2\endcsname{}
14650 \expandafter\def\csname Parent-1\endcsname{}
14651 \expandafter\def\csname Parent0\endcsname{}
14652 \expandafter\def\csname Parent1\endcsname{}
14653 \expandafter\def\csname Parent2\endcsname{}
14654 \expandafter\def\csname Parent3\endcsname{}
14655 \expandafter\def\csname Parent4\endcsname{}

14656 </outlines>

```

## 47 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek.

### 47.1 PD1 encoding

```

14657 < *pd1enc>
14658 \DeclareFontEncoding{PD1}{}{}

Accents
14659 \DeclareTextAccent{\`}{PD1}{\textasciigrave}
14660 \DeclareTextAccent{\'}{PD1}{\textacute}
14661 \DeclareTextAccent{\^}{PD1}{\textasciicircum}
14662 \DeclareTextAccent{\~}{PD1}{\texttilde}
14663 \DeclareTextAccent{\"}{PD1}{\textasciidieresis}
14664 \DeclareTextAccent{\r}{PD1}{\textring}
14665 \DeclareTextAccent{\v}{PD1}{\textasciicaron}
14666 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
14667 \DeclareTextAccent{\c}{PD1}{\textcedilla}
14668 \DeclareTextAccent{=} {PD1}{\textasciimacron}
14669 \DeclareTextAccent{\b}{PD1}{\textmacronbelow}
14670 \DeclareTextAccent{\d}{PD1}{\textdotbelow}
14671 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textasciigrave}
14672 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
14673 \DeclareTextCompositeCommand{\^}{PD1}{\@empty}{\textasciicircum}
14674 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
14675 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textasciidieresis}
14676 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
14677 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textasciicaron}
14678 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
14679 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
14680 \DeclareTextCompositeCommand{=} {PD1}{\@empty}{\textasciimacron}
14681 \DeclareTextCompositeCommand{\b}{PD1}{\@empty}{\textmacronbelow}
14682 \DeclareTextCompositeCommand{\d}{PD1}{\@empty}{\textdotbelow}
14683 \DeclareTextCompositeCommand{\`}{PD1}{\ }{\textasciigrave}
14684 \DeclareTextCompositeCommand{\'}{PD1}{\ }{\textacute}
14685 \DeclareTextCompositeCommand{\^}{PD1}{\ }{\textasciicircum}

```

```

14686 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\texttilde}
14687 \DeclareTextCompositeCommand{\"}{PD1}{\ }{\textasciidieresis}
14688 \DeclareTextCompositeCommand{\r}{PD1}{\ }{\textring}
14689 \DeclareTextCompositeCommand{\v}{PD1}{\ }{\textasciicaron}
14690 \DeclareTextCompositeCommand{\.}{PD1}{\ }{\textdotaccent}
14691 \DeclareTextCompositeCommand{\c}{PD1}{\ }{\textcedilla}
14692 \DeclareTextCompositeCommand{\=}{PD1}{\ }{\textasciimacron}
14693 \DeclareTextCompositeCommand{\b}{PD1}{\ }{\textmacronbelow}
14694 \DeclareTextCompositeCommand{\d}{PD1}{\ }{\textdotbelow}
14695 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}
14696 \DeclareTextCommand{\t}{PD1}[1]{\TextSymbolUnavailable{\t{#1}}#1}
14697 \DeclareTextCommand{\newtie}{PD1}[1]{%
14698 \TextSymbolUnavailable{\newtie{#1}}#1%
14699 }

```

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

```

14700 % U+0009 (CHARACTER TABULATION)
14701 \DeclareTextCommand{\textHT}{PD1}{\011}% U+0009
14702 % U+000A (LINE FEED)
14703 \DeclareTextCommand{\textLF}{PD1}{\012}% U+000A
14704 % U+000D (CARRIAGE RETURN)
14705 \DeclareTextCommand{\textCR}{PD1}{\015}% U+000D

```

Accent glyph names

```

14706 % U+02D8 BREVE; breve
14707 \DeclareTextCommand{\textasciibreve}{PD1}{\030}% U+02D8
14708 % U+02C7 CARON; caron
14709 \DeclareTextCommand{\textasciicaron}{PD1}{\031}% U+02C7
14710 % U+02C6 MODIFIER LETTER CIRCUMFLEX ACCENT; circumflex
14711 \DeclareTextCommand{\textcircumflex}{PD1}{\032}% U+02C6
14712 % U+02D9 DOT ABOVE; dotaccent
14713 \DeclareTextCommand{\textdotaccent}{PD1}{\033}% U+02D9
14714 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut
14715 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034}% U+02DD
14716 % U+02DB OGONEK; ogonek
14717 \DeclareTextCommand{\textogonek}{PD1}{\035}% U+02DB
14718 % U+02DA RING ABOVE; ring
14719 \DeclareTextCommand{\textring}{PD1}{\036}% U+02DA
14720 % U+02DC SMALL TILDE; ilde, *tilde
14721 \DeclareTextCommand{\texttilde}{PD1}{\037}% U+02DC
\040: U+0020 SPACE; *space, spacehackarabic
\041: U+0021 EXCLAMATION MARK; exclam
14722 % U+0022 QUOTATION MARK; quotedbl
14723 \DeclareTextCommand{\textquotedbl}{PD1}{"}% \042 U+0022
14724 % U+0023 NUMBER SIGN; numbersign
14725 \DeclareTextCommand{\textnumbersign}{PD1}{\043}% U+0023
14726 % U+0024 DOLLAR SIGN; dollar
14727 \DeclareTextCommand{\textdollar}{PD1}{\044}% U+0024
14728 % U+0025 PERCENT SIGN; percent
14729 \DeclareTextCommand{\textpercent}{PD1}{\045}% U+0025
14730 % U+0026 AMPERSAND; ampersand
14731 \DeclareTextCommand{\textampersand}{PD1}{\046}% U+0026
\047: U+0027 APOSTROPHE; quotesingle

```

14732 % U+0028 LEFT PARENTHESIS; parenleft  
14733 \DeclareTextCommand{\textparenleft}{PD1}{\string\{}% \050 U+0028  
14734 % U+0029 RIGHT PARENTHESIS; parenright  
14735 \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  
14736 % U+002E FULL STOP; period  
14737 \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  
14738 % U+003C LESS-THAN SIGN; less  
14739 \DeclareTextCommand{\textless}{PD1}{<}% \074 U+003C  
\075: U+003D EQUALS SIGN; equal  
14740 % U+003E GREATER-THAN SIGN; greater  
14741 \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  
14742 % U+005C REVERSE SOLIDUS; backslash  
14743 \DeclareTextCommand{\textbackslash}{PD1}{\134}% U+005C  
14744 % "U+2216 SET MINUS" simulated by "U+005C REVERSE SOLIDUS"  
14745 \DeclareTextCommand{\textsetminus}{PD1}{\textbackslash}  
\135: U+005D RIGHT SQUARE BRACKET; bracketright  
14746 % U+005E CIRCUMFLEX ACCENT; asciicircum  
14747 \DeclareTextCommand{\textasciicircum}{PD1}{\136}% U+005E  
14748 % U+005F LOW LINE; underscore  
14749 \DeclareTextCommand{\textunderscore}{PD1}{\137}% U+005F  
14750 \DeclareTextCommand{\textmacronbelow}{PD1}{\137}% U+005F  
14751 % U+0060 GRAVE ACCENT; grave  
14752 \DeclareTextCommand{\textasciigrave}{PD1}{\140}% U+0060  
\141: U+0061 LATIN SMALL LETTER A; a  
...  
\150: U+0068 LATIN SMALL LETTER H; h  
14753 % U+0069 LATIN SMALL LETTER I; i  
14754 \DeclareTextCompositeCommand{\.}{PD1}{i}{i}% \151 U+0069  
\152: U+006A LATIN SMALL LETTER J; j  
...  
\172: U+007A LATIN SMALL LETTER Z; z  
14755 % U+007B LEFT CURLY BRACKET; braceleft  
14756 \DeclareTextCommand{\textbraceleft}{PD1}{\173}% U+007B



14757 % U+007C VERTICAL LINE; \*bar, verticalbar  
14758 \DeclareTextCommand{\textbar}{PD1}{|}% U+007C  
14759 % U+007D RIGHT CURLY BRACKET; braceright  
14760 \DeclareTextCommand{\textbraceright}{PD1}{\175}% U+007D  
14761 % U+007E TILDE; asciitilde  
14762 \DeclareTextCommand{\textasciitilde}{PD1}{\176}% U+007E  
Slot \177 (0x7F) is undefined in PDFDocEncoding.  
14763 % U+2022 BULLET; bullet  
14764 \DeclareTextCommand{\textbullet}{PD1}{\200}% U+2022  
14765 % U+2020 DAGGER; dagger  
14766 \DeclareTextCommand{\textdagger}{PD1}{\201}% U+2020  
14767 % U+2021 DOUBLE DAGGER; daggerdbl; \ddagger (LaTeX)  
14768 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202}% U+2021  
14769 \DeclareTextCommand{\textddagger}{PD1}{\textdaggerdbl}  
14770 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
14771 \DeclareTextCommand{\textellipsis}{PD1}{\203}% U+2026  
14772 % U+2014 EM DASH; emdash  
14773 \DeclareTextCommand{\textemdash}{PD1}{\204}% U+2014  
14774 % U+2013 EN DASH; endash  
14775 \DeclareTextCommand{\textendash}{PD1}{\205}% U+2013  
14776 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
14777 \DeclareTextCommand{\textflorin}{PD1}{\206}% U+0192  
14778 % U+2044 FRACTION SLASH; fraction  
14779 \DeclareTextCommand{\textfractionsolidus}{PD1}{\207}% U+2044  
14780 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
inglleft  
14781 \DeclareTextCommand{\guilsinglleft}{PD1}{\210}% U+2039  
14782 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
inglright  
14783 \DeclareTextCommand{\guilsinglright}{PD1}{\211}% U+203A  
14784 % U+2212 MINUS SIGN; minus  
14785 \DeclareTextCommand{\textminus}{PD1}{\212}% U+2212  
14786 % U+2030 PER MILLE SIGN; perthousand  
14787 \DeclareTextCommand{\textperthousand}{PD1}{\213}% U+2030  
14788 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
14789 \DeclareTextCommand{\quotedblbase}{PD1}{\214}% U+201E  
14790 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
14791 \DeclareTextCommand{\textquotedblleft}{PD1}{\215}% U+201C  
14792 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
14793 \DeclareTextCommand{\textquotedblright}{PD1}{\216}% U+201D  
14794 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
14795 \DeclareTextCommand{\textquoteleft}{PD1}{\217}% U+2018  
14796 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
14797 \DeclareTextCommand{\textquoteright}{PD1}{\220}% U+2019  
14798 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
14799 \DeclareTextCommand{\quotesinglbase}{PD1}{\221}% U+201A  
14800 % U+2122 TRADE MARK SIGN; trademark  
14801 \DeclareTextCommand{\texttrademark}{PD1}{\222}% U+2122  
14802 % U+FB01 LATIN SMALL LIGATURE FI; fi  
14803 \DeclareTextCommand{\textfi}{PD1}{\223}% U+FB01  
14804 % U+FB02 LATIN SMALL LIGATURE FL; fl  
14805 \DeclareTextCommand{\textfl}{PD1}{\224}% U+FB02  
14806 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
14807 \DeclareTextCommand{\L}{PD1}{\225}% U+0141

14808 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
14809 \DeclareTextCommand{\OE}{PD1}{\226}% U+0152  
14810 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
14811 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227}% U+0160  
14812 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
14813 \DeclareTextCompositeCommand{"}{PD1}{Y}{\230}% U+0178  
14814 \DeclareTextCommand{\IJ}{PD1}{IJ}% ligature U+0049 U+004A  
14815 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
14816 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231}% U+017D  
14817 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
14818 \DeclareTextCommand{\i}{PD1}{\232}% U+0131  
14819 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
14820 \DeclareTextCommand{\l}{PD1}{\233}% U+0142  
14821 % U+0153 LATIN SMALL LIGATURE OE; oe  
14822 \DeclareTextCommand{\oe}{PD1}{\234}% U+0153  
14823 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
14824 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235}% U+0161  
14825 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
14826 \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.  
14827 % U+20AC EURO SIGN; \*Euro, euro  
14828 \DeclareTextCommand{\texteuro}{PD1}{\240}% U+20AC  
14829 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
14830 \DeclareTextCommand{\textexclamdown}{PD1}{\241}% U+00A1  
14831 % U+00A2 CENT SIGN; cent  
14832 \DeclareTextCommand{\textcent}{PD1}{\242}% U+00A2  
14833 % U+00A3 POUND SIGN; sterling  
14834 \DeclareTextCommand{\textsterling}{PD1}{\243}% U+00A3  
14835 % U+00A4 CURRENCY SIGN; currency  
14836 \DeclareTextCommand{\textcurrency}{PD1}{\244}% U+00A4  
14837 % U+00A5 YEN SIGN; yen  
14838 \DeclareTextCommand{\textyen}{PD1}{\245}% U+00A5  
14839 % U+00A6 BROKEN BAR; brokenbar  
14840 \DeclareTextCommand{\textbrokenbar}{PD1}{\246}% U+00A6  
14841 % U+00A7 SECTION SIGN; section  
14842 \DeclareTextCommand{\textsection}{PD1}{\247}% U+00A7  
14843 % U+00A8 DIAERESIS; dieresis  
14844 \DeclareTextCommand{\textasciidieresis}{PD1}{\250}% U+00A8  
14845 % U+00A9 COPYRIGHT SIGN; copyright  
14846 \DeclareTextCommand{\textcopyright}{PD1}{\251}% U+00A9  
14847 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
14848 \DeclareTextCommand{\textordfeminine}{PD1}{\252}% U+00AA  
14849 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetleft  
14850 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB  
14851 \DeclareTextCommand{\guillemetleft}{PD1}{\253}% U+00AB  
14852 % U+00AC NOT SIGN; logicalnot  
14853 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC  
14854 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not  
No glyph \255 in PDFDocEncoding.  
14855 % U+00AE REGISTERED SIGN; registered  
14856 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE  
14857 % U+00AF MACRON; \*macron, overscore

14858 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF  
14859 % U+00B0 DEGREE SIGN; degree  
14860 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0  
14861 % U+00B1 PLUS-MINUS SIGN; plusminus  
14862 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1  
14863 % U+00B2 SUPERSCRIPT TWO; twosuperior  
14864 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}%\* U+00B2  
14865 % U+00B3 SUPERSCRIPT THREE; threesuperior  
14866 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}%\* U+00B3  
14867 % U+00B4 ACUTE ACCENT; acute  
14868 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4  
14869 % U+00B5 MICRO SIGN; mu, mul  
14870 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5  
14871 % U+00B6 PILCROW SIGN; paragraph  
14872 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6  
14873 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
14874 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7  
14875 % U+00B8 CEDILLA; cedilla  
14876 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8  
14877 % U+00B9 SUPERSCRIPT ONE; onesuperior  
14878 \DeclareTextCommand{\textonesuperior}{PD1}{\271}%\* U+00B9  
14879 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
14880 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA  
14881 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetright  
14882 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB  
14883 \DeclareTextCommand{\guillemetright}{PD1}{\273}% U+00BB  
14884 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
14885 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC  
14886 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
14887 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD  
14888 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
14889 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE  
14890 % U+00BF INVERTED QUESTION MARK; questiondown  
14891 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF  
14892 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
14893 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0  
14894 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
14895 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1  
14896 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
14897 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2  
14898 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
14899 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3  
14900 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
14901 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304}% U+00C4  
14902 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
14903 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5  
14904 % U+00C6 LATIN CAPITAL LETTER AE; AE  
14905 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6  
14906 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
14907 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7  
14908 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
14909 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310}% U+00C8  
14910 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
14911 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311}% U+00C9

14912 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
14913 \DeclareTextCompositeCommand{\`}{PD1}{E}{\312}% U+00CA  
14914 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
14915 \DeclareTextCompositeCommand{"}{PD1}{E}{\313}% U+00CB  
14916 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
14917 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314}% U+00CC  
14918 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
14919 \DeclareTextCompositeCommand{'}{PD1}{I}{\315}% U+00CD  
14920 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
14921 \DeclareTextCompositeCommand{\`}{PD1}{I}{\316}% U+00CE  
14922 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
14923 \DeclareTextCompositeCommand{"}{PD1}{I}{\317}% U+00CF  
14924 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
14925 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0  
14926 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0  
14927 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
14928 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321}% U+00D1  
14929 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
14930 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322}% U+00D2  
14931 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
14932 \DeclareTextCompositeCommand{'}{PD1}{O}{\323}% U+00D3  
14933 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
14934 \DeclareTextCompositeCommand{\`}{PD1}{O}{\324}% U+00D4  
14935 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
14936 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325}% U+00D5  
14937 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
14938 \DeclareTextCompositeCommand{"}{PD1}{O}{\326}% U+00D6  
14939 % U+00D7 MULTIPLICATION SIGN; multiply  
14940 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7  
14941 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
14942 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8  
14943 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
14944 \DeclareTextCompositeCommand{\`}{PD1}{U}{\331}% U+00D9  
14945 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
14946 \DeclareTextCompositeCommand{'}{PD1}{U}{\332}% U+00DA  
14947 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
14948 \DeclareTextCompositeCommand{\`}{PD1}{U}{\333}% U+00DB  
14949 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
14950 \DeclareTextCompositeCommand{"}{PD1}{U}{\334}% U+00DC  
14951 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
14952 \DeclareTextCompositeCommand{'}{PD1}{Y}{\335}% U+00DD  
14953 % U+00DE LATIN CAPITAL LETTER THORN; Thorn; \TH, \Thorn (wasysym)  
14954 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE  
14955 \DeclareTextCommand{\textThorn}{PD1}{\336}%\* U+00DE  
14956 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
14957 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF  
14958 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
14959 \DeclareTextCompositeCommand{\`}{PD1}{a}{\340}% U+00E0  
14960 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
14961 \DeclareTextCompositeCommand{'}{PD1}{a}{\341}% U+00E1  
14962 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
14963 \DeclareTextCompositeCommand{\`}{PD1}{a}{\342}% U+00E2  
14964 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
14965 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343}% U+00E3

14966 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
14967 \DeclareTextCompositeCommand{"}{PD1}{a}{\344}% U+00E4  
14968 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
14969 \DeclareTextCompositeCommand{r}{PD1}{a}{\345}% U+00E5  
14970 % U+00E6 LATIN SMALL LETTER AE; ae  
14971 \DeclareTextCommand{\ae}{PD1}{\346}% U+00E6  
14972 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
14973 \DeclareTextCompositeCommand{c}{PD1}{c}{\347}% U+00E7  
14974 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
14975 \DeclareTextCompositeCommand{`}{PD1}{e}{\350}% U+00E8  
14976 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
14977 \DeclareTextCompositeCommand{'}{PD1}{e}{\351}% U+00E9  
14978 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
14979 \DeclareTextCompositeCommand{^}{PD1}{e}{\352}% U+00EA  
14980 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
14981 \DeclareTextCompositeCommand{"}{PD1}{e}{\353}% U+00EB  
14982 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
14983 \DeclareTextCompositeCommand{`}{PD1}{i}{\354}% U+00EC  
14984 \DeclareTextCompositeCommand{`}{PD1}{i}{\354}% U+00EC  
14985 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
14986 \DeclareTextCompositeCommand{'}{PD1}{i}{\355}% U+00ED  
14987 \DeclareTextCompositeCommand{'}{PD1}{i}{\355}% U+00ED  
14988 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
14989 \DeclareTextCompositeCommand{^}{PD1}{i}{\356}% U+00EE  
14990 \DeclareTextCompositeCommand{^}{PD1}{i}{\356}% U+00EE  
14991 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
14992 \DeclareTextCompositeCommand{"}{PD1}{i}{\357}% U+00EF  
14993 \DeclareTextCompositeCommand{"}{PD1}{i}{\357}% U+00EF  
14994 % U+00F0 LATIN SMALL LETTER ETH; eth  
14995 \DeclareTextCommand{\dh}{PD1}{\360}% U+00F0  
14996 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
14997 \DeclareTextCompositeCommand{~}{PD1}{n}{\361}% U+00F1  
14998 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
14999 \DeclareTextCompositeCommand{`}{PD1}{o}{\362}% U+00F2  
15000 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
15001 \DeclareTextCompositeCommand{'}{PD1}{o}{\363}% U+00F3  
15002 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
15003 \DeclareTextCompositeCommand{^}{PD1}{o}{\364}% U+00F4  
15004 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
15005 \DeclareTextCompositeCommand{~}{PD1}{o}{\365}% U+00F5  
15006 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
15007 \DeclareTextCompositeCommand{"}{PD1}{o}{\366}% U+00F6  
15008 % U+00F7 DIVISION SIGN; divide  
15009 \DeclareTextCommand{\textdivide}{PD1}{\367}% U+00F7  
15010 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
15011 \DeclareTextCommand{\o}{PD1}{\370}% U+00F8  
15012 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
15013 \DeclareTextCompositeCommand{`}{PD1}{u}{\371}% U+00F9  
15014 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
15015 \DeclareTextCompositeCommand{'}{PD1}{u}{\372}% U+00FA  
15016 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
15017 \DeclareTextCompositeCommand{^}{PD1}{u}{\373}% U+00FB  
15018 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
15019 \DeclareTextCompositeCommand{"}{PD1}{u}{\374}% U+00FC

```

15020 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute
15021 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375}% U+00FD
15022 % U+00FE LATIN SMALL LETTER THORN; thorn; \th, \thorn (wasysym)
15023 \DeclareTextCommand{\th}{PD1}{\376}% U+00FE
15024 \DeclareTextCommand{\textthorn}{PD1}{\376}%* U+00FE
15025 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis
15026 \DeclareTextCompositeCommand{"}{PD1}{y}{\377}% U+00FF
15027 \DeclareTextCommand{\ij}{PD1}{ij}% ligature U+0069 U+006A

```

Glyphs that consist of several characters.

```

15028 \DeclareTextCommand{\SS}{PD1}{SS}%
15029 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}%

```

Aliases (german.sty)

```

15030 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}%
15031 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}%
15032 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}%
15033 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}%
15034 \DeclareTextCommand{\textflqq}{PD1}{\guillemetleft}%
15035 \DeclareTextCommand{\textfrqq}{PD1}{\guillemetright}%
15036 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}%
15037 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}%

```

Aliases (math names)

```

15038 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}%
15039 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}%
15040 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}%
15041 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}%
15042 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}%
15043 \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).

```

15044 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek
15045 \DeclareTextCompositeCommand{\'}{PD1}{c}{c}% cacute
15046 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek
15047 \DeclareTextCompositeCommand{\'}{PD1}{n}{n}% nacute
15048 \DeclareTextCompositeCommand{\'}{PD1}{s}{s}% sacute
15049 \DeclareTextCompositeCommand{\'}{PD1}{z}{z}% zacute
15050 \DeclareTextCompositeCommand{\.}{PD1}{z}{z}% zdot
15051 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek
15052 \DeclareTextCompositeCommand{\'}{PD1}{C}{C}% Cacute
15053 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek
15054 \DeclareTextCompositeCommand{\'}{PD1}{N}{N}% Nacute
15055 \DeclareTextCompositeCommand{\'}{PD1}{S}{S}% Sacute
15056 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z}% Zacute
15057 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z}% Zdot

```

```

15058 </pd1enc>

```

## 47.2 PU encoding

```

15059 <*puenc>
15060 \DeclareFontEncoding{PU}{}{}

```

### 47.2.1 NFSS2 accents

15061 % U+0300 COMBINING GRAVE ACCENT; gravecmb, \*gravecomb  
15062 \DeclareTextCommand{\`}{PU}[1]{#1\83\000}% U+0300  
15063 % U+0301 COMBINING ACUTE ACCENT; acutecmb, \*acutecomb  
15064 \DeclareTextCommand{\'}{PU}[1]{#1\83\001}% U+0301  
15065 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb  
15066 \DeclareTextCommand{\^}{PU}[1]{#1\83\002}% U+0302  
15067 % U+0303 COMBINING TILDE; tildecmb, \*tildecomb  
15068 \DeclareTextCommand{\~}{PU}[1]{#1\83\003}% U+0303  
15069 % U+0304 COMBINING MACRON; macroncmb  
15070 \DeclareTextCommand{\=}{PU}[1]{#1\83\004}% U+0304  
15071 % U+0306 COMBINING BREVE; brevecmb  
15072 \DeclareTextCommand{\u}{PU}[1]{#1\83\006}% U+0306  
15073 \ifx\CYRDZE\@undefined \else  
15074 \DeclareTextCommand{\U}{PU}[1]{#1\83\006}% U+0306  
15075 \fi  
15076 % U+0307 COMBINING DOT ABOVE; dotaccentcmb  
15077 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307  
15078 % U+0308 COMBINING DIAERESIS; dieresiscmb  
15079 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308  
15080 % U+030A COMBINING RING ABOVE; ringcmb  
15081 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A  
15082 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb  
15083 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B  
15084 % U+030C COMBINING CARON; caroncmb  
15085 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C  
15086 (/puenc)  
15087 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb  
15088 (puextra)\DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F  
15089 (\*puenc)  
15090 \ifx\CYRDZE\@undefined \else  
15091 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F  
15092 \fi  
15093 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
15094 \DeclareTextCommand{\textinvbreve}{PU}[1]{#1\83\021}% U+0311  
15095 \DeclareTextCommand{\newtie}{PU}[1]{#1\83\021}% U+0311  
15096 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcomb  
15097 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323  
15098 % U+0324 COMBINING DIAERESIS BELOW; dieresisbelowcmb; \textsubum-  
laut (tipa)  
15099 \DeclareTextCommand{\textsubumlaut}{PU}[1]{#1\83\044}% U+0324  
15100 % U+0325 COMBINING RING BELOW; ringbelowcmb; \textsubring (tipa)  
15101 \DeclareTextCommand{\textsubring}{PU}[1]{#1\83\045}% U+0325  
15102 % U+0327 COMBINING CEDILLA; cedillacmb  
15103 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327  
15104 % U+0328 COMBINING OGONEK; ogonekcmb  
15105 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328  
15106 % U+032D COMBINING CIRCUMFLEX ACCENT BELOW;  
15107 % \textsubcircum (tipa)  
15108 \DeclareTextCommand{\textsubcircum}{PU}[1]{#1\83\055}% U+032D  
15109 % U+032E COMBINING BREVE BELOW; brevebelowcmb  
15110 \DeclareTextCommand{\textsubbreve}{PU}[1]{#1\83\056}% U+032E  
15111 % U+0330 COMBINING TILDE BELOW; tildebelowcmb; \textsubtilde (tipa)  
15112 \DeclareTextCommand{\textsubtilde}{PU}[1]{#1\83\060}% U+0330  
15113 % U+0331 COMBINING MACRON BELOW; macronbelowcmb

15114 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331  
15115 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb  
15116 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361  
15117 % U+20DD COMBINING ENCLOSING CIRCLE  
15118 \DeclareTextCommand{\textcircled}{PU}[1]{#1\9040\335}% U+20DD

Double accents.

15119 \DeclareTextCommand{\textacutemacron}{PU}[1]{#1\83\001\83\004}% U+0301 U+0304  
15120 \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.

15121 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textasciigrave}%  
15122 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}%  
15123 \DeclareTextCompositeCommand{\^}{PU}{\@empty}{\textasciicircum}%  
15124 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}%  
15125 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textasciidieresis}%  
15126 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}%  
15127 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textasciicaron}%  
15128 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}%  
15129 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}%  
15130 \DeclareTextCompositeCommand{\u}{PU}{\@empty}{\textasciibreve}%  
15131 (/puenc)  
15132 (puextra)\DeclareTextCompositeCommand{\G}{PU}{\@empty}{\textdoublegrave}%  
15133 (\*puenc)  
15134 \DeclareTextCompositeCommand{\=}{PU}{\@empty}{\textasciimacron}%  
15135 \DeclareTextCompositeCommand{\H}{PU}{\@empty}{\texthungarumlaut}%  
15136 \DeclareTextCompositeCommand{\k}{PU}{\@empty}{\textogonek}%  
15137 \DeclareTextCompositeCommand{\textinvbreve}{PU}{\@empty}{\83\021}% U+0311  
15138 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{\@empty}{\83\044}% U+0324  
15139 \DeclareTextCompositeCommand{\textsubring}{PU}{\@empty}{\textringlow}%  
15140 \DeclareTextCompositeCommand{\textsubcircum}{PU}{\@empty}{\textcircumlow}%  
15141 \DeclareTextCompositeCommand{\textsubbreve}{PU}{\@empty}{\83\056}% U+032E  
15142 \DeclareTextCompositeCommand{\textsubtilde}{PU}{\@empty}{\texttildelow}%  
15143 \DeclareTextCompositeCommand{\b}{PU}{\@empty}{\textmacronbelow}%  
15144 \DeclareTextCompositeCommand{\d}{PU}{\@empty}{\textdotbelow}%  
15145 \DeclareTextCompositeCommand{\t}{PU}{\@empty}{\texttie}%  
15146 \DeclareTextCompositeCommand{\newtie}{PU}{\@empty}{\textnewtie}%  
15147 \DeclareTextCompositeCommand{\textcircled}{PU}{\@empty}{\textbigcircle}%  
15148 \DeclareTextCompositeCommand{\textacutemacron}{PU}{\@empty}{\83\001\83\004}% U+0301 U+0304  
15149 \DeclareTextCompositeCommand{\textgravemacron}{PU}{\@empty}{\83\000\83\004}% U+0300 U+0304  
15150 \DeclareTextCompositeCommand{\`}{PU}{\ }{\textasciigrave}%  
15151 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textacute}%  
15152 \DeclareTextCompositeCommand{\^}{PU}{\ }{\textasciicircum}%  
15153 \DeclareTextCompositeCommand{\~}{PU}{\ }{\texttilde}%  
15154 \DeclareTextCompositeCommand{\"}{PU}{\ }{\textasciidieresis}%  
15155 \DeclareTextCompositeCommand{\r}{PU}{\ }{\textring}%  
15156 \DeclareTextCompositeCommand{\v}{PU}{\ }{\textasciicaron}%  
15157 \DeclareTextCompositeCommand{\.}{PU}{\ }{\textdotaccent}%  
15158 \DeclareTextCompositeCommand{\c}{PU}{\ }{\textcedilla}%  
15159 \DeclareTextCompositeCommand{\u}{PU}{\ }{\textasciibreve}%  
15160 (/puenc)  
15161 (puextra)\DeclareTextCompositeCommand{\G}{PU}{\ }{\textdoublegrave}%



15162 (\*puenc)  
15163 \DeclareTextCompositeCommand{\=} {PU}{\ }{\textasciimacron}%  
15164 \DeclareTextCompositeCommand{\H} {PU}{\ }{\texthungarumlaut}%  
15165 \DeclareTextCompositeCommand{\k} {PU}{\ }{\textogonek}%  
15166 \DeclareTextCompositeCommand{\textinvbreve} {PU}{\ }{\{\ \83\021\}}% U+0311  
15167 \DeclareTextCompositeCommand{\textsubumlaut} {PU}{\ }{\{\ \83\044\}}% U+0324  
15168 \DeclareTextCompositeCommand{\textsubring} {PU}{\ }{\textringlow}%  
15169 \DeclareTextCompositeCommand{\textsubcircum} {PU}{\ }{\textcircumlow}%  
15170 \DeclareTextCompositeCommand{\textsubbreve} {PU}{\ }{\{\ \83\056\}}% U+032E  
15171 \DeclareTextCompositeCommand{\textsubtilde} {PU}{\ }{\texttildelow}%  
15172 \DeclareTextCompositeCommand{\b} {PU}{\ }{\textmacronbelow}%  
15173 \DeclareTextCompositeCommand{\d} {PU}{\ }{\textdotbelow}%  
15174 \DeclareTextCompositeCommand{\t} {PU}{\ }{\texttie}%  
15175 \DeclareTextCompositeCommand{\newtie} {PU}{\ }{\textnewtie}%  
15176 \DeclareTextCompositeCommand{\textcircled} {PU}{\ }{\textbigcircle}%  
15177 \DeclareTextCompositeCommand{\textacutemacron} {PU}{\ }{\{\ \83\001\83\004\}}% U+0301 U+0304  
15178 \DeclareTextCompositeCommand{\textgravemacron} {PU}{\ }{\{\ \83\000\83\004\}}% U+0300 U+0304

Accents for capitals (see encoding TS1)

15179 \DeclareTextCommand{\capitalcedilla} {PU}[1]{\c{#1}}%  
15180 \DeclareTextCommand{\capitalogonek} {PU}[1]{\k{#1}}%  
15181 \DeclareTextCommand{\capitalgrave} {PU}[1]{\`{#1}}%  
15182 \DeclareTextCommand{\capitalacute} {PU}[1]{\'{#1}}%  
15183 \DeclareTextCommand{\capitalcircumflex} {PU}[1]{\^{#1}}%  
15184 \DeclareTextCommand{\capitaltilde} {PU}[1]{\~{#1}}%  
15185 \DeclareTextCommand{\capitaldieresis} {PU}[1]{\"{#1}}%  
15186 \DeclareTextCommand{\capitalhungarumlaut} {PU}[1]{\H{#1}}%  
15187 \DeclareTextCommand{\capitalring} {PU}[1]{\r{#1}}%  
15188 \DeclareTextCommand{\capitalcaron} {PU}[1]{\v{#1}}%  
15189 \DeclareTextCommand{\capitalbreve} {PU}[1]{\u{#1}}%  
15190 \DeclareTextCommand{\capitalmacron} {PU}[1]{\={#1}}%  
15191 \DeclareTextCommand{\capitaldotaccent} {PU}[1]{\.\{#1}}%  
15192 \DeclareTextCommand{\capitaltie} {PU}[1]{\t{#1}}%  
15193 \DeclareTextCommand{\capitalnewtie} {PU}[1]{\newtie{#1}}%

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

Special white space escape characters.

15194 % U+0009 (CHARACTER TABULATION)  
15195 \DeclareTextCommand{\textHT} {PU}{\80\011}% U+0009  
15196 % U+000A (LINE FEED)  
15197 \DeclareTextCommand{\textLF} {PU}{\80\012}% U+000A  
15198 % U+000D (CARRIAGE RETURN)  
15199 \DeclareTextCommand{\textCR} {PU}{\80\015}% U+000D  
\80\040: U+0020 SPACE; space, spacehackarabic  
\80\041: U+0021 EXCLAMATION MARK; exclam  
15200 % U+0022 QUOTATION MARK; quotedbl  
15201 \DeclareTextCommand{\textquotedbl} {PU}{"}% \80\042 U+0022  
15202 % U+0023 NUMBER SIGN; numbersign  
15203 \DeclareTextCommand{\textnumbersign} {PU}{\80\043}% U+0023  
15204 % U+0024 DOLLAR SIGN; dollar  
15205 \DeclareTextCommand{\textdollar} {PU}{\80\044}% U+0024  
15206 %\* \textdollar -> \mathdollar  
15207 %\* \textdollar -> \EyesDollar (marvosym)  
15208 % U+0025 PERCENT SIGN; percent

15209 \DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025  
15210 % U+0026 AMPERSAND; ampersand  
15211 \DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026  
15212 %\* \textampersand -> \binampersand (stmaryrd)  
15213 %\* \textampersand -> \with (cml)  
15214 % U+0027 APOSTROPHE; quotesingle  
15215 \DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027  
15216 % U+0028 LEFT PARENTHESIS; parenleft  
15217 \DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028  
15218 % U+0029 RIGHT PARENTHESIS; parenright  
15219 \DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029  
15220 % U+002A ASTERISK; asterisk; (?)  
15221 \DeclareTextCommand{\textasteriskcentered}{PU}{\80\052}% U+002A  
15222 % U+002B PLUS SIGN; plus; \MVPlus (marvosym)  
15223 \DeclareTextCommand{\textMVPlus}{PU}{\80\053}%\* U+002B  
15224 % U+002C COMMA; comma; \MVComma (marvosym)  
15225 \DeclareTextCommand{\textMVComma}{PU}{\80\054}%\* U+002C  
15226 % U+002D HYPHEN-MINUS; hyphen; \MVMinus (marvosym)  
15227 \DeclareTextCommand{\textMVMinus}{PU}{\80\055}%\* U+002D  
15228 % U+002E FULL STOP; period; \MVPeriod (marvosym)  
15229 \DeclareTextCommand{\textMVPeriod}{PU}{\80\056}%\* U+002E  
15230 % U+002F SOLIDUS; slash; \MVDivision (marvosym)  
15231 \DeclareTextCommand{\textMVDivision}{PU}{\80\057}%\* U+002F  
15232 % U+0030 DIGIT ZERO; zero; \MVZero (marvosym)  
15233 \DeclareTextCommand{\textMVZero}{PU}{\80\060}%\* U+0030  
15234 % U+0031 DIGIT ONE; one; \MVOne (marvosym)  
15235 \DeclareTextCommand{\textMVOne}{PU}{\80\061}%\* U+0031  
15236 % U+0032 DIGIT TWO; two; \MVTwo (marvosym)  
15237 \DeclareTextCommand{\textMVTwo}{PU}{\80\062}%\* U+0032  
15238 % U+0033 DIGIT THREE; three; \MVThree (marvosym)  
15239 \DeclareTextCommand{\textMVThree}{PU}{\80\063}%\* U+0033  
15240 % U+0034 DIGIT FOUR; four; \MVFfour (marvosym)  
15241 \DeclareTextCommand{\textMVFfour}{PU}{\80\064}%\* U+0034  
15242 % U+0035 DIGIT FIVE; five; \MVFfive (marvosym)  
15243 \DeclareTextCommand{\textMVFfive}{PU}{\80\065}%\* U+0035  
15244 % U+0036 DIGIT SIX; six; \MVSix (marvosym)  
15245 \DeclareTextCommand{\textMVSix}{PU}{\80\066}%\* U+0036  
15246 % U+0037 DIGIT SEVEN; seven; \MVSeven (marvosym)  
15247 \DeclareTextCommand{\textMVSeven}{PU}{\80\067}%\* U+0037  
15248 % U+0038 DIGIT EIGHT; eight; \MVEight (marvosym)  
15249 \DeclareTextCommand{\textMVEight}{PU}{\80\070}%\* U+0038  
15250 % U+0039 DIGIT NINE; nine; \MVNine (marvosym)  
15251 \DeclareTextCommand{\textMVNine}{PU}{\80\071}%\* U+0039  
  
\80\072: U+003A COLON; colon  
\80\073: U+003B SEMICOLON; semicolon  
  
15252 % U+003C LESS-THAN SIGN; less  
15253 \DeclareTextCommand{\textless}{PU}{<}% \80\074 U+003C  
  
\80\075: U+003D EQUALS SIGN; equal  
  
15254 % U+003E GREATER-THAN SIGN; greater  
15255 \DeclareTextCommand{\textgreater}{PU}{>}% \80\076 U+003E  
  
\80\077: U+003F QUESTION MARK; question  
  
15256 % U+0040 COMMERCIAL AT; at; \MVAt (marvosym)

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15257 \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
15258 % U+005C REVERSE SOLIDUS; backslash
15259 \DeclareTextCommand{\textbackslash}{PU}{\80\134}% U+005C
\80\135: U+005D RIGHT SQUARE BRACKET; bracketright
15260 % U+005E CIRCUMFLEX ACCENT; asciicircum
15261 \DeclareTextCommand{\textasciicircum}{PU}{\80\136}% U+005E
15262 % U+005F LOW LINE; underscore
15263 \DeclareTextCommand{\textunderscore}{PU}{\80\137}% U+005F
15264 %* \textunderscore -> \mathunderscore (LaTeX)
15265 % U+0060 GRAVE ACCENT; grave
15266 \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
15267 % U+0069 LATIN SMALL LETTER I; i
15268 \DeclareTextCompositeCommand{\.}{PU}{i}{i}% \80\151 U+0069
15269 \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
15270 % U+007B LEFT CURLY BRACKET; braceleft
15271 \DeclareTextCommand{\textbraceleft}{PU}{\80\173}% U+007B
15272 % U+007C VERTICAL LINE; *bar, verticalbar
15273 \DeclareTextCommand{\textbar}{PU}{|}% \80\174 U+007C
15274 %* \textbar -> \textvline (tipa)
15275 % U+007D RIGHT CURLY BRACKET; braceright
15276 \DeclareTextCommand{\textbraceright}{PU}{\80\175}% U+007D
15277 % U+007E TILDE; asciitilde
15278 \DeclareTextCommand{\textasciitilde}{PU}{\80\176}% U+007E

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

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\80\240: U+00A0 NO-BREAK SPACE; nbspace, nonbreakingspace
15279 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown
15280 \DeclareTextCommand{\textexclamdown}{PU}{\80\241}% U+00A1
15281 % U+00A2 CENT SIGN; cent
15282 \DeclareTextCommand{\textcent}{PU}{\80\242}% U+00A2
15283 % U+00A3 POUND SIGN; sterling
15284 \DeclareTextCommand{\textsterling}{PU}{\80\243}% U+00A3
15285 %* \textsterling -> \mathsterling (LaTeX)
15286 %* \textsterling -> \pounds (LaTeX)
15287 % U+00A4 CURRENCY SIGN; currency
15288 \DeclareTextCommand{\textcurrency}{PU}{\80\244}% U+00A4
15289 % U+00A5 YEN SIGN; yen
15290 \DeclareTextCommand{\textyen}{PU}{\80\245}% U+00A5
15291 % U+00A6 BROKEN BAR; brokenbar
15292 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246}% U+00A6

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15293 %\* \textbrokenbar -> \brokenvert (wasysym)  
15294 % U+00A7 SECTION SIGN; section  
15295 \DeclareTextCommand{\textsection}{PU}{\80\247}% U+00A7  
15296 %\* \textsection -> \mathsection (LaTeX)  
15297 %\* \textsection -> \S (LaTeX)  
15298 % U+00A8 DIAERESIS; dieresis  
15299 \DeclareTextCommand{\textasciidieresis}{PU}{\80\250}% U+00A8  
15300 % U+00A9 COPYRIGHT SIGN; copyright  
15301 \DeclareTextCommand{\textcopyright}{PU}{\80\251}%\* U+00A9  
15302 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
15303 \DeclareTextCommand{\textordfeminine}{PU}{\80\252}% U+00AA  
15304 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetleft  
15305 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB  
15306 \DeclareTextCommand{\guillemetleft}{PU}{\80\253}% U+00AB  
15307 % U+00AC NOT SIGN; logicalnot  
15308 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254}% U+00AC  
15309 \DeclareTextCommand{\textlnot}{PU}{\80\254}% U+00AC  
\80\255: U+00AD SOFT HYPHEN; sfthyphen, softthyphen  
15310 % U+00AE REGISTERED SIGN; registered  
15311 \DeclareTextCommand{\textregistered}{PU}{\80\256}% U+00AE  
15312 % U+00AF MACRON; \*macron, overscore  
15313 \DeclareTextCommand{\textasciimacron}{PU}{\80\257}% U+00AF  
15314 % U+00B0 DEGREE SIGN; degree  
15315 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0  
15316 % U+00B1 PLUS-MINUS SIGN; plusminus  
15317 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1  
15318 % U+00B2 SUPERSCRIPT TWO; twosuperior  
15319 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}%\* U+00B2  
15320 % U+00B3 SUPERSCRIPT THREE; threesuperior  
15321 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}%\* U+00B3  
15322 % U+00B4 ACUTE ACCENT; acute  
15323 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4  
15324 \DeclareTextCommand{\textasciiacute}{PU}{\80\264}% U+00B4  
15325 % U+00B5 MICRO SIGN; mu, mu1  
15326 \DeclareTextCommand{\textmu}{PU}{\80\265}% U+00B5  
15327 % U+00B6 PILCROW SIGN; paragraph  
15328 \DeclareTextCommand{\textparagraph}{PU}{\80\266}% U+00B6  
15329 %\* \textparagraph -> \mathparagraph (LaTeX)  
15330 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
15331 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267}% U+00B7  
15332 %\* \textperiodcentered -> \MultiplicationDot (marvosym)  
15333 %\* \textperiodcentered -> \Squaredot (marvosym)  
15334 % U+00B8 CEDILLA; cedilla  
15335 \DeclareTextCommand{\textcedilla}{PU}{\80\270}% U+00B8  
15336 % U+00B9 SUPERSCRIPT ONE; onesuperior  
15337 \DeclareTextCommand{\textonesuperior}{PU}{\80\271}%\* U+00B9  
15338 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
15339 \DeclareTextCommand{\textordmasculine}{PU}{\80\272}% U+00BA  
15340 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetright  
15341 \DeclareTextCommand{\guillemotright}{PU}{\80\273}% U+00BB  
15342 \DeclareTextCommand{\guillemetright}{PU}{\80\273}% U+00BB  
15343 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
15344 \DeclareTextCommand{\textonequarter}{PU}{\80\274}% U+00BC  
15345 % U+00BD VULGAR FRACTION ONE HALF; onehalf

15346 \DeclareTextCommand{\textonehalf}{PU}{\80\275}% U+00BD  
15347 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
15348 \DeclareTextCommand{\textthreequarters}{PU}{\80\276}% U+00BE  
15349 % U+00BF INVERTED QUESTION MARK; questiondown  
15350 \DeclareTextCommand{\textquestiondown}{PU}{\80\277}% U+00BF  
15351 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
15352 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
15353 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
15354 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
15355 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
15356 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302}% U+00C2  
15357 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
15358 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
15359 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
15360 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304}% U+00C4  
15361 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
15362 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305}% U+00C5  
15363 % U+00C6 LATIN CAPITAL LETTER AE; AE  
15364 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6  
15365 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
15366 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7  
15367 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
15368 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
15369 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
15370 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
15371 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
15372 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312}% U+00CA  
15373 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
15374 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313}% U+00CB  
15375 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
15376 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
15377 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
15378 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
15379 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
15380 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316}% U+00CE  
15381 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
15382 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317}% U+00CF  
15383 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
15384 \DeclareTextCommand{\DH}{PU}{\80\320}% U+00D0  
15385 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
15386 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321}% U+00D1  
15387 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
15388 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
15389 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
15390 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
15391 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
15392 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324}% U+00D4  
15393 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
15394 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
15395 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
15396 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326}% U+00D6  
15397 % U+00D7 MULTIPLICATION SIGN; multiply  
15398 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7  
15399 %\* \textmultiply -> \vartimes (stmaryrd)

15400 %\* \textmultiply -> \MVMultiplication (marvosym)  
15401 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
15402 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8  
15403 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
15404 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9  
15405 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
15406 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA  
15407 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
15408 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333}% U+00DB  
15409 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
15410 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334}% U+00DC  
15411 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
15412 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD  
15413 % U+00DE LATIN CAPITAL LETTER THORN; Thorn; \TH, \Thorn (wasysym)  
15414 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE  
15415 \DeclareTextCommand{\textThorn}{PU}{\80\336}%\* U+00DE  
15416 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
15417 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF  
15418 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
15419 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0  
15420 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
15421 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1  
15422 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
15423 \DeclareTextCompositeCommand{\^}{PU}{a}{\80\342}% U+00E2  
15424 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
15425 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
15426 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
15427 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344}% U+00E4  
15428 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
15429 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5  
15430 % U+00E6 LATIN SMALL LETTER AE; ae  
15431 \DeclareTextCommand{\ae}{PU}{\80\346}% U+00E6  
15432 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
15433 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7  
15434 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
15435 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8  
15436 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
15437 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
15438 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
15439 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA  
15440 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
15441 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353}% U+00EB  
15442 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
15443 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
15444 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC  
15445 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
15446 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
15447 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
15448 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
15449 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
15450 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
15451 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
15452 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
15453 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF

15454 % U+00F0 LATIN SMALL LETTER ETH; eth  
15455 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0  
15456 %\* \dh -> \eth (wsuipa, phonetic)  
15457 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
15458 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361}% U+00F1  
15459 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
15460 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
15461 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
15462 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
15463 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
15464 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364}% U+00F4  
15465 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
15466 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
15467 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
15468 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366}% U+00F6  
15469 % U+00F7 DIVISION SIGN; divide  
15470 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7  
15471 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
15472 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8  
15473 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
15474 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
15475 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
15476 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
15477 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
15478 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373}% U+00FB  
15479 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
15480 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374}% U+00FC  
15481 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
15482 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
15483 % U+00FE LATIN SMALL LETTER THORN; thorn;  
15484 % \th, \thorn (wasysym), \textthorn (tipa)  
15485 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE  
15486 \DeclareTextCommand{\textthorn}{PU}{\80\376}%\* U+00FE  
15487 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
15488 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377}% U+00FF

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

15489 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron  
15490 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% U+0100  
15491 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron  
15492 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% U+0101  
15493 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve  
15494 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% U+0102  
15495 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve  
15496 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% U+0103  
15497 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek  
15498 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% U+0104  
15499 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek  
15500 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% U+0105  
15501 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacute  
15502 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% U+0106  
15503 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacute  
15504 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% U+0107

15505 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex  
15506 \DeclareTextCompositeCommand{\~}{PU}{C}{\81\010}% U+0108  
15507 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex  
15508 \DeclareTextCompositeCommand{\~}{PU}{c}{\81\011}% U+0109  
15509 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotaccent  
15510 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% U+010A  
15511 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent  
15512 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% U+010B  
15513 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron  
15514 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% U+010C  
15515 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron  
15516 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% U+010D  
15517 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron  
15518 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% U+010E  
15519 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron  
15520 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% U+010F  
15521 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash  
15522 \DeclareTextCommand{\DJ}{PU}{\81\020}% U+0110  
15523 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron;  
15524 % \textcrd (tipa)  
15525 \DeclareTextCommand{\dj}{PU}{\81\021}% U+0111  
15526 \DeclareTextCommand{\textcrd}{PU}{\81\021}% U+0111  
15527 %\* \textcrd -> \crossd (wsuipa)  
15528 % An alternate glyph with the stroke through the bowl:  
15529 %\* \textcrd -> \textbard (tipa)  
15530 %\* \textcrd -> \bard (wsuipa)  
15531 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron  
15532 \DeclareTextCompositeCommand{=} {PU}{E}{\81\022}% U+0112  
15533 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron  
15534 \DeclareTextCompositeCommand{=} {PU}{e}{\81\023}% U+0113  
15535 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve  
15536 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% U+0114  
15537 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve  
15538 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% U+0115  
15539 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent  
15540 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% U+0116  
15541 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent  
15542 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% U+0117  
15543 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek  
15544 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% U+0118  
15545 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek  
15546 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% U+0119  
15547 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron  
15548 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% U+011A  
15549 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron  
15550 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% U+011B  
15551 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex  
15552 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% U+011C  
15553 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex  
15554 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% U+011D  
15555 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve  
15556 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% U+011E  
15557 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve



15558 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% U+011F  
15559 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotaccent  
15560 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% U+0120  
15561 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent  
15562 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% U+0121  
15563 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcommaaccent  
15564 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% U+0122  
15565 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent  
15566 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% U+0123  
15567 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex  
15568 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% U+0124  
15569 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex  
15570 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% U+0125  
15571 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar  
15572 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126  
15573 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar; \hbar (AmS)  
15574 \DeclareTextCommand{\texthbar}{PU}{\81\047}%\* U+0127  
15575 %\* \texthbar -> \textcrh (tipa)  
15576 %\* \texthbar -> \crossh (wsuipa)  
15577 %\* \texthbar -> \planck (phonetic)  
15578 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; Itilde  
15579 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128  
15580 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde  
15581 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
15582 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
15583 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron  
15584 \DeclareTextCompositeCommand{\=} {PU}{I}{\81\052}% U+012A  
15585 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron  
15586 \DeclareTextCompositeCommand{\=} {PU}{i}{\81\053}% U+012B  
15587 \DeclareTextCompositeCommand{\=} {PU}{i}{\81\053}% U+012B  
15588 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibreve  
15589 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C  
15590 % U+012D LATIN SMALL LETTER I WITH BREVE; ibreve  
15591 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
15592 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
15593 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek  
15594 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E  
15595 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek  
15596 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
15597 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
15598 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent  
15599 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% U+0130  
15600 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
15601 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131  
15602 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ  
15603 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132  
15604 % U+0133 LATIN SMALL LIGATURE IJ; ij  
15605 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133  
15606 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex  
15607 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% U+0134  
15608 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex  
15609 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135

15610 `\DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135`  
15611 `% U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaaccent`  
15612 `\DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136`  
15613 `% U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent`  
15614 `\DeclareTextCompositeCommand{\c}{PU}{k}{\81\067}% U+0137`

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

15615 `% U+0138 LATIN SMALL LETTER KRA; kgreenlandic`  
15616 `\DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138`  
15617 `% U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute`  
15618 `\DeclareTextCompositeCommand{\'}{PU}{L}{\81\071}% U+0139`  
15619 `% U+013A LATIN SMALL LETTER L WITH ACUTE; lacute`  
15620 `\DeclareTextCompositeCommand{\'}{PU}{l}{\81\072}% U+013A`  
15621 `% U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaaccent`  
15622 `\DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B`  
15623 `% U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent`  
15624 `\DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C`  
15625 `% U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron`  
15626 `\DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D`  
15627 `% U+013E LATIN SMALL LETTER L WITH CARON; lcaron`  
15628 `\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`.

15629 `% U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotaccent`  
15630 `\DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F`  
15631 `% U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent`  
15632 `\DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140`  
15633 `% U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash`  
15634 `\DeclareTextCommand{\L}{PU}{\81\101}% U+0141`  
15635 `% U+0142 LATIN SMALL LETTER L WITH STROKE; lslash`  
15636 `\DeclareTextCommand{\l}{PU}{\81\102}% U+0142`  
15637 `% U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute`  
15638 `\DeclareTextCompositeCommand{\'}{PU}{N}{\81\103}% U+0143`  
15639 `% U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute`  
15640 `\DeclareTextCompositeCommand{\'}{PU}{n}{\81\104}% U+0144`  
15641 `% U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaaccent`  
15642 `\DeclareTextCompositeCommand{\c}{PU}{N}{\81\105}% U+0145`  
15643 `% U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent`  
15644 `\DeclareTextCompositeCommand{\c}{PU}{n}{\81\106}% U+0146`  
15645 `% U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron`  
15646 `\DeclareTextCompositeCommand{\v}{PU}{N}{\81\107}% U+0147`  
15647 `% U+0148 LATIN SMALL LETTER N WITH CARON; ncaron`  
15648 `\DeclareTextCompositeCommand{\v}{PU}{n}{\81\110}% U+0148`  
15649 `% U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napostrophe, quoterightn`  
15650 `\DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149`  
15651 `% U+014A LATIN CAPITAL LETTER ENG; Eng`

15652 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A  
15653 % U+014B LATIN SMALL LETTER ENG; eng  
15654 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B  
15655 %\* \ng -> \eng (wsuipa)  
15656 %\* \ng -> \engma (phonetic)  
15657 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron  
15658 \DeclareTextCompositeCommand{=} {PU}{O}{\81\114}% U+014C  
15659 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron  
15660 \DeclareTextCompositeCommand{=} {PU}{o}{\81\115}% U+014D  
15661 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve  
15662 \DeclareTextCompositeCommand{\u} {PU}{O}{\81\116}% U+014E  
15663 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve  
15664 \DeclareTextCompositeCommand{\u} {PU}{o}{\81\117}% U+014F  
15665 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odblac-  
cute, Ohungarumlaut  
15666 \DeclareTextCompositeCommand{\H} {PU}{O}{\81\120}% U+0150  
15667 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odbla-  
cute, ohungarumlaut  
15668 \DeclareTextCompositeCommand{\H} {PU}{o}{\81\121}% U+0151  
15669 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
15670 \DeclareTextCommand{\OE}{PU}{\81\122}% U+0152  
15671 % U+0153 LATIN SMALL LIGATURE OE; oe  
15672 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153  
15673 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute  
15674 \DeclareTextCompositeCommand{\'} {PU}{R}{\81\124}% U+0154  
15675 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute  
15676 \DeclareTextCompositeCommand{\'} {PU}{r}{\81\125}% U+0155  
15677 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcommaac-  
cent  
15678 \DeclareTextCompositeCommand{\c} {PU}{R}{\81\126}% U+0156  
15679 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcommaaccent  
15680 \DeclareTextCompositeCommand{\c} {PU}{r}{\81\127}% U+0157  
15681 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron  
15682 \DeclareTextCompositeCommand{\v} {PU}{R}{\81\130}% U+0158  
15683 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron  
15684 \DeclareTextCompositeCommand{\v} {PU}{r}{\81\131}% U+0159  
15685 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute  
15686 \DeclareTextCompositeCommand{\'} {PU}{S}{\81\132}% U+015A  
15687 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute  
15688 \DeclareTextCompositeCommand{\'} {PU}{s}{\81\133}% U+015B  
15689 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex  
15690 \DeclareTextCompositeCommand{\^} {PU}{S}{\81\134}% U+015C  
15691 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex  
15692 \DeclareTextCompositeCommand{\^} {PU}{s}{\81\135}% U+015D  
15693 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla  
15694 \DeclareTextCompositeCommand{\c} {PU}{S}{\81\136}% U+015E  
15695 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla  
15696 \DeclareTextCompositeCommand{\c} {PU}{s}{\81\137}% U+015F  
15697 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
15698 \DeclareTextCompositeCommand{\v} {PU}{S}{\81\140}% U+0160  
15699 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
15700 \DeclareTextCompositeCommand{\v} {PU}{s}{\81\141}% U+0161  
15701 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcommaac-  
cent

15702 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162  
15703 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcommaaccent  
15704 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163  
15705 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron  
15706 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164  
15707 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron  
15708 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165  
15709 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar  
15710 \DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166  
15711 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar  
15712 \DeclareTextCommand{\texttslash}{PU}{\81\147}% U+0167  
15713 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde  
15714 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168  
15715 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde  
15716 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
15717 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron  
15718 \DeclareTextCompositeCommand{\=} {PU}{U}{\81\152}% U+016A  
15719 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron  
15720 \DeclareTextCompositeCommand{\=} {PU}{u}{\81\153}% U+016B  
15721 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve  
15722 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154}% U+016C  
15723 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve  
15724 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155}% U+016D  
15725 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring  
15726 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156}% U+016E  
15727 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring  
15728 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157}% U+016F  
15729 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Udbl-  
acute, Uhungarumlaut  
15730 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160}% U+0170  
15731 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; udbl-  
acute, uhungarumlaut  
15732 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161}% U+0171  
15733 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek  
15734 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162}% U+0172  
15735 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek  
15736 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163}% U+0173  
15737 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex  
15738 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164}% U+0174  
15739 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex  
15740 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165}% U+0175  
15741 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex  
15742 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166}% U+0176  
15743 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex  
15744 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167}% U+0177  
15745 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
15746 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170}% U+0178  
15747 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute  
15748 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171}% U+0179  
15749 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute  
15750 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172}% U+017A  
15751 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent  
15752 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173}% U+017B  
15753 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent

15754 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174}% U+017C  
 15755 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
 15756 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175}% U+017D  
 15757 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
 15758 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176}% U+017E  
 15759 % U+017F LATIN SMALL LETTER LONG S; longs, slong  
 15760 \DeclareTextCommand{\textlongS}{PU}{\81\177}% U+017F

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

15761 % U+0180 LATIN SMALL LETTER B WITH STROKE; bstroke; \textcrb (tipa)  
 15762 \DeclareTextCommand{\textcrb}{PU}{\81\200}% U+0180  
 15763 %\* \textcrb -> \crossb (wsuipa)  
 15764 % An alternate glyph with the stroke through the bowl:  
 15765 %\* \textcrb -> \textbarb (tipa)  
 15766 %\* \textcrb -> \barb (wsuipa)  
 15767 % U+0181 LATIN CAPITAL LETTER B WITH HOOK; Bhook; \hausaB (pho-  
 netic)  
 15768 \DeclareTextCommand{\texthausaB}{PU}{\81\201}%\* U+0181  
 15769 % U+0188 LATIN SMALL LETTER C WITH HOOK; chook; \texthtc (tipa)  
 15770 \DeclareTextCommand{\texthtc}{PU}{\81\210}% U+0188  
 15771 % U+018A LATIN CAPITAL LETTER D WITH HOOK; Dhook; \hausaD (pho-  
 netic)  
 15772 \DeclareTextCommand{\texthausaD}{PU}{\81\212}%\* U+018A  
 15773 % U+018E LATIN CAPITAL LETTER REVERSED E; Ereversed  
 15774 \DeclareTextCommand{\textEreversed}{PU}{\81\216}% U+018E  
 15775 \DeclareTextCommand{\textrevE}{PU}{\81\216}% U+018E  
 15776 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
 15777 \DeclareTextCommand{\textflorin}{PU}{\81\222}% U+0192  
 15778 %\* \textflorin -> \Florin (marvosym)  
 15779 % U+0195 LATIN SMALL LETTER HV; hv; \texthvlig (tipa)  
 15780 \DeclareTextCommand{\texthvlig}{PU}{\81\225}% U+0195  
 15781 %\* \texthvlig -> \hv (wsuipa)  
 15782 % U+0198 LATIN CAPITAL LETTER K WITH HOOK; Khook; \hausaK (pho-  
 netic)  
 15783 \DeclareTextCommand{\texthausaK}{PU}{\81\230}%\* U+0198  
 15784 % U+0199 LATIN SMALL LETTER K WITH HOOK; khook; \texthtk (tipa)  
 15785 \DeclareTextCommand{\texthtk}{PU}{\81\231}% U+0199  
 15786 %\* \texthtk -> \hausak (phonetic)  
 15787 % U+019A LATIN SMALL LETTER L WITH BAR; lbar;  
 15788 % \textbarl (tipa), \barl (wsuipa)  
 15789 \DeclareTextCommand{\textbarl}{PU}{\81\232}%\* U+019A  
 15790 % U+019B LATIN SMALL LETTER LAMBDA WITH STROKE/  
 15791 % LATIN SMALL LETTER BARRED LAMBDA; lambdastroke;  
 15792 % \textcrlambda (tipa)  
 15793 \DeclareTextCommand{\textcrlambda}{PU}{\81\233}% U+019B  
 15794 %\* \textcrlambda -> \crossnilambda (wsuipa)  
 15795 %\* \textcrlambda -> \barlambda (phonetic)  
 15796 %\* \textcrlambda -> \lambdabar (txfonts/pxfonts)  
 15797 %\* \textcrlambda -> \lambdash (txfonts/pxfonts)  
 15798 % U+019E LATIN SMALL LETTER N WITH LONG RIGHT LEG; nletright-  
 long;  
 15799 % \textnrleg (tipx)  
 15800 \DeclareTextCommand{\textPUnrleg}{PU}{\81\236}% U+019E  
 15801 %\* \textPUnrleg -> \textnrleg (tipx)

15802 % U+01A5 LATIN SMALL LETTER P WITH HOOK; phook; \texthtp (tipa)  
15803 \DeclareTextCommand{\texthtp}{PU}{\81\245}% U+01A5  
15804 % U+01AB LATIN SMALL LETTER T WITH PALATAL HOOK; tpalatalhook;  
15805 % \textlhookt (tipa)  
15806 \DeclareTextCommand{\textlhookt}{PU}{\81\253}% U+01AB  
15807 % U+01AD LATIN SMALL LETTER T WITH HOOK; thook; \texthtt (tipa)  
15808 \DeclareTextCommand{\texthtt}{PU}{\81\255}% U+01AD  
15809 % U+01B9 LATIN SMALL LETTER EZH REVERSED/  
15810 % LATIN SMALL LETTER REVERSED YOGH; \textrevyogh (tipa)  
15811 \DeclareTextCommand{\textrevyogh}{PU}{\81\271}% U+01B9  
15812 % U+01BB LATIN LETTER TWO WITH STROKE; twostroke; \textcrtwo (tipa)  
15813 \DeclareTextCommand{\textcrtwo}{PU}{\81\273}% U+01BB  
15814 % U+01BE LATIN LETTER INVERTED GLOTTAL STOP WITH STROKE;  
15815 % glottalinvertedstroke; \textcrinvglotstop (tipa)  
15816 \DeclareTextCommand{\textcrinvglotstop}{PU}{\81\276}% U+01BE  
15817 % U+01BF LATIN LETTER WYNN; wynn; \textwynn (tipa)  
15818 \DeclareTextCommand{\textwynn}{PU}{\81\277}% U+01BF  
15819 % U+01C0 LATIN LETTER DENTAL CLICK/LATIN LETTER PIPE; clickden-  
tal;  
15820 % \textpipe (tipa)  
15821 \DeclareTextCommand{\textpipe}{PU}{\81\300}% U+01C0  
15822 %\* \textpipe -> \textpipevar (tipx)  
15823 % U+01C1 LATIN LETTER LATERAL CLICK/LATIN LETTER  
15824 % DOUBLE PIPE; clicklateral; \textdoublepipe (tipa)  
15825 \DeclareTextCommand{\textdoublepipe}{PU}{\81\301}% U+01C1  
15826 %\* \textdoublepipe -> \textdoublepipevar (tipx)  
15827 % U+01C2 LATIN LETTER ALVEOLAR CLICK/LATIN LETTER PIPE DOU-  
BLE BAR;  
15828 % clickalveolar; \textdoublebarpipe (tipa)  
15829 \DeclareTextCommand{\textdoublebarpipe}{PU}{\81\302}% U+01C2  
15830 %\* \textdoublebarpipe -> \textdoublebarpipevar (tipx)  
15831 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron  
15832 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315}% U+01CD  
15833 % U+01CE LATIN SMALL LETTER A WITH CARON; acaron  
15834 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316}% U+01CE  
15835 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icaron  
15836 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317}% U+01CF  
15837 % U+01D0 LATIN SMALL LETTER I WITH CARON; icaron  
15838 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
15839 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
15840 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocaron  
15841 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1  
15842 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocaron  
15843 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2  
15844 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucaron  
15845 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3  
15846 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucaron  
15847 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4  
15848 % U+01DD LATIN SMALL LETTER TURNED E; eturned; \inve (wasysym)  
15849 \DeclareTextCommand{\textinve}{PU}{\81\335}%\* U+01DD  
15850 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke  
15851 \DeclareTextCommand{\textGslash}{PU}{\81\344}% U+01E4  
15852 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke  
15853 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5

15854 %\* \textgslash -> \textcrg (tipa)  
15855 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcaron  
15856 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6  
15857 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcaron  
15858 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7  
15859 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcaron  
15860 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8  
15861 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcaron  
15862 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9  
15863 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek  
15864 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA  
15865 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek  
15866 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB  
15867 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcaron  
15868 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
15869 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
15870 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute  
15871 \DeclareTextCompositeCommand{\'}{PU}{G}{\81\364}% U+01F4  
15872 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute  
15873 \DeclareTextCompositeCommand{\'}{PU}{g}{\81\365}% U+01F5  
15874 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE  
15875 \DeclareTextCompositeCommand{\`}{PU}{N}{\81\370}% U+01F8  
15876 % U+01F9 LATIN SMALL LETTER N WITH GRAVE  
15877 \DeclareTextCompositeCommand{\`}{PU}{n}{\81\371}% U+01F9  
15878 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute  
15879 \DeclareTextCompositeCommand{\'}{PU}{\AE}{\81\374}% U+01FC  
15880 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute  
15881 \DeclareTextCompositeCommand{\'}{PU}{\ae}{\81\375}% U+01FD  
15882 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE;  
15883 % \*Oslashacute, Ostrokeacut  
15884 \DeclareTextCompositeCommand{\'}{PU}{\O}{\81\376}% U+01FE  
15885 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE;  
15886 % \*oslashacute, ostrokeacut  
15887 \DeclareTextCompositeCommand{\'}{PU}{\o}{\81\377}% U+01FF  
15888 (/puenc)  
15889 (\*puextra)  
15890 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave  
15891 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200  
15892 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave  
15893 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201  
15894 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave  
15895 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204  
15896 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave  
15897 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205  
15898 (/puextra)  
15899 (\*puenc)  
15900 % U+0206 LATIN CAPITAL LETTER E WITH INVERTED BREVE; Einvert-  
edbreve  
15901 \DeclareTextCompositeCommand{\textinvbreve}{PU}{E}{\82\006}% U+0206  
15902 % U+0207 LATIN SMALL LETTER E WITH INVERTED BREVE; einvert-  
breve  
15903 \DeclareTextCompositeCommand{\textinvbreve}{PU}{e}{\82\007}% U+0207  
15904 (/puenc)  
15905 (\*puextra)

15906 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; Idblgrave  
15907 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208  
15908 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave  
15909 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
15910 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
15911 </puextra>  
15912 (\*puenc)  
15913 % U+020A LATIN CAPITAL LETTER I WITH INVERTED BREVE; Iinverted-  
breve  
15914 \DeclareTextCompositeCommand{\textinvbreve}{PU}{I}{\82\012}% U+020A  
15915 % U+020B LATIN SMALL LETTER I WITH INVERTED BREVE; iinverted-  
breve  
15916 \DeclareTextCompositeCommand{\textinvbreve}{PU}{i}{\82\013}% U+020B  
15917 \DeclareTextCompositeCommand{\textinvbreve}{PU}{i}{\82\013}% U+020B  
15918 </puenc>  
15919 (\*puextra)<
/puextra>  
15920 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave  
15921 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C  
15922 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave  
15923 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D  
15924 </puextra>  
15925 (\*puenc)<
/puextra>  
15926 % U+020E LATIN CAPITAL LETTER O WITH INVERTED BREVE; Oinverted-  
edbreve  
15927 \DeclareTextCompositeCommand{\textinvbreve}{PU}{O}{\82\016}% U+020E  
15928 % U+020F LATIN SMALL LETTER O WITH INVERTED BREVE; oinverted-  
breve  
15929 \DeclareTextCompositeCommand{\textinvbreve}{PU}{o}{\82\017}% U+020F  
15930 </puenc>  
15931 (\*puextra)<
/puextra>  
15932 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave  
15933 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210  
15934 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave  
15935 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211  
15936 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave  
15937 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214  
15938 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave  
15939 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215  
15940 </puextra>  
15941 (\*puenc)<
/puextra>  
15942 % U+0216 LATIN CAPITAL LETTER U WITH INVERTED BREVE; Uinverted-  
edbreve  
15943 \DeclareTextCompositeCommand{\textinvbreve}{PU}{U}{\82\026}% U+0216  
15944 % U+0217 LATIN SMALL LETTER U WITH INVERTED BREVE; uinverted-  
breve  
15945 \DeclareTextCompositeCommand{\textinvbreve}{PU}{u}{\82\027}% U+0217  
15946 % U+021E LATIN CAPITAL LETTER H WITH CARON  
15947 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E  
15948 % U+021F LATIN SMALL LETTER H WITH CARON  
15949 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F  
15950 % U+0221 LATIN SMALL LETTER D WITH CURL; \textctd (tipa)  
15951 \DeclareTextCommand{\textctd}{PU}{\82\041}% U+0221  
15952 % U+0225 LATIN SMALL LETTER Z WITH HOOK; \textcommatailz (tipa)  
15953 \DeclareTextCommand{\textcommatailz}{PU}{\82\045}% U+0225



15954 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE  
15955 \DeclareTextCompositeCommand{\.}{PU}{A}{\82\046}% U+0226  
15956 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE  
15957 \DeclareTextCompositeCommand{\.}{PU}{a}{\82\047}% U+0227  
15958 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA  
15959 \DeclareTextCompositeCommand{\c}{PU}{E}{\82\050}% U+0228  
15960 % U+0229 LATIN SMALL LETTER E WITH CEDILLA  
15961 \DeclareTextCompositeCommand{\c}{PU}{e}{\82\051}% U+0229  
15962 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE  
15963 \DeclareTextCompositeCommand{\.}{PU}{O}{\82\056}% U+022E  
15964 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE  
15965 \DeclareTextCompositeCommand{\.}{PU}{o}{\82\057}% U+022F  
15966 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON  
15967 \DeclareTextCompositeCommand{\=} {PU}{Y}{\82\062}% U+0232  
15968 % U+0233 LATIN SMALL LETTER Y WITH MACRON  
15969 \DeclareTextCompositeCommand{\=} {PU}{y}{\82\063}% U+0233  
15970 % U+0235 LATIN SMALL LETTER N WITH CURL; \textctn (tipa)  
15971 \DeclareTextCommand{\textctn}{PU}{\82\065}% U+0235  
15972 % U+0236 LATIN SMALL LETTER T WITH CURL; \textctt (tipa)  
15973 \DeclareTextCommand{\textctt}{PU}{\82\066}% U+0236  
15974 % U+0237 LATIN SMALL LETTER DOTLESS J  
15975 \DeclareTextCommand{\j}{PU}{\82\067}% U+0237  
15976 % U+0238 LATIN SMALL LETTER DB DIGRAPH; \textdblig (tipx)  
15977 \DeclareTextCommand{\textPUdblig}{PU}{\82\070}% U+0238  
15978 %\* \textPUdblig -> \textdblig (tipx)  
15979 % U+0239 LATIN SMALL LETTER QP DIGRAPH; \textqplig (tipx)  
15980 \DeclareTextCommand{\textPUqplig}{PU}{\82\071}% U+0239  
15981 %\* \textPUqplig -> \textqplig (tipx)  
15982 % U+023C LATIN SMALL LETTER C WITH STROKE; \slashc (wsuipa)  
15983 \DeclareTextCommand{\textslashc}{PU}{\82\074}%\* U+023C  
15984 %\* \textslashc -> \textcentoldstyle (textcomp)  
15985 % With bar instead of stroke:  
15986 %\* \textslashc -> \textbarc (tipa)

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

15987 % U+0250 LATIN SMALL LETTER TURNED A; aturned; \textturna (tipa)  
15988 \DeclareTextCommand{\textturna}{PU}{\82\120}% U+0250  
15989 %\* \textturna -> \inva (wasysym)  
15990 % U+0251 LATIN SMALL LETTER ALPHA/LATIN SMALL LETTER  
15991 % SCRIPT A; ascript; \textscripta (tipa), \scripta (wsuipa)  
15992 \DeclareTextCommand{\textscripta}{PU}{\82\121}%\* U+0251  
15993 %\* \textscripta -> \vara (phonetic)  
15994 % U+0252 LATIN SMALL LETTER TURNED ALPHA; ascriptturned;  
15995 % \textturnscripta (tipa)  
15996 \DeclareTextCommand{\textturnscripta}{PU}{\82\122}% U+0252  
15997 %\* \textturnscripta -> \invscripta (wsuipa)  
15998 %\* \textturnscripta -> \rotvara (phonetic)  
15999 % U+0253 LATIN CAPITAL LETTER B WITH HOOK; bhook; \texthtb (tipa)  
16000 \DeclareTextCommand{\texthtb}{PU}{\82\123}% U+0253  
16001 %\* \texthtb -> \hookb (wsuipa)  
16002 %\* \texthtb -> \hausab (phonetic)  
16003 % U+0254 LATIN SMALL LETTER OPEN O; oopen;  
16004 % \textopeno (tipa), \openo (wasysym)  
16005 \DeclareTextCommand{\textopeno}{PU}{\82\124}%\* U+0254

16006 %\* \textopeno -> \varopeno (phonetic)  
16007 % U+0255 LATIN SMALL LETTER C WITH CURL; ccurl; \textctc (tipa)  
16008 \DeclareTextCommand{\textctc}{PU}{\82\125}% U+0255  
16009 %\* \textctc -> \curlyc (wsuipa)  
16010 % U+0256 LATIN SMALL LETTER D WITH TAIL; dtail; \textrtaild (tipa)  
16011 \DeclareTextCommand{\textrtaild}{PU}{\82\126}% U+0256  
16012 %\* \textrtaild -> \taild (wsuipa)  
16013 % U+0257 LATIN SMALL LETTER D WITH HOOK; dhook; \texthtd (tipa)  
16014 \DeclareTextCommand{\texthtd}{PU}{\82\127}% U+0257  
16015 %\* \texthtd -> \hookd (wsuipa)  
16016 %\* \texthtd -> \hausad (phonetic)  
16017 % U+0258 LATIN SMALL LETTER REVERSED E; ereversed;  
16018 % \textreve (tipa), \reve (wsuipa)  
16019 \DeclareTextCommand{\textreve}{PU}{\82\130}% U+0258  
16020 % U+0259 LATIN SMALL LETTER SCHWA; schwa;  
16021 % \textschwa (tipa), \schwa (wsuipa, phonetic)  
16022 \DeclareTextCommand{\textschwa}{PU}{\82\131}% U+0259  
16023 % U+025A LATIN SMALL LETTER SCHWA WITH HOOK; schwahook;  
16024 % \textrhookschwa (tipa)  
16025 \DeclareTextCommand{\textrhookschwa}{PU}{\82\132}% U+025A  
16026 %\* \textrhookschwa -> \er (wsuipa)  
16027 % U+025B LATIN SMALL LETTER OPEN E/LATIN SMALL LETTER EP-  
SILON; eopen;  
16028 % \niepsilon (wsuipa)  
16029 \DeclareTextCommand{\textniepsilon}{PU}{\82\133}% U+025B  
16030 %\* \textniepsilon -> \epsi (phonetic)  
16031 % U+025C LATIN SMALL LETTER REVERSED OPEN E; eopenreversed;  
16032 % \textrepsilon (tipa), \repsilon (wsuipa)  
16033 \DeclareTextCommand{\textrepsilon}{PU}{\82\134}% U+025C  
16034 % U+025D LATIN SMALL LETTER REVERSED OPEN E WITH HOOK; eopen-  
reversedhook;  
16035 % \textrhookrepsilon (tipa)  
16036 \DeclareTextCommand{\textrhookrepsilon}{PU}{\82\135}% U+025D  
16037 %\* \textrhookrepsilon -> \hookrepsilon (wsuipa)  
16038 % U+025E LATIN SMALL LETTER CLOSED REVERSED OPEN E; eopenre-  
versedclosed;  
16039 % \textcloserepsilon (tipa)  
16040 \DeclareTextCommand{\textcloserepsilon}{PU}{\82\136}% U+025E  
16041 %\* \textcloserepsilon -> \closedrepsilon (wsuipa)  
16042 % U+025F LATIN SMALL LETTER DOTLESS J WITH STROKE; jdot-  
lessstroke;  
16043 % \textbardotlessj (tipa)  
16044 \DeclareTextCommand{\textbardotlessj}{PU}{\82\137}% U+025F  
16045 %\* \textbardotlessj -> \barj (phonetic)  
16046 % U+0260 LATIN SMALL LETTER G WITH HOOK; ghook; \texthtg (tipa)  
16047 \DeclareTextCommand{\texthtg}{PU}{\82\140}% U+0260  
16048 %\* \texthtg -> \hookg (wsuipa)  
16049 % U+0261 LATIN SMALL LETTER SCRIPT G; gscript;  
16050 % \textscriptg (tipa), \scriptg (wsuipa)  
16051 \DeclareTextCommand{\textscriptg}{PU}{\82\141}% U+0261  
16052 %\* \textscriptg -> \varg (phonetic)  
16053 % U+0262 LATIN LETTER SMALL CAPITAL G; \textscg (tipa), \scg (wsuipa)  
16054 \DeclareTextCommand{\textscg}{PU}{\82\142}% U+0262  
16055 % U+0263 LATIN SMALL LETTER GAMMA; gammalatinsmall;

16056 % \ipagamma (wsuipa), \vod (phonetic)  
16057 \DeclareTextCommand{\textipagamma}{PU}{\82\143}%\* U+0263  
16058 %\* \textipagamma -> \vod (pnonetic)  
16059 % U+0264 LATIN SMALL LETTER RAMS HORN; ramshorn;  
16060 % \babygamma (wsuipa)  
16061 \DeclareTextCommand{\textbabygamma}{PU}{\82\144}%\* U+0264  
16062 % U+0265 LATIN SMALL LETTER TURNED H; hturned; \textturnh (tipa)  
16063 \DeclareTextCommand{\textturnh}{PU}{\82\145}% U+0265  
16064 %\* \textturnh -> \invh (wsuipa)  
16065 %\* \textturnh -> \udesc (phonetic)  
16066 % U+0266 LATIN SMALL LETTER H WITH HOOK; hhook; \texthth (tipa)  
16067 \DeclareTextCommand{\texthth}{PU}{\82\146}% U+0266  
16068 %\* \texthth -> \hookh (wsuipa)  
16069 %\* \texthth -> \voicedh (phonetic)  
16070 % U+0267 LATIN SMALL LETTER HENG WITH HOOK; henghook; \tex-  
ththeng (tipa)  
16071 \DeclareTextCommand{\texththeng}{PU}{\82\147}% U+0267  
16072 %\* \texththeng -> \hookheng (wsuipa)  
16073 % U+0268 LATIN SMALL LETTER I WITH STROKE;  
16074 % \textbari (tipa), \bari (wsuipa)  
16075 \DeclareTextCommand{\textbari}{PU}{\82\150}%\* U+0268  
16076 %\* \textbari -> \ibar (phonetic)  
16077 % U+0269 LATIN SMALL LETTER IOTA; iotalatin; \niiota (wsuipa)  
16078 \DeclareTextCommand{\textniiota}{PU}{\82\151}%\* U+0269  
16079 %\* \textniiota -> \vari (phonetic)  
16080 % U+026A LATIN LETTER SMALL CAPITAL I; \textsci (tipa), \sci (wsuipa)  
16081 \DeclareTextCommand{\textsci}{PU}{\82\152}%\* U+026A  
16082 % U+026B LATIN SMALL LETTER L WITH MIDDLE TILDE; lmiddletilde;  
16083 % \textltilde (tipa)  
16084 \DeclareTextCommand{\textltilde}{PU}{\82\153}% U+026B  
16085 %\* \textltilde -> \tildel (wsuipa)  
16086 % U+026C LATIN SMALL LETTER L WITH BELT; lbelt; \textbeltl (tipa)  
16087 \DeclareTextCommand{\textbeltl}{PU}{\82\154}% U+026C  
16088 %\* \textbeltl -> \latfrc (wsuipa)  
16089 % U+026D LATIN SMALL LETTER L WITH RETROFLEX HOOK;  
16090 % lhookretroflex; \textrtaill (tipa)  
16091 \DeclareTextCommand{\textrtaill}{PU}{\82\155}% U+026D  
16092 %\* \textrtaill -> \taill (wsuipa)  
16093 % U+026E LATIN SMALL LETTER LEZH; lezh; \textlyoghlig (tipa)  
16094 \DeclareTextCommand{\textlyoghlig}{PU}{\82\156}% U+026E  
16095 %\* \textlyoghlig -> \lz (wsuipa)  
16096 % U+026F LATIN SMALL LETTER TURNED M; mturned; \textturnm (tipa)  
16097 \DeclareTextCommand{\textturnm}{PU}{\82\157}% U+026F  
16098 %\* \textturnm -> \invm (wsuipa)  
16099 %\* \textturnm -> \rotm (phonetic)  
16100 % U+0270 LATIN SMALL LETTER TURNED M WITH LONG LEG; mlongleg-  
turned;  
16101 % \textturnmrleg (tipa)  
16102 \DeclareTextCommand{\textturnmrleg}{PU}{\82\160}% U+0270  
16103 %\* \textturnmrleg -> \legm (wsuipa)  
16104 % U+0271 LATIN SMALL LETTER M WITH HOOK; mhook; \textltailm (tipa)  
16105 \DeclareTextCommand{\textltailm}{PU}{\82\161}% U+0271  
16106 %\* \textltailm -> \labdentalnas (wsuipa)  
16107 %\* \textltailm -> \emgma (phonetic)

16108 % U+0272 LATIN SMALL LETTER N WITH LEFT HOOK; nhookleft; \textl-  
tailn (tipa)  
16109 \DeclareTextCommand{\textltailn}{PU}{\82\162}% U+0272  
16110 %\* \textltailn -> \nj (wsuipa)  
16111 %\* \textltailn -> \enya (phonetic)  
16112 % U+0273 LATIN SMALL LETTER N WITH RETROFLEX HOOK;  
16113 % nhookretroflex; \textrtailn (tipa)  
16114 \DeclareTextCommand{\textrtailn}{PU}{\82\163}% U+0273  
16115 %\* \textrtailn -> \tailn (wsuipa)  
16116 % U+0274 LATIN LETTER SMALL CAPITAL N; \textscn (tipa), \scn (wsuipa)  
16117 \DeclareTextCommand{\textscn}{PU}{\82\164}%\* U+0274  
16118 % U+0275 LATIN CAPITAL LETTER O WITH MIDDLE TILDE/  
16119 % LATIN CAPITAL LETTER BARRED O; obarred;  
16120 % \textbaro (tipa), \baro (wsuipa)  
16121 % But \baro from stmaryrd is different!  
16122 \DeclareTextCommand{\textbaro}{PU}{\82\165}% U+0275  
16123 % U+0276 LATIN LETTER SMALL CAPITAL OE; \textscoeelig (tipa)  
16124 \DeclareTextCommand{\textscoeelig}{PU}{\82\166}% U+0276  
16125 % U+0277 LATIN SMALL LETTER CLOSED OMEGA; omegalatinclosed;  
16126 % \textcloseomega (tipa)  
16127 \DeclareTextCommand{\textcloseomega}{PU}{\82\167}% U+0277  
16128 %\* \textcloseomega -> \closedniomega (wsuipa)  
16129 %\* \textcloseomega -> \varomega (phonetic)  
16130 % U+0278 LATIN SMALL LETTER PHI; philatin; \nipher (wsuipa)  
16131 \DeclareTextCommand{\textnipher}{PU}{\82\170}%\* U+0278  
16132 % U+0279 LATIN SMALL LETTER TURNED R; rturned; \textturnr (tipa)  
16133 \DeclareTextCommand{\textturnr}{PU}{\82\171}% U+0279  
16134 %\* \textturnr -> \invr (wsuipa)  
16135 %\* \textturnr -> \rotr (phonetic)  
16136 % U+027A LATIN SMALL LETTER TURNED R WITH LONG LEG;  
16137 % rlonglegturned; \textturnlongleg (tipa)  
16138 \DeclareTextCommand{\textturnlongleg}{PU}{\82\172}% U+027A  
16139 %\* \textturnlongleg -> \invleg (wsuipa)  
16140 % U+027B LATIN SMALL LETTER TURNED R WITH HOOK; rhookturned;  
16141 % \textturnrrtail (tipa)  
16142 \DeclareTextCommand{\textturnrrtail}{PU}{\82\173}% U+027B  
16143 %\* \textturnrrtail -> \tailinvr (wsuipa)  
16144 % U+027C LATIN SMALL LETTER R WITH LONG LEG; rlongleg; \textlon-  
gleg (tipa)  
16145 \DeclareTextCommand{\textlongleg}{PU}{\82\174}%\* U+027C  
16146 %\* \textlongleg -> \leg (wsuipa)  
16147 % U+027D LATIN SMALL LETTER R WITH TAIL; rhook; \textrtailr (tipa)  
16148 \DeclareTextCommand{\textrtailr}{PU}{\82\175}% U+027D  
16149 %\* \textrtailr -> \tailr (wsuipa)  
16150 % U+027E LATIN SMALL LETTER R WITH FISHHOOK; rfishhook;  
16151 % \textfishhook (tipa)  
16152 \DeclareTextCommand{\textfishhook}{PU}{\82\176}% U+027E  
16153 %\* \textfishhook -> \flapr (wsuipa)  
16154 %\* \textfishhook -> \flap (phonetic)  
16155 % U+027F LATIN SMALL LETTER REVERSED R WITH FISHHOOK; rfish-  
hookreversed;  
16156 % \textlhtlongi (tipa)  
16157 \DeclareTextCommand{\textlhtlongi}{PU}{\82\177}% U+027F  
16158 % U+0280 LATIN LETTER SMALL CAPITAL R; \textscr (tipa), \scr (wsuipa)

16159 \DeclareTextCommand{\textscrl}{PU}{\82\200}%\* U+0280  
16160 % U+0281 LATIN LETTER SMALL CAPITAL INVERTED R; Rsmallinverted;  
16161 % \textinvscr (tipa), \invscr (wsuipa)  
16162 \DeclareTextCommand{\textinvscr}{PU}{\82\201}%\* U+0281  
16163 % U+0282 LATIN SMALL LETTER S WITH HOOK; shook; \textrtails (tipa)  
16164 \DeclareTextCommand{\textrtails}{PU}{\82\202}% U+0282  
16165 %\* \textrtails -> \tails (wsuipa)  
16166 % U+0283 LATIN SMALL LETTER ESH; esh; \textesh (tipa), \esh (wsuipa)  
16167 \DeclareTextCommand{\textesh}{PU}{\82\203}%\* U+0283  
16168 % U+0284 LATIN SMALL LETTER DOTLESS J WITH STROKE AND HOOK;  
16169 % dotlessjstrokehook; \texthtbardotlessj (tipa)  
16170 \DeclareTextCommand{\texthtbardotlessj}{PU}{\82\204}% U+0284  
16171 % U+0285 LATIN SMALL LETTER SQUAT REVERSED ESH; eshsquatre-  
versed;  
16172 % \textvibyi (tipa)  
16173 \DeclareTextCommand{\textvibyi}{PU}{\82\205}% U+0285  
16174 % U+0286 LATIN SMALL LETTER ESH WITH CURL; eshcurl; \textctesh (tipa)  
16175 \DeclareTextCommand{\textctesh}{PU}{\82\206}% U+0286  
16176 %\* \textctesh -> \curlyesh (wsuipa)  
16177 % U+0287 LATIN SMALL LETTER TURNED T; tturned; \textturnt (tipa)  
16178 \DeclareTextCommand{\textturnt}{PU}{\82\207}% U+0287  
16179 %\* \textturnt -> \clickt (wsuipa)  
16180 % U+0288 LATIN SMALL LETTER T WITH RETROFLEX HOOK; retroflex-  
hook;  
16181 % \texttrtailt (tipa)  
16182 \DeclareTextCommand{\texttrtailt}{PU}{\82\210}% U+0288  
16183 %\* \texttrtailt -> \tailt (wsuipa)  
16184 % U+0289 LATIN SMALL LETTER U BAR; ubar;  
16185 % \textbaru (tipa), \baru (wsuipa)  
16186 \DeclareTextCommand{\textbaru}{PU}{\82\211}%\* U+0289  
16187 %\* \textbaru -> \ubar (phonetic)  
16188 % U+028A LATIN SMALL LETTER UPSILON; \niupsilon (wsuipa)  
16189 \DeclareTextCommand{\textniupsilon}{PU}{\82\212}%\* U+028A  
16190 %\* \textniupsilon -> \rotOmega (phonetic)  
16191 % U+028B LATIN SMALL LETTER V WITH HOOK/LATIN SMALL LET-  
TER SCRIPT V;  
16192 % vhook; \textscriptv (tipa), \scriptv (wsuipa)  
16193 \DeclareTextCommand{\textscriptv}{PU}{\82\213}%\* U+028B  
16194 % U+028C LATIN SMALL LETTER TURNED V; vturned; \textturnv (tipa)  
16195 \DeclareTextCommand{\textturnv}{PU}{\82\214}%\* U+028C  
16196 %\* \textturnv -> \invv (wsuipa)  
16197 %\* \textturnv -> \pwedge (phonetic)  
16198 % U+028D LATIN SMALL LETTER TURNED W; wturned; \textturnw (tipa)  
16199 \DeclareTextCommand{\textturnw}{PU}{\82\215}%\* U+028D  
16200 %\* \textturnw -> \invw (wsuipa)  
16201 %\* \textturnw -> \rotw (phonetic)  
16202 % U+028E LATIN SMALL LETTER TURNED Y; yturned; \textturny (tipa)  
16203 \DeclareTextCommand{\textturny}{PU}{\82\216}%\* U+028E  
16204 %\* \textturny -> \invy (wsuipa)  
16205 %\* \textturny -> \roty (phonetic)  
16206 % U+028F LATIN LETTER SMALL CAPITAL Y; \textscy (tipa), \scy (wsuipa)  
16207 \DeclareTextCommand{\textscy}{PU}{\82\217}%\* U+028F  
16208 % U+0290 LATIN SMALL LETTER Z WITH RETROFLEX HOOK; zretroflex-  
hook;

16209 % \textrtailz (tipa)  
16210 \DeclareTextCommand{\textrtailz}{PU}{\82\220}% U+0290  
16211 %\* \textrtailz -> \tailz (wsuipa)  
16212 % U+0291 LATIN SMALL LETTER Z WITH CURL; zcurl; \textctz (tipa)  
16213 \DeclareTextCommand{\textctz}{PU}{\82\221}% U+0291  
16214 %\* \textctz -> \curlyz (wsuipa)  
16215 % U+0292 LATIN SMALL LETTER EZH/LATIN SMALL LETTER YOGH; ezh;  
16216 % \textyogh (tipa), \yogh (wsuipa)  
16217 \DeclareTextCommand{\textyogh}{PU}{\82\222}%\* U+0292  
16218 % U+0293 LATIN SMALL LETTER EZH WITH CURL/LATIN SMALL LETTER YOGH CURL;  
16219 % ezhcurl; \textctyogh (tipa)  
16220 \DeclareTextCommand{\textctyogh}{PU}{\82\223}% U+0293  
16221 %\* \textctyogh -> \curlyyogh (wsuipa)  
16222 % U+0294 LATIN LETTER GLOTTAL STOP; glottalstop;  
16223 % \textglotstop (tipa), \glotstop (wsuipa)  
16224 \DeclareTextCommand{\textglotstop}{PU}{\82\224}%\* U+0294  
16225 %\* \textglotstop -> \ejective (wsuipa)  
16226 %\* \textglotstop -> \glottal (phonetic)  
16227 % U+0295 LATIN LETTER PHARYNGEAL VOICED FRICATIVE/  
16228 % LATIN LETTER REVERSED GLOTTAL STOP; glottalstopreversed;  
16229 % \textrevglotstop (tipa), \revglotstop (wsuipa)  
16230 \DeclareTextCommand{\textrevglotstop}{PU}{\82\225}%\* U+0295  
16231 %\* \textrevglotstop -> \reveject (wsuipa)  
16232 % U+0296 LATIN LETTER INVERTED GLOTTAL STOP; glottalstopinverted;  
16233 % \textinvglotstop (tipa), \invglotstop (wsuipa)  
16234 \DeclareTextCommand{\textinvglotstop}{PU}{\82\226}%\* U+0296  
16235 % U+0297 LATIN LETTER STRETCHED C; cstretched; \textstretchc (tipa)  
16236 \DeclareTextCommand{\textstretchc}{PU}{\82\227}% U+0297  
16237 %\* \textstretchc -> \clickc (wsuipa)  
16238 %\* \textstretchc -> \textstretchcvar (tipx)  
16239 % U+0298 LATIN LETTER BILABIAL CLICK; bilabialclick;  
16240 % \textbullseye (tipa)  
16241 \DeclareTextCommand{\textbullseye}{PU}{\82\230}% U+0298  
16242 %\* \textbullseye -> \clickb (wsuipa)  
16243 %\* \textbullseye -> \textObullseye (tipx)  
16244 % U+0299 LATIN LETTER SMALL CAPITAL B; \textscb (tipa)  
16245 \DeclareTextCommand{\textscb}{PU}{\82\231}% U+0299  
16246 % U+029A LATIN SMALL LETTER CLOSED OPEN E; eopenclosed;  
16247 % \textcloseepsilon (tipa)  
16248 \DeclareTextCommand{\textcloseepsilon}{PU}{\82\232}% U+029A  
16249 % U+029B LATIN LETTER SMALL CAPITAL G WITH HOOK; Gsmallhook;  
16250 % \texthtscg (tipa)  
16251 \DeclareTextCommand{\texthtscg}{PU}{\82\233}% U+029B  
16252 % U+029C LATIN LETTER SMALL CAPITAL H; \textsch (tipa)  
16253 \DeclareTextCommand{\textsch}{PU}{\82\234}% U+029C  
16254 % U+029D LATIN SMALL LETTER J WITH CROSSED-TAIL; jcrossed-tail;  
\textcdj (tipa)  
16255 \DeclareTextCommand{\textctj}{PU}{\82\235}% U+029D  
16256 %\* \textctj -> \textctjvar (tipx)  
16257 % U+029E LATIN SMALL LETTER TURNED K; kturned; \textturnk (tipa)  
16258 \DeclareTextCommand{\textturnk}{PU}{\82\236}% U+029E  
16259 %\* \textturnk -> \textturnsck (tipx)  
16260 % U+029F LATIN LETTER SMALL CAPITAL L; \textscL (tipa)

16261 \DeclareTextCommand{\textsc1}{PU}{\82\237}% U+029F  
16262 % U+02A0 LATIN SMALL LETTER Q WITH HOOK; qhook; \texthtq (tipa)  
16263 \DeclareTextCommand{\texthtq}{PU}{\82\240}% U+02A0  
16264 % U+02A1 LATIN LETTER GLOTTAL STOP WITH STROKE; glottalstop-  
stroke;  
16265 % \textbarglotstop (tipa)  
16266 \DeclareTextCommand{\textbarglotstop}{PU}{\82\241}% U+02A1  
16267 % U+02A2 LATIN LETTER REVERSED GLOTTAL STOP WITH STROKE/  
16268 % LATIN LETTER REVERSED GLOTTAL STOP BAR; glottalstopstrokere-  
versed;  
16269 % \textbarrevglotstop (tipa)  
16270 \DeclareTextCommand{\textbarrevglotstop}{PU}{\82\242}% U+02A2  
16271 % U+02A3 LATIN SMALL LETTER DZ DIGRAPH; dzaltone; \textdzlig (tipa)  
16272 \DeclareTextCommand{\textdzlig}{PU}{\82\243}% U+02A3  
16273 %\* \textdzlig -> \dz (wsupipa)  
16274 % U+02A4 LATIN SMALL LETTER DEZH DIGRAPH; dezh; \textdyogh-  
lig (tipa)  
16275 \DeclareTextCommand{\textdyoghlig}{PU}{\82\244}% U+02A4  
16276 % U+02A5 LATIN SMALL LETTER DZ DIGRAPH WITH CURL; dzcurl;  
16277 % \textdctzlig (tipa)  
16278 \DeclareTextCommand{\textdctzlig}{PU}{\82\245}% U+02A5  
16279 % U+02A6 LATIN SMALL LETTER TS DIGRAPH; ts; \texttslig (tipa)  
16280 \DeclareTextCommand{\texttslig}{PU}{\82\246}% U+02A6  
16281 % U+02A7 LATIN SMALL LETTER TESH DIGRAPH; tesh; \texttshlig (tipa)  
16282 \DeclareTextCommand{\texttshlig}{PU}{\82\247}% U+02A7  
16283 %\* \texttshlig -> \tesh (wsuipa)  
16284 % U+02A8 LATIN SMALL LETTER TC DIGRAPH WITH CURL; tccurl;  
16285 % \texttctclig (tipa)  
16286 \DeclareTextCommand{\texttctclig}{PU}{\82\250}% U+02A8  
16287 % U+02AE LATIN SMALL LETTER TURNED H WITH FISHHOOK;  
16288 % \textlhtlongy (tipa)  
16289 \DeclareTextCommand{\textlhtlongy}{PU}{\82\256}% U+02AE  
16290 % U+02AF LATIN SMALL LETTER TURNED H WITH FISHHOOK AND TAIL;  
16291 % \textvibyy (tipa)  
16292 \DeclareTextCommand{\textvibyy}{PU}{\82\257}% U+02AF

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

16293 % U+02BD MODIFIER LETTER REVERSED COMMA;  
16294 % commareversedmod, afi64937; \textrevapostrophe (tipa)  
16295 \DeclareTextCommand{\textrevapostrophe}{PU}{\82\275}% U+02BD  
16296 % U+02C0 MODIFIER LETTER GLOTTAL STOP; glottalstopmod;  
16297 % \textraiseglotstop (tipa)  
16298 \DeclareTextCommand{\textraiseglotstop}{PU}{\82\300}% U+02C0  
16299 % U+02C2 MODIFIER LETTER LEFT ARROWHEAD; arrowheadleftmod;  
16300 % \textlptr (tipa)  
16301 \DeclareTextCommand{\textlptr}{PU}{\82\302}% U+02C2  
16302 % U+02C3 MODIFIER LETTER RIGHT ARROWHEAD; arrowheadrightmod;  
16303 % \textrptr (tipa)  
16304 \DeclareTextCommand{\textrptr}{PU}{\82\303}% U+02C3  
16305 % U+02C7 CARON; caron  
16306 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7  
16307 % U+02C8 MODIFIER LETTER VERTICAL LINE; verticalinmod;  
16308 % \textprimstress (tipa)  
16309 \DeclareTextCommand{\textprimstress}{PU}{\82\310}% U+02C8

16310 % U+02CC MODIFIER LETTER LOW VERTICAL LINE; `verticallinelowmod`;  
 16311 % `\textsecstress` (tipa)  
 16312 `\DeclareTextCommand{\textsecstress}{PU}{\82\314}% U+02CC`  
 16313 % U+02D0 MODIFIER LETTER TRIANGULAR COLON; `colontriangularmod`;  
 16314 % `\textlengthmark` (tipa)  
 16315 `\DeclareTextCommand{\textlengthmark}{PU}{\82\320}% U+02D0`  
 16316 % U+02D1 MODIFIER LETTER HALF TRIANGULAR COLON; `colontriangularhalfmod`;  
 16317 % `\texthalflength` (tipa)  
 16318 `\DeclareTextCommand{\texthalflength}{PU}{\82\321}% U+02D1`  
 16319 % U+02D8 BREVE; `breve`  
 16320 `\DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8`  
 16321 % U+02D9 DOT ABOVE; `dotaccent`  
 16322 `\DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9`  
 16323 % U+02DA RING ABOVE; `ring`  
 16324 `\DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA`  
 16325 % U+02DB OGONEK; `ogonek`  
 16326 `\DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB`  
 16327 % U+02DC SMALL TILDE; `ilde`, `*tilde`  
 16328 `\DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC`  
 16329 % U+02DD DOUBLE ACUTE ACCENT; `hungarumlaut`  
 16330 `\DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD`  
 16331 `\DeclareTextCommand{\textacutedbl}{PU}{\82\335}% U+02DD`  
 16332 % U+02F3 MODIFIER LETTER LOW RING  
 16333 `\DeclareTextCommand{\textringlow}{PU}{\82\363}% U+02F3`  
 16334 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT  
 16335 `\DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5`  
 16336 % U+02F7 MODIFIER LETTER LOW TILDE  
 16337 `\DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7`  
 16338 % U+02F9 MODIFIER LETTER BEGIN HIGH TONE; `\textopencorner` (tipa)  
 16339 `\DeclareTextCommand{\textopencorner}{PU}{\82\371}% U+02F9`  
 16340 % U+02FA MODIFIER LETTER END HIGH TONE; `\textcorner` (tipa)  
 16341 `\DeclareTextCommand{\textcorner}{PU}{\82\372}% U+02FA`

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

16342 % U+030F COMBINING DOUBLE GRAVE ACCENT; `dblgravecmb`  
 16343 `\DeclareTextCommand{\textdoublegrave}{PU}{\83\017}% U+030F`  
 16344 % U+0311 COMBINING INVERTED BREVE; `breveinvertedcmb`  
 16345 `\DeclareTextCommand{\textnewtie}{PU}{\83\021}% U+0311`  
 16346 % U+0323 COMBINING DOT BELOW; `dotbelowcmb`, `*dotbelowcomb`  
 16347 `\DeclareTextCommand{\textdotbelow}{PU}{\83\043}% U+0323`  
 16348 % U+0331 COMBINING MACRON BELOW; `macronbelowcmb`  
 16349 `\DeclareTextCommand{\textmacronbelow}{PU}{\83\061}% U+0331`  
 16350 % U+0361 COMBINING DOUBLE INVERTED BREVE; `breveinverteddoublecmb`  
 16351 `\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.

```

16352 \ifx\textBeta\@undefined \else
16353 \input{puenc-greek.def}
16354 \fi
16355 \end{puenc}

```



### 47.2.10 Cyrillic: U+0400 to U+04FF

Thanks to Vladimir Volovich (vvv@vvv.vsu.ru) for the help with the Cyrillic glyph names. Cyrillic only loaded if \CYRDZE is defined.

```
16356 (*puenc)
16357 \ifx\CYRDZE\@undefined \else
16358 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE
16359 \DeclareTextCompositeCommand{\`}{PU}{\CYRE}{\84\000}% U+0400
16360 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrillic, *afii10023
16361 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401
16362 \DeclareTextCompositeCommand{\"}{PU}{\CYRE}{\84\001}% U+0401
16363 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, *afii10051
16364 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402
16365 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, *afii10052
16366 \DeclareTextCompositeCommand{\'}{PU}{\CYRG}{\84\003}% U+0403
16367 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrillic, *afii10053
16368 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404
16369 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzecyrillic, *afii10054
16370 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405
16371 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I;
16372 % Icyrillic, *afii10055
16373 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406
16374 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrillic, *afii10056
16375 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407
16376 \DeclareTextCompositeCommand{\"}{PU}{\CYRII}{\84\007}% U+0407
16377 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, *afii10057
16378 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408
16379 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, *afii10058
16380 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409
16381 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, *afii10059
16382 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A
16383 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, *afii10060
16384 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B
16385 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, *afii10061
16386 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% U+040C
16387 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE
16388 \DeclareTextCompositeCommand{\`}{PU}{\CYRI}{\84\015}% U+040D
16389 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrillic, *afii10062
16390 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E
16391 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\016}% U+040E
16392 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, *afii10145
16393 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F
16394 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, *afii10017
16395 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410
16396 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrillic, *afii10018
16397 \DeclareTextCommand{\CYRB}{PU}{\84\021}% U+0411
16398 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, *afii10019
16399 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412
16400 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, *afii10020
16401 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413
16402 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, *afii10021
16403 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414
16404 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, *afii10022
16405 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415
```

16406 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, \*afii10024  
16407 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416  
16408 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, \*afii10025  
16409 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417  
16410 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrillic, \*afii10026  
16411 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418  
16412 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; Iishortcyrillic, \*afii10027  
16413 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419  
16414 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}% U+0419  
16415 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, \*afii10028  
16416 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A  
16417 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, \*afii10029  
16418 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B  
16419 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, \*afii10030  
16420 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C  
16421 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, \*afii10031  
16422 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D  
16423 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, \*afii10032  
16424 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E  
16425 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, \*afii10033  
16426 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F  
16427 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, \*afii10034  
16428 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420  
16429 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, \*afii10035  
16430 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421  
16431 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, \*afii10036  
16432 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422  
16433 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, \*afii10037  
16434 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423  
16435 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, \*afii10038  
16436 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424  
16437 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, \*afii10039  
16438 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425  
16439 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, \*afii10040  
16440 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426  
16441 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, \*afii10041  
16442 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427  
16443 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, \*afii10042  
16444 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428  
16445 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, \*afii10043  
16446 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429  
16447 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN;  
16448 % Hardsigncyrillic, \*afii10044  
16449 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A  
16450 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, \*afii10045  
16451 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B  
16452 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN;  
16453 % Softsigncyrillic, \*afii10046  
16454 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C  
16455 % U+042D CYRILLIC CAPITAL LETTER E; Ereversedcyrillic, \*afii10047  
16456 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D  
16457 % U+042E CYRILLIC CAPITAL LETTER YU; IUcyrillic, \*afii10048  
16458 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E  
16459 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, \*afii10049

16460 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F  
16461 % U+0430 CYRILLIC SMALL LETTER A; acyrillic, \*afii10065  
16462 \DeclareTextCommand{\cyra}{PU}{\84\060}% U+0430  
16463 % U+0431 CYRILLIC SMALL LETTER BE; \*afii10066, becyrillic  
16464 \DeclareTextCommand{\cyrb}{PU}{\84\061}% U+0431  
16465 % U+0432 CYRILLIC SMALL LETTER VE; \*afii10067, vecyrillic  
16466 \DeclareTextCommand{\cyrv}{PU}{\84\062}% U+0432  
16467 % U+0433 CYRILLIC SMALL LETTER GHE; \*afii10068, gecyrillic  
16468 \DeclareTextCommand{\cyrg}{PU}{\84\063}% U+0433  
16469 % U+0434 CYRILLIC SMALL LETTER DE; \*afii10069, decyrillic  
16470 \DeclareTextCommand{\cyrd}{PU}{\84\064}% U+0434  
16471 % U+0435 CYRILLIC SMALL LETTER IE; \*afii10070, iecyrillic  
16472 \DeclareTextCommand{\cyre}{PU}{\84\065}% U+0435  
16473 % U+0436 CYRILLIC SMALL LETTER ZHE; \*afii10072, zhecyrillic  
16474 \DeclareTextCommand{\cyrzh}{PU}{\84\066}% U+0436  
16475 % U+0437 CYRILLIC SMALL LETTER ZE; \*afii10073, zecyrillic  
16476 \DeclareTextCommand{\cyrz}{PU}{\84\067}% U+0437  
16477 % U+0438 CYRILLIC SMALL LETTER I; \*afii10074, iicyrillic  
16478 \DeclareTextCommand{\cyri}{PU}{\84\070}% U+0438  
16479 % U+0439 CYRILLIC SMALL LETTER SHORT I; \*afii10075, iishortcyrillic  
16480 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% U+0439  
16481 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}% U+0439  
16482 % U+043A CYRILLIC SMALL LETTER KA; \*afii10076, kacyrillic  
16483 \DeclareTextCommand{\cyrk}{PU}{\84\072}% U+043A  
16484 % U+043B CYRILLIC SMALL LETTER EL; \*afii10077, elcyrillic  
16485 \DeclareTextCommand{\cyr}{PU}{\84\073}% U+043B  
16486 % U+043C CYRILLIC SMALL LETTER EM; \*afii10078, emcyrillic  
16487 \DeclareTextCommand{\cyrm}{PU}{\84\074}% U+043C  
16488 % U+043D CYRILLIC SMALL LETTER EN; \*afii10079, encyrillic  
16489 \DeclareTextCommand{\cyrn}{PU}{\84\075}% U+043D  
16490 % U+043E CYRILLIC SMALL LETTER O; \*afii10080, ocyrillic  
16491 \DeclareTextCommand{\cyro}{PU}{\84\076}% U+043E  
16492 % U+043F CYRILLIC SMALL LETTER PE; \*afii10081, pecyrillic  
16493 \DeclareTextCommand{\cyrp}{PU}{\84\077}% U+043F  
16494 % U+0440 CYRILLIC SMALL LETTER ER; \*afii10082, ercyrillic  
16495 \DeclareTextCommand{\cyrr}{PU}{\84\100}% U+0440  
16496 % U+0441 CYRILLIC SMALL LETTER ES; \*afii10083, escyrillic  
16497 \DeclareTextCommand{\cyrs}{PU}{\84\101}% U+0441  
16498 % U+0442 CYRILLIC SMALL LETTER TE; \*afii10084, tecyrillic  
16499 \DeclareTextCommand{\cyrt}{PU}{\84\102}% U+0442  
16500 % U+0443 CYRILLIC SMALL LETTER U; \*afii10085, ucyrillic  
16501 \DeclareTextCommand{\cyru}{PU}{\84\103}% U+0443  
16502 % U+0444 CYRILLIC SMALL LETTER EF; \*afii10086, efcyrillic  
16503 \DeclareTextCommand{\cyrf}{PU}{\84\104}% U+0444  
16504 % U+0445 CYRILLIC SMALL LETTER HA; \*afii10087, khacyrillic  
16505 \DeclareTextCommand{\cyrh}{PU}{\84\105}% U+0445  
16506 % U+0446 CYRILLIC SMALL LETTER TSE; \*afii10088, tsecyrillic  
16507 \DeclareTextCommand{\cyrc}{PU}{\84\106}% U+0446  
16508 % U+0447 CYRILLIC SMALL LETTER CHE; \*afii10089, checyrillic  
16509 \DeclareTextCommand{\cyrch}{PU}{\84\107}% U+0447  
16510 % U+0448 CYRILLIC SMALL LETTER SHA; \*afii10090, shacyrillic  
16511 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% U+0448  
16512 % U+0449 CYRILLIC SMALL LETTER SHCHA; \*afii10091, shchacyrillic  
16513 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% U+0449

16514 % U+044A CYRILLIC SMALL LETTER HARD SIGN; \*afii10092, hardsigncyril-  
lic  
16515 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% U+044A  
16516 %\* \cyrhrdsn -> \hardsign (tipa)  
16517 % U+044B CYRILLIC SMALL LETTER YERU; \*afii10093, yericyrillic  
16518 \DeclareTextCommand{\cyrery}{PU}{\84\113}% U+044B  
16519 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; \*afii10094, softsigncyrillic  
16520 \DeclareTextCommand{\cyrsoftsn}{PU}{\84\114}% U+044C  
16521 %\* \cyrsoftsn -> \softsign (tipa)  
16522 % U+044D CYRILLIC SMALL LETTER E; \*afii10095, ereversedcyrillic  
16523 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% U+044D  
16524 % U+044E CYRILLIC SMALL LETTER YU; \*afii10096, iucyrillic  
16525 \DeclareTextCommand{\cyrriu}{PU}{\84\116}% U+044E  
16526 % U+044F CYRILLIC SMALL LETTER YA; \*afii10097, iacyrillic  
16527 \DeclareTextCommand{\cyrria}{PU}{\84\117}% U+044F  
16528 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE  
16529 \DeclareTextCompositeCommand{\`}{PU}{\cyr}{\84\120}% U+0450  
16530 % U+0451 CYRILLIC SMALL LETTER IO; \*afii10071, iocyrillic  
16531 \DeclareTextCommand{\cyrrio}{PU}{\84\121}% U+0451  
16532 \DeclareTextCompositeCommand{\"}{PU}{\cyr}{\84\121}% U+0451  
16533 % U+0452 CYRILLIC SMALL LETTER DJE; \*afii10099, djecyrillic  
16534 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% U+0452  
16535 % U+0453 CYRILLIC SMALL LETTER GJE; \*afii10100, gjecyrillic  
16536 \DeclareTextCompositeCommand{\'}{PU}{\cyr}{\84\123}% U+0453  
16537 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; \*afii10101, ecyrillic  
16538 \DeclareTextCommand{\cyrrie}{PU}{\84\124}% U+0454  
16539 % U+0455 CYRILLIC SMALL LETTER DZE; \*afii10102, dzecyrillic  
16540 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% U+0455  
16541 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I;  
16542 % \*afii10103, icyrillic  
16543 \DeclareTextCommand{\cyrrii}{PU}{\84\126}% U+0456  
16544 % U+0457 CYRILLIC SMALL LETTER YI; \*afii10104, yicyrillic  
16545 \DeclareTextCommand{\cyrri}{PU}{\84\127}% U+0457  
16546 \DeclareTextCompositeCommand{\"}{PU}{\cyrrii}{\84\127}% U+0457  
16547 % U+0458 CYRILLIC SMALL LETTER JE; \*afii10105, jecyrillic  
16548 \DeclareTextCommand{\cyrje}{PU}{\84\130}% U+0458  
16549 % U+0459 CYRILLIC SMALL LETTER LJE; \*afii10106, ljecyrillic  
16550 \DeclareTextCommand{\cyrlje}{PU}{\84\131}% U+0459  
16551 % U+045A CYRILLIC SMALL LETTER NJE; \*afii10107, njecyrillic  
16552 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% U+045A  
16553 % U+045B CYRILLIC SMALL LETTER TSHE; \*afii10108, tshecyrillic  
16554 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% U+045B  
16555 % U+045C CYRILLIC SMALL LETTER KJE; \*afii10109, kjecyrillic  
16556 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% U+045C  
16557 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE  
16558 \DeclareTextCompositeCommand{\`}{PU}{\cyrri}{\84\135}% U+045D  
16559 % U+045E CYRILLIC SMALL LETTER SHORT U; \*afii10110, ushortcyrillic  
16560 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E  
16561 \DeclareTextCompositeCommand{\U}{PU}{\cyr}{\84\136}% U+045E  
16562 % U+045F CYRILLIC SMALL LETTER DZHE; \*afii10193, dzhecyrillic  
16563 \DeclareTextCommand{\cyrdze}{PU}{\84\137}% U+045F  
16564 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic  
16565 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460  
16566 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrillic

16567 \DeclareTextCommand{\cyromega}{PU}{\84\141}% U+0461  
16568 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, \*afii10146  
16569 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462  
16570 % U+0463 CYRILLIC SMALL LETTER YAT; \*afii10194, yatcyrillic  
16571 \DeclareTextCommand{\cyryat}{PU}{\84\143}% U+0463  
16572 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic  
16573 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464  
16574 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrillic  
16575 \DeclareTextCommand{\cyriote}{PU}{\84\145}% U+0465  
16576 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslittlecyrillic  
16577 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466  
16578 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslittlecyrillic  
16579 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467  
16580 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslitlei-  
otifiedcyrillic  
16581 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468  
16582 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslitlei-  
otifiedcyrillic  
16583 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469  
16584 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbigcyrillic  
16585 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A  
16586 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbigcyrillic  
16587 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B  
16588 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbigiotified-  
cyrillic  
16589 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C  
16590 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbigiotified-  
cyrillic  
16591 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D  
16592 % U+046E CYRILLIC CAPITAL LETTER KSI; Ksicyrillic  
16593 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% U+046E  
16594 % U+046F CYRILLIC SMALL LETTER KSI; ksicyrillic  
16595 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F  
16596 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psicyrillic  
16597 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470  
16598 % U+0471 CYRILLIC SMALL LETTER PSI; psicyrillic  
16599 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471  
16600 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, \*afii10147  
16601 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472  
16602 % U+0473 CYRILLIC SMALL LETTER FITA; \*afii10195, fitacyrillic  
16603 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473  
16604 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, \*afii10148  
16605 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474  
16606 % U+0475 CYRILLIC SMALL LETTER IZHITSA; \*afii10196, izhitsacyrillic  
16607 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475  
16608 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE  
GRAVE ACCENT; Izhitsadblgravecyrillic  
16609 % GRAVE ACCENT; Izhitsadblgravecyrillic  
16610 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% U+0476  
16611 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE  
GRAVE ACCENT; izhitsadblgravecyrillic  
16612 % GRAVE ACCENT; izhitsadblgravecyrillic  
16613 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477  
16614 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic  
16615 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478  
16616 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic

16617 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479  
16618 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyrillic  
16619 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A  
16620 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic  
16621 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B  
16622 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatitlocyrillic  
16623 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C  
16624 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlocyrillic  
16625 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D  
16626 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic  
16627 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E  
16628 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic  
16629 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F  
16630 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic  
16631 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480  
16632 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic  
16633 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481  
16634 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic  
16635 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% U+0482  
\84\203: U+0483 COMBINING CYRILLIC TITLO; titlocyrilliccmb  
\84\204: U+0484 COMBINING CYRILLIC PALATALIZATION; palatalizationcyrilliccmb  
\84\205: U+0485 COMBINING CYRILLIC DASIA PNEUMATA; dasiapneumatacyrilliccmb  
\84\206: U+0486 COMBINING CYRILLIC PSILI PNEUMATA; psilipneumatcyrilliccmb  
\84\207: U+0487 COMBINING CYRILLIC POKRYTIE  
\84\210: U+0488 COMBINING CYRILLIC HUNDRED THOUSANDS SIGN  
\84\211: U+0489 COMBINING CYRILLIC MILLIONS SIGN  
16636 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL  
16637 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A  
16638 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL  
16639 \DeclareTextCommand{\cyrishrtdsc}{PU}{\84\213}% U+048B  
16640 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN  
16641 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C  
16642 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN  
16643 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D  
16644 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK  
16645 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E  
16646 % U+048F CYRILLIC SMALL LETTER ER WITH TICK  
16647 \DeclareTextCommand{\cyrrtick}{PU}{\84\217}% U+048F  
16648 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturncyrillic, \*afii10050  
16649 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490  
16650 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; \*afii10098, gheupturncyrillic  
16651 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491  
16652 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestrokecyrillic  
16653 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492

16654 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic  
16655 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% U+0493  
16656 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK;  
16657 % Ghemiddlehookcyrillic  
16658 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494  
16659 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK;  
16660 % ghemiddlehookcyrillic  
16661 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495  
16662 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER;  
16663 % Zhedescendercyrillic  
16664 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496  
16665 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER;  
16666 % zhedescendercyrillic  
16667 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% U+0497  
16668 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescen-  
dercyrillic  
16669 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498  
16670 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498  
16671 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescender-  
cyrillic  
16672 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% U+0499  
16673 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499  
16674 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescen-  
dercyrillic  
16675 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A  
16676 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kadescen-  
dercyrillic  
16677 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% U+049B  
16678 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE;  
16679 % Kavertikalstrokecyrillic  
16680 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C  
16681 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE;  
16682 % kavertikalstrokecyrillic  
16683 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D  
16684 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic  
16685 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E  
16686 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic  
16687 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% U+049F  
16688 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic  
16689 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0  
16690 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic  
16691 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1  
16692 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescen-  
dercyrillic  
16693 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2  
16694 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endescender-  
cyrillic  
16695 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3  
16696 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic  
16697 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4  
16698 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic  
16699 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5  
16700 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemid-  
dlehookcyrillic

16701 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6  
16702 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddlehookcyrillic  
16703 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7  
16704 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyrillic  
16705 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8  
16706 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic  
16707 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% U+04A9  
16708 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescendercyrillic  
16709 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA  
16710 \DeclareTextCompositeCommand{\k}{PU}{\CYRS}{\84\252}% U+04AA  
16711 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescendercyrillic  
16712 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% U+04AB  
16713 \DeclareTextCompositeCommand{\k}{PU}{\cyr}{\84\253}% U+04AB  
16714 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescendercyrillic  
16715 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC  
16716 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescendercyrillic  
16717 \DeclareTextCommand{\cyrtdsc}{PU}{\84\255}% U+04AD  
16718 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic  
16719 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE  
16720 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; ustraightcyrillic  
16721 \DeclareTextCommand{\cyry}{PU}{\84\257}% U+04AF  
16722 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Ustraightstrokecyrillic  
16723 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0  
16724 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; usstraightstrokecyrillic  
16725 \DeclareTextCommand{\cyryhcrs}{PU}{\84\261}% U+04B1  
16726 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hadesdescendercyrillic  
16727 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% U+04B2  
16728 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadescendercyrillic  
16729 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% U+04B3  
16730 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetsecyrillic  
16731 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4  
16732 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetsecyrillic  
16733 \DeclareTextCommand{\cyrтетse}{PU}{\84\265}% U+04B5  
16734 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER;  
16735 % Chedescendercyrillic  
16736 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6  
16737 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescendercyrillic  
16738 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% U+04B7  
16739 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE;  
16740 % Cheverticalstrokecyrillic  
16741 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8  
16742 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE;  
16743 % cheverticalstrokecyrillic



16744 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9  
16745 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic  
16746 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA  
16747 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic  
16748 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB  
16749 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasian-  
cyrillic  
16750 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC  
16751 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyril-  
lic  
16752 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% U+04BD  
16753 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCEN-  
DER; Chedescenderabkhasiancyrillic  
16754 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE  
16755 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE  
16756 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCEN-  
DER; chedescenderabkhasiancyrillic  
16757 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% U+04BF  
16758 \DeclareTextCompositeCommand{\k}{PU}{\cyrabhch}{\84\277}% U+04BF  
16759 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic  
16760 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0  
16761 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic  
16762 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1  
16763 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic  
16764 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% U+04C2  
16765 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic  
16766 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3  
16767 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic  
16768 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% U+04C4  
16769 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL  
16770 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5  
16771 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL  
16772 \DeclareTextCommand{\cyrldsc}{PU}{\84\306}% U+04C6  
16773 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic  
16774 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7  
16775 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic  
16776 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% U+04C8  
16777 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakas-  
siancyrillic  
16778 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB  
16779 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassian-  
cyrillic  
16780 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% U+04CC  
16781 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL  
16782 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD  
16783 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL  
16784 \DeclareTextCommand{\cyrmdsc}{PU}{\84\316}% U+04CE  
\84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA  
16785 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevecyrillic  
16786 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0  
16787 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevecyrillic  
16788 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% U+04D1  
16789 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyril-  
lic

16790 \DeclareTextCompositeCommand{\}{PU}{\CYRA}{\84\322}% U+04D2  
16791 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresiscyrillic  
16792 \DeclareTextCompositeCommand{\}{PU}{\cyra}{\84\323}% U+04D3  
16793 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aiecyrillic  
16794 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4  
16795 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aiecyrillic  
16796 \DeclareTextCommand{\cyrae}{PU}{\84\325}% U+04D5  
16797 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrevocyrillic  
16798 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6  
16799 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrevocyrillic  
16800 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% U+04D7  
16801 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwacyrillic  
16802 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8  
16803 % U+04D9 CYRILLIC SMALL LETTER SCHWA; \*afii10846, schwacyrillic  
16804 \DeclareTextCommand{\cyrswa}{PU}{\84\331}% U+04D9  
16805 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS;  
16806 % Schwadieresiscyrillic  
16807 \DeclareTextCompositeCommand{\}{PU}{\CYRSCHWA}{\84\332}% U+04DA  
16808 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS;  
16809 % schwadieresiscyrillic  
16810 \DeclareTextCompositeCommand{\}{PU}{\cyrswa}{\84\333}% U+04DB  
16811 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhedie-  
siscyrillic  
16812 \DeclareTextCompositeCommand{\}{PU}{\CYRZH}{\84\334}% U+04DC  
16813 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedieresis-  
cyrillic  
16814 \DeclareTextCompositeCommand{\}{PU}{\cyrzh}{\84\335}% U+04DD  
16815 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedieresis-  
cyrillic  
16816 \DeclareTextCompositeCommand{\}{PU}{\CYRZ}{\84\336}% U+04DE  
16817 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedieresiscyril-  
lic  
16818 \DeclareTextCompositeCommand{\}{PU}{\cyrz}{\84\337}% U+04DF  
16819 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasian-  
cyrillic  
16820 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0  
16821 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasiancyril-  
lic  
16822 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% U+04E1  
16823 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Imacroncyrillic  
16824 \DeclareTextCompositeCommand{\=}{PU}{\CYRI}{\84\342}% U+04E2  
16825 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacroncyrillic  
16826 \DeclareTextCompositeCommand{\=}{PU}{\cyri}{\84\343}% U+04E3  
16827 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresiscyrillic  
16828 \DeclareTextCompositeCommand{\}{PU}{\CYRI}{\84\344}% U+04E4  
16829 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresiscyrillic  
16830 \DeclareTextCompositeCommand{\}{PU}{\cyri}{\84\345}% U+04E5  
16831 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresiscyril-  
lic  
16832 \DeclareTextCompositeCommand{\}{PU}{\CYRO}{\84\346}% U+04E6  
16833 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresiscyrillic  
16834 \DeclareTextCompositeCommand{\}{PU}{\cyro}{\84\347}% U+04E7  
16835 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarredcyrillic  
16836 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8

16837 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarredcyrillic  
 16838 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9  
 16839 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERESIS;  
 16840 % Obarreddieresiscyrillic  
 16841 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% U+04EA  
 16842 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS;  
 16843 % obarreddieresiscyrillic  
 16844 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% U+04EB  
 16845 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS  
 16846 \DeclareTextCompositeCommand{"}{PU}{\CYREREV}{\84\354}% U+04EC  
 16847 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS  
 16848 \DeclareTextCompositeCommand{"}{PU}{\cyrerev}{\84\355}% U+04ED  
 16849 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacroncyrillic  
 16850 \DeclareTextCompositeCommand{=} {PU}{\CYRU}{\84\356}% U+04EE  
 16851 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacroncyrillic  
 16852 \DeclareTextCompositeCommand{=} {PU}{\cyru}{\84\357}% U+04EF  
 16853 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udieresiscyrillic  
 16854 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U+04F0  
 16855 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udieresiscyrillic  
 16856 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% U+04F1  
 16857 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhungarumlautcyrillic  
 16858 \DeclareTextCompositeCommand{H}{PU}{\CYRU}{\84\362}% U+04F2  
 16859 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhungarumlautcyrillic  
 16860 \DeclareTextCompositeCommand{H}{PU}{\cyru}{\84\363}% U+04F3  
 16861 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chedieresiscyrillic  
 16862 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% U+04F4  
 16863 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieresiscyrillic  
 16864 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% U+04F5  
 16865 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER  
 16866 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6  
 16867 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER  
 16868 \DeclareTextCommand{\cyrgdsc}{PU}{\84\367}% U+04F7  
 16869 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudieresiscyrillic  
 16870 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% U+04F8  
 16871 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudieresiscyrillic  
 16872 \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  
 16873 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK  
 16874 \DeclareTextCommand{\CYRHHK}{PU}{\84\374}% U+04FC  
 16875 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK  
 16876 \DeclareTextCommand{\cyrhhk}{PU}{\84\375}% U+04FD  
 16877 \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

```
16878 \ifx\hebdalet\@undefined\else
16879 % U+05C3 HEBREW PUNCTUATION SOF PASUQ
16880 \DeclareTextCommand{\sofpasuq}{PU}{\85\303}% U+05C3
16881 % U+05D0 HEBREW LETTER ALEF
16882 \DeclareTextCommand{\hebalef}{PU}{\85\320}% U+05D0
16883 % U+05D1 HEBREW LETTER BET
16884 \DeclareTextCommand{\hebbet}{PU}{\85\321}% U+05D1
16885 % U+05D2 HEBREW LETTER GIMEL
16886 \DeclareTextCommand{\hebgimel}{PU}{\85\322}% U+05D2
16887 % U+05D3 HEBREW LETTER DALET
16888 \DeclareTextCommand{\hebdalet}{PU}{\85\323}% U+05D3
16889 % U+05D4 HEBREW LETTER HE
16890 \DeclareTextCommand{\hebhe}{PU}{\85\324}% U+05D4
16891 % U+05D5 HEBREW LETTER VAV
16892 \DeclareTextCommand{\hebvav}{PU}{\85\325}% U+05D5
16893 % U+05D6 HEBREW LETTER ZAYIN
16894 \DeclareTextCommand{\hebzayin}{PU}{\85\326}% U+05D6
16895 % U+05D7 HEBREW LETTER HET
16896 \DeclareTextCommand{\hebhhet}{PU}{\85\327}% U+05D7
16897 % U+05D8 HEBREW LETTER TET
16898 \DeclareTextCommand{\hebtet}{PU}{\85\330}% U+05D8
16899 % U+05D9 HEBREW LETTER YOD
16900 \DeclareTextCommand{\hebyod}{PU}{\85\331}% U+05D9
16901 % U+05DA HEBREW LETTER FINAL KAF
16902 \DeclareTextCommand{\hebfinalkaf}{PU}{\85\332}% U+05DA
16903 % U+05DB HEBREW LETTER KAF
16904 \DeclareTextCommand{\hebkafe}{PU}{\85\333}% U+05DB
16905 % U+05DC HEBREW LETTER LAMED
16906 \DeclareTextCommand{\heblamed}{PU}{\85\334}% U+05DC
16907 % U+05DD HEBREW LETTER FINAL MEM
16908 \DeclareTextCommand{\hebfinalmem}{PU}{\85\335}% U+05DD
16909 % U+05DE HEBREW LETTER MEM
16910 \DeclareTextCommand{\hebmem}{PU}{\85\336}% U+05DE
16911 % U+05DF HEBREW LETTER FINAL NUN
16912 \DeclareTextCommand{\hebfinalnun}{PU}{\85\337}% U+05DF
16913 % U+05E0 HEBREW LETTER NUN
16914 \DeclareTextCommand{\hebnun}{PU}{\85\340}% U+05E0
16915 % U+05E1 HEBREW LETTER SAMEKH
16916 \DeclareTextCommand{\hebsamekh}{PU}{\85\341}% U+05E1
16917 % U+05E2 HEBREW LETTER AYIN
16918 \DeclareTextCommand{\hebayin}{PU}{\85\342}% U+05E2
16919 % U+05E3 HEBREW LETTER FINAL PE
16920 \DeclareTextCommand{\hebfinalpe}{PU}{\85\343}% U+05E3
16921 % U+05E4 HEBREW LETTER PE
16922 \DeclareTextCommand{\hebpe}{PU}{\85\344}% U+05E4
16923 % U+05E5 HEBREW LETTER FINAL TSADI
16924 \DeclareTextCommand{\hebfinaltsadi}{PU}{\85\345}% U+05E5
16925 % U+05E6 HEBREW LETTER TSADI
```

16926 \DeclareTextCommand{\hebtsadi}{PU}{\85\346}% U+05E6  
 16927 % U+05E7 HEBREW LETTER QOF  
 16928 \DeclareTextCommand{\hebqof}{PU}{\85\347}% U+05E7  
 16929 % U+05E8 HEBREW LETTER RESH  
 16930 \DeclareTextCommand{\hebresh}{PU}{\85\350}% U+05E8  
 16931 % U+05E9 HEBREW LETTER SHIN  
 16932 \DeclareTextCommand{\hebshin}{PU}{\85\351}% U+05E9  
 16933 %\* \hebshin -> \hebsin (he8)  
 16934 % U+05EA HEBREW LETTER TAV  
 16935 \DeclareTextCommand{\hebtav}{PU}{\85\352}% U+05EA  
 16936 % U+05F0 HEBREW LIGATURE YIDDISH DOUBLE VAV  
 16937 \DeclareTextCommand{\doublevav}{PU}{\85\360}% U+05F0  
 16938 % U+05F1 HEBREW LIGATURE YIDDISH VAV YOD  
 16939 \DeclareTextCommand{\vavyod}{PU}{\85\361}% U+05F1  
 16940 % U+05F2 HEBREW LIGATURE YIDDISH DOUBLE YOD  
 16941 \DeclareTextCommand{\doubleyod}{PU}{\85\362}% U+05F2  
 16942 \fi

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

16943 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai  
 16944 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

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

16945 % U+1D00 LATIN LETTER SMALL CAPITAL A; \textscA (tipa)  
 16946 \DeclareTextCommand{\textscA}{PU}{\9035\000}% U+1D00  
 16947 % U+1D05 LATIN LETTER SMALL CAPITAL D; \scD (wsuipa)  
 16948 \DeclareTextCommand{\textscD}{PU}{\9035\005}%\* U+1D05  
 16949 % U+1D07 LATIN LETTER SMALL CAPITAL E; \textscE (tipa)  
 16950 \DeclareTextCommand{\textscE}{PU}{\9035\007}% U+1D07  
 16951 % U+1D0A LATIN LETTER SMALL CAPITAL J; \textscJ (tipa)  
 16952 \DeclareTextCommand{\textscJ}{PU}{\9035\012}% U+1D0A  
 16953 % U+1D0B LATIN LETTER SMALL CAPITAL K; \textscK (tipx)  
 16954 \DeclareTextCommand{\textPUscK}{PU}{\9035\013}% U+1D0B  
 16955 %\* \textPUscK -> \textscK (tipx)  
 16956 % U+1D0D LATIN LETTER SMALL CAPITAL M; \textscM (tipx)  
 16957 \DeclareTextCommand{\textPUscM}{PU}{\9035\015}% U+1D0D  
 16958 %\* \textPUscM -> \textscM (tipx)  
 16959 % U+1D18 LATIN LETTER SMALL CAPITAL P; \textscP (tipx)  
 16960 \DeclareTextCommand{\textPUscP}{PU}{\9035\030}% U+1D18  
 16961 %\* \textPUscP -> \textscP (tipx)  
 16962 % U+1D19 LATIN LETTER SMALL CAPITAL REVERSED R; \textrevscr (tipx)  
 16963 \DeclareTextCommand{\textPUrevscr}{PU}{\9035\031}% U+1D19  
 16964 %\* \textPUrevscr -> \textrevscr (tipx)  
 16965 % U+1D1C LATIN LETTER SMALL CAPITAL U; \textscU (tipa), \scU (wsuipa)  
 16966 \DeclareTextCommand{\textscU}{PU}{\9035\034}%\* U+1D1C  
 16967 % U+1D62 LATIN SUBSCRIPT SMALL LETTER I  
 16968 \DeclareTextCommand{\textiinferior}{PU}{\9035\142}%\* U+1D62  
 16969 % U+1D63 LATIN SUBSCRIPT SMALL LETTER R  
 16970 \DeclareTextCommand{\textrinferior}{PU}{\9035\143}%\* U+1D63  
 16971 % U+1D64 LATIN SUBSCRIPT SMALL LETTER U  
 16972 \DeclareTextCommand{\textuinferior}{PU}{\9035\144}%\* U+1D64  
 16973 % U+1D65 LATIN SUBSCRIPT SMALL LETTER V  
 16974 \DeclareTextCommand{\textvinferior}{PU}{\9035\145}%\* U+1D65

16975 % U+1D66 GREEK SUBSCRIPT SMALL LETTER BETA  
16976 \DeclareTextCommand{\textbetainferior}{PU}{\9035\146}%\* U+1D66  
16977 % U+1D67 GREEK SUBSCRIPT SMALL LETTER GAMMA  
16978 \DeclareTextCommand{\textgammainferior}{PU}{\9035\147}%\* U+1D67  
16979 % U+1D68 GREEK SUBSCRIPT SMALL LETTER RHO  
16980 \DeclareTextCommand{\textrhoinferior}{PU}{\9035\150}%\* U+1D68  
16981 % U+1D69 GREEK SUBSCRIPT SMALL LETTER PHI  
16982 \DeclareTextCommand{\textphiinferior}{PU}{\9035\151}%\* U+1D69  
16983 % U+1D6A GREEK SUBSCRIPT SMALL LETTER CHI  
16984 \DeclareTextCommand{\textchiinferior}{PU}{\9035\152}%\* U+1D6A  
16985 % U+1D7B LATIN SMALL CAPITAL LETTER I WITH STROKE;  
16986 % \barsci (wsuipa)  
16987 \DeclareTextCommand{\textbarsci}{PU}{\9035\173}%\* U+1D7B  
16988 % U+1D7D LATIN SMALL LETTER P WITH STROKE; \barp (wsuipa)  
16989 \DeclareTextCommand{\textbarp}{PU}{\9035\175}%\* U+1D7D  
16990 % U+1D7E LATIN SMALL CAPITAL LETTER U WITH STROKE;  
16991 % \barscu (wsuipa)  
16992 \DeclareTextCommand{\textbarscu}{PU}{\9035\176}%\* U+1D7E

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

16993 % U+1D8F LATIN SMALL LETTER A WITH RETROFLEX HOOK; \text-  
trhooka (tipx)  
16994 \DeclareTextCommand{\textPURhooka}{PU}{\9035\217}% U+1D8F  
16995 %\* \textPURhooka -> \texttrhooka (tipx)  
16996 % U+1D91 LATIN SMALL LETTER D WITH HOOK AND TAIL; \texthtr-  
taild (tipa)  
16997 \DeclareTextCommand{\texthtrtaild}{PU}{\9035\221}%\* U+1D91  
16998 % U+1D92 LATIN SMALL LETTER E WITH RETROFLEX HOOK; \text-  
trhooke (tipx)  
16999 \DeclareTextCommand{\textPURhooke}{PU}{\9035\222}% U+1D92  
17000 %\* \textPURhooke -> \texttrhooke (tipx)  
17001 % U+1D93 LATIN SMALL LETTER OPEN E WITH RETROFLEX HOOK;  
17002 % \textrhookepsilon (tipx)  
17003 \DeclareTextCommand{\textPURhookepsilon}{PU}{\9035\223}% U+1D93  
17004 %\* \textPURhookepsilon -> \textrhookepsilon (tipx)  
17005 % U+1D97 LATIN SMALL LETTER OPEN O WITH RETROFLEX HOOK;  
17006 % \textrhookopeno (tipx)  
17007 \DeclareTextCommand{\textPURhookopeno}{PU}{\9035\227}% U+1D97  
17008 %\* \textPURhookopeno -> \textrhookopeno (tipx)

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

17009 % U+1E00 LATIN CAPITAL LETTER A WITH RING BELOW; Aringbelow  
17010 \DeclareTextCompositeCommand{\textsubring}{PU}{A}{\9036\000}% U+1E00  
17011 % U+1E01 LATIN SMALL LETTER A WITH RING BELOW; aringbelow  
17012 \DeclareTextCompositeCommand{\textsubring}{PU}{a}{\9036\001}% U+1E01  
17013 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent  
17014 \DeclareTextCompositeCommand{\.}{PU}{B}{\9036\002}% U+1E02  
17015 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent  
17016 \DeclareTextCompositeCommand{\.}{PU}{b}{\9036\003}% U+1E03  
17017 % U+1E04 LATIN CAPITAL LETTER B WITH DOT BELOW; Bdotbelow  
17018 \DeclareTextCompositeCommand{\d}{PU}{B}{\9036\004}% U+1E04  
17019 % U+1E05 LATIN SMALL LETTER B WITH DOT BELOW; bdotbelow  
17020 \DeclareTextCompositeCommand{\d}{PU}{b}{\9036\005}% U+1E05  
17021 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow

17022 \DeclareTextCompositeCommand{\b}{PU}{B}{\9036\006}% U+1E06  
17023 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow  
17024 \DeclareTextCompositeCommand{\b}{PU}{b}{\9036\007}% U+1E07  
17025 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent  
17026 \DeclareTextCompositeCommand{\.}{PU}{D}{\9036\012}% U+1E0A  
17027 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent  
17028 \DeclareTextCompositeCommand{\.}{PU}{d}{\9036\013}% U+1E0B  
17029 % U+1E0C LATIN CAPITAL LETTER D WITH DOT BELOW; Ddotbelow  
17030 \DeclareTextCompositeCommand{\d}{PU}{D}{\9036\014}% U+1E0C  
17031 % U+1E0D LATIN SMALL LETTER D WITH DOT BELOW; ddotbelow  
17032 \DeclareTextCompositeCommand{\d}{PU}{d}{\9036\015}% U+1E0D  
17033 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow  
17034 \DeclareTextCompositeCommand{\b}{PU}{D}{\9036\016}% U+1E0E  
17035 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow  
17036 \DeclareTextCompositeCommand{\b}{PU}{d}{\9036\017}% U+1E0F  
17037 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla  
17038 \DeclareTextCompositeCommand{\c}{PU}{D}{\9036\020}% U+1E10  
17039 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla  
17040 \DeclareTextCompositeCommand{\c}{PU}{d}{\9036\021}% U+1E11  
17041 % U+1E12 LATIN CAPITAL LETTER D WITH CIRCUMFLEX BELOW; Dcircumflexbelow  
17042 \DeclareTextCompositeCommand{\textsubcircum}{PU}{D}{\9036\022}% U+1E12  
17043 % U+1E13 LATIN SMALL LETTER D WITH CIRCUMFLEX BELOW; dircumflexbelow  
17044 \DeclareTextCompositeCommand{\textsubcircum}{PU}{d}{\9036\023}% U+1E13  
17045 % U+1E14 LATIN CAPITAL LETTER E WITH MACRON AND GRAVE;  
17046 % Emacrongrave  
17047 \DeclareTextCompositeCommand{\textgravemacron}{PU}{E}{\9036\024}% U+1E14  
17048 % U+1E15 LATIN SMALL LETTER E WITH MACRON AND GRAVE;  
17049 % emacrongrave  
17050 \DeclareTextCompositeCommand{\textgravemacron}{PU}{e}{\9036\025}% U+1E15  
17051 % U+1E16 LATIN CAPITAL LETTER E WITH MACRON AND ACUTE;  
17052 % Emacronacute  
17053 \DeclareTextCompositeCommand{\textacutemacron}{PU}{E}{\9036\026}% U+1E16  
17054 % U+1E17 LATIN SMALL LETTER E WITH MACRON AND ACUTE;  
17055 % emacronacute  
17056 \DeclareTextCompositeCommand{\textacutemacron}{PU}{e}{\9036\027}% U+1E17  
17057 % U+1E18 LATIN CAPITAL LETTER E WITH CIRCUMFLEX BELOW; Ecircumflexbelow  
17058 \DeclareTextCompositeCommand{\textsubcircum}{PU}{E}{\9036\030}% U+1E18  
17059 % U+1E19 LATIN SMALL LETTER E WITH CIRCUMFLEX BELOW; eircumflexbelow  
17060 \DeclareTextCompositeCommand{\textsubcircum}{PU}{e}{\9036\031}% U+1E19  
17061 % U+1E1A LATIN CAPITAL LETTER E WITH TILDE BELOW; Etildebelow  
17062 \DeclareTextCompositeCommand{\textsubtilde}{PU}{E}{\9036\032}% U+1E1A  
17063 % U+1E1B LATIN SMALL LETTER E WITH TILDE BELOW; etildebelow  
17064 \DeclareTextCompositeCommand{\textsubtilde}{PU}{e}{\9036\033}% U+1E1B  
17065 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent  
17066 \DeclareTextCompositeCommand{\.}{PU}{F}{\9036\036}% U+1E1E  
17067 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent  
17068 \DeclareTextCompositeCommand{\.}{PU}{f}{\9036\037}% U+1E1F  
17069 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron  
17070 \DeclareTextCompositeCommand{\=} {PU}{G}{\9036\040}% U+1E20  
17071 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron

17072 \DeclareTextCompositeCommand{=} {PU}{g}{\9036\041}% U+1E21  
17073 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent  
17074 \DeclareTextCompositeCommand{.} {PU}{H}{\9036\042}% U+1E22  
17075 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent  
17076 \DeclareTextCompositeCommand{.} {PU}{h}{\9036\043}% U+1E23  
17077 % U+1E24 LATIN CAPITAL LETTER H WITH DOT BELOW; Hdotbelow  
17078 \DeclareTextCompositeCommand{d} {PU}{H}{\9036\044}% U+1E24  
17079 % U+1E25 LATIN SMALL LETTER H WITH DOT BELOW; hdotbelow  
17080 \DeclareTextCompositeCommand{d} {PU}{h}{\9036\045}% U+1E25  
17081 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis  
17082 \DeclareTextCompositeCommand{"} {PU}{H}{\9036\046}% U+1E26  
17083 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis  
17084 \DeclareTextCompositeCommand{"} {PU}{h}{\9036\047}% U+1E27  
17085 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla  
17086 \DeclareTextCompositeCommand{c} {PU}{H}{\9036\050}% U+1E28  
17087 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla  
17088 \DeclareTextCompositeCommand{c} {PU}{h}{\9036\051}% U+1E29  
17089 % U+1E2A LATIN CAPITAL LETTER H WITH BREVE BELOW; Hbrevebelow  
17090 \DeclareTextCompositeCommand{\textsubbreve} {PU}{H}{\9036\052}% U+1E2A  
17091 % U+1E2B LATIN SMALL LETTER H WITH BREVE BELOW; hbrevebelow  
17092 \DeclareTextCompositeCommand{\textsubbreve} {PU}{h}{\9036\053}% U+1E2B  
17093 % U+1E2C LATIN CAPITAL LETTER I WITH TILDE BELOW; Itildebelow  
17094 \DeclareTextCompositeCommand{\textsubtilde} {PU}{I}{\9036\054}% U+1E2C  
17095 % U+1E2D LATIN SMALL LETTER I WITH TILDE BELOW; itildebelow  
17096 \DeclareTextCompositeCommand{\textsubtilde} {PU}{i}{\9036\055}% U+1E2D  
17097 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute  
17098 \DeclareTextCompositeCommand{'} {PU}{K}{\9036\060}% U+1E30  
17099 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute  
17100 \DeclareTextCompositeCommand{'} {PU}{k}{\9036\061}% U+1E31  
17101 % U+1E32 LATIN CAPITAL LETTER K WITH DOT BELOW; Kdotbelow  
17102 \DeclareTextCompositeCommand{d} {PU}{K}{\9036\062}% U+1E32  
17103 % U+1E33 LATIN SMALL LETTER K WITH DOT BELOW; kdotbelow  
17104 \DeclareTextCompositeCommand{d} {PU}{k}{\9036\063}% U+1E33  
17105 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow  
17106 \DeclareTextCompositeCommand{\b} {PU}{K}{\9036\064}% U+1E34  
17107 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow  
17108 \DeclareTextCompositeCommand{\b} {PU}{k}{\9036\065}% U+1E35  
17109 % U+1E36 LATIN CAPITAL LETTER L WITH DOT BELOW; Ldotbelow  
17110 \DeclareTextCompositeCommand{d} {PU}{L}{\9036\066}% U+1E36  
17111 % U+1E37 LATIN SMALL LETTER L WITH DOT BELOW; ldotbelow  
17112 \DeclareTextCompositeCommand{d} {PU}{l}{\9036\067}% U+1E37  
17113 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow  
17114 \DeclareTextCompositeCommand{\b} {PU}{L}{\9036\072}% U+1E3A  
17115 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow  
17116 \DeclareTextCompositeCommand{\b} {PU}{l}{\9036\073}% U+1E3B  
17117 % U+1E3C LATIN CAPITAL LETTER L WITH CIRCUMFLEX BELOW; Lcircumflexbelow  
17118 \DeclareTextCompositeCommand{\textsubcircum} {PU}{L}{\9036\074}% U+1E3C  
17119 % U+1E3D LATIN SMALL LETTER L WITH CIRCUMFLEX BELOW; lcircumflexbelow  
17120 \DeclareTextCompositeCommand{\textsubcircum} {PU}{l}{\9036\075}% U+1E3D  
17121 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute  
17122 \DeclareTextCompositeCommand{'} {PU}{M}{\9036\076}% U+1E3E  
17123 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute



17124 \DeclareTextCompositeCommand{\'}{PU}{m}{\9036\077}% U+1E3F  
17125 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent  
17126 \DeclareTextCompositeCommand{\.}{PU}{M}{\9036\100}% U+1E40  
17127 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent  
17128 \DeclareTextCompositeCommand{\.}{PU}{m}{\9036\101}% U+1E41  
17129 % U+1E42 LATIN CAPITAL LETTER M WITH DOT BELOW; Mdotbelow  
17130 \DeclareTextCompositeCommand{\d}{PU}{M}{\9036\102}% U+1E42  
17131 % U+1E43 LATIN SMALL LETTER M WITH DOT BELOW; mdotbelow  
17132 \DeclareTextCompositeCommand{\d}{PU}{m}{\9036\103}% U+1E43  
17133 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent  
17134 \DeclareTextCompositeCommand{\.}{PU}{N}{\9036\104}% U+1E44  
17135 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent  
17136 \DeclareTextCompositeCommand{\.}{PU}{n}{\9036\105}% U+1E45  
17137 % U+1E46 LATIN CAPITAL LETTER N WITH DOT BELOW; Ndotbelow  
17138 \DeclareTextCompositeCommand{\d}{PU}{N}{\9036\106}% U+1E46  
17139 % U+1E47 LATIN SMALL LETTER N WITH DOT BELOW; ndotbelow  
17140 \DeclareTextCompositeCommand{\d}{PU}{n}{\9036\107}% U+1E47  
17141 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow  
17142 \DeclareTextCompositeCommand{\b}{PU}{N}{\9036\110}% U+1E48  
17143 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow  
17144 \DeclareTextCompositeCommand{\b}{PU}{n}{\9036\111}% U+1E49  
17145 % U+1E4A LATIN CAPITAL LETTER N WITH CIRCUMFLEX BELOW; Ncircumflexbelow  
17146 \DeclareTextCompositeCommand{\textsubcircum}{PU}{N}{\9036\112}% U+1E4A  
17147 % U+1E4B LATIN SMALL LETTER N WITH CIRCUMFLEX BELOW; ncircumflexbelow  
17148 \DeclareTextCompositeCommand{\textsubcircum}{PU}{n}{\9036\113}% U+1E4B  
17149 % U+1E50 LATIN CAPITAL LETTER O WITH MACRON AND GRAVE;  
17150 % Omacrongrave  
17151 \DeclareTextCompositeCommand{\textgravemacron}{PU}{O}{\9036\120}% U+1E50  
17152 % U+1E51 LATIN SMALL LETTER O WITH MACRON AND GRAVE;  
17153 % omacrongrave  
17154 \DeclareTextCompositeCommand{\textgravemacron}{PU}{o}{\9036\121}% U+1E51  
17155 % U+1E52 LATIN CAPITAL LETTER O WITH MACRON AND ACUTE;  
17156 % Omacronacute  
17157 \DeclareTextCompositeCommand{\textacutemacron}{PU}{O}{\9036\122}% U+1E52  
17158 % U+1E53 LATIN SMALL LETTER O WITH MACRON AND ACUTE;  
17159 % omacronacute  
17160 \DeclareTextCompositeCommand{\textacutemacron}{PU}{o}{\9036\123}% U+1E53  
17161 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute  
17162 \DeclareTextCompositeCommand{\'}{PU}{P}{\9036\124}% U+1E54  
17163 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute  
17164 \DeclareTextCompositeCommand{\'}{PU}{p}{\9036\125}% U+1E55  
17165 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent  
17166 \DeclareTextCompositeCommand{\.}{PU}{P}{\9036\126}% U+1E56  
17167 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent  
17168 \DeclareTextCompositeCommand{\.}{PU}{p}{\9036\127}% U+1E57  
17169 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent  
17170 \DeclareTextCompositeCommand{\.}{PU}{R}{\9036\130}% U+1E58  
17171 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent  
17172 \DeclareTextCompositeCommand{\.}{PU}{r}{\9036\131}% U+1E59  
17173 % U+1E5A LATIN CAPITAL LETTER R WITH DOT BELOW; Rdotbelow  
17174 \DeclareTextCompositeCommand{\d}{PU}{R}{\9036\132}% U+1E5A  
17175 % U+1E5B LATIN SMALL LETTER R WITH DOT BELOW; rdotbelow

17176 \DeclareTextCompositeCommand{\d}{PU}{r}{\9036\133}% U+1E5B  
17177 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow  
17178 \DeclareTextCompositeCommand{\b}{PU}{R}{\9036\136}% U+1E5E  
17179 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow  
17180 \DeclareTextCompositeCommand{\b}{PU}{r}{\9036\137}% U+1E5F  
17181 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent  
17182 \DeclareTextCompositeCommand{\.}{PU}{S}{\9036\140}% U+1E60  
17183 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent  
17184 \DeclareTextCompositeCommand{\.}{PU}{s}{\9036\141}% U+1E61  
17185 % U+1E62 LATIN CAPITAL LETTER S WITH DOT BELOW; Sdotbelow  
17186 \DeclareTextCompositeCommand{\d}{PU}{S}{\9036\142}% U+1E62  
17187 % U+1E63 LATIN SMALL LETTER S WITH DOT BELOW; sdotbelow  
17188 \DeclareTextCompositeCommand{\d}{PU}{s}{\9036\143}% U+1E63  
17189 % U+1E6A LATIN CAPITAL LETTER T WITH DOT ABOVE; Tdotaccent  
17190 \DeclareTextCompositeCommand{\.}{PU}{T}{\9036\152}% U+1E6A  
17191 % U+1E6B LATIN SMALL LETTER T WITH DOT ABOVE; tdotaccent  
17192 \DeclareTextCompositeCommand{\.}{PU}{t}{\9036\153}% U+1E6B  
17193 % U+1E6C LATIN CAPITAL LETTER T WITH DOT BELOW; Tdotbelow  
17194 \DeclareTextCompositeCommand{\d}{PU}{T}{\9036\154}% U+1E6C  
17195 % U+1E6D LATIN SMALL LETTER T WITH DOT BELOW; tdotbelow  
17196 \DeclareTextCompositeCommand{\d}{PU}{t}{\9036\155}% U+1E6D  
17197 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow  
17198 \DeclareTextCompositeCommand{\b}{PU}{T}{\9036\156}% U+1E6E  
17199 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow  
17200 \DeclareTextCompositeCommand{\b}{PU}{t}{\9036\157}% U+1E6F  
17201 % U+1E70 LATIN CAPITAL LETTER T WITH CIRCUMFLEX BELOW; Tcircumflexbelow  
17202 \DeclareTextCompositeCommand{\textsubcircum}{PU}{T}{\9036\160}% U+1E70  
17203 % U+1E71 LATIN SMALL LETTER T WITH CIRCUMFLEX BELOW; tcircumflexbelow  
17204 \DeclareTextCompositeCommand{\textsubcircum}{PU}{t}{\9036\161}% U+1E71  
17205 % U+1E72 LATIN CAPITAL LETTER U WITH DIAERESIS BELOW; Udiere-  
sisbelow  
17206 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{U}{\9036\162}% U+1E72  
17207 % U+1E73 LATIN SMALL LETTER U WITH DIAERESIS BELOW; udiere-  
sisbelow  
17208 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{u}{\9036\163}% U+1E73  
17209 % U+1E74 LATIN CAPITAL LETTER U WITH TILDE BELOW; Utildebelow  
17210 \DeclareTextCompositeCommand{\textsubtilde}{PU}{U}{\9036\164}% U+1E74  
17211 % U+1E75 LATIN SMALL LETTER U WITH TILDE BELOW; utildebelow  
17212 \DeclareTextCompositeCommand{\textsubtilde}{PU}{u}{\9036\165}% U+1E75  
17213 % U+1E76 LATIN CAPITAL LETTER U WITH CIRCUMFLEX BELOW; Ucircumflexbelow  
17214 \DeclareTextCompositeCommand{\textsubcircum}{PU}{U}{\9036\166}% U+1E76  
17215 % U+1E77 LATIN SMALL LETTER U WITH CIRCUMFLEX BELOW; ucircumflexbelow  
17216 \DeclareTextCompositeCommand{\textsubcircum}{PU}{u}{\9036\167}% U+1E77  
17217 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde  
17218 \DeclareTextCompositeCommand{\~}{PU}{V}{\9036\174}% U+1E7C  
17219 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde  
17220 \DeclareTextCompositeCommand{\~}{PU}{v}{\9036\175}% U+1E7D  
17221 % U+1E7E LATIN CAPITAL LETTER V WITH DOT BELOW; Vdotbelow  
17222 \DeclareTextCompositeCommand{\d}{PU}{V}{\9036\176}% U+1E7E  
17223 % U+1E7F LATIN SMALL LETTER V WITH DOT BELOW; vdotbelow

17224 \DeclareTextCompositeCommand{\d}{PU}{v}{\9036\177}% U+1E7F  
17225 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave  
17226 \DeclareTextCompositeCommand{\`}{PU}{W}{\9036\200}% U+1E80  
17227 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave  
17228 \DeclareTextCompositeCommand{\`}{PU}{w}{\9036\201}% U+1E81  
17229 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute  
17230 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\202}% U+1E82  
17231 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute  
17232 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\203}% U+1E83  
17233 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis  
17234 \DeclareTextCompositeCommand{\"}{PU}{W}{\9036\204}% U+1E84  
17235 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis  
17236 \DeclareTextCompositeCommand{\"}{PU}{w}{\9036\205}% U+1E85  
17237 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent  
17238 \DeclareTextCompositeCommand{\.}{PU}{W}{\9036\206}% U+1E86  
17239 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent  
17240 \DeclareTextCompositeCommand{\.}{PU}{w}{\9036\207}% U+1E87  
17241 % U+1E88 LATIN CAPITAL LETTER W WITH DOT BELOW; wdotbelow  
17242 \DeclareTextCompositeCommand{\d}{PU}{W}{\9036\210}% U+1E88  
17243 % U+1E89 LATIN SMALL LETTER W WITH DOT BELOW; wdotbelow  
17244 \DeclareTextCompositeCommand{\d}{PU}{w}{\9036\211}% U+1E89  
17245 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent  
17246 \DeclareTextCompositeCommand{\.}{PU}{X}{\9036\212}% U+1E8A  
17247 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent  
17248 \DeclareTextCompositeCommand{\.}{PU}{x}{\9036\213}% U+1E8B  
17249 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis  
17250 \DeclareTextCompositeCommand{\"}{PU}{X}{\9036\214}% U+1E8C  
17251 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis  
17252 \DeclareTextCompositeCommand{\"}{PU}{x}{\9036\215}% U+1E8D  
17253 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent  
17254 \DeclareTextCompositeCommand{\.}{PU}{Y}{\9036\216}% U+1E8E  
17255 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent  
17256 \DeclareTextCompositeCommand{\.}{PU}{y}{\9036\217}% U+1E8F  
17257 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex  
17258 \DeclareTextCompositeCommand{\^}{PU}{Z}{\9036\220}% U+1E90  
17259 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex  
17260 \DeclareTextCompositeCommand{\^}{PU}{z}{\9036\221}% U+1E91  
17261 % U+1E92 LATIN CAPITAL LETTER Z WITH DOT BELOW; Zdotbelow  
17262 \DeclareTextCompositeCommand{\d}{PU}{Z}{\9036\222}% U+1E92  
17263 % U+1E93 LATIN SMALL LETTER Z WITH DOT BELOW; zdotbelow  
17264 \DeclareTextCompositeCommand{\d}{PU}{z}{\9036\223}% U+1E93  
17265 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow  
17266 \DeclareTextCompositeCommand{\b}{PU}{Z}{\9036\224}% U+1E94  
17267 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow  
17268 \DeclareTextCompositeCommand{\b}{PU}{z}{\9036\225}% U+1E95  
17269 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow  
17270 \DeclareTextCompositeCommand{\b}{PU}{h}{\9036\226}% U+1E96  
17271 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis  
17272 \DeclareTextCompositeCommand{\"}{PU}{t}{\9036\227}% U+1E97  
17273 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring  
17274 \DeclareTextCompositeCommand{\r}{PU}{w}{\9036\230}% U+1E98  
17275 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring  
17276 \DeclareTextCompositeCommand{\r}{PU}{y}{\9036\231}% U+1E99  
17277 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdo-

taccent

17278 \DeclareTextCompositeCommand{\.}{PU}{\textlongs}{\9036\233}% U+1E9B  
17279 % U+1EA0 LATIN CAPITAL LETTER A WITH DOT BELOW; Adotbelow  
17280 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}% U+1EA0  
17281 % U+1EA1 LATIN SMALL LETTER A WITH DOT BELOW; adotbelow  
17282 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}% U+1EA1  
17283 % U+1EB8 LATIN CAPITAL LETTER E WITH DOT BELOW; Edotbelow  
17284 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}% U+1EB8  
17285 % U+1EB9 LATIN SMALL LETTER E WITH DOT BELOW; edotbelow  
17286 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}% U+1EB9  
17287 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde  
17288 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
17289 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde  
17290 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
17291 % U+1ECA LATIN CAPITAL LETTER I WITH DOT BELOW; Idotbelow  
17292 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}% U+1ECA  
17293 % U+1ECB LATIN SMALL LETTER I WITH DOT BELOW; idotbelow  
17294 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}% U+1ECB  
17295 % U+1ECC LATIN CAPITAL LETTER O WITH DOT BELOW; Odotbelow  
17296 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}% U+1ECC  
17297 % U+1ECD LATIN SMALL LETTER O WITH DOT BELOW; odotbelow  
17298 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}% U+1ECD  
17299 % U+1EE4 LATIN CAPITAL LETTER U WITH DOT BELOW; Udotbelow  
17300 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4  
17301 % U+1EE5 LATIN SMALL LETTER U WITH DOT BELOW; udotbelow  
17302 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}% U+1EE5  
17303 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave  
17304 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2  
17305 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave  
17306 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3  
17307 % U+1EF4 LATIN CAPITAL LETTER Y WITH DOT BELOW; Ydotbelow  
17308 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4  
17309 % U+1EF5 LATIN SMALL LETTER Y WITH DOT BELOW; ydotbelow  
17310 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}% U+1EF5  
17311 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde  
17312 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8  
17313 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde  
17314 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9

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

17315 % U+200C ZERO WIDTH NON-JOINER; \*afii61664, zerowidthnonjoiner  
17316 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C  
17317 % U+2013 EN DASH; endash  
17318 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013  
17319 % U+2014 EM DASH; emdash  
17320 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014  
17321 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar  
17322 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016  
17323 %\* \textbardbl -> \textdoublevertline (tipa)  
17324 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
17325 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018  
17326 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
17327 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019  
17328 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase

17329 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A  
17330 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
17331 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034}% U+201C  
17332 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
17333 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035}% U+201D  
17334 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
17335 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E  
17336 % U+2020 DAGGER; dagger  
17337 \DeclareTextCommand{\textdagger}{PU}{\9040\040}%\* U+2020  
17338 %\* \textdagger -> \dag (LaTeX)  
17339 % U+2021 DOUBLE DAGGER; daggerdbl; ddagger (LaTeX)  
17340 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021  
17341 %\* \textdaggerdbl -> \ddagger (LaTeX)  
17342 %\* \textdaggerdbl -> \ddag (LaTeX)  
17343 % U+2022 BULLET; bullet  
17344 \DeclareTextCommand{\textbullet}{PU}{\9040\042}%\* U+2022  
17345 % U+2025 TWO DOT LEADER; \hdotfor (MnSymbol)  
17346 \DeclareTextCommand{\texthdotfor}{PU}{\9040\045}%\* U+2025  
17347 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
17348 \DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026  
17349 %\* \textellipsis -> \mathellipsis  
17350 % U+2030 PER MILLE SIGN; perthousand  
17351 \DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030  
17352 % U+2031 PER TEN THOUSAND SIGN  
17353 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031  
17354 % U+2032 PRIME; minute; \prime (MnSymbol)  
17355 \DeclareTextCommand{\textprime}{PU}{\9040\062}%\* U+2032  
17356 % U+2033 DOUBLE PRIME; \second (mathabx)  
17357 \DeclareTextCommand{\textsecond}{PU}{\9040\063}%\* U+2033  
17358 % U+2034 TRIPLE PRIME; \third (mathabx)  
17359 \DeclareTextCommand{\textthird}{PU}{\9040\064}%\* U+2034  
17360 % U+2035 REVERSED PRIME; \backprime (AmS)  
17361 \DeclareTextCommand{\textbackprime}{PU}{\9040\065}%\* U+2035  
17362 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
ingleft  
17363 \DeclareTextCommand{\guilsingleft}{PU}{\9040\071}% U+2039  
17364 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
ingright  
17365 \DeclareTextCommand{\guilsingright}{PU}{\9040\072}% U+203A  
17366 % U+203B REFERENCE MARK; referencemark  
17367 \DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B  
17368 % U+203D INTERROBANG  
17369 \DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D  
17370 % U+2044 FRACTION SLASH; fraction  
17371 \DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044  
17372 % U+2045 LEFT SQUARE BRACKET WITH QUILL  
17373 \DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045  
17374 % U+2046 RIGHT SQUARE BRACKET WITH QUILL  
17375 \DeclareTextCommand{\textrquill}{PU}{\9040\106}% U+2046  
17376 % U+2052 COMMERCIAL MINUS SIGN  
17377 \DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052  
17378 % U+2056 THREE DOT PUNCTUATION; \lefttherefore (MnSymbol)  
17379 \DeclareTextCommand{\textlefttherefore}{PU}{\9040\126}%\* U+2056  
17380 % U+2057 QUADRUPLE PRIME; \fourth (mathabx)

17381 \DeclareTextCommand{\textfourth}{PU}{\9040\127}%\* U+2057  
 17382 % U+2058 FOUR DOT PUNCTUATION; \diamonddots (MnSymbol)  
 17383 \DeclareTextCommand{\textdiamonddots}{PU}{\9040\130}%\* U+2058

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

17384 % U+2070 SUPERSCRIPT ZERO; zerosuperior  
 17385 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}%\* U+2070  
 17386 % U+2071 SUPERSCRIPT LATIN SMALL LETTER I  
 17387 \DeclareTextCommand{\textisuperior}{PU}{\9040\161}%\* U+2071  
 17388 % U+2074 SUPERSCRIPT FOUR; foursuperior  
 17389 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}%\* U+2074  
 17390 % U+2075 SUPERSCRIPT FIVE; fivesuperior  
 17391 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}%\* U+2075  
 17392 % U+2076 SUPERSCRIPT SIX; sixsuperior  
 17393 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}%\* U+2076  
 17394 % U+2077 SUPERSCRIPT SEVEN; sevensuperior  
 17395 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}%\* U+2077  
 17396 % U+2078 SUPERSCRIPT EIGHT; eightsuperior  
 17397 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170}%\* U+2078  
 17398 % U+2079 SUPERSCRIPT NINE; ninesuperior  
 17399 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171}%\* U+2079  
 17400 % U+207A SUPERSCRIPT PLUS SIGN; plussuperior  
 17401 \DeclareTextCommand{\textplussuperior}{PU}{\9040\172}%\* U+207A  
 17402 % U+207B SUPERSCRIPT MINUS  
 17403 \DeclareTextCommand{\textminussuperior}{PU}{\9040\173}%\* U+207B  
 17404 % U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior  
 17405 \DeclareTextCommand{\textequalsuperior}{PU}{\9040\174}%\* U+207C  
 17406 % U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftsuperior  
 17407 \DeclareTextCommand{\textparenleftsuperior}{PU}{\9040\175}%\* U+207D  
 17408 % U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightsuperior  
 17409 \DeclareTextCommand{\textparenrightsuperior}{PU}{\9040\176}%\* U+207E  
 17410 % U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior  
 17411 \DeclareTextCommand{\textnsuperior}{PU}{\9040\177}%\* U+207F  
 17412 % U+2080 SUBSCRIPT ZERO; zeroinferior  
 17413 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}%\* U+2080  
 17414 % U+2081 SUBSCRIPT ONE; oneinferior  
 17415 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201}%\* U+2081  
 17416 % U+2082 SUBSCRIPT TWO; twoinferior  
 17417 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}%\* U+2082  
 17418 % U+2083 SUBSCRIPT THREE; threeinferior  
 17419 \DeclareTextCommand{\textthreeinferior}{PU}{\9040\203}%\* U+2083  
 17420 % U+2084 SUBSCRIPT FOUR; fourinferior  
 17421 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204}%\* U+2084  
 17422 % U+2085 SUBSCRIPT FIVE; fiveinferior  
 17423 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}%\* U+2085  
 17424 % U+2086 SUBSCRIPT SIX; sixinferior  
 17425 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}%\* U+2086  
 17426 % U+2087 SUBSCRIPT SEVEN; seveninferior  
 17427 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}%\* U+2087  
 17428 % U+2088 SUBSCRIPT EIGHT; eightinferior  
 17429 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}%\* U+2088  
 17430 % U+2089 SUBSCRIPT NINE; nineinferior  
 17431 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}%\* U+2089  
 17432 % U+208A SUBSCRIPT PLUS SIGN

17433 \DeclareTextCommand{\textplusinferior}{PU}{\9040\212}%\* U+208A  
17434 % U+208B SUBSCRIPT MINUS  
17435 \DeclareTextCommand{\textminusinferior}{PU}{\9040\213}%\* U+208B  
17436 % U+208C SUBSCRIPT EQUALS SIGN  
17437 \DeclareTextCommand{\textequalsinferior}{PU}{\9040\214}%\* U+208C  
17438 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior  
17439 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}%\* U+208D  
17440 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior  
17441 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}%\* U+208E  
17442 % U+2090 LATIN SUBSCRIPT SMALL LETTER A  
17443 \DeclareTextCommand{\textainferior}{PU}{\9040\220}%\* U+2090  
17444 % U+2091 LATIN SUBSCRIPT SMALL LETTER E  
17445 \DeclareTextCommand{\texteinferior}{PU}{\9040\221}%\* U+2091  
17446 % U+2092 LATIN SUBSCRIPT SMALL LETTER O  
17447 \DeclareTextCommand{\textoinferior}{PU}{\9040\222}%\* U+2092  
17448 % U+2093 LATIN SUBSCRIPT SMALL LETTER X  
17449 \DeclareTextCommand{\textxinferior}{PU}{\9040\223}%\* U+2093  
17450 % U+2094 LATIN SUBSCRIPT SMALL LETTER SCHWA  
17451 \DeclareTextCommand{\textschwainferior}{PU}{\9040\224}%\* U+2094  
17452 % U+2095 LATIN SUBSCRIPT SMALL LETTER H  
17453 \DeclareTextCommand{\texthinferior}{PU}{\9040\225}%\* U+2095  
17454 % U+2096 LATIN SUBSCRIPT SMALL LETTER K  
17455 \DeclareTextCommand{\textkinferior}{PU}{\9040\226}%\* U+2096  
17456 % U+2097 LATIN SUBSCRIPT SMALL LETTER L  
17457 \DeclareTextCommand{\textlinferior}{PU}{\9040\227}%\* U+2097  
17458 % U+2098 LATIN SUBSCRIPT SMALL LETTER M  
17459 \DeclareTextCommand{\textminferior}{PU}{\9040\230}%\* U+2098  
17460 % U+2099 LATIN SUBSCRIPT SMALL LETTER N  
17461 \DeclareTextCommand{\textninferior}{PU}{\9040\231}%\* U+2099  
17462 % U+209A LATIN SUBSCRIPT SMALL LETTER P  
17463 \DeclareTextCommand{\textpinferior}{PU}{\9040\232}%\* U+209A  
17464 % U+209B LATIN SUBSCRIPT SMALL LETTER S  
17465 \DeclareTextCommand{\textsinferior}{PU}{\9040\233}%\* U+209B  
17466 % U+209C LATIN SUBSCRIPT SMALL LETTER T  
17467 \DeclareTextCommand{\texttinferior}{PU}{\9040\234}%\* U+209C

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

17468 % U+20A1 COLON SIGN; \*colonmonetary, colonsign  
17469 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1  
17470 % U+20A4 LIRA SIGN; afi08941, \*lira  
17471 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4  
17472 % U+20A6 NAIRA SIGN  
17473 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6  
17474 % U+20A7 PESETA SIGN; peseta  
17475 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7  
17476 % U+20A9 WON SIGN; won  
17477 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9  
17478 % U+20AB DONG SIGN; dong  
17479 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB  
17480 % U+20AC EURO SIGN; \*Euro, euro  
17481 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC  
17482 %\* \texteuro -> \EurDig (marvosym)  
17483 %\* \texteuro -> \EURdig (marvosym)  
17484 %\* \texteuro -> \EurHv (marvosym)

17485 %\* \texteuero -> \EURhv (marvosym)  
 17486 %\* \texteuero -> \EurCr (marvosym)  
 17487 %\* \texteuero -> \EURcr (marvosym)  
 17488 %\* \texteuero -> \EurTm (marvosym)  
 17489 %\* \texteuero -> \EURtm (marvosym)  
 17490 %\* \texteuero -> \Eur (marvosym)  
 17491 % U+20B0 GERMAN PENNY SIGN; \Deleatur (marvosym)  
 17492 \DeclareTextCommand{\textDeleatur}{PU}{\9040\260}% U+20B0  
 17493 %\* \textDeleatur -> \Denarius (marvosym)  
 17494 % U+20B1 PESO SIGN  
 17495 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1  
 17496 % U+20B2 GUARANI SIGN  
 17497 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

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

17498 % U+2103 DEGREE CELSIUS; centigrade  
 17499 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103  
 17500 % U+210F PLANCK CONSTANT OVER TWO PI; \hslash (AmS)  
 17501 \DeclareTextCommand{\texthslash}{PU}{\9041\017}% U+210F  
 17502 % U+2111 BLACK-LETTER CAPITAL I (=imaginary part); Ifraktur; \Im (LaTeX)  
 17503 \DeclareTextCommand{\textIm}{PU}{\9041\021}% U+2111  
 17504 % U+2113 SCRIPT SMALL L (=ell, liter); afii61289, lsquare; \ell (LaTeX)  
 17505 \DeclareTextCommand{\textell}{PU}{\9041\023}% U+2113  
 17506 % U+2116 NUMERO SIGN; \*afii61352, numero  
 17507 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116  
 17508 % U+2117 SOUND RECORDING COPYRIGHT  
 17509 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117  
 17510 % U+2118 SCRIPT CAPITAL P (=Weierstrass elliptic function);  
 17511 % weierstrass; \wp (LaTeX)  
 17512 \DeclareTextCommand{\textwp}{PU}{\9041\030}% U+2118  
 17513 % U+211C BLACK-LETTER CAPITAL R (=real part); Rfraktur; \Re (LaTeX)  
 17514 \DeclareTextCommand{\textRe}{PU}{\9041\034}% U+211C  
 17515 % U+211E PRESCRIPTION TAKE; prescription  
 17516 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E  
 17517 % U+2120 SERVICE MARK  
 17518 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120  
 17519 % U+2122 TRADE MARK SIGN; trademark  
 17520 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122  
 17521 % U+2126 OHM SIGN; Ohm, Omega  
 17522 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126  
 17523 % U+2127 INVERTED OHM SIGN  
 17524 \DeclareTextCommand{\textmho}{PU}{\9041\047}% U+2127  
 17525 %\* \textmho -> \agemO (wasysym)  
 17526 % U+2129 TURNED GREEK SMALL LETTER IOTA; \riota (phonetic)  
 17527 \DeclareTextCommand{\textriota}{PU}{\9041\051}% U+2129  
 17528 % U+212B ANGSTROM SIGN; angstrom  
 17529 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B  
 17530 % U+212E ESTIMATED SYMBOL; estimated  
 17531 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E  
 17532 %\* \textestimated -> \EstimatedSign (marvosym)  
 17533 %\* \textestimated -> \Ecommerce (marvosym)  
 17534 % U+2132 TURNED CAPITAL F; \Finv (AmS)  
 17535 \DeclareTextCommand{\textFinv}{PU}{\9041\062}% U+2132



17536 % U+2135 ALEF SYMBOL; aleph; \aleph (LaTeX)  
 17537 \DeclareTextCommand{\textaleph}{PU}{\9041\065}%\* U+2135  
 17538 % U+2136 BET SYMBOL; \beth (AmS, MnSymbol)  
 17539 \DeclareTextCommand{\textbeth}{PU}{\9041\066}%\* U+2136  
 17540 % U+2137 GIMEL SYMBOL; \gimel (AmS, MnSymbol)  
 17541 \DeclareTextCommand{\textgimel}{PU}{\9041\067}%\* U+2137  
 17542 % U+2138 DALET SYMBOL; \daleth (AmS, MnSymbol)  
 17543 \DeclareTextCommand{\textdaleth}{PU}{\9041\070}%\* U+2138  
 17544 % U+213B FACSIMILE SIGN; \fax (marvosym)  
 17545 \DeclareTextCommand{\textfax}{PU}{\9041\073}%\* U+213B  
 17546 % U+2141 TURNED SANS-SERIF CAPITAL G (=game); \Game  
 17547 \DeclareTextCommand{\textGame}{PU}{\9041\101}%\* U+2141  
 17548 % U+214B TURNED AMPERSAND; \invamp (txfonts/pxfonts)  
 17549 \DeclareTextCommand{\textinvamp}{PU}{\9041\113}%\* U+214B  
 17550 %\* \textinvamp -> \bindnasrepma (stmaryrd)  
 17551 %\* \textinvamp -> \parr (cml)

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

17552 % U+2150 VULGAR FRACTION ONE SEVENTH  
 17553 \DeclareTextCommand{\textoneseventh}{PU}{\9041\120}% U+2150  
 17554 % U+2151 VULGAR FRACTION ONE NINTH  
 17555 \DeclareTextCommand{\textoneninth}{PU}{\9041\121}% U+2151  
 17556 % U+2152 VULGAR FRACTION ONE TENTH  
 17557 \DeclareTextCommand{\textonetenth}{PU}{\9041\122}% U+2152  
 17558 % U+2153 VULGAR FRACTION ONE THIRD; onethird  
 17559 \DeclareTextCommand{\textonethird}{PU}{\9041\123}% U+2153  
 17560 % U+2154 VULGAR FRACTION TWO THIRDS; twothirds  
 17561 \DeclareTextCommand{\texttwothirds}{PU}{\9041\124}% U+2154  
 17562 % U+2155 VULGAR FRACTION ONE FIFTH  
 17563 \DeclareTextCommand{\textonefifth}{PU}{\9041\125}% U+2155  
 17564 % U+2156 VULGAR FRACTION TWO FIFTHS  
 17565 \DeclareTextCommand{\texttwofifths}{PU}{\9041\126}% U+2156  
 17566 % U+2157 VULGAR FRACTION THREE FIFTHS  
 17567 \DeclareTextCommand{\textthreefifths}{PU}{\9041\127}% U+2157  
 17568 % U+2158 VULGAR FRACTION FOUR FIFTHS  
 17569 \DeclareTextCommand{\textfourfifths}{PU}{\9041\130}% U+2158  
 17570 % U+2159 VULGAR FRACTION ONE SIXTH  
 17571 \DeclareTextCommand{\textonesixth}{PU}{\9041\131}% U+2159  
 17572 % U+215A VULGAR FRACTION FIVE SIXTHS  
 17573 \DeclareTextCommand{\textfivesixths}{PU}{\9041\132}% U+215A  
 17574 % U+215B VULGAR FRACTION ONE EIGHTH; oneeighth  
 17575 \DeclareTextCommand{\textoneeighth}{PU}{\9041\133}% U+215B  
 17576 % U+215C VULGAR FRACTION THREE EIGHTHS; threeeighths  
 17577 \DeclareTextCommand{\textthreeeighths}{PU}{\9041\134}% U+215C  
 17578 % U+215D VULGAR FRACTION FIVE EIGHTHS; fiveeighths  
 17579 \DeclareTextCommand{\textfiveeighths}{PU}{\9041\135}% U+215D  
 17580 % U+215E VULGAR FRACTION SEVEN EIGHTHS; seveneighths  
 17581 \DeclareTextCommand{\textseveneighths}{PU}{\9041\136}% U+215E  
 17582 % U+2184 LATIN SMALL LETTER REVERSED C  
 17583 \DeclareTextCommand{\textrevc}{PU}{\9041\204}% U+2184  
 17584 % U+2189 VULGAR FRACTION ZERO THIRDS  
 17585 \DeclareTextCommand{\textzerthirds}{PU}{\9041\211}% U+2189

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

17586 % U+2190 LEFTWARDS ARROW; arrowleft  
17587 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}%\* U+2190  
17588 % U+2191 UPWARDS ARROW; arrowup  
17589 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}%\* U+2191  
17590 % U+2192 RIGHTWARDS ARROW; arrowright  
17591 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}%\* U+2192  
17592 %\* \textrightarrow -> \MVRightArrow (marvosym)  
17593 %\* \textrightarrow -> \MVRightarrow (marvosym)  
17594 % U+2193 DOWNWARDS ARROW; arrowdown  
17595 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}%\* U+2193  
17596 %\* \textdownarrow -> \MVArrowDown (marvosym)  
17597 %\* \textdownarrow -> \Force (marvosym)  
17598 % U+2194 LEFT RIGHT ARROW; arrowboth; \leftrightarrow (LaTeX)  
17599 \DeclareTextCommand{\textleftrightarrow}{PU}{\9041\224}%\* U+2194  
17600 % U+2195 UP DOWN ARROW; arrowupdn; \updownarrow (LaTeX)  
17601 \DeclareTextCommand{\textupdownarrow}{PU}{\9041\225}%\* U+2195  
17602 % U+2196 NORTH WEST ARROW; arrowupleft; \nwarrow (LaTeX)  
17603 \DeclareTextCommand{\textnwarrow}{PU}{\9041\226}%\* U+2196  
17604 % U+2197 NORTH EAST ARROW; arrowupright; \nearrow (LaTeX)  
17605 \DeclareTextCommand{\textnearrow}{PU}{\9041\227}%\* U+2197  
17606 %\* \textnearrow -> \textglobe (tipa)  
17607 % U+2198 SOUTH EAST ARROW; arrowdownright; \searrow (LaTeX)  
17608 \DeclareTextCommand{\textsearrow}{PU}{\9041\230}%\* U+2198  
17609 %\* \textsearrow -> \textglobe (tipa)  
17610 % U+2199 SOUTH WEST ARROW; arrowdownleft; \swarrow (LaTeX)  
17611 \DeclareTextCommand{\textswarrow}{PU}{\9041\231}%\* U+2199  
17612 % U+219A LEFTWARDS ARROW WITH STROKE; \leftarrow (AmS)  
17613 \DeclareTextCommand{\textnleftarrow}{PU}{\9041\232}%\* U+219A  
17614 % U+219B RIGHTWARDS ARROW WITH STROKE; \rightarrow (AmS)  
17615 \DeclareTextCommand{\textnrightarrow}{PU}{\9041\233}%\* U+219B  
17616 % U+219E LEFTWARDS TWO HEADED ARROW; \twoheadleftarrow (AmS)  
17617 \DeclareTextCommand{\texttwoheadleftarrow}{PU}{\9041\236}%\* U+219E  
17618 % \twoheadleftarrow (txfonts/pxfonts)  
17619 \DeclareTextCommand{\textntwoheadleftarrow}{PU}{\9041\236\83\070}%\* U+219E U+0338  
17620 % U+219F UPWARDS TWO HEADED ARROW; \twoheaduparrow (MnSymbol)  
17621 \DeclareTextCommand{\texttwoheaduparrow}{PU}{\9041\237}%\* U+219F  
17622 % U+21A0 RIGHTWARDS TWO HEADED ARROW;  
17623 % \twoheadrightarrow (AmS)  
17624 \DeclareTextCommand{\texttwoheadrightarrow}{PU}{\9041\240}%\* U+21A0  
17625 % \twoheadrightarrow (txfonts/pxfonts)  
17626 \DeclareTextCommand{\textntwoheadrightarrow}{PU}{\9041\240\83\070}%\* U+21A0 U+0338  
17627 % U+21A1 DOWNWARDS TWO HEADED ARROW; \twoheaddownarrow (Mn-  
Symbol)  
17628 \DeclareTextCommand{\texttwoheaddownarrow}{PU}{\9041\241}%\* U+21A1  
17629 % U+21A2 LEFTWARDS ARROW WITH TAIL; \leftarrowtail (AmS)  
17630 \DeclareTextCommand{\textleftarrowtail}{PU}{\9041\242}%\* U+21A2  
17631 % U+21A3 RIGHTWARDS ARROW WITH TAIL; \rightarrowtail (AmS)  
17632 \DeclareTextCommand{\textrightarrowtail}{PU}{\9041\243}%\* U+21A3  
17633 % U+21A6 RIGHTWARDS ARROW FROM BAR; \mapsto (LaTeX)  
17634 \DeclareTextCommand{\textmapsto}{PU}{\9041\246}%\* U+21A6  
17635 % U+21A9 LEFTWARDS ARROW WITH HOOK; \hookleftarrow (LaTeX)  
17636 \DeclareTextCommand{\texthookleftarrow}{PU}{\9041\251}%\* U+21A9  
17637 % U+21AA RIGHTWARDS ARROW WITH HOOK; \hookrightarrow (LaTeX)  
17638 \DeclareTextCommand{\texthookrightarrow}{PU}{\9041\252}%\* U+21AA

17639 % U+21AB LEFTWARDS ARROW WITH LOOP; \looparrowleft (AmS)  
17640 \DeclareTextCommand{\textlooparrowleft}{PU}{\9041\253}%\* U+21AB  
17641 % U+21AC RIGHTWARDS ARROW WITH LOOP; \looparrowright (AmS)  
17642 \DeclareTextCommand{\textlooparrowright}{PU}{\9041\254}%\* U+21AC  
17643 % U+21AE LEFT RIGHT ARROW WITH STROKE; \nletrightarrow (AmS)  
17644 \DeclareTextCommand{\textnletrightarrow}{PU}{\9041\256}%\* U+21AE  
17645 % U+21AF DOWNWARDS ZIGZAG ARROW; \lightning (stmaryrd)  
17646 \DeclareTextCommand{\textlightning}{PU}{\9041\257}%\* U+21AF  
17647 %\* \textlightning -> \Lightning (marvosym)  
17648 % U+21B5 DOWNWARDS ARROW WITH CORNER LEFTWARDS;  
17649 % \dlsH (mathabx)  
17650 \DeclareTextCommand{\textdlsH}{PU}{\9041\265}%\* U+21B5  
17651 % U+21B6 ANTICLOCKWISE TOP SEMICIRCLE ARROW;  
17652 % \curvearrowleft (AmS)  
17653 \DeclareTextCommand{\textcurvearrowleft}{PU}{\9041\266}%\* U+21B6  
17654 % U+21B7 CLOCKWISE TOP SEMICIRCLE ARROW; \curvearrowright (AmS)  
17655 \DeclareTextCommand{\textcurvearrowright}{PU}{\9041\267}%\* U+21B7  
17656 % U+21BC LEFTWARDS HARPOON WITH BARB UPWARDS; harpoonleft-  
barbup;  
17657 % \leftharpoonup (LaTeX)  
17658 \DeclareTextCommand{\textleftharpoonup}{PU}{\9041\274}%\* U+21BC  
17659 % U+21BD LEFTWARDS HARPOON WITH BARB DOWNWARDS;  
17660 % \leftharpoondown (LaTeX)  
17661 \DeclareTextCommand{\textleftharpoondown}{PU}{\9041\275}%\* U+21BD  
17662 % U+21BE UPWARDS HARPOON WITH BARB RIGHTWARDS;  
17663 % \upharpoonright (AmS)  
17664 \DeclareTextCommand{\textupharpoonright}{PU}{\9041\276}%\* U+21BE  
17665 % U+21BF UPWARDS HARPOON WITH BARB LEFTWARDS;  
17666 % \upharpoonleft (AmS)  
17667 \DeclareTextCommand{\textupharpoonleft}{PU}{\9041\277}%\* U+21BF  
17668 % U+21C0 RIGHTWARDS HARPOON WITH BARB UPWARDS; harpoonright-  
barbup  
17669 % \rightharpoonup (LaTeX)  
17670 \DeclareTextCommand{\textrightharpoonup}{PU}{\9041\300}%\* U+21C0  
17671 % U+21C1 RIGHTWARDS HARPOON WITH BARB DOWNWARDS;  
17672 % \rightharpoondown (LaTeX)  
17673 \DeclareTextCommand{\textrightharpoondown}{PU}{\9041\301}%\* U+21C1  
17674 % U+21C2 DOWNWARDS HARPOON WITH BARB RIGHTWARDS;  
17675 % \downharpoonright (AmS)  
17676 \DeclareTextCommand{\textdownharpoonright}{PU}{\9041\302}%\* U+21C2  
17677 % U+21C3 DOWNWARDS HARPOON WITH BARB LEFTWARDS;  
17678 % \downharpoonleft (AmS)  
17679 \DeclareTextCommand{\textdownharpoonleft}{PU}{\9041\303}%\* U+21C3  
17680 % U+21C4 RIGHTWARDS ARROW OVER LEFTWARDS ARROW;  
17681 % \arrowrightoverleft; \rightleftarrows (MnSymbol)  
17682 \DeclareTextCommand{\textrightleftarrows}{PU}{\9041\304}%\* U+21C4  
17683 % U+21C5 UPWARDS ARROW LEFTWARDS OF DOWNWARDS ARROW; ar-  
rowupleftofdown;  
17684 % \updownarrows (MnSymbol)  
17685 \DeclareTextCommand{\textupdownarrows}{PU}{\9041\305}%\* U+21C5  
17686 % U+21C6 LEFTWARDS ARROW OVER RIGHTWARDS ARROW; arrowleft-  
overright;  
17687 % \leftrightarrows (AmS)  
17688 \DeclareTextCommand{\textleftrightarrows}{PU}{\9041\306}%\* U+21C6

17689 % U+21C7 LEFTWARDS PAIRED ARROWS; \leftleftarrows (AmS)  
17690 \DeclareTextCommand{\textleftleftarrows}{PU}{\9041\307}%\* U+21C7  
17691 % U+21C8 UPWARDS PAIRED ARROWS; \upuparrows (AmS)  
17692 \DeclareTextCommand{\textupuparrows}{PU}{\9041\310}%\* U+21C8  
17693 % U+21C9 RIGHTWARDS PAIRED ARROWS; \rightrightarrows (AmS)  
17694 \DeclareTextCommand{\textrightarrows}{PU}{\9041\311}%\* U+21C9  
17695 % U+21CA DOWNWARDS PAIRED ARROWS; \downdownarrows (AmS)  
17696 \DeclareTextCommand{\textdowndownarrows}{PU}{\9041\312}%\* U+21CA  
17697 % U+21CB LEFTWARDS HARPOON OVER RIGHTWARDS HARPOON;  
17698 % \leftrightharpoons (AmS);  
17699 \DeclareTextCommand{\textleftrightharpoons}{PU}{\9041\313}%\* U+21CB  
17700 % U+21CC RIGHTWARDS HARPOON OVER LEFTWARDS HARPOON;  
17701 % \rightleftharpoons (LaTeX, AmS)  
17702 \DeclareTextCommand{\textrightleftharpoons}{PU}{\9041\314}%\* U+21CC  
17703 % U+21CD LEFTWARDS DOUBLE ARROW WITH STROKE; arrowleftd-  
blstroke;  
17704 % \nLeftarrow (AmS)  
17705 \DeclareTextCommand{\textnLeftarrow}{PU}{\9041\315}%\* U+21CD  
17706 % U+21CE LEFT RIGHT DOUBLE ARROW WITH STROKE; \nLeftrightarrow (AmS)  
17707 \DeclareTextCommand{\textnLeftrightarrow}{PU}{\9041\316}%\* U+21CE  
17708 % U+21CF RIGHTWARDS DOUBLE ARROW WITH STROKE; arrowrightd-  
blstroke;  
17709 % \rightarrow (AmS)  
17710 \DeclareTextCommand{\textnrightarrow}{PU}{\9041\317}%\* U+21CF  
17711 % U+21D0 LEFTWARDS DOUBLE ARROW; arrowdblleft, arrowleftdbl;  
17712 % \Leftarrow (LaTeX)  
17713 \DeclareTextCommand{\textLeftarrow}{PU}{\9041\320}%\* U+21D0  
17714 % U+21D1 UPWARDS DOUBLE ARROW; arrowdblup; \Uparrow (LaTeX)  
17715 \DeclareTextCommand{\textUparrow}{PU}{\9041\321}%\* U+21D1  
17716 % U+21D2 RIGHTWARDS DOUBLE ARROW; arrowdblright, dblarrowright;  
17717 % \Rightarrow (LaTeX)  
17718 \DeclareTextCommand{\textRightarrow}{PU}{\9041\322}%\* U+21D2  
17719 %\* \textRightarrow -> \Conclusion (marvosym)  
17720 % U+21D3 DOWNWARDS DOUBLE ARROW; arrowdbl down; \Downarrow (La-  
TeX)  
17721 \DeclareTextCommand{\textDownarrow}{PU}{\9041\323}%\* U+21D3  
17722 % U+21D4 LEFT RIGHT DOUBLE ARROW; arrowdblboth;  
17723 % \Leftrightarrow (LaTeX)  
17724 \DeclareTextCommand{\textLeftrightarrow}{PU}{\9041\324}%\* U+21D4  
17725 %\* \textLeftrightarrow -> \Equivalence (marvosym)  
17726 % U+21D5 UP DOWN DOUBLE ARROW; \Updownarrow (LaTeX)  
17727 \DeclareTextCommand{\textUpdownarrow}{PU}{\9041\325}%\* U+21D5  
17728 % U+21D6 NORTH WEST DOUBLE ARROW; \Nwarrow (MnSymbol)  
17729 \DeclareTextCommand{\textNwarrow}{PU}{\9041\326}%\* U+21D6  
17730 % U+21D7 NORTH EAST DOUBLE ARROW; \Nearrow (MnSymbol)  
17731 \DeclareTextCommand{\textNearrow}{PU}{\9041\327}%\* U+21D7  
17732 % U+21D8 SOUTH EAST DOUBLE ARROW; \Searrow (MnSymbol)  
17733 \DeclareTextCommand{\textSearrow}{PU}{\9041\330}%\* U+21D8  
17734 % U+21D9 SOUTH WEST DOUBLE ARROW; \Swarrow (MnSymbol)  
17735 \DeclareTextCommand{\textSwarrow}{PU}{\9041\331}%\* U+21D9  
17736 % U+21DA LEFTWARDS TRIPLE ARROW; \Lleftarrow (AmS)  
17737 \DeclareTextCommand{\textLleftarrow}{PU}{\9041\332}%\* U+21DA  
17738 % U+21DB RIGHTWARDS TRIPLE ARROW; \Rrightarrow (MnSymbol)

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17739 \DeclareTextCommand{\textRrightarrow}{PU}{\9041\333}%* U+21DB
17740 % U+21DC LEFTWARDS SQUIGGLE ARROW; \leftsquigarrow (mathabx)
17741 \DeclareTextCommand{\textleftsquigarrow}{PU}{\9041\334}%* U+21DC
17742 % U+21DD RIGHTWARDS SQUIGGLE ARROW; \rightsquigarrow (mathabx)
17743 \DeclareTextCommand{\textrightsquigarrow}{PU}{\9041\335}%* U+21DD
17744 % U+21E0 LEFTWARDS DASHED ARROW; arrowdashleft;
17745 % \dashleftarrow (AmS)
17746 \DeclareTextCommand{\textdashleftarrow}{PU}{\9041\340}%* U+21E0
17747 %* \textdashleftarrow -> \dashedleftarrow (MnSymbol)
17748 % U+21E1 UPWARDS DASHED ARROW; arrowdashup; \dasheduparrow (Mn-
Symbol)
17749 \DeclareTextCommand{\textdasheduparrow}{PU}{\9041\341}%* U+21E1
17750 % U+21E2 RIGHTWARDS DASHED ARROW; arrowdashright; \dashrightarrow
(AmS)
17751 \DeclareTextCommand{\textdashrightarrow}{PU}{\9041\342}%* U+21E2
17752 %* \textdashrightarrow -> \dashedrightarrow (MnSymbol)
17753 % U+21E3 DOWNWARDS DASHED ARROW; arrowdashdown; \dasheddownarrow
(MnSymbol)
17754 \DeclareTextCommand{\textdasheddownarrow}{PU}{\9041\343}%* U+21E3
17755 % U+21E8 RIGHTWARDS WHITE ARROW; \pointer (wasysym)
17756 \DeclareTextCommand{\textpointer}{PU}{\9041\350}%* U+21E8
17757 % U+21F5 DOWNWARDS ARROW LEFTWARDS OF UPWARDS ARROW;
17758 % \downuparrows (MnSymbol)
17759 \DeclareTextCommand{\textdownuparrows}{PU}{\9041\365}%* U+21F5
17760 % U+21FD LEFTWARDS OPEN-HEADED ARROW; \leftarrowtriangle (stmaryrd)
17761 \DeclareTextCommand{\textleftarrowtriangle}{PU}{\9041\375}%* U+21FD
17762 % U+21FE RIGHTWARDS OPEN-HEADED ARROW; \rightarrowtriangle (stmaryrd)
17763 \DeclareTextCommand{\textrightarrowtriangle}{PU}{\9041\376}%* U+21FE
17764 % U+21FF LEFT RIGHT OPEN-HEADED ARROW; \leftrightarrowtriangle
(stmaryrd)
17765 \DeclareTextCommand{\textleftrightarrowtriangle}{PU}{\9041\377}%* U+21FF

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

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17766 % U+2200 FOR ALL; forall; \forall (LaTeX)
17767 \DeclareTextCommand{\textforall}{PU}{\9042\000}%* U+2200
17768 % U+2201 COMPLEMENT; \complement (AmS)
17769 \DeclareTextCommand{\textcomplement}{PU}{\9042\001}%* U+2201
17770 % U+2202 PARTIAL DIFFERENTIAL; partialdiff; \partial (LaTeX)
17771 \DeclareTextCommand{\textpartial}{PU}{\9042\002}%* U+2202
17772 % U+2203 THERE EXISTS; existential; \exists (LaTeX)
17773 \DeclareTextCommand{\textexists}{PU}{\9042\003}%* U+2203
17774 % U+2204 THERE DOES NOT EXIST; \nexists (AmS)
17775 \DeclareTextCommand{\textnexists}{PU}{\9042\004}%* U+2204
17776 % U+2205 EMPTY SET; emptyset; \emptyset (LaTeX), \varnothing (AmS)
17777 \DeclareTextCommand{\textemptyset}{PU}{\9042\005}%* U+2205
17778 %* \textemptyset -> \varnothing (AmS)
17779 % U+2206 INCREMENT; increment, Delta; \triangle (LaTeX)
17780 \DeclareTextCommand{\texttriangle}{PU}{\9042\006}%* U+2206
17781 % U+2207 NABLA; nabla, gradient; \nabla (LaTeX)
17782 \DeclareTextCommand{\textnabla}{PU}{\9042\007}%* U+2207
17783 % U+2208 ELEMENT OF; element; \in (LaTeX)
17784 \DeclareTextCommand{\textin}{PU}{\9042\010}%* U+2208
17785 % U+2209 NOT AN ELEMENT OF; notelement, notelementof; \notin (LaTeX)
17786 \DeclareTextCommand{\textnotin}{PU}{\9042\011}%* U+2209

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17787 % U+220A SMALL ELEMENT OF; \smallin (mathdesign)  
17788 \DeclareTextCommand{\textsmallin}{PU}{\9042\012}%\* U+220A  
17789 % U+220B CONTAINS AS MEMBER; suchthat; \ni (LaTeX)  
17790 \DeclareTextCommand{\textni}{PU}{\9042\013}%\* U+220B  
17791 %\* \textni -> \owns (mathabx)  
17792 % U+220C DOES NOT CONTAIN AS MEMBER; \notowner (mathabx)  
17793 \DeclareTextCommand{\textnotowner}{PU}{\9042\014}%\* U+220C  
17794 %\* \textnotowner -> \notni (txfonts/pxfonts)  
17795 % U+220D SMALL CONTAINS AS MEMBER; \smallowns (mathdesign)  
17796 \DeclareTextCommand{\textsmallowns}{PU}{\9042\015}%\* U+220D  
17797 % U+220F N-ARY PRODUCT; \prod (LaTeX)  
17798 \DeclareTextCommand{\textprod}{PU}{\9042\017}%\* U+220F  
17799 % U+2210 N-ARY COPRODUCT; \amalg (LaTeX)  
17800 \DeclareTextCommand{\textamalg}{PU}{\9042\020}%\* U+2210  
17801 % U+2211 N-ARY SUMMATION; summation; \sum (LaTeX)  
17802 \DeclareTextCommand{\textsum}{PU}{\9042\021}%\* U+2211  
17803 % U+2212 MINUS SIGN; minus  
17804 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212  
17805 % U+2213 MINUS-OR-PLUS SIGN; minusplus; \mp (LaTeX)  
17806 \DeclareTextCommand{\textmp}{PU}{\9042\023}%\* U+2213  
17807 % U+2214 DOT PLUS; \dotplus (AmS)  
17808 \DeclareTextCommand{\textdotplus}{PU}{\9042\024}%\* U+2214  
17809 % U+2215 DIVISION SLASH; divisionslash; \Divides (marvosym)  
17810 \DeclareTextCommand{\textDivides}{PU}{\9042\025}%\* U+2215  
17811 % \DividesNot (marvosym)  
17812 \DeclareTextCommand{\textDividesNot}{PU}{\9042\025\9040\322}%\* U+2215 U+20D2  
17813 % U+2216 SET MINUS; \setminus (LaTeX)  
17814 \DeclareTextCommand{\textsetminus}{PU}{\9042\026}%\* U+2216  
17815 % U+2217 ASTERISK OPERATOR; asteriskmath; \ast (LaTeX)  
17816 \DeclareTextCommand{\textast}{PU}{\9042\027}%\* U+2217  
17817 % U+2218 RING OPERATOR; \circ (LaTeX)  
17818 \DeclareTextCommand{\textcirc}{PU}{\9042\030}%\* U+2218  
17819 % U+2219 BULLET OPERATOR; bulletoperator; \bullet (LaTeX)  
17820 \DeclareTextCommand{\textbulletoperator}{PU}{\9042\031}% U+2219  
17821 % U+221A SQUARE ROOT; radical  
17822 \DeclareTextCommand{\textsqrt}{PU}{\9042\032}%\* U+221A  
17823 % U+221D PROPORTIONAL TO; proportional; \propto (LaTeX)  
17824 \DeclareTextCommand{\textpropto}{PU}{\9042\035}%\* U+221D  
17825 %\* \textpropto -> \varprop (wasysym)  
17826 % U+221E INFINITY; infinity; \infty (LaTeX)  
17827 \DeclareTextCommand{\textinfty}{PU}{\9042\036}%\* U+221E  
17828 % U+2220 ANGLE; angle; \angle (LaTeX)  
17829 \DeclareTextCommand{\textangle}{PU}{\9042\040}%\* U+2220  
17830 % U+2221 MEASURED ANGLE; \measuredangle (mathabx, MnSymbol)  
17831 \DeclareTextCommand{\textmeasuredangle}{PU}{\9042\041}%\* U+2221  
17832 % U+2222 SPHERICAL ANGLE; \sphericalangle (AmS)  
17833 \DeclareTextCommand{\textsphericalangle}{PU}{\9042\042}%\* U+2222  
17834 %\* \textsphericalangle -> \varangle (wasysym)  
17835 %\* \textsphericalangle -> \Anglesign (marvosym)  
17836 %\* \textsphericalangle -> \AngleSign (marvosym)  
17837 % U+2223 DIVIDES; divides; \mid (LaTeX)  
17838 \DeclareTextCommand{\textmid}{PU}{\9042\043}%\* U+2223  
17839 % U+2224 DOES NOT DIVIDE; \nmid (AmS)  
17840 \DeclareTextCommand{\textnmid}{PU}{\9042\044}%\* U+2224

17841 %\* \textnmid -> \notdivides (mathabx)  
17842 % U+2225 PARALLEL TO; parallel; \parallel (LaTeX)  
17843 \DeclareTextCommand{\textparallel}{PU}{\9042\045}%\* U+2225  
17844 % U+2226 NOT PARALLEL TO; notparallel; \nparallel (AmS)  
17845 \DeclareTextCommand{\textnparallel}{PU}{\9042\046}%\* U+2226  
17846 %\* \textnparallel -> nUpdownline (MnSymbol)  
17847 % U+2227 LOGICAL AND; logicaland; \wedge (LaTeX)  
17848 \DeclareTextCommand{\textwedge}{PU}{\9042\047}%\* U+2227  
17849 % \owedge (stmaryrd)  
17850 \DeclareTextCommand{\textowedge}{PU}{\9042\047\9040\335}%\* U+2227 U+20DD  
17851 %\* \textowedge -> \varowedge (stmaryrd)  
17852 % U+2228 LOGICAL OR; logicalor; \vee (LaTeX)  
17853 \DeclareTextCommand{\textvee}{PU}{\9042\050}%\* U+2228  
17854 % \ovee (stmaryrd)  
17855 \DeclareTextCommand{\textovee}{PU}{\9042\050\9040\335}%\* U+2228 U+20DD  
17856 %\* \textovee -> \varovee (stmaryrd)  
17857 % U+2229 INTERSECTION; intersection; \cap (LaTeX)  
17858 \DeclareTextCommand{\textcap}{PU}{\9042\051}%\* U+2229  
17859 % U+222A UNION; union; \cup (LaTeX)  
17860 \DeclareTextCommand{\textcup}{PU}{\9042\052}%\* U+222A  
17861 % U+222B INTEGRAL; integral; \int (LaTeX)  
17862 \DeclareTextCommand{\textint}{PU}{\9042\053}%\* U+222B  
17863 %\* \textint -> \varint (wasysym)  
17864 % U+222C DOUBLE INTEGRAL; dblintegral; \iint (AmS)  
17865 \DeclareTextCommand{\textiint}{PU}{\9042\054}%\* U+222C  
17866 % U+222D TRIPLE INTEGRAL; \iiint (AmS)  
17867 \DeclareTextCommand{\textiiint}{PU}{\9042\055}%\* U+222D  
17868 % U+222E CONTOUR INTEGRAL; contourintegral; \oint (LaTeX)  
17869 \DeclareTextCommand{\textoint}{PU}{\9042\056}%\* U+222E  
17870 %\* \textoint -> \varoint (wasysym)  
17871 % U+222F SURFACE INTEGRAL; \oiint (wasysym)  
17872 \DeclareTextCommand{\textoiint}{PU}{\9042\057}%\* U+222F  
17873 % U+2232 CLOCKWISE CONTOUR INTEGRAL;  
17874 % \ointclockwise (txfonts/pxfonts)  
17875 \DeclareTextCommand{\textointclockwise}{PU}{\9042\062}%\* U+2232  
17876 % U+2233 ANTICLOCKWISE CONTOUR INTEGRAL; \ointctrlockwise (tx-  
font/pxfont)  
17877 \DeclareTextCommand{\textointctrlockwise}{PU}{\9042\063}%\* U+2233  
17878 % U+2234 THEREFORE; therefore; \therefore (AmS)  
17879 \DeclareTextCommand{\texttherefore}{PU}{\9042\064}%\* U+2234  
17880 %\* \texttherefore -> uptherefore (MnSymbol)  
17881 % U+2235 BECAUSE; because; \because (AmS)  
17882 \DeclareTextCommand{\textbecause}{PU}{\9042\065}%\* U+2235  
17883 %\* \textbecause -> \downtherefore (MnSymbol)  
17884 % U+2236 RATIO; \vdotdot (MnSymbol)  
17885 \DeclareTextCommand{\textvdotdot}{PU}{\9042\066}%\* U+2236  
17886 % U+2237 PROPORTION; \squaredots (MnSymbol)  
17887 \DeclareTextCommand{\textsquaredots}{PU}{\9042\067}%\* U+2237  
17888 % U+2238 DOT MINUS; \dotminus (MnSymbol)  
17889 \DeclareTextCommand{\textdotminus}{PU}{\9042\070}%\* U+2238  
17890 %\* \textdotminus -> \textdotdiv (mathabx)  
17891 % U+2239 EXCESS; \eqcolon (txfonts/pxfont)  
17892 \DeclareTextCommand{\texteqcolon}{PU}{\9042\071}%\* U+2239  
17893 % U+223C TILDE OPERATOR; similar; \sim (LaTeX)

17894 \DeclareTextCommand{\textsim}{PU}{\9042\074}%\* U+223C  
17895 %\* \textsim -> \AC (wasysym)  
17896 % U+223D REVERSED TILDE; reversedtilde; \backsim (AmS)  
17897 \DeclareTextCommand{\textbacksim}{PU}{\9042\075}%\* U+223D  
17898 % \nbacksim (txfonts/pxfonts)  
17899 \DeclareTextCommand{\textnbacksim}{PU}{\9042\075\83\070}%\* U+223D U+0338  
17900 % U+2240 WREATH PRODUCT; \wr (LaTeX)  
17901 \DeclareTextCommand{\textwr}{PU}{\9042\100}%\* U+2240  
17902 %\* \textwr -> \wreath (MnSymbol)  
17903 % U+2241 NOT TILDE; \nsim (AmS)  
17904 \DeclareTextCommand{\textnsim}{PU}{\9042\101}%\* U+2241  
17905 % U+2242 MINUS TILDE; \eqsim (MnSymbol)  
17906 \DeclareTextCommand{\texteqsim}{PU}{\9042\102}%\* U+2242  
17907 % \neqsim (MnSymbol)  
17908 \DeclareTextCommand{\textneqsim}{PU}{\9042\102\83\070}%\* U+2242 U+0338  
17909 % U+2243 ASYMPTOTICALLY EQUAL TO; asymptoticallyequal; \simeq (LaTeX)  
17910 \DeclareTextCommand{\textsimeq}{PU}{\9042\103}%\* U+2243  
17911 % U+2244 NOT ASYMPTOTICALLY EQUAL TO; \nsimeq (txfonts/pxfonts)  
17912 \DeclareTextCommand{\textnsimeq}{PU}{\9042\104}%\* U+2244  
17913 % U+2245 APPROXIMATELY EQUAL TO; approximatelyequal; \cong (LaTeX)  
17914 \DeclareTextCommand{\textcong}{PU}{\9042\105}%\* U+2245  
17915 % U+2247 NEITHER APPROXIMATELY NOR ACTUALLY EQUAL TO;  
17916 % \ncong (AmS)  
17917 \DeclareTextCommand{\textncong}{PU}{\9042\107}%\* U+2247  
17918 % U+2248 ALMOST EQUAL TO; approxequal; \approx (LaTeX)  
17919 \DeclareTextCommand{\textapprox}{PU}{\9042\110}%\* U+2248  
17920 % U+2249 NOT ALMOST EQUAL TO; \napprox (txfonts/pxfonts)  
17921 \DeclareTextCommand{\textnapprox}{PU}{\9042\111}%\* U+2249  
17922 %\* \textnapprox -> \nthickapprox (txfonts/pxfonts)  
17923 % U+224A ALMOST EQUAL OR EQUAL TO; \approxeq (AmS)  
17924 \DeclareTextCommand{\textapproxeq}{PU}{\9042\112}%\* U+224A  
17925 % \napproxeq (txfonts/pxfonts)  
17926 \DeclareTextCommand{\textnapproxeq}{PU}{\9042\112\83\070}%\* U+224A U+0338  
17927 % U+224B TRIPLE TILDE; \triplesim (MnSymbol)  
17928 \DeclareTextCommand{\texttriplesim}{PU}{\9042\113}%\* U+224B  
17929 %\* \texttriplesim -> \VHF (wasysym)  
17930 % \ntriplesim (MnSymbol)  
17931 \DeclareTextCommand{\textntriplesim}{PU}{\9042\113\83\070}%\* U+224B U+0338  
17932 % U+224C ALL EQUAL TO; allequal; \backcong (MnSymbol)  
17933 \DeclareTextCommand{\textbackcong}{PU}{\9042\114}%\* U+224C  
17934 % \nbackcong (MnSymbol)  
17935 \DeclareTextCommand{\textnbackcong}{PU}{\9042\114\83\070}%\* U+224C U+0338  
17936 % U+224D EQUIVALENT TO; \asymp (LaTeX)  
17937 \DeclareTextCommand{\textasymp}{PU}{\9042\115}%\* U+224D  
17938 % \nasymp (txfonts/pxfonts)  
17939 \DeclareTextCommand{\textnasymp}{PU}{\9042\115\83\070}%\* U+224D U+0338  
17940 %\* \textnasymp -> \notasymp (mathabx)  
17941 % U+224E GEOMETRICALLY EQUIVALENT TO; \Bumpeq (AmS)  
17942 \DeclareTextCommand{\textBumpeq}{PU}{\9042\116}%\* U+224E  
17943 % \nBumpeq (txfonts/pxfonts)  
17944 \DeclareTextCommand{\textnBumpeq}{PU}{\9042\116\83\070}%\* U+224E U+0338  
17945 % U+224F DIFFERENCE BETWEEN; \bumpeq (AmS)  
17946 \DeclareTextCommand{\textbumpeq}{PU}{\9042\117}%\* U+224F



17947 % \nbumpeq (txfonts/pxfonts)  
17948 \DeclareTextCommand{\textnbumpeq}{PU}{\9042\117\83\070}%\* U+224F U+0338  
17949 % U+2250 APPROACHES THE LIMIT; approaches; \doteq (LaTeX)  
17950 \DeclareTextCommand{\textdoteq}{PU}{\9042\120}%\* U+2250  
17951 % \ndoteq (MnSymbol)  
17952 \DeclareTextCommand{\textndoteq}{PU}{\9042\120\83\070}%\* U+2250 U+0338  
17953 % U+2251 GEOMETRICALLY EQUAL TO; geometricallyequal;  
17954 % \doteqdot (AmS)  
17955 \DeclareTextCommand{\textdoteqdot}{PU}{\9042\121}%\* U+2251  
17956 %\* \textdoteqdot -> \Doteq (MnSymbol)  
17957 % \nDoteq (MnSymbol)  
17958 \DeclareTextCommand{\textnDoteq}{PU}{\9042\121\83\070}%\* U+2251 U+0338  
17959 % U+2252 APPROXIMATELY EQUAL TO OR THE IMAGE OF; approx-  
equalorimage;  
17960 % \fallingdotseq (AmS)  
17961 \DeclareTextCommand{\textfallingdotseq}{PU}{\9042\122}%\* U+2252  
17962 % \nfallingdotseq (MnSymbol)  
17963 \DeclareTextCommand{\textnfallingdotseq}{PU}{\9042\122\83\070}%\* U+2252 U+0338  
17964 % U+2253 IMAGE OF OR APPROXIMATELY EQUAL TO; imageorapprox-  
imatelyequal;  
17965 % \risingdotseq (AmS)  
17966 \DeclareTextCommand{\textrisingdotseq}{PU}{\9042\123}%\* U+2253  
17967 % \nrisingdotseq (MnSymbol)  
17968 \DeclareTextCommand{\textnrisingdotseq}{PU}{\9042\123\83\070}%\* U+2253 U+0338  
17969 % U+2254 COLON EQUALS; \colonequals (colonequals)  
17970 \DeclareTextCommand{\textcolonequals}{PU}{\9042\124}%\* U+2254  
17971 % U+2255 EQUALS COLON; \equalscolon (colonequals)  
17972 \DeclareTextCommand{\textequalscolon}{PU}{\9042\125}%\* U+2255  
17973 % U+2256 RING IN EQUAL TO; \eqcirc (AmS)  
17974 \DeclareTextCommand{\texteqcirc}{PU}{\9042\126}%\* U+2256  
17975 % \neqcirc (MnSymbol)  
17976 \DeclareTextCommand{\textneqcirc}{PU}{\9042\126\83\070}%\* U+2256 U+0338  
17977 % U+2257 RING EQUAL TO; \circeq (AmS)  
17978 \DeclareTextCommand{\textcirceq}{PU}{\9042\127}%\* U+2257  
17979 % \ncirceq (MnSymbol)  
17980 \DeclareTextCommand{\textncirceq}{PU}{\9042\127\83\070}%\* U+2257 U+0338  
17981 % U+2259 ESTIMATES; \hateq (MnSymbol)  
17982 \DeclareTextCommand{\texthateq}{PU}{\9042\131}%\* U+2259  
17983 %\* \texthateq -> \corresponds (mathabx)  
17984 %\* \texthateq -> \Corresponds (marvosym)  
17985 % \nhateq (MnSymbol)  
17986 \DeclareTextCommand{\textnhateq}{PU}{\9042\131\83\070}%\* U+2259 U+0338  
17987 % U+225C DELTA EQUAL TO; \triangleeq (AmS)  
17988 \DeclareTextCommand{\texttriangleeq}{PU}{\9042\134}%\* U+225C  
17989 % U+2260 NOT EQUAL TO; notequal; \ne (LaTeX), \neq (LaTeX)  
17990 \DeclareTextCommand{\textneq}{PU}{\9042\140}%\* U+2260  
17991 \DeclareTextCommand{\textne}{PU}{\9042\140}%\* U+2260  
17992 %\* \textneq -> \nequal (MnSymbol)  
17993 % U+2261 IDENTICAL TO; equivalence; \equiv (LaTeX)  
17994 \DeclareTextCommand{\textequiv}{PU}{\9042\141}%\* U+2261  
17995 %\* \textequiv -> \Congruent (marvosym)  
17996 % U+2262 NOT IDENTICAL TO; notidentical; \nequiv (txfonts/pxfonts)  
17997 \DeclareTextCommand{\textnequiv}{PU}{\9042\142}%\* U+2262  
17998 %\* \textnequiv -> \NotCongruent (marvosym)

17999 %\* \textnequiv -> \notequiv (mathabx)  
18000 % U+2264 LESS-THAN OR EQUAL TO; lessequal; \le (LaTeX), \leq (LaTeX)  
18001 \DeclareTextCommand{\textleq}{PU}{\9042\144}%\* U+2264  
18002 \DeclareTextCommand{\texttle}{PU}{\9042\144}%\* U+2264  
18003 %\* \textleq -> \LessOrEqual (marvosym)  
18004 % U+2265 GREATER-THAN OR EQUAL TO; greaterequal;  
18005 % \ge (LaTeX), \geq (LaTeX)  
18006 \DeclareTextCommand{\textgeq}{PU}{\9042\145}%\* U+2265  
18007 \DeclareTextCommand{\textge}{PU}{\9042\145}%\* U+2265  
18008 %\* \textgeq -> \LargerOrEqual (marvosym)  
18009 % U+2266 LESS-THAN OVER EQUAL TO; lessorequal; \leqq (AmS)  
18010 \DeclareTextCommand{\textleqq}{PU}{\9042\146}%\* U+2266  
18011 % \nleqq (txfonts/pxfonts)  
18012 \DeclareTextCommand{\textnleqq}{PU}{\9042\146\83\070}%\* U+2266 U+0338  
18013 % U+2267 GREATER-THAN OVER EQUAL TO; greaterorequal; \geqq (AmS)  
18014 \DeclareTextCommand{\textgeqq}{PU}{\9042\147}%\* U+2267  
18015 % \ngeqq (txfonts/pxfonts)  
18016 \DeclareTextCommand{\textngeqq}{PU}{\9042\147\83\070}%\* U+2267 U+0338  
18017 % U+2268 LESS-THAN BUT NOT EQUAL TO; \lneqq (AmS)  
18018 \DeclareTextCommand{\textlneqq}{PU}{\9042\150}%\* U+2268  
18019 % U+2269 GREATER-THAN BUT NOT EQUAL TO; \gneqq (AmS)  
18020 \DeclareTextCommand{\textgneqq}{PU}{\9042\151}%\* U+2269  
18021 % U+226A MUCH LESS-THAN; muchless; \ll (LaTeX)  
18022 \DeclareTextCommand{\textll}{PU}{\9042\152}%\* U+226A  
18023 % \nll (txfonts/pxfonts)  
18024 \DeclareTextCommand{\textnll}{PU}{\9042\152\83\070}%\* U+226A U+0338  
18025 % U+226B MUCH GREATER-THAN; muchgreater; \gg (LaTeX)  
18026 \DeclareTextCommand{\textgg}{PU}{\9042\153}%\* U+226B  
18027 % \ngg (txfonts/pxfonts)  
18028 \DeclareTextCommand{\textngg}{PU}{\9042\153\83\070}%\* U+226B U+0338  
18029 % U+226C BETWEEN; \between (AmS)  
18030 \DeclareTextCommand{\textbetween}{PU}{\9042\154}%\* U+226C  
18031 % U+226E NOT LESS-THAN; notless; \nless (AmS)  
18032 \DeclareTextCommand{\textnless}{PU}{\9042\156}%\* U+226E  
18033 % U+226F NOT GREATER-THAN; notgreater; \ngtr (AmS)  
18034 \DeclareTextCommand{\textngtr}{PU}{\9042\157}%\* U+226F  
18035 % U+2270 NEITHER LESS-THAN NOR EQUAL TO; notlessnorequal;  
18036 % \nleq (AmS)  
18037 \DeclareTextCommand{\textnleq}{PU}{\9042\160}%\* U+2270  
18038 % U+2271 NEITHER GREATER-THAN NOR EQUAL TO; notgreaternorequal; \ngeq (AmS)  
18039 \DeclareTextCommand{\textngeq}{PU}{\9042\161}%\* U+2271  
18040 % U+2272 LESS-THAN OR EQUIVALENT TO; lessorequivalent; \lessim (AmS)  
18041 \DeclareTextCommand{\textlessim}{PU}{\9042\162}%\* U+2272  
18042 %\* \textlessim -> \apprle (wasysym)  
18043 % U+2273 GREATER-THAN OR EQUIVALENT TO; greaterorequivalent; \gtrsim (AmS)  
18044 \DeclareTextCommand{\textgtrsim}{PU}{\9042\163}%\* U+2273  
18045 %\* \textgtrsim -> \apprge (wasysym)  
18046 % U+2274 NEITHER LESS-THAN NOR EQUIVALENT TO; \nlessim (txfonts/pxfonts)  
18047 \DeclareTextCommand{\textnlessim}{PU}{\9042\164}%\* U+2274  
18048 % U+2275 NEITHER GREATER-THAN NOR EQUIVALENT TO; \ngtrsim (txfonts/pxfonts)

18049 `\DeclareTextCommand{\textngtrsim}{PU}{\9042\165}%* U+2275`  
18050 `% U+2276 LESS-THAN OR GREATER-THAN; lessorgreater; \lessgtr (AmS)`  
18051 `\DeclareTextCommand{\textlessgtr}{PU}{\9042\166}%* U+2276`  
18052 `% U+2277 GREATER-THAN OR LESS-THAN; greaterorless; \gtrless (AmS)`  
18053 `\DeclareTextCommand{\textgtrless}{PU}{\9042\167}%* U+2277`  
18054 `% U+2278 NEITHER LESS-THAN NOR GREATER-THAN; \ngtrless (tx-`  
`fonts/pxfonts)`  
18055 `\DeclareTextCommand{\textngtrless}{PU}{\9042\170}%* U+2278`  
18056 `% U+2279 NEITHER GREATER-THAN NOR LESS-THAN; \nlessgtr (tx-`  
`fonts/pxfonts)`  
18057 `\DeclareTextCommand{\textnlessgtr}{PU}{\9042\171}%* U+2279`  
18058 `% U+227A PRECEDES; precedes; \prec (LaTeX)`  
18059 `\DeclareTextCommand{\textprec}{PU}{\9042\172}%* U+227A`  
18060 `% U+227B SUCCEEDS; succeeds; \succ (LaTeX)`  
18061 `\DeclareTextCommand{\textsucc}{PU}{\9042\173}%* U+227B`  
18062 `% U+227C PRECEDES OR EQUAL TO; \preccurlyeq (AmS)`  
18063 `\DeclareTextCommand{\textpreccurlyeq}{PU}{\9042\174}%* U+227C`  
18064 `% U+227D SUCCEEDS OR EQUAL TO; \succcurlyeq (AmS)`  
18065 `\DeclareTextCommand{\textsucccurlyeq}{PU}{\9042\175}%* U+227D`  
18066 `% U+227E PRECEDES OR EQUIVALENT TO; \precsim (AmS)`  
18067 `\DeclareTextCommand{\textprecsim}{PU}{\9042\176}%* U+227E`  
18068 `% \nprecsim (txfonts/pxfonts)`  
18069 `\DeclareTextCommand{\textnprecsim}{PU}{\9042\176\83\070}%* U+227E U+0338`  
18070 `% U+227F SUCCEEDS OR EQUIVALENT TO; \succsim (AmS)`  
18071 `\DeclareTextCommand{\textsuccsim}{PU}{\9042\177}%* U+227F`  
18072 `% \nsuccsim (txfonts/pxfonts)`  
18073 `\DeclareTextCommand{\textnsuccsim}{PU}{\9042\177\83\070}%* U+227F U+0338`  
18074 `% U+2280 DOES NOT PRECEDE; notprecedes; \nprec (AmS)`  
18075 `\DeclareTextCommand{\textnprec}{PU}{\9042\200}%* U+2280`  
18076 `% U+2281 DOES NOT SUCCEED; notsucceeds; \nsucc (AmS)`  
18077 `\DeclareTextCommand{\textnsucc}{PU}{\9042\201}%* U+2281`  
18078 `% U+2282 SUBSET OF; propersubset; \subset (LaTeX)`  
18079 `\DeclareTextCommand{\textsubset}{PU}{\9042\202}%* U+2282`  
18080 `% U+2283 SUPERSET OF; propersuperset; \supset (LaTeX)`  
18081 `\DeclareTextCommand{\textsupset}{PU}{\9042\203}%* U+2283`  
18082 `% U+2284 NOT A SUBSET OF; notsubset; \nsubset (mathabx)`  
18083 `\DeclareTextCommand{\textnsubset}{PU}{\9042\204}%* U+2284`  
18084 `% U+2285 NOT A SUPERSET OF; notsuperset; \nsupset (mathabx)`  
18085 `\DeclareTextCommand{\textnsupset}{PU}{\9042\205}%* U+2285`  
18086 `% U+2286 SUBSET OF OR EQUAL TO; reflexsubset; \subsetq (LaTeX)`  
18087 `\DeclareTextCommand{\textsubsetq}{PU}{\9042\206}%* U+2286`  
18088 `% U+2287 SUPERSET OF OR EQUAL TO; reflexsuperset; \supsetq (LaTeX)`  
18089 `\DeclareTextCommand{\textsupsetq}{PU}{\9042\207}%* U+2287`  
18090 `% U+2288 NEITHER A SUBSET OF NOR EQUAL TO; \nsubsetq (AmS)`  
18091 `\DeclareTextCommand{\textnsubsetq}{PU}{\9042\210}%* U+2288`  
18092 `% U+2289 NEITHER A SUPERSET OF NOR EQUAL TO; \nsupsetq (AmS)`  
18093 `\DeclareTextCommand{\textnsupsetq}{PU}{\9042\211}%* U+2289`  
18094 `% U+228A SUBSET OF WITH NOT EQUAL TO; subsetnotequal; \subset-`  
`neq (AmS)`  
18095 `\DeclareTextCommand{\textsubsetneq}{PU}{\9042\212}%* U+228A`  
18096 `% U+228B SUPERSET OF WITH NOT EQUAL TO; supersetnotequal; \supset-`  
`neq (AmS)`  
18097 `\DeclareTextCommand{\textsupsetneq}{PU}{\9042\213}%* U+228B`  
18098 `% U+228D MULTISET MULTIPLICATION; \cupdot (MnSymbol)`

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18099 \DeclareTextCommand{\textcupdot}{PU}{\9042\215}%* U+228D
18100 % U+228E MULTISET UNION; \cupplus (MnSymbol)
18101 \DeclareTextCommand{\textcupplus}{PU}{\9042\216}%* U+228E
18102 % U+228F SQUARE IMAGE OF; \sqsubset (latexsym, ...)
18103 \DeclareTextCommand{\textsqsubset}{PU}{\9042\217}%* U+228F
18104 % \nsqsubset (txfonts/pxfonts)
18105 \DeclareTextCommand{\textnsqsubset}{PU}{\9042\217\83\070}%* U+228F U+0338
18106 % U+2290 SQUARE ORIGINAL OF; \sqsupset (latexsym, ...)
18107 \DeclareTextCommand{\textsqsupset}{PU}{\9042\220}%* U+2290
18108 % \nsqsupset (txfonts/pxfonts)
18109 \DeclareTextCommand{\textnsqsupset}{PU}{\9042\220\83\070}%* U+2290 U+0338
18110 % U+2291 SQUARE IMAGE OF OR EQUAL TO; \sqsubseteq (LaTeX)
18111 \DeclareTextCommand{\textsqsubseteq}{PU}{\9042\221}%* U+2291
18112 % \nsqsubseteq (txfonts/pxfonts)
18113 \DeclareTextCommand{\textnsqsubseteq}{PU}{\9042\221\83\070}%* U+2291 U+0338
18114 % U+2292 SQUARE ORIGINAL OF OR EQUAL TO; \sqsupseteq (LaTeX)
18115 \DeclareTextCommand{\textsqsupseteq}{PU}{\9042\222}%* U+2292
18116 % \nsqsupseteq (txfonts/pxfonts)
18117 \DeclareTextCommand{\textnsqsupseteq}{PU}{\9042\222\83\070}%* U+2292 U+0338
18118 % U+2293 SQUARE CAP; \sqcap (LaTeX)
18119 \DeclareTextCommand{\textsqcap}{PU}{\9042\223}%* U+2293
18120 % U+2294 SQUARE CUP; \sqcup (LaTeX)
18121 \DeclareTextCommand{\textsqcup}{PU}{\9042\224}%* U+2294
18122 % U+2295 CIRCLED PLUS; circleplus; \oplus (LaTeX)
18123 \DeclareTextCommand{\textoplus}{PU}{\9042\225}%* U+2295
18124 %* \textoplus -> \varoplus (stmaryrd)
18125 % U+2296 CIRCLED MINUS; minuscircle; \ominus (LaTeX)
18126 \DeclareTextCommand{\textominus}{PU}{\9042\226}%* U+2296
18127 %* \textominus -> \varominus (stmaryrd)
18128 % U+2297 CIRCLED TIMES; circlemultiply; \otimes (LaTeX)
18129 \DeclareTextCommand{\textotimes}{PU}{\9042\227}%* U+2297
18130 %* \textotimes -> \varotimes (stmaryrd)
18131 % U+2298 CIRCLED DIVISION SLASH; \oslash (LaTeX)
18132 \DeclareTextCommand{\textoslash}{PU}{\9042\230}%* U+2298
18133 %* \textoslash -> \varoslash (stmaryrd)
18134 % U+2299 CIRCLED DOT OPERATOR; circle(d?)ot; \odot (LaTeX)
18135 \DeclareTextCommand{\textodot}{PU}{\9042\231}%* U+2299
18136 %* \textodot -> \varodot (stmaryrd)
18137 % U+229A CIRCLED RING OPERATOR; \circledcirc (AmS)
18138 \DeclareTextCommand{\textcircledcirc}{PU}{\9042\232}%* U+229A
18139 %* \textcircledcirc -> \ocirc (mathabx)
18140 %* \textcircledcirc -> \varocircle (stmaryrd)
18141 % U+229B CIRCLED ASTERISK OPERATOR; \circledast (AmS)
18142 \DeclareTextCommand{\textcircledast}{PU}{\9042\233}%* U+229B
18143 %* \textcircledast -> \varoast (stmaryrd)
18144 %* \textcircledast -> \oasterisk (mathabx)
18145 % U+229D CIRCLED DASH; \circleddash (AmS)
18146 \DeclareTextCommand{\textcircleddash}{PU}{\9042\235}%* U+229D
18147 % U+229E SQUARED PLUS; \boxplus (AmS)
18148 \DeclareTextCommand{\textboxplus}{PU}{\9042\236}%* U+229E
18149 % U+229F SQUARED MINUS; \boxminus (AmS)
18150 \DeclareTextCommand{\textboxminus}{PU}{\9042\237}%* U+229F
18151 % U+22A0 SQUARED TIMES; \boxtimes (AmS)
18152 \DeclareTextCommand{\textboxtimes}{PU}{\9042\240}%* U+22A0

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18153 % U+22A1 SQUARED DOT OPERATOR; \boxdot (AmS)  
18154 \DeclareTextCommand{\textboxdot}{PU}{\9042\241}%\* U+22A1  
18155 % U+22A2 RIGHT TACK; \vdash (LaTeX)  
18156 \DeclareTextCommand{\textvdash}{PU}{\9042\242}%\* U+22A2  
18157 %\* \textvdash -> \rightvdash (MnSymbol)  
18158 % U+22A3 LEFT TACK; \dashv (LaTeX)  
18159 \DeclareTextCommand{\textdashv}{PU}{\9042\243}%\* U+22A3  
18160 %\* \textdashv -> \leftvdash (MnSymbol)  
18161 % \ndashv (mathabx)  
18162 \DeclareTextCommand{\textndashv}{PU}{\9042\243\83\070}%\* U+22A3 U+0338  
18163 %\* \textndashv -> \nleftvdash (MnSymbol)  
18164 % U+22A4 DOWN TACK (=top); \tackdown; \top (LaTeX)  
18165 \DeclareTextCommand{\textttop}{PU}{\9042\244}%\* U+22A4  
18166 %\* \textttop -> \downvdash (MnSymbol)  
18167 % \ndownvdash (MnSymbol)  
18168 \DeclareTextCommand{\textndownvdash}{PU}{\9042\244\83\070}%\* U+22A4 U+0338  
18169 % U+22A5 UP TACK (=base, bottom); \bot (LaTeX)  
18170 \DeclareTextCommand{\textbot}{PU}{\9042\245}%\* U+22A5  
18171 %\* \textbot -> \upvdash (MnSymbol)  
18172 % \nupvdash (MnSymbol)  
18173 \DeclareTextCommand{\textnupvdash}{PU}{\9042\245\83\070}%\* U+22A5 U+0338  
18174 %\* \textnupvdash -> \nperp (MnSymbol)  
18175 % U+22A8 TRUE; \vDash (AmS)  
18176 \DeclareTextCommand{\textvDash}{PU}{\9042\250}%\* U+22A8  
18177 %\* \textvDash -> \models (LaTeX)  
18178 %\* \textvDash -> \rightmodels (MnSymbol)  
18179 % U+22A9 FORCES; \Vdash (AmS)  
18180 \DeclareTextCommand{\textVdash}{PU}{\9042\251}%\* U+22A9  
18181 %\* \textVdash -> \rightVdash (MnSymbol)  
18182 % U+22AA TRIPLE VERTICAL BAR RIGHT TURNSTILE; \Vvdash (AmS)  
18183 \DeclareTextCommand{\textVvdash}{PU}{\9042\252}%\* U+22AA  
18184 % \nVvdash (mathabx)  
18185 \DeclareTextCommand{\textnVvdash}{PU}{\9042\252\83\070}%\* U+22AA U+0338  
18186 % U+22AB DOUBLE VERTICAL BAR DOUBLE RIGHT TURNSTILE;  
18187 % \VDash (mathabx)  
18188 \DeclareTextCommand{\textVDash}{PU}{\9042\253}%\* U+22AB  
18189 %\* \textVDash -> \rightModels (MnSymbol)  
18190 % U+22AC DOES NOT PROVE; \nvdash (AmS)  
18191 \DeclareTextCommand{\textnvdash}{PU}{\9042\254}%\* U+22AC  
18192 %\* \textnvdash -> \nrightvdash (MnSymbol)  
18193 % U+22AD NOT TRUE; \nvDash (AmS)  
18194 \DeclareTextCommand{\textnvDash}{PU}{\9042\255}%\* U+22AD  
18195 %\* \textnvDash -> \nrightmodels (MnSymbol)  
18196 %\* \textnvDash -> \nmodels (MnSymbol)  
18197 % U+22AE DOES NOT FORCE; \nVdash (txfonts/pxfonts)  
18198 \DeclareTextCommand{\textnVdash}{PU}{\9042\256}%\* U+22AE  
18199 %\* \textnVdash -> \nrightVdash (MnSymbol)  
18200 % U+22AF NEGATED DOUBLE VERTICAL BAR DOUBLE RIGHT TURN-  
STILE; \nVDash (AmS)  
18201 \DeclareTextCommand{\textnVDash}{PU}{\9042\257}%\* U+22AF  
18202 %\* \textnVDash -> \nrightModels (MnSymbol)  
18203 % U+22B2 NORMAL SUBGROUP OF; \lhd (latexsym, ...)  
18204 \DeclareTextCommand{\textlhd}{PU}{\9042\262}%\* U+22B2  
18205 %\* \textlhd -> \lessclosed (MnSymbol)

18206 % U+22B3 CONTAINS AS NORMAL SUBGROUP; \rhd (latexsym, ...)  
18207 \DeclareTextCommand{\textrhd}{PU}{\9042\263}%\* U+22B3  
18208 %\* \textrhd -> \gtrclosed (MnSymbol)  
18209 % U+22B4 NORMAL SUBGROUP OF OR EQUAL TO; \unlhd (latexsym, ...)  
18210 \DeclareTextCommand{\textunlhd}{PU}{\9042\264}%\* U+22B4  
18211 %\* \textunlhd -> \leqclosed (MnSymbol)  
18212 %\* \textunlhd -> \trianglelefteq (MnSymbol)  
18213 % U+22B5 CONTAINS AS NORMAL SUBGROUP OR EQUAL TO; \unrhd (latexsym, ...)  
18214 \DeclareTextCommand{\textunrhd}{PU}{\9042\265}%\* U+22B5  
18215 %\* \textunrhd -> \geqclosed (MnSymbol)  
18216 %\* \textunrhd -> \trianglerighteq (MnSymbol)  
18217 % U+22B6 ORIGINAL OF; \multimapdotbothA (txfonts/pxfonts)  
18218 \DeclareTextCommand{\textmultimapdotbothA}{PU}{\9042\266}%\* U+22B6  
18219 % U+22B7 IMAGE OF; \multimapdotbothB (txfonts/pxfonts)  
18220 \DeclareTextCommand{\textmultimapdotbothB}{PU}{\9042\267}%\* U+22B7  
18221 % U+22B8 MULTIMAP; \multimap (AmS, txfonts/pxfonts)  
18222 \DeclareTextCommand{\textmultimap}{PU}{\9042\270}%\* U+22B8  
18223 % U+22BB XOR; \veebar (AmS)  
18224 \DeclareTextCommand{\textveebar}{PU}{\9042\273}%\* U+22BB  
18225 % U+22BC NAND; \barwedge (mathabx)  
18226 \DeclareTextCommand{\textbarwedge}{PU}{\9042\274}%\* U+22BC  
18227 % U+22C6 STAR OPERATOR; \star (LaTeX)  
18228 \DeclareTextCommand{\textstar}{PU}{\9042\306}%\* U+22C6  
18229 % U+22C7 DIVISION TIMES; \divideontimes (AmS)  
18230 \DeclareTextCommand{\textdivideontimes}{PU}{\9042\307}%\* U+22C7  
18231 % U+22C8 BOWTIE; \bowtie (LaTeX)  
18232 \DeclareTextCommand{\textbowtie}{PU}{\9042\310}%\* U+22C8  
18233 %\* \textbowtie -> \Bowtie (wasysym)  
18234 % U+22C9 LEFT NORMAL FACTOR SEMIDIRECT PRODUCT; \ltimes (AmS)  
18235 \DeclareTextCommand{\textltimes}{PU}{\9042\311}%\* U+22C9  
18236 % U+22CA RIGHT NORMAL FACTOR SEMIDIRECT PRODUCT;  
18237 % \rtimes (AmS)  
18238 \DeclareTextCommand{\textrtimes}{PU}{\9042\312}%\* U+22CA  
18239 % U+22CB LEFT SEMIDIRECT PRODUCT; \leftthreetimes (AmS)  
18240 \DeclareTextCommand{\textleftthreetimes}{PU}{\9042\313}%\* U+22CB  
18241 % U+22CC RIGHT SEMIDIRECT PRODUCT; \rightthreetimes (AmS)  
18242 \DeclareTextCommand{\textrightthreetimes}{PU}{\9042\314}%\* U+22CC  
18243 % U+22CD REVERSED TILDE EQUALS; \backsimeq (AmS)  
18244 \DeclareTextCommand{\textbacksimeq}{PU}{\9042\315}%\* U+22CD  
18245 % \nbacksimeq (txfonts/pxfonts)  
18246 \DeclareTextCommand{\textnbacksimeq}{PU}{\9042\315\83\070}%\* U+22CD U+0338  
18247 % U+22CE CURLY LOGICAL OR; curlyor; \curlyvee (AmS)  
18248 \DeclareTextCommand{\textcurlyvee}{PU}{\9042\316}%\* U+22CE  
18249 %\* \textcurlyvee -> \varcurlyvee (stmaryrd)  
18250 % U+22CF CURLY LOGICAL AND; curlyand; \curlywedge (AmS)  
18251 \DeclareTextCommand{\textcurlywedge}{PU}{\9042\317}%\* U+22CF  
18252 %\* \textcurlywedge -> \varcurlywedge (stmaryrd)  
18253 % U+22D0 DOUBLE SUBSET; \Subset (AmS)  
18254 \DeclareTextCommand{\textSubset}{PU}{\9042\320}%\* U+22D0  
18255 % \nSubset (txfonts/pxfonts)  
18256 \DeclareTextCommand{\textnSubset}{PU}{\9042\320\83\070}%\* U+22D0 U+0338  
18257 % U+22D1 DOUBLE SUPERSET; \Supset (AmS)  
18258 \DeclareTextCommand{\textSupset}{PU}{\9042\321}%\* U+22D1

18259 % \nSupset (txfonts/pxfonts)  
18260 \DeclareTextCommand{\textnSupset}{PU}{\9042\321\83\070}%\* U+22D1 U+0338  
18261 % U+22D2 DOUBLE INTERSECTION; \Cap (AmS)  
18262 \DeclareTextCommand{\textCap}{PU}{\9042\322}%\* U+22D2  
18263 %\* \textCap -> \doublecap (mathabx)  
18264 % U+22D3 DOUBLE UNION; \Cup (AmS)  
18265 \DeclareTextCommand{\textCup}{PU}{\9042\323}%\* U+22D3  
18266 %\* \textCup -> \doublecup (mathabx)  
18267 % U+22D4 PITCHFORK; \pitchfork (mathabx)  
18268 \DeclareTextCommand{\textpitchfork}{PU}{\9042\324}%\* U+22D4  
18269 % U+22D6 LESS-THAN WITH DOT; \lessdot (AmS)  
18270 \DeclareTextCommand{\textlessdot}{PU}{\9042\326}%\* U+22D6  
18271 % U+22D7 GREATER-THAN WITH DOT; \gtrdot (AmS)  
18272 \DeclareTextCommand{\textgtrdot}{PU}{\9042\327}%\* U+22D7  
18273 % U+22D8 VERY MUCH LESS-THAN; \lll (AmS)  
18274 \DeclareTextCommand{\textlll}{PU}{\9042\330}%\* U+22D8  
18275 % U+22D9 VERY MUCH GREATER-THAN; \ggg (AmS)  
18276 \DeclareTextCommand{\textggg}{PU}{\9042\331}%\* U+22D9  
18277 % U+22DA LESS-THAN EQUAL TO OR GREATER-THAN; lessequalorgreater;  
18278 % \lesseqgtr (AmS)  
18279 \DeclareTextCommand{\textlesseqgtr}{PU}{\9042\332}%\* U+22DA  
18280 % U+22DB GREATER-THAN EQUAL TO OR LESS-THAN; greaterequalorless;  
18281 % \gtreqless (AmS)  
18282 \DeclareTextCommand{\textgtreqless}{PU}{\9042\333}%\* U+22DB  
18283 % U+22DE EQUAL TO OR PRECEDES; \curlyeqprec (MnSymbol)  
18284 \DeclareTextCommand{\textcurlyeqprec}{PU}{\9042\336}%\* U+22DE  
18285 % \ncurlyeqprec (mathabx)  
18286 \DeclareTextCommand{\textncurlyeqprec}{PU}{\9042\336\83\070}%\* U+22DE U+0338  
18287 % U+22DF EQUAL TO OR SUCCEEDS; \curlyeqsucc (MnSymbol)  
18288 \DeclareTextCommand{\textcurlyeqsucc}{PU}{\9042\337}%\* U+22DF  
18289 % \ncurlyeqsucc (mathabx)  
18290 \DeclareTextCommand{\textncurlyeqsucc}{PU}{\9042\337\83\070}%\* U+22DF U+0338  
18291 % U+22E0 DOES NOT PRECEDE OR EQUAL; \npreccurlyeq (txfonts/pxfonts)  
18292 \DeclareTextCommand{\textnpreccurlyeq}{PU}{\9042\340}%\* U+22E0  
18293 % U+22E1 DOES NOT SUCCEED OR EQUAL; \nsucccurlyeq (txfonts/pxfonts)  
18294 \DeclareTextCommand{\textnsucccurlyeq}{PU}{\9042\341}%\* U+22E1  
18295 % U+22E2 NOT SQUARE IMAGE OF OR EQUAL TO; \nqsubseteq (tx-  
fonts/pxfonts)  
18296 \DeclareTextCommand{\textnqsubseteq}{PU}{\9042\342}%\* U+22E2  
18297 % U+22E3 NOT SQUARE ORIGINAL OF OR EQUAL TO; \nqsupseteq (tx-  
fonts/pxfonts)  
18298 \DeclareTextCommand{\textnqsupseteq}{PU}{\9042\343}%\* U+22E3  
18299 % U+22E4 SQUARE IMAGE OF OR NOT EQUAL TO; \sqsubsetneq (mathabx)  
18300 \DeclareTextCommand{\textsqsubsetneq}{PU}{\9042\344}%\* U+22E4  
18301 %\* \textsqsubsetneq -> \varsqsubsetneq (mathabx)  
18302 % U+22E5 SQUARE ORIGINAL OF OR NOT EQUAL TO; \sqsupsetneq (math-  
abx)  
18303 \DeclareTextCommand{\textsqsupsetneq}{PU}{\9042\345}%\* U+22E5  
18304 %\* \textsqsupsetneq -> \varsqsupsetneq (mathabx)  
18305 % U+22E6 LESS-THAN BUT NOT EQUIVALENT TO; \lnsim (AmS)  
18306 \DeclareTextCommand{\textlnsim}{PU}{\9042\346}%\* U+22E6  
18307 % U+22E7 GREATER-THAN BUT NOT EQUIVALENT TO; \gnsim (AmS)  
18308 \DeclareTextCommand{\textgnsim}{PU}{\9042\347}%\* U+22E7  
18309 % U+22E8 PRECEDES BUT NOT EQUIVALENT TO; \precsim (AmS)

18310 `\DeclareTextCommand{\textprecsim}{PU}{\9042\350}%* U+22E8`  
18311 `% U+22E9 SUCCEEDS BUT NOT EQUIVALENT TO; \succsim (AmS)`  
18312 `\DeclareTextCommand{\textsuccsim}{PU}{\9042\351}%* U+22E9`  
18313 `% U+22EA NOT NORMAL SUBGROUP OF; \ntriangleleft (AmS)`  
18314 `\DeclareTextCommand{\textntriangleleft}{PU}{\9042\352}%* U+22EA`  
18315 `%* \textntriangleleft -> \nlessclosed (MnSymbol)`  
18316 `% U+22EB DOES NOT CONTAIN AS NORMAL SUBGROUP; \ntriangleright (AmS)`  
18317 `\DeclareTextCommand{\textntriangleright}{PU}{\9042\353}%* U+22EB`  
18318 `%* \textntriangleright -> \ngtrclosed (MnSymbol)`  
18319 `% U+22EC NOT NORMAL SUBGROUP OF OR EQUAL TO;`  
18320 `% \ntrianglelefteq (AmS)`  
18321 `\DeclareTextCommand{\textntrianglelefteq}{PU}{\9042\354}%* U+22EC`  
18322 `% U+22ED DOES NOT CONTAIN AS NORMAL SUBGROUP OR EQUAL;`  
18323 `% \ntrianglerighteq (AmS)`  
18324 `\DeclareTextCommand{\textntrianglerighteq}{PU}{\9042\355}%* U+22ED`  
18325 `%* \textntrianglerighteq -> \textngeqclosed`  
18326 `% U+22EE VERTICAL ELLIPSIS; ellipsisvertical; \vdots (LaTeX)`  
18327 `\DeclareTextCommand{\textvdots}{PU}{\9042\356}%* U+22EE`  
18328 `% U+22EF MIDLINE HORIZONTAL ELLIPSIS; \cdots (LaTeX)`  
18329 `\DeclareTextCommand{\textcdots}{PU}{\9042\357}%* U+22EF`  
18330 `% U+22F0 UP RIGHT DIAGONAL ELLIPSIS; \udots (MnSymbol)`  
18331 `\DeclareTextCommand{\textudots}{PU}{\9042\360}%* U+22F0`  
18332 `% U+22F1 DOWN RIGHT DIAGONAL ELLIPSIS; \ddots (LaTeX)`  
18333 `\DeclareTextCommand{\textddots}{PU}{\9042\361}%* U+22F1`  
18334 `% U+22F6 ELEMENT OF WITH OVERBAR; \barin (mathabx)`  
18335 `\DeclareTextCommand{\textbarin}{PU}{\9042\366}%* U+22F6`

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

18336 `% U+2300 DIAMETER SIGN; \diameter (mathabx,wasysym)`  
18337 `\DeclareTextCommand{\textdiameter}{PU}{\9043\000}%* U+2300`  
18338 `% U+2310 REVERSED NOT SIGN; \backneg (MnSymbol)`  
18339 `\DeclareTextCommand{\textbackneg}{PU}{\9043\020}%* U+2310`  
18340 `% U+2311 SQUARE LOZENGE; \wasylozenge (wasysym)`  
18341 `\DeclareTextCommand{\textwasylozenge}{PU}{\9043\021}%* U+2311`  
18342 `% U+2319 TURNED NOT SIGN; \invbackneg (MnSymbol)`  
18343 `\DeclareTextCommand{\textinvbackneg}{PU}{\9043\031}%* U+2319`  
18344 `% U+231A WATCH; \clock (wasysym)`  
18345 `\DeclareTextCommand{\textclock}{PU}{\9043\032}%* U+231A`  
18346 `%* \textclock -> \Clocklogo (marvosym)`  
18347 `%* \textclock -> \ClockLogo (marvosym)`  
18348 `% U+231C TOP LEFT CORNER; \ulcorner (AmS)`  
18349 `\DeclareTextCommand{\textulcorner}{PU}{\9043\034}%* U+231C`  
18350 `% U+231D TOP RIGHT CORNER; \urcorner (AmS)`  
18351 `\DeclareTextCommand{\texturcorner}{PU}{\9043\035}%* U+231D`  
18352 `% U+231E BOTTOM LEFT CORNER; \llcorner (AmS)`  
18353 `\DeclareTextCommand{\textllcorner}{PU}{\9043\036}%* U+231E`  
18354 `% U+231F BOTTOM RIGHT CORNER; \lrcorner (AmS)`  
18355 `\DeclareTextCommand{\textlrcorner}{PU}{\9043\037}%* U+231F`  
18356 `% U+2322 FROWN; \frown (LaTeX)`  
18357 `\DeclareTextCommand{\textfrown}{PU}{\9043\042}%* U+2322`  
18358 `% U+2323 SMILE; \smile (LaTeX)`  
18359 `\DeclareTextCommand{\textsmile}{PU}{\9043\043}%* U+2323`  
18360 `% U+2328 KEYBOARD; \Keyboard (marvosym)`



18361 `\DeclareTextCommand{\textKeyboard}{PU}{\9043\050}%* U+2328`  
18362 `% U+2329 LEFT-POINTING ANGLE BRACKET; angleleft; \langle (LaTeX)`  
18363 `\DeclareTextCommand{\textlangle}{PU}{\9043\051}%* U+2329`  
18364 `% U+232A RIGHT-POINTING ANGLE BRACKET; angleright; \rangle (LaTeX)`  
18365 `\DeclareTextCommand{\textrightangle}{PU}{\9043\052}%* U+232A`  
18366 `% U+2339 APL FUNCTIONAL SYMBOL QUAD DIVIDE; \APLinv (wasysym)`  
18367 `\DeclareTextCommand{\textAPLinv}{PU}{\9043\071}%* U+2339`  
18368 `% U+233C APL FUNCTIONAL SYMBOL QUAD CIRCLE; \Tumbler (marvosym)`  
18369 `\DeclareTextCommand{\textTumbler}{PU}{\9043\074}%* U+233C`  
18370 `% U+233D APL FUNCTIONAL SYMBOL CIRCLE STILE; \baro (stmaryrd)`  
18371 `\DeclareTextCommand{\textstmaryrdbaro}{PU}{\9043\075}% U+233D`  
18372 `%* \textstmaryrdbaro -> \baro (stmaryrd)`  
18373 `% U+233F APL FUNCTIONAL SYMBOL SLASH BAR; \notslash (wasysym)`  
18374 `\DeclareTextCommand{\textnotslash}{PU}{\9043\077}%* U+233F`  
18375 `% U+2340 APL FUNCTIONAL SYMBOL BACKSLASH BAR;`  
18376 `% \notbackslash (wasysym)`  
18377 `\DeclareTextCommand{\textnotbackslash}{PU}{\9043\100}%* U+2340`  
18378 `% U+2342 APL FUNCTIONAL SYMBOL QUAD BACKSLASH; \boxbackslash (mathabx)`  
18379 `\DeclareTextCommand{\textboxbackslash}{PU}{\9043\102}%* U+2342`  
18380 `% U+2347 APL FUNCTIONAL SYMBOL QUAD LEFTWARDS ARROW;`  
18381 `% \APLleftarrowbox (wasysym)`  
18382 `\DeclareTextCommand{\textAPLleftarrowbox}{PU}{\9043\107}%* U+2347`  
18383 `% U+2348 APL FUNCTIONAL SYMBOL QUAD RIGHTWARDS ARROW;`  
18384 `% \APLrightarrowbox (wasysym)`  
18385 `\DeclareTextCommand{\textAPLrightarrowbox}{PU}{\9043\110}%* U+2348`  
18386 `% U+2350 APL FUNCTIONAL SYMBOL QUAD UPWARDS ARROW; \APLuparrowbox (wasysym)`  
18387 `\DeclareTextCommand{\textAPLuparrowbox}{PU}{\9043\120}%* U+2350`  
18388 `% U+2357 APL FUNCTIONAL SYMBOL QUAD DOWNWARDS ARROW;`  
18389 `% \APLdownarrowbox (wasysym)`  
18390 `\DeclareTextCommand{\textAPLdownarrowbox}{PU}{\9043\127}%* U+2357`  
18391 `% U+235E APL FUNCTIONAL SYMBOL QUOTE QUAD;`  
18392 `% \APLinput (wasysym)`  
18393 `\DeclareTextCommand{\textAPLinput}{PU}{\9043\136}%* U+235E`  
18394 `% U+2370 APL FUNCTIONAL SYMBOL QUAD QUESTION; \Request (china2e)`  
18395 `\DeclareTextCommand{\textRequest}{PU}{\9043\160}%* U+2370`  
18396 `% U+2393 DIRECT CURRENT SYMBOL FORM TWO; \Beam (marvosym)`  
18397 `\DeclareTextCommand{\textBeam}{PU}{\9043\223}%* U+2393`  
18398 `% U+2394 SOFTWARE-FUNCTION SYMBOL; \hexagon (wasysym)`  
18399 `\DeclareTextCommand{\texthexagon}{PU}{\9043\224}%* U+2394`  
18400 `% U+2395 APL FUNCTIONAL SYMBOL QUAD; \APLbox (wasysym)`  
18401 `\DeclareTextCommand{\textAPLbox}{PU}{\9043\225}%* U+2395`  
18402 `% U+23ED BLACK RIGHT-POINTING DOUBLE TRIANGLE WITH VERTICAL BAR;`  
18403 `% \ForwardToIndex (marvosym)`  
18404 `\DeclareTextCommand{\textForwardToIndex}{PU}{\9043\355}%* U+23ED`  
18405 `% U+23EE BLACK LEFT-POINTING DOUBLE TRIANGLE WITH VERTICAL BAR;`  
18406 `% \RewindToIndex (marvosym)`  
18407 `\DeclareTextCommand{\textRewindToIndex}{PU}{\9043\356}%* U+23EE`

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

18408 % U+2422 BLANK SYMBOL  
18409 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422  
18410 % U+2423 OPEN BOX; blank  
18411 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

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

18412 % U+244A OCR DOUBLE BACKSLASH; \bbslash (stmaryrd)  
18413 \DeclareTextCommand{\textbbslash}{PU}{\9044\112}%\* U+244A  
18414 %\* \textbbslash -> \varparallelinv (txfonts/pxfonts)

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

18415 % U+2460 CIRCLED DIGIT ONE; onecircle  
18416 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460  
18417 % U+2461 CIRCLED DIGIT TWO; twocircle  
18418 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461  
18419 % U+2462 CIRCLED DIGIT THREE; threecircle  
18420 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462  
18421 % U+2463 CIRCLED DIGIT FOUR; fourcircle  
18422 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463  
18423 % U+2464 CIRCLED DIGIT FIVE; fivecircle  
18424 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464  
18425 % U+2465 CIRCLED DIGIT SIX; sixcircle  
18426 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465  
18427 % U+2466 CIRCLED DIGIT SEVEN; sevencircle  
18428 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466  
18429 % U+2467 CIRCLED DIGIT EIGHT; eightcircle  
18430 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467  
18431 % U+2468 CIRCLED DIGIT NINE; ninecircle  
18432 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468  
18433 % U+2469 CIRCLED NUMBER TEN; tencircle  
18434 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469  
18435 % U+246A CIRCLED NUMBER ELEVEN; elevencircle  
18436 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A  
18437 % U+246B CIRCLED NUMBER TWELVE; twelvecircle  
18438 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B  
18439 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle  
18440 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C  
18441 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle  
18442 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D  
18443 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle  
18444 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E  
18445 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle  
18446 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F  
18447 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle  
18448 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470  
18449 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle  
18450 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471  
18451 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle  
18452 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472  
18453 % U+2473 CIRCLED NUMBER TWENTY; twentycircle  
18454 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473  
18455 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle  
18456 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6  
18457 % \CircledA (marvosym)

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18458 \DeclareTextCommand{\textCircledA}{PU}{\9044\266}%* U+24B6
18459 %* \textCircledA -> \CleaningA
18460 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle
18461 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7
18462 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle
18463 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8
18464 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle
18465 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9
18466 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle
18467 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA
18468 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle
18469 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB
18470 % \CleaningF (marvosym)
18471 \DeclareTextCommand{\textCleaningF}{PU}{\9044\273}%* U+24BB
18472 % \CleaningFF (marvosym)
18473 \DeclareTextCommand{\textCleaningFF}{PU}{\9044\273\83\062}%* U+24BB U+0332
18474 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle
18475 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC
18476 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle
18477 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD
18478 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle
18479 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE
18480 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle
18481 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF
18482 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle
18483 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0
18484 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle
18485 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1
18486 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle
18487 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2
18488 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle
18489 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3
18490 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle
18491 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4
18492 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle
18493 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5
18494 % \CleaningP (marvosym)
18495 \DeclareTextCommand{\textCleaningP}{PU}{\9044\305}%* U+24C5
18496 % \CleaningPP (marvosym)
18497 \DeclareTextCommand{\textCleaningPP}{PU}{\9044\305\83\062}%* U+24C5 U+0332
18498 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle
18499 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6
18500 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle
18501 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7
18502 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle
18503 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8
18504 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle
18505 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9
18506 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle
18507 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA
18508 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle
18509 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB
18510 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle
18511 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC

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18512 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle  
18513 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD  
18514 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle  
18515 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE  
18516 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle  
18517 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF  
18518 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle  
18519 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0  
18520 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle  
18521 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1  
18522 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle  
18523 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2  
18524 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle  
18525 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3  
18526 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle  
18527 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4  
18528 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle  
18529 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5  
18530 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle  
18531 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6  
18532 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle  
18533 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7  
18534 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle  
18535 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8  
18536 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcircle  
18537 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9  
18538 % U+24DA CIRCLED LATIN SMALL LETTER K; kcircle  
18539 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA  
18540 % U+24DB CIRCLED LATIN SMALL LETTER L; lcircle  
18541 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB  
18542 % U+24DC CIRCLED LATIN SMALL LETTER M; mcircle  
18543 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC  
18544 % U+24DD CIRCLED LATIN SMALL LETTER N; ncircle  
18545 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD  
18546 % U+24DE CIRCLED LATIN SMALL LETTER O; ocircle  
18547 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE  
18548 % U+24DF CIRCLED LATIN SMALL LETTER P; pcircle  
18549 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF  
18550 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcircle  
18551 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0  
18552 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcircle  
18553 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1  
18554 % U+24E2 CIRCLED LATIN SMALL LETTER S; scircle  
18555 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2  
18556 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcircle  
18557 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3  
18558 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucircle  
18559 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4  
18560 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcircle  
18561 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5  
18562 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcircle  
18563 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6  
18564 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcircle  
18565 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7

18566 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycircle  
18567 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8  
18568 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcircle  
18569 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9  
18570 % U+24EA CIRCLED DIGIT ZERO  
18571 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

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

18572 % U+2504 BOX DRAWINGS LIGHT TRIPLE DASH HORIZONTAL; \Cutting-  
Line (marvosym)  
18573 \DeclareTextCommand{\textCuttingLine}{PU}{\9045\004}%\* U+2504  
18574 %\* \textCuttingLine -> \Kutline (marvosym)  
18575 %\* \textCuttingLine -> \CutLine (marvosym)  
18576 %\* \textCuttingLine -> \Cutline (marvosym)

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

18577 % U+25B2 BLACK UP-POINTING TRIANGLE; \UParrow (wasysym)  
18578 \DeclareTextCommand{\textUParrow}{PU}{\9045\262}%\* U+25B2  
18579 %\* \textUParrow -> \MoveUp (marvosym)  
18580 % U+25B3 WHITE UP-POINTING TRIANGLE; whiteuppointingtriangle;  
18581 % \bigtriangleup (LaTeX)  
18582 \DeclareTextCommand{\textbigtriangleup}{PU}{\9045\263}%\* U+25B3  
18583 %\* \textbigtriangleup -> \APLup (wasysym)  
18584 %\* \textbigtriangleup -> \Bleech (marvosym)  
18585 % U+25B6 BLACK RIGHT-POINTING TRIANGLE; \Forward (marvosym)  
18586 \DeclareTextCommand{\textForward}{PU}{\9045\266}%\* U+25B6  
18587 % U+25B7 WHITE RIGHT-POINTING TRIANGLE (= z notation range restric-  
tion);  
18588 % whiterightpointingtriangle; \triangleright (LaTeX)  
18589 \DeclareTextCommand{\texttriangleright}{PU}{\9045\267}%\* U+25B7  
18590 % U+25BA BLACK RIGHT-POINTING POINTER; \RHD (wasysym)  
18591 \DeclareTextCommand{\textRHD}{PU}{\9045\272}%\* U+25BA  
18592 % U+25BC BLACK DOWN-POINTING TRIANGLE; \DOWNarrow (wasysym)  
18593 \DeclareTextCommand{\textDOWNarrow}{PU}{\9045\274}%\* U+25BC  
18594 %\* \textDOWNarrow -> \MoveDown (marvosym)  
18595 % U+25BD WHITE DOWN-POINTING TRIANGLE; whitedownpointingtri-  
angle;  
18596 % \bigtriangledown (LaTeX)  
18597 \DeclareTextCommand{\textbigtriangledown}{PU}{\9045\275}%\* U+25BD  
18598 %\* \textbigtriangledown -> \APLdown (wasysym)  
18599 % U+25C0 BLACK LEFT-POINTING TRIANGLE; \Rewind (marvosym)  
18600 \DeclareTextCommand{\textRewind}{PU}{\9045\300}%\* U+25C0  
18601 % U+25C1 WHITE RIGHT-POINTING TRIANGLE (= z notation domain re-  
striction);  
18602 % whiteleftpointingtriangle; \triangleleft (LaTeX)  
18603 \DeclareTextCommand{\texttriangleleft}{PU}{\9045\301}%\* U+25C1  
18604 % U+25C4 BLACK LEFT-POINTING POINTER; \LHD (wasysym)  
18605 \DeclareTextCommand{\textLHD}{PU}{\9045\304}%\* U+25C4  
18606 % U+25C7 WHITE DIAMOND; whitediamond; \diamond (LaTeX)  
18607 \DeclareTextCommand{\textdiamond}{PU}{\9045\307}%\* U+25C7  
18608 %\* \textdiamond -> \Diamond (wasysym)  
18609 % U+25CA LOZENGE; lozenge; \lozenge (AmS)  
18610 \DeclareTextCommand{\textlozenge}{PU}{\9045\312}%\* U+25CA  
18611 % U+25D6 LEFT HALF BLACK CIRCLE; \LEFTCIRCLE (wasysym)

18612 \DeclareTextCommand{\textLEFTCIRCLE}{PU}{\9045\326}%\* U+25D6  
18613 % U+25D7 RIGHT HALF BLACK CIRCLE; \RIGHTCIRCLE (wasysym)  
18614 \DeclareTextCommand{\textRIGHTCIRCLE}{PU}{\9045\327}%\* U+25D7  
18615 % U+25E6 WHITE BULLET; \*openbullet, whitebullet  
18616 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}%\* U+25E6  
18617 % U+25EB WHITE SQUARE WITH VERTICAL BISECTING LINE;  
18618 % \boxbar (stmaryrd)  
18619 \DeclareTextCommand{\textboxbar}{PU}{\9045\353}%\* U+25EB  
18620 % U+25EF LARGE CIRCLE; largecircle  
18621 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}%\* U+25EF  
18622 %\* \textbigcircle -> \varbigcirc (stmaryrd)  
18623 %

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

18624 % U+2601 CLOUD; \Cloud (ifsym)  
18625 \DeclareTextCommand{\textCloud}{PU}{\9046\001}%\* U+2601  
18626 % U+2605 BLACK STAR; \FiveStar (bbding)  
18627 \DeclareTextCommand{\textFiveStar}{PU}{\9046\005}%\* U+2605  
18628 % U+2606 WHITE STAR; \FiveStarOpen (bbding)  
18629 \DeclareTextCommand{\textFiveStarOpen}{PU}{\9046\006}%\* U+2606  
18630 % U+260E BLACK TELEPHONE; telephoneblack; \Phone (bbding)  
18631 \DeclareTextCommand{\textPhone}{PU}{\9046\016}%\* U+260E  
18632 %\* \textPhone -> \Telefon (marvosym)  
18633 % U+2610 BALLOT BOX; \boxempty (stmaryrd)  
18634 \DeclareTextCommand{\textboxempty}{PU}{\9046\020}%\* U+2610  
18635 %\* \textboxempty -> \Box (wasysym)  
18636 % U+2611 BALLOT BOX WITH CHECK; \Checkedbox (marvosym)  
18637 \DeclareTextCommand{\textCheckedbox}{PU}{\9046\021}%\* U+2611  
18638 %\* \textCheckedbox -> \CheckedBox (marvosym)  
18639 % U+2612 BALLOT BOX WITH X; \Crossedbox (marvosym)  
18640 \DeclareTextCommand{\textCrossedbox}{PU}{\9046\022}%\* U+2612  
18641 %\* \textCrossedbox -> \XBox (wasysym)  
18642 %\* \textCrossedbox -> \CrossedBox (marvosym)  
18643 % U+2615 HOT BEVERAGE; \Coffeecup (marvosym)  
18644 \DeclareTextCommand{\textCoffeecup}{PU}{\9046\025}%\* U+2615  
18645 % U+261A BLACK LEFT POINTING INDEX; \HandCuffLeft (bbding)  
18646 \DeclareTextCommand{\textHandCuffLeft}{PU}{\9046\032}%\* U+261A  
18647 % U+261B BLACK RIGHT POINTING INDEX; \HandCuffRight (bbding)  
18648 \DeclareTextCommand{\textHandCuffRight}{PU}{\9046\033}%\* U+261B  
18649 % U+261C WHITE LEFT POINTING INDEX; \HandLeft (bbding)  
18650 \DeclareTextCommand{\textHandLeft}{PU}{\9046\034}%\* U+261C  
18651 %\* \textHandLeft -> \rightpointleft (fourier)  
18652 % U+261E WHITE RIGHT POINTING INDEX; \HandRight (bbding)  
18653 \DeclareTextCommand{\textHandRight}{PU}{\9046\036}%\* U+261E  
18654 %\* \textHandRight -> \leftpointright (fourier)  
18655 %\* \textHandRight -> \PointingHand (marvosym)  
18656 %\* \textHandRight -> \Pointinghand (marvosym)  
18657 % U+2622 RADIOACTIVE SIGN; \Radioactivity (marvosym)  
18658 \DeclareTextCommand{\textRadioactivity}{PU}{\9046\042}%\* U+2622  
18659 %\* \textRadioactivity -> \Radiation (ifsym)  
18660 % U+2623 BIOHAZARD SIGN; \Biohazard (marvosym)  
18661 \DeclareTextCommand{\textBiohazard}{PU}{\9046\043}%\* U+2623  
18662 % U+2625 ANKH; \Ankh (marvosym)  
18663 \DeclareTextCommand{\textAnkh}{PU}{\9046\045}%\* U+2625

18664 % U+262F YIN YANG; \YinYang (marvosym)  
18665 \DeclareTextCommand{\textYinYang}{PU}{\9046\057}%\* U+262F  
18666 %\* \textYinYang -> \Yinyang (marvosym)  
18667 %\* \textYinYang -> \YingYang (marvosym)  
18668 %\* \textYinYang -> \Yingyang (marvosym)  
18669 % U+2639 WHITE FROWNING FACE; \frownie (wasysym)  
18670 \DeclareTextCommand{\textfrownie}{PU}{\9046\071}%\* U+2639  
18671 %\* \textfrownie -> \Frowny (marvosym)  
18672 % U+263A WHITE SMILING FACE; \smiley (wasysym)  
18673 \DeclareTextCommand{\textsmiley}{PU}{\9046\072}%\* U+263A  
18674 %\* \textsmiley -> \Smiley (marvosym)  
18675 % U+263B BLACK SMILING FACE; \blacksmiley (wasysym)  
18676 \DeclareTextCommand{\textblacksmiley}{PU}{\9046\073}%\* U+263B  
18677 % U+263C WHITE SUN WITH RAYS; \sun (wasysym)  
18678 \DeclareTextCommand{\textsun}{PU}{\9046\074}%\* U+263C  
18679 %\* \textsun -> \Sun (marvosym)  
18680 % U+263D FIRST QUARTER MOON; \leftmoon (wasysym, mathabx)  
18681 \DeclareTextCommand{\textleftmoon}{PU}{\9046\075}%\* U+263D  
18682 % U+263E LAST QUARTER MOON; \rightmoon (wasysym, mathabx)  
18683 \DeclareTextCommand{\textrightmoon}{PU}{\9046\076}%\* U+263E  
18684 % U+263F MERCURY; \mercury (wasysym)  
18685 \DeclareTextCommand{\textmercury}{PU}{\9046\077}%\* U+263F  
18686 %\* \textmercury -> \Mercury (marvosym)  
18687 % U+2640 FEMALE SIGN; female; \female (wasysym)  
18688 \DeclareTextCommand{\textPUfemale}{PU}{\9046\100}% U+2640  
18689 %\* \textPUfemale -> \textfemale (tipx)  
18690 %\* \textPUfemale -> \female (wasysym)  
18691 %\* \textPUfemale -> \venus (wasysym)  
18692 %\* \textPUfemale -> \Venus (marvosym)  
18693 %\* \textPUfemale -> \Female (marvosym)  
18694 % U+2641 EARTH; \earth (wasysym)  
18695 \DeclareTextCommand{\textearth}{PU}{\9046\101}%\* U+2641  
18696 %\* \textearth -> \Earth (marvosym)  
18697 % U+2642 MALE SIGN; male, mars; \male (wasysym)  
18698 \DeclareTextCommand{\textmale}{PU}{\9046\102}%\* U+2642  
18699 %\* \textmale -> \mars (wasysym)  
18700 %\* \textmale -> \Mars (marvosym)  
18701 %\* \textmale -> \Male (marvosym)  
18702 % U+2643 JUPITER; \jupiter (wasysym)  
18703 \DeclareTextCommand{\textjupiter}{PU}{\9046\103}%\* U+2643  
18704 %\* \textjupiter -> \Jupiter (marvosym)  
18705 % U+2644 SATURN; \saturn (wasysym)  
18706 \DeclareTextCommand{\textsaturn}{PU}{\9046\104}%\* U+2644  
18707 %\* \textsaturn -> \Saturn (marvosym)  
18708 % U+2645 URANUS; \uranus (wasysym)  
18709 \DeclareTextCommand{\texturanus}{PU}{\9046\105}%\* U+2645  
18710 %\* \texturanus -> \Uranus (marvosym)  
18711 % U+2646 NEPTUNE; \neptune (wasysym)  
18712 \DeclareTextCommand{\textneptune}{PU}{\9046\106}%\* U+2646  
18713 %\* \textneptune -> \Neptune (marvosym)  
18714 % U+2647 PLUTO; \pluto (wasysym)  
18715 \DeclareTextCommand{\textpluto}{PU}{\9046\107}%\* U+2647  
18716 %\* \textpluto -> \Pluto (marvosym)  
18717 % U+2648 ARIES; \aries (wasysym)

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18718 \DeclareTextCommand{\textaries}{PU}{\9046\110}%* U+2648
18719 %* \textaries -> \Aries (marvosym)
18720 % U+2649 TAURUS; \taurus (wasysym)
18721 \DeclareTextCommand{\texttaurus}{PU}{\9046\111}%* U+2649
18722 %* \texttaurus -> \Taurus (marvosym)
18723 % U+264A GEMINI; \gemini (wasysym)
18724 \DeclareTextCommand{\textgemini}{PU}{\9046\112}%* U+264A
18725 %* \textgemini -> \Gemini (marvosym)
18726 % U+264B CANCER; \cancer (wasysym)
18727 \DeclareTextCommand{\textcancer}{PU}{\9046\113}%* U+264B
18728 %* \textcancer -> \Cancer (marvosym)
18729 % U+264C LEO; \leo (wasysym)
18730 \DeclareTextCommand{\textleo}{PU}{\9046\114}%* U+264C
18731 %* \textleo -> \Leo (marvosym)
18732 % U+264D VIRGO; \virgo (wasysym)
18733 \DeclareTextCommand{\textvirgo}{PU}{\9046\115}%* U+264D
18734 %* \textvirgo -> \Virgo (marvosym)
18735 % U+264E LIBRA; \libra (wasysym)
18736 \DeclareTextCommand{\textlibra}{PU}{\9046\116}%* U+264E
18737 %* \textlibra -> \Libra (marvosym)
18738 % U+264F SCORPIO; \scorpio (wasysym)
18739 \DeclareTextCommand{\textscorpio}{PU}{\9046\117}%* U+264F
18740 %* \textscorpio -> \Scorpio (marvosym)
18741 % U+2650 SAGITTARIUS; \sagittarius (wasysym)
18742 \DeclareTextCommand{\textsagittarius}{PU}{\9046\120}%* U+2650
18743 %* \textsagittarius -> \Sagittarius (marvosym)
18744 % U+2651 CAPRICORN; \capricornus (wasysym)
18745 \DeclareTextCommand{\textcapricornus}{PU}{\9046\121}%* U+2651
18746 %* \textcapricornus -> \Capricorn (marvosym)
18747 % U+2652 AQUARIUS; \aquarius (wasysym)
18748 \DeclareTextCommand{\textaquarius}{PU}{\9046\122}%* U+2652
18749 %* \textaquarius -> \Aquarius (marvosym)
18750 % U+2653 PISCES; \pisces (wasysym)
18751 \DeclareTextCommand{\textpisces}{PU}{\9046\123}%* U+2653
18752 %* \textpisces -> \Pisces (marvosym)
18753 % U+2660 BLACK SPADE SUIT; spade, spadesuitblack; \spadesuit (LaTeX)
18754 \DeclareTextCommand{\textspadesuitblack}{PU}{\9046\140}% U+2660
18755 %* \textspadesuitblack -> \spadesuit (MnSymbol)
18756 % U+2661 WHITE HEART SUIT; heartsuitwhite; \heartsuit (LaTeX)
18757 \DeclareTextCommand{\textheartsuitwhite}{PU}{\9046\141}% U+2661
18758 %* \textheartsuitwhite -> \Heart (marvosym)
18759 %* \textheartsuitwhite -> \heartsuit (MnSymbol)
18760 % U+2662 WHITE DIAMOND SUIT; diamondsuitwhite; \diamondsuit (LaTeX)
18761 \DeclareTextCommand{\textdiamondsuitwhite}{PU}{\9046\142}% U+2662
18762 %* \textdiamondsuitwhite -> \diamondsuit (MnSymbol)
18763 % U+2663 BLACK CLUB SUIT; club, clubsuitblack; \clubsuit (LaTeX)
18764 \DeclareTextCommand{\textclubsuitblack}{PU}{\9046\143}% U+2663
18765 %* \textclubsuitblack -> \clubsuit (MnSymbol)
18766 % U+2664 WHITE SPADE SUIT; spadesuitwhite
18767 \DeclareTextCommand{\textspadesuitwhite}{PU}{\9046\144}% U+2664
18768 % U+2665 BLACK HEART SUIT; heartsuitblack, heart
18769 \DeclareTextCommand{\textheartsuitblack}{PU}{\9046\145}% U+2665
18770 % U+2666 BLACK DIAMOND SUIT; diamond
18771 \DeclareTextCommand{\textdiamondsuitblack}{PU}{\9046\146}% U+2666

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18772 % U+2667 WHITE CLUB SUIT; clubsuitwhite  
18773 \DeclareTextCommand{\textclubsuitwhite}{PU}{\9046\147}% U+2667  
18774 % U+2669 QUARTER NOTE; quarternote; \quarternote (wasysym, arev)  
18775 \DeclareTextCommand{\textquarternote}{PU}{\9046\151}%\* U+2669  
18776 % U+266A EIGHTH NOTE; musicalnote; \textmusicalnote (textcomp)  
18777 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}% U+266A  
18778 %\* \textmusicalnote -> \eighthnote (wasysym, arev)  
18779 % U+266B BEAMED EIGHTH NOTES; eighthnotebeamed; \twonotes (wasysym)  
18780 \DeclareTextCommand{\texttwonotes}{PU}{\9046\153}%\* U+266B  
18781 % U+266C BEAMED SIXTEENTH NOTES; beamedsixteenthnotes; \sixteenth-  
note (arev)  
18782 \DeclareTextCommand{\textsixteenthnote}{PU}{\9046\154}%\* U+266C  
18783 % U+266D MUSIC FLAT SIGN; musicflatsign; \flat (LaTeX)  
18784 \DeclareTextCommand{\textflat}{PU}{\9046\155}%\* U+266D  
18785 % U+266E MUSIC NATURAL SIGN; \natural (LaTeX)  
18786 \DeclareTextCommand{\textnatural}{PU}{\9046\156}%\* U+266E  
18787 % U+266F MUSIC SHARP SIGN; musicsharpsign; \sharp (LaTeX)  
18788 \DeclareTextCommand{\textsharp}{PU}{\9046\157}%\* U+266F  
18789 % U+2672 UNIVERSAL RECYCLING SYMBOL; \recycle (recycle)  
18790 \DeclareTextCommand{\textrecycle}{PU}{\9046\162}%\* U+2672  
18791 %\* \textrecycle -> \Recycling (marvosym)  
18792 % U+267F WHEELCHAIR SYMBOL; \Wheelchair (marvosym)  
18793 \DeclareTextCommand{\textWheelchair}{PU}{\9046\177}%\* U+267F  
18794 % U+2691 BLACK FLAG; \Flag (ifsym)  
18795 \DeclareTextCommand{\textFlag}{PU}{\9046\221}%\* U+2691  
18796 %\* \textFlag -> \VarFlag (ifsym)  
18797 % U+2692 HAMMER AND PICK; \MineSign (marvosym)  
18798 \DeclareTextCommand{\textMineSign}{PU}{\9046\222}%\* U+2692  
18799 % U+2694 CROSSED SWORDS; \dsmilitary (dictsym)  
18800 \DeclareTextCommand{\textdsmilitary}{PU}{\9046\224}%\* U+2694  
18801 %\* \textdsmilitary -> \textxswup (fourier)  
18802 % U+2695 STAFF OF AESCULAPIUS; \dsmedical (dictsym)  
18803 \DeclareTextCommand{\textdsmedical}{PU}{\9046\225}%\* U+2695  
18804 % U+2696 SCALES; \dsjuridical (dictsym)  
18805 \DeclareTextCommand{\textdsjuridical}{PU}{\9046\226}%\* U+2696  
18806 % U+2697 ALEMBIC; \dschemical (dictsym)  
18807 \DeclareTextCommand{\textdschemical}{PU}{\9046\227}%\* U+2697  
18808 % U+2698 FLOWER; \dsbiological (dictsym)  
18809 \DeclareTextCommand{\textdsbiological}{PU}{\9046\230}%\* U+2698  
18810 % U+269A STAFF OF HERMES; \dscommercial (dictsym)  
18811 \DeclareTextCommand{\textdscommercial}{PU}{\9046\232}%\* U+269A  
18812 % U+269D OUTLINED WHITE STAR; \manstar (manfnt)  
18813 \DeclareTextCommand{\textmanstar}{PU}{\9046\235}%\* U+269D  
18814 % U+26A0 WARNING SIGN; \danger (fourier)  
18815 \DeclareTextCommand{\textdanger}{PU}{\9046\240}%\* U+26A0  
18816 % U+26A2 DOUBLED FEMALE SIGN; \FemaleFemale (marvosym)  
18817 \DeclareTextCommand{\textFemaleFemale}{PU}{\9046\242}%\* U+26A2  
18818 % U+26A3 DOUBLED MALE SIGN; \MaleMale (marvosym)  
18819 \DeclareTextCommand{\textMaleMale}{PU}{\9046\243}%\* U+26A3  
18820 % U+26A4 INTERLOCKED FEMALE AND MALE SIGN; \FemaleMale (mar-  
vosym)  
18821 \DeclareTextCommand{\textFemaleMale}{PU}{\9046\244}%\* U+26A4  
18822 % U+26A5 MALE AND FEMALE SIGN; \Hermaphrodite (marvosym)  
18823 \DeclareTextCommand{\textHermaphrodite}{PU}{\9046\245}%\* U+26A5

18824 % U+26AA MEDIUM WHITE CIRCLE; \Neural (marvosym)  
 18825 \DeclareTextCommand{\textNeutral}{PU}{\9046\252}%\* U+26AA  
 18826 % U+26AD MARRIAGE SYMBOL  
 18827 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD  
 18828 % U+26AE DIVORCE SYMBOL  
 18829 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE  
 18830 % U+26B2 NEUTER; \textunconfemale (tipx)  
 18831 \DeclareTextCommand{\textPUunconfemale}{PU}{\9046\262}% U+26B2  
 18832 %\* \textPUunconfemale -> \textunconfemale (tipx)  
 18833 % U+26B9 SEXTILE; \hexstar (wasysym)  
 18834 \DeclareTextCommand{\texthexstar}{PU}{\9046\271}%\* U+26B9  
 18835 % U+26BD SOCCER BALL; \Football (marvosym)  
 18836 \DeclareTextCommand{\textSoccerBall}{PU}{\9046\275}% U+26BD  
 18837 %\* \textSoccerBall -> \Football (marvosym)  
 18838 % U+26C5 SUN BEHIND CLOUD; \SunCloud (ifsym)  
 18839 \DeclareTextCommand{\textSunCloud}{PU}{\9046\305}%\* U+26C5  
 18840 % U+26C6 RAIN; \Rain (ifsym)  
 18841 \DeclareTextCommand{\textRain}{PU}{\9046\306}%\* U+26C6  
 18842 % U+26D4 NO ENTRY; \noway (fourier)  
 18843 \DeclareTextCommand{\textnoway}{PU}{\9046\324}%\* U+26D4  
 18844 % U+26F0 MOUNTAIN; \Mountain (ifsym)  
 18845 \DeclareTextCommand{\textMountain}{PU}{\9046\360}%\* U+26F0  
 18846 % U+26FA TENT; \Tent (ifsym)  
 18847 \DeclareTextCommand{\textTent}{PU}{\9046\372}%\* U+26FA

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

18848 % U+2701 UPPER BLADE SCISSORS; \ScissorRightBrokenBottom (bding)  
 18849 \DeclareTextCommand{\textScissorRightBrokenBottom}{PU}{\9047\001}% U+2701  
 18850 %\* \textScissorRightBrokenBottom -> \CutLeft (marvosym)  
 18851 %\* \textScissorRightBrokenBottom -> \Cutright (marvosym)  
 18852 % U+2702 BLACK SCISSORS; \ScissorRight (bding)  
 18853 \DeclareTextCommand{\textScissorRight}{PU}{\9047\002}%\* U+2702  
 18854 %\* \textScissorRight -> \RightScissors (marvosym)  
 18855 %\* \textScissorRight -> \Leftscissors (marvosym)  
 18856 % U+2703 LOWER BLADE SCISSORS; \ScissorRightBrokenTop (bding)  
 18857 \DeclareTextCommand{\textScissorRightBrokenTop}{PU}{\9047\003}%\* U+2703  
 18858 % U+2704 WHITE SCISSORS; \ScissorHollowRight (bding)  
 18859 \DeclareTextCommand{\textScissorHollowRight}{PU}{\9047\004}%\* U+2704  
 18860 % U+2706 TELEPHONE LOCATION SIGN; \PhoneHandset (bding)  
 18861 \DeclareTextCommand{\textPhoneHandset}{PU}{\9047\006}%\* U+2706  
 18862 % U+2707 TAPE DRIVE; \Tape (bding)  
 18863 \DeclareTextCommand{\textTape}{PU}{\9047\007}%\* U+2707  
 18864 % U+2708 AIRPLANE; \Plane (bding)  
 18865 \DeclareTextCommand{\textPlane}{PU}{\9047\010}%\* U+2708  
 18866 % U+2709 ENVELOPE; \Envelope (bding),  
 18867 \DeclareTextCommand{\textEnvelope}{PU}{\9047\011}%\* U+2709  
 18868 %\* \textEnvelope -> \Letter (marvosym)  
 18869 % U+270C VICTORY HAND; \Peace (bding)  
 18870 \DeclareTextCommand{\textPeace}{PU}{\9047\014}%\* U+270C  
 18871 % U+270D WRITING HAND; \WritingHand (marvosym)  
 18872 \DeclareTextCommand{\textWritingHand}{PU}{\9047\015}%\* U+270D  
 18873 %\* \textWritingHand -> \Writinghand (marvosym)  
 18874 % U+270E LOWER RIGHT PENCIL; \PencilRightDown (bding)  
 18875 \DeclareTextCommand{\textPencilRightDown}{PU}{\9047\016}%\* U+270E

18876 % U+270F PENCIL; \PencilRight (bding)  
18877 \DeclareTextCommand{\textPencilRight}{PU}{\9047\017}%\* U+270F  
18878 % U+2710 UPPER RIGHT PENCIL; \PencilRightUp (bding)  
18879 \DeclareTextCommand{\textPencilRightUp}{PU}{\9047\020}%\* U+2710  
18880 % U+2711 WHITE NIB; \NibRight (bding)  
18881 \DeclareTextCommand{\textNibRight}{PU}{\9047\021}%\* U+2711  
18882 % U+2712 BLACK NIB; \NibSolidRight (bding)  
18883 \DeclareTextCommand{\textNibSolidRight}{PU}{\9047\022}%\* U+2712  
18884 % U+2713 CHECK MARK; checkmark; \Checkmark (bding)  
18885 \DeclareTextCommand{\textCheckmark}{PU}{\9047\023}%\* U+2713  
18886 %\* \textCheckmark -> \checkmark (MnSymbol)  
18887 % U+2714 HEAVY CHECK MARK; \CheckmarkBold (bding)  
18888 \DeclareTextCommand{\textCheckmarkBold}{PU}{\9047\024}%\* U+2714  
18889 % U+2715 MULTIPLICATION X; \XSolid (bding)  
18890 \DeclareTextCommand{\textXSolid}{PU}{\9047\025}%\* U+2715  
18891 % U+2716 HEAVY MULTIPLICATION X; \XSolidBold (bding)  
18892 \DeclareTextCommand{\textXSolidBold}{PU}{\9047\026}%\* U+2716  
18893 % U+2717 BALLOT X; \XSolidBrush (bding)  
18894 \DeclareTextCommand{\textXSolidBrush}{PU}{\9047\027}%\* U+2717  
18895 % U+2719 OUTLINED GREEK CROSS; \PlusOutline (bding)  
18896 \DeclareTextCommand{\textPlusOutline}{PU}{\9047\031}%\* U+2719  
18897 % U+271A HEAVY GREEK CROSS; \Plus (bding)  
18898 \DeclareTextCommand{\textPlus}{PU}{\9047\032}%\* U+271A  
18899 % U+271B OPEN CENTRE CROSS; \PlusThinCenterOpen (bding)  
18900 \DeclareTextCommand{\textPlusThinCenterOpen}{PU}{\9047\033}%\* U+271B  
18901 % U+271C HEAVY OPEN CENTRE CROSS; \PlusCenterOpen (bding)  
18902 \DeclareTextCommand{\textPlusCenterOpen}{PU}{\9047\034}%\* U+271C  
18903 % U+271D LATIN CROSS; \Cross (bding)  
18904 \DeclareTextCommand{\textCross}{PU}{\9047\035}%\* U+271D  
18905 % U+271E SHADOWED WHITE LATIN CROSS; \CrossOpenShadow (bding)  
18906 \DeclareTextCommand{\textCrossOpenShadow}{PU}{\9047\036}%\* U+271E  
18907 % U+271F OUTLINED LATIN CROSS; \CrossOutline (bding)  
18908 \DeclareTextCommand{\textCrossOutline}{PU}{\9047\037}%\* U+271F  
18909 % U+2720 MALTESE CROSS; \CrossMaltese (bding)  
18910 \DeclareTextCommand{\textCrossMaltese}{PU}{\9047\040}%\* U+2720  
18911 % U+2721 STAR OF DAVID; \DavidStar (bding)  
18912 \DeclareTextCommand{\textDavidStar}{PU}{\9047\041}%\* U+2721  
18913 %\* \textDavidStar -> \davidstar (wasysym)  
18914 % U+2722 FOUR TEARDROP-SPOKED ASTERISK; \FourAsterisk (bding)  
18915 \DeclareTextCommand{\textFourAsterisk}{PU}{\9047\042}%\* U+2722  
18916 % U+2723 FOUR BALLOON-SPOKED ASTERISK; \JackStar (bding)  
18917 \DeclareTextCommand{\textJackStar}{PU}{\9047\043}%\* U+2723  
18918 % U+2724 HEAVY FOUR BALLOON-SPOKED ASTERISK; \JackStarBold (bding)  
18919 \DeclareTextCommand{\textJackStarBold}{PU}{\9047\044}%\* U+2724  
18920 % U+2725 FOUR CLUB-SPOKED ASTERISK; \CrossClowerTips (bding)  
18921 \DeclareTextCommand{\textClowerTips}{PU}{\9047\045}%\* U+2725  
18922 % U+2726 BLACK FOUR POINTED STAR; \FourStar (bding)  
18923 \DeclareTextCommand{\textFourStar}{PU}{\9047\046}%\* U+2726  
18924 % U+2727 WHITE FOUR POINTED STAR; \FourStarOpen (bding)  
18925 \DeclareTextCommand{\textFourStarOpen}{PU}{\9047\047}%\* U+2727  
18926 % U+272A CIRCLED WHITE STAR; \FiveStarOpenCircled (bding)  
18927 \DeclareTextCommand{\textFiveStarOpenCircled}{PU}{\9047\052}%\* U+272A  
18928 % U+272B OPEN CENTRE BLACK STAR; \FiveStarCenterOpen (bding)

18929 \DeclareTextCommand{\textFiveStarCenterOpen}{PU}{\9047\053}%\* U+272B  
18930 % U+272C BLACK CENTRE WHITE STAR; \FiveStarOpenDotted (bding)  
18931 \DeclareTextCommand{\textFiveStarOpenDotted}{PU}{\9047\054}%\* U+272C  
18932 % U+272D OUTLINED BLACK STAR; \FiveStarOutline (bding)  
18933 \DeclareTextCommand{\textFiveStarOutline}{PU}{\9047\055}%\* U+272D  
18934 % U+272E HEAVY OUTLINED BLACK STAR; \FiveStarOutlineHeavy (bding)  
18935 \DeclareTextCommand{\textFiveStarOutlineHeavy}{PU}{\9047\056}%\* U+272E  
18936 % U+272F PINWHEEL STAR; \FiveStarConvex (bding)  
18937 \DeclareTextCommand{\textFiveStarConvex}{PU}{\9047\057}%\* U+272F  
18938 % U+2730 SHADOWED WHITE STAR; \FiveStarShadow (bding)  
18939 \DeclareTextCommand{\textFiveStarShadow}{PU}{\9047\060}%\* U+2730  
18940 % U+2731 HEAVY ASTERISK; \AsteriskBold (bding)  
18941 \DeclareTextCommand{\textAsteriskBold}{PU}{\9047\061}%\* U+2731  
18942 % U+2732 OPEN CENTRE ASTERISK; \AsteriskCenterOpen (bding)  
18943 \DeclareTextCommand{\textAsteriskCenterOpen}{PU}{\9047\062}%\* U+2732  
18944 % U+2734 EIGHT POINTED BLACK STAR; \EightStarTaper (bding)  
18945 \DeclareTextCommand{\textEightStarTaper}{PU}{\9047\064}%\* U+2734  
18946 % U+2735 EIGHT POINTED PINWHEEL STAR; \EightStarConvex (bding)  
18947 \DeclareTextCommand{\textEightStarConvex}{PU}{\9047\065}%\* U+2735  
18948 % U+2736 SIX POINTED BLACK STAR; \SixStar (bding)  
18949 \DeclareTextCommand{\textSixStar}{PU}{\9047\066}%\* U+2736  
18950 % U+2737 EIGHT POINTED RECTILINEAR BLACK STAR; \EightStar (bding)  
18951 \DeclareTextCommand{\textEightStar}{PU}{\9047\067}%\* U+2737  
18952 % U+2738 HEAVY EIGHT POINTED RECTILINEAR BLACK STAR; \EightStarBold (bding)  
18953 \DeclareTextCommand{\textEightStarBold}{PU}{\9047\070}%\* U+2738  
18954 % U+2739 TWELVE POINTED BLACK STAR; \TwelveStar (bding)  
18955 \DeclareTextCommand{\textTwelveStar}{PU}{\9047\071}%\* U+2739  
18956 % U+273A SIXTEEN POINTED ASTERISK; \SixteenStarLight (bding)  
18957 \DeclareTextCommand{\textSixteenStarLight}{PU}{\9047\072}%\* U+273A  
18958 % U+273B TEARDROP-SPOKED ASTERISK; \SixFlowerPetalRemoved (bding)  
18959 \DeclareTextCommand{\textSixFlowerPetalRemoved}{PU}{\9047\073}%\* U+273B  
18960 % U+273C OPEN CENTRE TEARDROP-SPOKED ASTERISK;  
18961 % \SixFlowerOpenCenter (bding)  
18962 \DeclareTextCommand{\textSixFlowerOpenCenter}{PU}{\9047\074}%\* U+273C  
18963 % U+273D HEAVY TEARDROP-SPOKED ASTERISK; \Asterisk (bding)  
18964 \DeclareTextCommand{\textAsterisk}{PU}{\9047\075}%\* U+273D  
18965 % U+273E SIX PETALLED BLACK AND WHITE FLORETTE; \SixFlowerAlternate (bding)  
18966 \DeclareTextCommand{\textSixFlowerAlternate}{PU}{\9047\076}%\* U+273E  
18967 % U+273F BLACK FLORETTE; \FiveFlowerPetal (bding)  
18968 \DeclareTextCommand{\textFiveFlowerPetal}{PU}{\9047\077}%\* U+273F  
18969 % U+2740 WHITE FLORETTE; \FiveFlowerOpen (bding)  
18970 \DeclareTextCommand{\textFiveFlowerOpen}{PU}{\9047\100}%\* U+2740  
18971 % U+2741 EIGHT PETALLED OUTLINED BLACK FLORETTE; \EightFlowerPetal (bding)  
18972 \DeclareTextCommand{\textEightFlowerPetal}{PU}{\9047\101}%\* U+2741  
18973 % U+2742 CIRCLED OPEN CENTRE EIGHT POINTED STAR; \SunshineOpenCircled (bding)  
18974 \DeclareTextCommand{\textSunshineOpenCircled}{PU}{\9047\102}%\* U+2742  
18975 % U+2743 HEAVY TEARDROP-SPOKED PINWHEEL ASTERISK; \SixFlowerAltPetal (bding)

18976 \DeclareTextCommand{\textSixFlowerAltPetal}{PU}{\9047\103}%\* U+2743  
18977 % U+2744 SNOWFLAKE; \SnowflakeChevron (bding)  
18978 \DeclareTextCommand{\textSnowflakeChevron}{PU}{\9047\104}%\* U+2744  
18979 % U+2745 TIGHT TRIFOLIATE SNOWFLAKE; \Snowflake (bding)  
18980 \DeclareTextCommand{\textSnowflake}{PU}{\9047\105}%\* U+2745  
18981 % U+2746 HEAVY CHEVRON SNOWFLAKE; \SnowflakeChevronBold (bding)  
18982 \DeclareTextCommand{\textSnowflakeChevronBold}{PU}{\9047\106}%\* U+2746  
18983 % U+2747 SPARKLE; \Sparkle (bding)  
18984 \DeclareTextCommand{\textSparkle}{PU}{\9047\107}%\* U+2747  
18985 % U+2748 HEAVY SPARKLE; \SparkleBold (bding)  
18986 \DeclareTextCommand{\textSparkleBold}{PU}{\9047\110}%\* U+2748  
18987 % U+2749 BALLOON-SPOKED ASTERISK; \AsteriskRoundedEnds (bding)  
18988 \DeclareTextCommand{\textAsteriskRoundedEnds}{PU}{\9047\111}%\* U+2749  
18989 % U+274A EIGHT TEARDROP-SPOKED PROPELLER ASTERISK;  
18990 % \EightFlowerPetalRemoved (bding)  
18991 \DeclareTextCommand{\textEightFlowerPetalRemoved}{PU}{\9047\112}%\* U+274A  
18992 % U+274B HEAVY EIGHT TEARDROP-SPOKED PROPELLER ASTERISK;  
18993 % \EightAsterisk (bding)  
18994 \DeclareTextCommand{\textEightAsterisk}{PU}{\9047\113}%\* U+274B  
18995 % U+274D SHADOWED WHITE CIRCLE; \CircleShadow (bding)  
18996 \DeclareTextCommand{\textCircleShadow}{PU}{\9047\115}%\* U+274D  
18997 % U+274F LOWER RIGHT DROP-SHADOWED WHITE SQUARE;  
18998 % \SquareShadowBottomRight (bding)  
18999 \DeclareTextCommand{\textSquareShadowBottomRight}{PU}{\9047\117}%\* U+274F  
19000 % U+2750 UPPER RIGHT DROP-SHADOWED WHITE SQUARE;  
19001 % \SquareShadowTopRight (bding)  
19002 \DeclareTextCommand{\textSquareTopRight}{PU}{\9047\120}%\* U+2750  
19003 % U+2751 LOWER RIGHT SHADOWED WHITE SQUARE;  
19004 % \SquareCastShadowBottomRight (bding)  
19005 \DeclareTextCommand{\textSquareCastShadowBottomRight}{PU}{\9047\121}%\* U+2751  
19006 % U+2752 UPPER RIGHT SHADOWED WHITE SQUARE;  
19007 % \SquareCastShadowTopRight (bding)  
19008 \DeclareTextCommand{\textSquareCastShadowTopRight}{PU}{\9047\122}%\* U+2752  
19009 % U+2756 BLACK DIAMOND MINUS WHITE X; \OrnamentDiamondSolid (b-  
ding)  
19010 \DeclareTextCommand{\textDiamondSolid}{PU}{\9047\126}%\* U+2756  
19011 % U+2758 LIGHT VERTICAL BAR; \RectangleThin (bding)  
19012 \DeclareTextCommand{\textRectangleThin}{PU}{\9047\130}%\* U+2758  
19013 % U+2759 MEDIUM VERTICAL BAR; \Rectangle (bding)  
19014 \DeclareTextCommand{\textRectangle}{PU}{\9047\131}%\* U+2759  
19015 % U+275A HEAVY VERTICAL BAR; \RectangleBold (bding)  
19016 \DeclareTextCommand{\textRectangleBold}{PU}{\9047\132}%\* U+275A

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

19017 % U+27C2 PERPENDICULAR; perpendicular; \perp (LaTeX)  
19018 \DeclareTextCommand{\textperp}{PU}{\9047\302}%\* U+27C2  
19019 % \notperp (mathabx)  
19020 \DeclareTextCommand{\textnotperp}{PU}{\9047\302\83\070}%\* U+27C2 U+0338  
19021 % U+27C7 OR WITH DOT INSIDE; \veedot (MnSymbol)  
19022 \DeclareTextCommand{\textveedot}{PU}{\9047\307}%\* U+27C7  
19023 % U+27D1 AND WITH DOT; \wedgedot (MnSymbol)  
19024 \DeclareTextCommand{\textwedgedot}{PU}{\9047\321}%\* U+27D1  
19025 % U+27DC LEFT MULTIMAP; \leftspoon (MnSymbol)  
19026 \DeclareTextCommand{\textleftspoon}{PU}{\9047\334}%\* U+27DC

19027 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET  
19028 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}%\* U+27E6  
19029 %\* \textlbrackdbl -> \lbracket (stmaryrd)  
19030 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET  
19031 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}%\* U+27E7  
19032 %\* \textrbrackdbl -> \rrbracket (stmaryrd)

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

19033 % U+27F2 ANTICLOCKWISE GAPPED CIRCLE ARROW;  
19034 % \circlearrowleft (AmS)  
19035 \DeclareTextCommand{\textcirclearrowleft}{PU}{\9047\362}%\* U+27F2  
19036 % U+27F3 CLOCKWISE GAPPED CIRCLE ARROW; \circlearrowright (AmS)  
19037 \DeclareTextCommand{\textcirclearrowright}{PU}{\9047\363}%\* U+27F3  
19038 % U+27F5 LONG LEFTWARDS ARROW; \longleftarrow (AmS)  
19039 \DeclareTextCommand{\textlongleftarrow}{PU}{\9047\365}%\* U+27F5  
19040 % U+27F6 LONG RIGHTWARDS ARROW; \longrightarrow (AmS)  
19041 \DeclareTextCommand{\textlongrightarrow}{PU}{\9047\366}%\* U+27F6  
19042 % U+27F7 LONG LEFT RIGHT ARROW; \longlefttrightarrow (AmS)  
19043 \DeclareTextCommand{\textlonglefttrightarrow}{PU}{\9047\367}%\* U+27F7  
19044 % U+27F8 LONG LEFTWARDS DOUBLE ARROW; \Longleftarrow (AmS)  
19045 \DeclareTextCommand{\textLongleftarrow}{PU}{\9047\370}%\* U+27F8  
19046 % U+27F9 LONG RIGHTWARDS DOUBLE ARROW; \Longrightarrow (AmS)  
19047 \DeclareTextCommand{\textLongrightarrow}{PU}{\9047\371}%\* U+27F9  
19048 % U+27FA LONG LEFT RIGHT DOUBLE ARROW; \Longlefttrightarrow (AmS)  
19049 \DeclareTextCommand{\textLonglefttrightarrow}{PU}{\9047\372}%\* U+27FA  
19050 % U+27FC LONG RIGHTWARDS ARROW FROM BAR; \longmapsto (AmS)  
19051 \DeclareTextCommand{\textlongmapsto}{PU}{\9047\374}%\* U+27FC  
19052 % U+27FD LONG LEFTWARDS DOUBLE ARROW FROM BAR; \Longmaps-  
from (stmaryrd)  
19053 \DeclareTextCommand{\textLongmapsfrom}{PU}{\9047\375}%\* U+27FD  
19054 % U+27FE LONG RIGHTWARDS DOUBLE ARROW FROM BAR; \Longmap-  
sto (stmaryrd)  
19055 \DeclareTextCommand{\textLongmapsto}{PU}{\9047\376}%\* U+27FE

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

19056 % U+2921 NORTH WEST AND SOUTH EAST ARROW; \nwsearrow (MnSym-  
bol)  
19057 \DeclareTextCommand{\textnwsearrow}{PU}{\9051\041}%\* U+2921  
19058 % U+2922 NORTH EAST AND SOUTH WEST ARROW; \neswarrow (MnSym-  
bol)  
19059 \DeclareTextCommand{\textneswarrow}{PU}{\9051\042}%\* U+2922  
19060 % U+2923 NORTH WEST ARROW WITH HOOK; \hooknwarrow (MnSymbol)  
19061 \DeclareTextCommand{\texthooknwarrow}{PU}{\9051\043}%\* U+2923  
19062 % U+2924 NORTH EAST ARROW WITH HOOK; \hooknearrow (MnSymbol)  
19063 \DeclareTextCommand{\textrhooknearrow}{PU}{\9051\044}%\* U+2924  
19064 % U+2925 SOUTH EAST ARROW WITH HOOK; \hooksearrow (MnSymbol)  
19065 \DeclareTextCommand{\texthooksearrow}{PU}{\9051\045}%\* U+2925  
19066 % U+2926 SOUTH WEST ARROW WITH HOOK; \hookswarrow (MnSymbol)  
19067 \DeclareTextCommand{\textrhookswarrow}{PU}{\9051\046}%\* U+2926  
19068 % U+2933 WAVE ARROW POINTING DIRECTLY RIGHT; \leadsto (wasysym)  
19069 \DeclareTextCommand{\textleadsto}{PU}{\9051\063}%\* U+2933  
19070 % U+2934 ARROW POINTING RIGHTWARDS THEN CURVING UPWARDS;  
19071 % \rcurvearrowne (MnSymbol)  
19072 \DeclareTextCommand{\textrcurvearrowne}{PU}{\9051\064}%\* U+2934

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19073 % U+2935 ARROW POINTING RIGHTWARDS THEN CURVING DOWN-
WARDS;
19074 % \lcurvearrowse (MnSymbol)
19075 \DeclareTextCommand{\textlcurvearrowse}{PU}{\9051\065}%* U+2935
19076 % U+2936 ARROW POINTING DOWNWARDS THEN CURVING LEFT-
WARDS;
19077 % \lcurvearrowsw (MnSymbol)
19078 \DeclareTextCommand{\textlcurvearrowsw}{PU}{\9051\066}%* U+2936
19079 % U+2937 ARROW POINTING DOWNWARDS THEN CURVING RIGHT-
WARDS;
19080 % \rcurvearrowse (MnSymbol)
19081 \DeclareTextCommand{\textrcurvearrowse}{PU}{\9051\067}%* U+2937
19082 % U+2938 RIGHT-SIDE ARC CLOCKWISE ARROW; \lcurvearrowdown (Mn-
Symbol)
19083 \DeclareTextCommand{\textlcurvearrowdown}{PU}{\9051\070}%* U+2938
19084 %* \textlcurvearrowdown -> \RightTorque (marvosym)
19085 %* \textlcurvearrowdown -> \Righttorque (marvosym)
19086 % U+2939 LEFT-SIDE ARC ANTICLOCKWISE ARROW;
19087 % \rcurvearrowdown (MnSymbol)
19088 \DeclareTextCommand{\textrcurvearrowdown}{PU}{\9051\071}%* U+2939
19089 %* \textrcurvearrowdown -> \LeftTorque (marvosym)
19090 %* \textrcurvearrowdown -> \Lefttorque (marvosym)
19091 % U+293A TOP ARC ANTICLOCKWISE ARROW; \rcurvearrowleft (MnSym-
bol)
19092 \DeclareTextCommand{\textrcurvearrowleft}{PU}{\9051\072}%* U+293A
19093 % U+293B BOTTOM ARC ANTICLOCKWISE ARROW;
19094 % \rcurvearrowright (MnSymbol)
19095 \DeclareTextCommand{\textrcurvearrowright}{PU}{\9051\073}%* U+293B
19096 % U+294A LEFT BARB UP RIGHT BARB DOWN HARPOON; \leftrighthar-
poon (mathabx)
19097 \DeclareTextCommand{\textleftrightharpoon}{PU}{\9051\112}%* U+294A
19098 % U+294B LEFT BARB DOWN RIGHT BARB UP HARPOON; \rightlefthar-
poon (mathabx)
19099 \DeclareTextCommand{\textrightleftharpoon}{PU}{\9051\113}%* U+294B
19100 % U+294C UP BARB RIGHT DOWN BARB LEFT HARPOON;
19101 % \updownharpoonrightleft (MnSymbol)
19102 \DeclareTextCommand{\textupdownharpoonrightleft}{PU}{\9051\114}%* U+294C
19103 % U+294D UP BARB LEFT DOWN BARB RIGHT HARPOON;
19104 % \updownharpoonleftright (MnSymbol)
19105 \DeclareTextCommand{\textupdownharpoonleftright}{PU}{\9051\115}%* U+294D
19106 % U+2962 LEFTWARDS HARPOON WITH BARB UP ABOVE LEFTWARDS
19107 % HARPOON WITH BARB DOWN; \leftleftharpoons (mathabx)
19108 \DeclareTextCommand{\textleftleftharpoons}{PU}{\9051\142}%* U+2962
19109 % U+2963 UPWARDS HARPOON WITH BARB LEFT BESIDE UPWARDS
19110 % HARPOON WITH BARB RIGHT; \upupharpoons (mathabx)
19111 \DeclareTextCommand{\textupupharpoons}{PU}{\9051\143}%* U+2963
19112 % U+2964 RIGHTWARDS HARPOON WITH BARB UP ABOVE RIGHT-
WARDS HARPOON
19113 % WITH BARB DOWN; \rightrightarpoons (mathabx)
19114 \DeclareTextCommand{\textrightarpoons}{PU}{\9051\144}%* U+2964
19115 % U+2965 DOWNWARDS HARPOON WITH BARB LEFT BESIDE DOWN-
WARDS HARPOON
19116 % WITH BARB RIGHT; \downdownharpoons (mathabx)
19117 \DeclareTextCommand{\textdowndownharpoons}{PU}{\9051\145}%* U+2965

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19118 % U+296A LEFTWARDS HARPOON WITH BARB UP ABOVE LONG DASH;  
 19119 % \leftbarharpoon (mathabx)  
 19120 \DeclareTextCommand{\textleftbarharpoon}{PU}{\9051\152}%\* U+296A  
 19121 % U+296B LEFTWARDS HARPOON WITH BARB DOWN BELOW  
 19122 % LONG DASH; \barleftharpoon (mathabx)  
 19123 \DeclareTextCommand{\textbarleftharpoon}{PU}{\9051\153}%\* U+296B  
 19124 % U+296C RIGHTWARDS HARPOON WITH BARB UP ABOVE  
 19125 % LONG DASH; \rightbarharpoon (mathabx)  
 19126 \DeclareTextCommand{\textrightbarharpoon}{PU}{\9051\154}%\* U+296C  
 19127 % U+296D RIGHTWARDS HARPOON WITH BARB DOWN BELOW  
 19128 % LONG DASH; \barrightharpoon (mathabx)  
 19129 \DeclareTextCommand{\textbarrightharpoon}{PU}{\9051\155}%\* U+296D  
 19130 % U+296E UPWARDS HARPOON WITH BARB LEFT BESIDE DOWN-  
 WARDS HARPOON  
 19131 % WITH BARB RIGHT; \updownharpoons (mathabx)  
 19132 \DeclareTextCommand{\textupdownharpoons}{PU}{\9051\156}%\* U+296E  
 19133 % U+296F DOWNWARDS HARPOON WITH BARB LEFT BESIDE UP-  
 WARDS HARPOON  
 19134 % WITH BARB RIGHT; \downupharpoons (mathabx)  
 19135 \DeclareTextCommand{\textdownupharpoons}{PU}{\9051\157}%\* U+296F  
 19136 % U+297F DOWN FISH TAIL  
 19137 \DeclareTextCommand{\textmoo}{PU}{\9051\177\83\066}%\* U+297F U+0336

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

19138 % U+2987 Z NOTATION LEFT IMAGE BRACKET; \lparenthesis (stmaryrd)  
 19139 \DeclareTextCommand{\textllparenthesis}{PU}{\9051\207}%\* U+2987  
 19140 % U+2988 Z NOTATION RIGHT IMAGE BRACKET; \rrparenthesis (stmaryrd)  
 19141 \DeclareTextCommand{\textrrparenthesis}{PU}{\9051\210}%\* U+2988  
 19142 % U+29B0 REVERSED EMPTY SET; \invdiameter (wasysym)  
 19143 \DeclareTextCommand{\textinvdiameter}{PU}{\9051\260}%\* U+29B0  
 19144 % U+29B6 CIRCLED VERTICAL BAR; \obar (stmaryrd)  
 19145 \DeclareTextCommand{\textobar}{PU}{\9051\266}%\* U+29B6  
 19146 %\* \textobar -> \textvarobar (stmaryrd)  
 19147 % U+29B8 CIRCLED REVERSE SOLIDUS; \obslash (stmaryrd)  
 19148 \DeclareTextCommand{\textobslash}{PU}{\9051\270}%\* U+29B8  
 19149 %\* \textobslash -> \circledbslash (txfonts/pxfonts)  
 19150 %\* \textobslash -> \obackslash (mathabx)  
 19151 %\* \textobslash -> \varobslash (stmaryrd)  
 19152 % U+29BA CIRCLE DIVIDED BY HORIZONTAL BAR AND TOP HALF  
 19153 % DIVIDED BY VERTICAL BAR; \obot (mathabx)  
 19154 \DeclareTextCommand{\textobot}{PU}{\9051\272}%\* U+29BA  
 19155 %\* \textobot -> \odplus (ulsy)  
 19156 % U+29BB CIRCLE WITH SUPERIMPOSED X; \NoChemicalCleaning (mar-  
 vosym)  
 19157 \DeclareTextCommand{\textNoChemicalCleaning}{PU}{\9051\273}%\* U+29BB  
 19158 % U+29C0 CIRCLED LESS-THAN; \olessthan (stmaryrd)  
 19159 \DeclareTextCommand{\textolessthan}{PU}{\9051\300}%\* U+29C0  
 19160 %\* \textolessthan -> \varolessthan (stmaryrd)  
 19161 % U+29C1 CIRCLED GREATER-THAN; \ogreaterthan (stmaryrd)  
 19162 \DeclareTextCommand{\textogreaterthan}{PU}{\9051\301}%\* U+29C1  
 19163 %\* \textogreaterthan -> \varogreaterthan (stmaryrd)  
 19164 % U+29C4 SQUARED RISING DIAGONAL SLASH; \boxslash (mathabx, stmaryrd)  
 19165 \DeclareTextCommand{\textboxslash}{PU}{\9051\304}%\* U+29C4  
 19166 % U+29C5 SQUARED FALLING DIAGONAL SLASH; \boxbslash (stmaryrd)



19167 \DeclareTextCommand{\textboxslash}{PU}{\9051\305}%\* U+29C5  
 19168 % U+29C6 SQUARED ASTERISK; \boxast (stmaryrd)  
 19169 \DeclareTextCommand{\textboxast}{PU}{\9051\306}%\* U+29C6  
 19170 % U+29C7 SQUARED SMALL CIRCLE; \boxcircle (stmaryrd)  
 19171 \DeclareTextCommand{\textboxcircle}{PU}{\9051\307}%\* U+29C7  
 19172 % U+29C8 SQUARED SQUARE; \boxbox (stmaryrd)  
 19173 \DeclareTextCommand{\textboxbox}{PU}{\9051\310}%\* U+29C8  
 19174 % U+29D3 BLACK BOWTIE; \Valve (marvosym)  
 19175 \DeclareTextCommand{\textValve}{PU}{\9051\323}%\* U+29D3  
 19176 % U+29DF DOUBLE-ENDED MULTIMAP; \multimapboth (txfonts/pxfonts)  
 19177 \DeclareTextCommand{\textmultimapboth}{PU}{\9051\337}%\* U+29DF  
 19178 % U+29E2 SHUFFLE PRODUCT; \shuffle (shuffle)  
 19179 \DeclareTextCommand{\textshuffle}{PU}{\9051\342}%\* U+29E2

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

19180 % U+2A04 N-ARY UNION OPERATOR WITH PLUS; \uplus (LaTeX)  
 19181 \DeclareTextCommand{\textuplus}{PU}{\9052\004}%\* U+2A04  
 19182 % U+2A07 TWO LOGICAL AND OPERATOR; \bigdoublewedge (MnSymbol)  
 19183 \DeclareTextCommand{\textbigdoublewedge}{PU}{\9052\007}%\* U+2A07  
 19184 % U+2A08 TWO LOGICAL OR OPERATOR; \bigdoublevee (MnSymbol)  
 19185 \DeclareTextCommand{\textbigdoublevee}{PU}{\9052\010}%\* U+2A08  
 19186 % U+2A1D JOIN; \Join (latexsym, amsfonts, amssymb, mathabx, txfonts,  
 19187 % pxfonts, wasysym)  
 19188 \DeclareTextCommand{\textJoin}{PU}{\9052\035}%\* U+2A1D  
 19189 % U+2A1F Z NOTATION SCHEMA COMPOSITION; \fatsemi (stmaryrd)  
 19190 \DeclareTextCommand{\textfatsemi}{PU}{\9052\037}%\* U+2A1F  
 19191 % U+2A22 PLUS SIGN WITH SMALL CIRCLE ABOVE; \cirplus (mathabx)  
 19192 \DeclareTextCommand{\textcirplus}{PU}{\9052\042}%\* U+2A22  
 19193 % U+2A2A MINUS SIGN WITH DOT BELOW; \minusdot (MnSymbol)  
 19194 \DeclareTextCommand{\textminusdot}{PU}{\9052\052}%\* U+2A2A  
 19195 %\* \textminusdot -> \divdot (mathabx)  
 19196 % U+2A30 MULTIPLICATION SIGN WITH DOT ABOVE; \dottimes (mathabx)  
 19197 \DeclareTextCommand{\textdottimes}{PU}{\9052\060}%\* U+2A30  
 19198 % U+2A32 SEMIDIRECT PRODUCT WITH BOTTOM CLOSED;  
 19199 % \dtimes (mathdesign)  
 19200 \DeclareTextCommand{\textdtimes}{PU}{\9052\062}%\* U+2A32  
 19201 % U+2A38 CIRCLED DIVISION SIGN; \odiv (mathabx)  
 19202 \DeclareTextCommand{\textodiv}{PU}{\9052\070}%\* U+2A38  
 19203 % U+2A3C INTERIOR PRODUCT; \invneg (MnSymbol)  
 19204 \DeclareTextCommand{\textinvneg}{PU}{\9052\074}%\* U+2A3C  
 19205 % U+2A4E DOUBLE SQUARE INTERSECTION; \sqdoublecap (mathabx)  
 19206 \DeclareTextCommand{\textsqdoublecap}{PU}{\9052\116}%\* U+2A4E  
 19207 %\* \textsqdoublecap -> \doublesqcap (MnSymbol)  
 19208 % U+2A40 INTERSECTION WITH DOT; \capdot (MnSymbol)  
 19209 \DeclareTextCommand{\textcapdot}{PU}{\9052\100}%\* U+2A40  
 19210 % U+2A4F DOUBLE SQUARE UNION; \sqdoublecup (mathabx)  
 19211 \DeclareTextCommand{\textsqdoublecup}{PU}{\9052\117}%\* U+2A4F  
 19212 %\* \textsqdoublecup -> \doublesqcup (MnSymbol)  
 19213 % U+2A55 TWO INTERSECTING LOGICAL AND; \doublewedge (MnSymbol)  
 19214 \DeclareTextCommand{\textdoublewedge}{PU}{\9052\125}%\* U+2A55  
 19215 % U+2A56 TWO INTERSECTING LOGICAL OR; \doublevee (MnSymbol)  
 19216 \DeclareTextCommand{\textdoublevee}{PU}{\9052\126}%\* U+2A56  
 19217 %\* \textdoublevee -> \merge (stmaryrd)  
 19218 % U+2A5E LOGICAL AND WITH DOUBLE OVERBAR;

19219 % \doublebarwedge (AmS)  
19220 \DeclareTextCommand{\textdoublebarwedge}{PU}{\9052\136}%\* U+2A5E  
19221 % U+2A63 LOGICAL OR WITH DOUBLE UNDERBAR;  
19222 % \veedoublebar (mahtabx)  
19223 \DeclareTextCommand{\textveedoublebar}{PU}{\9052\143}%\* U+2A63  
19224 % U+2A66 EQUALS SIGN WITH DOT BELOW; \eqdot (MnSymbol)  
19225 \DeclareTextCommand{\texteqdot}{PU}{\9052\146}%\* U+2A66  
19226 % \neqdot (MnSymbol)  
19227 \DeclareTextCommand{\textneqdot}{PU}{\9052\146\83\070}%\* U+2A66 U+0338  
19228 % U+2A74 DOUBLE COLON EQUAL; \coloncolonequals (colonequals)  
19229 \DeclareTextCommand{\textcoloncolonequals}{PU}{\9052\164}%\* U+2A74  
19230 % U+2A7D LESS-THAN OR SLANTED EQUAL TO; \leqslant (AmS)  
19231 \DeclareTextCommand{\textleqslant}{PU}{\9052\175}%\* U+2A7D  
19232 % \nleqslant (txfonts/pxfonts)  
19233 \DeclareTextCommand{\textnleqslant}{PU}{\9052\175\83\070}%\* U+2A7D U+0338  
19234 % U+2A7E GREATER-THAN OR SLANTED EQUAL TO; \geqslant (AmS)  
19235 \DeclareTextCommand{\textgeqslant}{PU}{\9052\176}%\* U+2A7E  
19236 % \ngeqslant (txfonts/pxfonts)  
19237 \DeclareTextCommand{\textngeqslant}{PU}{\9052\176\83\070}%\* U+2A7E U+0338  
19238 % U+2A85 LESS-THAN OR APPROXIMATE; \lessapprox (AmS)  
19239 \DeclareTextCommand{\textlessapprox}{PU}{\9052\205}%\* U+2A85  
19240 % \nlessapprox (txfonts/pxfonts)  
19241 \DeclareTextCommand{\textnlessapprox}{PU}{\9052\205\83\070}%\* U+2A85 U+0338  
19242 % U+2A86 GREATER-THAN OR APPROXIMATE; \gtrapprox (AmS)  
19243 \DeclareTextCommand{\textgtrapprox}{PU}{\9052\206}%\* U+2A86  
19244 % \ngtrapprox (txfonts/pxfonts)  
19245 \DeclareTextCommand{\textngtrapprox}{PU}{\9052\206\83\070}%\* U+2A86 U+0338  
19246 % U+2A87 LESS-THAN AND SINGLE-LINE NOT EQUAL TO; \lneq (AmS)  
19247 \DeclareTextCommand{\textlneq}{PU}{\9052\207}%\* U+2A87  
19248 % U+2A88 GREATER-THAN AND SINGLE-LINE NOT EQUAL TO;  
19249 % \gneq (AmS)  
19250 \DeclareTextCommand{\textgneq}{PU}{\9052\210}%\* U+2A88  
19251 % U+2A89 LESS-THAN AND NOT APPROXIMATE; \lnapprox (AmS)  
19252 \DeclareTextCommand{\textlnapprox}{PU}{\9052\211}%\* U+2A89  
19253 % U+2A8A GREATER-THAN AND NOT APPROXIMATE; \gnapprox (AmS)  
19254 \DeclareTextCommand{\textgnapprox}{PU}{\9052\212}%\* U+2A8A  
19255 % U+2A8B LESS-THAN ABOVE DOUBLE-LINE EQUAL ABOVE GREATER-  
THAN;  
19256 % \lesseqgtr (AmS)  
19257 \DeclareTextCommand{\textlesseqgtr}{PU}{\9052\213}%\* U+2A8B  
19258 % U+2A8C GREATER-THAN ABOVE DOUBLE-LINE EQUAL ABOVE LESS-  
THAN;  
19259 % \gtreqless (AmS)  
19260 \DeclareTextCommand{\textgtreqless}{PU}{\9052\214}%\* U+2A8C  
19261 % U+2A95 SLANTED EQUAL TO OR LESS-THAN; \eqslantless (AmS)  
19262 \DeclareTextCommand{\texteqslantless}{PU}{\9052\225}%\* U+2A95  
19263 % U+2A96 SLANTED EQUAL TO OR GREATER-THAN; \eqslantgtr (AmS)  
19264 \DeclareTextCommand{\texteqslantgtr}{PU}{\9052\226}%\* U+2A96  
19265 % U+2AA6 LESS-THAN CLOSED BY CURVE; \leftslice (stmaryrd)  
19266 \DeclareTextCommand{\textleftslice}{PU}{\9052\246}%\* U+2AA6  
19267 % U+2AA7 GREATER-THAN CLOSED BY CURVE; \rightslice (stmaryrd)  
19268 \DeclareTextCommand{\textrightslice}{PU}{\9052\247}%\* U+2AA7  
19269 % U+2AAF PRECEDES ABOVE SINGLE-LINE EQUALS SIGN; \preceq (Mn-  
Symbol)

19270 \DeclareTextCommand{\textpreceq}{PU}{\9052\257}%\* U+2AAF  
19271 % \npreceq (txfonts/pxfonts)  
19272 \DeclareTextCommand{\textnpreceq}{PU}{\9052\257\83\070}%\* U+2AAF U+0338  
19273 % U+2AB0 SUCCEEDS ABOVE SINGLE-LINE EQUALS SIGN; \succeq (Mn-  
Symbol)  
19274 \DeclareTextCommand{\textsucceq}{PU}{\9052\260}%\* U+2AB0  
19275 % \nsucceq (txfonts/pxfonts)  
19276 \DeclareTextCommand{\textnsucceq}{PU}{\9052\260\83\070}%\* U+2AB0 U+0338  
19277 % U+2AB1 PRECEDES ABOVE SINGLE-LINE NOT EQUAL TO; \preceq  
(mathabx)  
19278 \DeclareTextCommand{\textprecneq}{PU}{\9052\261}%\* U+2AB1  
19279 % U+2AB2 SUCCEEDS ABOVE SINGLE-LINE NOT EQUAL TO; \succ  
neq (mathabx)  
19280 \DeclareTextCommand{\textsuccneq}{PU}{\9052\262}%\* U+2AB2  
19281 % U+2AB3 PRECEDES ABOVE EQUALS SIGN; \preceqq (txfonts/pxfonts)  
19282 \DeclareTextCommand{\textpreceqq}{PU}{\9052\263}%\* U+2AB3  
19283 % \npreceqq (txfonts/pxfonts)  
19284 \DeclareTextCommand{\textnpreceqq}{PU}{\9052\263\83\070}%\* U+2AB3 U+0338  
19285 % U+2AB4 SUCCEEDS ABOVE EQUALS SIGN; \succeqq (txfonts/pxfonts)  
19286 \DeclareTextCommand{\textsucceqq}{PU}{\9052\264}%\* U+2AB4  
19287 % \nsucceqq (txfonts/pxfonts)  
19288 \DeclareTextCommand{\textnsucceqq}{PU}{\9052\264\83\070}%\* U+2AB4 U+0338  
19289 % U+2AB5 PRECEDES ABOVE NOT EQUAL TO; \precneqq (txfonts/pxfonts)  
19290 \DeclareTextCommand{\textprecneqq}{PU}{\9052\265}%\* U+2AB5  
19291 % U+2AB6 SUCCEEDS ABOVE NOT EQUAL TO; \succneqq (txfonts/pxfonts)  
19292 \DeclareTextCommand{\textsuccneqq}{PU}{\9052\266}%\* U+2AB6  
19293 % U+2AB7 PRECEDES ABOVE ALMOST EQUAL TO; \precapprox (AmS)  
19294 \DeclareTextCommand{\textprecapprox}{PU}{\9052\267}%\* U+2AB7  
19295 % \nprecapprox (txfonts/pxfonts)  
19296 \DeclareTextCommand{\textnprecapprox}{PU}{\9052\267\83\070}%\* U+2AB7 U+0338  
19297 % U+2AB8 SUCCEEDS ABOVE ALMOST EQUAL TO; \succapprox (AmS)  
19298 \DeclareTextCommand{\textsuccapprox}{PU}{\9052\270}%\* U+2AB8  
19299 % \nsuccapprox (txfonts/pxfonts)  
19300 \DeclareTextCommand{\textnsuccapprox}{PU}{\9052\270\83\070}%\* U+2AB8 U+0338  
19301 % U+2AB9 PRECEDES ABOVE NOT ALMOST EQUAL TO; \precnap  
prox (AmS)  
19302 \DeclareTextCommand{\textprecnapprox}{PU}{\9052\271}%\* U+2AB9  
19303 % U+2ABA SUCCEEDS ABOVE NOT ALMOST EQUAL TO; \succnap  
prox (AmS)  
19304 \DeclareTextCommand{\textsuccnapprox}{PU}{\9052\272}%\* U+2ABA  
19305 % U+2AC5 SUBSET OF ABOVE EQUALS SIGN; \subseteqq (AmS)  
19306 \DeclareTextCommand{\textsubseteqq}{PU}{\9052\305}%\* U+2AC5  
19307 % \nsubseteqq (txfonts/pxfonts, mathabx)  
19308 \DeclareTextCommand{\textnsubseteqq}{PU}{\9052\305\83\070}%\* U+2AC5 U+0338  
19309 % U+2AC6 SUPERSET OF ABOVE EQUALS SIGN; \supseteqq (AmS)  
19310 \DeclareTextCommand{\textsupseteqq}{PU}{\9052\306}%\* U+2AC6  
19311 % \nsupseteqq (mathabx)  
19312 \DeclareTextCommand{\textnsupseteqq}{PU}{\9052\306\83\070}%\* U+2AC6 U+0338  
19313 % U+2AE3 DOUBLE VERTICAL BAR LEFT TURNSTILE  
19314 \DeclareTextCommand{\textdashV}{PU}{\9052\343}%\* U+2AE3  
19315 %\* \textdashV -> \leftVdash (MnSymbol)  
19316 % \ndashV (mathabx)  
19317 \DeclareTextCommand{\textndashV}{PU}{\9052\343\83\070}%\* U+2AE3 U+0338  
19318 %\* \textndashV -> \nleftVdash (MnSymbol)

19319 % U+2AE4 VERTICAL BAR DOUBLE LEFT TURNSTILE; \Dashv (mathabx)  
19320 \DeclareTextCommand{\textDashv}{PU}{\9052\344}%\* U+2AE4  
19321 %\* \textDashv -> \leftmodels (MnSymbol)  
19322 % \nDashv (mathabx)  
19323 \DeclareTextCommand{\textnDashv}{PU}{\9052\344\83\070}%\* U+2AE4 U+0338  
19324 %\* \textnDashv -> \leftmodels (MnSymbol)  
19325 % U+2AE5 DOUBLE VERTICAL BAR DOUBLE LEFT TURNSTILE;  
19326 % \DashV (mathabx)  
19327 \DeclareTextCommand{\textDashV}{PU}{\9052\345}%\* U+2AE5  
19328 %\* \textDashV -> \leftModels (MnSymbol)  
19329 % \nDashV (mathabx)  
19330 \DeclareTextCommand{\textnDashV}{PU}{\9052\345\83\070}%\* U+2AE5 U+0338  
19331 %\* \textnDashV -> \leftModels (MnSymbol)  
19332 % U+2AEA DOUBLE VERTICAL BAR DOUBLE LEFT TURNSTILE;  
19333 \DeclareTextCommand{\textdownmodels}{PU}{\9052\352}%\* U+2AEA  
19334 % \ndownmodels (MnSymbol)  
19335 \DeclareTextCommand{\textndownmodels}{PU}{\9052\352\83\070}%\* U+2AEA U+0338  
19336 % U+2AEB DOUBLE UP TACK; \upmodels (MnSymbol)  
19337 \DeclareTextCommand{\textupmodels}{PU}{\9052\353}%\* U+2AEB  
19338 % \nupmodels (MnSymbol)  
19339 \DeclareTextCommand{\textnupmodels}{PU}{\9052\353\83\070}%\* U+2AEB U+0338  
19340 % U+2AEF VERTICAL LINE WITH CIRCLE ABOVE; \upspoon (MnSymbol)  
19341 \DeclareTextCommand{\textupspoon}{PU}{\9052\357}%\* U+2AEF  
19342 % U+2AF4 TRIPLE VERTICAL BAR BINARY RELATION;  
19343 % \interleave (stmaryrd)  
19344 \DeclareTextCommand{\textinterleave}{PU}{\9052\364}%\* U+2AF4  
19345 % U+2AFD DOUBLE SOLIDUS OPERATOR; \sslash (stmaryrd)  
19346 \DeclareTextCommand{\textsslash}{PU}{\9052\375}%\* U+2AFD  
19347 %\* \textsslash -> \varparallel (txfonts\pxfonts)

#### 47.2.36 Miscellaneous Symbols and Arrows: U+2B00 to U+2BFF

19348 % U+2B20 WHITE PENTAGON; \pentagon (wasysym)  
19349 \DeclareTextCommand{\textpentagon}{PU}{\9053\040}%\* U+2B20  
19350 % U+2B21 WHITE HEXAGON; \varhexagon (wasysym)  
19351 \DeclareTextCommand{\textvarhexagon}{PU}{\9053\041}%\* U+2B21

#### 47.2.37 Latin Extended-C: U+2C60 to U+2C7F

19352 % U+2C7C LATIN SUBSCRIPT SMALL LETTER J  
19353 \DeclareTextCommand{\textjinferior}{PU}{\9054\174}%\* U+2C7C

#### 47.2.38 Supplemental Punctuation: U+2E00 to U+2E7F

19354 % U+2E13 DOTTED OBELOS; \slashdiv (MnSymbol)  
19355 \DeclareTextCommand{\textslashdiv}{PU}{\9056\023}%\* U+2E13  
19356 % U+2E18 INVERTED INTERROBANG; \textinterrobangdown (textcomp)  
19357 \DeclareTextCommand{\textinterrobangdown}{PU}{\9056\030}% U+2E18  
19358 % U+2E2D FIVE DOT MARK; \fivedots (MnSymbol)  
19359 \DeclareTextCommand{\textfivedots}{PU}{\9056\055}%\* U+2E2D

#### 47.2.39 Modifier Tone Letters: U+A700 to U+A71F

19360 % U+A71B MODIFIER LETTER RAISED UP ARROW; \textupstep (tipa)  
19361 \DeclareTextCommand{\textupstep}{PU}{\9247\033}% U+A71B  
19362 % U+A71C MODIFIER LETTER RAISED DOWN ARROW;  
19363 % \textdownstep (tipa)  
19364 \DeclareTextCommand{\textdownstep}{PU}{\9247\034}% U+A71C

#### 47.2.40 Latin Extended-D: U+A720 to U+A7FF

19365 % U+A727 LATIN SMALL LETTER HENG; \textheng (tipx)  
19366 \DeclareTextCommand{\textPUheng}{PU}{\9247\047}% U+A727  
19367 %\* \textPUheng -> \textheng (tipx)  
19368 % U+A72C LATIN CAPITAL LETTER CUATRILLO; \textlhookfour (tipx)  
19369 \DeclareTextCommand{\textPUlhookfour}{PU}{\9247\054}% U+A72C  
19370 %\* \textPUlhookfour -> \textlhookfour (tipx)  
19371 % U+A730 LATIN LETTER SMALL CAPITAL F; \textscf (tipx)  
19372 \DeclareTextCommand{\textPUscf}{PU}{\9247\060}% U+A730  
19373 %\* \textPUscf -> \textscf (tipx)  
19374 % U+A735 LATIN SMALL LETTER AO; \textao lig (tipx)  
19375 \DeclareTextCommand{\textPUaolig}{PU}{\9247\065}% U+A735  
19376 %\* \textPUaolig -> \textao lig (tipx)  
19377 % U+A74F LATIN SMALL LETTER OO; \oo (wsuipa)  
19378 \DeclareTextCommand{\textoo}{PU}{\9247\117}%\* U+A74F  
19379 % U+A788 MODIFIER LETTER LOW CIRCUMFLEX ACCENT  
19380 \DeclareTextCommand{\textcircumlw}{PU}{\9247\210}% U+A788

#### 47.2.41 Alphabetic Presentation Forms: U+FB00 to U+FB4F

19381 % U+FB01 LATIN SMALL LIGATURE FI; fi  
19382 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01  
19383 % U+FB02 LATIN SMALL LIGATURE FL; fl  
19384 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02

#### 47.2.42 Musical Symbols: U+1D100 to U+1D1FF

19385 % U+1D13B MUSICAL SYMBOL WHOLE REST; \GaPa (harmony)  
19386 \DeclareTextCommand{\textGaPa}{PU}{\9330\064\9335\073}%\* U+1D13B  
19387 % U+1D13C MUSICAL SYMBOL HALF REST; \HaPa (harmony)  
19388 \DeclareTextCommand{\textHaPa}{PU}{\9330\064\9335\074}%\* U+1D13C  
19389 % U+1D13D MUSICAL SYMBOL QUARTER REST; \ViPa (harmony)  
19390 \DeclareTextCommand{\textViPa}{PU}{\9330\064\9335\075}%\* U+1D13D  
19391 % U+1D13E MUSICAL SYMBOL EIGHTH REST; \AcPa (harmony)  
19392 \DeclareTextCommand{\textAcPa}{PU}{\9330\064\9335\076}%\* U+1D13E  
19393 % U+1D13F MUSICAL SYMBOL SIXTEENTH REST; \SePa (harmony)  
19394 \DeclareTextCommand{\textSePa}{PU}{\9330\064\9335\077}%\* U+1D13F  
19395 % U+1D140 MUSICAL SYMBOL THIRTY-SECOND REST; \ZwPa (harmony)  
19396 \DeclareTextCommand{\textZwPa}{PU}{\9330\064\9335\100}%\* U+1D140  
19397 % U+1D15D MUSICAL SYMBOL WHOLE NOTE; \fullnote (wasysym)  
19398 \DeclareTextCommand{\textfullnote}{PU}{\9330\064\9335\135}%\* U+1D15D  
19399 %\* \textfullnote -> \Ganz (harmony)  
19400 % U+1D15E MUSICAL SYMBOL HALF NOTE; \halfnote (wasysym)  
19401 \DeclareTextCommand{\texthalfnote}{PU}{\9330\064\9335\136}%\* U+1D15E  
19402 %\* \texthalfnote -> \Halb (harmony)  
19403 % U+1D15F MUSICAL SYMBOL QUARTER NOTE; \Vier (harmony)  
19404 \DeclareTextCommand{\textVier}{PU}{\9330\064\9335\137}%\* U+1D15F  
19405 % U+1D160 MUSICAL SYMBOL EIGHTH NOTE; \Acht (harmony)  
19406 \DeclareTextCommand{\textAcht}{PU}{\9330\064\9335\140}%\* U+1D160  
19407 % U+1D161 MUSICAL SYMBOL SIXTEENTH NOTE; \Sech (harmony)  
19408 \DeclareTextCommand{\textSech}{PU}{\9330\064\9335\141}%\* U+1D161  
19409 % U+1D162 MUSICAL SYMBOL THIRTY-SECOND NOTE; \Zwdr (harmony)  
19410 \DeclareTextCommand{\textZwdr}{PU}{\9330\064\9335\142}%\* U+1D162

#### 47.2.43 Miscellaneous Symbols and Pictographs: U+1F300 to U+1F5FF

19411 % U+1F30D EARTH GLOBE EUROPE-AFRICA; \Mundus (marvosym)  
19412 \DeclareTextCommand{\textMundus}{PU}{\9330\074\9337\015}%\* U+1F30D  
19413 % U+1F319 CRESCENT MOON; \Moon (marvosym)  
19414 \DeclareTextCommand{\textMoon}{PU}{\9330\074\9337\031}%\* U+1F319  
19415 % U+1F468 MAN; \ManFace (marvosym)  
19416 \DeclareTextCommand{\textManFace}{PU}{\9330\075\9334\150}%\* U+1F468  
19417 % U+1F469 WOMAN; \WomanFace (marvosym)  
19418 \DeclareTextCommand{\textWomanFace}{PU}{\9330\075\9334\151}%\* U+1F469  
19419 %\* \textWomanFace -> \Womanface (marvosym)  
19420 % U+1F4E0 FAX MACHINE; \Fax (marvosym)  
19421 \DeclareTextCommand{\textFax}{PU}{\9330\075\9334\340}%\* U+1F4E0  
19422 %\* \textFax -> \Faxmachine (marvosym)  
19423 % U+1F525 FIRE; \Fire (ifsym)  
19424 \DeclareTextCommand{\textFire}{PU}{\9330\075\9335\045}%\* U+1F525

#### 47.2.44 Transport and Map Symbols: U+1F680 to U+1F6FF

19425 % U+1F6B2 BICYCLE; \Bicycle (marvosym)  
19426 \DeclareTextCommand{\textBicycle}{PU}{\9330\075\9336\262}%\* U+1F6B2  
19427 % U+1F6B9 MENS SYMBOL; \Gentsroom (marvosym)  
19428 \DeclareTextCommand{\textGentsroom}{PU}{\9330\075\9336\271}%\* U+1F6B9  
19429 % U+1F6BA WOMENS SYMBOL; \Ladiesroom (marvosym)  
19430 \DeclareTextCommand{\textLadiesroom}{PU}{\9330\075\9336\272}%\* U+1F6BA

#### 47.2.45 Miscellaneous

19431 \DeclareTextCommand{\SS}{PU}{SS}%  
19432 % \textcopyleft (textcomp)  
19433 \DeclareTextCommand{\textcopyleft}{PU}{\9041\204\9040\335}% U+2184 U+20DD  
19434 % \ccnc (ccllicenses)  
19435 \DeclareTextCommand{\textccnc}{PU}{\80\044\9040\340}%\* U+0024 U+20E0  
19436 % \ccnd (ccllicenses)  
19437 \DeclareTextCommand{\textccnd}{PU}{=\9040\335}%\* U+003D U+20DD  
19438 % \ccsa (ccllicenses)  
19439 \DeclareTextCommand{\textccsa}{PU}{\9047\362\9040\335}%\* U+27F2 U+20DD  
19440 % \Info (marvosym, china2e)  
19441 \DeclareTextCommand{\textInfo}{PU}{\9330\065\9334\042\9040\336}%\* U+1D422 U+20DE  
19442 % \CESign (marvosym)  
19443 \DeclareTextCommand{\textCESign}{PU}{\80\103\80\105}%\* U+0043 U+0045  
19444 %\* \textCESign -> \CESign (marvosym)

#### 47.2.46 Aliases

Aliases (german.sty)

19445 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}%  
19446 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}%  
19447 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}%  
19448 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}%  
19449 \DeclareTextCommand{\textflqq}{PU}{\guillemetleft}%  
19450 \DeclareTextCommand{\textfrqq}{PU}{\guillemetright}%  
19451 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}%  
19452 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}%

Aliases (math names)

19453 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}%\*  
19454 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}%\*  
19455 \DeclareTextCommand{\textdiv}{PU}{\textdivide}%\*

```

19456 \DeclareTextCommand{\textpm}{PU}{\textplusminus}%*
19457 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}%*
19458 </puenc>

```

### 47.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```

19459 (*puvnenc)

19460 \DeclareTextCommand{\abreve}{PU}{\81\003}% U+0103
19461 \DeclareTextCommand{\acircumflex}{PU}{\80\342}% U+00E2
19462 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}% U+00EA
19463 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}% U+00F4
19464 \DeclareTextCommand{\ohorn}{PU}{\81\241}% U+01A1
19465 \DeclareTextCommand{\uhorn}{PU}{\81\260}% U+01B0
19466 \DeclareTextCommand{\ABREVE}{PU}{\81\002}% U+0102
19467 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}% U+00C2
19468 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}% U+00CA
19469 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}% U+00D4
19470 \DeclareTextCommand{\OHORN}{PU}{\81\240}% U+01A0
19471 \DeclareTextCommand{\UHORN}{PU}{\81\257}% U+01AF

19472 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1
19473 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}% U+1EA1
19474 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0
19475 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}% U+1EA3
19476 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3
19477 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}% U+1EAF
19478 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}% U+1EB7
19479 \DeclareTextCompositeCommand{\`}{PU}{\abreve}{\9036\261}% U+1EB1
19480 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}% U+1EB3
19481 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}% U+1EB5
19482 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}% U+1EA5
19483 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}% U+1EAD
19484 \DeclareTextCompositeCommand{\`}{PU}{\acircumflex}{\9036\247}% U+1EA7
19485 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}% U+1EA9
19486 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}% U+1EAB
19487 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9
19488 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}% U+1EB9
19489 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8
19490 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}% U+1EBB
19491 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD
19492 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}% U+1EBF
19493 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}% U+1EC7
19494 \DeclareTextCompositeCommand{\`}{PU}{\ecircumflex}{\9036\301}% U+1EC1
19495 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}% U+1EC3
19496 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}% U+1EC5
19497 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED
19498 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}% U+1ECB
19499 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC
19500 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}% U+1EC9
19501 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129
19502 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3
19503 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}% U+1ECD

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19504 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
19505 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}% U+1ECF  
19506 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
19507 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}% U+1ED1  
19508 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}% U+1ED9  
19509 \DeclareTextCompositeCommand{\`}{PU}{\ocircumflex}{\9036\323}% U+1ED3  
19510 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}% U+1ED5  
19511 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}% U+1ED7  
19512 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}% U+1EDB  
19513 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}% U+1EE3  
19514 \DeclareTextCompositeCommand{\`}{PU}{\ohorn}{\9036\335}% U+1EDD  
19515 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}% U+1EDF  
19516 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}% U+1EE1  
19517 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
19518 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}% U+1EE5  
19519 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
19520 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}% U+1EE7  
19521 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
19522 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}% U+1EE9  
19523 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}% U+1EF1  
19524 \DeclareTextCompositeCommand{\`}{PU}{\uhorn}{\9036\353}% U+1EEB  
19525 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}% U+1EED  
19526 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}% U+1EEF  
19527 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
19528 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}% U+1EF5  
19529 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3  
19530 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}% U+1EF7  
19531 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9  
19532 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
19533 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}% U+1EA0  
19534 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
19535 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}% U+1EA2  
19536 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
19537 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}% U+1EAE  
19538 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}% U+1EB6  
19539 \DeclareTextCompositeCommand{\`}{PU}{\ABREVE}{\9036\260}% U+1EB0  
19540 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}% U+1EB2  
19541 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}% U+1EB4  
19542 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}% U+1EA4  
19543 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}% U+1EAC  
19544 \DeclareTextCompositeCommand{\`}{PU}{\ACIRCUMFLEX}{\9036\246}% U+1EA6  
19545 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}% U+1EA8  
19546 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}% U+1EA A  
19547 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
19548 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}% U+1EB8  
19549 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
19550 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}% U+1EBA  
19551 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
19552 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\276}% U+1EBE  
19553 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}% U+1EC6  
19554 \DeclareTextCompositeCommand{\`}{PU}{\ECIRCUMFLEX}{\9036\300}% U+1EC0  
19555 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}% U+1EC2  
19556 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}% U+1EC4  
19557 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD



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19558 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}% U+1ECA
19559 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC
19560 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}% U+1EC8
19561 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128
19562 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3
19563 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}% U+1ECC
19564 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2
19565 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}% U+1ECE
19566 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5
19567 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}% U+1ED0
19568 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}% U+1ED8
19569 \DeclareTextCompositeCommand{\`}{PU}{\OCIRCUMFLEX}{\9036\322}% U+1ED2
19570 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}% U+1ED4
19571 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}% U+1ED6
19572 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\332}% U+1EDA
19573 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}% U+1EE2
19574 \DeclareTextCompositeCommand{\`}{PU}{\OHORN}{\9036\334}% U+1EDC
19575 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}% U+1EDE
19576 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}% U+1EE0
19577 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA
19578 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4
19579 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9
19580 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}% U+1EE6
19581 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168
19582 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}% U+1EE8
19583 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}% U+1EF0
19584 \DeclareTextCompositeCommand{\`}{PU}{\UHORN}{\9036\352}% U+1EEA
19585 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}% U+1EEC
19586 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}% U+1EEE
19587 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD
19588 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4
19589 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2
19590 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}% U+1EF6
19591 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8
19592 </p>puvnc)

```

## 47.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```

19593 (*puarenc)
19594 % U+0621;afii57409;ARABIC LETTER HAMZA
19595 \DeclareTextCommand{\hamza}{PU}{\86\041}% U+0621
19596 % U+0622;afii57410;ARABIC LETTER ALEF WITH MADDA ABOVE
19597 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% U+0622
19598 % U+0623;afii57411;ARABIC LETTER ALEF WITH HAMZA ABOVE
19599 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% U+0623
19600 % U+0624;afii57412;ARABIC LETTER WAW WITH HAMZA ABOVE
19601 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% U+0624
19602 % U+0625;afii57413;ARABIC LETTER ALEF WITH HAMZA BELOW
19603 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% U+0625
19604 % U+0626;afii57414;ARABIC LETTER YEH WITH HAMZA ABOVE
19605 \DeclareTextCommand{\yahamza}{PU}{\86\046}% U+0626
19606 % U+0627;afii57415;ARABIC LETTER ALEF

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19607 \DeclareTextCommand{\alef}{PU}{\86\047}% U+0627  
19608 % U+0628;afii57416;ARABIC LETTER BEH  
19609 \DeclareTextCommand{\baa}{PU}{\86\050}% U+0628  
19610 % U+0629;afii57417;ARABIC LETTER TEH MARBUTA  
19611 \DeclareTextCommand{\T}{PU}{\86\051}% U+0629  
19612 % U+062A;afii57418;ARABIC LETTER TEH  
19613 \DeclareTextCommand{\taa}{PU}{\86\052}% U+062A  
19614 % U+062B;afii57419;ARABIC LETTER THEH  
19615 \DeclareTextCommand{\thaa}{PU}{\86\053}% U+062B  
19616 % U+062C;afii57420;ARABIC LETTER JEEM  
19617 \DeclareTextCommand{\jeem}{PU}{\86\054}% U+062C  
19618 % U+062D;afii57421;ARABIC LETTER HAH  
19619 \DeclareTextCommand{\Haa}{PU}{\86\055}% U+062D  
19620 % U+062E;afii57422;ARABIC LETTER KHAH  
19621 \DeclareTextCommand{\kha}{PU}{\86\056}% U+062E  
19622 % U+062F;afii57423;ARABIC LETTER DAL  
19623 \DeclareTextCommand{\dal}{PU}{\86\057}% U+062F  
19624 % U+0630;afii57424;ARABIC LETTER THAL  
19625 \DeclareTextCommand{\dhal}{PU}{\86\060}% U+0630  
19626 % U+0631;afii57425;ARABIC LETTER REH  
19627 \DeclareTextCommand{\ra}{PU}{\86\061}% U+0631  
19628 % U+0632;afii57426;ARABIC LETTER ZAIN  
19629 \DeclareTextCommand{\zay}{PU}{\86\062}% U+0632  
19630 % U+0633;afii57427;ARABIC LETTER SEEN  
19631 \DeclareTextCommand{\seen}{PU}{\86\063}% U+0633  
19632 % U+0634;afii57428;ARABIC LETTER SHEEN  
19633 \DeclareTextCommand{\sheen}{PU}{\86\064}% U+0634  
19634 % U+0635;afii57429;ARABIC LETTER SAD  
19635 \DeclareTextCommand{\sad}{PU}{\86\065}% U+0635  
19636 % U+0636;afii57430;ARABIC LETTER DAD  
19637 \DeclareTextCommand{\dad}{PU}{\86\066}% U+0636  
19638 % U+0637;afii57431;ARABIC LETTER TAH  
19639 \DeclareTextCommand{\Ta}{PU}{\86\067}% U+0637  
19640 % U+0638;afii57432;ARABIC LETTER ZAH  
19641 \DeclareTextCommand{\za}{PU}{\86\070}% U+0638  
19642 % U+0639;afii57433;ARABIC LETTER AIN  
19643 \DeclareTextCommand{\ayn}{PU}{\86\071}% U+0639  
19644 % U+063A;afii57434;ARABIC LETTER GHAIN  
19645 \DeclareTextCommand{\ghayn}{PU}{\86\072}% U+063A  
19646 % U+0640;afii57440;ARABIC TATWEEL  
19647 \DeclareTextCommand{\tatweel}{PU}{\86\100}% U+0640  
19648 % U+0641;afii57441;ARABIC LETTER FEH  
19649 \DeclareTextCommand{\fa}{PU}{\86\101}% U+0641  
19650 % U+0642;afii57442;ARABIC LETTER QAF  
19651 \DeclareTextCommand{\qaf}{PU}{\86\102}% U+0642  
19652 % U+0643;afii57443;ARABIC LETTER KAF  
19653 \DeclareTextCommand{\kaf}{PU}{\86\103}% U+0643  
19654 % U+0644;afii57444;ARABIC LETTER LAM  
19655 \DeclareTextCommand{\lam}{PU}{\86\104}% U+0644  
19656 % U+0645;afii57445;ARABIC LETTER MEEM  
19657 \DeclareTextCommand{\meem}{PU}{\86\105}% U+0645  
19658 % U+0646;afii57446;ARABIC LETTER NOON  
19659 \DeclareTextCommand{\nun}{PU}{\86\106}% U+0646  
19660 % U+0647;afii57470;ARABIC LETTER HEH

19661 \DeclareTextCommand{\ha}{PU}{\86\107}% U+0647  
19662 % U+0648;afi57448;ARABIC LETTER WAW  
19663 \DeclareTextCommand{\waw}{PU}{\86\110}% U+0648  
19664 % U+0649;afi57449;ARABIC LETTER ALEF MAKSURA  
19665 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% U+0649  
19666 % U+064A;afi57450;ARABIC LETTER YEH  
19667 \DeclareTextCommand{\ya}{PU}{\86\112}% U+064A  
  
19668 % U+064B;afi57451;ARABIC FATHATAN  
19669 \DeclareTextCommand{\nasb}{PU}{\86\113}% U+064B  
19670 % U+064C;afi57452;ARABIC DAMMATAN  
19671 \DeclareTextCommand{\raff}{PU}{\86\114}% U+064C  
19672 % U+064D;afi57453;ARABIC KASRATAN  
19673 \DeclareTextCommand{\jarr}{PU}{\86\115}% U+064D  
19674 % U+064E;afi57454;ARABIC FATHA  
19675 \DeclareTextCommand{\fatha}{PU}{\86\116}% U+064E  
19676 % U+064F;afi57455;ARABIC DAMMA  
19677 \DeclareTextCommand{\damma}{PU}{\86\117}% U+064F  
19678 % U+0650;afi57456;ARABIC KASRA  
19679 \DeclareTextCommand{\kasra}{PU}{\86\120}% U+0650  
19680 % U+0651;afi57457;ARABIC SHADDA  
19681 \DeclareTextCommand{\shadda}{PU}{\86\121}% U+0651  
19682 % U+0652;afi57458;ARABIC SUKUN  
19683 \DeclareTextCommand{\sukun}{PU}{\86\122}% U+0652  
  
Farsi  
19684 % U+067E ARABIC LETTER PEH; afi57506  
19685 \DeclareTextCommand{\peh}{PU}{\86\176}% U+067E  
19686 % U+0686 ARABIC LETTER TCHEH; afi57507  
19687 \DeclareTextCommand{\tcheh}{PU}{\86\206}% U+0686  
19688 % U+0698 ARABIC LETTER JEH; afi57508  
19689 \DeclareTextCommand{\jeh}{PU}{\86\230}% U+0698  
19690 % U+06A9 ARABIC LETTER KEHEH  
19691 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% U+06A9  
19692 % U+06AF ARABIC LETTER GAF; afi57509  
19693 \DeclareTextCommand{\gaf}{PU}{\86\257}% U+06AF  
19694 % U+06CC ARABIC LETTER FARSI YEH  
19695 \DeclareTextCommand{\farsiya}{PU}{\86\314}% U+06CC  
  
19696 % U+200C ZERO WIDTH NON-JOINER; afi61664  
19697 \DeclareTextCommand{\ZWJ}{PU}{\9040\014}% U+200C  
19698 % U+200D ZERO WIDTH JOINER; afi301  
19699 \DeclareTextCommand{\textEncodingNoboundary}{PU}{\9040\015}% U+200D  
  
19700 </puarenc>  
19701 (\*psdextra)  
19702 \Hy@VersionCheck{psdextra.def}  
19703 \DeclareTextCommand{\textGamma}{PU}{\83\223}%\* U+0393  
19704 \DeclareTextCommand{\textDelta}{PU}{\83\224}%\* U+0394  
19705 \DeclareTextCommand{\textTheta}{PU}{\83\230}%\* U+0398  
19706 \DeclareTextCommand{\textLambda}{PU}{\83\233}%\* U+039B  
19707 \DeclareTextCommand{\textXi}{PU}{\83\236}%\* U+039E  
19708 \DeclareTextCommand{\textPi}{PU}{\83\240}%\* U+03A0  
19709 \DeclareTextCommand{\textSigma}{PU}{\83\243}%\* U+03A3  
19710 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}%\* U+03A5  
19711 \DeclareTextCommand{\textPhi}{PU}{\83\246}%\* U+03A6

19712 \DeclareTextCommand{\textChi}{PU}{\83\247}% U+03A7  
19713 \DeclareTextCommand{\textPsi}{PU}{\83\250}%\* U+03A8  
19714 \DeclareTextCommand{\textOmega}{PU}{\83\251}%\* U+03A9  
19715 \DeclareTextCommand{\textalpha}{PU}{\83\261}%\* U+03B1  
19716 \DeclareTextCommand{\textbeta}{PU}{\83\262}%\* U+03B2  
19717 \DeclareTextCommand{\textgamma}{PU}{\83\263}%\* U+03B3  
19718 \DeclareTextCommand{\textdelta}{PU}{\83\264}%\* U+03B4  
19719 \DeclareTextCommand{\textepsilon}{PU}{\83\265}%\* U+03B5  
19720 \DeclareTextCommand{\textzeta}{PU}{\83\266}%\* U+03B6  
19721 \DeclareTextCommand{\texteta}{PU}{\83\267}%\* U+03B7  
19722 \DeclareTextCommand{\texttheta}{PU}{\83\270}%\* U+03B8  
19723 \DeclareTextCommand{\textiota}{PU}{\83\271}%\* U+03B9  
19724 \DeclareTextCommand{\textkappa}{PU}{\83\272}%\* U+03BA  
19725 \DeclareTextCommand{\textlambda}{PU}{\83\273}%\* U+03BB  
19726 \DeclareTextCommand{\textmugreek}{PU}{\83\274}%\* U+03BC  
19727 \DeclareTextCommand{\textnu}{PU}{\83\275}%\* U+03BD  
19728 \DeclareTextCommand{\textxi}{PU}{\83\276}%\* U+03BE  
19729 \DeclareTextCommand{\textpi}{PU}{\83\300}%\* U+03C0  
19730 \DeclareTextCommand{\textrho}{PU}{\83\301}%\* U+03C1  
19731 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}%\* U+03C2  
19732 \DeclareTextCommand{\textsigma}{PU}{\83\303}%\* U+03C3  
19733 \DeclareTextCommand{\texttau}{PU}{\83\304}%\* U+03C4  
19734 \DeclareTextCommand{\textupsilon}{PU}{\83\305}%\* U+03C5  
19735 \DeclareTextCommand{\textphi}{PU}{\83\306}%\* U+03C6  
19736 \DeclareTextCommand{\textchi}{PU}{\83\307}%\* U+03C7  
19737 \DeclareTextCommand{\textpsi}{PU}{\83\310}%\* U+03C8  
19738 \DeclareTextCommand{\textomega}{PU}{\83\311}%\* U+03C9  
19739 \newcommand\*{\psdmapshortnames}{%  
19740 \let\MVPlus\textMVPlus  
19741 \let\MVComma\textMVComma  
19742 \let\MVMinus\textMVMinus  
19743 \let\MVPeriod\textMVPeriod  
19744 \let\MVDivision\textMVDivision  
19745 \let\MVZero\textMVZero  
19746 \let\MVOne\textMVOne  
19747 \let\MVTwo\textMVTwo  
19748 \let\MVThree\textMVThree  
19749 \let\MVFour\textMVFfour  
19750 \let\MVFive\textMVFfive  
19751 \let\MVSix\textMVSix  
19752 \let\MVSeven\textMVSeven  
19753 \let\MVEight\textMVEight  
19754 \let\MVNine\textMVNine  
19755 \let\MVAt\textMVAt  
19756 \let\copyright\textcopyright  
19757 \let\twosuperior\texttwosuperior  
19758 \let\threesuperior\textthreesuperior  
19759 \let\onesuperior\textonesuperior  
19760 \let\Thorn\textThorn  
19761 \let\thorn\textthorn  
19762 \let\hbar\texthbar  
19763 \let\hausasB\texthausasB  
19764 \let\hausasD\texthausasD  
19765 \let\hausasK\texthausasK

19766 \let\barl\textbarl  
19767 \let\inve\textinve  
19768 \let\slashc\textslashc  
19769 \let\scripta\textscripta  
19770 \let\openo\textopeno  
19771 \let\rtaild\textrtaild  
19772 \let\reve\textreve  
19773 \let\schwa\textschwa  
19774 \let\niepsilon\textniepsilon  
19775 \let\repsilon\textrepsilon  
19776 \let\rhookrepsilon\textrhoepsilon  
19777 \let\scriptg\textscriptg  
19778 \let\scg\textscg  
19779 \let\ipagamma\textipagamma  
19780 \let\babygamma\textbabygamma  
19781 \let\bari\textbari  
19782 \let\niiota\textniiota  
19783 \let\sci\textsci  
19784 \let\scn\textscn  
19785 \let\niphi\textniphi  
19786 \let\longlegr\textlonglegr  
19787 \let\scr\textscr  
19788 \let\invscr\textinvscr  
19789 \let\esh\textesh  
19790 \let\baru\textbaru  
19791 \let\niupsilon\textniupsilon  
19792 \let\scriptv\textscriptv  
19793 \let\turnv\textturnv  
19794 \let\turnw\textturnw  
19795 \let\turny\textturny  
19796 \let\scy\textscy  
19797 \let\yogh\textyogh  
19798 \let\glotstop\textglotstop  
19799 \let\revglotstop\textrevglotstop  
19800 \let\invglotstop\textinvglotstop  
19801 \let\Gamma\textGamma  
19802 \let\Delta\textDelta  
19803 \let\Theta\textTheta  
19804 \let\Lambda\textLambda  
19805 \let\Xi\textXi  
19806 \let\Pi\textPi  
19807 \let\Sigma\textSigma  
19808 \let\Upsilon\textUpsilon  
19809 \let\Phi\textPhi  
19810 \let\Psi\textPsi  
19811 \let\Omega\textOmega  
19812 \let\alpha\textalpha  
19813 \let\beta\textbeta  
19814 \let\gamma\textgamma  
19815 \let\delta\textdelta  
19816 \let\epsilon\textepsilon  
19817 \let\zeta\textzeta  
19818 \let\eta\texteta  
19819 \let\theta\texttheta

19820 `\let\iota\textiota`  
19821 `\let\kappa\textkappa`  
19822 `\let\lambda\textlambda`  
19823 `\let\mu\textmu`  
19824 `\let\mugreek\textmugreek`  
19825 `\let\nu\textnu`  
19826 `\let\xi\textxi`  
19827 `\let\pi\textpi`  
19828 `\let\rho\textrho`  
19829 `\let\varsigma\textvarsigma`  
19830 `\let\sigma\textsigma`  
19831 `\let\tau\texttau`  
19832 `\let\upsilon\textupsilon`  
19833 `\let\phi\textphi`  
19834 `\let\chi\textchi`  
19835 `\let\psi\textpsi`  
19836 `\let\omega\textomega`  
19837 `\let\scd\textscd`  
19838 `\let\scu\textscu`  
19839 `\let\iinferior\textiinferior`  
19840 `\let\rinferior\textrinferior`  
19841 `\let\uinferior\textuinferior`  
19842 `\let\vinferior\textvinferior`  
19843 `\let\betainferior\textbetainferior`  
19844 `\let\gammainferior\textgammainferior`  
19845 `\let\rhoinferior\textrhoinferior`  
19846 `\let\phiinferior\textphiinferior`  
19847 `\let\chiinferior\textchiinferior`  
19848 `\let\barsci\textbarsci`  
19849 `\let\barp\textbarp`  
19850 `\let\barscu\textbarscu`  
19851 `\let\htrtaild\texthtrtaild`  
19852 `\let\dagger\textdagger`  
19853 `\let\bullet\textbullet`  
19854 `\let\hdotfor\texthdotfor`  
19855 `\let\prime\textprime`  
19856 `\let\second\textsecond`  
19857 `\let\third\textthird`  
19858 `\let\backprime\textbackprime`  
19859 `\let\lefttherefore\textlefttherefore`  
19860 `\let\fourth\textfourth`  
19861 `\let\diamonddots\textdiamonddots`  
19862 `\let\zerosuperior\textzerosuperior`  
19863 `\let\isuperior\textisuperior`  
19864 `\let\foursuperior\textfoursuperior`  
19865 `\let\fivesuperior\textfivesuperior`  
19866 `\let\sixsuperior\textsixsuperior`  
19867 `\let\sevensuperior\textsevensuperior`  
19868 `\let\eightsuperior\texteightsuperior`  
19869 `\let\ninesuperior\textninesuperior`  
19870 `\let\plussuperior\textplussuperior`  
19871 `\let\minussuperior\textminussuperior`  
19872 `\let\equalsuperior\textequalsuperior`  
19873 `\let\parenleftsuperior\textparenleftsuperior`

19874 \let\parenrightsuperior\textparenrightsuperior  
19875 \let\nsuperior\textnsuperior  
19876 \let\zeroinferior\textzeroinferior  
19877 \let\oneinferior\textoneinferior  
19878 \let\twoinferior\texttwoinferior  
19879 \let\threeinferior\textthreeinferior  
19880 \let\fourinferior\textfourinferior  
19881 \let\fiveinferior\textfiveinferior  
19882 \let\sixinferior\textsixinferior  
19883 \let\seveninferior\textseveninferior  
19884 \let\eightinferior\texteightinferior  
19885 \let\nineinferior\textnineinferior  
19886 \let\plusinferior\textplusinferior  
19887 \let\minusinferior\textminusinferior  
19888 \let\equalsinferior\textequalsinferior  
19889 \let\parenleftinferior\textparenleftinferior  
19890 \let\parenrightinferior\textparenrightinferior  
19891 \let\ainferior\textainferior  
19892 \let\einferior\texteinferior  
19893 \let\oinferior\textoinferior  
19894 \let\xinferior\textxinferior  
19895 \let\schwainferior\textschwainferior  
19896 \let\hinferior\texthinferior  
19897 \let\kinferior\textkinferior  
19898 \let\linferior\textlinferior  
19899 \let\minferior\textminferior  
19900 \let\ninferior\textninferior  
19901 \let\pinferior\textpinferior  
19902 \let\sinferior\textsinferior  
19903 \let\tinferior\texttinferior  
19904 \let\Deleatur\textDeleatur  
19905 \let\hslash\texthslash  
19906 \let\Im\textIm  
19907 \let\ell\textell  
19908 \let\wp\textwp  
19909 \let\Re\textRe  
19910 \let\mho\textmho  
19911 \let\riota\textriota  
19912 \let\Finv\textFinv  
19913 \let\aleph\textaleph  
19914 \let\beth\textbeth  
19915 \let\gimel\textgimel  
19916 \let\daleth\textdaleth  
19917 \let\xfax\textfax  
19918 \let\Game\textGame  
19919 \let\leftarrow\textleftarrow  
19920 \let\uparrow\textuparrow  
19921 \let\rightarrow\textrightarrow  
19922 \let\downarrow\textdownarrow  
19923 \let\leftrightarrow\textleftrightarrow  
19924 \let\updownarrow\textupdownarrow  
19925 \let\nwarrow\textnwarrow  
19926 \let\nearrow\textnearrow  
19927 \let\searrow\textsearrow

19928 `\let\swarrow\textswarrow`  
19929 `\let\nleftarrow\textnleftarrow`  
19930 `\let\nrightarrow\textnrightarrow`  
19931 `\let\twoheadleftarrow\texttwoheadleftarrow`  
19932 `\let\ntwoheadleftarrow\textntwoheadleftarrow`  
19933 `\let\twoheaduparrow\texttwoheaduparrow`  
19934 `\let\twoheadrightarrow\texttwoheadrightarrow`  
19935 `\let\ntwoheadrightarrow\textntwoheadrightarrow`  
19936 `\let\twoheaddownarrow\texttwoheaddownarrow`  
19937 `\let\leftarrowtail\textleftarrowtail`  
19938 `\let\rightarrowtail\textrightarrowtail`  
19939 `\let\mapsto\textmapsto`  
19940 `\let\hookrightarrow\texthookrightarrow`  
19941 `\let\hookleftarrow\texthookleftarrow`  
19942 `\let\looparrowleft\textlooparrowleft`  
19943 `\let\looparrowright\textlooparrowright`  
19944 `\let\nleftrightarrow\textnleftrightarrow`  
19945 `\let\lightning\textlightning`  
19946 `\let\dsh\textdsh`  
19947 `\let\curvearrowleft\textcurvearrowleft`  
19948 `\let\curvearrowright\textcurvearrowright`  
19949 `\let\leftharpoonup\textleftharpoonup`  
19950 `\let\leftharpoondown\textleftharpoondown`  
19951 `\let\upharpoonright\textupharpoonright`  
19952 `\let\upharpoonleft\textupharpoonleft`  
19953 `\let\rightarpoonup\textrightarpoonup`  
19954 `\let\rightarpoondown\textrightarpoondown`  
19955 `\let\downharpoonright\textdownharpoonright`  
19956 `\let\downharpoonleft\textdownharpoonleft`  
19957 `\let\rightleftarrows\textrightleftarrows`  
19958 `\let\updownarrows\textupdownarrows`  
19959 `\let\leftrightarrows\textleftrightarrows`  
19960 `\let\leftleftarrows\textleftleftarrows`  
19961 `\let\upuparrows\textupuparrows`  
19962 `\let\righttrightarrows\textrighttrightarrows`  
19963 `\let\downdownarrows\textdowndownarrows`  
19964 `\let\leftrightharpoons\textleftrightharpoons`  
19965 `\let\rightleftharpoons\textrightleftharpoons`  
19966 `\let\nLeftarrow\textnLeftarrow`  
19967 `\let\nLeftrightarrow\textnLeftrightarrow`  
19968 `\let\nRightarrow\textnRightarrow`  
19969 `\let\Leftarrow\textLeftarrow`  
19970 `\let\Uparrow\textUparrow`  
19971 `\let\Rightarrow\textRightarrow`  
19972 `\let\Downarrow\textDownarrow`  
19973 `\let\Leftrightarrow\textLeftrightarrow`  
19974 `\let\Updownarrow\textUpdownarrow`  
19975 `\let\Nwarrow\textNwarrow`  
19976 `\let\Nearrow\textNearrow`  
19977 `\let\searrow\textsearrow`  
19978 `\let\swarrow\textswarrow`  
19979 `\let\Lleftarrow\textLleftarrow`  
19980 `\let\Rrightarrow\textRrightarrow`  
19981 `\let\leftsquigarrow\textleftsquigarrow`



19982 `\let\rightsquigarrow\textrightsquigarrow`  
19983 `\let\dashleftarrow\textdashleftarrow`  
19984 `\let\dasheduparrow\textdasheduparrow`  
19985 `\let\dashrightarrow\textdashrightarrow`  
19986 `\let\dasheddownarrow\textdasheddownarrow`  
19987 `\let\pointer\textpointer`  
19988 `\let\downuparrows\textdownuparrows`  
19989 `\let\leftarrowtriangle\textleftarrowtriangle`  
19990 `\let\rightarrowtriangle\textrightarrowtriangle`  
19991 `\let\leftrightarrowtriangle\textleftrightarrowtriangle`  
19992 `\let\forall\textforall`  
19993 `\let\complement\textcomplement`  
19994 `\let\partial\textpartial`  
19995 `\let\exists\textexists`  
19996 `\let\nexists\textnexists`  
19997 `\let\emptyset\textemptyset`  
19998 `\let\triangle\texttriangle`  
19999 `\let\nabla\textnabla`  
20000 `\let\in\textin`  
20001 `\let\notin\textnotin`  
20002 `\let\smallin\textsmallin`  
20003 `\let\ni\textni`  
20004 `\let\notowner\textnotowner`  
20005 `\let\smallowns\textsmallowns`  
20006 `\let\prod\textprod`  
20007 `\let\amalg\textamalg`  
20008 `\let\sum\textsum`  
20009 `\let\mp\textmp`  
20010 `\let\dotplus\textdotplus`  
20011 `\let\Divides\textDivides`  
20012 `\let\DividesNot\textDividesNot`  
20013 `\let\setminus\textsetminus`  
20014 `\let\ast\textast`  
20015 `\let\circ\textcirc`  
20016 `\let\surd\textsurd`  
20017 `\let\propto\textpropto`  
20018 `\let\infty\textinfty`  
20019 `\let\angle\textangle`  
20020 `\let\measuredangle\textmeasuredangle`  
20021 `\let\sphericalangle\textsphericalangle`  
20022 `\let\mid\textmid`  
20023 `\let\nmid\textnmid`  
20024 `\let\parallel\textparallel`  
20025 `\let\nparallel\textnparallel`  
20026 `\let\wedge\textwedge`  
20027 `\let\owedge\textowedge`  
20028 `\let\vee\textvee`  
20029 `\let\ovee\textovee`  
20030 `\let\cap\textcap`  
20031 `\let\cup\textcup`  
20032 `\let\int\textint`  
20033 `\let\iint\textiint`  
20034 `\let\iiint\textiiint`  
20035 `\let\oint\textoint`

20036 \let\oiint\textoiint  
 20037 \let\ointclockwise\textointclockwise  
 20038 \let\ointctrlockwise\textointctrlockwise  
 20039 \let\therefore\texttherefore  
 20040 \let\because\textbecause  
 20041 \let\vdotdot\textvdotdot  
 20042 \let\squaredots\textsquaredots  
 20043 \let\dotminus\textdotminus  
 20044 \let\eqcolon\texteqcolon  
 20045 \let\sim\textsim  
 20046 \let\backsim\textbacksim  
 20047 \let\nbacksim\textnbacksim  
 20048 \let\wr\textwr  
 20049 \let\nsim\textnsim  
 20050 \let\eqsim\texteqsim  
 20051 \let\neqsim\textneqsim  
 20052 \let\simeq\textsimeq  
 20053 \let\nsimeq\textnsimeq  
 20054 \let\cong\textcong  
 20055 \let\ncong\textncong  
 20056 \let\approx\textapprox  
 20057 \let\napprox\textnapprox  
 20058 \let\approxeq\textapproxeq  
 20059 \let\napproxeq\textnapproxeq  
 20060 \let\triplesim\texttriplesim  
 20061 \let\ntriplesim\textntriplesim  
 20062 \let\backcong\textbackcong  
 20063 \let\nbackcong\textnbackcong  
 20064 \let\asymp\textasymp  
 20065 \let\nasymp\textnasymp  
 20066 \let\Bumpeq\textBumpeq  
 20067 \let\nBumpeq\textnBumpeq  
 20068 \let\bumpeq\textbumpeq  
 20069 \let\nbumpeq\textnbumpeq  
 20070 \let\doteq\textdoteq  
 20071 \let\ndoteq\textndoteq  
 20072 \let\doteqdot\textdoteqdot  
 20073 \let\ndoteq\textndoteq  
 20074 \let\fallingdoteq\textfallingdoteq  
 20075 \let\nfallingdoteq\textnfallingdoteq  
 20076 \let\risingdoteq\textrisingdoteq  
 20077 \let\nrisingdoteq\textnrisingdoteq  
 20078 \let\colonequals\textcolonequals  
 20079 \let\equalscolon\textequalscolon  
 20080 \let\eqcirc\texteqcirc  
 20081 \let\neqcirc\textneqcirc  
 20082 \let\circeq\textcirceq  
 20083 \let\ncirceq\textncirceq  
 20084 \let\hateq\texthateq  
 20085 \let\nhateq\textnhateq  
 20086 \let\triangleq\texttriangleq  
 20087 \let\neq\textneq  
 20088 \let\ne\textne  
 20089 \let\equiv\textequiv

20090 \let\nequiv\textnequiv  
 20091 \let\leq\textleq  
 20092 \let\le\textle  
 20093 \let\geq\textgeq  
 20094 \let\ge\textge  
 20095 \let\leqq\textleqq  
 20096 \let\leqq\textleqq  
 20097 \let\geqq\textgeqq  
 20098 \let\geqq\textgeqq  
 20099 \let\leqq\textleqq  
 20100 \let\geqq\textgeqq  
 20101 \let\ll\textll  
 20102 \let\nll\textnll  
 20103 \let\gg\textgg  
 20104 \let\ngg\textngg  
 20105 \let\between\textbetween  
 20106 \let\nless\textnless  
 20107 \let\ngtr\textngtr  
 20108 \let\nleq\textnleq  
 20109 \let\ngel\textngel  
 20110 \let\lessim\textlessim  
 20111 \let\gtrsim\textgtrsim  
 20112 \let\nlessim\textnlessim  
 20113 \let\ngtrsim\textngtrsim  
 20114 \let\lessgtr\textlessgtr  
 20115 \let\gtrless\textgtrless  
 20116 \let\ngtrless\textngtrless  
 20117 \let\nlessgtr\textnlessgtr  
 20118 \let\prec\textprec  
 20119 \let\succ\textsucc  
 20120 \let\preccurlyeq\textpreccurlyeq  
 20121 \let\succcurlyeq\textsucccurlyeq  
 20122 \let\precsim\textprecsim  
 20123 \let\nprecsim\textnprecsim  
 20124 \let\succsim\textsuccsim  
 20125 \let\nsuccsim\textnsuccsim  
 20126 \let\nprec\textnprec  
 20127 \let\nsucc\textnsucc  
 20128 \let\subset\textsubset  
 20129 \let\supset\textsupset  
 20130 \let\nsubset\textnsubset  
 20131 \let\nsupset\textnsupset  
 20132 \let\subseteq\textsubseteq  
 20133 \let\supseteq\textsupseteq  
 20134 \let\nsubseteq\textnsubseteq  
 20135 \let\nsupseteq\textnsupseteq  
 20136 \let\subsetneq\textsubsetneq  
 20137 \let\supsetneq\textsupsetneq  
 20138 \let\cupdot\textcupdot  
 20139 \let\cupplus\textcupplus  
 20140 \let\sqsubset\textsqsubset  
 20141 \let\nsqsubset\textnsqsubset  
 20142 \let\sqsupset\textsqsupset  
 20143 \let\nsqsupset\textnsqsupset

20144 `\let\sqssubseteq\textsqsubseteq`  
 20145 `\let\nsqsubseteq\textnsqsubseteq`  
 20146 `\let\sqsupseteq\textsqsupseteq`  
 20147 `\let\nsqsupseteq\textnsqsupseteq`  
 20148 `\let\sqcap\textsqcap`  
 20149 `\let\sqcup\textsqcup`  
 20150 `\let\oplus\textoplus`  
 20151 `\let\ominus\textominus`  
 20152 `\let\otimes\textotimes`  
 20153 `\let\oslash\textoslash`  
 20154 `\let\odot\textodot`  
 20155 `\let\circledcirc\textcircledcirc`  
 20156 `\let\circledast\textcircledast`  
 20157 `\let\circleddash\textcircleddash`  
 20158 `\let\boxplus\textboxplus`  
 20159 `\let\boxminus\textboxminus`  
 20160 `\let\boxtimes\textboxtimes`  
 20161 `\let\boxdot\textboxdot`  
 20162 `\let\vdash\textvdash`  
 20163 `\let\dashv\textdashv`  
 20164 `\let\ndashv\textndashv`  
 20165 `\let\top\texttop`  
 20166 `\let\ndownvdash\textndownvdash`  
 20167 `\let\bot\textbot`  
 20168 `\let\nupvdash\textnupvdash`  
 20169 `\let\vDash\textvDash`  
 20170 `\let\VDash\textVDash`  
 20171 `\let\Vvdash\textVvdash`  
 20172 `\let\NVdash\textNVdash`  
 20173 `\let\VDash\textVDash`  
 20174 `\let\Nvdash\textNvdash`  
 20175 `\let\NVDash\textNVDash`  
 20176 `\let\NVdash\textNVdash`  
 20177 `\let\NVDash\textNVDash`  
 20178 `\let\lhd\textlhd`  
 20179 `\let\rhd\textrhd`  
 20180 `\let\unlhd\textunlhd`  
 20181 `\let\unrhd\textunrhd`  
 20182 `\let\multimapdotbothA\textmultimapdotbothA`  
 20183 `\let\multimapdotbothB\textmultimapdotbothB`  
 20184 `\let\multimap\textmultimap`  
 20185 `\let\veebar\textveebar`  
 20186 `\let\barwedge\textbarwedge`  
 20187 `\let\star\textstar`  
 20188 `\let\divideontimes\textdivideontimes`  
 20189 `\let\bowtie\textbowtie`  
 20190 `\let\ltimes\textltimes`  
 20191 `\let\rtimes\textrtimes`  
 20192 `\let\leftthreetimes\textleftthreetimes`  
 20193 `\let\rightthreetimes\textrightthreetimes`  
 20194 `\let\backsimeq\textbacksimeq`  
 20195 `\let\Nbacksimeq\textNbacksimeq`  
 20196 `\let\curlyvee\textcurlyvee`  
 20197 `\let\curlywedge\textcurlywedge`

20198 \let\Subset\textSubset  
 20199 \let\nSubset\textnSubset  
 20200 \let\Supset\textSupset  
 20201 \let\nSupset\textnSupset  
 20202 \let\Cap\textCap  
 20203 \let\Cup\textCup  
 20204 \let\pitchfork\textpitchfork  
 20205 \let\lessdot\textlessdot  
 20206 \let\gtrdot\textgtrdot  
 20207 \let\lll\textlll  
 20208 \let\ggg\textggg  
 20209 \let\lesseqgtr\textlesseqgtr  
 20210 \let\gtreqless\textgtreqless  
 20211 \let\curlyeqprec\textcurlyeqprec  
 20212 \let\ncurlyeqprec\textncurlyeqprec  
 20213 \let\curlyeqsucc\textcurlyeqsucc  
 20214 \let\ncurlyeqsucc\textncurlyeqsucc  
 20215 \let\preccurlyeq\textpreccurlyeq  
 20216 \let\nsuccurlyeq\textnsuccurlyeq  
 20217 \let\nqsubseteq\textnqsubseteq  
 20218 \let\nqsupseteq\textnqsupseteq  
 20219 \let\sqsubsetneq\textsqsubsetneq  
 20220 \let\sqsupsetneq\textsqsupsetneq  
 20221 \let\lnsim\textlnsim  
 20222 \let\gnsim\textgnsim  
 20223 \let\precnsim\textprecnsim  
 20224 \let\succnsim\textsuccnsim  
 20225 \let\ntriangleleft\textntriangleleft  
 20226 \let\ntriangleright\textntriangleright  
 20227 \let\ntrianglelefteq\textntrianglelefteq  
 20228 \let\ntrianglerighteq\textntrianglerighteq  
 20229 \let\vdots\textvdots  
 20230 \let\cdots\textcdots  
 20231 \let\udots\textudots  
 20232 \let\ddots\textddots  
 20233 \let\barin\textbarin  
 20234 \let\diameter\textdiameter  
 20235 \let\backneg\textbackneg  
 20236 \let\wasylozenge\textwasylozenge  
 20237 \let\invbackneg\textinvbackneg  
 20238 \let\clock\textclock  
 20239 \let\ulcorner\textulcorner  
 20240 \let\urcorner\texturcorner  
 20241 \let\llcorner\textllcorner  
 20242 \let\lrcorner\textlrcorner  
 20243 \let\frown\textfrown  
 20244 \let\smile\textsmile  
 20245 \let\Keyboard\textKeyboard  
 20246 \let\langle\textlangle  
 20247 \let\rangle\textrangle  
 20248 \let\APLinv\textAPLinv  
 20249 \let\Tumbler\textTumbler  
 20250 \let\notslash\textnotslash  
 20251 \let\notbackslash\textnotbackslash

20252 \let\boxbackslash\textboxbackslash  
20253 \let\APLleftarrowbox\textAPLleftarrowbox  
20254 \let\APLrightarrowbox\textAPLrightarrowbox  
20255 \let\APLuparrowbox\textAPLuparrowbox  
20256 \let\APLdownarrowbox\textAPLdownarrowbox  
20257 \let\APLinput\textAPLinput  
20258 \let\Request\textRequest  
20259 \let\Beam\textBeam  
20260 \let\hexagon\texthexagon  
20261 \let\APLbox\textAPLbox  
20262 \let\ForwardToIndex\textForwardToIndex  
20263 \let\RewindToIndex\textRewindToIndex  
20264 \let\bbslash\textbbslash  
20265 \let\CircledA\textCircledA  
20266 \let\CleaningF\textCleaningF  
20267 \let\CleaningFF\textCleaningFF  
20268 \let\CleaningP\textCleaningP  
20269 \let\CleaningPP\textCleaningPP  
20270 \let\CuttingLine\textCuttingLine  
20271 \let\UParrow\textUParrow  
20272 \let\bigtriangleup\textbigtriangleup  
20273 \let\Forward\textForward  
20274 \let\triangleright\texttriangleright  
20275 \let\RHD\textRHD  
20276 \let\DOWNarrow\textDOWNarrow  
20277 \let\bigtriangledown\textbigtriangledown  
20278 \let\Rewind\textRewind  
20279 \let\triangleleft\texttriangleleft  
20280 \let\LHD\textLHD  
20281 \let\diamond\textdiamond  
20282 \let\lozenge\textlozenge  
20283 \let\LEFTCIRCLE\textLEFTCIRCLE  
20284 \let\RIGHTCIRCLE\textRIGHTCIRCLE  
20285 \let\openbullet\textopenbullet  
20286 \let\boxbar\textboxbar  
20287 \let\bigcircle\textbigcircle  
20288 \let\Cloud\textCloud  
20289 \let\FiveStar\textFiveStar  
20290 \let\FiveStarOpen\textFiveStarOpen  
20291 \let\Phone\textPhone  
20292 \let\boxempty\textboxempty  
20293 \let\Checkedbox\textCheckedbox  
20294 \let\Crossedbox\textCrossedbox  
20295 \let\Coffeecup\textCoffeecup  
20296 \let\HandCuffLeft\textHandCuffLeft  
20297 \let\HandCuffRight\textHandCuffRight  
20298 \let\HandLeft\textHandLeft  
20299 \let\HandRight\textHandRight  
20300 \let\Radioactivity\textRadioactivity  
20301 \let\Biohazard\textBiohazard  
20302 \let\Ankh\textAnkh  
20303 \let\YinYang\textYinYang  
20304 \let\frownie\textfrownie  
20305 \let\smiley\textsmiley

20306 \let\blacksmiley\textblacksmiley  
20307 \let\sun\textsun  
20308 \let\leftmoon\textleftmoon  
20309 \let\rightmoon\textrightmoon  
20310 \let\mercury\textmercury  
20311 \let\earth\textearth  
20312 \let\male\textmale  
20313 \let\jupiter\textjupiter  
20314 \let\saturn\textsaturn  
20315 \let\uranus\texturanus  
20316 \let\neptune\textneptune  
20317 \let\pluto\textpluto  
20318 \let\aries\textaries  
20319 \let\taurus\texttaurus  
20320 \let\gemini\textgemini  
20321 \let\cancer\textcancer  
20322 \let\leo\textleo  
20323 \let\virgo\textvirgo  
20324 \let\libra\textlibra  
20325 \let\scorpio\textscorpio  
20326 \let\sagittarius\textsagittarius  
20327 \let\capricornus\textcapricornus  
20328 \let\aquarius\textaquarius  
20329 \let\pisces\textpisces  
20330 \let\quarternote\textquarternote  
20331 \let\twonotes\texttwonotes  
20332 \let\sixteenthnote\textsixteenthnote  
20333 \let\flat\textflat  
20334 \let\natural\textnatural  
20335 \let\sharp\textsharp  
20336 \let\recycle\textrecycle  
20337 \let\Wheelchair\textWheelchair  
20338 \let\Flag\textFlag  
20339 \let\MineSign\textMineSign  
20340 \let\dsmilitary\textdsmilitary  
20341 \let\dsmedical\textdsmedical  
20342 \let\dsjuridical\textdsjuridical  
20343 \let\dschemical\textdschemical  
20344 \let\dsbiological\textdsbiological  
20345 \let\dscommercial\textdscommercial  
20346 \let\manstar\textmanstar  
20347 \let\danger\textdanger  
20348 \let\FemaleFemale\textFemaleFemale  
20349 \let\MaleMale\textMaleMale  
20350 \let\FemaleMale\textFemaleMale  
20351 \let\Hermaphrodite\textHermaphrodite  
20352 \let\Neutral\textNeutral  
20353 \let\hexstar\texthexstar  
20354 \let\SunCload\textSunCload  
20355 \let\Rain\textRain  
20356 \let\noway\textnoway  
20357 \let\Mountain\textMountain  
20358 \let\Tent\textTent  
20359 \let\ScissorRight\textScissorRight

20360 \let\ScissorRightBrokenTop\textScissorRightBrokenTop  
20361 \let\ScissorHollowRight\textScissorHollowRight  
20362 \let\PhoneHandset\textPhoneHandset  
20363 \let\Tape\textTape  
20364 \let\Plane\textPlane  
20365 \let\Envelope\textEnvelope  
20366 \let\Peace\textPeace  
20367 \let\WritingHand\textWritingHand  
20368 \let\PencilRightDown\textPencilRightDown  
20369 \let\PencilRight\textPencilRight  
20370 \let\PencilRightUp\textPencilRightUp  
20371 \let\NibRight\textNibRight  
20372 \let\NibSolidRight\textNibSolidRight  
20373 \let\Checkmark\textCheckmark  
20374 \let\CheckmarkBold\textCheckmarkBold  
20375 \let\XSolid\textXSolid  
20376 \let\XSolidBold\textXSolidBold  
20377 \let\XSolidBrush\textXSolidBrush  
20378 \let\PlusOutline\textPlusOutline  
20379 \let\Plus\textPlus  
20380 \let\PlusThinCenterOpen\textPlusThinCenterOpen  
20381 \let\PlusCenterOpen\textPlusCenterOpen  
20382 \let\Cross\textCross  
20383 \let\CrossOpenShadow\textCrossOpenShadow  
20384 \let\CrossOutline\textCrossOutline  
20385 \let\CrossMaltese\textCrossMaltese  
20386 \let\DavidStar\textDavidStar  
20387 \let\FourAsterisk\textFourAsterisk  
20388 \let\JackStar\textJackStar  
20389 \let\JackStarBold\textJackStarBold  
20390 \let\CloverTips\textCloverTips  
20391 \let\FourStar\textFourStar  
20392 \let\FourStarOpen\textFourStarOpen  
20393 \let\FiveStarOpenCircled\textFiveStarOpenCircled  
20394 \let\FiveStarCenterOpen\textFiveStarCenterOpen  
20395 \let\FiveStarOpenDotted\textFiveStarOpenDotted  
20396 \let\FiveStarOutline\textFiveStarOutline  
20397 \let\FiveStarOutlineHeavy\textFiveStarOutlineHeavy  
20398 \let\FiveStarConvex\textFiveStarConvex  
20399 \let\FiveStarShadow\textFiveStarShadow  
20400 \let\AsteriskBold\textAsteriskBold  
20401 \let\AsteriskCenterOpen\textAsteriskCenterOpen  
20402 \let\EightStarTaper\textEightStarTaper  
20403 \let\EightStarConvex\textEightStarConvex  
20404 \let\SixStar\textSixStar  
20405 \let\EightStar\textEightStar  
20406 \let\EightStarBold\textEightStarBold  
20407 \let\TwelveStar\textTwelveStar  
20408 \let\SixteenStarLight\textSixteenStarLight  
20409 \let\SixFlowerPetalRemoved\textSixFlowerPetalRemoved  
20410 \let\SixFlowerOpenCenter\textSixFlowerOpenCenter  
20411 \let\Asterisk\textAsterisk  
20412 \let\SixFlowerAlternate\textSixFlowerAlternate  
20413 \let\FiveFlowerPetal\textFiveFlowerPetal



20414 `\let\FiveFlowerOpen\textFiveFlowerOpen`  
20415 `\let\EightFlowerPetal\textEightFlowerPetal`  
20416 `\let\SunshineOpenCircled\textSunshineOpenCircled`  
20417 `\let\SixFlowerAltPetal\textSixFlowerAltPetal`  
20418 `\let\SnowflakeChevron\textSnowflakeChevron`  
20419 `\let\Snowflake\textSnowflake`  
20420 `\let\SnowflakeChevronBold\textSnowflakeChevronBold`  
20421 `\let\Sparkle\textSparkle`  
20422 `\let\SparkleBold\textSparkleBold`  
20423 `\let\AsteriskRoundedEnds\textAsteriskRoundedEnds`  
20424 `\let\EightFlowerPetalRemoved\textEightFlowerPetalRemoved`  
20425 `\let\EightAsterisk\textEightAsterisk`  
20426 `\let\CircleShadow\textCircleShadow`  
20427 `\let\SquareShadowBottomRight\textSquareShadowBottomRight`  
20428 `\let\SquareTopRight\textSquareTopRight`  
20429 `\let\SquareCastShadowBottomRight\textSquareCastShadowBottomRight`  
20430 `\let\SquareCastShadowTopRight\textSquareCastShadowTopRight`  
20431 `\let\DiamondSolid\textDiamondSolid`  
20432 `\let\RectangleThin\textRectangleThin`  
20433 `\let\Rectangle\textRectangle`  
20434 `\let\RectangleBold\textRectangleBold`  
20435 `\let\perp\textperp`  
20436 `\let\notperp\textnotperp`  
20437 `\let\veedot\textveedot`  
20438 `\let\wedgedot\textwedgedot`  
20439 `\let\leftspoon\textleftspoon`  
20440 `\let\lbrackdbl\textlbrackdbl`  
20441 `\let\rbrackdbl\textrbrackdbl`  
20442 `\let\circlearrowleft\textcirclearrowleft`  
20443 `\let\circlearrowright\textcirclearrowright`  
20444 `\let\longleftarrow\textlongleftarrow`  
20445 `\let\longrightarrow\textlongrightarrow`  
20446 `\let\longleftrightarrow\textlongleftrightarrow`  
20447 `\let\Longleftarrow\textLongleftarrow`  
20448 `\let\Longrightarrow\textLongrightarrow`  
20449 `\let\Longleftrightarrow\textLongleftrightarrow`  
20450 `\let\longmapsto\textlongmapsto`  
20451 `\let\Longmapsfrom\textLongmapsfrom`  
20452 `\let\Longmapsto\textLongmapsto`  
20453 `\let\nwsearrow\textnwsearrow`  
20454 `\let\neswarrow\textneswarrow`  
20455 `\let\hookrightarrow\texthookrightarrow`  
20456 `\let\rhookrightarrow\text\rhookrightarrow`  
20457 `\let\hooksearrow\texthooksearrow`  
20458 `\let\rhooksearrow\text\rhooksearrow`  
20459 `\let\leadsto\textleadsto`  
20460 `\let\rcurvearrowne\textrcurvearrowne`  
20461 `\let\lcurvearrowse\textlcurvearrowse`  
20462 `\let\lcurvearrowsw\textlcurvearrowsw`  
20463 `\let\rcurvearrowse\textrcurvearrowse`  
20464 `\let\lcurvearrowdown\textlcurvearrowdown`  
20465 `\let\rcurvearrowdown\textrcurvearrowdown`  
20466 `\let\rcurvearrowleft\textrcurvearrowleft`  
20467 `\let\rcurvearrowright\textrcurvearrowright`

20468 `\let\leftrightharpoon\textleftrightharpoon`  
20469 `\let\rightleftharpoon\textrightleftharpoon`  
20470 `\let\updownharpoonrightleft\textupdownharpoonrightleft`  
20471 `\let\updownharpoonleftright\textupdownharpoonleftright`  
20472 `\let\leftleftharpoons\textleftleftharpoons`  
20473 `\let\upupharpoons\textupupharpoons`  
20474 `\let\righttrightharpoons\textrighttrightharpoons`  
20475 `\let\downdownharpoons\textdowndownharpoons`  
20476 `\let\leftbarharpoon\textleftbarharpoon`  
20477 `\let\barleftharpoon\textbarleftharpoon`  
20478 `\let\rightbarharpoon\textrightbarharpoon`  
20479 `\let\barrightharpoon\textbarrightharpoon`  
20480 `\let\updownharpoons\textupdownharpoons`  
20481 `\let\downupharpoons\textdownupharpoons`  
20482 `\let\moo\textmoo`  
20483 `\let\llparenthesis\textllparenthesis`  
20484 `\let\rrparenthesis\textrrparenthesis`  
20485 `\let\invdiameter\textinvdiameter`  
20486 `\let\obar\textobar`  
20487 `\let\obslash\textobslash`  
20488 `\let\obot\textobot`  
20489 `\let\NoChemicalCleaning\textNoChemicalCleaning`  
20490 `\let\olessthan\textolessthan`  
20491 `\let\ogreaterthan\textogreaterthan`  
20492 `\let\boxslash\textboxslash`  
20493 `\let\boxbslash\textboxbslash`  
20494 `\let\boxast\textboxast`  
20495 `\let\boxcircle\textboxcircle`  
20496 `\let\boxbox\textboxbox`  
20497 `\let\Valve\textValve`  
20498 `\let\multimapboth\textmultimapboth`  
20499 `\let\shuffle\textshuffle`  
20500 `\let\uplus\textuplus`  
20501 `\let\bigdoublewedge\textbigdoublewedge`  
20502 `\let\bigdoublevee\textbigdoublevee`  
20503 `\let\Join\textJoin`  
20504 `\let\fatsemi\textfatsemi`  
20505 `\let\cirplus\textcirplus`  
20506 `\let\minusdot\textminusdot`  
20507 `\let\dottimes\textdottimes`  
20508 `\let\dtimes\textdtimes`  
20509 `\let\odiv\textodiv`  
20510 `\let\invneg\textinvneg`  
20511 `\let\sqdoublecap\textsqdoublecap`  
20512 `\let\capdot\textcapdot`  
20513 `\let\sqdoublecup\textsqdoublecup`  
20514 `\let\doublewedge\textdoublewedge`  
20515 `\let\doublevee\textdoublevee`  
20516 `\let\doublebarwedge\textdoublebarwedge`  
20517 `\let\veedoublebar\textveedoublebar`  
20518 `\let\eqdot\texteqdot`  
20519 `\let\neqdot\textneqdot`  
20520 `\let\coloncolonequals\textcoloncolonequals`  
20521 `\let\leqslant\textleqslant`

20522 `\let\nleqslant\textnleqslant`  
 20523 `\let\geqslant\textgeqslant`  
 20524 `\let\ngeqslant\textngeqslant`  
 20525 `\let\lessapprox\textlessapprox`  
 20526 `\let\nlessapprox\textnlessapprox`  
 20527 `\let\gtrapprox\textgtrapprox`  
 20528 `\let\ngtrapprox\textngtrapprox`  
 20529 `\let\lneq\textlneq`  
 20530 `\let\gneq\textgneq`  
 20531 `\let\lnapprox\textlnapprox`  
 20532 `\let\gnapprox\textgnapprox`  
 20533 `\let\lesseqgtr\textlesseqgtr`  
 20534 `\let\gtreqless\textgtreqless`  
 20535 `\let\eqslantless\texteqslantless`  
 20536 `\let\eqslantgtr\texteqslantgtr`  
 20537 `\let\leftslice\textleftslice`  
 20538 `\let\rightslice\textrightslice`  
 20539 `\let\preceq\textpreceq`  
 20540 `\let\npreceq\textnpreceq`  
 20541 `\let\succeq\textsucceq`  
 20542 `\let\nsucceq\textnsucceq`  
 20543 `\let\precneq\textprecneq`  
 20544 `\let\succneq\textsuccneq`  
 20545 `\let\preceqq\textpreceqq`  
 20546 `\let\npreceqq\textnpreceqq`  
 20547 `\let\succeqq\textsucceqq`  
 20548 `\let\nsucceqq\textnsucceqq`  
 20549 `\let\precneqq\textprecneqq`  
 20550 `\let\succneqq\textsuccneqq`  
 20551 `\let\precapprox\textprecapprox`  
 20552 `\let\nprecapprox\textnprecapprox`  
 20553 `\let\succapprox\textsuccapprox`  
 20554 `\let\nsuccapprox\textnsuccapprox`  
 20555 `\let\precnapprox\textprecnapprox`  
 20556 `\let\succnapprox\textsuccnapprox`  
 20557 `\let\subseteqq\textsubseteqq`  
 20558 `\let\nsubseteqq\textnsubseteqq`  
 20559 `\let\supseteqq\textsupseteqq`  
 20560 `\let\nsupseteqq\textnsupseteqq`  
 20561 `\let\dashV\textdashV`  
 20562 `\let\ndashV\textndashV`  
 20563 `\let\Dashv\textDashv`  
 20564 `\let\NDashv\textNDashv`  
 20565 `\let\DashV\textDashV`  
 20566 `\let\NDashV\textNDashV`  
 20567 `\let\downmodels\textdownmodels`  
 20568 `\let\ndownmodels\textndownmodels`  
 20569 `\let\upmodels\textupmodels`  
 20570 `\let\nupmodels\textnupmodels`  
 20571 `\let\upspoon\textupspoon`  
 20572 `\let\interleave\textinterleave`  
 20573 `\let\slash\textslash`  
 20574 `\let\pentagon\textpentagon`  
 20575 `\let\varhexagon\textvarhexagon`

20576 \let\jinferior\textjinferior  
20577 \let\slashdiv\textslashdiv  
20578 \let\fivedots\textfivedots  
20579 \let\oo\textoo  
20580 \let\GaPa\textGaPa  
20581 \let\HaPa\textHaPa  
20582 \let\ViPa\textViPa  
20583 \let\AcPa\textAcPa  
20584 \let\SePa\textSePa  
20585 \let\ZwPa\textZwPa  
20586 \let\fullnote\textfullnote  
20587 \let\halfnote\texthalfnote  
20588 \let\Vier\textVier  
20589 \let\Acht\textAcht  
20590 \let\Sech\textSech  
20591 \let\Zwdr\textZwdr  
20592 \let\Mundus\textMundus  
20593 \let\Moon\textMoon  
20594 \let\ManFace\textManFace  
20595 \let\WomanFace\textWomanFace  
20596 \let\Fax\textFax  
20597 \let\Fire\textFire  
20598 \let\Bicycle\textBicycle  
20599 \let\Gentsroom\textGentsroom  
20600 \let\Ladiesroom\textLadiesroom  
20601 \let\ccnc\textccnc  
20602 \let\ccsa\textccsa  
20603 \let\Info\textInfo  
20604 \let\CESign\textCESign  
20605 \let\neg\textneg  
20606 \let\times\texttimes  
20607 \let\div\textdiv  
20608 \let\pm\textpm  
20609 \let\cdot\textcdot  
20610 }% \psdmapshortnames  
20611 \newcommand\*{\psdaliasnames}{%  
20612 \let\epsdice\HyPsd@DieFace  
20613 \let\fcdice\HyPsd@DieFace  
20614 \let\MoonPha\HyPsd@MoonPha  
20615 \let\mathdollar\textdollar  
20616 \let\EyesDollar\textdollar  
20617 \let\binampersand\textampersand  
20618 \let\with\textampersand  
20619 \let\mathunderscore\textunderscore  
20620 \let\textvertline\textbar  
20621 \let\mathsterling\textsterling  
20622 \let\pounds\textsterling  
20623 \let\brokenvert\textbrokenbar  
20624 \let\mathsection\textsection  
20625 \let\S\textsection  
20626 \let\mathparagraph\textparagraph  
20627 \let\MultiplicationDot\textperiodcentered  
20628 \let\Squaredot\textperiodcentered  
20629 \let\vartimes\textmultiply

20630 \let\MVMultiplication\textmultiply  
20631 \let\eth\dh  
20632 \let\crossd\textcrd  
20633 \let\textbard\textcrd  
20634 \let\bard\textcrd  
20635 \let\textcrh\texthbar  
20636 \let\crossh\texthbar  
20637 \let\planck\texthbar  
20638 \let\eng\ng  
20639 \let\engma\ng  
20640 \let\crossb\textcrb  
20641 \let\textbarb\textcrb  
20642 \let\barb\textcrb  
20643 \let\Florin\textflorin  
20644 \let\hv\texthvlig  
20645 \let\hausak\texthtk  
20646 \let\crossnilambda\textcrlambda  
20647 \let\barlambda\textcrlambda  
20648 \let\lambdabar\textcrlambda  
20649 \let\lambdash\textcrlambda  
20650 \let\textnrleg\textPUnleg  
20651 \let\textpipevar\textpipe  
20652 \let\textdoublepipevar\textdoublepipe  
20653 \let\textdoublebarpipevar\textdoublebarpipe  
20654 \let\textcrg\textgslash  
20655 \let\textdblig\textPUdblig  
20656 \let\textqplig\textPUqplig  
20657 \let\textcentoldstyle\textslashc  
20658 \let\textbarc\textslashc  
20659 \let\inva\textturna  
20660 \let\vara\textscripta  
20661 \let\invscripta\textturnscripta  
20662 \let\rotvara\textturnscripta  
20663 \let\hookb\texthtb  
20664 \let\hausab\texthtb  
20665 \let\varopeno\textopeno  
20666 \let\curlyc\textctc  
20667 \let\taild\textrtaild  
20668 \let\hookd\texthtd  
20669 \let\hausad\texthtd  
20670 \let\er\textrhookschwa  
20671 \let\epsi\textniepsilon  
20672 \let\hookrevepsilon\textrhookrevepsilon  
20673 \let\closedrevepsilon\textcloserevepsilon  
20674 \let\barj\textbardotlessj  
20675 \let\hookg\texthtg  
20676 \let\varg\textscriptg  
20677 \let\vod\textipagamma  
20678 \let\invh\textturnh  
20679 \let\udesc\textturnh  
20680 \let\hookh\texthth  
20681 \let\voicedh\texthth  
20682 \let\hookheng\texththeng  
20683 \let\ibar\textbari

20684 \let\vari\textniota  
 20685 \let\tildel\texttilde  
 20686 \let\latfric\textbeltl  
 20687 \let\tail\textrtail  
 20688 \let\lz\textlyoghlig  
 20689 \let\invm\textturnm  
 20690 \let\rotm\textturnm  
 20691 \let\legm\textturnmleg  
 20692 \let\labdentalnas\textltailm  
 20693 \let\emgma\textltailm  
 20694 \let\nj\textltailn  
 20695 \let\enya\textltailn  
 20696 \let\tain\textrtainn  
 20697 \let\closedniomega\textcloseomega  
 20698 \let\varomega\textcloseomega  
 20699 \let\invr\textturnr  
 20700 \let\rotr\textturnr  
 20701 \let\invlegr\textturnlonglegr  
 20702 \let\tailinvr\textturnrrtail  
 20703 \let\legr\textlonglegr  
 20704 \let\tair\textrtair  
 20705 \let\flapr\textfishhookr  
 20706 \let\flap\textfishhookr  
 20707 \let\tails\textrtails  
 20708 \let\curlyesh\textctesh  
 20709 \let\clickt\textturnt  
 20710 \let\tailt\textrtailt  
 20711 \let\ubar\textbaru  
 20712 \let\rotOmega\textniupsilon  
 20713 \let\invv\textturnv  
 20714 \let\pwedge\textturnv  
 20715 \let\invw\textturnw  
 20716 \let\rotw\textturnw  
 20717 \let\invy\textturny  
 20718 \let\roty\textturny  
 20719 \let\tailz\textrtailz  
 20720 \let\curlyz\textctz  
 20721 \let\curlyyogh\textctyogh  
 20722 \let\ejective\textglotstop  
 20723 \let\glottal\textglotstop  
 20724 \let\reveject\textrevglotstop  
 20725 \let\clickc\textstretchc  
 20726 \let\textstretchcvar\textstretchc  
 20727 \let\clickb\textbullseye  
 20728 \let\textObullseye\textbullseye  
 20729 \let\textctjvar\textctj  
 20730 \let\textturnsck\textturnk  
 20731 \let\dz\textdzlig  
 20732 \let\tesh\textteshlig  
 20733 \let\digamma\textdigammagreek  
 20734 \let\hardsign\cyrrhdsn  
 20735 \let\softsign\cyrsftsn  
 20736 \let\hebsin\hebshin  
 20737 \let\textsck\textPUscck

20738 \let\textscm\textPUscm  
20739 \let\textscp\textPUscp  
20740 \let\textrevscr\textPUrevscr  
20741 \let\textrhooka\textPURhooka  
20742 \let\textrhooke\textPURhooke  
20743 \let\textrhookepsilon\textPURhookepsilon  
20744 \let\texthookopeno\textPURhookopeno  
20745 \let\textdoublevertline\textbardbl  
20746 \let\dag\textdagger  
20747 \let\ddagger\textdaggerdbl  
20748 \let\ddag\textdaggerdbl  
20749 \let\mathellipsis\textellipsis  
20750 \let\EurDig\texteuero  
20751 \let\EURdig\texteuero  
20752 \let\EurHv\texteuero  
20753 \let\EURhv\texteuero  
20754 \let\EurCr\texteuero  
20755 \let\EURcr\texteuero  
20756 \let\EurTm\texteuero  
20757 \let\EURtm\texteuero  
20758 \let\Eur\texteuero  
20759 \let\Denarius\textDeleatur  
20760 \let\agemO\textmho  
20761 \let\EstimatedSign\textestimated  
20762 \let\Ecommerce\textestimated  
20763 \let\bindnasrepma\textinvamp  
20764 \let\parr\textinvamp  
20765 \let\MVRightArrow\textrightarrow  
20766 \let\MVRightarrow\textrightarrow  
20767 \let\MVArrowDown\textdownarrow  
20768 \let\Force\textdownarrow  
20769 \let\textglobrise\textnearrow  
20770 \let\textglobfall\textsearrow  
20771 \let\Lightning\textlightning  
20772 \let\Conclusion\textrightarrow  
20773 \let\dashedleftarrow\textdashleftarrow  
20774 \let\dashedrightarrow\textdashrightarrow  
20775 \let\varnothing\textemptyset  
20776 \let\owns\textni  
20777 \let\notni\textnotowner  
20778 \let\varprop\textpropto  
20779 \let\varangle\textsphericalangle  
20780 \let\AngleSign\textsphericalangle  
20781 \let\AngleSign\textsphericalangle  
20782 \let\notdivides\textnmid  
20783 \let\varowedge\textowedge  
20784 \let\varovee\textovee  
20785 \let\varint\textint  
20786 \let\varoint\textoint  
20787 \let\downtherefore\textbecause  
20788 \let\textdotdiv\textdotminus  
20789 \let\AC\textsim  
20790 \let\wreath\textwr  
20791 \let\nthickapprox\textnapprox

20792 \let\VHF\texttriplesim  
20793 \let\notasymp\textnasymp  
20794 \let\Doteq\textdoteqdot  
20795 \let\corresponds\texthateq  
20796 \let\Corresponds\texthateq  
20797 \let\nequal\textneq  
20798 \let\Congruent\textequiv  
20799 \let\NotCongruent\textnequiv  
20800 \let\notequiv\textnequiv  
20801 \let\LessOrEqual\textleq  
20802 \let\LargerOrEqual\textgeq  
20803 \let\apprle\textlessim  
20804 \let\apprge\textgtrsim  
20805 \let\varoplus\textoplus  
20806 \let\varominus\textominus  
20807 \let\varotimes\textotimes  
20808 \let\varoslash\textoslash  
20809 \let\varodot\textodot  
20810 \let\ocirc\textcircledcirc  
20811 \let\varocircle\textcircledcirc  
20812 \let\varoast\textcircledast  
20813 \let\oasterisk\textcircledast  
20814 \let\rightvdash\textvdash  
20815 \let\leftvdash\textdashv  
20816 \let\leftvdash\textndashv  
20817 \let\downvdash\texttop  
20818 \let\upvdash\textbot  
20819 \let\nperp\textnupvdash  
20820 \let\models\textvDash  
20821 \let\rightmodels\textvDash  
20822 \let\rightVdash\textVdash  
20823 \let\rightModels\textVDash  
20824 \let\rightvdash\textnvdash  
20825 \let\rightmodels\textnvDash  
20826 \let\nmodels\textnvDash  
20827 \let\rightVdash\textnVdash  
20828 \let\rightModels\textnVDash  
20829 \let\lessclosed\textlhd  
20830 \let\gtrclosed\textrhd  
20831 \let\leqclosed\textunlhd  
20832 \let\trianglelefteq\textunlhd  
20833 \let\geqclosed\textunrhd  
20834 \let\trianglerighteq\textunrhd  
20835 \let\Bowtie\textbowtie  
20836 \let\varcurlyvee\textcurlyvee  
20837 \let\varcurlywedge\textcurlywedge  
20838 \let\doublecap\textCap  
20839 \let\doublecup\textCup  
20840 \let\varsqsubsetneq\textsqssubsetneq  
20841 \let\varsqsupsetneq\textsqsupsetneq  
20842 \let\nlessclosed\textntriangleleft  
20843 \let\ngtrclosed\textntriangleright  
20844 \let\Clocklogo\textclock  
20845 \let\ClockLogo\textclock



20846 \let\baro\textstmaryrdbaro  
20847 \let\varparallelinv\textbbslash  
20848 \let\CleaningA\textCircledA  
20849 \let\Kutline\textCuttingLine  
20850 \let\CutLine\textCuttingLine  
20851 \let\Cutline\textCuttingLine  
20852 \let\MoveUp\textUParrow  
20853 \let\APLup\textbigtriangleup  
20854 \let\Bleech\textbigtriangleup  
20855 \let\MoveDown\textDOWNarrow  
20856 \let\APLdown\textbigtriangledown  
20857 \let\Diamond\textdiamond  
20858 \let\varbigcirc\textbigcircle  
20859 \let\Telefon\textPhone  
20860 \let\Box\textboxempty  
20861 \let\CheckedBox\textCheckedbox  
20862 \let\XBox\textCrossedbox  
20863 \let\CrossedBox\textCrossedbox  
20864 \let\rightpointleft\textHandLeft  
20865 \let\leftpointright\textHandRight  
20866 \let\PointingHand\textHandRight  
20867 \let\Pointinghand\textHandRight  
20868 \let\Radiation\textRadioactivity  
20869 \let\Yinyang\textYinYang  
20870 \let\YingYang\textYinYang  
20871 \let\Yingyang\textYinYang  
20872 \let\Frowny\textfrownie  
20873 \let\Smiley\textsmiley  
20874 \let\Sun\textsun  
20875 \let\Mercury\textmercury  
20876 \let\textfemale\textPUfemale  
20877 \let\female\textPUfemale  
20878 \let\venus\textPUfemale  
20879 \let\Venus\textPUfemale  
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20886 \let\Saturn\textsaturn  
20887 \let\Uranus\texturanus  
20888 \let\Neptune\textneptune  
20889 \let\Pluto\textpluto  
20890 \let\Aries\textaries  
20891 \let\Taurus\texttaurus  
20892 \let\Gemini\textgemini  
20893 \let\Cancer\textcancer  
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20896 \let\Libra\textlibra  
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20899 \let\Capricorn\textcapricornus

20900 \let\Aquarius\textaquarius  
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20903 \let\Heart\textheartsuitwhite  
20904 \let\heartsuit\textheartsuitwhite  
20905 \let\diamondsuit\textdiamondsuitwhite  
20906 \let\clubsuit\textclubsuitblack  
20907 \let\eighthnote\textmusicalnote  
20908 \let\Recycling\textrecycle  
20909 \let\VarFlag\textFlag  
20910 \let\textxswup\textdsmilitary  
20911 \let\textuncrfemale\textPUuncrfemale  
20912 \let\Football\textSoccerBall  
20913 \let\CutLeft\textScissorRightBrokenBottom  
20914 \let\Cutright\textScissorRightBrokenBottom  
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20925 \let\LeftTorque\textrcurvearrowdown  
20926 \let\Lefttorque\textrcurvearrowdown  
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20957 \typeout{}
20958 \begin{document}
20959 \end{document}
20960 </check>
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