

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

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

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## 1 Documentation overview for hyperref

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

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

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

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

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

Source code documentation:

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

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

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

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### 3 File hycheck.tex

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

```
1 <*check>
2 \documentclass{article}
3 \makeatletter
```

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

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

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

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

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

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

`\HyC@checkPackage`

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```



```

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

```

`\HyC@noValue`

```

85 \def\HyC@noValue{NoValue}

```

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

```

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

```

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

```

90 \newtoks\HyC@Toks

```

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

```

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

```

`\HyC@nc@opt` This macro scans the first optional argument of a  $\text{\LaTeX}$  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 `\cmd_` with an space at the end of the command name, defined by `\newcommand`. Therefore the further parsing is done by `\HyC@nc@opt` or `\HyC@nc@noopt` of the `\HyC@newcommand` chain.

```

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

```

```

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

\HyC@def The parameter text of \def or \edef is stored in the token register \HyC@Toks.
\HyC@edef 125 \def\HyC@def#1#{%
126 \HyC@Toks={#1}%
127 \HyC@nc@noopt
128 }
129 \let\HyC@edef\HyC@def

\HyC@doCheck This command performs the checks and prints the result.
130 \def\HyC@doCheck{%
131 \typeout{* Checking ` \HyC@string\HyC@cmd':}%
132 \HyC@checkItem{cmd}%
133 \HyC@checkItem{robustcmd}%
134 \HyC@checkItem{optcmd}%
135 \HyC@checkItem{robustoptcmd}%
136 \endgroup
137 }

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

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

\HyC@checkOk The result, if the check succeeds.
154 \def\HyC@checkOk#1{%
155 \typeout{\space\space` \HyC@string#1' ok.}%
156 }

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

```

```

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

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

```

## 4 Package options and setup

### 4.1 Save catcodes

There are many packages that change the standard catcodes.

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

```

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

```

\Hy@SetCatcodes

```

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

```

```

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

```

\Hy@RestoreCatcodes

```

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

```

231 \Hy@SetCatcodes

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

```

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

```

```

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

```

## 4.2 Version check

\Hy@VersionChecked

```

258 \chardef\Hy@VersionChecked=0 %

```

\Hy@VersionCheck

```

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

```

```

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

```

\Hy@@VersionCheck

```

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

```

### 4.3 Checks with regular expressions

```

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

```

## 4.4 Compatibility with format dumps

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

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

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

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

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

`\Hy@AtEndOfPackage`

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

`\Hy@AtBeginDocumentHook`

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

`\Hy@AtEndOfPackageHook`

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

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

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

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

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

## 4.5 Switches

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

```

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

```

Defaults for the switches are now set.

```

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

```



```

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

```

## 5 Common help macros

\Hy@StepCount

```

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

```

\Hy@GlobalStepCount

```

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

```

```

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

```

### 5.1 Macros for recursions

```

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

```

## 5.2 Babel's protection of shorthand characters

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

```

467 \def\Hy@safe@activetrue{\csname @safe@activetrue\endcsname}
468 \def\Hy@safe@activesfalse{\csname @safe@activesfalse\endcsname}

```

## 5.3 Coordinate transformations

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

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

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

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

Example (TeX):

```

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

```

`\hypercalcbp`

```

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

```

## 6 Dealing with PDF strings

The PDF string stuff done by Heiko Oberdiek.

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

### 6.1 Description of PDF strings

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

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

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

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

## 6.2 Definition of `\pdfstringdef`

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

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

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

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

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

`\MakeUppercaseUnsupportedInPdfStrings`  
`\MakeLowercaseUnsupportedInPdfStrings`

```

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

```

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

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

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

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

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

```
492 \begingroup
```

### 6.2.1 Preprocessing

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

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

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

```
493 \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.

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

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

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

```
497 \edef\3{\string\3}%
```

**Setting font encoding.** The unicode encoding uses `\8` and `\9` as marker for the higher byte. `\8` is an abbreviation for the higher bytes 0 until 7 that can be expressed by one digit. `\8` will be converted to `\00`. However `\9` only marks the next three digits as higher byte and will be removed later.

The encoding is set by `\enc@update` for optimizing reasons.

```
498 \ifHy@unicode
```

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

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

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

```

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

```

**Internal encoding commands.** `\pdfstringdef` interpretes text strings which are not allowed to contain mathematical stuff. The text glyph commands will produce a warning, if called in math mode. But this warning disturbs while expanding. Therefore we check for math mode here, before `\@inmathwarn` will be disabled (see below).

```

510 \@inmathwarn\pdfstringdef

```

If a glyph is used, that isn't in the PD1/PU encoding there will be an infinite error loop, because the NFSS encoding stuff have to be expanded unprotected (`\edef`), so that the assignments of `\@changed@cmd` don't take place. To patch this behaviour I only found `\@inmathwarn` as a usable hook. While an `\edef` a warning message by `\@inmathwarn` or `\TextSymbolUnavailable` cannot be give out, so `\@inmathwarn` should be disabled. And with the help of it the assignments in `\@changed@cmd` can easily be caught (see below).

```

511 \let\@inmathwarn\HyPsd@inmathwarn

```

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

```

512 \let\add@accent\HyPsd@add@accent

```

**Commands that don't use NFSS directly.** There are several commands that prints characters in the printable ASCII area that don't obey the NFSS, so they have to be redefined here. UF 29.09.2017: added a mapping for `\noboundary`, see issue #37 <https://github.com/latex3/hyperref/issues/37> No test for PU, if some definition for PD1 is added it will work too.

```

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

```

**Newline** `\newline` or `\\` do not work in bookmarks, in text annotations they should expand to `\r`. In pdf strings `\\` stands for a backslash. Therefore the

commands are disabled now. The user can redefine them for a result what he want:

**backslash:** `\pdfstringdefDisableCommands{\let\\\textbackslash}`

**new line:** `\pdfstringdefDisableCommands{\let\\\textCR}`

**disabled:** `\pdfstringdefDisableCommands{\let\\\empty}`

At any case, however, the optional argument or the star cannot be scanned in a 100% sure manner.

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

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

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

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

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

```

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

```

#### Package pifont.

```

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

```

#### Environments.

```

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

```

#### Package color.

```

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

```

#### Upper- and lowercase.

```

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

```

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

```

595 \ifHy@psdextra
596 \ifHy@unicode
597 \csname psdmapshortnames\endcsname
598 \csname psdaliasnames\endcsname
599 \fi
600 \fi

```

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

```
601 \let\foreignlanguage\@secondoftwo
602 \let\textlatin\@firstofone
603 \let\IfUndefined\language@group\@firstofone
604 \let\bbl@info\@gobble
605 \csname HyPsd@babel@\language@group\endcsname
606 }%

607 \let\@safe@activetrue\relax
608 \let\@safe@activesfalse\relax
```

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

```
609 \let\cyr\relax
```

**Package german.**

```
610 \let\glqq\textglqq
611 \let\grqq\textgrqq
612 \let\glq\textglq
613 \let\grq\textgrq
614 \let\flqq\textflqq
615 \let\frqq\textfrqq
616 \let\flq\textflq
617 \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}
```

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

**AMS classes.**

```
619 \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.

```
620 \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.

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



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

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

#### Miscellaneous commands.

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

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

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

#### Patch for cjk bookmarks.

```
636 \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`).

```
637 \Hy@pdfstringtrue
638 \pdfstringdefPreHook
```

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

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

#### Package `xspace`.

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

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

```
651 \let\discretionary\@gobbletwo
```

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

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

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

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

```
652 \def\@ifnextchar{\HyPsd@ifnextchar\@ifnextchar}%
```

```
653 \def\kernel@ifnextchar{\HyPsd@ifnextchar\kernel@ifnextchar}%
```

```
654 \def\new@ifnextchar{\HyPsd@ifnextchar\new@ifnextchar}%
```

```
655 \let\@protected@testopt\HyPsd@protected@testopt
```

Support for package 'xargs':

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

### 6.2.2 Expansion

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

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

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

**\edef** This version uses this standard form for expansion. It is stronger than L<sup>A</sup>T<sub>E</sub>X's `\protected@edef`. So the font encoding mechanism works and the glyph commands are converted to the correct tokens for PDF strings with the definitions of the PD1 encoding. Because the protecting mechanism of L<sup>A</sup>T<sub>E</sub>X doesn't work within an `\edef`, there are situations thinkable where code can break. For example, assignments and definitions aren't performed and so undefined command errors or argument parsing errors can occur. But this is only a compatibility problem with old texts. Now there are possibilities to write code that gives correct PDF strings (see `\texorpdfstring`). In the most cases unexpandable commands and tokens (math shift, grouping characters) remains. They don't cause an error like with `\csname`. However a PDF reader isn't T<sub>E</sub>X, so these tokens are viewed verbatim. So this

version detects them now, and removes them with an descriptive warning for the user. As additional features xspace support is possible and grouping characters can be used without problems, because they are removed silently.

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

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

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

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

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

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

### 6.2.3 Postprocessing

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

```
674 \ifx#1\@empty
675 \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 little 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.

```
676 \HyPsd@ProtectSpaces#1%
677 \let\HyPsd@String\@empty
678 \expandafter\HyPsd@RemoveBraces\expandafter{#1|}%
679 \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 `\HyPsd@CheckCatcodes` the command `\HyPsd@RemoveMask` is reused to remove the group protection character |. This character is needed to ensure that the string at least consists of one token if `\HyPsd@CheckCatcodes` is called.

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

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

```
688 \expandafter
689 \HyPsd@Subst\expandafter{\HyPsd@GLYPHERR}{\relax}#1%
```

```

690 \let\HyPsd@String\@empty
691 \expandafter\HyPsd@GlyphProcess#1\relax\@empty
692 \global\let#1\HyPsd@String

```

**Backslash.** The double backslash disturbs parsing octal sequences, for example in a string like `abc\\051` the sequence `\051` is detected although the second `\` belongs to the first backslash.

```

693 \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.

```

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

```

706 \iffHy@unicode
707 \HyPsd@StringSubst{\)}{\80\051}#1%
708 \HyPsd@Subst){\80\051}#1%
709 \let\HyPsd@empty\relax
710 \expandafter\HyPsd@StringSubst\cname 80\051\endcsname
711 {\HyPsd@empty\80\051}#1%
712 \else
713 \HyPsd@StringSubst{\)}{\051}#1%
714 \HyPsd@Subst){\051}#1%
715 \let\HyPsd@empty\relax
716 \HyPsd@StringSubst{\051}\HyPsd@empty\string\)}#1%
717 \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`.

```

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

```

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

```

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

```

733 \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.

```

734 \ifHy@unicode
735 \HyPsd@StringSubst{\textparenleft#1%
736 \HyPsd@Subst{\textparenleft#1%
737 \else
738 \HyPsd@StringSubst{\{050\}#1%
739 \HyPsd@Subst{\{050\}#1%

```

```

740     \HyPsd@StringSubst{\050}{\string\{ }#1%
741     \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.

```

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

```

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

```

**Try conversion back to PDFDocEncoding.**

```

753     \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
754     \ltx@ifundefined{StringEncodingConvertTest}{%
755     }{%
756     \EdefUnescapeString\HyPsd@temp#1%
757     \iftutex
758     \let\HyPsd@UnescapedString\HyPsd@temp
759     \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
760     {utf16be}{ascii-print}{%
761     \EdefEscapeString\HyPsd@temp\HyPsd@temp
762     \global\let#1\HyPsd@temp
763     \HyPsd@EscapeTeX#1%
764     \Hy@unicodedefalse
765     }{%
766     \HyPsd@EscapeTeX#1%
767     }%
768     \else
769     \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
770     {utf16be}{pdfdoc}{%
771     \EdefEscapeString\HyPsd@temp\HyPsd@temp
772     \global\let#1\HyPsd@temp
773     \HyPsd@EscapeTeX#1%
774     \Hy@unicodedefalse
775     }{%}%
776     \fi
777     }%
778     \fi
779     \fi

```

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

```
780 \pdfstringdefPostHook#1%
781 \endgroup
782 }
```

`\Hy@pdfstringdef`

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

## 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

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

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

`\Hy@SaveCatcodeSettings`

```
806 \def\Hy@SaveCatcodeSettings#1{%
807 \expandafter\edef\csname Hy@cat@#1\endcsname{%
808 \endlinechar=\the\endlinechar\relax
809 \catcode32 \the\catcode32\relax % (space)
810 \catcode34 \the\catcode34\relax % "
811 \catcode35 \the\catcode35\relax % #
812 \catcode37 \the\catcode37\relax % (percent)
813 \catcode40 \the\catcode40\relax % (
814 \catcode41 \the\catcode41\relax % )
815 \catcode42 \the\catcode42\relax % *
```



```

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

```

\Hy@RestoreCatcodeSettings

```

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

```

### 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.

```

854 \@ifundefined{T@PD1}{%
855 \Hy@SaveCatcodeSettings{pd1}%
856 \input{pd1enc.def}%

```

```

857 \Hy@RestoreCatcodeSettings{pd1}%
858 \HyLinguex@Restore
859 }{}
860 \DeclareFontFamily{PD1}{pdf}{}
861 \DeclareFontShape{PD1}{pdf}{m}{n}{ <-> cmr10 }{}
862 \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`.

```

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

```

`\HyPsd@LoadExtra`

```

876 \def\HyPsd@LoadExtra{%
877   \ifHy@psdextra
878     \ltx@iffileloaded{puenc.def}{%
879       \Hy@SaveCatcodeSettings{psdextra}%
880       \input{psdextra.def}%
881       \Hy@RestoreCatcodeSettings{psdextra}%
882       \let\HyPsd@LoadExtra\relax
883     }{}%
884   \fi
885 }

```

## 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 expandable 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.

```

886 \def\texorpdfstring{%
887   \ifHy@pdfstring

```

```

888   \expandafter\@secondoftwo
889   \else
890   \expandafter\@firstoftwo
891   \fi
892 }

```

#### 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`.

```

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

```

`\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`.

```

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

```

`\HyPsd@DisableCommands`

```

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

```

`\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`.

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

## 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.

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

```
920 \newif\ifHy@next
921 </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.

```
922 <*/package>
```

### 6.5.3 CJK patch

```

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

\HyPsd@CJKhook

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

```

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

```

935 \begingroup
936 \catcode"7F=\active
937 \toks@{%
938   \let\CJK@ignorespaces\empty
939   \def\CJK@char#1{\@gobbletwo}%
940   \let\CJK@charx\@gobblefour
941   \let\CJK@punctchar\@gobblefour
942   \def\CJK@punctcharx#1{\@gobblefour}%
943   \catcode"7F=\active
944   \def^^7f#1^^7f#2^^7f{%
945     \string #1\HyPsd@DecimalToOctal{#2}%
946   }%
947   % ... ?
948   \ifHy@unicode
949     \def\Hy@cjkpu{\80}%
950   \else
951     \let\Hy@cjkpu\@empty
952   \fi
953   \HyPsd@CJKActiveChars
954 }%
955 \count@=127 %
956 \@whilenum\count@<255 \do{%
957   \advance\count@ by 1 %
958   \lccode`~=\count@
959   \lowercase{%
960     \toks@\expandafter{\the\toks@ ~}%

```

```

961 }%
962 }%
963 \toks@\expandafter{\the\toks@ !}%
964 \xdef\HyPsd@CJKhook@bookmarks{%
965   \the\toks@
966 }%
967 \endgroup

```

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

```

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

```

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

```

976 \def\HyPsd@DecimalToOctal#1{%
977   \ifcase #1 %
978     \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
979     \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
980     \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
981     \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
982     \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
983     \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
984     \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
985     \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
986     \or @\or A\or B\or C\or D\or E\or F\or G%
987     \or H\or I\or J\or K\or L\or M\or N\or O%
988     \or P\or Q\or R\or S\or T\or U\or V\or W%
989     \or X\or Y\or Z\or \133\or \134\or \135\or \136\or \137%
990     \or \140\or a\or b\or c\or d\or e\or f\or g%
991     \or h\or i\or j\or k\or l\or m\or n\or o%
992     \or p\or q\or r\or s\or t\or u\or v\or w%
993     \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
994     \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
995     \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
996     \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
997     \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
998     \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
999     \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1000    \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1001    \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1002    \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1003    \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1004    \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1005    \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1006    \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1007    \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1008    \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1009    \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%

```

```

1010 \fi
1011 }

```

### 6.5.5 CJK unicode

\HyPsd@CJKhook@unicode

```

1012 \def\HyPsd@CJKhook@unicode{%
1013 \let\Unicode\HyPsd@CJK@Unicode
1014 \let\CJKnumber\HyPsd@CJKnumber
1015 \let\CJKdigits\HyPsd@CJKdigits
1016 }

```

\HyPsd@CJK@Unicode

```

1017 \def\HyPsd@CJK@Unicode#1#2{%
1018 \ifnum#1<256 %
1019 \HyPsd@DecimalToOctalFirst{#1}%
1020 \HyPsd@DecimalToOctalSecond{#2}%
1021 \else
1022 \933%
1023 \expandafter\expandafter\expandafter\HyPsd@HighA
1024 \intcalcDiv{#1}{4}!%
1025 \933%
1026 \ifcase\intcalcMod{#1}{4} %
1027 4\or 5\or 6\or 7%
1028 \fi
1029 \HyPsd@DecimalToOctalSecond{#2}%
1030 \fi
1031 }

1032 \def\HyPsd@HighA#1!{%
1033 \expandafter\expandafter\expandafter\HyPsd@HighB
1034 \IntCalcDiv#1!64!!%
1035 \expandafter\expandafter\expandafter\HyPsd@HighD
1036 \IntCalcMod#1!64!!%
1037 }
1038 \def\HyPsd@HighB#1!{%
1039 \expandafter\expandafter\expandafter\HyPsd@HighC
1040 \IntCalcDec#1!!%
1041 }
1042 \def\HyPsd@HighC#1!{%
1043 \IntCalcDiv#1!4!%
1044 \@backslashchar
1045 \IntCalcMod#1!4!%
1046 }
1047 \def\HyPsd@HighD#1!{%
1048 \ifcase\IntCalcDiv#1!8! %
1049 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1050 \fi
1051 \ifcase\IntCalcMod#1!8! %
1052 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1053 \fi
1054 }
1055 \def\HyPsd@DecimalToOctalFirst#1{%
1056 \9%

```

```

1057 \ifcase#1 %
1058     000\or 001\or 002\or 003\or 004\or 005\or 006\or 007%
1059     \or 010\or 011\or 012\or 013\or 014\or 015\or 016\or 017%
1060     \or 020\or 021\or 022\or 023\or 024\or 025\or 026\or 027%
1061     \or 030\or 031\or 032\or 033\or 034\or 035\or 036\or 037%
1062     \or 040\or 041\or 042\or 043\or 044\or 045\or 046\or 047%
1063     \or 050\or 051\or 052\or 053\or 054\or 055\or 056\or 057%
1064     \or 060\or 061\or 062\or 063\or 064\or 065\or 066\or 067%
1065     \or 070\or 071\or 072\or 073\or 074\or 075\or 076\or 077%
1066     \or 100\or 101\or 102\or 103\or 104\or 105\or 106\or 107%
1067     \or 120\or 111\or 112\or 113\or 114\or 115\or 116\or 117%
1068     \or 120\or 121\or 122\or 123\or 124\or 125\or 126\or 127%
1069     \or 130\or 131\or 132\or 133\or 134\or 135\or 136\or 137%
1070     \or 140\or 141\or 142\or 143\or 144\or 145\or 146\or 147%
1071     \or 150\or 151\or 152\or 153\or 154\or 155\or 156\or 157%
1072     \or 160\or 161\or 162\or 163\or 164\or 165\or 166\or 167%
1073     \or 170\or 171\or 172\or 173\or 174\or 175\or 176\or 177%
1074     \or 200\or 201\or 202\or 203\or 204\or 205\or 206\or 207%
1075     \or 210\or 211\or 212\or 213\or 214\or 215\or 216\or 217%
1076     \or 220\or 221\or 222\or 223\or 224\or 225\or 226\or 227%
1077     \or 230\or 231\or 232\or 233\or 234\or 235\or 236\or 237%
1078     \or 240\or 241\or 242\or 243\or 244\or 245\or 246\or 247%
1079     \or 250\or 251\or 252\or 253\or 254\or 255\or 256\or 257%
1080     \or 260\or 261\or 262\or 263\or 264\or 265\or 266\or 267%
1081     \or 270\or 271\or 272\or 273\or 274\or 275\or 276\or 277%
1082     \or 300\or 301\or 302\or 303\or 304\or 305\or 306\or 307%
1083     \or 310\or 311\or 312\or 313\or 314\or 315\or 316\or 317%
1084     \or 320\or 321\or 322\or 323\or 324\or 325\or 326\or 327%
1085     \or 330\or 331\or 332\or 333\or 334\or 335\or 336\or 337%
1086     \or 340\or 341\or 342\or 343\or 344\or 345\or 346\or 347%
1087     \or 350\or 351\or 352\or 353\or 354\or 355\or 356\or 357%
1088     \or 360\or 361\or 362\or 363\or 364\or 365\or 366\or 367%
1089     \or 370\or 371\or 372\or 373\or 374\or 375\or 376\or 377%
1090 \fi
1091 }
1092 \def\HyPsd@DecimalToOctalSecond#1{%
1093     \ifcase #1 %
1094         \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
1095         \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
1096         \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
1097         \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
1098         \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
1099         \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
1100         \or \060\or \061\or \062\or \063\or \064\or \065\or \066\or \067%
1101         \or \070\or \071\or \072\or \073\or \074\or \075\or \076\or \077%
1102         \or \100\or \101\or \102\or \103\or \104\or \105\or \106\or \107%
1103         \or \110\or \111\or \112\or \113\or \114\or \115\or \116\or \117%
1104         \or \120\or \121\or \122\or \123\or \124\or \125\or \126\or \127%
1105         \or \130\or \131\or \132\or \133\or \134\or \135\or \136\or \137%
1106         \or \140\or \141\or \142\or \143\or \144\or \145\or \146\or \147%
1107         \or \150\or \151\or \152\or \153\or \154\or \155\or \156\or \157%
1108         \or \160\or \161\or \162\or \163\or \164\or \165\or \166\or \167%
1109         \or \170\or \171\or \172\or \173\or \174\or \175\or \176\or \177%
1110         \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%

```



```

1111 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
1112 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1113 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
1114 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1115 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1116 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1117 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1118 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1119 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1120 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1121 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1122 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1123 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1124 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1125 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1126 \fi
1127 }

1128 \def\HyPsd@CJKnumber#1{%
1129 \ifnum#1<\z@
1130 \CJK@minus
1131 \expandafter\HyPsd@@CJKnumber\expandafter{\number-\number#1}%
1132 \else
1133 \expandafter\HyPsd@@CJKnumber\expandafter{\number#1}%
1134 \fi
1135 }

1136 \def\HyPsd@@CJKnumber#1{%
1137 \ifcase#1 %
1138 \CJK@zero\or\CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1139 \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine\or
1140 \CJK@ten\or\CJK@ten\CJK@one\or\CJK@ten\CJK@two\or
1141 \CJK@ten\CJK@three\or\CJK@ten\CJK@four\or\CJK@ten\CJK@five\or
1142 \CJK@ten\CJK@six\or\CJK@ten\CJK@seven\or\CJK@ten\CJK@eight\or
1143 \CJK@ten\CJK@nine
1144 \else
1145 \ifnum#1<10000 %
1146 \HyPsd@CJKnumberFour#1!\@empty{20}%
1147 \@empty
1148 \else
1149 \ifnum#1<100000000 %
1150 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1151 \IntCalcDiv#1!10000!%
1152 !\{20}%
1153 \CJK@tenthousand
1154 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1155 \IntCalcMod#1!10000!%
1156 !\CJK@zero{10}%
1157 \@empty
1158 \else
1159 \expandafter\HyPsd@CJKnumberLarge
1160 \number\IntCalcDiv#1!100000000!\expandafter!%
1161 \number\IntCalcMod#1!100000000!!%
1162 \fi
1163 \fi
1164 \fi

```

```

1165 }
1166 \def\HyPsd@CJKnumberLarge#1!#2!{%
1167   \HyPsd@CJKnumberFour#1!#{20}%
1168   \CJK@hundredmillion
1169   \ifnum#2=\z@
1170   \else
1171     \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1172     \IntCalcDiv#2!10000!%
1173     !\CJK@zero{10}%
1174     \CJK@tenthousand
1175     \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1176     \IntCalcMod#2!10000!%
1177     !\CJK@zero{10}%
1178     \@empty
1179   \fi
1180 }
1181 \def\HyPsd@CJKnumberFour#1!#2#3{%
1182   \ifnum#1=\z@
1183     \expandafter\@gobble
1184   \else
1185     \ifnum#1<1000 %
1186       #2%
1187       \HyPsd@CJKnumberThree#1!#{3}%
1188     \else
1189       \HyPsd@@@CJKnumber{\IntCalcDiv#1!1000!}%
1190       \CJK@thousand
1191       \expandafter\expandafter\expandafter\HyPsd@CJKnumberThree
1192       \IntCalcMod#1!1000!%
1193       !\CJK@zero{10}%
1194     \fi
1195   \fi
1196 }
1197 \def\HyPsd@CJKnumberThree#1!#2#3{%
1198   \ifnum#1=\z@
1199   \else
1200     \ifnum#1<100 %
1201       #2%
1202       \HyPsd@CJKnumberTwo#1!#{3}%
1203     \else
1204       \HyPsd@@@CJKnumber{\IntCalcDiv#1!100!}%
1205       \CJK@hundred
1206       \expandafter\expandafter\expandafter\HyPsd@CJKnumberTwo
1207       \IntCalcMod#1!100!%
1208       !\CJK@zero{10}%
1209     \fi
1210   \fi
1211 }
1212 \def\HyPsd@CJKnumberTwo#1!#2#3{%
1213   \ifnum#1=\z@
1214   \else
1215     \ifnum#1<#3 %
1216       #2%
1217       \HyPsd@@@CJKnumber{#1}%
1218     \else

```

```

1219 \HyPsd@@CJKnumber{\IntCalcDiv#1!10!}%
1220 \CJK@ten
1221 \ifnum\IntCalcMod#1!10!=\z@
1222 \else
1223 \HyPsd@@CJKnumber{\IntCalcMod#1!10!}%
1224 \fi
1225 \fi
1226 \fi
1227 }

1228 \def\HyPsd@CJKdigits#1{%
1229 \ifx*#1\relax
1230 \expandafter\HyPsd@@CJKdigits\expandafter\CJK@zero
1231 \else
1232 \HyPsd@@CJKdigits\CJK@null{#1}%
1233 \fi
1234 }

1235 \def\HyPsd@@CJKdigits#1#2{%
1236 \ifx\#2\%
1237 \else
1238 \HyPsd@@@CJKdigits#1#2\@nil
1239 \fi
1240 }%

1241 \def\HyPsd@@@CJKdigits#1#2#3\@nil{%
1242 \HyPsd@CJKdigit#1{#2}%
1243 \ifx\#3\%
1244 \expandafter\@gobble
1245 \else
1246 \expandafter\@firstofone
1247 \fi
1248 {%
1249 \HyPsd@@@CJKdigits#1#3\@nil
1250 }%
1251 }

1252 \def\HyPsd@CJKdigit#1#2{%
1253 \ifcase#2 %
1254 #1\or
1255 \CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1256 \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine
1257 \fi
1258 }

```

### 6.5.6 \@inmathwarn-Patch

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

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

```
\def\@current@cmd#1{%
```

```

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

1259 \def\HyPsd@inmathwarn#1#2{%
1260   \ifx#2\expandafter
1261     \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
1262       \HyPsd@GLYPHERR
1263       \expandafter\@gobble\string#1%
1264       >%
1265       \expandafter\expandafter\expandafter\HyPsd@EndWithElse
1266       \else
1267         \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
1268       \fi
1269     \else
1270       \expandafter#2%
1271     \fi
1272 }
1273 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
1274 \def\HyPsd@EndWithElse#1\else\else}

```

\HyPsd@add@accent

```

1275 \def\HyPsd@add@accent#1#2{%
1276   \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
1277   #2%
1278 }%

```

### 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`.

```
1279 \def\HyPsd@LetUnexpandableSpace#1{%
1280   \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
1281 }
```

`\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.

```
1282 \HyPsd@LetUnexpandableSpace\HyPsd@UnexpandableSpace
```

### 6.5.8 Marker for commands

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

```
1283 \edef\HyPsd@XSPACE{\string#\string X}
1284 \edef\HyPsd@ITALCORR{\string#\string I}
1285 \edef\HyPsd@GLYPHERR{\string#\string G}
```

### 6.5.9 `\hspace` fix

`\HyPsd@hspace`

```
1286 \def\HyPsd@hspace#1{\HyPsd@@hspace#1*\END}
```

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

```
1287 \def\HyPsd@@hspace#1*#2\END{%
1288   \ifx\#2\%
1289     \HyPsd@hspacetest{#1}%
1290   \else
1291     \expandafter\HyPsd@hspacetest
1292   \fi
1293 }
```

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

```
1294 \def\HyPsd@hspacetest#1{\ifdim\dimexpr#1\relax>\z@\space\fi}
```

### 6.5.10 Fix for AMS classes

```
1295 \ltx@ifundefined{tocsection}{%
1296   \let\HyPsd@AMSclassfix\relax
1297 }{%
1298   \def\HyPsd@AMSclassfix{%
```

```

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

```

### 6.5.11 Reference commands

`\HyPsd@href`

```

1312 \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.

```

1313 \def\HyPsd@ref#1{\HyPsd@@ref#1*\END}%

```

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

```

1314 \def\HyPsd@@ref#1*#2\END{%
1315 \ifx\#2\%
1316 \HyPsd@@@ref{#1}%
1317 \else
1318 \expandafter\HyPsd@@@ref
1319 \fi
1320 }%

```

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

```

1321 \def\HyPsd@@@ref#1{%
1322 \expandafter\ifx\csname r@#1\endcsname\relax
1323 ??%
1324 \else
1325 \expandafter\expandafter\expandafter
1326 \@car\csname r@#1\endcsname\@nil
1327 \fi
1328 }

```

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

```

1329 \def\HyPsd@pageref#1{\HyPsd@@pageref#1*\END}

```

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

```

1330 \def\HyPsd@@pageref#1*#2\END{%
1331 \ifx\#2\%
1332 \HyPsd@@@pageref{#1}%
1333 \else
1334 \expandafter\HyPsd@@@pageref
1335 \fi
1336 }

```

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

```

1337 \def\HyPsd@@@pageref#1{%
1338   \expandafter\ifx\csname r@#1\endcsname\relax
1339     ??%
1340   \else
1341     \expandafter\expandafter\expandafter\expandafter
1342     \expandafter\expandafter\expandafter\@car
1343     \expandafter\expandafter\expandafter\@gobble
1344     \csname r@#1\endcsname{}\@nil
1345   \fi
1346 }
```

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

```

1347 \def\HyPsd@nameref#1{\HyPsd@@nameref#1*\END}
```

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

```

1348 \def\HyPsd@@nameref#1*#2\END{%
1349   \ifx\#2\%
1350     \HyPsd@@@nameref{#1}%
1351   \else
1352     \expandafter\HyPsd@@@nameref
1353   \fi
1354 }
```

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

```

1355 \def\HyPsd@@@nameref#1{%
1356   \expandafter\ifx\csname r@#1\endcsname\relax
1357     ??%
1358   \else
1359     \expandafter\expandafter\expandafter\expandafter
1360     \expandafter\expandafter\expandafter\@car
1361     \expandafter\expandafter\expandafter\@gobbletwo
1362     \csname r@#1\endcsname{}\@nil
1363   \fi
1364 }
```

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

```

1365 \def\HyPsd@autoref#1{\HyPsd@@autoref#1*\END}
```

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

```

1366 \def\HyPsd@@autoref#1*#2\END{%
1367   \ifx\#2\%
1368     \HyPsd@@@autoref{#1}%
1369   \else
1370     \expandafter\HyPsd@@@autoref
1371   \fi
1372 }
```

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

```

1373 \def\HyPsd@@@autoref#1{%
1374   \expandafter\ifx\csname r@#1\endcsname\relax
```

```

1375   ??%
1376 \else
1377   \expandafter\expandafter\expandafter\HyPsd@autorefname
1378     \csname r@#1\endcsname\}\}\}\@nil
1379   \expandafter\expandafter\expandafter
1380     \@car\csname r@#1\endcsname\@nil
1381 \fi
1382 }

```

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

```

1383 \def\HyPsd@autorefname#1#2#3#4#5\@nil{%
1384   \ifx\#4\%
1385   \else
1386     \HyPsd@@autorefname#4.\@nil
1387   \fi
1388 }

```

`\HyPsd@@autorefname`

```

1389 \def\HyPsd@@autorefname#1.#2\@nil{%
1390   \ltx@ifundefined{#1autorefname}{%
1391     \ltx@ifundefined{#1name}{%
1392       }{%
1393         \csname#1name\endcsname\space
1394       }%
1395     }{%
1396       \csname#1autorefname\endcsname\space
1397     }%
1398   }

```

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

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

```
\HyPsd@DefCommand
\HyPsd@LetCommand 1399 \begingroup
1400 \def\x#1#2{%
1401 \endgroup
1402 \let#1\def
1403 \def\HyPsd@DefCommand##1##2###{%
1404 #1%
1405 \expandafter\noexpand
1406 \csname\expandafter\@gobble\string##1\@empty\endcsname
1407 \@gobble
1408 }%
1409 \let#2\let
1410 \def\HyPsd@@LetCommand##1{%
1411 \expandafter\ifx\csname##1\expandafter\endcsname
1412 \csname iftrue\endcsname
1413 \pdfstringdefWarn\let
1414 \expandafter\@gobble
1415 \else
1416 \expandafter\ifx\csname##1\expandafter\endcsname
1417 \csname iffalse\endcsname
1418 \pdfstringdefWarn\let
1419 \expandafter\expandafter\expandafter\@gobble
1420 \else
1421 #2%
1422 \expandafter\noexpand
1423 \csname##1\expandafter\expandafter\expandafter\endcsname
1424 \fi
1425 \fi
1426 }%
1427 }%
1428 \expandafter\x\csname <def>-command\expandafter\endcsname
1429 \csname <let>-command\endcsname
1430 \def\HyPsd@LetCommand#1{%
1431 \expandafter\expandafter\expandafter\HyPsd@@LetCommand
1432 \expandafter\expandafter\expandafter{%
1433 \expandafter\@gobble\string#1\@empty
1434 }%
1435 }
```

### 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).

```

1436 \def\HyPsd@ifnextchar#1{%
1437   \pdfstringdefWarn#1%
1438   \expandafter\@gobbletwo\@gobble
1439 }

```

### 6.5.14 `\@protected@testopt@ifnextchar`

`\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`.

```

1440 \def\HyPsd@protected@testopt#1{%
1441   \pdfstringdefWarn#1%
1442   \@gobbletwo
1443 }

```

## 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:

```

1444 \def\HyPsd@Warning#1{%
1445   \begingroup
1446   \let\space\ltx@space
1447   \Hy@Warning{#1}%
1448   \endgroup
1449 }

```

### 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`.

```

1450 \let\HyPsd@fi\fi
1451 \def\HyPsd@ProtectSpaces#1{%
1452   \xdef#1{%
1453     \iftrue
1454       \expandafter\HyPsd@@ProtectSpacesFi
1455       \expandafter|\expandafter\@empty#1| %
1456       \HyPsd@fi
1457   }%
1458   \expandafter\HyPsd@RemoveMask#1\HyPsd@End#1%
1459 }%

```

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

```

1460 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@fi{%
1461   \fi
1462   \unexpanded{#1}%
1463   \ifx\scrollmode#2\scrollmode
1464   \else
1465     \HyPsd@@ProtectSpacesFi\HyPsd@UnexpandableSpace#2%
1466   \HyPsd@fi
1467 }%
```

### 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.

```

1468 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1469   \xdef#2{\unexpanded\expandafter{#1}}%
1470 }%
```

### 6.6.3 Remove grouping braces

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

```

1471 \def\HyPsd@RemoveBraces#1{%
1472   \ifx\scrollmode#1\scrollmode
1473   \else
1474     \HyPsd@@RemoveBracesFi#1\HyPsd@End{#1}%
1475   \fi
1476 }
```

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

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

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

```

1477 \def\HyPsd@@RemoveBracesFi#1#2\HyPsd@End#3\fi{%
1478   \fi
1479   \def\Hy@temp@A{#1#2}%
1480   \def\Hy@temp@B{#3}%
1481   \ifx\Hy@temp@A\Hy@temp@B
1482     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1483       \HyPsd@String#1%
1484     }%
1485     \ifx\scrollmode#2\scrollmode
1486     \else
1487       \Hy@ReturnAfterFiFiEnd{%
```

```

1488     \HyPsd@RemoveBraces{#2}%
1489   }%
1490   \fi
1491 \else
1492   \def\Hy@temp@A{#1}%
1493   \HyPsd@AppendItalcorr\HyPsd@String
1494   \ifx\Hy@temp@A\@empty
1495     \Hy@ReturnAfterElseFiFiEnd{%
1496       \HyPsd@RemoveBraces{#2}%
1497     }%
1498   \else
1499     \HyPsd@ProtectSpaces\Hy@temp@A
1500     \HyPsd@AppendItalcorr\Hy@temp@A
1501     \Hy@ReturnAfterFiFiEnd{%
1502       \expandafter\HyPsd@RemoveBraces\expandafter
1503         {\Hy@temp@A#2}%
1504     }%
1505   \fi
1506 \fi
1507 \Hy@ReturnEnd
1508 }

```

`\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`.

```

1509 \def\HyPsd@AppendItalcorr#1{%
1510   \expandafter\HyPsd@@AppendItalcorr\expandafter{\/#1}%
1511 }
1512 \def\HyPsd@@AppendItalcorr#1#2{%
1513   \expandafter\def\expandafter#2\expandafter{#2#1}%
1514 }

```

#### 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>.

```

1515 \ltx@ifundefined{directlua}{%
1516 }{%
1517   \expandafter\ifx\csname\endcsname\relax\fi
1518 }

```

#### 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,  $\sim$  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`.

```

1519 \begingroup
1520 \catcode`\Q=\active
1521 \let Q\ltx@empty
1522 \gdef\HyPsd@CheckCatcodes#1#2\HyPsd@end{%
1523   \global\let\HyPsd@Rest\relax
1524   \ifcat\relax\noexpand#1\relax
1525     \ifx#1\protect
1526     \else
1527       \ifx#1\penalty
1528         \setbox\z@=\hbox{%
1529           \afterassignment\HyPsd@AfterCountRemove
1530           \count@=#2\HyPsd@end
1531         }%
1532       \else
1533         \ifx#1\kern
1534           \setbox\z@=\hbox{%
1535             \afterassignment\HyPsd@AfterDimenRemove
1536             \dimen@=#2\HyPsd@end
1537           }%
1538         \else
1539           \ifx#1\hskip
1540             \setbox\z@=\hbox{%
1541               \afterassignment\HyPsd@AfterSkipRemove
1542               \skip@=#2\HyPsd@end
1543             }%
1544           \else
1545             \HyPsd@CatcodeWarning{#1}%
1546           \fi
1547         \fi
1548       \fi
1549     \fi
1550   \else
1551     \ifcat\noexpand#1\noexpandQ% active character
1552     \expandafter\expandafter\expandafter\def
1553     \expandafter\expandafter\expandafter\HyPsd@String
1554     \expandafter\expandafter\expandafter{%
1555       \expandafter\HyPsd@String\string#1%
1556     }%
1557   \else
1558     \ifcat#1A% letter
1559     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1560       \HyPsd@String#1%
1561     }%
1562   \else
1563     \ifcat#1 % SPACE
1564     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1565       \HyPsd@String\HyPsd@SPACEOPTI
1566     }%
1567   \else
1568     \ifcat$#1%
1569     \HyPsd@CatcodeWarning{math shift}%

```

```

1570         \else
1571         \ifcat&#1%
1572         \HyPsd@CatcodeWarning{alignment tab}%
1573         \else
1574         \ifcat^#1%
1575         \HyPsd@CatcodeWarning{superscript}%
1576         \else
1577         \ifcat_#1%
1578         \HyPsd@CatcodeWarning{subscript}%
1579         \else
1580         \expandafter\def\expandafter\HyPsd@String\expandafter{%
1581         \HyPsd@String#1%
1582         }%
1583         \fi
1584         \fi
1585         \fi
1586         \fi
1587         \fi
1588         \fi
1589         \fi
1590     \fi
1591     \ifx\HyPsd@Rest\relax
1592     \ifx\scrollmode#2\scrollmode
1593     \else
1594     \Hy@ReturnAfterFiFiEnd{%
1595     \HyPsd@CheckCatcodes#2\HyPsd@End
1596     }%
1597     \fi
1598     \else
1599     \ifx\HyPsd@Rest\@empty
1600     \else
1601     \Hy@ReturnAfterFiFiEnd{%
1602     \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@End
1603     }%
1604     \fi
1605     \fi
1606     \Hy@ReturnEnd
1607 }%
1608 \endgroup

```

### Remove counts, dimens, skips.

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

```

1609 \def\HyPsd@AfterCountRemove#1\HyPsd@End{%
1610   \gdef\HyPsd@Rest{#1}%
1611 }

```

`\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.

```

1612 \def\HyPsd@AfterDimenRemove#1\HyPsd@End{%
1613   \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@#1>1ex %

```

```

1614 \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1615 \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1616 \else
1617 \ifdim\dimen@=\z@
1618 \else
1619 \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1620 \fi
1621 \gdef\HyPsd@Rest{#1}%
1622 \fi
1623 }

```

`\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).

```

1624 \def\HyPsd@AfterSkipRemove#1\HyPsd@end{%
1625 \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@>\fi>lex %
1626 \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1627 \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1628 \else
1629 \ifdim\skip@=\z@
1630 \else
1631 \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1632 \fi
1633 \gdef\HyPsd@Rest{#1}%
1634 \fi
1635 }

```

### Catcode warnings.

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

```

1636 \def\HyPsd@CatcodeWarning#1{%
1637 \HyPsd@Warning{%
1638 Token not allowed in a PDF string (%
1639 \ifHy@unicode
1640 Unicode%
1641 \else
1642 PDFDocEncoding%
1643 \fi
1644 ):%
1645 \MessageBreak removing `\'HyPsd@RemoveCmdPrefix#1'%
1646 }%
1647 }
1648 \begingroup
1649 \catcode`\|=0 %
1650 \catcode`\|=12 %
1651 |gdef|HyPsd@RemoveCmdPrefix#1{%
1652 |expandafter|HyPsd@@RemoveCmdPrefix
1653 |string#1|@empty\<>-|@empty|@empty
1654 }%
1655 |gdef|HyPsd@@RemoveCmdPrefix#1\<>-#2|@empty#3|@empty{#1#2}%
1656 |endgroup

```

`\HyPsd@RemoveSpaceWarning`

```

1657 \def\HyPsd@RemoveSpaceWarning#1{%
1658 \HyPsd@Warning{%

```

```

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

```

\HyPsd@ReplaceSpaceWarning

```

1670 \def\HyPsd@ReplaceSpaceWarning#1{%
1671 \HyPsd@Warning{%
1672 Token not allowed in a PDF string (%)
1673 \ifHy@unicode
1674 Unicode%
1675 \else
1676 PDFDocEncoding%
1677 \fi
1678 ):%
1679 \MessageBreak #1\MessageBreak
1680 replaced by space%
1681 }%
1682 }

```

### 6.6.5 Check for wrong glyphs

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

```

1683 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
1684 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1685 \HyPsd@String#1%
1686 }%
1687 \ifx\#2\%
1688 \else
1689 \ltx@ReturnAfterFi{%
1690 \HyPsd@GlyphProcessWarning#2\@empty
1691 }%
1692 \fi
1693 }
1694 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
1695 \HyPsd@@@GlyphProcessWarning#1++>%
1696 \HyPsd@GlyphProcess#2\@empty
1697 }
1698 \def\HyPsd@@@GlyphProcessWarning#1+#2+#3>{%
1699 \ifx\#2\%
1700 \HyPsd@Warning{%
1701 Glyph not defined in %
1702 P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
1703 removing \@backslashchar#1'%
1704 }%
1705 \else

```



```

1706 \HyPsd@Warning{%
1707   Composite letter ` \@backslashchar#1+#2'\MessageBreak
1708   not defined in P\ifHy@unicode U\else D1\fi\space encoding,%
1709   \MessageBreak
1710   removing ` \@backslashchar#1'%
1711 }%
1712 \fi
1713 }

```

### 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`.

```

1714 \def\HyPsd@spaceopti#1{ % first space
1715   \ifx\HyPsd@spaceopti#1%
1716     \040%
1717   \else
1718     #1%
1719   \fi
1720 }%

```

### 6.6.6 Replacing tokens

`\HyPsd@Subst` To save tokens `\HyPsd@StringSubst` is a 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.
1721 \def\HyPsd@Subst#1#2#3{%
1722   \def\HyPsd@@ReplaceFi##1#1##2\END\fi{%
1723     \fi
1724     ##1%
1725     \ifx\scrollmode##2\scrollmode
1726     \else
1727       #2%
1728       \HyPsd@@ReplaceFi##2\END
1729     \fi
1730   }%
1731   \xdef#3{%
1732     \iftrue
1733       \expandafter\HyPsd@@ReplaceFi#3#1\END
1734     \fi
1735   }%
1736 }

```

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

```

1737 \def\HyPsd@StringSubst#1{%
1738   \expandafter\HyPsd@Subst\expandafter{\string#1}%
1739 }

```

`\HyPsd@EscapeTeX`

```

1740 \begingroup
1741 \lccode`!=`\\%%
1742 \lccode`|=`\\%%
1743 \lccode`\(<`{\%
1744 \lccode`\)=`}%
1745 \lccode`0=\ltx@zero
1746 \lccode`1=\ltx@zero
1747 \lccode`3=\ltx@zero
1748 \lccode`4=\ltx@zero
1749 \lccode`5=\ltx@zero
1750 \lccode`7=\ltx@zero
1751 \lowercase{\endgroup
1752 \def\HyPsd@EscapeTeX#1{%
1753   \HyPsd@Subst!{|045}#1%
1754   \HyPsd@Subst({|173}#1%
1755   \HyPsd@Subst){|175}#1%
1756 }%
1757 }

```

### 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.

```

1758 \def\HyPsd@doxspace#1{%
1759   \ifx#1\relax\else
1760     \ifx#1.\else
1761       \ifx#1:\else
1762         \ifx#1,\else
1763           \ifx#1;\else
1764             \ifx#1!\else
1765               \ifx#1?\else
1766                 \ifx#1/\else
1767                   \ifx#1-\else
1768                     \ifx#1'\else
1769                       \HyPsd@SPACEOPTI
1770                     \fi
1771                   \fi
1772                 \fi
1773               \fi
1774             \fi
1775           \fi
1776         \fi
1777       \fi
1778     \fi
1779   \fi
1780   #1%
1781 }%

```

### 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.

```
1782 \beginingroup
1783 \catcode`\|=0 %
1784 \catcode`\|=12 %
```

\HyPsd@ConvertToUnicode

```
1785 |gdef|HyPsd@ConvertToUnicode#1{%
1786 |xdef#1{%
1787 |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
1788 }%
1789 |ifx#1|@empty
1790 |else
1791 |xdef#1{%
1792 \376\377%
1793 #1%
1794 }%
1795 |fi
1796 }%
```

\HyPsd@DoConvert

```
1797 |gdef|HyPsd@DoConvert#1{%
1798 |ifx#1|@empty
1799 |else
1800 |ltx@ReturnAfterFi{%
1801 |ifx#1\%%
1802 \%%
1803 |expandafter|HyPsd@DoEscape
1804 |else
1805 |HyPsd@Char{#1}%
1806 |expandafter|HyPsd@DoConvert
1807 |fi
1808 }%
1809 |fi
1810 }%
```

\HyPsd@DoEscape

```
1811 |gdef|HyPsd@DoEscape#1{%
1812 |ifx#19%
1813 |expandafter|HyPsd@GetTwoBytes
1814 |else
1815 |ltx@ReturnAfterFi{%
1816 |ifx#18%
1817 00%
1818 |expandafter|HyPsd@GetTwoBytes
1819 |else
1820 #1%
1821 |expandafter|HyPsd@GetOneByte
1822 |fi
1823 }%
1824 |fi
```

```

1825 }%

\HyPsd@GetTwoBytes
1826 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
1827   #1\#2#3#4%
1828   |HyPsd@DoConvert
1829 }%

\HyPsd@GetOneByte
1830 |gdef|HyPsd@GetOneByte#1#2{%
1831   #1#2%
1832   |HyPsd@DoConvert
1833 }%
1834 |endgroup

\HyPsd@@GetNextTwoTokens TeX does only allow nine parameters, so we need another macro to get more
arguments.
1835 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
1836   \xdef#4{#4#1#2}%
1837   \HyPsd@@ConvertToUnicode#3\END#4%
1838 }

\HyPsd@Char
1839 \begingroup
1840 \catcode0=9 %
1841 \catcode`\^=7 %
1842 \catcode`\^^=12 %
1843 \def\x{^^^0000}%
1844 \expandafter\endgroup
1845 \ifx\x\@empty
1846   \def\HyPsd@Char#1{%
1847     \ifnum`#1<128 %
1848       \@backslashchar 000#1%
1849     \else
1850       \ifnum`#1<65536 %
1851         \expandafter\HyPsd@CharTwoByte\number`#1!%
1852       \else
1853         \expandafter\expandafter\expandafter\HyPsd@CharSurrogate
1854         \intcalcSub{`#1}{65536}!%
1855       \fi
1856     \fi
1857   }%
1858   \def\HyPsd@CharTwoByte#1!{%
1859     \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1860     \IntCalcDiv#1!256!!%
1861     \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1862     \IntCalcMod#1!256!!%
1863   }%
1864   \def\HyPsd@CharOctByte#1!{%
1865     \@backslashchar
1866     \IntCalcDiv#1!64!%
1867     \intcalcDiv{\IntCalcMod#1!64!}{8}%
1868     \IntCalcMod#1!8!%
1869   }%

```

```

1870 \def\HyPsd@CharSurrogate#1{%
1871   \@backslashchar 33%
1872   \IntCalcDiv#1!262144!%
1873   \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1874   \intcalcDiv{\IntCalcMod#1!262144!}{1024}!%
1875   \@backslashchar 33%
1876   \expandafter\expandafter\expandafter\IntCalcAdd
1877   \intcalcDiv{\IntCalcMod#1!1024!}{256}!4!%
1878   \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1879   \IntCalcMod#1!256!!%
1880 }%
1881 \else
1882 \def\HyPsd@Char#1{%
1883   \@backslashchar 000#1%
1884 }%
1885 \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.

```

1886 \ifcsname UTFviii@loop\endcsname
1887 \def\HyPsd@expand@utfvii{%
1888   \count@"C2
1889   \@tempcnta"F5
1890   \def\UTFviii@tmp{\expandafter\def\expandafter~\expandafter{~}}%
1891   \UTFviii@loop
1892 }
1893 \else
1894 \def\HyPsd@expand@utfvii{}
1895 \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`

```

1896 \begingroup
1897   \lccode`~=`^^f4\relax
1898   \lowercase{\endgroup
1899   \def\HyPsd@UTFviii{%
1900     \HyPsd@expand@utfvii
1901     \let\UTFviii@two@octets\HyPsd@UTFviii@two
1902     \let\UTFviii@three@octets\HyPsd@UTFviii@three
1903     \let\UTFviii@four@octets\HyPsd@UTFviii@four
1904     \ifx~\HyPsd@UTFviii@ccxliv@undef
1905       \let~\HyPsd@UTFviii@ccxliv@def

```

```

1906 \fi
1907 \let\unichar\HyPsd@unichar
1908 }%
1909 }%
1910 \def\HyPsd@UTFviii@ccxliv@undef{\@inpenc@undefined@{utf8}}%
1911 \edef\HyPsd@UTFviii@ccxliv@def{%
1912 \noexpand\UTFviii@four@octets\string ^^f4%
1913 }%

```

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

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

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

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

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

$$(5)$$

```

1914 \def\HyPsd@UTFviii@two#1#2{%
1915 \expandafter\HyPsd@UTFviii@@two
1916 \number\dimexpr.25\dimexpr`#1sp\expandafter\relax\expandafter|
1917 \number`#1\expandafter|
1918 \number\dimexpr.125\dimexpr`#2sp\expandafter\relax\expandafter|
1919 \number`#2 \@nil
1920 }%
1921 \def\HyPsd@UTFviii@@two#1|#2|#3|#4\@nil{%
1922 \expandafter\8%
1923 \number\numexpr #1-48\expandafter\relax
1924 \csname\number\numexpr #2-4*#1\relax\expandafter\endcsname
1925 \number\numexpr #3-8*%
1926 \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
1927 \number\numexpr #4-8*#3\relax
1928 }%

```

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

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

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

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

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

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

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

$$(12)$$

```

1929 \def\HyPsd@UTFviii@three#1#2#3{%
1930 \expandafter\HyPsd@UTFviii@@three
1931 \number\dimexpr.25\dimexpr`#1sp\expandafter\relax\expandafter|
1932 \number`#1\expandafter|
1933 \number\ifnum\numexpr`#2-128\relax <32 0\else 1\fi\expandafter|
1934 \number\dimexpr.25\dimexpr`#2sp\expandafter\relax\expandafter|

```

```

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

```

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

```

```

1948 \def\HyPsd@UTFviii@four#1#2{%
1949 \expandafter\HyPsd@@UTFviii@four\number
1950 \numexpr-1+(\`#1-240)*4+\dimexpr.0625\dimexpr`#2sp-128sp%
1951 \expandafter|\number
1952 \numexpr`#2-16*\dimexpr.0625\dimexpr`#2sp| %
1953 }%
1954 \def\HyPsd@@UTFviii@four#1|#2|#3{%
1955 \933\number\dimexpr.25\dimexpr#1sp\relax\relax
1956 \csname\number\numexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1957 \ifodd#2 %
1958 \number\numexpr(#2-1)/2\relax
1959 \else
1960 \number\numexpr#2/2\relax
1961 \fi
1962 \number\numexpr\ifodd#2 4+\fi
1963 \dimexpr.0625\dimexpr`#3sp-128sp\relax\relax\relax
1964 \933%
1965 \expandafter\HyPsd@@@UTFviii@four\number
1966 \numexpr`#3-16*\dimexpr.0625\dimexpr`#3sp| %
1967 }%
1968 \def\HyPsd@@@UTFviii@four#1|#2{%
1969 \number\numexpr4+\dimexpr.25\dimexpr#1sp\relax\relax\relax
1970 \csname\number\numexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1971 \number\dimexpr.125\dimexpr`#2sp-128sp\relax\relax
1972 \number\numexpr`#2-8*\dimexpr.125\dimexpr`#2sp\relax\relax\relax
1973 }%

```

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

```

1974 \def\HyPsd@unichar#1{%
1975 \ifHy@unicode
1976 \ifnum#1>"10FFFF %
1977 \HyPsd@UnicodeReplacementCharacter % illegal

```

```

1978 \else
1979 \ifnum#1>"FFFF %

```

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

```

1980 \expandafter\HyPsd@unichar\expandafter{%
1981 \number\numexpr 55296+%
1982 \dimexpr.0009765625\dimexpr\number#1sp-\p@
1983 \relax\relax\relax
1984 }%

```

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

```

1985 \expandafter\HyPsd@unichar\expandafter{%
1986 \number\numexpr#1-9216%
1987 -1024*\dimexpr.0009765625\dimexpr\number#1sp-\p@
1988 \relax\relax\relax
1989 }%

```

```

1990 \else
1991 \ifnum#1>"7FF %
1992 \9%
1993 \expandafter\HyPsd@unichar@first@byte\expandafter{%
1994 \number
1995 \dimexpr.00390625\dimexpr\number#1sp\relax\relax
1996 }%
1997 \else
1998 \8%
1999 \number\dimexpr.00390625\dimexpr\number#1sp\relax\relax
2000 \fi
2001 \expandafter\HyPsd@unichar@second@byte\expandafter{%
2002 \number
2003 \numexpr#1-256*\number
2004 \dimexpr.00390625\dimexpr\number#1sp\relax\relax\relax
2005 }%

```

```

2006 \fi
2007 \fi
2008 \else
2009 .% unsupported (Unicode -> PDF Doc Encoding)
2010 \fi
2011 }%

```

```

2012 \def\HyPsd@UnicodeReplacementCharacter{\9377\375}%
2013 \def\HyPsd@unichar@first@byte#1{%
2014 \number\dimexpr.015625\dimexpr#1sp\relax\relax
2015 \expandafter\HyPsd@unichar@octtwo\expandafter{%
2016 \number
2017 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2018 \relax\relax\relax
2019 }%
2020 }%
2021 \def\HyPsd@unichar@second@byte#1{%
2022 \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
2023 \expandafter\HyPsd@unichar@octtwo\expandafter{%
2024 \number
2025 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2026 \relax\relax\relax
2027 }%
2028 }%

```



```

2029 \def\HyPsd@unichar@octtwo#1{%
2030   \number\dimexpr.125\dimexpr#1sp\relax\relax
2031   \number\dimexpr#1-8*\number\dimexpr.125\dimexpr#1sp%
2032   \relax\relax\relax
2033 }%

```

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

```

2034 \def\HyPsd@utf@viii@undeferr#1#2#3#4#5#6{%
2035   \ifx\@gobble#1%
2036   \else
2037     [Please insert \textbackslash PrerenderUnicode%
2038     \textbraceleft#1\textbraceright\space
2039     into preamble]%
2040   \fi
2041 }%

```

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

`\HyPsd@DieFace` Die faces are provided by

Package	Macro
ifsym	<code>\Cube</code>
epsdice	<code>\epsdice</code>
hhcount	<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`.

```

2042 \def\HyPsd@DieFace#1{%
2043   \ifHy@unicode
2044     \ifnum#1<1 %
2045       \HyPsd@UnicodeReplacementCharacter
2046     \else
2047       \ifnum#1>6 %
2048         \9046\205%
2049         \expandafter\expandafter\expandafter
2050         \HyPsd@DieFaceLarge\intcalcSub{#1}{6}!%
2051       \else
2052         \9046\20\intcalcDec{#1}%
2053       \fi
2054     \fi
2055   \else
2056     .% Die faces are not part of PDFDocEncoding
2057   \fi
2058 }

```

`\HyPsd@DieFaceLarge`

```

2059 \def\HyPsd@DieFaceLarge#1!{%
2060   \ifnum#1>6 %
2061     \expandafter\ltx@firstoftwo
2062   \else
2063     \expandafter\ltx@secondoftwo
2064   \fi
2065 }%

```

```

2066 \9046\205%
2067 \expandafter\expandafter\expandafter
2068 \HyPsd@DieFaceLarge\IntCalcSub#1!6!!%
2069 }{%
2070 \9046\20\IntCalcDec#1!%
2071 }%
2072 }

```

### 6.6.11 Support for moon phases of package china2e

```

2073 \def\HyPsd@MoonPha#1{%
2074 \ifcase\intcalcNum{#1} %
2075 \HyPsd@UnicodeReplacementCharacter
2076 \or % 1
2077 % U+1F31A NEW MOON WITH FACE; \MoonPha{1} (china2e)
2078 \9330\074\9337\032%
2079 \or % 2
2080 \HyPsd@UnicodeReplacementCharacter
2081 \or % 3
2082 % U+1F31D FULL MOON WITH FACE; \MoonPha{3} (china2e)
2083 \9330\074\9337\035%
2084 \or % 4
2085 % U+1F31C LAST QUARTER MOON WITH FACE; \MoonPha{4} (china2e)
2086 \9330\074\9337\034%
2087 \else
2088 \HyPsd@UnicodeReplacementCharacter
2089 \fi
2090 }
2091 %* \HyPsd@MoonPha -> \MoonPha

```

### 6.6.12 Support for package pifont

\HyPsd@ding

```

2092 \def\HyPsd@ding#1{%
2093 \ifHy@unicode
2094 \ifnum#1<32 %
2095 \HyPsd@UnicodeReplacementCharacter
2096 \else
2097 \ifnum#1>254 %
2098 \HyPsd@UnicodeReplacementCharacter
2099 \else
2100 \ifnum#1<127 %
2101 \expandafter\expandafter\expandafter
2102 \HyPsd@@ding\intcalcNum{#1}!%
2103 \else
2104 \ifnum#1>160 %
2105 \expandafter\expandafter\expandafter
2106 \HyPsd@@ding\intcalcNum{#1}!%
2107 \else
2108 \HyPsd@UnicodeReplacementCharacter
2109 \fi
2110 \fi
2111 \fi
2112 \fi
2113 \else

```

```

2114 .% Dingbats are not part of PDFDocEncoding
2115 \fi
2116 }

```

\HyPsd@@ding

```

2117 \def\HyPsd@@ding#1!{%
2118 \ltx@ifundefined{HyPsd@ding@#1}{%
2119 \ifnum#1<127 %
2120 \9047%
2121 \HyPsd@DecimalToOctalSecond{\IntCalcSub#1!32!}%
2122 \else
2123 \ifnum#1<168 %
2124 \9047\14\IntCalcSub#1!160!%
2125 \else
2126 \ifnum#1>181 %
2127 \9047\HyPsd@DecimalToOctalSecond{\IntCalcSub#1!64!}%
2128 \else
2129 % 172..181 -> U+2460..U+2469
2130 \9044\HyPsd@DecimalToOctalSecond{\IntCalcSub#1!76!}%
2131 \fi
2132 \fi
2133 \fi
2134 }{%
2135 \csname HyPsd@ding@#1\endcsname
2136 }%
2137 }

```

```

2138 \@namedef{HyPsd@ding@32}{\space}
2139 % U+260E BLACK TELEPHONE
2140 \@namedef{HyPsd@ding@37}{\9046\016}% U+260E
2141 % U+261B BLACK RIGHT POINTING INDEX
2142 \@namedef{HyPsd@ding@42}{\9046\033}% U+261B
2143 % U+261E WHITE RIGHT POINTING INDEX
2144 \@namedef{HyPsd@ding@43}{\9046\036}% U+261E
2145 % U+2605 BLACK STAR
2146 \@namedef{HyPsd@ding@72}{\9046\005}% U+2605
2147 % U+25CF BLACK CIRCLE
2148 \@namedef{HyPsd@ding@108}{\9045\317}% U+25CF
2149 % U+25A0 BLACK SQUARE
2150 \@namedef{HyPsd@ding@110}{\9045\240}% U+25A0
2151 % U+25B2 BLACK UP-POINTING TRIANGLE
2152 \@namedef{HyPsd@ding@115}{\9045\262}% U+25B2
2153 % U+25BC BLACK DOWN-POINTING TRIANGLE
2154 \@namedef{HyPsd@ding@116}{\9045\274}% U+25BC
2155 % U+25C6 BLACK DIAMOND
2156 \@namedef{HyPsd@ding@117}{\9045\306}% U+25C6
2157 % U+25D7 RIGHT HALF BLACK CIRCLE
2158 \@namedef{HyPsd@ding@119}{\9045\327}% U+25D7
2159 \@namedef{HyPsd@ding@168}{\textclubsuitblack}%
2160 \@namedef{HyPsd@ding@169}{\textdiamondsuitblack}%
2161 \@namedef{HyPsd@ding@170}{\textheartsuitblack}%
2162 \@namedef{HyPsd@ding@171}{\textspadesuitblack}%
2163 \@namedef{HyPsd@ding@213}{\textrightarrow}%
2164 \@namedef{HyPsd@ding@214}{\textleftarrow}%

```

```

2165 \@namedef{HyPsd@ding@215}{\textupdownarrow}%
2166 \@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.

```

2167 \@ifpackageloaded{subfigure}{%
2168   \ltx@ifundefined{sub@label}{%
2169     \Hy@hypertexnamesfalse
2170   }{%
2171     \renewcommand*{\sub@label}[1]{%
2172       \@bsphack
2173       \subfig@oldlabel{#1}%
2174       \if@filesw
2175         \begingroup
2176         \edef\@currentlabstr{%
2177           \expandafter\strip@prefix\meaning\@currentlabelname
2178         }%
2179         \protected@write\@auxout{}{%
2180           \string\newlabel{sub@#1}{%
2181             {\@nameuse{\@thesub\@capttype}}%
2182             {\thepage}%
2183             {%
2184               \expandafter\strip@period\@currentlabstr
2185               \relax.\relax\@@@%
2186             }%
2187             {\@currentHref}%
2188             {}%
2189           }%
2190         }%
2191       \endgroup
2192     \fi
2193     \@esphack
2194   }%
2195 }%
2196 }{}

```

### 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.

```

2197 \def\Hy@true{true}
2198 \def\Hy@false{false}

```

Providing dummy definitions.

```

2199 \let\literalps@out\@gobble
2200 \newcommand\pdfbookmark[3][]{ }
2201 \def\Acrobatmenu#1#2{\leavevmode#2}
2202 \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

```

2203 \let\HyperRaiseLinkHook\@empty
2204 \def\HyperRaiseLinkDefault{\baselineskip}

```

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

```

2205 \newcount\Hy@SavedSpaceFactor
2206 \def\Hy@SaveSpaceFactor{%
2207   \global\Hy@SavedSpaceFactor=\ifhmode\spacefactor\else\z@\fi
2208 }
2209 \def\Hy@RestoreSpaceFactor{%
2210   \relax
2211   \ifhmode
2212     \ifnum\Hy@SavedSpaceFactor>\z@
2213       \spacefactor=\Hy@SavedSpaceFactor
2214     \fi
2215   \fi
2216 }
2217 \def\Hy@SaveSavedSpaceFactor{%
2218   \edef\Hy@RestoreSavedSpaceFactor{%
2219     \global\Hy@SavedSpaceFactor=\the\Hy@SavedSpaceFactor\relax
2220   }%
2221 }
2222 \def\Hy@raisedlink#1{%
2223   \ifvmode
2224     #1%
2225   \else
2226     \Hy@SaveSpaceFactor
2227     \penalty\@M
2228     \smash{%
2229       \begingroup
2230         \let\HyperRaiseLinkLength\@tempdima
2231         \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
2232         \HyperRaiseLinkHook
2233       \expandafter\endgroup
2234       \expandafter\raise\the\HyperRaiseLinkLength\hbox{%
2235         \Hy@RestoreSpaceFactor
2236         #1%
2237         \Hy@SaveSpaceFactor
2238       }%
2239     }%
2240   \Hy@RestoreSpaceFactor

```

```

2241 \fi
2242 }

```

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

```

\Hy@RestoreLastskip 2243 \def\Hy@SaveLastskip{%
2244 \let\Hy@RestoreLastskip\relax
2245 \ifvmode
2246 \ifdim\lastskip=\z@
2247 \ifnum\lastnodetype=1 %
2248 \let\Hy@RestoreLastskip\relax
2249 \else
2250 \let\Hy@RestoreLastskip\nobreak
2251 \fi
2252 \else
2253 \begingroup
2254 \skip@=-\lastskip
2255 \edef\x{%
2256 \endgroup
2257 \def\noexpand\Hy@RestoreLastskip{%
2258 \noexpand\ifvmode
2259 \noexpand\nobreak
2260 \vskip\the\skip@
2261 \vskip\the\lastskip\relax
2262 \noexpand\fi
2263 }%
2264 }%
2265 \x
2266 \fi
2267 \else
2268 \ifhmode
2269 \ifdim\lastskip=\z@
2270 \let\Hy@RestoreLastskip\nobreak
2271 \else
2272 \begingroup
2273 \skip@=-\lastskip
2274 \edef\x{%
2275 \endgroup
2276 \def\noexpand\Hy@RestoreLastskip{%
2277 \noexpand\ifhmode
2278 \noexpand\nobreak
2279 \hskip\the\skip@
2280 \hskip\the\lastskip\relax
2281 \noexpand\fi
2282 }%
2283 }%
2284 \x
2285 \fi
2286 \fi
2287 \fi
2288 }%

```

## 9 Options

```

2289 \SetupKeyvalOptions{%
2290   family=Hyp,%
2291   prefix=HyOpt%
2292 }

```

## 9.1 Help macros

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

```

\AddToDocumentProperties
\GetDocumentProperties 2293 \ExplSyntaxOn
2294 \@ifundefined{AddToDocumentProperties}
2295 {
2296   \prop_new:N \g__hyp_documentproperties_prop
2297   \NewDocumentCommand\AddToDocumentProperties{O{\currname}mm}
2298   {
2299     \exp_args:NNx
2300     \prop_gput:Nnn \g__hyp_documentproperties_prop
2301     {
2302       \tl_if_blank:eTF {#1}{top-level/}{#1/} #2
2303     }
2304     { #3}
2305   }
2306   \NewExpandableDocumentCommand\GetDocumentProperties{m}
2307   {
2308     \prop_item:Nn \g__hyp_documentproperties_prop {#1}
2309   }
2310 }{}
2311 \ExplSyntaxOff

\IfHyperBooleanExists

2312 \def\IfHyperBooleanExists#1{%
2313   \ltx@ifundefined{Hy@#1false}\ltx@secondoftwo{%
2314     \ltx@ifundefined{KV@Hyp@#1@default}\ltx@secondoftwo\ltx@firstoftwo
2315   }%
2316 }

2317 \@namedef{KV@Hyp@stoppearly@default}{}

\IfHyperBoolean

2318 \def\IfHyperBoolean#1{%
2319   \IfHyperBooleanExists{#1}{%
2320     \csname ifHy@#1\endcsname
2321     \expandafter\ltx@firstoftwo
2322   \else
2323     \expandafter\ltx@secondoftwo
2324   \fi
2325 } \ltx@secondoftwo
2326 }

\Hy@boolkey

2327 \def\Hy@boolkey#1#2{%

```

```

2328 \edef\Hy@tempa{#2}%
2329 \lowercase\expandafter{%
2330   \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
2331 }%
2332 \ifx\Hy@tempa\@empty
2333   \let\Hy@tempa\Hy@true
2334 \fi
2335 \ifx\Hy@tempa\Hy@true
2336 \else
2337   \ifx\Hy@tempa\Hy@false
2338   \else
2339     \let\Hy@tempa\relax
2340   \fi
2341 \fi
2342 \ifx\Hy@tempa\relax
2343   \Hy@WarnOptionValue{#2}{#1}{`true' or `false'}%
2344 \else
2345   \Hy@Info{Option `#1' set `\Hy@tempa'}%
2346   \csname Hy@#1\Hy@tempa\endcsname
2347 \fi
2348 }

```

\Hy@WarnOptionValue

```

2349 \def\Hy@WarnOptionValue#1#2#3{%
2350   \Hy@Warning{%
2351     Unexpected value `#1'\MessageBreak
2352     of option `#2' instead of\MessageBreak
2353     #3%
2354   }%
2355 }

```

\Hy@DisableOption

```

2356 \def\Hy@DisableOption#1{%
2357   \ltx@ifundefined{KV@Hyp@#1@default}{%
2358     \define@key{Hyp}{#1}%
2359   }{%
2360     \define@key{Hyp}{#1}[]%
2361   }%
2362   {\Hy@WarnOptionDisabled{#1}}%
2363 }
2364

```

\Hy@WarnOptionDisabled

```

2365 \def\Hy@WarnOptionDisabled#1{%
2366   \Hy@Warning{%
2367     Option `#1' has already been used,\MessageBreak
2368     setting the option has no effect%
2369   }%
2370 }

```

\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.



```

2371 \def\Hy@CheckOptionValue#1#2#3{%
2372   \begingroup
2373   \edef\x{#1}%
2374   \@onelevel@sanitize\x
2375   \let\y=y%
2376   \def\do##1##2{%
2377     \def\z{##1}%
2378     \@onelevel@sanitize\z
2379     \ifx\x\z
2380       \let\y=n%
2381       \let\do\@gobbletwo
2382     \fi
2383   }%
2384   #3%
2385   \ifx\y y%
2386     \def\do##1##2{%
2387       * `##1'%
2388       \ifx\\##2\\\else\space(##2)\fi
2389       \MessageBreak
2390     }%
2391     \Hy@Warning{%
2392       Values of option `#2':\MessageBreak
2393       #3%
2394       * An empty value disables the option.\MessageBreak
2395       Unknown value `x'%
2396     }%
2397   \fi
2398 \endgroup
2399 }

```

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

```

2400 \def\Hy@DefNameKey#1{%
2401   \expandafter\Hy@@DefNameKey\csname @#1\endcsname{#1}%
2402 }

```

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

```

2403 \def\Hy@@DefNameKey#1#2#3{%
2404   \define@key{Hyp}{#2}{%
2405     \edef#1{##1}%
2406     \ifx#1\@empty
2407       \else
2408         \Hy@CheckOptionValue{##1}{#2}{#3}%
2409       \fi
2410   }%
2411   \let#1\@empty
2412 }

```

`\Hy@UseNameKey`

```

2413 \def\Hy@UseNameKey#1#2{%

```

```

2414 \ifx#2\@empty
2415 \else
2416   /#1/#2%
2417 \fi
2418 }

```

## 9.2 Defining the options

```

2419 \define@key{Hyp}{implicit}[true]{%
2420   \Hy@boolkey{implicit}{#1}%
2421 }
2422 \define@key{Hyp}{draft}[true]{%
2423   \Hy@boolkey{draft}{#1}%
2424 }
2425 \define@key{Hyp}{final}[true]{%
2426   \Hy@boolkey{final}{#1}%
2427 }
2428 \let\KV@Hyp@nolinks\KV@Hyp@draft
2429 \def\Hy@ObsoletePaperOption#1{%
2430   \Hy@WarningNoLine{%
2431     Option `#1' is no longer used%
2432   }%
2433   \define@key{Hyp}{#1}[true]{}%
2434 }
2435 \def\Hy@temp#1{%
2436   \define@key{Hyp}{#1}[true]{%
2437     \Hy@ObsoletePaperOption{#1}%
2438   }%
2439 }
2440 \Hy@temp{a4paper}
2441 \Hy@temp{a5paper}
2442 \Hy@temp{b5paper}
2443 \Hy@temp{letterpaper}
2444 \Hy@temp{legalpaper}
2445 \Hy@temp{executivepaper}
2446 \define@key{Hyp}{setpagesize}[true]{%
2447   \Hy@boolkey{setpagesize}{#1}%
2448 }
2449 \define@key{Hyp}{debug}[true]{%
2450   \Hy@boolkey{debug}{#1}%
2451 }
2452 \define@key{Hyp}{linktocpage}[true]{%
2453   \Hy@boolkey{linktocpage}{#1}%
2454   \ifHy@linktocpage
2455     \let\Hy@linktoc\Hy@linktoc@page
2456   \else
2457     \let\Hy@linktoc\Hy@linktoc@section
2458   \fi
2459 }
2460 \chardef\Hy@linktoc@none=0 %
2461 \chardef\Hy@linktoc@section=1 %
2462 \chardef\Hy@linktoc@page=2 %
2463 \chardef\Hy@linktoc@all=3 %

```

```

2464 \ifHy@linktocpage
2465   \let\Hy@linktoc\Hy@linktoc@page
2466 \else
2467   \let\Hy@linktoc\Hy@linktoc@section
2468 \fi
2469 \define@key{Hyp}{linktoc}{%
2470   \@ifundefined{Hy@linktoc@#1}{%
2471     \Hy@Warning{%
2472       Unexpected value `#1' of\MessageBreak
2473       option `linktoc' instead of `none',\MessageBreak
2474       `section', `page' or `all'%
2475     }%
2476   }{%
2477     \expandafter\let\expandafter\Hy@linktoc
2478     \csname Hy@linktoc@#1\endcsname
2479   }%
2480 }
2481 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
2482 \let\XR@ext\relax
2483 \define@key{Hyp}{verbose}[true]{%
2484   \Hy@boolkey{verbose}{#1}%
2485 }

```

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.

```

2486 \define@key{Hyp}{raiselinks}[true]{%
2487   \Hy@boolkey{raiselinks}{#1}%
2488 }

```

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

```

2489 \def\Hy@setbreaklinks#1{%
2490   \csname breaklinks#1\endcsname
2491 }
2492 \def\Hy@breaklinks@unsupported{%
2493   \ifx\Hy@setbreaklinks\@gobble
2494     \ifHy@breaklinks
2495       \Hy@WarningNoLine{%
2496         You have enabled option `breaklinks'.\MessageBreak
2497         But driver ``\Hy@driver.def' does not support this.\MessageBreak
2498         Expect trouble with the link areas of broken links%
2499       }%
2500     \fi
2501   \fi
2502 }
2503 \define@key{Hyp}{breaklinks}[true]{%
2504   \Hy@boolkey{breaklinks}{#1}%
2505   \let\Hy@setbreaklinks\@gobble
2506 }
2507 \define@key{Hyp}{localanchorname}[true]{%
2508   \Hy@WarningNoLine{%
2509     Option `localanchorname' is deprecated%
2510   }%

```

```

2511 \Hy@boolkey{localanchorname}{#1}%
2512 }

```

Determines whether an automatic anchor is put on each page

```

2513 \define@key{Hyp}{pageanchor}[true]{%
2514 \Hy@boolkey{pageanchor}{#1}%
2515 }

```

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.

```

2516 \define@key{Hyp}{plainpages}[true]{%
2517 \Hy@boolkey{plainpages}{#1}%
2518 }

```

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

```

2519 \define@key{Hyp}{naturalnames}[true]{%
2520 \Hy@boolkey{naturalnames}{#1}%
2521 }

```

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

```

2522 \define@key{Hyp}{hypertextnames}[true]{%
2523 \Hy@boolkey{hypertextnames}{#1}%
2524 }

```

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

```

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

2528 \define@key{Hyp}{destlabel}[true]{%
2529 \Hy@boolkey{destlabel}{#1}%
2530 }

```

```

2531 \define@key{Hyp}{unicode}[true]{%
2532 \Hy@boolkey{unicode}{#1}%
2533 \ifHy@unicode
2534 \def\HyPsd@pdfencoding{unicode}%
2535 \HyPsd@LoadUnicode
2536 \else
2537 \def\HyPsd@pdfencoding{pdfdoc}%
2538 \fi
2539 }

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

```

```

2553 }%
2554 \fi
2555 }

2556 \define@key{Hyp}{pdfencoding}{%
2557 \edef\HyPsd@temp{#1}%
2558 \ifx\HyPsd@temp\HyPsd@pdfencoding@pdfdoc
2559 \let\HyPsd@pdfencoding\HyPsd@temp
2560 \Hy@unicodetrue
2561 \else
2562 \ifcase\ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
2563 \z@
2564 \else
2565 \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
2566 \z@
2567 \else
2568 \@ne
2569 \fi
2570 \fi
2571 \let\HyPsd@pdfencoding\HyPsd@temp
2572 \hypersetup{unicode}%
2573 \ifHy@unicode
2574 \def\HyPsd@pdfencoding{#1}%
2575 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
2576 \HyPsd@LoadStringEnc
2577 \fi
2578 \else
2579 \Hy@Warning{Cannot switch to unicode bookmarks}%
2580 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
2581 \fi
2582 \else
2583 \@onelevel@sanitize\HyPsd@temp
2584 \Hy@Warning{%
2585 Values of option `pdfencoding':\MessageBreak
2586 `pdfdoc', `unicode', `auto'.\MessageBreak
2587 Ignoring unknown value ``\HyPsd@temp'%
2588 }%
2589 \fi
2590 \fi
2591 }
2592 \def\HyPsd@pdfencoding@auto{auto}
2593 \def\HyPsd@pdfencoding@pdfdoc{pdfdoc}
2594 \def\HyPsd@pdfencoding@unicode{unicode}

change 2020-08-14, use unicode by default:
2595 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
2596 \HyPsd@LoadUnicode
2597 \def\HyPsd@LoadStringEnc{%
2598 \RequirePackage{stringenc}[2009/12/15]%
2599 \let\HyPsd@LoadStringEnc\relax
2600 }
2601 \Hy@AtBeginDocument{%
2602 \@ifpackageloaded{stringenc}{%
2603 \let\HyPsd@LoadStringEnc\relax
2604 }{%

```

```

2605 \def\HyPsd@LoadStringEnc{%
2606 \Hy@WarningNoLine{%
2607 Missing package `stringenc'. Use `pdfencoding=auto'\MessageBreak
2608 in the preamble or load the package there%
2609 }%
2610 }%
2611 }%
2612 }

2613 \define@key{Hyp}{psdextra}[true]{%
2614 \Hy@boolkey{psdextra}{#1}%
2615 \HyPsd@LoadExtra
2616 }

2617 \def\hypersetup{\kvsetkeys{Hyp}}

2618 \newif\ifHy@setpdfversion
2619 \define@key{Hyp}{pdfversion}{%
2620 \@ifundefined{Hy@pdfversion@#1}{%
2621 \PackageWarning{hyperref}{%
2622 Unsupported PDF version `#1'.\MessageBreak
2623 Valid values: 1.2-1.7, 2.0%
2624 }%
2625 }{%
2626 \Hy@setpdfversiontrue
2627 \@nameuse{Hy@pdfversion@#1}%
2628 }%
2629 }

\Hy@pdfminorversion already used elsewhere to denote \pdfminorversion or
\pdfvariable majorversion} so introduce new names here.
2630 \@namedef{Hy@pdfversion@1.2}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
norversion{2}}%
2631 \@namedef{Hy@pdfversion@1.3}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
norversion{3}}%
2632 \@namedef{Hy@pdfversion@1.4}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
norversion{4}}%
2633 \@namedef{Hy@pdfversion@1.5}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
norversion{5}}%
2634 \@namedef{Hy@pdfversion@1.6}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
norversion{6}}%
2635 \@namedef{Hy@pdfversion@1.7}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
norversion{7}}%
2636 \@namedef{Hy@pdfversion@2.0}{\def\Hy@pdf@majorversion{2}\def\Hy@pdf@mi-
norversion{0}}%
2637 \def\Hy@pdf@majorversion{1}\def\Hy@pdf@minorversion{5}

Legacy name, earlier releases assumed 1.x
2638 \let\Hy@pdfversion\Hy@pdf@minorversion
2639 \def\Hy@pdf@majorminor@version{\numexpr100*\Hy@pdf@majorversion+\Hy@pdf@mi-
norversion\relax}
2640 \def\Hy@pdfmajorminor@version{\numexpr100*\Hy@pdfmajorversion+\Hy@pdfmi-
norversion\relax}

if pdfminorversion is defined, make sure pdfmajorversion is too.
2641 \@ifundefined{pdfminorversion}{}{%
2642 \@ifundefined{pdfmajorversion}{}%
2643 \newcount\pdfmajorversion

```

```

2644 \pdfmajorversion=1
2645 }{}%
2646 }
2647 \ifx\pdfmajorversion\@undefined\else
2648 \def\Hy@pdfmajorversion{\pdfmajorversion}
2649 \fi

```

## 10 Options for different drivers

```

2650 \newif\ifHy@DviMode
2651 \let\Hy@DviErrMsg\ltx@empty
2652 \ifpdf
2653 \def\Hy@DviErrMsg{pdfTeX or LuaTeX is running in PDF mode}%
2654 \else
2655 \ifxetex
2656 \def\Hy@DviErrMsg{XeTeX is running}%
2657 \else
2658 \ifvtex
2659 \ifnum\OpMode=\z@
2660 \Hy@DviModetrue
2661 \else
2662 \def\Hy@DviErrMsg{VTeX is running, but not in DVI mode}%
2663 \fi
2664 \else
2665 \Hy@DviModetrue
2666 \fi
2667 \fi
2668 \fi
2669 \def\HyOpt@CheckDvi#1{%
2670 \ifHy@DviMode
2671 \expandafter\ltx@firstofone
2672 \else
2673 \Hy@Error{%
2674 Wrong DVI mode driver option `#1',\MessageBreak
2675 because \Hy@DviErrMsg
2676 }\@ehc
2677 \expandafter\ltx@gobble
2678 \fi
2679 }

2680 \DeclareVoidOption{tex4ht}{%
2681 \Hy@texhttrue
2682 \kvsetkeys{Hyp}{colorlinks=true}%
2683 \def\BeforeTeXIVht{\RequirePackage{color}}%
2684 \def\Hy@driver{htex4ht}%
2685 \def\MaybeStopEarly{%
2686 \Hy@Message{Stopped early}%
2687 \Hy@AtBeginDocument{%
2688 \PDF@FinishDoc
2689 \gdef\PDF@FinishDoc{}}%
2690 }%
2691 \endinput
2692 }%
2693 }
2694 \DeclareVoidOption{pdftex}{%

```

```

2695 \ifpdf
2696   \def\Hy@driver{hpdfTeX}%
2697   \PassOptionsToPackage{pdfTeX}{color}%
2698 \else
2699   \Hy@Error{%
2700     Wrong driver option `pdfTeX',\MessageBreak
2701     because pdfTeX in PDF mode is not detected%
2702   }\@ehc
2703 \fi
2704 }
2705 \DeclareVoidOption{luatex}{%
2706   \ifpdf
2707     \ifx\pdfextension\@undefined
2708       \def\Hy@driver{hpdfTeX}%
2709       \PassOptionsToPackage{pdfTeX}{color}%
2710     \else
2711       \def\Hy@driver{hluatex}%
2712       \PassOptionsToPackage{luatex}{color}%
2713     \fi
2714   \else
2715     \Hy@Error{%
2716       Wrong driver option `luatex',\MessageBreak
2717       because luaTeX in PDF mode is not detected%
2718     }\@ehc
2719   \fi
2720 }
2721 \DeclareVoidOption{nativepdf}{%
2722   \HyOpt@CheckDvi{nativepdf}{%
2723     \def\Hy@driver{hdvips}%
2724     \PassOptionsToPackage{dvips}{color}%
2725   }%
2726 }
2727 \DeclareVoidOption{dvipdfm}{%
2728   \HyOpt@CheckDvi{dvipdfm}{%
2729     \def\Hy@driver{hdvipdfm}%
2730   }%
2731 }
2732 \DeclareVoidOption{dvipdfmx}{%
2733   \HyOpt@CheckDvi{dvipdfmx}{%
2734     \def\Hy@driver{hdvipdfm}%
2735     \PassOptionsToPackage{dvipdfmx}{color}%
2736   }%
2737 }
2738 \define@key{Hyp}{dvipdfmx-outline-open}[true]{%
2739   \expandafter\ifx\csname if#1\expandafter\endcsname
2740     \csname iftrue\endcsname
2741     \chardef\SpecialDvipdfmxOutlineOpen\@ne
2742   \else
2743     \chardef\SpecialDvipdfmxOutlineOpen\z@
2744   \fi
2745 }
2746 \DeclareVoidOption{xetex}{%
2747   \ifxetex
2748     \def\Hy@driver{hxetex}%

```



```

2749 \else
2750   \Hy@Error{%
2751     Wrong driver option `xetex',\MessageBreak
2752     because XeTeX is not detected%
2753   }\@ehc
2754 \fi
2755 }
2756 \DeclareVoidOption{pdfmark}{%
2757   \HyOpt@CheckDvi{pdfmark}{%
2758     \def\Hy@driver{hdvips}%
2759   }%
2760 }
2761 \DeclareVoidOption{dvips}{%
2762   \HyOpt@CheckDvi{dvips}{%
2763     \def\Hy@driver{hdvips}%
2764     \PassOptionsToPackage{dvips}{color}%
2765   }%
2766 }
2767 \DeclareVoidOption{hypertex}{%
2768   \HyOpt@CheckDvi{hypertex}{%
2769     \def\Hy@driver{hypertex}%
2770   }%
2771 }
2772 \let\Hy@MaybeStopNow\relax
2773 \DeclareVoidOption{vtex}{%
2774   \ifvtex
2775     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2776     \def\Hy@driver{hvtex}%
2777   \else
2778     \ifnum\OpMode=10\relax
2779     \def\Hy@driver{hvtexhtm}%
2780     \def\MaybeStopEarly{%
2781       \Hy@Message{Stopped early}%
2782       \Hy@AtBeginDocument{%
2783         \PDF@FinishDoc
2784         \gdef\PDF@FinishDoc{}%
2785       }%
2786     \endinput
2787   }%
2788   \else
2789     \Hy@Error{%
2790       Wrong driver option `vtex',\MessageBreak
2791       because of wrong OpMode (\the\OpMode)%
2792     }\@ehc
2793   \fi
2794 \fi
2795 \else
2796   \Hy@Error{%
2797     Wrong driver option `vtex',\MessageBreak
2798     because VTeX is not running%
2799   }\@ehc
2800 \fi
2801 }
2802 \DeclareVoidOption{vtexpdfmark}{%

```

```

2803 \ifvtex
2804 \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2805 \def\Hy@driver{hvtexmrk}%
2806 \else
2807 \Hy@Error{%
2808   Wrong driver option `vtexpdfmark',\MessageBreak
2809   because of wrong OpMode (\the\OpMode)%
2810 } \@ehc
2811 \fi
2812 \else
2813 \Hy@Error{%
2814   Wrong driver option `vtexpdfmark',\MessageBreak
2815   because VTeX is not running%
2816 } \@ehc
2817 \fi
2818 }
2819 \DeclareVoidOption{dviwindo}{%
2820 \HyOpt@CheckDvi{dviwindo}{%
2821 \def\Hy@driver{hdviwind}%
2822 \kvsetkeys{Hyp}{colorlinks}%
2823 \PassOptionsToPackage{dviwindo}{color}%
2824 }%
2825 }
2826 \DeclareVoidOption{dvipsone}{%
2827 \HyOpt@CheckDvi{dvipsone}{%
2828 \def\Hy@driver{hdvipson}%
2829 \PassOptionsToPackage{dvipsone}{color}%
2830 }%
2831 }
2832 \DeclareVoidOption{textures}{%
2833 \HyOpt@CheckDvi{textures}{%
2834 \def\Hy@driver{htexture}%
2835 }%
2836 }
2837 \DeclareVoidOption{latex2html}{%
2838 \Hy@Warning{Option `latex2html` is obsolete. \MessageBreak
2839   A current html.sty will do all necessary (re)definitions%
2840 }%
2841 }
2842 \DeclareVoidOption{hitex}{%
2843 \ifhint
2844 \IfFileExists{hhitex.def}
2845 {\def\Hy@driver{hhitex}}%
2846 {\Hy@Warning{%
2847   Missing driver file `hhitex.def',\MessageBreak
2848   ignoring hitex driver%
2849 }}%
2850 \else
2851 \Hy@Error{%
2852   Wrong driver option `hitex',\MessageBreak
2853   because HiTeX is not detected%
2854 } \@ehc
2855 \fi
2856 }

```

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

```

2857 \DeclareVoidOption{ps2pdf}{%
2858   \HyOpt@CheckDvi{ps2pdf}{%
2859     \def\Hy@driver{hdvips}%
2860     \PassOptionsToPackage{dvips}{color}%
2861   }%
2862 }

2863 \let\HyOpt@DriverFallback\ltx@empty
2864 \define@key{Hyp}{driverfallback}{%
2865   \ifHy@DviMode
2866     \def\HyOpt@DriverFallback{#1}%
2867     \Hy@Match\HyOpt@DriverFallback{}{%
2868       ~(|dvipdfm|dvipdfmx|dvips|dvipsone|dviwindo|hypertex|ps2pdf|
2869       latex2html|tex4ht)$%
2870     }{}%
2871     \Hy@Warning{%
2872       Invalid driver `#1' for option\MessageBreak
2873       `driverfallback'%
2874     }%
2875     \let\HyOpt@DriverFallback\ltx@empty
2876   }%
2877 \fi
2878 }

2879 \let\HyOpt@CustomDriver\ltx@empty
2880 \define@key{Hyp}{customdriver}{%
2881   \IfFileExists{#1.def}{%
2882     \def\HyOpt@CustomDriver{#1}%
2883   }{%
2884     \Hy@Warning{%
2885       Missing driver file `#1.def',\MessageBreak
2886       ignoring custom driver%
2887     }%
2888   }%
2889 }

```

## 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.

```

2890 \define@key{Hyp}{hyperfigures}[true]{%
2891   \Hy@boolkey{hyperfigures}{#1}%
2892 }

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

2893 \define@key{Hyp}{hyperfootnotes}[true]{%
2894   \Hy@boolkey{hyperfootnotes}{#1}%
2895 }

```

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

```

2896 \def\back@none{none}
2897 \def\back@section{section}
2898 \def\back@page{page}
2899 \def\back@slide{slide}
2900 \define@key{Hyp}{backref}[section]{%

```

```

2901 \lowercase{\def\Hy@tempa{#1}}%
2902 \ifx\Hy@tempa\@empty
2903   \let\Hy@tempa\back@section
2904 \fi
2905 \ifx\Hy@tempa\Hy@false
2906   \let\Hy@tempa\back@none
2907 \fi
2908 \ifx\Hy@tempa\back@slide
2909   \let\Hy@tempa\back@section
2910 \fi
2911 \ifx\Hy@tempa\back@page
2912   \PassOptionsToPackage{hyperpageref}{backref}%
2913   \Hy@backreftrue
2914 \else
2915   \ifx\Hy@tempa\back@section
2916     \PassOptionsToPackage{hyperref}{backref}%
2917     \Hy@backreftrue
2918   \else
2919     \ifx\Hy@tempa\back@none
2920       \Hy@backreffalse
2921     \else
2922       \Hy@WarnOptionValue{#1}{backref}{%
2923         `section', `slide', `page', `none',\MessageBreak
2924         or `false'}%
2925     \fi
2926   \fi
2927 \fi
2928 }
2929 \define@key{Hyp}{pagebackref}[true]{%
2930 \edef\Hy@tempa{#1}%
2931 \lowercase\expandafter{%
2932 \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
2933 }%
2934 \ifx\Hy@tempa\@empty
2935   \let\Hy@tempa\Hy@true
2936 \fi
2937 \ifx\Hy@tempa\Hy@true
2938   \PassOptionsToPackage{hyperpageref}{backref}%
2939   \Hy@backreftrue
2940 \else
2941   \ifx\Hy@tempa\Hy@false
2942     \Hy@backreffalse
2943   \else
2944     \Hy@WarnOptionValue{#1}{pagebackref}{`true' or `false'}%
2945   \fi
2946 \fi
2947 }

```

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

```

2948 \define@key{Hyp}{hyperindex}[true]{%
2949 \Hy@boolkey{hyperindex}{#1}%
2950 }

```

Configuration of encap char.

```

2951 \define@key{Hyp}{encap}{\|}{%
2952 \def\HyInd@EncapChar{#1}%
2953 }

```

## 12 Language options

The `\autoref` feature depends on the language.

```

2954 \def\HyLang@afrikaans{%
2955 \def\equationautorefname{Vergelyking}%
2956 \def\footnoteautorefname{Voetnota}%
2957 \def\itemautorefname{Item}%
2958 \def\figureautorefname{Figuur}%
2959 \def\tableautorefname{Tabel}%
2960 \def\partautorefname{Deel}%
2961 \def\appendixautorefname{Bylae}%
2962 \def\chapterautorefname{Hoofstuk}%
2963 \def\sectionautorefname{Afdeling}%
2964 \def\subsectionautorefname{Subafdeling}%
2965 \def\subsubsectionautorefname{Subsubafdeling}%
2966 \def\paragraphautorefname{Paragraaf}%
2967 \def\subparagraphautorefname{Subparagraaf}%
2968 \def\FancyVerbLineautorefname{Lyn}%
2969 \def\theoremautorefname{Teorema}%
2970 \def\pageautorefname{Bladsy}%
2971 }
2972 \def\HyLang@english{%
2973 \def\equationautorefname{Equation}%
2974 \def\footnoteautorefname{footnote}%
2975 \def\itemautorefname{item}%
2976 \def\figureautorefname{Figure}%
2977 \def\tableautorefname{Table}%
2978 \def\partautorefname{Part}%
2979 \def\appendixautorefname{Appendix}%
2980 \def\chapterautorefname{chapter}%
2981 \def\sectionautorefname{section}%
2982 \def\subsectionautorefname{subsection}%
2983 \def\subsubsectionautorefname{subsubsection}%
2984 \def\paragraphautorefname{paragraph}%
2985 \def\subparagraphautorefname{subparagraph}%
2986 \def\FancyVerbLineautorefname{line}%
2987 \def\theoremautorefname{Theorem}%
2988 \def\pageautorefname{page}%
2989 }
2990 \def\HyLang@french{%
2991 \def\equationautorefname{'equation}%
2992 \def\footnoteautorefname{note}%
2993 \def\itemautorefname{item}%
2994 \def\figureautorefname{figure}%
2995 \def\tableautorefname{tableau}%
2996 \def\partautorefname{partie}%
2997 \def\appendixautorefname{annexe}%
2998 \def\chapterautorefname{chapitre}%
2999 \def\sectionautorefname{section}%

```

```

3000 \def\subsectionautorefname{sous-section}%
3001 \def\subsubsectionautorefname{sous-sous-section}%
3002 \def\paragraphautorefname{paragraphe}%
3003 \def\subparagraphautorefname{sous-paragraphe}%
3004 \def\FancyVerbLineautorefname{ligne}%
3005 \def\theoremautorefname{th\`eor\`eme}%
3006 \def\pageautorefname{page}%
3007 }
3008 \def\HyLang@german{%
3009 \def\equationautorefname{Gleichung}%
3010 \def\footnoteautorefname{Fu\ss note}%
3011 \def\itemautorefname{Punkt}%
3012 \def\figureautorefname{Abbildung}%
3013 \def\tableautorefname{Tabelle}%
3014 \def\partautorefname{Teil}%
3015 \def\appendixautorefname{Anhang}%
3016 \def\chapterautorefname{Kapitel}%
3017 \def\sectionautorefname{Abschnitt}%
3018 \def\subsectionautorefname{Unterabschnitt}%
3019 \def\subsubsectionautorefname{Unterunterabschnitt}%
3020 \def\paragraphautorefname{Absatz}%
3021 \def\subparagraphautorefname{Unterabsatz}%
3022 \def\FancyVerbLineautorefname{Zeile}%
3023 \def\theoremautorefname{Theorem}%
3024 \def\pageautorefname{Seite}%
3025 }
3026 \def\HyLang@italian{%
3027 \def\equationautorefname{Equazione}%
3028 \def\footnoteautorefname{nota}%
3029 \def\itemautorefname{punto}%
3030 \def\figureautorefname{Figura}%
3031 \def\tableautorefname{Tabella}%
3032 \def\partautorefname{Parte}%
3033 \def\appendixautorefname{Appendice}%
3034 \def\chapterautorefname{Capitolo}%
3035 \def\sectionautorefname{sezione}%
3036 \def\subsectionautorefname{sottosezione}%
3037 \def\subsubsectionautorefname{sottosottosezione}%
3038 \def\paragraphautorefname{paragrafo}%
3039 \def\subparagraphautorefname{sottoparagrafo}%
3040 \def\FancyVerbLineautorefname{linea}%
3041 \def\theoremautorefname{Teorema}%
3042 \def\pageautorefname{Pag.\@}%
3043 }
3044 \def\HyLang@magyar{%
3045 \def\equationautorefname{Egyenlet}%
3046 \def\footnoteautorefname{l\`abjegyzet}%
3047 \def\itemautorefname{Elem}%
3048 \def\figureautorefname{\`Abra}%
3049 \def\tableautorefname{T\`abl\`azat}%
3050 \def\partautorefname{R\`esz}%
3051 \def\appendixautorefname{F\`uggel\`ek}%
3052 \def\chapterautorefname{fejezet}%
3053 \def\sectionautorefname{szakasz}%

```

```

3054 \def\subsectionautorefname{alszakasz}%
3055 \def\subsubsectionautorefname{alalszakasz}%
3056 \def\paragraphautorefname{bekezd'es}%
3057 \def\subparagraphautorefname{albekezd'es}%
3058 \def\FancyVerbLineautorefname{sor}%
3059 \def\theoremautorefname{T'etel}%
3060 \def\pageautorefname{oldal}%
3061 }
3062 \def\HyLang@portuges{%
3063 \def\equationautorefname{Equa\c c\~ao}%
3064 \def\footnoteautorefname{Nota de rodap'e}%
3065 \def\itemautorefname{Item}%
3066 \def\figureautorefname{Figura}%
3067 \def\tableautorefname{Tabela}%
3068 \def\partautorefname{Parte}%
3069 \def\appendixautorefname{Ap\~endice}%
3070 \def\chapterautorefname{Cap\itulo}%
3071 \def\sectionautorefname{Se\c c\~ao}%
3072 \def\subsectionautorefname{Subse\c c\~ao}%
3073 \def\subsubsectionautorefname{Subsubse\c c\~ao}%
3074 \def\paragraphautorefname{par\agrafo}%
3075 \def\subparagraphautorefname{subpar\agrafo}%
3076 \def\FancyVerbLineautorefname{linha}%
3077 \def\theoremautorefname{Teorema}%
3078 \def\pageautorefname{P\agina}%
3079 }

```

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`.

```

3080 \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`?

```

3081 \def\equationautorefname{\cyr\cyrv\cyrry\cyrr.}%

```

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

```

3082 % \def\equationautorefname{%
3083 % \cyr\cyrv\cyrry\cyrr\cyra\cyrzh\cyre\cyrn\cyri\cyre
3084 % }%

```

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

```

3085 \def\footnoteautorefname{%
3086 \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr.\ \cyrp\cyrr\cyri\cyrm.%
3087 }%

```

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}”

```
3088 % \def\footnoteautorefname{%
3089 %   \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr\cyro\cyrch\cyrn\cyro\cyre\ %
3090 %   \cyrp\cyrr\cyri\cyrm\cyre\cyrch\cyra\cyrn\cyri\cyre
3091 % }%
```

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

```
3092 % \def\Nomfootnoteautorefname{\cyr\cyrs\cyrn\cyro\cyrs\cyrk\cyra}%
3093 % \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.

```
3094 \def\itemautorefname{\cyr\cyrp.}%
3095 % \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.

```
3096 \def\figureautorefname{\cyr\cyrr\cyri\cyrs.}%
3097 \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.

```
3098 \def\partautorefname{\cyr\cyrch.}%
3099 \def\chapterautorefname{\cyr\cyrg\cyrl.}%
3100 \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.

```
3101 \def\appendixautorefname{\cyr\cyrp\cyrr\cyri\cyrl.}%
3102 % \def\appendixautorefname{%
3103 %   \cyr\cyrp\cyrr\cyri\cyrl\cyro\cyrz\cyre\cyrn\cyri\cyre
3104 % }%
```

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.

```
3105 \def\subsectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
3106 \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.

```
3107 \def\paragraphautorefname{\cyr\cyrp.}%
3108 \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.

```
3109 % \def\paragraphautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyrt}%
3110 % \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.

```
3111 \def\FancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr.}%
```

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

```
3112 % \def\NomFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyra}%
```

```
3113 % \def\AccFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyru}%
```

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

```
3114 % \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 ...

```
3115 \def\theoremautorefname{\cyr\cyrt\cyre\cyro\cyrr.}%
```

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

```
3116 % \def\Nomtheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyra}%
```

```
3117 % \def\Acctheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyru}%
```

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

```
3118 \def\pageautorefname{\cyr\cyrs.}%
```

```
3119 }
```

```
3120 \def\HyLang@spanish{%
```

```
3121 \def\equationautorefname{Ecuaci\'on}%
```

```
3122 \def\footnoteautorefname{Nota a pie de p\'agina}%
```

```
3123 \def\itemautorefname{Elemento}%
```

```
3124 \def\figureautorefname{Figura}%
```

```
3125 \def\tableautorefname{Tabla}%
```

```
3126 \def\partautorefname{Parte}%
```

```
3127 \def\appendixautorefname{Ap\'endice}%
```

```
3128 \def\chapterautorefname{Cap\'itulo}%
```

```
3129 \def\sectionautorefname{Secci\'on}%
```

```
3130 \def\subsectionautorefname{Subsecci\'on}%
```

```
3131 \def\subsubsectionautorefname{Subsubsecci\'on}%
```

```
3132 \def\paragraphautorefname{P\'arrafo}%
```

```
3133 \def\subparagraphautorefname{Subp\'arrafo}%
```

```
3134 \def\FancyVerbLineautorefname{L\'inea}%
```

```
3135 \def\theoremautorefname{Teorema}%
```

```
3136 \def\pageautorefname{P\'agina}%
```

```
3137 }
```

```
3138 \def\HyLang@catalan{%
```

```
3139 \def\equationautorefname{Equaci\'o}%
```

```
3140 \def\footnoteautorefname{Nota al peu de p\'agina}%
```

```
3141 \def\itemautorefname{Element}%
```

```
3142 \def\figureautorefname{Figura}%
```

```
3143 \def\tableautorefname{Taula}%
```

```
3144 \def\partautorefname{Part}%
```

```
3145 \def\appendixautorefname{Ap\'endix}%
```

```
3146 \def\chapterautorefname{Cap\'itol}%
```

```

3147 \def\sectionautorefname{Secci\`o}%
3148 \def\subsectionautorefname{Subsec\`ci\`o}%
3149 \def\subsubsectionautorefname{Subsubsec\`ci\`o}%
3150 \def\paragraphautorefname{Par\`agraf}%
3151 \def\subparagraphautorefname{Subpar\`agraf}%
3152 \def\FancyVerbLineautorefname{L\`inia}%
3153 \def\theoremautorefname{Teorema}%
3154 \def\pageautorefname{P\`agina}%
3155 }

3156 \def\HyLang@vietnamesef%
3157 \def\equationautorefname{Ph\`uhorn\`}\horn\`ng tr\`inh}%
3158 \def\footnoteautorefname{Ch\`u th\`ich}%
3159 \def\itemautorefname{m\`d\`u\`c}%
3160 \def\figureautorefname{H\`inh}%
3161 \def\tableautorefname{B\`h\`a\`ng}%
3162 \def\partautorefname{Ph\`acircumflex\`n}%
3163 \def\appendixautorefname{Ph\`d\`u\`l\`d\`u\`c}%
3164 \def\chapterautorefname{ch\`uhorn\`}\horn\`ng}%
3165 \def\sectionautorefname{m\`d\`u\`c}%
3166 \def\subsectionautorefname{m\`d\`u\`c}%
3167 \def\subsubsectionautorefname{m\`d\`u\`c}%
3168 \def\paragraphautorefname{\dj\`o\`d\`a\`n}%
3169 \def\subparagraphautorefname{\dj\`o\`d\`a\`n}%
3170 \def\FancyVerbLineautorefname{d\`ong}%
3171 \def\theoremautorefname{DJ\`d\`i\`nh\`l\`y}%
3172 \def\pageautorefname{Trang}%
3173 }

```

```

3174 \def\HyLang@greek{%
3175   \def\equationautorefname{\textEpsilon\textxi\acconos\textiota\textrho\textsigma\textomega\textsigma\texteta}%
3176   \def\footnoteautorefname{\textupsilon\textpi\textomicron\textsigma\texteta\textmu\textepsilon\acconos\textiota\textomega\textsigma\texteta}%
3177   \def\itemautorefname{\textalpha\textnu\texttau\textiota\textkappa\textepsilon\acconos\textiota\textmu\textepsilon\textnu\textomicron}%
3178   \def\figureautorefname{\textSigma\textchi\acconos\texteta\textmu\textalpha}%
3179   \def\tableautorefname{\textPi\acconos\textiota\textnu\textalpha\textkappa\textalpha}%
3180   \def\partautorefname{\textMu\acconos\textepsilon\rho\textomicron\textvarsigma}%
3181   \def\appendixautorefname{\textPi\textalpha\rho\acconos\textalpha\rho\texttau\texteta\textmu\textalpha}%
3182   \def\chapterautorefname{\textkappa\textepsilon\textphi\acconos\textalpha\textlambda\textalpha\textiota\textomicron}%
3183   \def\sectionautorefname{\textepsilon\textnu\acconos\textomicron\texttau\texteta\texttau\textalpha}%
3184   \def\subsectionautorefname{\textupsilon\textpi\textomicron\textepsilon\textnu\acconos\textomicron\texttau\texteta\texttau\textalpha}%
3185   \def\subsectionautorefname{\textupsilon\textpi\textomicron-\textupsilon\textpi\textomicron\textepsilon}
3186   \def\paragraphautorefname{\textpi\textalpha\acconos\textalpha\textgamma\textrho\textalpha\textphi\textomicron\textvarsigma}%
3187   \def\ subparagraphautorefname{\textupsilon\textpi\textomicron\textpi\textepsilon}

```

```

        talpha\textrho\acctonos\textalpha\textgamma\textrho\textalpha\textphi\textomi-
        cron\textvarsigma}%
3188 \def\FancyVerbLineautorefname{\textgamma\textrho\textalpha\textmu\textmu\ac-
        ctonos\texteta}%
3189 \def\theoremautorefname{\textTheta\textepsilon\acctonos\textomega\text-
        rho\texteta\textmu\textalpha}%
3190 \def\pageautorefname{\textsigma\textepsilon\textlambda\acctonos\textiota\textdelta\text-
        talpha}%
3191 }

3192 \def\HyLang@dutch{%
3193 \def\equationautorefname{Vergelijking}%
3194 \def\footnoteautorefname{voetnoot}%
3195 \def\itemautorefname{punt}%
3196 \def\figureautorefname{Figuur}%
3197 \def\tableautorefname{Tabel}%
3198 \def\partautorefname{Deel}%
3199 \def\appendixautorefname{Bijlage}%
3200 \def\chapterautorefname{hoofdstuk}%
3201 \def\sectionautorefname{paragraaf}%
3202 \def\subsectionautorefname{deelparagraaf}%
3203 \def\subsubsectionautorefname{deel-deelparagraaf}%
3204 \def\paragraphautorefname{alinea}%
3205 \def\subparagraphautorefname{deelalinea}%
3206 \def\FancyVerbLineautorefname{regel}%
3207 \def\theoremautorefname{Stelling}%
3208 \def\pageautorefname{pagina}%
3209 }

3210 \def\HyLang@norsk{%
3211 \def\equationautorefname{Ligning}%
3212 \def\footnoteautorefname{fotnote}%
3213 \def\itemautorefname{element}%
3214 \def\figureautorefname{Figur}%
3215 \def\tableautorefname{Tabell}%
3216 \def\partautorefname{Del}%
3217 \def\appendixautorefname{Tillegg}%
3218 \def\chapterautorefname{kapittel}%
3219 \def\sectionautorefname{seksjon}%
3220 \def\subsectionautorefname{underseksjon}%
3221 \def\subsubsectionautorefname{under-underseksjon}%
3222 \def\paragraphautorefname{avsnitt}%
3223 \def\subparagraphautorefname{underavsnitt}%
3224 \def\FancyVerbLineautorefname{Linje}%
3225 \def\theoremautorefname{Teorem}%
3226 \def\pageautorefname{side}%
3227 }

3228 \def\HyLang@danish{%
3229 \def\equationautorefname{Ligning}%
3230 \def\footnoteautorefname{fodnote}%
3231 \def\itemautorefname{element}%
3232 \def\figureautorefname{Figur}%
3233 \def\tableautorefname{Tabel}%
3234 \def\partautorefname{Del}%
3235 \def\appendixautorefname{Bilag}%
3236 \def\chapterautorefname{kapitel}%

```

```

3237 \def\sectionautorefname{sektion}%
3238 \def\subsectionautorefname{under-sektion}%
3239 \def\subsubsectionautorefname{under-under-sektion}%
3240 \def\paragraphautorefname{afsnit}%
3241 \def\subparagraphautorefname{underafsnit}%
3242 \def\FancyVerbLineautorefname{linje}%
3243 \def\theoremautorefname{Teorem}%
3244 \def\pageautorefname{side}%
3245 }
3246 \def\HyLang@swedish{%
3247 \def\equationautorefname{Ekvation}%
3248 \def\footnoteautorefname{fotnot}%
3249 \def\itemautorefname{punkt}%
3250 \def\figureautorefname{Figur}%
3251 \def\tableautorefname{Tabell}%
3252 \def\partautorefname{Del}%
3253 \def\appendixautorefname{Bilaga}%
3254 \def\chapterautorefname{kapitel}%
3255 \def\sectionautorefname{avsnitt}%
3256 \def\subsectionautorefname{underavsnitt}%
3257 \def\subsubsectionautorefname{under-underavsnitt}%
3258 \def\paragraphautorefname{paragraf}%
3259 \def\subparagraphautorefname{underparagraf}%
3260 \def\FancyVerbLineautorefname{linje}%
3261 \def\theoremautorefname{Teorem}%
3262 \def\pageautorefname{sida}%
3263 }

```

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

```

3264 \def\HyLang@addto#1#2{%
3265   #2%
3266   \@temptokena{#2}%
3267   \ifx#1\relax
3268     \let#1\@empty
3269   \fi
3270   \ifx#1\@undefined
3271     \edef#1{\the\@temptokena}%
3272   \else
3273     \toks@\expandafter{#1}%
3274     \edef#1{\the\toks@\the\@temptokena}%
3275   \fi
3276   \@temptokena{}\toks@\@temptokena
3277 }
3278 \def\HyLang@DeclareLang#1#2#3{%
3279 \ifpackagewith{babel}{#1}{%
3280   \expandafter\HyLang@addto
3281     \csname extras#1\expandafter\endcsname
3282     \csname HyLang@#2\endcsname
3283   \begingroup
3284     \edef\x{\endgroup
3285       #3%
3286     }%
3287   \x

```

```

3288 \namedef{HyLang@#1@done}{}%
3289 }{}%
3290 \begingroup
3291 \edef\x##1##2{%
3292 \noexpand\ifx##2\relax
3293 \errmessage{No definitions for language #2' found!}%
3294 \noexpand\fi
3295 \endgroup
3296 \noexpand\define@key{Hyp}{#1}[]{}%
3297 \noexpand\@ifundefined{HyLang@#1@done}{%
3298 \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
3299 ##3%
3300 \noexpand\@namedef{HyLang@#1@done}{}%
3301 }{}%
3302 }%
3303 }%
3304 \expandafter\x\csname extras#1\expandafter\endcsname
3305 \csname HyLang@#2\endcsname
3306 }
3307 \HyLang@DeclareLang{english}{english}{}
3308 \HyLang@DeclareLang{UKenglish}{english}{}
3309 \HyLang@DeclareLang{british}{english}{}
3310 \HyLang@DeclareLang{USenglish}{english}{}
3311 \HyLang@DeclareLang{american}{english}{}
3312 \HyLang@DeclareLang{german}{german}{}
3313 \HyLang@DeclareLang{austrian}{german}{}
3314 \HyLang@DeclareLang{ngerman}{german}{}
3315 \HyLang@DeclareLang{naustrian}{german}{}
3316 \HyLang@DeclareLang{nswissgerman}{german}{}
3317 \HyLang@DeclareLang{swissgerman}{german}{}
3318 \HyLang@DeclareLang{russian}{russian}{\noexpand\hypersetup{unicode}}
3319 \HyLang@DeclareLang{brazil}{portuges}{}
3320 \HyLang@DeclareLang{brazilian}{portuges}{}
3321 \HyLang@DeclareLang{portuguese}{portuges}{}
3322 \HyLang@DeclareLang{spanish}{spanish}{}
3323 \HyLang@DeclareLang{catalan}{catalan}{}
3324 \HyLang@DeclareLang{afrikaans}{afrikaans}{}
3325 \HyLang@DeclareLang{french}{french}{}
3326 \HyLang@DeclareLang{frenchb}{french}{}
3327 \HyLang@DeclareLang{francais}{french}{}
3328 \HyLang@DeclareLang{acadian}{french}{}
3329 \HyLang@DeclareLang{canadien}{french}{}
3330 \HyLang@DeclareLang{italian}{italian}{}
3331 \HyLang@DeclareLang{magyar}{magyar}{}
3332 \HyLang@DeclareLang{hungarian}{magyar}{}
3333 \HyLang@DeclareLang{greek}{greek}{}
3334 \HyLang@DeclareLang{dutch}{dutch}{}
3335 \HyLang@DeclareLang{norsk}{norsk}{}
3336 \HyLang@DeclareLang{norwegian}{norsk}{}
3337 \HyLang@DeclareLang{danish}{danish}{}
3338 \HyLang@DeclareLang{swedish}{swedish}{}

```

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

```

3339 \DeclareVoidOption{vietnamese}{%

```

```

3340 \HyLang@addto\extrasvietnamese\HyLang@vietnamese
3341 \Hy@AtEndOfPackage{%
3342   \@ifundefined{T@PU}{-}{%
3343     \input{puvnenc.def}%
3344   }%
3345 }%
3346 }
3347 \DeclareVoidOption{vietnam}{-%
3348   \HyLang@addto\extrasvietnam\HyLang@vietnamese
3349   \Hy@AtEndOfPackage{%
3350     \@ifundefined{T@PU}{-}{%
3351       \input{puvnenc.def}%
3352     }%
3353   }%
3354 }

```

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

```

3355 \DeclareVoidOption{arabic}{-%
3356   \Hy@AtEndOfPackage{%
3357     \@ifundefined{T@PU}{-}{%
3358       \input{puarenc.def}%
3359     }%
3360   }%
3361 }

```

## 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.

```

3362 \define@key{Hyp}{colorlinks}[true]{%
3363   \Hy@boolkey{colorlinks}{#1}%
3364 }
3365 \DeclareVoidOption{hidelinks}{-%
3366   \Hy@colorlinksfalse
3367   \Hy@ocgcolorlinksfalse
3368   \Hy@frenchlinksfalse
3369   \def\Hy@colorlink##1{\begingroup}%
3370   \def\Hy@endcolorlink{\endgroup}%
3371   \def\@pdfborder{0 0 0}%
3372   \let\@pdfborderstyle\ltx@empty
3373 }
3374 \define@key{Hyp}{ocgcolorlinks}[true]{%
3375   \Hy@boolkey{ocgcolorlinks}{#1}%
3376 }
3377 \Hy@AtBeginDocument{%
3378   \begingroup
3379   \@ifundefined{OBJ@OCG@view}{%
3380     \ifHy@ocgcolorlinks
3381       \Hy@Warning{%
3382         Driver does not support `ocgcolorlinks',\MessageBreak
3383         using `colorlinks' instead%
3384       }%
3385     \fi
3386   }%

```

```

3387 \endgroup
3388 }
3389 \define@key{Hyp}{frenchlinks}[true]{%
3390 \Hy@boolkey{frenchlinks}{#1}%
3391 }

```

## 14 Bookmarking

```

3392 \begingroup\expandafter\expandafter\expandafter\endgroup
3393 \expandafter\ifx\csname chapter\endcsname\relax
3394 \def\toclevel@part{0}%
3395 \else
3396 \def\toclevel@part{-1}%
3397 \fi
3398 \def\toclevel@chapter{0}
3399 \def\toclevel@section{1}
3400 \def\toclevel@subsection{2}
3401 \def\toclevel@subsubsection{3}
3402 \def\toclevel@paragraph{4}
3403 \def\toclevel@subparagraph{5}
3404 \def\toclevel@figure{0}
3405 \def\toclevel@table{0}

3406 \define@key{Hyp}{bookmarks}[true]{%
3407 \Hy@boolkey{bookmarks}{#1}%
3408 }

3409 \define@key{Hyp}{bookmarksopen}[true]{%
3410 \Hy@boolkey{bookmarksopen}{#1}%
3411 }

```

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.

```

3412 \let\Hy@bookmarksdepth\c@tocdepth
3413 \define@key{Hyp}{bookmarksdepth}[]{%
3414 \begingroup
3415 \edef\x{#1}%
3416 \ifx\x\empty
3417 \global\let\Hy@bookmarksdepth\c@tocdepth
3418 \else
3419 \@ifundefined{toclevel@\x}{%
3420 \@onelevel@sanitize\x
3421 \edef\y{\expandafter\@car\x\@nil}%
3422 \ifcase 0\expandafter\ifx\y-1\fi
3423 \expandafter\ifnum\expandafter`\y>47 %
3424 \expandafter\ifnum\expandafter`\y<58 1\fi\fi\relax

```

```

3425     \Hy@Warning{Unknown document division name (\x)}%
3426     \else
3427         \setbox\z@=\hbox{%
3428             \count@=\x
3429             \xdef\Hy@bookmarksdepth{\the\count@}%
3430         }%
3431     \fi
3432 }{%
3433     \setbox\z@=\hbox{%
3434         \count@=\csname toplevel@\x\endcsname
3435         \xdef\Hy@bookmarksdepth{\the\count@}%
3436     }%
3437 }%
3438 \fi
3439 \endgroup
3440 }

```

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

```

3441 \define@key{Hyp}{bookmarksopenlevel}{%
3442   \def\@bookmarksopenlevel{#1}%
3443 }
3444 \def\@bookmarksopenlevel{\maxdimen}
3445 % `bookmarkstype' to specify which `toc' file to mimic
3446 \define@key{Hyp}{bookmarkstype}{%
3447   \def\Hy@bookmarkstype{#1}%
3448 }
3449 \def\Hy@bookmarkstype{toc}

```

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

```

3450 \define@key{Hyp}{bookmarksnumbered}[true]{%
3451   \Hy@boolkey{bookmarksnumbered}{#1}%
3452 }

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

3453 \define@key{Hyp}{CJKbookmarks}[true]{%
3454   \Hy@boolkey{CJKbookmarks}{#1}%
3455 }
3456 \def\Hy@temp#1{%
3457   \expandafter\Hy@@temp\csname @#1color\endcsname{#1}%
3458 }
3459 \def\Hy@@temp#1#2#3{%
3460   \define@key{Hyp}{#2color}{%
3461     \HyColor@HyperrefColor{##1}#1%
3462   }%
3463   \def#1{#3}%
3464 }
3465 \Hy@temp{link}{red}
3466 \Hy@temp{anchor}{black}
3467 \Hy@temp{cite}{green}
3468 \Hy@temp{file}{cyan}
3469 \Hy@temp{url}{magenta}
3470 \Hy@temp{menu}{red}
3471 \Hy@temp{run}{\@filecolor}
3472 \define@key{Hyp}{pagecolor}{%

```



```

3473 \Hy@WarningPageColor
3474 }
3475 \def\Hy@WarningPageColor{%
3476 \Hy@WarningNoLine{Option `pagecolor' is not available anymore}%
3477 \global\let\Hy@WarningPageColor\relax
3478 }
3479 \define@key{Hyp}{allcolors}{%
3480 \HyColor@HyperrefColor{#1}\@linkcolor
3481 \HyColor@HyperrefColor{#1}\@anchorcolor
3482 \HyColor@HyperrefColor{#1}\@citecolor
3483 \HyColor@HyperrefColor{#1}\@filecolor
3484 \HyColor@HyperrefColor{#1}\@urlcolor
3485 \HyColor@HyperrefColor{#1}\@menucolor
3486 \HyColor@HyperrefColor{#1}\@runcolor
3487 }
3488 \def\hyperbaseurl#1{\def\@baseurl{#1}}
3489 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
3490 \let\@baseurl\@empty
3491 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
3492 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
3493 \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.

```

3494 \let\@pdfpagetransition\relax
3495 \define@key{Hyp}{pdfpagetransition}{%
3496 \def\@pdfpagetransition{#1}%
3497 }

```

`\@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.

```

3498 \let\@pdfpageduration\relax
3499 \define@key{Hyp}{pdfpageduration}{%
3500 \def\@pdfpageduration{#1}%
3501 \Hy@Match\@pdfpageduration}{%
3502 ^([0-9]+\.[0-9]*|[0-9]*\.[0-9]+)$%
3503 }{}{%
3504 \Hy@Warning{%
3505   Invalid value `'\@pdfpageduration'\MessageBreak
3506   of option `pdfpageduration'\MessageBreak
3507   is replaced by an empty value%
3508 }%
3509 \let\@pdfpageduration\ltx@empty
3510 }%
3511 }

```

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).

```

3512 \def\Hy@ColorList{cite,file,link,menu,run,url}
3513 \@for\Hy@temp:=\Hy@ColorList\do{%
3514   \edef\Hy@temp{%
3515     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
3516       \noexpand\HyColor@HyperrefBorderColor
3517       {##1}%
3518       \expandafter\noexpand\csname @\Hy@temp bordercolor\endcsname
3519       {hyperref}%
3520       {\Hy@temp bordercolor}%
3521     }%
3522   }%
3523   \Hy@temp
3524 }
3525 \define@key{Hyp}{pagebordercolor}{%
3526   \Hy@WarningPageBorderColor
3527 }
3528 \def\Hy@WarningPageBorderColor{%
3529   \Hy@WarningNoLine{Option `pagebordercolor' is not available anymore}%
3530   \global\let\Hy@WarningPageBorderColor\relax
3531 }
3532 \define@key{Hyp}{allbordercolors}{%
3533   \def\Hy@temp##1##2{%
3534     \HyColor@HyperrefBorderColor{##1}{##1}{hyperref}{##2bordercolor}%
3535   }%
3536   \Hy@temp\@citebordercolor{cite}%
3537   \Hy@temp\@filebordercolor{file}%
3538   \Hy@temp\@linkbordercolor{link}%
3539   \Hy@temp\@menubordercolor{menu}%
3540   \Hy@temp\@runbordercolor{run}%
3541   \Hy@temp\@urlbordercolor{url}%
3542 }
3543 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{##1}}
3544 \Hy@DefNameKey{pdfhighlight}{%
3545   \do{/I}{Invert}%
3546   \do{/N}{None}%
3547   \do{/O}{Outline}%
3548   \do{/P}{Push}%
3549 }
3550 \def\Hy@setpdfhighlight{%
3551   \ifx\@pdfhighlight\@empty
3552   \else
3553     /H\@pdfhighlight
3554   \fi
3555 }
3556 \define@key{Hyp}{pdfborder}{%
3557   \let\Hy@temp\@pdfborder
3558   \def\@pdfborder{##1}%
3559   \Hy@Match\@pdfborder{}{%

```

```

3560  ^\HyPat@NonNegativeReal/ %
3561  \HyPat@NonNegativeReal/ %
3562  \HyPat@NonNegativeReal/%
3563  ( ?\[ \HyPat@NonNegativeReal/( \HyPat@NonNegativeReal/)*])?$$%
3564  }{}{%
3565  \Hy@Warning{%
3566    Invalid value ` \@pdfborder'\MessageBreak
3567    for option `pdfborder'.\MessageBreak
3568    Option setting is ignored%
3569  }%
3570  \let\@pdfborder\Hy@temp
3571  }%
3572  }
3573  \define@key{Hyp}{pdfborderstyle}{%
3574    \let\Hy@temp\@pdfborderstyle
3575    \def\@pdfborderstyle{#1}%
3576    \Hy@Match\@pdfborderstyle{}{%
3577      ^%
3578      ( */Type */Border%
3579      | */W +\HyPat@NonNegativeReal/%
3580      | */S */[SDBIU]%
3581      | */D *[ ( \HyPat@NonNegativeReal/( \HyPat@NonNegativeReal/)? )? ]%
3582      )* *$%
3583    }{}{%
3584      \Hy@Warning{%
3585        Invalid value ` \@pdfborderstyle'\MessageBreak
3586        for option `pdfborderstyle'.\MessageBreak
3587        Option setting is ignored%
3588      }%
3589      \let\@pdfborderstyle\Hy@temp
3590    }%
3591  }
3592  \def\Hy@setpdfborder{%
3593    \ifx\@pdfborder\@empty
3594    \else
3595      /Border[\@pdfborder]%
3596    \fi
3597    \ifx\@pdfborderstyle\@empty
3598    \else
3599      /BS<<\@pdfborderstyle>>%
3600    \fi
3601  }
3602  \Hy@DefNameKey{pdfpagemode}{%
3603    \do{UseNone}{}%
3604    \do{UseOutlines}{}%
3605    \do{UseThumbs}{}%
3606    \do{FullScreen}{}%
3607    \do{UseOC}{PDF 1.5}%
3608    \do{UseAttachments}{PDF 1.6}%
3609  }
3610  \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
3611    \do{UseNone}{}%
3612    \do{UseOutlines}{}%
3613    \do{UseThumbs}{}%

```

```

3614 \do{FullScreen}{}%
3615 \do{UseOC}{PDF 1.5}%
3616 \do{UseAttachments}{PDF 1.6}%
3617 }
3618 \Hy@DefNameKey{pdfdirection}{%
3619 \do{L2R}{Left to right}%
3620 \do{R2L}{Right to left}%
3621 }
3622 \Hy@DefNameKey{pdfviewarea}{%
3623 \do{MediaBox}{}%
3624 \do{CropBox}{}%
3625 \do{BleedBox}{}%
3626 \do{TrimBox}{}%
3627 \do{ArtBox}{}%
3628 }
3629 \Hy@DefNameKey{pdfviewclip}{%
3630 \do{MediaBox}{}%
3631 \do{CropBox}{}%
3632 \do{BleedBox}{}%
3633 \do{TrimBox}{}%
3634 \do{ArtBox}{}%
3635 }
3636 \Hy@DefNameKey{pdfprintarea}{%
3637 \do{MediaBox}{}%
3638 \do{CropBox}{}%
3639 \do{BleedBox}{}%
3640 \do{TrimBox}{}%
3641 \do{ArtBox}{}%
3642 }
3643 \Hy@DefNameKey{pdfprintclip}{%
3644 \do{MediaBox}{}%
3645 \do{CropBox}{}%
3646 \do{BleedBox}{}%
3647 \do{TrimBox}{}%
3648 \do{ArtBox}{}%
3649 }
3650 \Hy@DefNameKey{pdfprintscaling}{%
3651 \do{AppDefault}{}%
3652 \do{None}{}%
3653 }
3654 \Hy@DefNameKey{pdfduplex}{%
3655 \do{Simplex}{}%
3656 \do{DuplexFlipShortEdge}{}%
3657 \do{DuplexFlipLongEdge}{}%
3658 }
3659 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
3660 \do{true}{}%
3661 \do{false}{}%
3662 }
3663 \define@key{Hyp}{pdfprintpagerange}{%
3664 \def\@pdfprintpagerange{#1}%
3665 }
3666 \Hy@DefNameKey{pdfnumcopies}{%
3667 \do{2}{two copies}%

```

```

3668 \do{3}{three copies}%
3669 \do{4}{four copies}%
3670 \do{5}{five copies}%
3671 }

3672 \define@key{Hyp}{pdfusetitle}[true]{%
3673   \Hy@boolkey{pdfusetitle}{#1}%
3674 }
3675 \def\HyXeTeX@CheckUnicode{%
3676   \ifxetex
3677     \ifHy@unicode
3678     \else
3679       \Hy@WarningNoLine{%
3680         XeTeX driver only supports unicode.\MessageBreak
3681         Enabling option `unicode'%
3682       }%
3683     \kvsetkeys{Hyp}{unicode}%
3684   \fi
3685 \else
3686   \let\HyXeTeX@CheckUnicode\relax
3687 \fi
3688 }
3689 \def\HyPsd@PrerenderUnicode#1{%
3690   \begingroup
3691     \expandafter\ifx\csname PrerenderUnicode\endcsname\relax
3692     \else
3693       \sbox0{%
3694         \let\GenericInfo\@gobbletwo
3695         \let\GenericWarning\@gobbletwo
3696         \let\GenericError\@gobblefour
3697         \PrerenderUnicode{#1}%
3698       }%
3699     \fi
3700   \endgroup
3701 }
3702 \define@key{Hyp}{pdftitle}{%
3703   \AddToDocumentProperties[hyperref]{pdftitle}{#1}%
3704   \HyXeTeX@CheckUnicode
3705   \HyPsd@PrerenderUnicode{#1}%
3706   \pdfstringdef\@pdftitle{#1}%
3707 }
3708 \define@key{Hyp}{pdfauthor}{%
3709   \AddToDocumentProperties[hyperref]{pdfauthor}{#1}%
3710   \HyXeTeX@CheckUnicode
3711   \HyPsd@PrerenderUnicode{#1}%
3712   \pdfstringdef\@pdfauthor{#1}%
3713 }
3714 \define@key{Hyp}{pdfproducer}{%
3715   \AddToDocumentProperties[hyperref]{pdfproducer}{#1}%
3716   \HyXeTeX@CheckUnicode
3717   \HyPsd@PrerenderUnicode{#1}%
3718   \pdfstringdef\@pdfproducer{#1}%
3719 }
3720 \define@key{Hyp}{pdfcreator}{%
3721   \AddToDocumentProperties[hyperref]{pdfcreator}{#1}%

```

```

3722 \HyXeTeX@CheckUnicode
3723 \HyPsd@PrerenderUnicode{#1}%
3724 \pdfstringdef\@pdfcreator{#1}%
3725 }
3726 \define@key{Hyp}{addtopdfcreator}{%
3727 \HyXeTeX@CheckUnicode
3728 \HyPsd@PrerenderUnicode{#1}%
3729 \pdfstringdef\@pdfcreator{\@pdfcreator, #1}%
3730 }
3731 \define@key{Hyp}{pdfcreationdate}{%
3732 \begingroup
3733 \Hy@unicodetrue
3734 \pdfstringdef\@pdfcreationdate{#1}%
3735 \endgroup
3736 }
3737 \define@key{Hyp}{pdfmoddate}{%
3738 \begingroup
3739 \Hy@unicodetrue
3740 \pdfstringdef\@pdfmoddate{#1}%
3741 \endgroup
3742 }
3743 \define@key{Hyp}{pdfsubject}{%
3744 \AddToDocumentProperties[hyperref]{pdfsubject}{#1}%
3745 \HyXeTeX@CheckUnicode
3746 \HyPsd@PrerenderUnicode{#1}%
3747 \pdfstringdef\@pdfsubject{#1}%
3748 }
3749 \define@key{Hyp}{pdfkeywords}{%
3750 \AddToDocumentProperties[hyperref]{pdfkeywords}{#1}%
3751 \HyXeTeX@CheckUnicode
3752 \HyPsd@PrerenderUnicode{#1}%
3753 \pdfstringdef\@pdfkeywords{#1}%
3754 }
3755 \define@key{Hyp}{pdftrapped}{%
3756 \lowercase{\edef\Hy@temp{#1}}%
3757 \ifx\Hy@temp\HyInfo@trapped@true
3758 \def\@pdftrapped{True}%
3759 \else
3760 \ifx\Hy@temp\HyInfo@trapped@false
3761 \def\@pdftrapped{False}%
3762 \else
3763 \ifx\Hy@temp\HyInfo@trapped@unknown
3764 \def\@pdftrapped{Unknown}%
3765 \else
3766 \ifx\Hy@temp\@empty
3767 \else
3768 \Hy@Warning{%
3769   Unsupported value `#1'\MessageBreak
3770   for option `pdftrapped'%
3771 }%
3772 \fi
3773 \def\@pdftrapped{}%
3774 \fi
3775 \fi

```

```

3776 \fi
3777 }
3778 \def\HyInfo@trapped@true{true}
3779 \def\HyInfo@trapped@false{false}
3780 \def\HyInfo@trapped@unknown{unknown}
3781 \def\HyInfo@TrappedUnsupported{%
3782   \ifx\@pdftrapped\@empty
3783   \else
3784     \Hy@WarningNoLine{'pdftrapped' is not supported by this driver}%
3785     \gdef\HyInfo@TrappedUnsupported{}%
3786   \fi
3787 }
3788 \define@key{Hyp}{pdfinfo}{%
3789   \kvsetkeys{pdfinfo}{#1}%
3790 }
3791 \def\Hy@temp#1{%
3792   \lowercase{\Hy@temp@A{#1}}{#1}%
3793 }
3794 \def\Hy@temp@A#1#2{%
3795   \define@key{pdfinfo}{#2}{%
3796     \hypersetup{pdf#1={#1}}%
3797   }%
3798 }
3799 \Hy@temp{Title}
3800 \Hy@temp{Author}
3801 \Hy@temp{Keywords}
3802 \Hy@temp{Subject}
3803 \Hy@temp{Creator}
3804 \Hy@temp{Producer}
3805 \Hy@temp{CreationDate}
3806 \Hy@temp{ModDate}
3807 \Hy@temp{Trapped}
3808 \newif\ifHyInfo@AddonUnsupported
3809 \kv@set@family@handler{pdfinfo}{%
3810   \HyInfo@AddonHandler{#1}{#2}%
3811 }
3812 \let\HyInfo@do\relax
3813 \def\HyInfo@AddonHandler#1#2{%
3814   \ifx\kv@value\relax
3815     \Hy@Warning{%
3816       Option `pdfinfo': ignoring key `kv@key' without value%
3817     }%
3818   \else
3819     \EdefEscapeName\HyInfo@KeyEscaped{\kv@key}%
3820     \EdefUnescapeName\HyInfo@Key{\HyInfo@KeyEscaped}%
3821     \expandafter\ifx\csname KV@pdfinfo@\HyInfo@Key\endcsname\relax
3822     \ifHyInfo@AddonUnsupported
3823       \Hy@Warning{%
3824         This driver does not support additional\MessageBreak
3825         information entries, therefore\MessageBreak
3826         `kv@key' is ignored%
3827       }%
3828     \else
3829       \def\HyInfo@tmp##1{%

```

```

3830 \kv@define@key{pdfinfo}{###1}{%
3831 \HyXeTeX@CheckUnicode
3832 \HyPsd@PrerenderUnicode{####1}%
3833 \pdfstringdef\HyInfo@Value{####1}%
3834 \global\expandafter
3835 \let\csname HyInfo@Value@##1\endcsname
3836 \HyInfo@Value
3837 }%
3838 }%
3839 \expandafter\HyInfo@tmp\expandafter{\HyInfo@Key}%
3840 \global\expandafter
3841 \let\csname KV@pdfinfo@\HyInfo@Key\expandafter\endcsname
3842 \csname KV@pdfinfo@\HyInfo@Key\endcsname
3843 \xdef\HyInfo@AddonList{%
3844 \HyInfo@AddonList
3845 \HyInfo@do{\HyInfo@Key}%
3846 }%
3847 \expandafter\kv@parse@normalized\expandafter{%
3848 \HyInfo@Key={#2}%
3849 }{%
3850 \kv@processor@default{pdfinfo}%
3851 }%
3852 \fi
3853 \else
3854 \expandafter\kv@parse@normalized\expandafter{%
3855 \HyInfo@Key={#2}%
3856 }{%
3857 \kv@processor@default{pdfinfo}%
3858 }%
3859 \fi
3860 \fi
3861 }
3862 \def\HyInfo@GenerateAddons{%
3863 \ifHyInfo@AddonUnsupported
3864 \def\HyInfo@Addons{}%
3865 \else
3866 \begingroup
3867 \toks@{}%
3868 \def\HyInfo@do##1{%
3869 \EdefEscapeName\HyInfo@Key{##1}%
3870 \edef\x{%
3871 \toks@{%
3872 \the\toks@
3873 /\HyInfo@Key(\csname HyInfo@Value@##1\endcsname)%
3874 }%
3875 }%
3876 \x
3877 }%
3878 \HyInfo@AddonList
3879 \edef\x{\endgroup
3880 \def\noexpand\HyInfo@Addons{\the\toks@}%
3881 }%
3882 \x
3883 \fi

```



```

3884 }
3885 \global\let\HyInfo@AddonList\ltx@empty

3886 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \}
3887 \define@key{Hyp}{pdfinkmargin}{\setpdfinkmargin{#1}}
3888 \let\setpdfinkmargin\@gobble
3889 \def\calculate@pdfview#1 #2\{%
3890   \def\@pdfview{#1}%
3891   \ifx\#2\%
3892     \def\@pdfviewparams{ -32768}%
3893   \else
3894     \def\@pdfviewparams{ #2}%
3895   \fi
3896 }
3897 \def\Hy@number#1{%
3898   \the\numexpr#1\relax
3899 }%
3900 \define@key{Hyp}{pdfstartpage}{%
3901   \ifx\#1\%
3902     \let\@pdfstartpage\ltx@empty
3903   \else
3904     \edef\@pdfstartpage{\Hy@number{#1}}%
3905   \fi
3906 }%
3907 \define@key{Hyp}{pdfstartview}{%
3908   \ifx\#1\%
3909     \let\@pdfstartview\ltx@empty
3910   \else
3911     \def\@pdfstartview{/#1}%
3912   \fi
3913 }
3914 \def\HyPat@NonNegativeReal/{%
3915   \ *([0-9]+\.[0-9]*|([0-9]*\.[0-9]+) *)%
3916 }
3917 \define@key{Hyp}{pdfremotestartview}{%
3918   \ifx\#1\%
3919     \def\@pdfremotestartview{/Fit}%
3920   \else
3921     \edef\@pdfremotestartview{#1}%
3922     \Hy@Match\@pdfremotestartview{%
3923       ^XYZ(%
3924         ()| %
3925         (null|-\HyPat@NonNegativeReal/) %
3926         (null|-\HyPat@NonNegativeReal/) %
3927         (null|\HyPat@NonNegativeReal/)%
3928       )| % end of "XYZ"
3929       Fit(%
3930         ()| %
3931         B| %
3932         (H|V|BH|BV)(%
3933           ()| %
3934           (null|\HyPat@NonNegativeReal/)%
3935         )| %
3936         R %
3937         \HyPat@NonNegativeReal/ %

```

```

3938         \HyPat@NonNegativeReal/ %
3939         \HyPat@NonNegativeReal/ %
3940         \HyPat@NonNegativeReal/%
3941     )% end of "Fit"
3942 )$%
3943 }{}{%
3944 \Hy@Warning{%
3945     Invalid value ` \@pdfremotestartview'\MessageBreak
3946     of `pdfremotestartview'\MessageBreak
3947     is replaced by `Fit'%
3948 }%
3949 \let\@pdfremotestartview\@empty
3950 }%
3951 \ifx\@pdfremotestartview\@empty
3952 \def\@pdfremotestartview{/Fit}%
3953 \else
3954 \edef\@pdfremotestartview{/ \@pdfremotestartview}%
3955 \fi
3956 \fi
3957 }
3958 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
3959 \define@key{Hyp}{pdftoolbar}[true]{%
3960 \Hy@boolkey{pdftoolbar}{#1}%
3961 }
3962 \define@key{Hyp}{pdfmenubar}[true]{%
3963 \Hy@boolkey{pdfmenubar}{#1}%
3964 }
3965 \define@key{Hyp}{pdfwindowui}[true]{%
3966 \Hy@boolkey{pdfwindowui}{#1}%
3967 }
3968 \define@key{Hyp}{pdffitwindow}[true]{%
3969 \Hy@boolkey{pdffitwindow}{#1}%
3970 }
3971 \define@key{Hyp}{pdfcenterwindow}[true]{%
3972 \Hy@boolkey{pdfcenterwindow}{#1}%
3973 }
3974 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
3975 \Hy@boolkey{pdfdisplaydoctitle}{#1}%
3976 }
3977 \define@key{Hyp}{pdfa}[true]{%
3978 \Hy@boolkey{pdfa}{#1}%
3979 }
3980 \define@key{Hyp}{pdfnewwindow}[true]{%
3981 \def\Hy@temp{#1}%
3982 \ifx\Hy@temp\@empty
3983 \Hy@pdfnewwindowsetfalse
3984 \else
3985 \Hy@pdfnewwindowsettrue
3986 \Hy@boolkey{pdfnewwindow}{#1}%
3987 \fi
3988 }
3989 \def\Hy@SetNewWindow{%
3990 \ifHy@pdfnewwindowset
3991 /NewWindow %

```

```

3992 \ifHy@pdfnewwindow true\else false\fi
3993 \fi
3994 }
3995 \Hy@DefNameKey{pdfpagelayout}{%
3996 \do{SinglePage}{}%
3997 \do{OneColumn}{}%
3998 \do{TwoColumnLeft}{}%
3999 \do{TwoColumnRight}{}%
4000 \do{TwoPageLeft}{PDF 1.5}%
4001 \do{TwoPageRight}{PDF 1.5}%
4002 }
4003 \define@key{Hyp}{pdflang}{%
4004 \edef\@pdflang{#1}%
4005 \def\Hy@temp{\relax}%
4006 \ifx\@pdflang\Hy@temp
4007 \let\@pdflang\relax
4008 \fi
4009 \ifx\@pdflang\relax
4010 \else
4011 \ifx\@pdflang\ltx@empty
4012 \else

```

Test according to ABNF of RFC 3066.

```

4013 \Hy@Match\@pdflang{icase}{%
4014 ~%
4015 [a-z]{1,8}%
4016 (-[a-z0-9]{1,8})*%
4017 $%
4018 }{%

```

Test according to ABNF of RFC 5646.

```

4019 \Hy@Match\@pdflang{icase}{%
4020 ~%
4021 (%
4022 % langtag
4023 (% language
4024 [a-z]{2,3}%
4025 ([a-z]{3}(-[a-z]{3}){0,2})?% extlang
4026 |[a-z]{4}% reserved for future use
4027 |[a-z]{5,8}% registered language subtag
4028 )%
4029 (-[a-z]{4})?% script
4030 (-([a-z]{2}|[0-9]{3}))?% region
4031 (-([a-z]{5,8}|[0-9][a-z0-9]{3}))?% variant
4032 (-[0-9a-wyz](-[a-z0-9]{2,8})+)?% extension
4033 (-x(-[a-z0-9]{1,8})+)?% privateuse
4034 % privateuse
4035 |x(-[a-z0-9]{1,8})+%
4036 % grandfathered/irregular
4037 |en-GB-oed%
4038 |i-(ami|bnn|default|enochian|hak|klinton|lux|
4039 mingo|navajo|pwn|tao|tay|tsu)%
4040 |sgn-(BE-FR|BE-NL|CH-DE)%
4041 % grandfathered/regular
4042 |art-lojban%

```

```

4043         |cel-gaulish%
4044         |no-(bok|nyn)%
4045         |zh-(guoyu|hakka|min|min-nan|xiang)%
4046     )%
4047     $%
4048     }{%

```

Test for unique extensions.

```

4049     \Hy@Match{-\@pdflang}{icase}{-[a-wyz0-9]-}{}%
4050     \Hy@Match\@pdflang{icase}{~x-}{}%
4051     % remove privateuse
4052     \edef\Hy@temp{-\@pdflang}%
4053     \Hy@Match\Hy@temp{icase}{}%
4054     ~%
4055     (%
4056         (-[a-wyz0-9]|-[a-z0-9]{2,8})*%
4057     )%
4058     -x-%
4059     }{%
4060     \edef\Hy@temp{%
4061         \expandafter\strip@prefix\pdfastmatch1%
4062     }%
4063     }{}%
4064     \Hy@Match\Hy@temp{icase}{}%
4065     (-[a-wyz0-9]-).*\ltx@backslashchar1%
4066     }{%
4067     \Hy@Warning{%
4068         Invalid language identifier `#1'\MessageBreak
4069         for option `pdfang', because it violates\MessageBreak
4070         well-formedness defined in RFC 4646\MessageBreak
4071         by duplicate singleton subtags%
4072     }%
4073     \let\@pdfang\relax
4074     }{}%
4075     }%
4076     }{}%

```

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

```

4077     \ifx\@pdfang\relax
4078     \else
4079     \Hy@Match\@pdfang{icase}{%
4080     ~%
4081     [a-zA-Z]{2}-%
4082     (%
4083         aa|AA|%
4084         [qQ][m-zA-Z]|%
4085         [xX][a-zA-Z]|%
4086         zz|ZZ%
4087     )%
4088     (-|$)%
4089     }{%
4090     \Hy@Warning{%
4091         Invalid language identifier `#1'\MessageBreak
4092         for option `pdfang' because of invalid country code%
4093     \MessageBreak

```

```

4094         in second subtag (RFC 3066)%
4095     }%
4096     \let\@pdflang\relax
4097 }{}%
4098 \fi
4099 }{%
4100 \Hy@Warning{%
4101     Invalid language identifier `#1'\MessageBreak
4102     for option `pdflang', because it violates\MessageBreak
4103     well-formedness defined in RFC 5646%
4104 }%
4105 \let\@pdflang\relax
4106 }%
4107 }{%
4108 \Hy@Warning{%
4109     Invalid language identifier `#1'\MessageBreak
4110     for option `pdflang' (RFC 3066)%
4111 }%
4112 \let\@pdflang\relax
4113 }%
4114 \fi
4115 \fi
4116 }
4117 \define@key{Hyp}{pdfpagelabels}[true]{%
4118 \Hy@boolkey{pdfpagelabels}{#1}%
4119 }
4120 \define@key{Hyp}{pdfescapeform}[true]{%
4121 \Hy@boolkey{pdfescapeform}{#1}%
4122 }

```

Default values:

```

4123 \def\@linkbordercolor{1 0 0}
4124 \def\@urlbordercolor{0 1 1}
4125 \def\@menubordercolor{1 0 0}
4126 \def\@filebordercolor{0 .5 .5}
4127 \def\@runbordercolor{0 .7 .7}
4128 \def\@citebordercolor{0 1 0}
4129 \def\@pdfhighlight{/I}
4130 \let\@pdftitle\ltx@empty
4131 \let\@pdfauthor\ltx@empty
4132 \let\@pdfproducer\relax
4133 \def\@pdfcreator{LaTeX with hyperref}
4134 \let\@pdfcreationdate\ltx@empty
4135 \let\@pdfmoddate\ltx@empty
4136 \let\@pdfsubject\ltx@empty
4137 \let\@pdfkeywords\ltx@empty
4138 \let\@pdftrapped\ltx@empty
4139 \let\@pdfpagescrop\ltx@empty
4140 \def\@pdfstartview{/Fit}
4141 \def\@pdfremotestartview{/Fit}
4142 \def\@pdfstartpage{1}
4143 \let\@pdfprintpagerange\ltx@empty
4144 \let\@pdflang\relax
4145 \let\PDF@SetupDoc\@empty
4146 \let\PDF@FinishDoc\@empty

```

```

4147 \let\phantomsection\@empty
4148 \let\special@paper\@empty
4149 \def\HyperDestNameFilter#1{#1}
4150 \Hy@AtBeginDocument{%
4151   \begingroup
4152     \edef\x{\ifdim\stockheight>\z@ \stockheight\else\paperheight\fi}%
4153     \dimen@=\x\relax
4154     \ifdim\dimen@>\z@
4155       \else
4156         \dimen@=11in\relax
4157         \Hy@WarningNoLine{%
4158           Height of page (\expandafter\string\x) %
4159           is invalid (\the\x),\MessageBreak
4160           using 11in%
4161         }%
4162       \fi
4163       \dimen@=0.99626401\dimen@
4164       \xdef\Hy@pageheight{\strip@pt\dimen@}%
4165     \endgroup
4166 }
4167 \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.

```

4168 \let\hyper@normalise\ExecuteOptions
4169 \let\ExecuteOptions\hypersetup
4170 \Hy@RestoreCatcodes
4171 \InputIfFileExists{hyperref.cfg}{-}{-}
4172 \Hy@SetCatcodes
4173 \let\ExecuteOptions\hyper@normalise
4174 \ifx\Hy@MaybeStopNow\relax
4175 \else
4176   \Hy@stoppeearlytrue
4177   \expandafter\Hy@MaybeStopNow
4178 \fi
4179 \Hy@stoppeearlyfalse

```

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.

```

4180 \SetupKeyvalOptions{family=Hyp}
4181 \DeclareLocalOptions{%
4182   a4paper,a5paper,b5paper,letterpaper,legalpaper,executivepaper%
4183 }

```

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

```

4184 \@ifpackagewith{hyperref}{tex4ht}{%
4185 }{%
4186   \@ifpackageloaded{tex4ht}{%
4187     \PassOptionsToPackage{tex4ht}{hyperref}%
4188   }{%
4189     \ltx@ifundefined{HCode}{%
4190     }{%
4191       \begingroup
4192       \def\Hy@pkg{tex4ht}%

```

```

4193 \def\Hy@temp@A#1\RequirePackage[#2]#3#4\Hy@NIL{%
4194 \def\Hy@param{#2#3}%
4195 \ifx\Hy@param\ltx@empty
4196 \expandafter\ltx@gobble
4197 \else
4198 \def\Hy@param{#3}%
4199 \ifx\Hy@param\Hy@pkg
4200 \PassOptionsToPackage{#2}{tex4ht}%
4201 \expandafter\expandafter\expandafter\@gobble
4202 \else
4203 \expandafter\expandafter\expandafter\ltx@firstofone
4204 \fi
4205 \fi
4206 {\Hy@temp@A#4\Hy@NIL}%
4207 }%
4208 \expandafter
4209 \Hy@temp@A\@documentclasshook\RequirePackage[]{}\Hy@NIL
4210 \endgroup
4211 \PassOptionsToPackage{tex4ht}{hyperref}%
4212 }%
4213 }%
4214 }

4215 \let\ReadBookmarks\relax
4216 \ProcessKeyvalOptions{Hyp}

```

After processing options.

## 15.1 Package xspace support

```

4217 \def\Hy@xspace@end{}
4218 \ltx@ifundefined{xspaceaddexceptions}{%
4219 \Hy@AtBeginDocument{%
4220 \ltx@ifundefined{xspaceaddexceptions}{%
4221 }{%
4222 \def\Hy@xspace@end{%
4223 \ltx@gobble{end for xspace}%
4224 }%
4225 \xspaceaddexceptions{%
4226 \Hy@xspace@end,\hyper@linkend,\hyper@anchorend
4227 }%
4228 }%
4229 }%
4230 }{%
4231 \def\Hy@xspace@end{%
4232 \ltx@gobble{end for xspace}%
4233 }%
4234 \xspaceaddexceptions{\Hy@xspace@end,\hyper@linkend,\hyper@anchorend}%
4235 }

```

## 15.2 Option draft

```

4236 \Hy@AtBeginDocument{%
4237 \ifHy@draft
4238 \let\hyper@@anchor\@gobble
4239 \gdef\hyper@link#1#2#3{#3\Hy@xspace@end}%

```

```

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

```

### 15.3 PDF/A

```

4258 \Hy@DisableOption{pdfa}
4259 \ifHy@pdfa
4260 \ifnum \Hy@pdf@majorminor@version< 104
4261 \kvsetkeys{Hyp}{pdfversion=1.4}%
4262 \fi
4263 \Hy@DisableOption{pdfversion}%
4264 \def\Hy@Acrobatmenu#1#2{%
4265 \leavevmode
4266 \begingroup
4267 \edef\x{#1}%
4268 \@onelevel@sanitize\x
4269 \ifx\x\Hy@NextPage
4270 \let\y=Y%
4271 \else
4272 \ifx\x\Hy@PrevPage
4273 \let\y=Y%
4274 \else
4275 \ifx\x\Hy@FirstPage
4276 \let\y=Y%
4277 \else
4278 \ifx\x\Hy@LastPage
4279 \let\y=Y%
4280 \else
4281 \let\y=N%
4282 \fi
4283 \fi
4284 \fi
4285 \fi
4286 \expandafter\endgroup
4287 \ifx\y Y%
4288 \else
4289 \Hy@Error{%
4290 PDF/A: Named action `#1' is not permitted%
4291 }\@ehc

```



```

4292     {#2}%
4293     \expandafter\@gobble
4294     \fi
4295 }%
4296 \def\Hy@temp#1{%
4297   \expandafter\def\csname Hy@#1\endcsname{#1}%
4298   \expandafter\@onelevel@sanitize\csname Hy@#1\endcsname
4299   }%
4300   \Hy@temp{NextPage}%
4301   \Hy@temp{PrevPage}%
4302   \Hy@temp{FirstPage}%
4303   \Hy@temp{LastPage}%
4304 \else
4305 \def\Hy@Acrobatmenu#1#2{\leavevmode}%
4306 \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.

```

4307 \def\Hy@wrapper@babel#1#2{%
4308   \begingroup
4309     \Hy@safe@activestrue
4310     \set@display@protect
4311     \edef\x{#2}%
4312     \@onelevel@sanitize\x
4313     \toks@{#1}%
4314     \edef\x{\endgroup\the\toks@\{x\}}%
4315     \x
4316 }
4317 \def\Hy@WrapperDef#1{%
4318   \begingroup
4319     \escapechar=\m@ne
4320     \xdef\Hy@gtemp{%
4321       \expandafter\noexpand\csname HyWrap@\string#1\endcsname
4322     }%
4323   \endgroup
4324   \edef#1{%
4325     \noexpand\Hy@wrapper@babel
4326     \expandafter\noexpand\Hy@gtemp
4327   }%
4328   \expandafter\def\Hy@gtemp
4329 }
4330 \ifHy@hyperfigures
4331   \Hy@Info{Hyper figures ON}%
4332 \else
4333   \Hy@Info{Hyper figures OFF}%
4334 \fi
4335 \ifHy@nesting
4336   \Hy@Info{Link nesting ON}%
4337 \else

```

```

4338 \Hy@Info{Link nesting OFF}%
4339 \fi
4340 \ifHy@hyperindex
4341 \Hy@Info{Hyper index ON}%
4342 \else
4343 \Hy@Info{Hyper index OFF}%
4344 \fi
4345 \ifHy@plainpages
4346 \Hy@Info{Plain pages ON}%
4347 \else
4348 \Hy@Info{Plain pages OFF}%
4349 \fi
4350 \ifHy@backref
4351 \Hy@Info{Backreferencing ON}%
4352 \else
4353 \Hy@Info{Backreferencing OFF}%
4354 \fi
4355 \ifHy@implicit
4356 \Hy@InfoNoLine{Implicit mode ON; LaTeX internals redefined}%
4357 \else
4358 \Hy@InfoNoLine{Implicit mode OFF; no redefinition of LaTeX internals}%
4359 \def\MaybeStopEarly{%
4360 \Hy@Message{Stopped early}}%
4361 \Hy@AtBeginDocument{%
4362 \PDF@FinishDoc
4363 \gdef\PDF@FinishDoc{}%
4364 }%
4365 \endinput
4366 }%
4367 \Hy@AtBeginDocument{%
4368 \let\autoref\ref
4369 \let\autopageref\pageref
4370 \ifx\@pdfpagemode\@empty
4371 \gdef\@pdfpagemode{UseNone}%
4372 \fi
4373 \global\Hy@backreffalse
4374 }%
4375 \Hy@AtEndOfPackage{%
4376 \global\let\ReadBookmarks\relax
4377 \global\let\WriteBookmarks\relax
4378 }%
4379 \fi
4380 \Hy@DisableOption{implicit}

```

#### 15.4.1 Driver loading

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

```

4381 \@ifundefined{stockwidth}{\newdimen\stockwidth}{}
4382 \@ifundefined{stockheight}{\newdimen\stockheight}{}

4383 \Hy@AtEndOfPackage{%
4384 \@ifpackageloaded{tex4ht}{%
4385 \def\Hy@driver{htex4ht}%
4386 \Hy@texhttrue

```

4387 }{}%

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.

```

4388 \ifx\Hy@driver\@empty
4389 \else
4390   \ifx\pdfextension\@undefined
4391     \def\Hy@temp{hpdfTeX}%
4392   \else
4393     \def\Hy@temp{hluatex}%
4394   \fi
4395 \ifpdf
4396   \ifx\Hy@driver\Hy@temp
4397   \else
4398     \Hy@WarningNoLine{%
4399       Wrong driver `\'Hy@driver.def';\MessageBreak
4400       pdfTeX is running in PDF mode.\MessageBreak
4401       Forcing driver `\'Hy@temp.def'%
4402     }%
4403   \let\Hy@driver\Hy@temp
4404   \fi
4405 \else
4406   \ifx\Hy@driver\Hy@temp
4407   \Hy@WarningNoLine{%
4408     Wrong driver `\'Hy@driver.def';\MessageBreak
4409     pdfTeX is not running in PDF mode.\MessageBreak
4410     Using default driver%
4411   }%
4412   \let\Hy@driver\@empty
4413   \fi
4414 \fi
4415 \fi
4416 \ifHy@texht
4417 \else
4418   \ifx\Hy@driver\@empty
4419   \else
4420     \def\Hy@temp{hxetex}%
4421   \ifxetex
4422     \ifx\Hy@driver\Hy@temp
4423     \else
4424       \Hy@WarningNoLine{%
4425         Wrong driver `\'Hy@driver.def';\MessageBreak
4426         XeTeX is running.\MessageBreak
4427         Forcing driver `\'Hy@temp.def' for XeTeX%
4428       }%
4429     \let\Hy@driver\Hy@temp
4430   \fi
4431 \fi
4432 \fi
4433 \fi
4434 \ifx\Hy@driver\@empty
4435 \else
4436   \def\Hy@temp{hhitex}%
4437 \ifhint

```

```

4438 \ifx\Hy@driver\Hy@temp
4439 \else
4440 \Hy@WarningNoLine{%
4441   Wrong driver ``\Hy@driver.def';\MessageBreak
4442   hitex is running.\MessageBreak
4443   Forcing driver ``\Hy@temp.def'%
4444 }%
4445 \let\Hy@driver\Hy@temp
4446 \fi
4447 \fi
4448 \fi
4449 \ifx\Hy@driver\@empty
4450 \else
4451 \def\Hy@temp{hvtexhtm}%
4452 \ifnum\ifvtex\OpMode\else\m@ne\fi=10 %
4453 \ifx\Hy@driver\Hy@temp
4454 \else
4455 \Hy@WarningNoLine{%
4456   Wrong driver ``\Hy@driver.def';\MessageBreak
4457   VTeX is running in HTML mode.\MessageBreak
4458   Forcing driver ``\Hy@temp.def'%
4459 }%
4460 \let\Hy@driver\Hy@temp
4461 \fi
4462 \else
4463 \ifx\Hy@driver\Hy@temp
4464 \Hy@WarningNoLine{%
4465   Wrong driver ``\Hy@driver.def';\MessageBreak
4466   VTeX is not running in HTML mode.\MessageBreak
4467   Using default driver%
4468 }%
4469 \let\Hy@driver\@empty
4470 \fi
4471 \fi
4472 \fi

```

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

```

4473 \let\HyOpt@DriverType\ltx@empty
4474 \ifx\HyOpt@CustomDriver\ltx@empty
4475 \ifx\Hy@driver\@empty
4476 \def\HyOpt@DriverType{ (autodetected)}%
4477 \providecommand*{\Hy@defaultdriver}{hdvips}%
4478 \ifpdf
4479 \ifx\pdfextension\@undefined
4480 \def\Hy@driver{hpdtex}%
4481 \else
4482 \def\Hy@driver{hluatex}%
4483 \fi
4484 \else
4485 \ifxetex
4486 \def\Hy@driver{hxetex}%
4487 \else
4488 \ifnum\ifvtex\OpMode\else\m@ne\fi=10 %
4489 \def\Hy@driver{hvtexhtm}%
4490 \def\MaybeStopEarly{%

```

```

4491 \Hy@Message{Stopped early}%
4492 \Hy@AtBeginDocument{%
4493 \PDF@FinishDoc
4494 \gdef\PDF@FinishDoc{}%
4495 }%
4496 \endinput
4497 }%
4498 \else
4499 \ifhint
4500 \def\Hy@driver{hhtex}
4501 \else
4502 \ifnum\ifvtex\OpMode\else\m@ne\fi=\@ne
4503 \def\Hy@driver{hvtex}%
4504 \else
4505 \ifnum\ifvtex\OpMode\else\m@ne\fi=\tw@
4506 \def\Hy@driver{hvtex}%
4507 \else
4508 \ifx\HyOpt@DriverFallback\ltx@empty
4509 \let\Hy@driver\Hy@defaultdriver
4510 \def\HyOpt@DriverType{ (default)}%
4511 \else
4512 \begingroup
4513 \toks@{\expandafter{\HyOpt@DriverFallback}%
4514 \edef\x{\endgroup
4515 \noexpand\kvsetkeys{Hyp}{\the\toks@}%
4516 }%
4517 \x
4518 \ifx\Hy@driver\ltx@empty
4519 \let\Hy@driver\Hy@defaultdriver
4520 \def\HyOpt@DriverType{ (default)}%
4521 \else
4522 \def\HyOpt@DriverType{ (fallback)}%
4523 \fi
4524 \fi
4525 \fi
4526 \fi
4527 \fi
4528 \fi
4529 \fi
4530 \fi
4531 \ifx\Hy@driver\Hy@defaultdriver
4532 \def\Hy@temp{hdviwind}%
4533 \ifx\Hy@temp\Hy@driver
4534 \kvsetkeys{Hyp}{colorlinks}%
4535 \PassOptionsToPackage{dviwindo}{color}%
4536 \fi
4537 \fi
4538 \fi
4539 \else
4540 \def\HyOpt@DriverType{ (custom)}%
4541 \let\Hy@driver\HyOpt@CustomDriver
4542 \fi
4543 \Hy@InfoNoLine{Driver\HyOpt@DriverType: \Hy@driver}%
4544 \chardef\Hy@VersionChecked=0 %

```

```

4545 \input{\Hy@driver.def}%
4546 \ifcase\Hy@VersionChecked
4547   \Hy@VersionCheck{\Hy@driver.def}%
4548 \fi
4549 \let\@unprocessedoptions\relax
4550 \Hy@RestoreCatcodes
4551 \Hy@DisableOption{tex4ht}%
4552 \Hy@DisableOption{pdftex}%
4553 \Hy@DisableOption{nativepdf}%
4554 \Hy@DisableOption{dvipdfm}%
4555 \Hy@DisableOption{dvipdfmx}%
4556 \Hy@DisableOption{dvipdfmx-outline-open}%
4557 \Hy@DisableOption{pdfmark}%
4558 \Hy@DisableOption{dvips}%
4559 \Hy@DisableOption{hypertex}%
4560 \Hy@DisableOption{vtex}%
4561 \Hy@DisableOption{vtexpdfmark}%
4562 \Hy@DisableOption{dviwindo}%
4563 \Hy@DisableOption{dvipsone}%
4564 \Hy@DisableOption{textures}%
4565 \Hy@DisableOption{latex2html}%
4566 \Hy@DisableOption{ps2pdf}%
4567 \Hy@DisableOption{xetex}%
4568 \Hy@DisableOption{driverfallback}%
4569 \Hy@DisableOption{customdriver}%
4570 \Hy@DisableOption{pdfversion}%
4571 }

```

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.

```

4572 \newif\ifHy@DvipdfmxOutlineOpen
4573 \ifxetex
4574   \ifdim\number\XeTeXversion\XeTeXrevision in<0.9995in %
4575   \else
4576     \chardef\SpecialDvipdfmxOutlineOpen\@ne
4577     \Hy@DvipdfmxOutlineOpenttrue
4578   \fi
4579 \fi
4580 \begingroup\expandafter\expandafter\expandafter\endgroup
4581 \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax
4582 \else
4583   \ifnum\SpecialDvipdfmxOutlineOpen>\z@
4584     \Hy@DvipdfmxOutlineOpenttrue
4585   \fi
4586 \fi

```

### 15.4.2 Bookmarks

```

4587 \def\WriteBookmarks{0}
4588 \def\@bookmarkopenstatus#1{%
4589   \ifHy@bookmarksopen

```

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

```

4590 \ifnum#1<\expandafter\@firstofone\expandafter
4591      {\number\@bookmarksopenlevel} % explicit space
4592 \else
4593     -%
4594 \fi
4595 \else
4596     -%
4597 \fi
4598 }
4599 \ifHy@bookmarks
4600 \Hy@Info{Bookmarks ON}%
4601 \ifx\@pdfpagemode\@empty
4602 \def\@pdfpagemode{UseOutlines}%
4603 \fi
4604 \else
4605 \let\@bookmarkopenstatus\ltx@gobble
4606 \Hy@Info{Bookmarks OFF}%
4607 \Hy@AtEndOfPackage{%
4608 \global\let\ReadBookmarks\relax
4609 \global\let\WriteBookmarks\relax
4610 }%
4611 \ifx\@pdfpagemode\@empty
4612 \def\@pdfpagemode{UseNone}%
4613 \fi
4614 \fi
4615 \Hy@DisableOption{bookmarks}

Add wrapper for setting standard catcodes (babel's shorthands).
4616 \def\Hy@CatcodeWrapper#1{%
4617 \let\Hy@endWrap\ltx@empty
4618 \def\TMP@EnsureCode##1##2{%
4619 \edef\Hy@endWrap{%
4620 \Hy@endWrap
4621 \catcode##1 \the\catcode##1\relax
4622 }%
4623 \catcode##1 ##2\relax
4624 }%
4625 \TMP@EnsureCode{10}{12}% ^^J
4626 \TMP@EnsureCode{33}{12}% !
4627 \TMP@EnsureCode{34}{12}% "
4628 \TMP@EnsureCode{36}{3}% $ (math)
4629 \TMP@EnsureCode{38}{4}% & (alignment)
4630 \TMP@EnsureCode{39}{12}% '
4631 \TMP@EnsureCode{40}{12}% (
4632 \TMP@EnsureCode{41}{12}% )
4633 \TMP@EnsureCode{42}{12}% *
4634 \TMP@EnsureCode{43}{12}% +
4635 \TMP@EnsureCode{44}{12}% ,
4636 \TMP@EnsureCode{45}{12}% -
4637 \TMP@EnsureCode{46}{12}% .
4638 \TMP@EnsureCode{47}{12}% /
4639 \TMP@EnsureCode{58}{12}% :
4640 \TMP@EnsureCode{59}{12}% ;
4641 \TMP@EnsureCode{60}{12}% <
4642 \TMP@EnsureCode{61}{12}% =

```

```

4643 \TMP@EnsureCode{62}{12}% >
4644 \TMP@EnsureCode{63}{12}% ?
4645 \TMP@EnsureCode{91}{12}% [
4646 \TMP@EnsureCode{93}{12}% ]
4647 \TMP@EnsureCode{94}{7}% ^ (superscript)
4648 \TMP@EnsureCode{95}{8}% _ (subscript)
4649 \TMP@EnsureCode{96}{12}% `
4650 \TMP@EnsureCode{124}{12}% |
4651 \TMP@EnsureCode{126}{13}% ~ (active)
4652 #1\relax
4653 \Hy@EndWrap
4654 }

```

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

```

4655 \Hy@AtBeginDocument{%
4656   \ifHy@ocgcolorlinks
4657     \kvsetkeys{Hyp}{colorlinks}%
4658     \ifHy@pdfa
4659       \Hy@Warning{%
4660         PDF/A: Optional Content Groups are prohibited,\MessageBreak
4661         using `colorlinks' instead of `ocgcolorlinks'%
4662       }%
4663       \Hy@ocgcolorlinksfalse
4664     \fi
4665   \fi
4666   \ifHy@ocgcolorlinks
4667   \else
4668     \Hy@DisableOption{ocgcolorlinks}%
4669   \fi
4670   \ifHy@colorlinks
4671     \def\@pdfborder{0 0 0}%
4672     \let\@pdfborderstyle\@empty
4673     \Hy@CatcodeWrapper{%
4674       \RequirePackage{color}%
4675     }%
4676     \def\Hy@colorlink#1{%
4677       \begingroup
4678       \HyColor@UseColor#1%
4679     }%
4680     \def\Hy@endcolorlink{\endgroup}%
4681     \Hy@Info{Link coloring ON}%
4682   \else
4683     \ifHy@frenchlinks
4684       \def\Hy@colorlink#1{\begingroup\fontshape{\scdefault}\selectfont}%
4685       \def\Hy@endcolorlink{\endgroup}%
4686       \Hy@Info{French linking ON}%
4687     \else

```

for grouping consistency:

```

4688     \def\Hy@colorlink#1{\begingroup}%
4689     \def\Hy@endcolorlink{\endgroup}%
4690     \Hy@Info{Link coloring OFF}%
4691   \fi
4692 \fi

```



```

4693 \Hy@DisableOption{colorlinks}%
4694 \Hy@DisableOption{frenchlinks}%
4695 \ifHy@texht
4696 \else

```

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

```

4697 \ifHy@implicit
4698 \let \T@Ref\HyRef@Ref
4699 \def\@refstar#1{%
4700 \NR@ref@showkeys{#1}%
4701 \HyRef@StarSetRef{#1}\@firstoffive
4702 }
4703 \def\@pagerefstar#1{%
4704 \NR@ref@showkeys{#1}%
4705 \HyRef@StarSetRef{#1}\@secondoffive
4706 }
4707 \def\@namerefstar#1{%
4708 \NR@ref@showkeys{#1}%
4709 \HyRef@StarSetRef{#1}\@thirdoffive
4710 }
4711 \def\@Refstar#1{%
4712 \NR@ref@showkeys{#1}%
4713 \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
4714 }%
4715 \else
4716 \fi
4717 \fi
4718 }
4719 \Hy@AtBeginDocument{%
4720 \ifx\ReadBookmarks\relax
4721 \else
4722 \Hy@CatcodeWrapper\ReadBookmarks
4723 \fi
4724 }
4725 \ifHy@backref
4726 \RequirePackage{backref}%
4727 \else
4728 \let\Hy@backout\@gobble
4729 \fi
4730 \Hy@DisableOption{backref}
4731 \Hy@DisableOption{pagebackref}
4732 \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.

```

4733 \begingroup
4734 \endlinechar=-1 %
4735 \catcode\^^A=14 %
4736 \catcode\^^M\active
4737 \catcode\%\active
4738 \catcode\#\active
4739 \catcode\_ \active
4740 \catcode\$\active
4741 \catcode\&\active
4742 \gdef\hyper@normalise{^^A
4743   \begingroup
4744   \catcode\^^M\active
4745   \def^^M{ }^^A
4746   \catcode\%\active
4747   \let%\@percentchar
4748   \let\%\@percentchar
4749   \catcode\#\active
4750   \def#{\hyper@hash}^^A
4751   \def#{\hyper@hash}^^A
4752   \@makeother\&^^A
4753   \edef&{\string&}^^A
4754   \edef\&{\string&}^^A
4755   \edef\textunderscore{\string_}^^A
4756   \let\_ \textunderscore
4757   \catcode\_ \active
4758   \let\_ \textunderscore
4759   \let~\hyper@tilde
4760   \let~\hyper@tilde
4761   \let\textasciitilde\hyper@tilde
4762   \let\\ \@backslashchar
4763   \edef${\string$}^^A
4764   \Hy@safe@activestrue
4765   \hyper@n@rmalise
4766 }^^A
4767 \catcode\#=6 ^^A
4768 \gdef\Hy@ActiveCarriageReturn{^^M}^^A
4769 \gdef\hyper@n@rmalise#1#2{^^A
4770   \def\Hy@tempa{#2}^^A
4771   \ifx\Hy@tempa\Hy@ActiveCarriageReturn
4772     \ltx@ReturnAfterElseFi{^^A
4773       \hyper@@normalise{#1}^^A
4774     }^^A
4775   \else
4776     \ltx@ReturnAfterFi{^^A
4777       \hyper@@normalise{#1}{#2}^^A
4778     }^^A
4779   \fi
4780 }^^A
4781 \gdef\hyper@@normalise#1#2{^^A
4782   \edef\Hy@tempa{^^A
4783     \endgroup
4784     \noexpand#1{\Hy@RemovePercentCr#2%\^^M\@nil}^^A
4785   }^^A
4786   \Hy@tempa

```

```

4787 }^^A
4788 \gdef\Hy@RemovePercentCr#1%^^M#2\@nil{^^A
4789   #1^^A
4790   \ifx\limits#2\limits
4791   \else
4792     \ltx@ReturnAfterFi{^^A
4793       \Hy@RemovePercentCr #2\@nil
4794     }^^A
4795   \fi
4796 }^^A
4797 \endgroup
4798 \providecommand*\hyper@chars{%
4799   \let\#\hyper@hash
4800   \let\%\@percentchar
4801   \Hy@safe@activestrue
4802 }

4803 \def\hyperlink#1#2{%
4804   \hyper@@link{#{1}}{#2}%
4805 }

4806 \def\Hy@VerboseLinkStart#1#2{%
4807   \ifHy@verbose
4808     \begingroup
4809       \Hy@safe@activestrue
4810       \xdef\Hy@VerboseGlobalTemp{(#1) `#2'}%
4811       \Hy@Info{Reference \Hy@VerboseGlobalTemp}%
4812       \xdef\Hy@VerboseGlobalTemp{%
4813         \Hy@VerboseGlobalTemp, %
4814         line \the\inputlineno
4815       }%
4816     \endgroup
4817     \let\Hy@VerboseLinkInfo\Hy@VerboseGlobalTemp
4818     \@onelevel@sanitize\Hy@VerboseLinkInfo
4819   \fi
4820 }

4821 \def\Hy@VerboseLinkInfo{<VerboseLinkInfo>}
4822 \def\Hy@VerboseLinkStop{%
4823   \ifHy@verbose
4824     \begingroup
4825       \edef\x{\endgroup
4826         \write\m@ne{%
4827           Package `hyperref' Info: %
4828           End of reference \Hy@VerboseLinkInfo.%
4829         }%
4830       }%
4831     \x
4832   \fi
4833 }

4834 \def\Hy@VerboseAnchor#1{%
4835   \ifHy@verbose
4836     \begingroup
4837       \Hy@safe@activestrue
4838       \Hy@Info{Anchor ``\HyperDestNameFilter{#1}'}%
4839     \endgroup

```

```

4840 \fi
4841 }

4842 \def\Hy@AllowHyphens{%
4843 \relax
4844 \ifhmode
4845 \penalty\@M
4846 \hskip\z@skip
4847 \fi
4848 }

4849 \DeclareRobustCommand*{\href}[1][]{%
4850 \begingroup
4851 \setkeys{href}{#1}%
4852 \@ifnextchar\bgroup\Hy@href{\hyper@normalise\href@}%
4853 }
4854 \def\Hy@href#{%
4855 \hyper@normalise\href@
4856 }
4857 \begingroup
4858 \catcode`\$=6 %
4859 \catcode`\#=12 %
4860 \gdef\href@\$1{\expandafter\href@split$1##\}%
4861 \gdef\href@split$1#\$2#\$3\\$4{%
4862 \hyper@@link{$1}{$2}{$3}{$4}%
4863 \endgroup
4864 }%
4865 \endgroup

```

Option ‘page’.

```

4866 \define@key{href}{page}{%
4867 \def\Hy@href@page{#1}%
4868 }
4869 \let\Hy@href@page\@empty
4870 \newcount\c@Hy@tempcnt
4871 \def\theHy@tempcnt{\the\c@Hy@tempcnt}
4872 \def\Hy@MakeRemoteAction{%
4873 \ifx\Hy@href@page\@empty
4874 \def\Hy@href@page{0}%
4875 \else
4876 \setcounter{Hy@tempcnt}{\Hy@href@page}%
4877 \ifnum\c@Hy@tempcnt<\@ne
4878 \Hy@Warning{%
4879 Invalid page number (\theHy@tempcnt)\MessageBreak
4880 for remote PDF file.\MessageBreak
4881 Using page 1%
4882 }%
4883 \def\Hy@href@page{0}%
4884 \else
4885 \global\advance\c@Hy@tempcnt\m@ne
4886 \edef\Hy@href@page{\theHy@tempcnt}%
4887 \fi
4888 \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.

```

4889 \ifx\Hy@href@nextactionraw\@empty
4890 \else
4891 \Hy@pdfnewwindowsettrue
4892 \Hy@pdfnewwindowtrue
4893 \fi
4894 }

```

Option ‘pdfremotestartview’.

```

4895 \define@key{href}{pdfremotestartview}{%
4896 \setkeys{Hyp}{pdfremotestartview={#1}}}%
4897 }

```

Option ‘pdfnewwindow’.

```

4898 \let\KV@href@pdfnewwindow\KV@Hyp@pdfnewwindow
4899 \let\KV@href@pdfnewwindow@default\KV@Hyp@pdfnewwindow@default

```

Option ‘ismap’.

```

4900 \newif\ifHy@href@ismap
4901 \define@key{href}{ismap}[true]{%
4902 \ltx@ifundefined{Hy@href@ismap#1}{%
4903 \Hy@Error{%
4904 Invalid value (#1) for key `ismap'.\MessageBreak
4905 Permitted values are `true' or `false'.\MessageBreak
4906 Ignoring `ismap'%
4907 } \@ehc
4908 }{%
4909 \csname Hy@href@ismap#1\endcsname
4910 }%
4911 }

```

Option ‘nextactionraw’.

```

4912 \let\Hy@href@nextactionraw\@empty
4913 \define@key{href}{nextactionraw}{%
4914 \edef\Hy@href@nextactionraw{#1}%
4915 \ifx\Hy@href@nextactionraw\@empty
4916 \else
4917 \Hy@Match\Hy@href@nextactionraw{}{%
4918 ~(\HyPat@ObjRef/|<<.*[/S[ /.+>>|
4919 \[( ?\HyPat@ObjRef/|<<.*[/S[ /.+>>)+ ?])$%
4920 }%}{%
4921 \Hy@Warning{Invalid value for `nextactionraw':\MessageBreak
4922 \Hy@href@nextactionraw\MessageBreak
4923 The action is discarded%
4924 }%
4925 }%
4926 \ifx\Hy@href@nextactionraw\@empty
4927 \else
4928 \edef\Hy@href@nextactionraw{/Next \Hy@href@nextactionraw}%
4929 \fi
4930 \fi
4931 }
4932 \def\HyPat@ObjRef/{.+}

```

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

```

4933 \RequirePackage{url}
4934 \let\HyOrg@url\url

```

```

4935 \def\Hurl{\begingroup \Url}
4936 \DeclareRobustCommand*\nolinkurl{\hyper@normalise\nolinkurl@}
4937 \def\nolinkurl@#1{\Hurl{#1}}
4938 \DeclareRobustCommand*\url{\hyper@normalise\url@}
4939 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}

4940 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
4941 \providecommand\hyper@image[2]{#2}

4942 \def\hypertarget#1#2{%
4943   \ifHy@nesting
4944     \hyper@@anchor{#1}{#2}%
4945   \else
4946     \hyper@@anchor{#1}{\relax}#2%
4947   \fi
4948 }

```

`\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  $\text{\LaTeX}$  label which can be used in a short form of `\hyperref` later, to avoid remembering the name and category.

```

4949 \DeclareRobustCommand*\hyperref{\%
4950   \@ifnextchar{\Hy@babelnormalise\label@hyperref}\@hyperref
4951 }
4952 \def\Hy@babelnormalise#1[#2]{%
4953   \begingroup
4954     \Hy@safe@activetrue
4955     \let\protect\@unexpandable@protect
4956     \edef\Hy@tempa{%
4957       \endgroup
4958       \noexpand#1[{#2}]}%
4959   }%
4960   \Hy@tempa
4961 }
4962 \def\@hyperref{\hyper@normalise\@hyperref}
4963 \def\@hyperref#1#2#3{%
4964   \edef\ref@one{\ifx\\#2\\else#2.\fi#3}%
4965   \expandafter\tryhyper@link\ref@one\{#1}%
4966 }
4967 \def\tryhyper@link#1\\#2{%
4968   \hyper@@link{#2}{#1}%
4969 }

4970 \def\hyperdef{\@ifnextchar{\label@hyperdef}\@hyperdef}
4971 \def\@hyperdef#1#2#3{%, category, name, text
4972   \ifx\\#1\\%
4973     \def\Hy@AnchorName{#2}%
4974   \else
4975     \def\Hy@AnchorName{#1.#2}%
4976   \fi
4977   \ifHy@nesting
4978     \expandafter\hyper@@anchor\expandafter\Hy@AnchorName{#3}%
4979   \else

```

```

4980 \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#3%
4981 \fi
4982 }

```

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.

```

4983 \let\hyperrefundefinedlink\@firstofone
4984 \def\label@hyperref[#1]{%
4985 \expandafter\label@@hyperref\csname r@#1\endcsname{#1}%
4986 }%
4987 \def\label@@hyperref#1#2#3{%
4988 \ifx#1\relax
4989 \protect\G@refundefinedtrue
4990 \@latex@warning{%
4991 Hyper reference `#2' on page \thepage \space undefined%
4992 }%
4993 \begingroup
4994 \hyperrefundefinedlink{#3}%
4995 \endgroup
4996 \else
4997 \hyper@@link{\expandafter\@fifthoffive#1}%
4998 {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
4999 \fi
5000 }
5001 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
5002 % anchor text
5003 \@bsphack
5004 \ifx\#2\%
5005 \def\Hy@AnchorName{#3}%
5006 \else
5007 \def\Hy@AnchorName{#2.#3}%
5008 \fi
5009 \if@filesw
5010 \protected@write\@auxout{}{%
5011 \string\newlabel{#1}{\{ }\{ }\{\Hy@AnchorName\} }\}%
5012 }%
5013 \fi
5014 \@esphack
5015 \ifHy@nesting
5016 \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#4}%
5017 \else
5018 \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#4%
5019 \fi
5020 }

```

`\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`

```
5021 \ExplSyntaxOn
```

```

5022 \cs_new:Npn \hyperget #1 #2
5023 {
5024   \use:c { __hyp_get_#1:n } { #2}
5025 }
5026
5027 \cs_new:Npn \__hyp_get_anchor:n #1
5028 {
5029   \HyperDestNameFilter
5030   {
5031     \cs_if_exist:cTF {r@#1}
5032     {
5033       \tl_item:cn {r@#1}{4}
5034     }
5035     {
5036       Doc-Start
5037     }
5038   }
5039 }
5040 \cs_new:Npn \__hyp_get_pageanchor:n #1
5041 {
5042   \HyperDestNameFilter
5043   {
5044     \cs_if_exist:cTF {r@#1}
5045     {
5046       page. \tl_item:cn {r@#1}{2}
5047     }
5048     {
5049       Doc-Start
5050     }
5051   }
5052 }
5053 \cs_new:Npn \__hyp_get_currentanchor:n #1
5054 {
5055   \HyperDestNameFilter { \@currentHref }
5056 }
5057 \ExplSyntaxOff

```

## 16.1 Link box support for XeTeX

```

5058 \newdimen\XeTeXLinkMargin
5059 \setlength{\XeTeXLinkMargin}{2pt}
5060 \ifxetex
5061   \font\XeTeXLink@font=pzdr at 1sp\relax
5062   \newcommand*{\XeTeXLink@space}{%
5063     \begingroup
5064       \XeTeXLink@font
5065       \@xxxii
5066     \endgroup
5067   }%
5068   \newcommand{\XeTeXLinkBox}[1]{%
5069     \begingroup
5070       \leavevmode
5071       \sbox\z@{#1}%
5072     \begingroup

```



```

5073 \dimen@=\dp\z@
5074 \advance\dimen@\XeTeXLinkMargin
5075 \setbox\tw@=\llap{%
5076 \hb@xt@\XeTeXLinkMargin{%
5077 \lower\dimen@\hbox{\XeTeXLink@space}%
5078 \hss
5079 }%
5080 }%
5081 \dp\tw@=\dp\z@
5082 \ht\tw@=\ht\z@
5083 \copy\tw@
5084 \endgroup
5085 \copy\z@
5086 \dimen@=\ht\z@
5087 \advance\dimen@\XeTeXLinkMargin
5088 \setbox\tw@=\rlap{%
5089 \hb@xt@\XeTeXLinkMargin{%
5090 \hss
5091 \raise\dimen@\hbox{\XeTeXLink@space}%
5092 }%
5093 }%
5094 \dp\tw@=\dp\z@
5095 \ht\tw@=\ht\z@
5096 \copy\tw@
5097 \endgroup
5098 }%
5099 \else
5100 \newcommand*\XeTeXLinkBox}[1]{%
5101 \begingroup
5102 \leavevmode
5103 \sbox\z@{#1}%
5104 \copy\z@
5105 \endgroup
5106 }%
5107 \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.

```

5108 \def\hyper@link{\let\Hy@reserved@a\relax
5109 \@ifnextchar{\hyper@link@}{\hyper@link@[link]}%
5110 }
5111 % #1: type
5112 % #2: URL
5113 % #3: destination name
5114 % #4: text
5115 \def\hyper@link@[#1]#2#3#4{%
5116 \ltx@ifempty{#4}{% link text
5117 \Hy@Warning{Suppressing empty link}%
5118 }{%
5119 \begingroup

```

```

5120 \protected@edef\Hy@tempa{#2}%
5121 \edef\Hy@tempb{#3}%
5122 \ifx\Hy@tempa\ltx@empty
5123 \ifx\Hy@tempb\ltx@empty
5124 \Hy@Warning{Suppressing link with empty target}%
5125 \toks@{%
5126 \endgroup
5127 \ltx@secondoftwo
5128 }%
5129 \else
5130 \toks@{%
5131 \endgroup
5132 \hyper@link{#1}%
5133 }%
5134 \fi
5135 \else
5136 \toks@{%
5137 \endgroup
5138 \expandafter\hyper@readexternallink#2\{#1}%
5139 }%
5140 \fi
5141 \Hy@safe@activesfalse
5142 \toks@\expandafter{%
5143 \the\expandafter\toks@
5144 \expandafter{\Hy@tempb}{#4}%
5145 }%
5146 \the\toks@
5147 }%
5148 }

```

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.

```

5149 \def\hyper@readexternallink#1\{#2#3#4{%
5150 \begingroup
5151 \let\\\relax
5152 \expandafter\endgroup
5153 \expandafter\@hyper@@readexternallink#1\{#2}{#3}{#4}%
5154 }
5155 \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.

```

5156 \@hyper@readexternallink{#2}{#3}{#4}#1::\{#1}%
5157 }

```

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

```

5158 \def\@pdftempwordfile{file}%
5159 \def\@pdftempwordrun{run}%
5160 \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**:

```

5161 \ifx\\\#6\\\%
5162 \@hyper@linkfile file:#7\\\{#3}{#2}{#7}%
5163 \else
5164 \ifx\\\#4\\\%
5165 \@hyper@linkfile file:#7\\\{#3}{#2}{#7}%
5166 \else

```

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

```

5167 \def\@pdftempa{#4}%
5168 \ifx\@pdftempa\@pdftempwordfile
5169 \@hyper@linkfile#7\\\{#3}{#2}{#7}%
5170 \else

```

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

```

5171 \ifx\@pdftempa\@pdftempwordrun
5172 \ifHy@pdfa
5173 \Hy@Error{%
5174 PDF/A: Launch action is prohibited%
5175 }\@ehc
5176 \begingroup
5177 \leavevmode
5178 #2%
5179 \endgroup
5180 \else
5181 \@hyper@launch#7\\\{#3}{#2}%
5182 \fi
5183 \else

```

otherwise its a URL

```

5184 \hyper@linkurl{#3}{#7\ifx\\\#2\\\else\hyper@hash#2\fi}%
5185 \fi
5186 \fi
5187 \fi
5188 \fi
5189 }

```

By default, turn run: into file:

```

5190 \def\@hyper@launch run:#1\\\#2#3{% filename, anchor text, linkname
5191 \hyper@linkurl{#2}{%
5192 \Hy@linkfileprefix
5193 #1%
5194 \ifx\\\#3\\\%

```

```

5195 \else
5196 \hyper@hash
5197 #3%
5198 \fi
5199 }%
5200 }

```

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

```

5201 \def\@hyper@linkfile file:#1\|#2#3#4{%
5202 %file url,link string, name, original uri
5203 \filename@parse{#1}%
5204 \ifx\filename@ext\relax
5205 \edef\filename@ext{\XR@ext}%
5206 \fi
5207 \def\use@file{\filename@area\filename@base.\filename@ext}%
5208 \Hy@IfStringEndsWith\filename@ext\XR@ext{%
5209 \hyper@linkfile{#2}{\use@file}{#3}%
5210 }{%
5211 \ifx\@baseurl\@empty
5212 \hyper@linkurl{#2}{%
5213 #4\ifx\|#3\|else\hyper@hash#3\fi
5214 }%
5215 \else
5216 \hyper@linkurl{#2}{\use@file\ifx\|#3\|else\hyper@hash#3\fi}%
5217 \fi
5218 }%
5219 }

5220 \def\Hy@IfStringEndsWith#1#2{%
5221 \begingroup
5222 \edef\x{#1}%
5223 \@onelevel@sanitize\x
5224 \edef\x{.\x}%
5225 \edef\y{#2}%
5226 \@onelevel@sanitize\y
5227 \edef\y{.\y}%
5228 \expandafter\def\expandafter\z\expandafter##\expandafter1\y##2\@nil{%
5229 \endgroup
5230 \ifx\relax##2\relax
5231 \expandafter\ltx@secondoftwo
5232 \else
5233 \expandafter\ltx@firstoftwo
5234 \fi
5235 }%
5236 \expandafter\expandafter\expandafter\z\expandafter\x\y\@nil
5237 }

5238 \def\Hy@StringLocalhost{localhost}
5239 \@onelevel@sanitize\Hy@StringLocalhost
5240 \def\Hy@CleanupFile#1{%
5241 \edef#1{#1}%
5242 \expandafter\Hy@@CleanupFile#1\hbox{//\hbox\@nil{#1}%
5243 }
5244 \def\Hy@@CleanupFile#1//#2/#3\hbox#4\@nil#5{%
5245 \begingroup

```

```

5246 \toks@{\endgroup}%
5247 \def\x{#1}%
5248 \ifx\x\@empty
5249 \def\x{#2}%
5250 \ifx\x\@empty
5251 \toks@{\endgroup\def#5{/#3}}%
5252 \else
5253 \@onelevel@sanitize\x
5254 \ifx\x\Hy@StringLocalhost
5255 \toks@{\endgroup\def#5{/#3}}%
5256 \fi
5257 \fi
5258 \fi
5259 \the\toks@
5260 }

```

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.

```

5261 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
5262 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
5263 \ifx\#1\%
5264 #2\Hy@Warning{Ignoring empty anchor}%
5265 \else
5266 \def\anchor@spot{#2#3}%
5267 \let\put@me@back\@empty
5268 \ifx\relax#2\relax
5269 \else
5270 \ifHy@nesting
5271 \else
5272 \ifcat a\noexpand#2\relax
5273 \else
5274 \ifcat 0\noexpand#2 \relax
5275 \else
5276 % \typeout{Anchor start is not alphanumeric %
5277 % on input line\the\inputlineno%
5278 % }%
5279 \let\anchor@spot\@empty
5280 \def\put@me@back{#2#3}%
5281 \fi
5282 \fi
5283 \fi
5284 \fi
5285 \ifHy@activeanchor
5286 \anchor@spot
5287 \else
5288 \hyper@anchor{#1}%
5289 \fi
5290 \expandafter\put@me@back
5291 \fi

```

```

5292 \let\anchor@spot\@empty
5293 }
5294 \let\anchor@spot\ltx@empty

```

## 18 Option ‘destlabel’

```

5295 \ifHy@destlabel

```

\hyper@newdestlabel

```

5296 \def\hyper@newdestlabel#1#2{%
5297   \begingroup
5298   \Hy@safe@activetrue
5299   \edef\x{\endgroup
5300     \noexpand\@newl@bel{HyDL}{#1}{#2}%
5301   }%
5302   \x
5303 }%

```

\hyper@destlabel@hook

```

5304 \providecommand*\hyper@destlabel@hook{}%

```

\Hy@DestRename

```

5305 \newcommand*\Hy@DestRename}[2]{%
5306   \ltx@ifundefined{HyDL!#1}{%
5307     \begingroup
5308     \Hy@safe@activetrue
5309     \edef\dest@name{#1}%
5310     \edef\label@name{#2}%
5311     \hyper@destlabel@hook
5312     \Hy@IsNotEmpty{dest@name}{%
5313       \Hy@IsNotEmpty{label@name}{%
5314         \global\expandafter
5315         \let\csname HyDL!#1\endcsname\ltx@empty
5316         \if@files
5317           \protected@write\@auxout{}{%
5318             \string\hyper@newdestlabel
5319             {#1}%
5320             {\label@name}%
5321           }%
5322         \fi
5323       }%
5324     }%
5325     \endgroup
5326   }{}%
5327 }%

```

\HyperDestRename

```

5328 \newcommand*\HyperDestRename}[2]{%
5329   \AtBeginDocument{%
5330     \Hy@DestRename{#1}{#2}%
5331   }%
5332 }%
5333 \AtBeginDocument{%

```

```

5334 \let\HyperDestRename\Hy@DestRename
5335 }%

\Hy@IsNotEmpty
5336 \def\Hy@IsNotEmpty#1{%
5337 \ltx@ifundefined{#1}\ltx@gobble{%
5338 \expandafter\ifx\csname#1\endcsname\ltx@empty
5339 \expandafter\ltx@gobble
5340 \else
5341 \expandafter\ltx@firstofone
5342 \fi
5343 }%
5344 }%

5345 \ltx@GlobalAppendToMacro\label@hook{%
5346 \HyperDestRename\@currentHref\label@name
5347 }%

\HyperDestLabelReplace
5348 \def\HyperDestLabelReplace#1{%
5349 \ltx@ifundefined{HyDL@#1}{%
5350 #1%
5351 }{%
5352 \csname HyDL@#1\endcsname
5353 }%
5354 }%

\HyperDestNameFilter
5355 \let\HyperDestNameFilter\HyperDestLabelReplace
5356 \else

\hyper@newdestlabel
5357 \let\hyper@newdestlabel\ltx@gobbletwo

\HyperDestLabelReplace
5358 \let\HyperDestLabelReplace\ltx@firstofone

\HyperDestRename
5359 \let\HyperDestRename\ltx@gobbletwo
5360 \fi
5361 \Hy@DisableOption{destlabel}

Provide a dummy default definition of \hyper@newdestlabel inside the .aux
files.
5362 \AddToHook{include/before}
5363 {\immediate\write\@partaux{\string\providecommand\string\hyper@newdest-
label[2]{}}
5364 \AddToHook{begindocument}
5365 {\immediate\write\@mainaux{\string\providecommand\string\hyper@newdest-
label[2]{}}

```

## 19 Forms creation

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

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

### 19.1 Field flags

The field flags are organized in a bit set.

```
5366 \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

```
5367 \def\HyField@NewFlag#1#2{%
5368   \lowercase{\HyField@NewOption{#2}}%
5369   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5370 }
```

\HyField@NewFlagOnly

```
5371 \def\HyField@NewFlagOnly#1#2{%
5372   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5373 }
```

\HyField@NewOption #1: option name

```
5374 \def\HyField@NewOption#1{%
5375   \expandafter\newif\csname ifFld@#1\endcsname
5376   \define@key{Field}{#1}[true]{%
5377     \lowercase{\Field@boolkey{##1}}{#1}%
5378   }%
5379 }
```

\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

```
5380 \def\HyField@NewBitsetFlag#1#2#3#4{%
5381   \begingroup
5382     \count@=#4\relax
5383     \advance\count@\m@ne
5384     \def\x##1{%
5385       \endgroup
5386       \expandafter\def\csname HyField@#3@#1\endcsname{##1}%
5387       \expandafter\ifx\csname HyField@#3@#1\endcsname\relax
```



```

5388     \expandafter\edef\csname HyField@#3@##1\endcsname{%
5389         (\number#4) #2%
5390     }%
5391     \else
5392     \expandafter\edef\csname HyField@#3@##1\endcsname{%
5393         \csname HyField@#3@##1\endcsname
5394         /#2%
5395     }%
5396     \fi
5397 }%
5398 \expandafter\x\expandafter{\the\count@}%
5399 }

```

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

```

5400 \def\HyField@UseFlag#1#2{%
5401     \lowercase{\HyField@@UseFlag{#2}}{#1}%
5402 }

```

\HyField@@UseFlag

```

5403 \def\HyField@@UseFlag#1#2{%
5404     \bitsetSetValue{HyField@#2}{%
5405         \csname HyField@#2@#1\endcsname
5406     }{%
5407         \csname ifFld@#1\endcsname 1\else 0\fi
5408     }%
5409 }

```

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

```

5410 \def\HyField@SetFlag#1#2{%
5411     \lowercase{\HyField@@SetFlag{#2}}{#1}%
5412 }

```

\HyField@@SetFlag

```

5413 \def\HyField@@SetFlag#1#2{%
5414     \bitsetSetValue{HyField@#2}{%
5415         \csname HyField@#2@#1\endcsname
5416     }{1}%
5417 }

```

\HyField@PrintFlags

```

5418 \def\HyField@PrintFlags#1#2{%
5419     \ifHy@verbose
5420     \begingroup
5421         \let\Hy@temp\@empty
5422         \let\MessageBreak\relax
5423         \expandafter\@for\expandafter\x\expandafter:\expandafter=%
5424         \bitsetGetSetBitList{HyField@#1}\do{%
5425             \edef\Hy@temp{%
5426                 \Hy@temp
5427                 \csname HyField@#1@\x\endcsname\MessageBreak
5428             }%
5429         }%
5430     \edef\x{\endgroup

```

```

5431 \noexpand\Hy@Info{%
5432   Field flags: %
5433   \expandafter\ifx\@car#1\@nil S\else/\fi
5434   #1 %
5435   \bitsetGetDec{HyField@#1} %
5436   (0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
5437   \Hy@temp
5438   for #2%
5439 }%
5440 }\x
5441 \fi
5442 }

```

### 19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```

5443 \HyField@NewFlag{Ff}{ReadOnly}{1}
5444 \HyField@NewFlag{Ff}{Required}{2}
5445 \HyField@NewFlag{Ff}{NoExport}{3}

```

“Table 8.75 Field flags specific to button fields”

```

5446 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
5447 \HyField@NewFlag{Ff}{Radio}{16}
5448 \HyField@NewFlag{Ff}{Pushbutton}{17}
5449 \HyField@NewFlag{Ff}{RadiosInUnison}{26}

```

“Table 8.77 Field flags specific to text fields”

```

5450 \HyField@NewFlag{Ff}{Multiline}{13}
5451 \HyField@NewFlag{Ff}{Password}{14}
5452 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
5453 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5454 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4
5455 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4
5456 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5

```

“Table 8.79 field flags specific to choice fields”

```

5457 \HyField@NewFlag{Ff}{Combo}{18}
5458 \HyField@NewFlag{Ff}{Edit}{19}
5459 \HyField@NewFlag{Ff}{Sort}{20}
5460 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4
5461 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5462 \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.

```

5463 \newif\ifFld@popdown
5464 \define@key{Field}{popdown}[true]{%
5465   \lowercase{\Field@boolkey{#1}}{popdown}%
5466 }

```

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.

```

5467 \HyField@NewFlag{F}{Invisible}{1}
5468 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2
5469 \HyField@NewFlag{F}{Print}{3}% PDF 1.2
5470 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2
5471 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3
5472 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3
5473 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4
5474 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5
5475 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7
5476 \ifHy@pdfa
5477   \def\HyField@PDFAFlagWarning#1#2{%
5478     \Hy@Warning{%
5479       PDF/A: Annotation flag `#1' must\MessageBreak
5480       be set to `#2'%
5481     }%
5482   }%
5483   \Fld@invisiblefalse
5484   \def\Fld@invisibletrue{%
5485     \HyField@PDFAFlagWarning{invisible}{false}%
5486   }%
5487   \Fld@hiddenfalse
5488   \def\Fld@hiddentrue{%
5489     \HyField@PDFAFlagWarning{hidden}{false}%
5490   }%
5491   \Fld@printtrue
5492   \def\Fld@printfalse{%
5493     \HyField@PDFAFlagWarning{print}{true}%
5494   }%
5495   \Fld@nozoomtrue
5496   \def\Fld@nozoomfalse{%
5497     \HyField@PDFAFlagWarning{nozoom}{true}%
5498   }%
5499   \Fld@norotatetrue
5500   \def\Fld@norotatefalse{%
5501     \HyField@PDFAFlagWarning{norotate}{true}%
5502   }%
5503   \Fld@noviewfalse
5504   \def\Fld@noviewtrue{%
5505     \HyField@PDFAFlagWarning{noview}{false}%
5506   }%
5507 \fi

```

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

```

5508 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
5509 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
5510 \HyField@NewFlag{Submit}{GetMethod}{4}
5511 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
5512 \HyField@NewFlagOnly{Submit}{XFDF}{6}
5513 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}
5514 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
5515 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}

```

```

5516 \HyField@NewFlag{Submit}{CanonicalFormat}{10}
5517 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
5518 \HyField@NewFlag{Submit}{ExclFKey}{12}
5519 \HyField@NewFlag{Submit}{EmbedForm}{14}

5520 \define@key{Field}{export}{%
5521   \lowercase{\def\Hy@temp{#1}}%
5522   \@ifundefined{Fld@export@\Hy@temp}{%
5523     \@onelevel@sanitize\Hy@temp
5524     \Hy@Error{%
5525       Unknown export format ``\Hy@temp'.\MessageBreak
5526       Known formats are `FDF', `HTML', `XFDF', and `PDF'%
5527     }}\ehc
5528   }{%
5529     \let\Fld@export\Hy@temp
5530   }%
5531 }
5532 \def\Fld@export{fdf}
5533 \@namedef{Fld@export@fdf}{0}%
5534 \@namedef{Fld@export@html}{1}%
5535 \@namedef{Fld@export@xfdf}{2}%
5536 \@namedef{Fld@export@pdf}{3}%

```

### 19.1.2 Set submit flags

\HyField@FlagsSubmit

```

5537 \def\HyField@FlagsSubmit{%
5538   \bitsetReset{HyField@Submit}%
5539   \ifcase\@nameuse{Fld@export@\Fld@export} %
5540     % FDF
5541     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5542     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5543     \HyField@UseFlag{Submit}{IncludeAppendSaves}%
5544     \HyField@UseFlag{Submit}{IncludeAnnotations}%
5545     \HyField@UseFlag{Submit}{CanonicalFormat}%
5546     \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
5547     \HyField@UseFlag{Submit}{ExclFKey}%
5548     \HyField@UseFlag{Submit}{EmbedForm}%
5549   \or % HTML
5550     \HyField@SetFlag{Submit}{ExportFormat}%
5551     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5552     \HyField@UseFlag{Submit}{GetMethod}%
5553     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5554     \HyField@UseFlag{Submit}{CanonicalFormat}%
5555   \or % XFDF
5556     \HyField@SetFlag{Submit}{XFDF}%
5557     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5558     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5559     \HyField@UseFlag{Submit}{CanonicalFormat}%
5560   \or % PDF
5561     \HyField@SetFlag{Submit}{SubmitPDF}%
5562     \HyField@UseFlag{Submit}{GetMethod}%
5563   \fi
5564   \HyField@PrintFlags{Submit}{submit button field}%

```

```

5565 \bitsetIsEmpty{HyField@Submit}{%
5566 \let\Fld@submitflags\ltx@empty
5567 }{%
5568 \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}%
5569 }%
5570 }

```

### 19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

5571 \def\HyField@FlagsAnnot#1{%
5572 \bitsetReset{HyField@F}%
5573 \HyField@UseFlag{F}{Invisible}%
5574 \HyField@UseFlag{F}{Hidden}%
5575 \HyField@UseFlag{F}{Print}%
5576 \HyField@UseFlag{F}{NoZoom}%
5577 \HyField@UseFlag{F}{NoRotate}%
5578 \HyField@UseFlag{F}{NoView}%
5579 \HyField@UseFlag{F}{Locked}%
5580 \HyField@UseFlag{F}{ToggleNoView}%
5581 \HyField@UseFlag{F}{LockedContents}%
5582 \HyField@PrintFlags{F}{#1}%
5583 \bitsetIsEmpty{HyField@F}{%
5584 \let\Fld@annotflags\ltx@empty
5585 }{%
5586 \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}%
5587 }%
5588 }

```

### 19.1.4 Pushbutton field

\HyField@FlagsPushButton

```

5589 \def\HyField@FlagsPushButton{%
5590 \HyField@FlagsAnnot{push button field}%
5591 \bitsetReset{HyField@Ff}%
5592 \HyField@UseFlag{Ff}{ReadOnly}%
5593 \HyField@UseFlag{Ff}{Required}%
5594 \HyField@UseFlag{Ff}{NoExport}%
5595 \HyField@SetFlag{Ff}{Pushbutton}%
5596 \HyField@PrintFlags{Ff}{push button field}%
5597 \bitsetIsEmpty{HyField@Ff}{%
5598 \let\Fld@flags\ltx@empty
5599 }{%
5600 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5601 }%
5602 }

```

### 19.1.5 Check box field

\HyField@FlagsCheckBox

```

5603 \def\HyField@FlagsCheckBox{%
5604 \HyField@FlagsAnnot{check box field}%
5605 \bitsetReset{HyField@Ff}%

```

```

5606 \HyField@UseFlag{Ff}{ReadOnly}%
5607 \HyField@UseFlag{Ff}{Required}%
5608 \HyField@UseFlag{Ff}{NoExport}%
5609 \HyField@PrintFlags{Ff}{check box field}%
5610 \bitsetIsEmpty{HyField@Ff}{%
5611   \let\Fld@flags\ltx@empty
5612 }{%
5613   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5614 }%
5615 }

```

### 19.1.6 Radio button field

\HyField@FlagsRadioButton

```

5616 \def\HyField@FlagsRadioButton{%
5617   \HyField@FlagsAnnot{radio button field}%
5618   \bitsetReset{HyField@Ff}%
5619   \HyField@UseFlag{Ff}{ReadOnly}%
5620   \HyField@UseFlag{Ff}{Required}%
5621   \HyField@UseFlag{Ff}{NoExport}%
5622   \HyField@UseFlag{Ff}{NoToggleToOff}%
5623   \HyField@SetFlag{Ff}{Radio}%
5624   \HyField@UseFlag{Ff}{RadiosInUnison}%
5625   \HyField@PrintFlags{Ff}{radio button field}%
5626   \bitsetIsEmpty{HyField@Ff}{%
5627     \let\Fld@flags\ltx@empty
5628   }{%
5629     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5630   }%
5631 }

```

### 19.1.7 Text fields

\HyField@FlagsText

```

5632 \def\HyField@FlagsText{%
5633   \HyField@FlagsAnnot{text field}%
5634   \bitsetReset{HyField@Ff}%
5635   \HyField@UseFlag{Ff}{ReadOnly}%
5636   \HyField@UseFlag{Ff}{Required}%
5637   \HyField@UseFlag{Ff}{NoExport}%
5638   \HyField@UseFlag{Ff}{Multiline}%
5639   \HyField@UseFlag{Ff}{Password}%
5640   \HyField@UseFlag{Ff}{FileSelect}%
5641   \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5642   \HyField@UseFlag{Ff}{DoNotScroll}%
5643   \ifFld@comb
5644     \ifcase0\ifFld@multiline
5645       \else\ifFld@password
5646       \else\ifFld@fileselect
5647       \else 1\fi\fi\fi\relax
5648   \Hy@Error{%
5649     Field option `comb' cannot used together with\MessageBreak
5650     `multiline', `password', or `fileselect'%

```

```

5651     }\@ehc
5652     \else
5653         \HyField@UseFlag{Ff}{Comb}%
5654     \fi
5655 \fi
5656 \HyField@UseFlag{Ff}{RichText}%
5657 \HyField@PrintFlags{Ff}{text field}%
5658 \bitsetIsEmpty{HyField@Ff}{%
5659     \let\Fld@flags\ltx@empty
5660 }{%
5661     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5662 }%
5663 }

```

### 19.1.8 Choice fields

\HyField@FlagsChoice

```

5664 \def\HyField@FlagsChoice{%
5665     \HyField@FlagsAnnot{choice field}%
5666     \bitsetReset{HyField@Ff}%
5667     \HyField@UseFlag{Ff}{ReadOnly}%
5668     \HyField@UseFlag{Ff}{Required}%
5669     \HyField@UseFlag{Ff}{NoExport}%
5670     \HyField@UseFlag{Ff}{Combo}%
5671     \ifFld@combo
5672         \HyField@UseFlag{Ff}{Edit}%
5673     \fi
5674     \HyField@UseFlag{Ff}{Sort}%
5675     \HyField@UseFlag{Ff}{MultiSelect}%
5676     \ifFld@combo
5677         \ifFld@edit
5678             \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5679         \fi
5680     \fi
5681     \HyField@UseFlag{Ff}{CommitOnSelChange}%
5682     \HyField@PrintFlags{Ff}{choice field}%
5683     \bitsetIsEmpty{HyField@Ff}{%
5684         \let\Fld@flags\ltx@empty
5685     }{%
5686         \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5687     }%
5688 }

```

## 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.

```

5689 \def\HyField@PDFChoices#1{%
5690     \begingroup
5691         \global\let\Fld@choices\ltx@empty
5692         \let\HyTmp@optlist\ltx@empty

```

```

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

```

\HyField@@PDFChoices

```

5732 \def\HyField@@PDFChoices#1#2{%
5733   \ifx#2\relax
5734   \else
5735     \count@=0 %
5736     \def\HyTmp@optitem##1##2##3{%
5737       \def\HyTmp@key{##2}%
5738       \ifx\HyTmp@key\Hy@gtemp
5739         \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5740           \HyTmp@optlist
5741           \HyTmp@optitem{##1}{##2}1%
5742         }%
5743       \let\HyTmp@found=Y%
5744     \else

```



```

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

```

### 19.3 Forms

\HyField@SetKeys

```

5793 \def\HyField@SetKeys{%
5794 \kvsetkeys{Field}%

```

```

5795 }

5796 \newif\ifFld@checked
5797 \newif\ifFld@disabled
5798 \Fld@checkedfalse
5799 \Fld@disabledfalse
5800 \newcount\Fld@menulength
5801 \newdimen\Field@Width
5802 \newdimen\Fld@charsize
5803 \Fld@charsize=10\p@
5804 \def\Fld@maxlen{0}
5805 \def\Fld@align{0}
5806 \def\Fld@color{0 0 0 rg}
5807 \def\Fld@bcolor{1 1 1}
5808 \def\Fld@bordercolor{1 0 0}
5809 \def\Fld@bordersep{1\p@}
5810 \def\Fld@borderwidth{1}
5811 \def\Fld@borderstyle{S}
5812 \def\Fld@cbsymbol{4}
5813 \def\Fld@radiosymbol{H}
5814 \def\Fld@rotation{0}
5815 \def\Form{\@ifnextchar[{\@Form}{\@Form[]}}
5816 \def\endForm{\@endForm}
5817 \newif\ifForm@html
5818 \Form@htmlfalse
5819 \def\Form@boolkey#1#2{%
5820   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5821 }
5822 \define@key{Form}{action}{%
5823   \hyper@normalise\Hy@DefFormAction{#1}%
5824 }
5825 \def\Hy@DefFormAction{\def\Form@action}
5826 \def\enc@html{html}
5827 \define@key{Form}{encoding}{%
5828   \def\Hy@tempa{#1}%
5829   \ifx\Hy@tempa\enc@html
5830     \Form@htmltrue
5831     \def\Fld@export{html}%
5832   \else
5833     \Hy@Warning{%
5834       Form `encoding' key with \MessageBreak
5835       unknown value `#1'%
5836     }%
5837     \Form@htmlfalse
5838   \fi
5839 }
5840 \define@key{Form}{method}{%
5841   \lowercase{\def\Hy@temp{#1}}%
5842   \@ifundefined{Form@method@\Hy@temp}{%
5843     \@onelevel@sanitize\Hy@temp
5844     \Hy@Error{%
5845       Unknown method ``\Hy@temp'.\MessageBreak
5846       Known values are `post' and `get'%
5847     }\@ehc

```

```

5848 }{%
5849   \let\Form@method\Hy@temp
5850   \ifcase\@nameuse{Form@method@\Hy@temp} %
5851     \Fld@getmethodfalse
5852   \else
5853     \Fld@getmethodtrue
5854   \fi
5855 }%
5856 }
5857 \def\Form@method{}
5858 \@namedef{Form@method@post}{0}
5859 \@namedef{Form@method@get}{1}

5860 \newif\ifHyField@NeedAppearances
5861 \def\HyField@NeedAppearancesfalse{%
5862   \global\let\ifHyField@NeedAppearances\iffalse
5863 }
5864 \def\HyField@NeedAppearancetrue{%
5865   \global\let\ifHyField@NeedAppearances\iftrue
5866 }
5867 \HyField@NeedAppearancetrue
5868 \define@key{Form}{NeedAppearances}[true]{%
5869   \edef\Hy@tempa{#1}%
5870   \ifx\Hy@tempa\Hy@true
5871     \HyField@NeedAppearancetrue
5872   \else
5873     \ifx\Hy@tempa\Hy@false
5874       \HyField@NeedAppearancesfalse
5875     \else
5876       \Hy@Error{%
5877         Unexpected value ``\Hy@tempa'\MessageBreak
5878         of option `NeedAppearances' instead of\MessageBreak
5879         `true' or `false'%
5880       }\@ehc
5881     \fi
5882   \fi
5883 }
5884 \def\Field@boolkey#1#2{%
5885   \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5886 }
5887 \ifHy@texht
5888   \newtoks\Field@toks
5889   \Field@toks={ }%
5890   \def\Field@addtoks#1#2{%
5891     \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}%
5892     \@processme
5893   }%
5894 \else
5895   \def\Hy@WarnHTMLFieldOption#1{%
5896     \Hy@Warning{%
5897       HTML field option `#1'\MessageBreak
5898       is ignored%
5899     }%
5900   }%
5901 \fi

```

```

5902 \def\Fld@checkequals#1=#2=#3\{%
5903   \def\@currDisplay{#1}%
5904   \ifx\#2\%
5905     \def\@currValue{#1}%
5906   \else
5907     \def\@currValue{#2}%
5908   \fi
5909   \expandafter\Hy@pdfstringdef\expandafter\@currValue\expandafter{\@currValue}%
5910 }
5911 \define@key{Field}{loc}{%
5912   \def\Fld@loc{#1}%
5913 }
5914 \define@key{Field}{checked}[true]{%
5915   \lowercase{\Field@boolkey{#1}}{checked}%
5916 }
5917 \define@key{Field}{disabled}[true]{%
5918   \lowercase{\Field@boolkey{#1}}{disabled}%
5919 }
5920 \ifHy@texht
5921   \define@key{Field}{accesskey}{%
5922     \Field@addtoks{accesskey}{#1}%
5923   }%
5924   \define@key{Field}{tabkey}{%
5925     \Field@addtoks{tabkey}{#1}%
5926   }%
5927 \else
5928   \define@key{Field}{accesskey}{%
5929     \Hy@WarnHTMLFieldOption{accesskey}%
5930   }%
5931   \define@key{Field}{tabkey}{%
5932     \Hy@WarnHTMLFieldOption{tabkey}%
5933   }%
5934 \fi
5935 \define@key{Field}{name}{%
5936   \def\Fld@name{#1}%
5937 }
5938 \let\Fld@altname\relax
5939 \define@key{Field}{altname}{%
5940   \def\Fld@altname{#1}%
5941 }
5942 \let\Fld@mappingname\relax
5943 \define@key{Field}{mappingname}{%
5944   \def\Fld@mappingname{#1}%
5945 }
5946 \define@key{Field}{width}{%
5947   \def\Fld@width{#1}%
5948   \Field@Width#1\setbox0=\hbox{m}%
5949 }
5950 \define@key{Field}{maxlen}{%
5951   \def\Fld@maxlen{#1}%
5952 }
5953 \define@key{Field}{menulength}{%
5954   \Fld@menulength=#1\relax
5955 }

```

```

5956 \define@key{Field}{height}{%
5957   \def\Fld@height{#1}%
5958 }
5959 \define@key{Field}{charsize}{%
5960   \setlength{\Fld@charsize}{#1}%
5961 }
5962 \define@key{Field}{borderwidth}{%
5963   \Hy@defaultbp\Fld@borderwidth{#1}%
5964 }
5965 \def\Hy@defaultbp#1#2{%
5966   \begingroup
5967   \afterassignment\Hy@defaultbpAux
5968   \dimen@=#2bp\relax{#1}{#2}%
5969 }
5970 \def\Hy@defaultbpAux#1\relax#2#3{%
5971   \ifx!#1!%
5972     \endgroup
5973     \def#2{#3}%
5974   \else
5975     \edef\x{\endgroup
5976       \def\noexpand#2{%
5977         \strip@pt\dimexpr\dimen@*800/803\relax
5978       }%
5979     }\x
5980   \fi
5981 }%
5982 \define@key{Field}{borderstyle}{%
5983   \let\Hy@temp\Fld@borderstyle
5984   \def\Fld@borderstyle{#1}%
5985   \Hy@Match\Fld@borderstyle{}{%
5986     ~[SDBIU]$%
5987   }{}{%
5988     \Hy@Warning{%
5989       Invalid value ~\@pdfborderstyle'\MessageBreak
5990       for option ~pdfborderstyle'. Valid values:\MessageBreak
5991       \space\space S (Solid), D (Dashed), B (Beveled),\MessageBreak
5992       \space\space I (Inset), U (Underline)\MessageBreak
5993       Option setting is ignored%
5994     }%
5995     \let\Fld@borderstyle\Hy@temp
5996   }%
5997 }
5998 \define@key{Field}{bordersep}{%
5999   \def\Fld@bordersep{#1}%
6000 }
6001 \define@key{Field}{default}{%
6002   \Hy@pdfstringdef\Fld@default{#1}%
6003 }
6004 \define@key{Field}{align}{%
6005   \def\Fld@align{#1}%
6006 }
6007 \define@key{Field}{value}{%
6008   \Hy@pdfstringdef\Fld@value{#1}%
6009 }

```

```

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

6043 \define@key{Field}{rotation}{%
6044   \def\Fld@rotation{#1}%
6045 }

6046 \define@key{Field}{backgroundcolor}{%
6047   \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
6048 }
6049 \define@key{Field}{bordercolor}{%
6050   \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
6051 }
6052 \define@key{Field}{color}{%
6053   \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
6054 }

6055 \let\Fld@onclick@code\ltx@empty
6056 \let\Fld@format@code\ltx@empty
6057 \let\Fld@validate@code\ltx@empty
6058 \let\Fld@calculate@code\ltx@empty
6059 \let\Fld@keystroke@code\ltx@empty
6060 \let\Fld@onfocus@code\ltx@empty
6061 \let\Fld@onblur@code\ltx@empty
6062 \let\Fld@onmousedown@code\ltx@empty

```

```

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

6090 \let\Fld@calculate@sortkey\ltx@empty
6091 \define@key{Field}{calculatesortkey}[1]{%
6092   \def\Fld@calculate@sortkey{#1}%
6093 }

6094 \ifHy@texht
6095   \def\Hy@temp#1{%
6096     \define@key{Field}{#1}{%
6097       \Field@addtoks{#1}{##1}%
6098     }%
6099   }%
6100 \else
6101   \def\Hy@temp#1{%
6102     \define@key{Field}{#1}{%
6103       \Hy@WarnHTMLFieldOption{#1}%
6104     }%
6105   }%
6106 \fi
6107 \Hy@temp{ondblclick}
6108 \Hy@temp{onmousedown}
6109 \Hy@temp{onmouseup}
6110 \Hy@temp{onmouseover}
6111 \Hy@temp{onmousemove}
6112 \Hy@temp{onmouseout}
6113 \Hy@temp{onkeydown}
6114 \Hy@temp{onkeyup}
6115 \Hy@temp{onselect}

```

```

6116 \Hy@temp{onchange}
6117 \Hy@temp{onkeypress}
6118 \ifHy@texht
6119 \define@key{Field}{onclick}{%
6120   \Field@addtoks{onclick}{#1}%
6121 }%
6122 \else
6123 \ifHy@pdfa
6124 \define@key{Field}{onclick}{%
6125   \Hy@Error{%
6126     PDF/A: Action `onclick' is prohibited%
6127   } \@ehc
6128 }%
6129 \else
6130 \define@key{Field}{onclick}{%
6131   \def\Fld@onclick@code{#1}%
6132 }%
6133 \fi
6134 \fi

6135 \DeclareRobustCommand\TextField{%
6136   \@ifnextchar[{\@TextField}{\@TextField[]}%
6137 }
6138 \DeclareRobustCommand\ChoiceMenu{%
6139   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
6140 }
6141 \DeclareRobustCommand\CheckBox{%
6142   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
6143 }
6144 \DeclareRobustCommand\PushButton{%
6145   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
6146 }
6147 \DeclareRobustCommand\Gauge{%
6148   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
6149 }
6150 \DeclareRobustCommand\Submit{%
6151   \@ifnextchar[{\@Submit}{\@Submit[]}%
6152 }
6153 \DeclareRobustCommand\Reset{%
6154   \@ifnextchar[{\@Reset}{\@Reset[]}%
6155 }
6156 \def\LayoutTextField#1#2{% label, field
6157   \def\Hy@temp{#1}%
6158   \ifx\Hy@temp\@empty
6159     #2%
6160   \else
6161     #1 #2%
6162   \fi
6163 }
6164 \def\LayoutChoiceField#1#2{% label, field
6165   \def\Hy@temp{#1}%
6166   \ifx\Hy@temp\@empty
6167     #2%
6168   \else
6169     #1 #2%

```



```

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

```

Default options for the types of \ChoiceMenu.

```

6217 \def\DefaultOptionsofListBox{print}
6218 \def\DefaultOptionsofComboBox{print,edit,sort}
6219 \def\DefaultOptionsofPopdownBox{print}
6220 \def\DefaultOptionsofRadio{print,notoggletooff}

```

## 20 Setup

```

6221 \ifHy@hyperfigures
6222   \Hy@Info{Hyper figures ON}%
6223 \else
6224   \Hy@Info{Hyper figures OFF}%
6225 \fi
6226 \ifHy@nesting
6227   \Hy@Info{Link nesting ON}%
6228 \else
6229   \Hy@Info{Link nesting OFF}%
6230 \fi
6231 \ifHy@hyperindex
6232   \Hy@Info{Hyper index ON}%
6233 \else
6234   \Hy@Info{Hyper index OFF}%
6235 \fi
6236 \ifHy@backref
6237   \Hy@Info{backreferencing ON}%
6238 \else
6239   \Hy@Info{backreferencing OFF}%
6240 \fi
6241 \ifHy@colorlinks
6242   \Hy@Info{Link coloring ON}%
6243 \else
6244   \Hy@Info{Link coloring OFF}%
6245 \fi
6246 \ifHy@ocgcolorlinks
6247   \Hy@Info{Link coloring with OCG ON}%
6248 \else
6249   \Hy@Info{Link coloring with OCG OFF}%
6250 \fi
6251 \ifHy@pdfa
6252   \Hy@Info{PDF/A mode ON}%
6253 \else
6254   \Hy@Info{PDF/A mode OFF}%
6255 \fi

```

## 21 Low-level utility macros

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

```

6256 \edef\hyper@hash{\string#}
6257 \edef\hyper@tilde{\string~}
6258 \edef\hyper@quote{\string"}

```

Support \label before \begin{document}.

```

6259 \def\@currentHref{Doc-Start}
6260 \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.

```

6261 \Hy@AtBeginDocument{%
6262   \Hy@pdfstringtrue
6263   \PDF@SetupDoc

```

```

6264 \let\PDF@SetupDoc\@empty
6265 \Hy@DisableOption{pdfpagescrop}%
6266 \Hy@DisableOption{pdfpagemode}%
6267 \Hy@DisableOption{pdfnonfullscreenpagemode}%
6268 \Hy@DisableOption{pdfdirection}%
6269 \Hy@DisableOption{pdfviewarea}%
6270 \Hy@DisableOption{pdfviewclip}%
6271 \Hy@DisableOption{pdfprintarea}%
6272 \Hy@DisableOption{pdfprintclip}%
6273 \Hy@DisableOption{pdfprintscaling}%
6274 \Hy@DisableOption{pdfduplex}%
6275 \Hy@DisableOption{pdfpicktraybypdftype}%
6276 \Hy@DisableOption{pdfprintpagerange}%
6277 \Hy@DisableOption{pdfnumcopies}%
6278 \Hy@DisableOption{pdfstartview}%
6279 \Hy@DisableOption{pdfstartpage}%
6280 \Hy@DisableOption{pdftoolbar}%
6281 \Hy@DisableOption{pdfmenubar}%
6282 \Hy@DisableOption{pdfwindowui}%
6283 \Hy@DisableOption{pdfwindow}%
6284 \Hy@DisableOption{pdfcenterwindow}%
6285 \Hy@DisableOption{pdfdisplaydoctitle}%
6286 \Hy@DisableOption{pdfpagelayout}%
6287 \Hy@DisableOption{pdflang}%
6288 \Hy@DisableOption{baseurl}%
6289 \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
6290 \Hy@pdfstringfalse
6291 }

```

Ignore star from referencing macros: This is only needed if LaTeX doesn't define the starred variants itself.

```

6292 \@ifundefined{@kernel@ref}
6293 {\LetLtxMacro\NoHy@OrgRef\ref
6294 \DeclareRobustCommand*{\ref}{%
6295 \ifstar\NoHy@OrgRef\NoHy@OrgRef
6296 }
6297 \LetLtxMacro\NoHy@OrgPageRef\pageref
6298 \DeclareRobustCommand*{\pageref}{%
6299 \ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
6300 }{}

```

## 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.

```

6301 \def\NoHyper{%
6302 \def\hyper@link@[##1]##2##3##4{##4\Hy@xspace@end}%
6303 \def\hyper@@anchor##1##2{##2\Hy@xspace@end}%
6304 \global\let\hyper@livelink\hyper@link
6305 \gdef\hyper@link##1##2##3{##3\Hy@xspace@end}%
6306 \let\hyper@anchor\ltx@gobble

```

```

6307 \let\hyper@anchorstart\ltx@gobble
6308 \def\hyper@anchorend{\Hy@xspace@end}%
6309 \let\hyper@linkstart\ltx@gobbletwo
6310 \def\hyper@linkend{\Hy@xspace@end}%
6311 \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%
6312 \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
6313 \let\Hy@backout\@gobble
6314 }
6315 \def\stop@hyper{%
6316 \def\hyper@link@[##1]##2##3##4{##4\Hy@xspace@end}%
6317 \let\Hy@backout\@gobble
6318 \let\hyper@@anchor\ltx@gobble
6319 \def\hyper@link##1##2##3{##3\Hy@xspace@end}%
6320 \let\hyper@anchor\ltx@gobble
6321 \let\hyper@anchorstart\ltx@gobble
6322 \def\hyper@anchorend{\Hy@xspace@end}%
6323 \let\hyper@linkstart\ltx@gobbletwo
6324 \def\hyper@linkend{\Hy@xspace@end}%
6325 \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%
6326 \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
6327 }
6328 \def\endNoHyper{%
6329 \global\let\hyper@link\hyper@livelink
6330 }
6331 \endpackage

```

## 23 Package nohyperref

This package is introduced by Sebastian Rahtz.

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

Some low-level commands:

```

6332 (*nohyperref)
6333 \RequirePackage{letltxmacro}[2008/06/13]
6334 \let\hyper@@anchor\@gobble
6335 \def\hyper@link#1#2#3{#3}%
6336 \let\hyper@anchorstart\@gobble
6337 \let\hyper@anchorend\@empty
6338 \let\hyper@linkstart\@gobbletwo
6339 \let\hyper@linkend\@empty
6340 \def\hyper@linkurl#1#2{#1}%
6341 \def\hyper@linkfile#1#2#3{#1}%
6342 \def\hyper@link@[#1]#2#3{#1}%
6343 \let\PDF@SetupDoc\@empty
6344 \let\PDF@FinishDoc\@empty
6345 \def\nohyperpage#1{#1}

```

Some top-level commands:

```

6346 \def\Acrobatmenu#1#2{\leavevmode#2}
6347 \let\pdfstringdefDisableCommands\@gobbletwo
6348 \let\texorpdfstring\@firstoftwo

```

```

6349 \let\pdfbookmark\@undefined
6350 \newcommand\pdfbookmark[3][]{ }
6351 \let\phantomsection\@empty
6352 \let\hypersetup\@gobble
6353 \let\hyperbaseurl\@gobble
6354 \newcommand*{\href}[3][]{#3}
6355 \let\hyperdef\@gobbletwo
6356 \let\hyperlink\@gobble
6357 \let\hypertarget\@gobble
6358 \def\hyperref{%
6359   \@ifnextchar{\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
6360 }
6361 \long\def\@gobbleopt[#1]{ }
6362 \let\hyperpage\@empty

```

Ignore star from referencing macros. This is only needed in older formats.

```

6363 \if@t@r\fmtversion{2022-06-01}
6364 {}%
6365 {%
6366   \LetLtxMacro\NoHy@OrgRef\ref
6367   \DeclareRobustCommand*{\ref}{%
6368     \@ifstar\NoHy@OrgRef\NoHy@OrgRef
6369   }
6370   \LetLtxMacro\NoHy@OrgPageRef\pageref
6371   \DeclareRobustCommand*{\pageref}{%
6372     \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
6373   }%
6374 }
6375 \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}`

```

6376 (*package)
6377 \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.

```

6378 \if@files
6379 \immediate\write\@auxout{%
6380   \string\providecommand\string\HyperFirstAtBeginDocument{%
6381     \string\AtBeginDocument}^^J%
6382   \string\HyperFirstAtBeginDocument{%
6383     \string\ifx\string\hyper\string\@anchor\string\@undefined^^J%
6384     \string\global\string\let\string\oldnewlabel\string\newlabel^^J%
6385     \string\gdef\string\newlabel\string#1\string#2{%
6386       \string\newlabelxx{\string#1}\string#2}^^J%
6387     \string\gdef\string\newlabelxx%

```

```

6388      \string#1\string#2\string#3\string#4\string#5\string#6{%
6389      \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.

```

6390      \string\AtEndDocument{%
6391      \string\ifx\string\hyper@anchor\string\@undefined^^J%
6392      \string\let\string\newlabel\string\oldnewlabel^^J%
6393      \string\fi%
6394      }^^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.

```

6395      \string\fi%
6396      }^^J%
6397      \string\global\string\let\string\hyper@last\relax^^J%
6398      \string\gdef\string\HyperFirstAtBeginDocument\string#1{\string#1}%
6399      }%
6400      \fi
6401      \let\HyperFirstAtBeginDocument\ltx@firstofone

```

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

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

```

6402      \ifx\hyper@last\@undefined
6403      \def\newlabel#1#2{\@newl@bel r{#1}{#2}{}}}%
6404      \fi
6405      }

```

## 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.

```

6406 \ifHy@pdfusetitle
6407 \let\HyOrg@title\title
6408 \let\HyOrg@author\author
6409 \def\title{\@ifnextchar{\Hy@scanopttitle}{\Hy@scantitle}}%
6410 \def\Hy@scanopttitle[#1]{%
6411 \gdef\Hy@title{#1}%
6412 \HyOrg@title{#1}%
6413 }%
6414 \def\Hy@scantitle#1{%
6415 \gdef\Hy@title{#1}%
6416 \HyOrg@title{#1}%
6417 }%
6418 \def\author{\@ifnextchar{\Hy@scanoptauthor}{\Hy@scanauthor}}%
6419 \def\Hy@scanoptauthor[#1]{%
6420 \gdef\Hy@author{#1}%
6421 \HyOrg@author{#1}%
6422 }%
6423 \def\Hy@scanauthor#1{%
6424 \gdef\Hy@author{#1}%

```

```

6425 \HyOrg@author{#1}%
6426 }%

```

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.

```

6427 \begingroup
6428 \def\process@me#1\@nil#2{%
6429 \expandafter\let\expandafter\x\csname @#2\endcsname
6430 \edef\y{\expandafter\strip@prefix\meaning\x}%
6431 \def\c##1##2\@nil{%
6432 \ifx\\##1\\%
6433 \else
6434 \expandafter\gdef\csname Hy@#2\expandafter\endcsname
6435 \expandafter{\x}%
6436 \fi
6437 }%
6438 \expandafter\c\y\relax#1\@nil
6439 }%
6440 \expandafter\process@me\string\@latex@\@nil{title}%
6441 \expandafter\process@me\string\@latex@\@nil{author}%
6442 \endgroup
6443 \fi
6444 \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.

```

6445 \def\Hy@UseMaketitleString#1{%
6446 \ltx@ifundefined{Hy@#1}{-}{%
6447 \begingroup
6448 \let\Hy@saved@hook\pdfstringdefPreHook
6449 \pdfstringdefDisableCommands{%
6450 \expandafter\let\expandafter\\\csname Hy@newline@#1\endcsname
6451 \let\newline\\%
6452 \def\and{; }%
6453 \let\thanks\@gobble%
6454 }%
6455 \expandafter\ifx\csname @pdf#1\endcsname\@empty
6456 \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
6457 \csname Hy@#1\endcsname\@empty
6458 }%
6459 \fi
6460 \global\let\pdfstringdefPreHook\Hy@saved@hook
6461 \endgroup
6462 }%
6463 }

```

```

6464 \def\Hy@newline@title#1{ #1}
6465 \def\Hy@newline@author#1{, #1}
6466 \def\Hy@UseMaketitleInfos{%
6467   \Hy@UseMaketitleString{title}%
6468   \Hy@UseMaketitleString{author}%
6469 }

```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.

## 27 Every page

```

6470 \RequirePackage{atbegshi}[2007/09/09]
6471 \let\Hy@EveryPageHook\ltx@empty
6472 \let\Hy@EveryPageBoxHook\ltx@empty
6473 \let\Hy@FirstPageHook\ltx@empty
6474 \AtBeginShipout{%
6475   \Hy@EveryPageHook
6476   \ifx\Hy@EveryPageBoxHook\ltx@empty
6477   \else
6478     \setbox\AtBeginShipoutBox=\vbox{%
6479       \offinterlineskip
6480       \Hy@EveryPageBoxHook
6481       \box\AtBeginShipoutBox
6482     }%
6483   \fi
6484 }
6485 \ltx@iffileloaded{hpdftex.def}{%
6486   \AtBeginShipout{%
6487     \Hy@FirstPageHook
6488     \global\let\Hy@FirstPageHook\ltx@empty
6489   }%
6490 }{%
6491   \AtBeginShipoutFirst{%
6492     \Hy@FirstPageHook
6493   }%
6494 }
6495 \g@addto@macro\Hy@FirstPageHook{%
6496   \PDF@FinishDoc
6497   \global\let\PDF@FinishDoc\ltx@empty
6498 }

```

### 27.1 PDF /PageLabels

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

```

6499 \ifHy@pdfpagelabels
6500   \begingroup\expandafter\expandafter\expandafter\endgroup
6501   \expandafter\ifx\csname thepage\endcsname\relax
6502     \Hy@pdfpagelabelsfalse
6503     \Hy@WarningNoLine{%
6504       Option `pdfpagelabels' is turned off\MessageBreak

```



```

6505     because \string\thepage\space is undefined%
6506   }%
6507   \csname fi\endcsname
6508   \csname iffalse\expandafter\endcsname
6509   \fi

```

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

```

6510   \def\thispdfpagelabel#1{%
6511     \gdef\HyPL@thisLabel{#1}%
6512   }%
6513   \global\let\HyPL@thisLabel\relax

```

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

```

6514   \let\HyPL@Labels\ltx@empty

```

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

```

6515   \newcount\Hy@abspage
6516   \Hy@abspage=0 %

```

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

```

6517   \def\HyPL@LastType{init}%
6518   \def\HyPL@LastNumber{0}%
6519   \let\HyPL@LastPrefix\ltx@empty

```

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

```

6520   \def\HyPL@arabic{D}%
6521   \def\HyPL@Roman{R}%
6522   \def\HyPL@roman{r}%
6523   \def\HyPL@Alph{A}%
6524   \def\HyPL@alph{a}%

6525   \let\HyPL@SlidesSetPage\ltx@empty
6526   \ltx@ifclassloaded{slides}{%
6527     \def\HyPL@SlidesSetPage{%
6528       \advance\c@page\ltx@one
6529       \ifnum\value{page}>\ltx@one
6530         \protected@edef\HyPL@SlidesOptionalPage{%
6531           \Hy@SlidesFormatOptionalPage{\thepage}%
6532         }%
6533       \else
6534         \let\HyPL@SlidesOptionalPage\ltx@empty
6535       \fi
6536       \advance\c@page-\ltx@one
6537     \def\HyPL@page{%
6538       \csname the\Hy@SlidesPage\endcsname
6539       \HyPL@SlidesOptionalPage
6540     }%
6541   }%
6542   }{}%

```

`\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.

```

6543 \def\HyPL@EveryPage{%
6544   \begingroup
6545     \ifx\HyPL@thisLabel\relax
6546       \let\HyPL@page\thepage
6547       \HyPL@SlidesSetPage
6548     \else
6549       \let\HyPL@page\HyPL@thisLabel
6550       \global\let\HyPL@thisLabel\relax
6551     \fi
6552     \let\HyPL@Type\relax
6553     \ifnum\c@page>0 %
6554       \ifx\HyPL@SlidesSetPage\ltx@empty
6555         \expandafter\HyPL@CheckThePage\HyPL@page\@nil
6556       \fi
6557     \fi
6558     \let\Hy@temp Y%
6559     \ifx\HyPL@Type\HyPL@LastType
6560     \else
6561       \let\Hy@temp N%
6562     \fi
6563     \ifx\HyPL@Type\relax
6564       \pdfstringdef\HyPL@Prefix{\HyPL@page}%
6565     \else
6566       \pdfstringdef\HyPL@Prefix\HyPL@Prefix
6567     \fi
6568     \ifx\HyPL@Prefix\HyPL@LastPrefix
6569     \else
6570       \let\Hy@temp N%
6571     \fi
6572     \if Y\Hy@temp
6573       \advance\c@page by -1 %
6574       \ifnum\HyPL@LastNumber=\the\c@page\relax
6575       \else
6576         \let\Hy@temp N%
6577       \fi
6578       \Hy@StepCount\c@page
6579     \fi
6580     \if N\Hy@temp
6581       \ifx\HyPL@Type\relax
6582         \HyPL@StorePageLabel{/P(\HyPL@Prefix)}%
6583       \else
6584         \HyPL@StorePageLabel{%
6585           \ifx\HyPL@Prefix\@empty
6586           \else
6587             /P(\HyPL@Prefix)%
6588           \fi
6589           /S/\csname HyPL\HyPL@Type\endcsname
6590           \ifnum\the\c@page=1 %
6591           \else
6592             \space/St \the\c@page
6593           \fi
6594         }%
6595       \fi
6596     \fi

```

```

6597 \xdef\HyPL@LastNumber{\the\c@page}%
6598 \global\let\HyPL@LastType\HyPL@Type
6599 \global\let\HyPL@LastPrefix\HyPL@Prefix
6600 \endgroup
6601 \Hy@GlobalStepCount\Hy@abspage
6602 }%

```

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

```

6603 \def\HyPL@CheckThePage#1\@nil{%
6604   \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
6605 }%

```

`\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`.

```

6606 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
6607   \def\Hy@tempa{#4}%
6608   \def\Hy@tempb{\csname\endcsname\c@page}%
6609   \ifx\Hy@tempa\Hy@tempb
6610     \expandafter\ifx\csname HyPL#3\endcsname\relax
6611       \else
6612         \def\HyPL@Type{#3}%
6613         \def\HyPL@Prefix{#2}%
6614         \fi
6615       \else
6616         \begingroup
6617           \let\Hy@next\endgroup
6618           \let\HyPL@found\@undefined
6619           \def\arabic{\HyPL@Format{arabic}}%
6620           \def\Roman{\HyPL@Format{Roman}}%
6621           \def\roman{\HyPL@Format{roman}}%
6622           \def\Alph{\HyPL@Format{Alph}}%
6623           \def\alph{\HyPL@Format{alph}}%
6624           \protected@edef\Hy@temp{#1}%
6625           \ifx\HyPL@found\relax
6626             \toks@{\expandafter{\Hy@temp}}%
6627             \edef\Hy@next{\endgroup
6628               \noexpand\HyPL@@@CheckThePage\the\toks@
6629               \noexpand\HyPL@found\relax\noexpand\@nil
6630             }%
6631             \fi
6632           \Hy@next
6633         \fi
6634       }%

```

`\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`.

```

6635 \def\HyPL@Format#1#2{%
6636   \ifx\HyPL@found\@undefined
6637     \expandafter\ifx\csname c@#2\endcsname\c@page
6638       \expandafter\noexpand\csname HyPL@found\endcsname{#1}%

```

```

6639 \else
6640 \expandafter\noexpand\csname#1\endcsname{#2}%
6641 \fi
6642 \else
6643 \expandafter\noexpand\csname#1\endcsname{#2}%
6644 \fi
6645 }%

```

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

```

6646 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
6647 \def\Hy@tempa{#3}%
6648 \def\Hy@tempb{\HyPL@found\relax}%
6649 \ifx\Hy@tempa\Hy@tempb
6650 \def\HyPL@Type{#2}%
6651 \def\HyPL@Prefix{#1}%
6652 \fi
6653 }%

```

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

```

6654 \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`.

```

6655 \def\HyPL@Useless{0<</S/D>>}%
6656 \@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.

```

6657 \def\HyPL@SetPageLabels{%
6658 \@onelevel@sanitize\HyPL@Labels
6659 \ifx\HyPL@Labels\@empty
6660 \else
6661 \ifx\HyPL@Labels\HyPL@Useless
6662 \else
6663 \Hy@PutCatalog{/PageLabels<</Nums[\HyPL@Labels]>>}%
6664 \fi
6665 \fi
6666 }%

6667 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
6668 \fi

```

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

```

6669 \Hy@DisableOption{pdfpagelabels}
6670 \</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`

```

6671 <*pdftex>
6672 \pdf@ifdraftmode{%
6673   \let\Hy@PutCatalog\ltx@gobble
6674 }{%
6675   \let\Hy@PutCatalog\pdfcatalog
6676 }
6677 </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.

```

6678 <*vtex>
6679 \providecommand*\XR@ext}{pdf}
6680 \edef\Hy@VTeXversion{%
6681   \ifx\VTeXversion\@undefined
6682     \z@
6683   \else
6684     \ifx\VTeXversion\relax
6685       \z@
6686     \else
6687       \VTeXversion
6688     \fi
6689   \fi
6690 }
6691 \begingroup
6692   \ifnum\Hy@VTeXversion<660 %
6693     \gdef\Hy@PutCatalog#1{%
6694       \Hy@WarningNoLine{%
6695         VTeX 6.59g or above required for pdfpagelabels%
6696       }%
6697     }%
6698   \else
6699     \gdef\Hy@PutCatalog#1{%
6700       \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
6701     }%
6702     \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
6703       \ifx\#2\%
6704         \else
6705           \immediate\special{!pdfpagelabels #2}%
6706         \fi
6707       }%
6708     \fi
6709   \endgroup
6710 </vtex>

6711 <*pdftex|vtex>

```

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

```

6712 \ifHy@pdfpagelabels
6713   \def\HyPL@StorePageLabel#1{%
6714     \toks@\expandafter{\HyPL@Labels}%

```

```

6715 \xdef\HyPL@Labels{%
6716 \the\toks@
6717 \the\Hy@abspage<<#1>>%
6718 }%
6719 }%

```

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.

```

6720 \RequirePackage{atveryend}[2009/12/07]%
6721 \AtVeryEndDocument{%
6722 \HyPL@SetPageLabels
6723 }%

6724 \fi
6725 </pdfTeX | vTeX>

```

### 27.1.2 xetex

```

6726 <*xetex>
6727 \HyPsd@LoadUnicode
6728 \Hy@unicodetrue
6729 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
6730 \else
6731 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
6732 \fi
6733 \HyPsd@LoadStringEncoding
6734 \define@key{Hyp}{unicode}[true]{%
6735 \Hy@boolkey{unicode}{#1}%
6736 \ifHy@unicode
6737 \else
6738 \Hy@Warning{%
6739 XeTeX driver only supports `unicode=true'. Ignoring\MessageBreak
6740 option setting `unicode=false'%
6741 }%
6742 \Hy@unicodetrue
6743 \fi
6744 }
6745 \define@key{Hyp}{pdfencoding}{%
6746 \edef\HyPsd@temp{#1}%
6747 \ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
6748 \let\HyPsd@pdfencoding\HyPsd@temp
6749 \else
6750 \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
6751 \let\HyPsd@pdfencoding\HyPsd@temp
6752 \else
6753 \Hy@Warning{%
6754 XeTeX driver only supports\MessageBreak
6755 `pdfencoding=unicode|auto'. Ignoring option\MessageBreak
6756 setting `pdfencoding=\HyPsd@temp'%
6757 }%
6758 \fi
6759 \fi
6760 }

```

```
6761 \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:

```
6762 \def\setpdfinkmargin#1{%
6763   \begingroup
6764     \setlength{\dimen@}{#1}%
6765     \special{dvipdfmx:config g \strip@pt\dimen@}%
6766   \endgroup}
6767 \xetex
```

set the pdf version

```
6768 \<dvipdfm | xetex>
6769 \special{pdf:majorversion \Hy@pdf@majorversion}
6770 \special{pdf:minorversion \Hy@pdf@minorversion}
6771 \</dvipdfm | xetex>
```

### 27.1.3 pdfmarkbase, dvipdfm, xetex

```
6772 \<pdfmarkbase>
6773 \begingroup
6774   \ifundefined{headerps@out}{-}{%
6775     \toks@{\expandafter{\Hy@FirstPageHook}%
6776     \xdef\Hy@FirstPageHook{%
6777       \noexpand\headerps@out{%
6778         systemdict /pdfmark known%
6779         {%
6780           userdict /?pdfmark systemdict /exec get put%
6781         }%
6782         userdict /?pdfmark systemdict /pop get put %
6783         userdict /pdfmark systemdict /cleartomark get put%
6784       }%
6785       ifelse%
6786     }%
6787     \the\toks@
6788   }%
6789 }%
6790 \endgroup
6791 \</pdfmarkbase>
```

\Hy@PutCatalog

```
6792 \<dvipdfm | xetex>\def\Hy@PutCatalog#1{\@pdfm@mark{docview <<#1>>}}
6793 \<pdfmarkbase>
6794 \def\Hy@PutCatalog#1{%
6795   \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} <<#1>>}}%
6796 }
6797 \</pdfmarkbase>

6798 \<pdfmarkbase | dvipdfm | xetex>
6799 \ifHy@pdfpagelabels
```

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

```
6800 \def\HyPL@StorePageLabel#1{%
6801   \if@filesw
6802     \begingroup
6803     \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
6804     \immediate\write\@mainaux{%
```

```

6805     \string\HyPL@Entry{\Hy@tempa}%
6806   }%
6807   \endgroup
6808   \fi
6809 }%

```

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.

```

6810 \Hy@AtBeginDocument{%
6811   \if@filesw
6812     \immediate\write\@mainaux{%
6813       \string\providecommand\string*\string\HyPL@Entry[1]{}%
6814     }%
6815   \fi
6816   \ifx\HyPL@Labels\@empty
6817     \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
6818   \else
6819     \HyPL@SetPageLabels
6820   \fi
6821   \let\HyPL@Entry\@gobble
6822 }%

```

`\HyPL@Entry`

```

6823 \def\HyPL@Entry#1{%
6824   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
6825     \HyPL@Labels
6826     #1%
6827   }%
6828 }%

6829 \fi
6830 </pdfmarkbase | dvipdfm | xetex>

6831 <*\packageEnd>

6832 \ifx\MaybeStopEarly\relax
6833 \else
6834   \Hy@stoppedearlytrue
6835   \expandafter\MaybeStopEarly
6836 \fi
6837 \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

```

6838 \def\Hy@CounterExists#1{%
6839   \begingroup\expandafter\expandafter\expandafter\endgroup
6840   \expandafter\ifx\csname c@#1\endcsname\relax
6841     \expandafter\@gobble
6842   \else
6843     \begingroup\expandafter\expandafter\expandafter\endgroup
6844     \expandafter\ifx\csname the#1\endcsname\relax
6845       \expandafter\expandafter\expandafter\@gobble
6846     \else
6847       \expandafter\expandafter\expandafter\@firstofone
6848     \fi
6849   \fi
6850 }
6851 \Hy@CounterExists{section}{%
6852   \providecommand\theHequation{\theHsection.\arabic{equation}}}%
6853 }
6854 \providecommand\theHequation{\arabic{equation}}}%
6855 \Hy@CounterExists{part}{%
6856   \providecommand\theHpart{\arabic{part}}}%
6857 }
6858 \ltx@ifundefined{thechapter}{%
6859   \providecommand\theHsection   {\arabic{section}}}%
6860   \providecommand\theHfigure    {\arabic{figure}}}%
6861   \providecommand\theHtable     {\arabic{table}}}%
6862 }{%
6863   \providecommand\theHchapter   {\arabic{chapter}}}%
6864   \providecommand\theHfigure    {\theHchapter.\arabic{figure}}}%
6865   \providecommand\theHtable     {\theHchapter.\arabic{table}}}%
6866   \providecommand\theHsection   {\theHchapter.\arabic{section}}}%
6867 }
6868 \providecommand\theHsubsection {\theHsection.\arabic{subsection}}
6869 \providecommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
6870 \providecommand\theHparagraph   {\theHsubsubsection.\arabic{paragraph}}
6871 \providecommand\theHsubparagraph{\theHparagraph.\arabic{subparagraph}}
6872 \providecommand\theHtheorem     {\theHsection.\arabic{theorem}}
6873 \providecommand\theHthm         {\theHsection.\arabic{thm}}

```

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

```

6874 \let\H@item\item
6875 \newcounter{Item}
6876 \def\theHItem{\arabic{Item}}

```

```

6877 \def\item{%
6878   \@hyper@itemfalse
6879   \if@nmbrlist\@hyper@itemtrue\fi
6880   \H@item
6881 }

6882 \providecommand\theHenumi    {\theHItem}
6883 \providecommand\theHenumii   {\theHItem}
6884 \providecommand\theHenumiii  {\theHItem}
6885 \providecommand\theHenumiv   {\theHItem}
6886 \providecommand\theHHfootnote {\arabic{Hfootnote}}
6887 \providecommand\theHmpfootnote{\arabic{mpfootnote}}
6888 \@ifundefined{theHHmpfootnote}{%
6889   \let\theHHmpfootnote\theHHfootnote
6890 }{}

```

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.

```

6891 \let\H@refstepcounter\refstepcounter
6892 \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`

```

6893 \newif\if@hyper@item
6894 \newif\if@skiphyperref
6895 \@hyper@itemfalse
6896 \@skiphyperreffalse
6897 \ExplSyntaxOn
6898 \def\refstepcounter#1{%
6899   \legacy_if:nF {Hy@pdfstring}
6900   {
6901     \H@refstepcounter{#1}%
6902     \bool_lazy_and:nnT
6903       { \l__hyp_target_create_bool }
6904       { ! \legacy_if_p:n{ @skiphyperref } }
6905     {
6906       \legacy_if:nTF { @hyper@item }
6907       {
6908         \stepcounter{Item}%
6909         \hyper@refstepcounter{Item}%
6910         \@hyper@itemfalse
6911       }
6912       {
6913         \hyper@refstepcounter{#1}%
6914       }
6915     }
6916   }
6917 }
6918 \ExplSyntaxOff
6919 \let\Hy@saved@refstepcounter\refstepcounter

```

AMST<sub>EX</sub> 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.

```

6920 \newif\ifmeasuring@\measuring@false
6921 \newcommand\Hy@ifnotmeasuring[1]{#1}
6922 \AddToHook{package/amsmath/after}
6923 {
6924   \renewcommand\Hy@ifnotmeasuring[1]
6925     {\ifmeasuring@ \else #1\fi}
6926 }

```

`\hyper@refstepcounter`

```

6927 \def\hyper@refstepcounter#1{%
6928   \HyCnt@ProvideTheHCounter{#1}%
6929   \hyper@makecurrent{#1}%
6930   \Hy@ifnotmeasuring
6931     {\Hy@raisedlink{%
6932       \hyper@anchorstart{\@currentHref}\hyper@anchorend
6933     }}%
6934 }

```

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

```

6935 \def\HyCnt@ProvideTheHCounter#1{%
6936   \@ifundefined{theH#1}{%
6937     \expandafter\def\csname theH#1\endcsname{%
6938       \def\Hy@temp{\@elt{#1}}%
6939       \ltx@onelevel@sanitize\Hy@temp
6940       \let\HyOrg@elt\@elt
6941       \edef\@elt{%
6942         \noexpand\HyCnt@LookForParentCounter
6943         \expandafter\noexpand\csname theH#1\endcsname
6944       }%
6945       \cl@<ckpt>
6946       \let\@elt\HyOrg@elt
6947       \expandafter
6948       \ltx@LocalAppendToMacro\csname theH#1\endcsname
6949       \expandafter{%
6950         \expandafter\@arabic\csname c@#1\endcsname
6951       }%
6952     }%
6953 }

```

`\Hy@LookForParentCounter`

```

6954 \def\HyCnt@LookForParentCounter#1#2{%
6955   \expandafter\let\expandafter\Hy@temp@A\csname cl@#2\endcsname
6956   \ltx@ifundefined{cl@#2}{%
6957     }{%

```

```

6958 \ltx@onelevel@sanitize\Hy@temp@A
6959 \edef\Hy@temp@A{%
6960 \noexpand\in@{\Hy@temp}{\Hy@temp@A}%
6961 }\Hy@temp@A
6962 \ifin@
6963 \ltx@ifundefined{theH#2}{%
6964 \expandafter\ltx@LocalAppendToMacro\expandafter#1%
6965 \expandafter{%
6966 \expandafter\@arabic\csname c@#2\endcsname.%
6967 }%
6968 }{%
6969 \expandafter\ltx@LocalAppendToMacro\expandafter#1%
6970 \expandafter{%
6971 \csname theH#2\endcsname.%
6972 }%
6973 }%
6974 \fi
6975 }%
6976 }

```

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`.

```

6977 \begingroup\expandafter\expandafter\expandafter\endgroup
6978 \expandafter\ifx\csname chapter\endcsname\relax
6979 \def\Hy@chapterstring{section}%
6980 \else
6981 \def\Hy@chapterstring{chapter}%
6982 \fi
6983 \def\Hy@appendixstring{appendix}
6984 \def\Hy@chapapp{\Hy@chapterstring}
6985 \ltx@ifundefined{appendix}{%
6986 }{%
6987 \let\HyOrg@appendix\appendix
6988 \def\Hy@AlphNoErr#1{%
6989 \ifnum\value{#1}>26 %
6990 Alph\number\value{#1}%
6991 \else
6992 \ifnum\value{#1}<1 %
6993 Alph\number\value{#1}%
6994 \else
6995 \Alph{#1}%
6996 \fi
6997 \fi
6998 }%
6999 \def\appendix{%
7000 \ltx@ifundefined{chapter}{%
7001 \gdef\theHsection{\Hy@AlphNoErr{section}}%
7002 }{%
7003 \gdef\theHchapter{\Hy@AlphNoErr{chapter}}%
7004 }%

```

```

7005 \xdef\Hy@chapapp{\Hy@appendixstring}%
7006 \HyOrg@appendix
7007 }%
7008 }

```

\Hy@Test@alph

```

7009 \def\Hy@Test@alph#1{%
7010 \ifcase#1\or
7011 a\or b\or c\or d\or e\or f\or g\or h\or i\or j\or
7012 k\or l\or m\or n\or o\or p\or q\or r\or s\or t\or
7013 u\or v\or w\or x\or y\or z%
7014 \else
7015 \@ctrerr
7016 \fi
7017 }

```

\Hy@Test@Alph

```

7018 \def\Hy@Test@Alph#1{%
7019 \ifcase#1\or
7020 A\or B\or C\or D\or E\or F\or G\or H\or I\or J\or
7021 K\or L\or M\or N\or O\or P\or Q\or R\or S\or T\or
7022 U\or V\or W\or X\or Y\or Z%
7023 \else
7024 \@ctrerr
7025 \fi
7026 }

```

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

```

7027 \NewHook{__hyp/target/setname }
7028 \define@key{Hyp}{next-anchor}{%
7029 \AddToHookNext{__hyp/target/setname}%
7030 {\Hy@MakeCurrentHref{#1}}}%
7031 }

```

\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.

```

7032 \def\hyper@makecurrent#1{%
7033 \begingroup
7034 \Hy@safe@activestru
7035 \edef\Hy@param{#1}%
7036 \ifx\Hy@param\Hy@chapterstring
7037 \let\Hy@param\Hy@chapapp
7038 \fi
7039 \ifHy@hypertextnames
7040 \let\@number\@firstofone
7041 \def\@fnsymbol##1{fnsymbol\number##1}%
7042 \def\@arabic##1{\number##1}%
7043 \ifx\@alph\Hy@Test@alph
7044 \else
7045 \def\@alph{alph\number}%
7046 \fi
7047 \ifx\@Alph\Hy@Test@Alph

```

```

7048 \else
7049 \def\@Alph{Alph\number}%
7050 \fi
7051 \ifHy@naturalnames
7052 \let\textlatin\@firstofone
7053 \xdef\HyperGlobalCurrentHref{\csname the#1\endcsname}%
7054 \else
7055 \xdef\HyperGlobalCurrentHref{%
7056 \csname
7057 the%
7058 \expandafter\ifx\csname theH#1\endcsname\relax\else H\fi
7059 #1%
7060 \endcsname
7061 }%
7062 \fi
7063 \xdef\HyperGlobalCurrentHref{%
7064 \Hy@param.\expandafter\strip@prefix\meaning\HyperGlobalCurrentHref
7065 }%
7066 \else
7067 \Hy@GlobalStepCount\Hy@linkcounter
7068 \xdef\HyperGlobalCurrentHref{\Hy@param.\the\Hy@linkcounter}%
7069 \fi
7070 \endgroup
7071 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
7072 \ifHy@localanchorname
7073 \let\@currentHref\HyperLocalCurrentHref
7074 \else
7075 \global\let\@currentHref\HyperGlobalCurrentHref
7076 \fi
7077 \UseHook{__hyp/target/setname}%
7078 }

```

`\Hy@MakeCurrentHref`

```

7079 \def\Hy@MakeCurrentHref#1{%
7080 \edef\HyperLocalCurrentHref{#1}%
7081 \@onelevel@sanitize\HyperLocalCurrentHref
7082 \global\let\HyperGlobalCurrentHref\HyperLocalCurrentHref
7083 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
7084 \ifHy@localanchorname
7085 \let\@currentHref\HyperLocalCurrentHref
7086 \else
7087 \global\let\@currentHref\HyperGlobalCurrentHref
7088 \fi
7089 }

```

`\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.

```

7090 \def\Hy@MakeCurrentHrefAuto#1{%
7091 \Hy@GlobalStepCount\Hy@linkcounter
7092 \Hy@MakeCurrentHref{#1.\the\Hy@linkcounter}%
7093 \UseHook{__hyp/target/setname}}

```

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

```
7094 \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.

```
7095 \def\hypergetref#1{\getrefbykeydefault{#1}{-}{??}}
```

```
7096 \def\hypergetpageref#1{\getrefbykeydefault{#1}{page}{0}}
```

## 30 Package titlesec and titletoc support

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

Package titlesec support:

```
7097 \@ifpackageloaded{titlesec}{%
7098   \def\ttl@Hy@steplink#1{%
7099     \Hy@MakeCurrentHrefAuto{#1*}%
7100     \edef\ttl@Hy@saveanchor{%
7101       \noexpand\Hy@raisedlink{%
7102         \noexpand\hyper@anchorstart{\@currentHref}%
7103         \noexpand\hyper@anchorend
7104         \def\noexpand\ttl@Hy@SavedCurrentHref{\@currentHref}%
7105         \noexpand\ttl@Hy@PatchSaveWrite
7106       }%
7107     }%
7108   }%
7109   \def\ttl@Hy@PatchSaveWrite{%
7110     \begingroup
7111     \toks@ \expandafter{\ttl@savewrite}%
7112     \edef\x{\endgroup
7113       \def\noexpand\ttl@savewrite{%
7114         \let\noexpand\@currentHref
7115         \noexpand\ttl@Hy@SavedCurrentHref
7116         \the\toks@
7117       }%
7118     }%
7119     \x
7120   }%
7121   \def\ttl@Hy@refstepcounter#1{%
7122     \let\ttl@b\Hy@raisedlink
7123     \def\Hy@raisedlink##1{%
7124       \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
7125     }%
7126     \refstepcounter{#1}%
7127     \let\Hy@raisedlink\ttl@b
7128   }%
7129 }
```

## 31 Package varioref support

Package nameref uses five arguments for the ref system. Fix provided by Felix Neubauer ([felix.neubauer@gmx.net](mailto:felix.neubauer@gmx.net)). This fix will no longer be needed with latex 2021-11-15.

```

7130 \@if@t@r\fmtversion{2021-11-15}
7131 {}%
7132 {
7133   \AtBeginDocument{%
7134     \def\Hy@varioref@undefined{{??}{??}{}}{}{}}
7135   \@ifpackageloaded{varioref}{%
7136     \def\vref@pagenum#1#2{%
7137       \@ifundefined{r@#2}{%
7138         \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
7139       }{}%
7140       \edef#1{\getpagerefnumber{#2}}}%
7141     }%
7142   }{}
7143 }
7144 }
```

## 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

```

7145 \@ifpackageloaded{longtable}{%
7146   \@ifundefined{hyper@nopatch@longtable}{%
7147     \begingroup
7148     \def\y{\LT@array}%
7149     \@ifundefined{scr@LT@array}{%
7150       \@ifundefined{adl@LT@array}{}{\def\y{\adl@LT@array}}%
7151     }{\def\y{\scr@LT@array}}%
7152     \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
7153       \expandafter\endgroup
7154       \expandafter\def\y[##1]##2{%
7155         \H@refstepcounter{#1}%
7156         \hyper@makecurrent{table}%
7157         \let\Hy@LT@currentHref\@currentHref
7158         #2\@sharp###4%
7159       }%
7160     }%
7161     \expandafter\expandafter\expandafter\x\y[##1]{##2}\@nil
```

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

```

7162   \begingroup
7163   \def\x#1\ifvoid\LT@foot#2\fi#3\@nil{%
7164     \endgroup
7165     \def\LT@start{%
7166       #1%
```



```

7167 \ifvoid\LT@foot#2\fi
7168 \let\@currentHref\Hy@LT@currentHref
7169 \Hy@raisedlink{%
7170 \hyper@anchorstart{\@currentHref}\hyper@anchorend
7171 }%
7172 #3%
7173 }%
7174 }%
7175 \expandafter\x\LT@start\@nil
7176 }{}
7177 }{}

```

### 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 40). 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`

```

7178 \let\new@refstepcounter\refstepcounter
7179 \let\H@equation\equation
7180 \let\H@endequation\endequation
7181 \@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.

```

7182 \@ifpackageloaded{amsmath}{%}{%
7183 \def\equation{%
7184 \let\refstepcounter\H@refstepcounter
7185 \H@equation
7186 \hyper@makecurrent{equation}%

```

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

```

7187 \mathopen{%
7188 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
7189 }%
7190 \let\refstepcounter\new@refstepcounter
7191 }%
7192 \def\endequation{%
7193 \ifx\Hy@raisedlink\ltx@empty
7194 \hyper@anchorend
7195 \else
7196 \mathclose{\Hy@raisedlink{\hyper@anchorend}}%
7197 \fi
7198 \H@endequation
7199 }%
7200 }
7201 }{}

```

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.

```

7202 \newif\if@eqnstar
7203 \@eqnstarfalse
7204 \let\H@eqnarray\eqnarray
7205 \let\H@endeqnarray\endeqnarray
7206 \@ifundefined{hyper@nopath@mathenv}{%
7207   \def\eqnarray{%
7208     \let\Hy@reserved@a\relax
7209     \def\@currentHref{}%
7210     \H@eqnarray
7211     \if@eqnstar
7212     \else
7213       \ifx\\\@currentHref\%
7214       \else
7215         \hyper@makecurrent{equation}%
7216         \mathopen{%
7217           \Hy@raisedlink{%
7218             \hyper@anchorstart{\@currentHref}\hyper@anchorend
7219           }%
7220         }%
7221       \fi
7222     \fi
7223   }
7224   \def\endeqnarray{%
7225     \H@endeqnarray
7226   }
7227 }{}

```

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.

```

7228 \@namedef{eqnarray*}{%
7229   \protected\def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
7230 }
7231 \@namedef{endeqnarray*}{%
7232   \nonumber\endeqnarray\@eqnstarfalse
7233 }

```

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

```

7234 \ltx@ifundefined{subeqnarray}{-}{%
7235   \let\H@subeqnarray\subeqnarray
7236   \let\H@endsubeqnarray\endsubeqnarray
7237   \def\subeqnarray{%
7238     \let\Hy@reserved@a\relax
7239     \H@subeqnarray
7240     \hyper@makecurrent{equation}%
7241     \hyper@anchorstart{\@currentHref}{-}\hyper@anchorend
7242   }%
7243   \def\endsubeqnarray{%

```

```

7244 \H@endsubeqnarray
7245 }%
7246 \providecommand\theHsubequation{\theHequation\alph{subequation}}%
7247 }

```

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

```

7248 \def\make@stripped@name#1{%
7249 \begingroup
7250 \escapechar\m@ne
7251 \global\let\newname\@empty
7252 \protected@edef\Hy@tempa{#1}%
7253 \edef\@tempb{%
7254 \noexpand\@tfor\noexpand\Hy@tempa:=%
7255 \expandafter\strip@prefix\meaning\Hy@tempa
7256 }%
7257 \@tempb\do{%
7258 \if{\Hy@tempa\else
7259 \if}\Hy@tempa\else
7260 \xdef\newname{\newname\Hy@tempa}%
7261 \fi
7262 \fi
7263 }%
7264 \endgroup
7265 }

```

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.

```

7266 \AddToHook{cmd/subequations/before}
7267 {%
7268 \stepcounter{equation}%
7269 \protected@edef\theHparentequation{\theHequation}%
7270 \addtocounter{equation}{-1}%
7271 }
7272
7273 \AddToHook{cmd/subequations/after}
7274 {%
7275 \def\theHequation{\theHparentequation\alph{equation}}%
7276 \ignorespaces
7277 }

```

Support for theorems. We move the target into the para hook to avoid spacing problem. The patch will not apply to `cleveref` but hopefully it does the right thing anyway. `\@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

```

7278 \newcommand\Hy@theorem@refstepcounter[1]
7279 {%
7280 \H@refstepcounter{#1}%
7281 \hyper@makecurrent{#1}%
7282 \global\let\Hy@dth@currentHref\@currentHref
7283 \AddToHookNext{para/begin}
7284 {\let\Hy@tempa\@currentHref
7285 \MakeLinkTarget*\Hy@dth@currentHref}%

```

```

7286 \global\let\@currentHref\Hy@tempa
7287 }%
7288 }
7289 \@ifundefined{hyper@nopatch@thm}{%
7290 \AtBeginDocument{%
7291 \@ifpackageloaded{cleveref}
7292 {\AddToHook{cmd/@thm/before}{\ifhmode\unskip\fi}}
7293 {%
7294 \ifpatchable\@thm{\refstepcounter}
7295 {\patchcmd\@thm{\refstepcounter}{\Hy@theorem@refstepcounter}{}{}}
7296 {}%
7297 }}{}

```

## 34 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.

```

7298 \@ifundefined{hyper@nopatch@footnote}{%
7299 \ifHy@hyperfootnotes
7300 \newcounter{Hfootnote}%
7301 \let\H@@footnotetext\@footnotetext
7302 \let\H@@footnotemark\@footnotemark
7303 \def\@xfootnotenext[#1]{%
7304 \begingroup
7305 \csname c@\@mpfn\endcsname #1\relax
7306 \unrestored@protected@xdef\@thefnmark{\thempfn}%
7307 \endgroup
7308 \ifx\@footnotetext\@mpfootnotetext
7309 \expandafter\H@@mpfootnotetext
7310 \else
7311 \expandafter\H@@footnotetext
7312 \fi
7313 }%
7314 \def\@xfootnotemark[#1]{%
7315 \begingroup
7316 \c@footnote #1\relax
7317 \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7318 \endgroup
7319 \H@@footnotemark
7320 }%
7321 \let\H@@mpfootnotetext\@mpfootnotetext
7322 \long\def\@mpfootnotetext#1{%
7323 \H@@mpfootnotetext{%
7324 \ifHy@nesting
7325 \expandafter\ltx@firstoftwo
7326 \else
7327 \expandafter\ltx@secondoftwo
7328 \fi

```

```

7329  {%
7330    \expandafter\hyper@@anchor\expandafter{%
7331      \Hy@footnote@currentHref
7332    }\ignorespaces #1}%
7333  }{%
7334    \Hy@raisedlink{%
7335      \expandafter\hyper@@anchor\expandafter{%
7336        \Hy@footnote@currentHref
7337      }\relax}%
7338    }\ignorespaces #1%
7339  }%
7340  }%
7341  }%
7342  \long\def\@footnotetext#1{%
7343    \H@@footnotetext{%
7344      \ifHy@nesting
7345        \expandafter\ltx@firstoftwo
7346      \else
7347        \expandafter\ltx@secondoftwo
7348      \fi
7349    }{%
7350      \expandafter\hyper@@anchor\expandafter{%
7351        \Hy@footnote@currentHref
7352      }\ignorespaces #1}%
7353    }{%
7354      \Hy@raisedlink{%
7355        \expandafter\hyper@@anchor\expandafter{%
7356          \Hy@footnote@currentHref
7357        }\relax}%
7358      }%
7359      \let\@currentHref\Hy@footnote@currentHref
7360      \let\@currentlabelname\@empty
7361      \ignorespaces #1%
7362    }%
7363  }%
7364  }%

```

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.

```

7365  \def\@footnotemark{%
7366    \leavevmode
7367    \ifhmode\edef\x@sf{\the\spacefactor}\nobreak\fi
7368    \stepcounter{Hfootnote}%
7369    \global\let\Hy@saved@currentHref\@currentHref
7370    \hyper@makecurrent{Hfootnote}%
7371    \global\let\Hy@footnote@currentHref\@currentHref
7372    \global\let\@currentHref\Hy@saved@currentHref
7373    \hyper@linkstart{link}{\Hy@footnote@currentHref}%
7374    \@makefnmark
7375    \hyper@linkend
7376    \ifhmode\spacefactor\x@sf\fi

```

```

7377 \relax
7378 }%

```

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

```

7379 \@ifpackageloaded{tabularx}{%
7380 \let\HyOrg@TX@endtabularx\TX@endtabularx
7381 \def\Hy@tabularx@hook{%
7382 \let\@footnotetext\H@footnotetext
7383 \let\@footnotemark\H@footnotemark
7384 \let\@mpfootnotetext\H@mpfootnotetext
7385 }%
7386 \begingroup
7387 \toks@\expandafter{\TX@endtabularx}%
7388 \xdef\Hy@gtemp{%
7389 \noexpand\Hy@tabularx@hook
7390 \the\toks@
7391 }%
7392 \endgroup
7393 \let\TX@endtabularx\Hy@gtemp
7394 }{}%

```

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

```

7395 \@ifpackageloaded{longtable}{%
7396 \CheckCommand{\LT@p@ftntext}[1]{%
7397 \edef\@tempa{%
7398 \the\LT@p@ftn
7399 \noexpand\footnotetext[\the\c@footnote]%
7400 }%
7401 \global\LT@p@ftn\expandafter{\@tempa{#1}}%
7402 }%
7403 \long\def\LT@p@ftntext#1{%
7404 \edef\@tempa{%
7405 \the\LT@p@ftn
7406 \begingroup
7407 \noexpand\c@footnote=\the\c@footnote\relax
7408 \noexpand\protected\xdef\noexpand\@thefnmark{%
7409 \noexpand\thempfn
7410 }%
7411 \noexpand\Hy@LT@footnotetext{%
7412 \Hy@footnote@currentHref
7413 }%
7414 }%
7415 \global\LT@p@ftn\expandafter{%
7416 \@tempa{#1}%
7417 \endgroup
7418 }%
7419 }%
7420 \long\def\Hy@LT@footnotetext#1#2{%
7421 \H@footnotetext{%
7422 \ifHy@nesting
7423 \hyper@@anchor{#1}{#2}%

```

```

7424 \else
7425 \Hy@raisedlink{%
7426 \hyper@@anchor{#1}{\relax}%
7427 }%
7428 \def\@currentHref{#1}%
7429 \let\@currentlabelname\@empty
7430 #2%
7431 \fi
7432 }%
7433 }%
7434 }{}%

```

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

```

7435 \@ifpackageloaded{fancyvrb}{%
7436 \def\V@@footnotetext{%
7437 \insert\footins\bgroup
7438 \csname reset@font\endcsname
7439 \footnotesize
7440 \interlinepenalty\interfootnotelinepenalty
7441 \splittopskip\footnotesep
7442 \splitmaxdepth\dp\strutbox
7443 \floatingpenalty \@MM
7444 \hsize\columnwidth
7445 \@parboxrestore
7446 \def\@currentcounter{footnote}%
7447 \protected@edef\@currentlabel{\csname p@footnote\endcsname\@thefn-
mark}%
7448 \@makefnmark}%
7449 \rule{\z@}{\footnotesep}%
7450 \bgroup
7451 \aftergroup\V@@@footnotetext
7452 \Hy@raisedlink{%
7453 \expandafter\hyper@@anchor\expandafter{%
7454 \Hy@footnote@currentHref
7455 }{\relax}%
7456 }%
7457 \let\@currentHref\Hy@footnote@currentHref
7458 \let\@currentlabelname\@empty
7459 \ignorespaces
7460 }%
7461 }{}%

```

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

```

7462 \def\Hy@temp#1{%
7463 \begingroup
7464 \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7465 \endgroup
7466 \@footnotemark
7467 }%
7468 \ifx\Hy@temp\footref
7469 \def\footref#1{%
7470 \begingroup
7471 \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7472 \endgroup

```

```

7473 \H@@footnotemark
7474 }%
7475 \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.

```

7476 \let\HyOrg@maketitle\maketitle
7477 \def\maketitle{%
7478 \let\Hy@saved@footnotemark\@footnotemark
7479 \let\Hy@saved@footnotetext\@footnotetext
7480 \let\@footnotemark\H@@footnotemark
7481 \let\@footnotetext\H@@footnotetext
7482 \@ifnextchar[\Hy@maketitle@optarg{% ]
7483 \HyOrg@maketitle
7484 \Hy@maketitle@end
7485 }%
7486 }%
7487 \def\Hy@maketitle@optarg[#1]{%
7488 \HyOrg@maketitle[#1]}%
7489 \Hy@maketitle@end
7490 }%
7491 \def\Hy@maketitle@end{%
7492 \ifx\@footnotemark\H@@footnotemark
7493 \let\@footnotemark\Hy@saved@footnotemark
7494 \fi
7495 \ifx\@footnotetext\H@@footnotetext
7496 \let\@footnotetext\Hy@saved@footnotetext
7497 \fi
7498 }%

```

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

```

7499 \def\realfootnote{%
7500 \@ifnextchar[\@xfootnote%]
7501 {\stepcounter{\@mpfn}%
7502 \protected@xdef\@thefnmark{\thempfn}%
7503 \H@@footnotemark\H@@footnotetext
7504 }%
7505 }%

7506 \fi
7507 }{}
7508 \Hy@DisableOption{hyperfootnotes}

7509 \</packageEnd>
7510 \< *check>
7511 \checklatex
7512 \checkcommand\def\@xfootnotenext[#1]{%
7513 \begingroup
7514 \csname c@\@mpfn\endcsname #1\relax
7515 \unrestored@protected@xdef\@thefnmark{\thempfn}%
7516 \endgroup
7517 \@footnotetext
7518 }
7519 \checkcommand\def\@xfootnotemark[#1]{%

```



```

7520 \begingroup
7521 \c@footnote #1\relax
7522 \unrestored@protected@xdef\@thefnmark{\thefnnote}%
7523 \endgroup
7524 \@footnotemark
7525 }
7526 \checkcommand\def\@footnotemark{%
7527 \leavevmode
7528 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7529 \@makefnmark
7530 \ifhmode\spacefactor\@x@sf\fi
7531 \relax
7532 }
7533 \</check>
7534 \*packageEnd>

```

## 35 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.

```

7535 \@ifundefined{hyper@nopatch@caption}{%
7536 \def\caption{%
7537 \ifx\@captype\@undefined
7538 \@latex@error{\noexpand\caption outside float}\@ehd
7539 \expandafter\@gobble
7540 \else
7541 \H@refstepcounter\@captype
7542 \let\Hy@tempa\@caption
7543 \@ifundefined{float@caption}{%
7544 }{%
7545 \expandafter\ifx\csname @float@c@\@captype\endcsname
7546 \float@caption
7547 \let\Hy@tempa\Hy@float@caption
7548 \fi
7549 }%
7550 \expandafter\@firstofone
7551 \fi
7552 {\@dblarg{\Hy@tempa\@captype}}}%
7553 }
7554 \long\def\@caption#1[#2]#3{%
7555 \expandafter\ifx\csname if@capstart\expandafter\endcsname
7556 \csname iftrue\endcsname
7557 \global\let\@currentHref\hc@currentHref
7558 \else
7559 \hyper@makecurrent{\@captype}%
7560 \fi
7561 \@ifundefined{NR@getttitle}{%
7562 \def\@currentlabelname{#2}%
7563 }{%
7564 \NR@getttitle{#2}%
7565 }%
7566 \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
7567 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%

```

```

7568 }%
7569 \begingroup
7570 \@parboxrestore
7571 \if@minipage
7572 \setminipage
7573 \fi
7574 \normalsize
7575 \expandafter\ifx\csname if@capstart\expandafter\endcsname
7576 \csname iftrue\endcsname
7577 \global\@capstartfalse
7578 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
7579 \else
7580 \@makecaption{\csname fnum@#1\endcsname}{%
7581 \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

7582 \ifHy@nesting
7583 \expandafter\hyper@@anchor\expandafter{\@currentHref}{#3}%
7584 \else
7585 \Hy@raisedlink{%
7586 \expandafter\hyper@@anchor\expandafter{%
7587 \@currentHref
7588 }{\relax}%
7589 }%
7590 #3%
7591 \fi
7592 }%
7593 \fi
7594 \par
7595 \endgroup
7596 }}{}%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’.

```

7597 \let\Hy@float@caption\@caption
7598 \newcommand{\HyNew@float@makebox}[1]{%
7599 \HyOrg@float@makebox{%
7600 #1\relax
7601 \ifx\Hy@float@currentHref\@undefined
7602 \else
7603 \expandafter\hyper@@anchor\expandafter{%
7604 \Hy@float@currentHref
7605 }{\relax}%
7606 \global\let\Hy@float@currentHref\@undefined
7607 \fi
7608 }%
7609 }%
7610 \@ifpackageloaded{float}{%
7611 \def\Hy@float@caption{%
7612 \ifx\Hy@float@currentHref\@undefined
7613 \hyper@makecurrent{\@capttype}%
7614 \global\let\Hy@float@currentHref\@currentHref

```

```

7615 \else
7616 \let\@currentHref\Hy@float@currentHref
7617 \fi
7618 \float@caption
7619 }%
7620 \let\HyOrg@float@makebox\float@makebox
7621 \let\float@makebox\HyNew@float@makebox
7622 }{}

7623 </packageEnd>
7624 <*check>
7625 \checklatex[1999/06/01 - 2000/06/01]
7626 \checkcommand\def\caption{%
7627 \ifx\@cuptype\@undefined
7628 \@latex@error{\noexpand\caption outside float}\@ehd
7629 \expandafter\@gobble
7630 \else
7631 \refstepcounter\@cuptype
7632 \expandafter\@firstofone
7633 \fi
7634 {\@dblarg{\@caption\@cuptype}}}%
7635 }
7636 \checkcommand\long\def\@caption#1[#2]#3{%
7637 \par
7638 \addcontentsline{\csname ext@#1\endcsname}{#1}{%
7639 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}}%
7640 }%
7641 \begingroup
7642 \@parboxrestore
7643 \if@minipage
7644 \@setminipage
7645 \fi
7646 \normalsize
7647 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
7648 \endgroup
7649 }
7650 </check>
7651 <*packageEnd>

```

## 36 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.

```

7652 \def\hyper@natlinkstart#1{%
7653 \Hy@backout{#1}%
7654 \hyper@linkstart{cite}{cite.#1}%
7655 \def\hyper@nat@current{#1}%

```

```

7656 }
7657 \def\hyper@natlinkend{%
7658   \hyper@linkend
7659 }
7660 \def\hyper@natlinkbreak#1#2{%
7661   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
7662 }
7663 \def\hyper@natanchorstart#1{%
7664   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
7665 }
7666 \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.

```

7667 \@ifundefined{hyper@nopatch@bib}
7668 {%
7669   \ltx@ifundefined{NAT@parse}{%
7670     \providecommand*\@extra@binfo{}%
7671     \providecommand*\@extra@b@citeb{}%
7672   \def\bibcite#1#2{%
7673     \@newl@bel{b}{#1\@extra@binfo}{%
7674       \hyper@link{cite}{cite.#1\@extra@b@citeb}{#2}%
7675     }%
7676   }%
7677   \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.”.

```

7678   \let\Hy@bibcite\bibcite
7679   \begingroup
7680     \@ifundefined{bbl@cite@choice}{}%
7681     \g@addto@macro\bbl@cite@choice{%
7682       \let\bibcite\Hy@bibcite
7683     }%
7684   }%
7685   \endgroup

```

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

```

7686   \providecommand*\@BIBLABEL{\@biblabel}%
7687   \def\@lbibitem[#1]#2{%
7688     \@skiphyperrftrue
7689     \H@item[%
7690       \ifx\Hy@raisedlink\@empty
7691         \hyper@anchorstart{cite.#2\@extra@b@citeb}%
7692         \@BIBLABEL{#1}%
7693       \hyper@anchorend
7694     \else
7695       \Hy@raisedlink{%
7696         \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
7697       }%
7698     \@BIBLABEL{#1}%
7699   \fi
7700   \hfill

```

```

7701    ]%
7702    \@skiphyperreffalse
7703    \if@filesw
7704        \begingroup
7705            \let\protect\noexpand
7706            \immediate\write\@auxout{%
7707                \string\bibcite{#2}{#1}%
7708            }%
7709        \endgroup
7710    \fi
7711    \ignorespaces
7712 }%

```

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

```

7713    \def\@bibitem#1{%
7714        \@skiphyperreftrue\H@item\@skiphyperreffalse
7715        \Hy@raisedlink{%
7716            \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
7717        }%
7718        \if@filesw
7719            \begingroup
7720                \let\protect\noexpand
7721                \immediate\write\@auxout{%
7722                    \string\bibcite{#1}{\the\value{\@listctr}}%
7723                }%
7724            \endgroup
7725        \fi
7726        \ignorespaces
7727    }%
7728 }{}%
7729 }{}

7730 \</packageEnd>
7731 \< *check>
7732 \checklatex
7733 \checkcommand\def\@lbibitem[#1]#2{%
7734     \item[\@biblabel{#1}\hfill]%
7735     \if@filesw
7736         {%
7737             \let\protect\noexpand
7738             \immediate\write\@auxout{%
7739                 \string\bibcite{#2}{#1}%
7740             }%
7741         }%
7742     \fi
7743     \ignorespaces
7744 }
7745 \checkcommand\def\@bibitem#1{%
7746     \item
7747     \if@filesw
7748         \immediate\write\@auxout{%
7749             \string\bibcite{#1}{\the\value{\@listctr}}%
7750         }%
7751     \fi

```

```

7752 \ignorespaces
7753 }
7754 </check>
7755 <*packageEnd>

```

### 36.1 Package harvard

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

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

```

7756 \@ifpackageloaded{harvard}{%
7757   \Hy@AtBeginDocument{%
7758     \Hy@Info{*** compatibility with harvard **** }%
7759     \Hy@raiselinksfalse
7760     \def\harvardcite#1#2#3#4{%
7761       \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{#1}{#2}}%
7762       \global\@namedef{HAR@an@#1}{\hyper@link[cite]{#1}{#3}}%
7763       \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{#1}{#4}}%
7764       \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
7765     }%
7766     \def\HAR@citetoaux#1{%
7767       \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
7768       \ifHy@backref
7769         \ifx\@empty\@currentlabel
7770           \else
7771             \@bsphack
7772             \if@filesw
7773               \protected@write\@auxout{}{%
7774                 \string\writefile{brf}{%
7775                   \string\backcite{#1}{%
7776                     {\thepage}{\@currentlabel}{\@currentHref}%
7777                   }%
7778                 }%
7779             }%
7780           \fi
7781           \@esphack
7782         \fi
7783       \fi
7784     }%
7785     \def\harvarditem{%
7786       \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
7787     }%
7788     \def\@harvarditem[#1]#2#3#4#5\par{%
7789       \item[]%
7790       \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
7791       \if@filesw
7792         \begingroup
7793         \def\protect##1{\string ##1\space}%
7794         \ifthenelse{\equal{#1}{\null}}{%

```

```

7795         {\def\next{{#4}{#2}{#2}{#3}}}%
7796         {\def\next{{#4}{#2}{#1}{#3}}}%
7797         \immediate\write\@auxout{\string\harvardcite\codeof\next}%
7798     \endgroup
7799 \fi
7800 \protect\hspace*{-\labelwidth}%
7801 \protect\hspace*{-\labelsep}%
7802 \ignorespaces
7803 #5%
7804 \ifHy@backref
7805     \newblock
7806     \backref{\csname br@#4\endcsname}%
7807 \fi
7808 \par
7809 }%

```

`\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`:

```

7810 \long\def\HAR@checkcitations#1#2#3#4{%
7811     \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%
7812     \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
7813         \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#3}}%
7814         \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
7815             \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#4}}%
7816             \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
7817                 \else
7818                     \@tempswatrue
7819                 \fi
7820             \else
7821                 \@tempswatrue
7822             \fi
7823         \else
7824             \@tempswatrue
7825         \fi
7826     }%
7827 }%

7828 }{}

```

## 36.2 Package `chicago`

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

```

7829 \@ifpackageloaded{chicago}{%

```

`\citeN`

```

7830 \def\citeN{%
7831     \def\@citesep{-1000}%
7832     \def\@cite##1##2{##1}%
7833     \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
7834     \@citedata@opt
7835 }%

```

```

\shortciteN
7836 \def\shortciteN{%
7837 \def\@citesep{-1000}%
7838 \def\@cite##1##2{##1}%
7839 \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
7840 \@citedata@opt
7841 }%

\@citedata@opt
7842 \def\@citedata@opt{%
7843 \let\@cite@opt\@empty
7844 \@ifnextchar [{%
7845 \@tempswatrue
7846 \@citedatax@opt
7847 }{%
7848 \@tempswafalse
7849 \@citedatax[]%
7850 }%
7851 }%

\@citedatax@opt
7852 \def\@citedatax@opt[#1]{%
7853 \def\@cite@opt{, #1}%
7854 \@citedatax[{#1}]%
7855 }%

7856 }{}

```

## 37 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.

```

7857 \ltx@ifclassloaded{slides}{%
7858 \def\Hy@SlidesFormatOptionalPage#1{(#1)}%
7859 \def\Hy@PageAnchorSlidesPlain{%
7860 \advance\c@page\ltx@one
7861 \edef\Hy@TempPageAnchor{%
7862 \noexpand\hyper@@anchor{%
7863 page.\the\c@slide.\the\c@overlay.\the\c@note%
7864 \ifnum\c@page=\ltx@one
7865 \else
7866 .\the\c@page
7867 \fi
7868 }%
7869 }%
7870 \advance\c@page-\ltx@one
7871 }%
7872 \def\Hy@PageAnchorSlide{%

```



```

7873 \advance\c@page\ltx@one
7874 \ifnum\c@page>\ltx@one
7875 \ltx@ifundefined{theHpage}{%
7876 \protected@edef\Hy@TheSlideOptionalPage{%
7877 \Hy@SlidesFormatOptionalPage{\thepage}%
7878 }%
7879 }{%
7880 \protected@edef\Hy@TheSlideOptionalPage{%
7881 \Hy@SlidesFormatOptionalPage{\theHpage}%
7882 }%
7883 }%
7884 \else
7885 \def\Hy@TheSlideOptionalPage{}%
7886 \fi
7887 \advance\c@page-\ltx@one
7888 \pdfstringdef\@the@H@page{%
7889 \csname
7890 the%
7891 \ltx@ifundefined{theH\Hy@SlidesPage}{\H}%
7892 \Hy@SlidesPage
7893 \endcsname
7894 \Hy@TheSlideOptionalPage
7895 }%
7896 \ltx@gobblethree
7897 }%
7898 \def\Hy@SlidesPage{slide}%
7899 \g@addto@macro\slide{%
7900 \def\Hy@SlidesPage{slide}%
7901 }%
7902 \g@addto@macro\overlay{%
7903 \def\Hy@SlidesPage{overlay}%
7904 }%
7905 \g@addto@macro\note{%
7906 \def\Hy@SlidesPage{note}%
7907 }%
7908 }{%
7909 \def\Hy@PageAnchorSlidesPlain{}%
7910 \def\Hy@PageAnchorSlide{}%
7911 }
7912 \def\Hy@EveryPageAnchor{%
7913 \Hy@DistillerDestFix
7914 \ifHy@pageanchor
7915 \ifHy@hypertextnames
7916 \ifHy@plainpages
7917 \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
7918 \Hy@PageAnchorSlidesPlain
7919 \else
7920 \begingroup
7921 \let\@number\@firstofone
7922 \Hy@unicodefalse
7923 \Hy@PageAnchorSlide
7924 \pdfstringdef\@the@H@page{\thepage}%
7925 \endgroup
7926 \EdefUnescapeString\@the@H@page{\@the@H@page}%

```

```

7927     \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@theH@page}}}%
7928     \fi
7929   \else
7930     \Hy@GlobalStepCount\Hy@pagecounter
7931     \def\Hy@TempPageAnchor{%
7932       \hyper@@anchor{page.\the\Hy@pagecounter}%
7933     }%
7934     \fi
7935     \vbox to 0pt{%
7936       \kern\voffset
7937       \kern\topmargin
7938       \kern-1bp\relax
7939       \hbox to 0pt{%
7940         \kern\hoffset
7941         \kern\ifodd\value{page}%
7942           \oddsidemargin
7943         \else
7944           \evensidemargin
7945         \fi
7946         \kern-1bp\relax
7947         \Hy@TempPageAnchor\relax
7948         \hss
7949       }%
7950     \vss
7951   }%
7952 \fi
7953 }
7954 \g@addto@macro\Hy@EveryPageBoxHook{%
7955   \Hy@EveryPageAnchor
7956 }

```

## 38 Table of contents

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

```

7957 \providecommand\protected@file@percent{}
7958 \@ifundefined{hyper@nopatch@toc}{%
7959   \def\addcontentsline#1#2#3{% toc extension, type, tag
7960     \begingroup
7961       \let\label\@gobble
7962       \ifx\@currentHref\@empty
7963         \Hy@Warning{%
7964           No destination for bookmark of \string\addcontentsline,%
7965           \MessageBreak destination is added%
7966         }%
7967       \phantomsection
7968     \fi
7969     \expandafter\ifx\csname toplevel@#2\endcsname\relax
7970       \begingroup

```

```

7971 \def\Hy@tempa{#1}%
7972 \ifx\Hy@tempa\Hy@bookmarkstype
7973 \Hy@WarningNoLine{%
7974     bookmark level for unknown #2 defaults to 0%
7975 }%
7976 \else
7977 \Hy@Info{bookmark level for unknown #2 defaults to 0}%
7978 \fi
7979 \endgroup
7980 \expandafter\gdef\csname toplevel@#2\endcsname{0}%
7981 \fi
7982 \edef\Hy@toclevel{\csname toplevel@#2\endcsname}%
7983 \Hy@writebookmark{\csname the#2\endcsname}%
7984 {#3}%
7985 {\@currentHref}%
7986 {\Hy@toclevel}%
7987 {#1}%
7988 \ifHy@verbose
7989 \begingroup
7990 \def\Hy@tempa{#3}%
7991 \@onelevel@sanitize\Hy@tempa
7992 \let\temp@online\on@line
7993 \let\on@line\@empty
7994 \Hy@Info{%
7995     bookmark\temp@online:\MessageBreak
7996     thecounter {\csname the#2\endcsname}\MessageBreak
7997     text {\Hy@tempa}\MessageBreak
7998     reference {\@currentHref}\MessageBreak
7999     toplevel {\Hy@toclevel}\MessageBreak
8000     type {#1}%
8001 }%
8002 \endgroup
8003 \fi
8004 \addtocontents{#1}{%
8005 \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}\protected@file@per-
cent
8006 }%
8007 \endgroup
8008 }
8009 }{}

```

`\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:

```

8010 \protected\def\Hy@toclinkstart{\hyper@linkstart{link}{\Hy@tocdestname}}
8011 \protected\def\Hy@toclinkend{\hyper@linkend}
8012
8013 \@ifundefined{hyper@nopatch@toc}{%
8014 \def\contentsline#1#2#3#4{%
8015 \begingroup
8016 \Hy@safe@activertrue
8017 \edef\x{\endgroup
8018 \def\noexpand\Hy@tocdestname{#4}%

```

```

8019 } \x
8020 \ifx\Hy@tocdestname\ltx@empty
8021   \csname l@#1\endcsname{#2}{#3}%
8022 \else
8023   \ifcase\Hy@linktoc % none
8024     \csname l@#1\endcsname{#2}{#3}%
8025   \or % section
8026     \csname l@#1\endcsname{%
8027       \Hy@toclinkstart{#2}\Hy@toclinkend
8028     }{#3}%
8029   \or % page
8030     \def\Hy@temp{#3}%
8031     \ifx\Hy@temp\ltx@empty
8032       \csname l@#1\endcsname{#2}{#3}%
8033     \else
8034       \csname l@#1\endcsname{{#2}}{%
8035         \Hy@toclinkstart{#3}\Hy@toclinkend
8036       }%
8037     \fi
8038   \else % all
8039     \def\Hy@temp{#3}%
8040     \ifx\Hy@temp\ltx@empty
8041       \csname l@#1\endcsname{%
8042         \Hy@toclinkstart{#2}\Hy@toclinkend
8043       }{}%
8044     \else
8045       \csname l@#1\endcsname{%
8046         \Hy@toclinkstart{#2}\Hy@toclinkend
8047       }{%
8048         \Hy@toclinkstart{#3}\Hy@toclinkend
8049       }%
8050     \fi
8051   \fi
8052 \fi
8053 }
8054 }{}

8055 \endpackage
8056 \check
8057 \checklatex
8058 \checkcommand\def\addcontentsline#1#2#3{%
8059   \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
8060 }
8061 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
8062 \endcheck
8063 \endpackage

```

## 39 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.

```

8064 \@ifundefined{hyper@nopatch@counter}
8065 {

```

```

8066 \let\H@definecounter\@definecounter
8067 \def\@definecounter#1{%
8068   \H@definecounter{#1}%
8069   \expandafter\gdef\csname theH#1\endcsname{\arabic{#1}}%
8070 }
8071 }{}

```

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.

```

8072 \ifundefined{hyper@nopatch@counter}
8073 {
8074   \let\H@newctr\@newctr
8075   \def\@newctr#1[#2]{%
8076     \H@newctr#1[#2]}%
8077   \expandafter\gdef\csname theH#1\endcsname{%
8078     \csname the\@ifundefined{theH#2}{H}#2\endcsname.\arabic{#1}%
8079   }%
8080 }
8081 }{}

```

## 40 AMS $\text{\LaTeX}$ 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.

```

8082 \ifundefined{hyper@nopatch@amsmath@tag}
8083 {%
8084   \AddToHook{package/amsmath/after}{%
8085     \def\Hy@make@anchor{%
8086       \Hy@MakeCurrentHrefAuto{AMS}%
8087       \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
8088     }%
8089     \def\Hy@make@df@tag@@#1{%
8090       \gdef\df@tag{%
8091         \maketag@@@{\Hy@make@anchor#1}%
8092         \def\@currentlabel{#1}%
8093       }%
8094     }%
8095     \def\Hy@make@df@tag@@@#1{%
8096       \gdef\df@tag{%
8097         \tagform@{\Hy@make@anchor#1}%
8098         \toks@{\xp{p@equation{#1}}}%
8099         \edef\@currentlabel{the\toks@}%
8100       }%
8101     }%
8102     \let\HyOrg@make@df@tag@@\make@df@tag@@

```

```

8103 \let\HyOrg@make@df@tag@@@ \make@df@tag@@@
8104 \let\make@df@tag@@ \Hy@make@df@tag@@
8105 \let\make@df@tag@@@ \Hy@make@df@tag@@@
8106 }{}
8107 }{}

```

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}}}}

```

#### 40.1 \@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.

```

8108 \@ifundefined{hyper@nopatch@counter}
8109 {
8110   \let\HyOrg@addtoreset\@addtoreset
8111   \def\@addtoreset#1#2{%
8112     \HyOrg@addtoreset{#1}{#2}%
8113     \expandafter\xdef\csname theH#1\endcsname{%
8114       \expandafter\noexpand
8115         \csname the\@ifundefined{theH#2}{H#2\endcsname
8116         .\noexpand\the\noexpand\value{#1}%
8117     }%
8118   }
8119 }{}

```

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

```

8120 \</packageEnd>
8121 \< *check>
8122 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
8123 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
8124   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
8125     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
8126       \@addtoreset{#2}{#3}%
8127       \@xp\xdef\csname the#2\endcsname{%
8128         \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8129       }%
8130     }%
8131   }%
8132 }%
8133 \</check>

```

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

```

8134 \< *packageEnd>

```

```

8135 \ifundefined{hyper@nopatch@counter}
8136 {
8137   \AddToHook{package/amsmath/after}{%
8138     \renewcommand*{\numberwithin}[3][\arabic]{%
8139       \ifundefined{c@#2}{\@nocounterr{#2}}{%
8140         \ifundefined{c@#3}{\@nocnterr{#3}}{%
8141           \HyOrg@addtoreset{#2}{#3}%
8142           \@xp\xdef\csname the#2\endcsname{%
8143             \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8144           }%
8145           \@xp\xdef\csname theH#2\endcsname{%
8146             \@xp\@nx
8147             \csname the\@ifundefined{theH#3}{}H#3\endcsname
8148             .\@nx#1{#2}%
8149           }%
8150         }%
8151       }%
8152     }%
8153   }{}
8154 }{}

```

## 41 Included figures

Simply intercept the low level graphics package macro.

```

8155 \ifHy@hyperfigures
8156   \let\Hy@Gin@setfile\Gin@setfile
8157   \def\Gin@setfile#1#2#3{%
8158     \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
8159   }%
8160 \fi
8161 \Hy@DisableOption{hyperfigures}

```

## 42 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.

```

8162 \ifHy@hyperindex
8163   \def\HyInd@ParenLeft{({}%
8164   \def\HyInd@ParenRight{)}}%
8165   \def\hyperindexformat#1#2{%
8166     \let\HyOrg@hyperpage\hyperpage
8167     \let\hyperpage\@firstofone
8168     #1{\HyOrg@hyperpage{#2}}%
8169     \let\hyperpage\HyOrg@hyperpage

```

```

8170 }%
8171 \Hy@nextfalse
8172 \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
8173 \@ifpackageloaded{index}{\Hy@nexttrue}{}%
8174 \@ifpackageloaded{amsmidx}{\Hy@nexttrue}{}%
8175 \begingroup
8176 \lccode`\|=\expandafter`\HyInd@EncapChar\relax
8177 \lccode`\/=``\relax
8178 \lowercase{\endgroup
8179 \ifHy@next
8180 \let\HyInd@org@wrindex\@wrindex
8181 \def\@wrindex#1#2{\HyInd@@wrindex{#1}#2||\}%
8182 \def\HyInd@@wrindex#1#2|#3|#4\{\%
8183 \ifx\|#3\%
8184 \HyInd@org@wrindex{#1}{#2|hyperpage}%
8185 \else
8186 \HyInd@@@wrindex{#1}{#2}#3\%
8187 \fi
8188 }%
8189 \def\HyInd@@@wrindex#1#2#3#4\{\%
8190 \def\Hy@temp@A{#3}%
8191 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8192 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8193 \relax
8194 \HyInd@org@wrindex{#1}{%
8195 #2|hyperindexformat{/#3#4}%
8196 }%
8197 \else
8198 \ifx\|#4\%
8199 \ifx\Hy@temp@A\HyInd@ParenRight
8200 \HyInd@org@wrindex{#1}{#2|#3}%
8201 \else
8202 \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
8203 \fi
8204 \else
8205 \HyInd@org@wrindex{#1}{%
8206 #2|#3hyperindexformat{/#4}%
8207 }%
8208 \fi
8209 \fi
8210 }%
8211 \else
8212 \def\@wrindex#1{\@wrindex#1||\}%
8213 \def\@wrindex#1|#2|#3\{\%
8214 \if@filesw
8215 \ifx\|#2\%
8216 \protected@write\@indexfile{\%
8217 \string\indexentry{#1|hyperpage}{\thepage}%
8218 }%
8219 \else
8220 \HyInd@@@wrindex{#1}#2\%
8221 \fi
8222 \fi
8223 \endgroup

```



```

8224 \@esphack
8225 }%
8226 \def\HyInd@@@wrindex#1#2#3\{\%
8227 \def\Hy@temp@A{#2}%
8228 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8229 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8230 \relax
8231 \protected@write\@indexfile{\%
8232 \string\indexentry{%
8233 #1|hyperindexformat{/#2#3}%
8234 }\the page}%
8235 }%
8236 \else
8237 \ifx\#3\%
8238 \ifx\Hy@temp@A\HyInd@ParenRight
8239 \HyInd@DefKey{#1}%
8240 \ltx@ifundefined{HyInd@(\HyInd@key)}{\%
8241 \let\Hy@temp\ltx@empty
8242 }{\%
8243 \expandafter\let\expandafter\Hy@temp
8244 \csname HyInd@(\HyInd@key)\endcsname
8245 }%
8246 \protected@write\@indexfile{\%
8247 \string\indexentry{#1|#2\Hy@temp}\the page}%
8248 }%
8249 \else
8250 \protected@write\@indexfile{\%
8251 \string\indexentry{#1|#2hyperpage}\the page}%
8252 }%
8253 \HyInd@DefKey{#1}%
8254 \expandafter
8255 \gdef\csname HyInd@(\HyInd@key)\endcsname{%
8256 hyperpage%
8257 }%
8258 \fi
8259 \else
8260 \protected@write\@indexfile{\%
8261 \string\indexentry{%
8262 #1|#2hyperindexformat{/#3}%
8263 }\the page}%
8264 }%
8265 \ifx\Hy@temp@A\HyInd@ParenLeft
8266 \HyInd@DefKey{#1}%
8267 \expandafter
8268 \gdef\csname HyInd@(\HyInd@key)\endcsname{%
8269 hyperindexformat{/#3}%
8270 }%
8271 \fi
8272 \fi
8273 \fi
8274 }%
8275 \def\HyInd@DefKey#1{\%
8276 \begingroup
8277 \let\protect\@unexpandable@protect

```

```

8278     \edef\Hy@temp{#1}%
8279     \ltx@onelevel@sanitize\Hy@temp
8280     \global\let\HyInd@key\Hy@temp
8281     \endgroup
8282   }%
8283   \fi
8284 }%
8285 \fi
8286 \Hy@DisableOption{hyperindex}
8287 \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.

```

8288 \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.

```

8289 \def\hyperpage#1{%
8290   \HyInd@hyperpage#1\nohyperpage{}\@nil
8291 }
8292 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{%
8293   \HyInd@@hyperpage{#1}%
8294   #2%
8295   \def\Hy@temp{#3}%
8296   \ifx\Hy@temp\@empty
8297     \else
8298       \ltx@ReturnAfterFi{%
8299         \HyInd@hyperpage#3\@nil
8300       }%
8301     \fi
8302 }
8303 \def\HyInd@@hyperpage#1{\@hyperpage#1----\}
8304 \def\@hyperpage#1--#2--#3\{\{%
8305   \ifx\#2\%
8306     \@commahyperpage{#1}%
8307   \else
8308     \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
8309   \fi
8310 }
8311 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
8312 \def\@commahyperpage#1, #2,#3\{\{%
8313   \ifx\#2\%
8314     \HyInd@pagelink{#1}%
8315   \else
8316     \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
8317   \fi
8318 }

```

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

```

8319 \def\HyInd@pagelink#1{%
8320   \begingroup
8321   \toks@={}%
8322   \HyInd@removespaces#1 \@nil

```

```

8323 \endgroup
8324 }
8325 \def\HyInd@removespaces#1 #2\@nil{%
8326 \toks@=\expandafter{\the\toks@#1}%
8327 \ifx\#2\%
8328 \edef\x{\the\toks@}%
8329 \ifx\x\@empty
8330 \else
8331 \hyperlink{page.\the\toks@}{\the\toks@}%
8332 \fi
8333 \else
8334 \ltx@ReturnAfterFi{%
8335 \HyInd@removespaces#2\@nil
8336 }%
8337 \fi
8338 }

```

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.

```

8339 \ifHy@texht
8340 \expandafter\endinput
8341 \fi
8342 \let\real@setref\@setref
8343 \def\@setref#1#2#3{% csname, extract group, refname
8344 \ifx#1\relax
8345 \protect\G@refundefinedtrue
8346 \nfss@text{\reset@font\bfseries ??}%
8347 \@latex@warning{%
8348 Reference `#3' on page \thepage \space undefined%
8349 }%
8350 \else
8351 \expandafter\Hy@setref@link#1\@empty\@empty\@empty\@nil{#2}%
8352 \fi
8353 }

```

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

```

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

```

```

8370 \else
8371 \protect\hyper@@link
8372 {\expandafter\@fifthoffive#1}%
8373 {page.\expandafter\@secondoffive#1}%
8374 {\expandafter\@secondoffive#1}%
8375 \fi
8376 }

8377 </packageEnd>
8378 <*check>
8379 \checklatex
8380 \checkcommand\def\@setref#1#2#3{%
8381 \ifx#1\relax
8382 \protect\G@refundefinedtrue
8383 \nfss@text{\reset@font\bfseries ??}%
8384 \@latex@warning{%
8385 Reference `#3' on page \thepage\space undefined%
8386 }%
8387 \else
8388 \expandafter#2#1\null
8389 \fi
8390 }
8391 </check>
8392 <*packageEnd>

```

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

```

8393 \def\HyRef@StarSetRef#1{%
8394 \begingroup
8395 \Hy@safe@activetrue
8396 \let\protect\@unexpandable@protect
8397 \edef\x{#1}%
8398 \@onelevel@sanitize\x
8399 \edef\x{\endgroup
8400 \noexpand\HyRef@@StarSetRef
8401 \expandafter\noexpand\csname r@\x\endcsname{\x}}%
8402 }%
8403 \x
8404 }

8405 \def\HyRef@@StarSetRef#1#2#3{%
8406 \ifx#1\@undefined
8407 \let#1\relax
8408 \fi
8409 \real@setref#1#3{#2}%
8410 }

8411 \def\@refstar#1{%
8412 \HyRef@StarSetRef{#1}\@firstoffive
8413 }

8414 \def\@pagerefstar#1{%
8415 \HyRef@StarSetRef{#1}\@secondoffive
8416 }

8417 \def\@namerefstar#1{%
8418 \HyRef@StarSetRef{#1}\@thirdoffive
8419 }

8420 \def\@Refstar#1{%

```

```

8421 \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
8422 }%
8423 \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
8424 \MakeUppercase#1%
8425 }%
8426 \def\HyRef@Ref#1{%
8427 \hyperref[{#1}]{\Ref*{#1}}%
8428 }%
8429 \Hy@AtBeginDocument{%
8430 \@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.

```

8431 \@ifundefined{hyper@nopatch@varioref}
8432 {
8433 \renewcommand\Vref@star[2][]{%
8434 \begingroup
8435 \let\T@pageref\@pagerefstar
8436 \Ref*{#2}
8437 \vpageref[#1]{#2}%
8438 \endgroup
8439 }%
8440 \renewcommand\Vr@f[2][]{%
8441 \begingroup
8442 \let\T@pageref\@pagerefstar
8443 \hyperref[{#2}]{%
8444 \Ref*{#2}
8445 \vpageref[#1]{#2}%
8446 }%
8447 \endgroup
8448 }%
8449 \renewcommand\vr@f[2][]{%
8450 \begingroup
8451 \let\T@pageref\@pagerefstar
8452 \hyperref[{#2}]{%
8453 \ref*{#2}
8454 \vpageref[#1]{#2}%
8455 }%
8456 \endgroup
8457 }%
8458 \renewcommand\vref@star[2][]{%
8459 \begingroup
8460 \let\T@pageref\@pagerefstar
8461 \ref*{#2}
8462 \vpageref[#1]{#2}%
8463 \endgroup
8464 }%
8465 }{}%
8466 }{}%
8467 }

8468 \DeclareRobustCommand*\autopageref{%
8469 \@ifstar{%
8470 \HyRef@autopagerefname\pageref*%

```

```

8471 } \HyRef@autopageref
8472 }
8473 \def \HyRef@autopageref#1{%
8474   \hyperref[{#1}]{\HyRef@autopagerefname\pageref*{#1}}%
8475 }
8476 \def \HyRef@autopagerefname{%
8477   \ltx@ifundefined{pageautorefname}{%
8478     \ltx@ifundefined{pagename}{%
8479       \Hy@Warning{No autoref name for `page'}%
8480     }{%
8481       \pagename\nobreakspace
8482     }%
8483   }{%
8484     \pageautorefname\nobreakspace
8485   }%
8486 }

```

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

```

8487 \NewDocumentCommand\autoref{s}
8488   {\leavevmode
8489     \IfBooleanTF{#1}{\HyRef@autoref\@gobbletwo}{\HyRef@autoref\hyper@@link}}
8490 \def \HyRef@autoref#1#2{%
8491   \begingroup
8492     \Hy@safe@activestrue
8493     \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
8494   \endgroup
8495 }
8496 \def \HyRef@autosetref#1#2#3{% link command, csname, refname
8497   \HyRef@ShowKeysRef{#2}%
8498   \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
8499   \edef\HyRef@thisref{%
8500     \expandafter\@fourthoffive#1\@empty\@empty\@empty
8501   }%
8502   \expandafter\HyRef@testreftype\HyRef@thisref.\.%
8503   \Hy@safe@activesfalse
8504   #3{%
8505     \expandafter\@fifthoffive#1\@empty\@empty\@empty
8506   }{%
8507     \expandafter\@fourthoffive#1\@empty\@empty\@empty
8508   }{%
8509     \HyRef@currentHtag
8510     \expandafter\@firstoffive#1\@empty\@empty\@empty
8511     \null
8512   }%
8513   \else
8514     \protect\G@refundefinedtrue
8515     \nfss@text{\reset@font\bfseries ??}%
8516     \@latex@warning{%
8517       Reference `#2' on page \thepage\space undefined%
8518     }%
8519   \fi
8520 }
8521 \def \HyRef@testreftype#1.#2\.{%

```

```

8522 \ltx@ifundefined{#1autorefname}{%
8523   \ltx@ifundefined{#1name}{%
8524     \HyRef@StripStar#1\\*\\@nil{#1}%
8525     \ltx@ifundefined{\HyRef@name autorefname}{%
8526       \ltx@ifundefined{\HyRef@name name}{%
8527         \def\HyRef@currentHtag{%
8528           \Hy@Warning{No autoref name for `#1'}%
8529         }%
8530         \edef\HyRef@currentHtag{%
8531           \expandafter\noexpand\csname\HyRef@name name\endcsname
8532           \noexpand~%
8533         }%
8534       }%
8535     }%
8536     \edef\HyRef@currentHtag{%
8537       \expandafter\noexpand
8538       \csname\HyRef@name autorefname\endcsname
8539       \noexpand~%
8540     }%
8541   }%
8542 }%
8543 \edef\HyRef@currentHtag{%
8544   \expandafter\noexpand\csname#1name\endcsname
8545   \noexpand~%
8546 }%
8547 }%
8548 }%
8549 \edef\HyRef@currentHtag{%
8550   \expandafter\noexpand\csname#1autorefname\endcsname
8551   \noexpand~%
8552 }%
8553 }%
8554 }
8555 \def\HyRef@StripStar#1*\\#2\\@nil#3{%
8556   \def\HyRef@name{#2}%
8557   \ifx\HyRef@name\HyRef@CaseStar
8558     \def\HyRef@name{#1}%
8559   \else
8560     \def\HyRef@name{#3}%
8561   \fi
8562 }
8563 \def\HyRef@CaseStar{*\\}
8564 \def\HyRef@currentHtag{}

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

8565 \let\HyRef@ShowKeysRef@gobble
8566 \def\HyRef@ShowKeysInit{%
8567   \ifcsname SK@@label\endcsname
8568     \ifx\SK@ref\@empty
8569     \else
8570       \def\HyRef@ShowKeysRef{%
8571         \SK@\SK@\@ref
8572       }%

```

```

8573   \fi
8574 \fi
8575 }
8576 \AddToHook{package/showkeys/after}{\HyRef@ShowKeysInit}

```

Defaults for the names that \autoref uses.

```

8577 \providecommand*\AMSautorefname{\equationautorefname}
8578 \providecommand*\Hfootnoteautorefname{\footnoteautorefname}
8579 \providecommand*\Itemautorefname{\itemautorefname}
8580 \providecommand*\itemautorefname{item}
8581 \providecommand*\equationautorefname{Equation}
8582 \providecommand*\footnoteautorefname{footnote}
8583 \providecommand*\itemautorefname{item}
8584 \providecommand*\figureautorefname{Figure}
8585 \providecommand*\tableautorefname{Table}
8586 \providecommand*\partautorefname{Part}
8587 \providecommand*\appendixautorefname{Appendix}
8588 \providecommand*\chapterautorefname{chapter}
8589 \providecommand*\sectionautorefname{section}
8590 \providecommand*\subsectionautorefname{subsection}
8591 \providecommand*\subsubsectionautorefname{subsubsection}
8592 \providecommand*\paragraphautorefname{paragraph}
8593 \providecommand*\subparagraphautorefname{subparagraph}
8594 \providecommand*\FancyVerbLineautorefname{line}
8595 \providecommand*\theoremautorefname{Theorem}
8596 \providecommand*\pageautorefname{page}
8597 \</packageEnd>

```

## 43 Configuration files

### 43.1 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 pdfTeX offers \pdfescapestring.

```

8598 (*pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo)
8599 \begingroup\expandafter\expandafter\expandafter\endgroup
8600 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
8601   \begingroup
8602     \catcode`\| = 0 %
8603     \@makeother\| %
8604     |@firstofone{ |endgroup
8605     |def|Hy@pstringdef#1#2{%
8606       |begingroup
8607         |edef~{|string~}%
8608         |xdef|Hy@gtemp{#2}%
8609       |endgroup
8610       |let#1|Hy@gtemp

```



```

8611 |@onelevel@sanitize#1%
8612 |edef#1{|expandafter|Hy@ExchangeBackslash#1\|@nil}%
8613 |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
8614 |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
8615 }%
8616 |def|Hy@ExchangeBackslash#1\#2|@nil{%
8617 #1%
8618 |ifx|\#2\|%%
8619 |else
8620 \\\%
8621 |ltx@ReturnAfterFi{%
8622 |Hy@ExchangeBackslash#2|@nil
8623 }%
8624 |fi
8625 }%
8626 }%
8627 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
8628 #1%
8629 \ifx\#2\|%%
8630 \else
8631 \@backslashchar(%
8632 \ltx@ReturnAfterFi{%
8633 \Hy@ExchangeLeftParenthesis#2\@nil
8634 }%
8635 \fi
8636 }%
8637 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
8638 #1%
8639 \ifx\#2\|%%
8640 \else
8641 \@backslashchar)%
8642 \ltx@ReturnAfterFi{%
8643 \Hy@ExchangeRightParenthesis#2\@nil
8644 }%
8645 \fi
8646 }%
8647 \else
8648 \def\Hy@pstringdef#1#2{%
8649 \begingroup
8650 \edef~{\string~}%
8651 \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
8652 \endgroup
8653 \let#1\Hy@gtemp
8654 }%
8655 \fi
8656 </pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>

```

## 43.2 pdfTeX

```

8657 <*pdfTeX>
8658 \providecommand*{\XR@ext}{pdf}
8659 \Hy@setbreaklinks{true}
8660 \def\HyPat@ObjRef{%
8661 [0-9]*[1-9][0-9]* 0 R%

```

8662 }

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

```

8663 \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
8664 \def\Hy@pdfminorversion{\pdfminorversion}%
8665 \ifHy@ocgcolorlinks
8666   \ifnum\Hy@pdfmajorminor@version<105 %
8667     \kvsetkeys{Hyp}{pdfversion=1.5}%
8668   \fi
8669 \fi
8670 \ifHy@setpdfversion
8671   \ifnum\Hy@pdf@majorminor@version<105 %
8672     \ltx@ifundefined{pdfobjcompresslevel}{%
8673       }{%
8674         \ifHy@verbose
8675           \Hy@InfoNoLine{%
8676             PDF object streams are disabled, because they are%
8677             \MessageBreak
8678             not supported in requested PDF version %
8679             \Hy@pdf@majorversion.\Hy@pdf@minorversion
8680           }%
8681         \fi
8682         \pdfobjcompresslevel=\ltx@zero
8683       }%
8684     \fi
8685     \ifnum\Hy@pdfmajorminor@version=\Hy@pdf@majorminor@version\relax
8686     \else
8687       \let\Hy@temp\ltx@empty
8688       \def\Hy@temp@A#1#2{%
8689         \ifnum#1>\ltx@zero
8690           \edef\Hy@temp{%
8691             \Hy@temp
8692             \space\space
8693             \the#1\space #2%
8694             \ifnum#1=\ltx@one\else s\fi
8695             \MessageBreak
8696           }%
8697         \fi
8698       }%
8699       \Hy@temp@A\pdflastobj{PDF object}%
8700       \Hy@temp@A\pdflastxform{form XObject}%
8701       \Hy@temp@A\pdflastximage{image XObject}%
8702       \Hy@temp@A\pdflastannot{annotation}%
8703       \ltx@ifundefined{pdflastlink}{%
8704         }{%
8705           \Hy@temp@A\pdflastlink{link}%
8706         }%
8707       \ifx\Hy@temp\ltx@empty

```

```

8708 \Hy@pdfmajorversion=\Hy@pdf@majorversion\relax
8709 \Hy@pdfminorversion=\Hy@pdf@minorversion\relax
8710 \else
8711 \let\Hy@temp@A\ltx@empty
8712 \ifnum\Hy@pdf@majorminor@version=104 %
8713 \IfFileExists{pdf14.sty}{%
8714 \def\Hy@temp@A{%
8715 \MessageBreak
8716 Or \string\RequirePackage{pdf14} can be used%
8717 \MessageBreak
8718 before \string\documentclass\space as shortcut%
8719 }%
8720 }{}%
8721 \fi
8722 \Hy@WarningNoLine{%
8723 The PDF version could not be set,\MessageBreak
8724 because some PDF objects are already written:%
8725 \MessageBreak
8726 \Hy@temp
8727 The version should be set as early as possible:%
8728 \MessageBreak
8729 \space\space
8730 \expandafter\string\Hy@pdfmajorversion=\Hy@pdf@majorversion, %
8731 \expandafter\string\Hy@pdfminorversion=\Hy@pdf@minorversion
8732 \string\relax
8733 \ifnum\Hy@pdf@majorminor@version<105 %
8734 \ltx@ifundefined{pdfobjcompresslevel}{%
8735 }{%
8736 \MessageBreak
8737 \space\space
8738 \string\pdfobjcompresslevel=0\string\relax
8739 }%
8740 \fi
8741 \Hy@temp@A
8742 }%
8743 \fi
8744 \fi
8745 \PackageInfo{hyperref}{%
8746 \expandafter\string\Hy@pdfmajorversion.%
8747 \expandafter\string\Hy@pdfminorversion
8748 :=\number\Hy@pdf@majorversion.\number\Hy@pdf@minorversion\space
8749 }%
8750 \fi
8751 \edef\Hy@pdf@majorversion{\number\Hy@pdfmajorversion}%
8752 \edef\Hy@pdf@minorversion{\number\Hy@pdfminorversion}%
8753 \Hy@DisableOption{pdfversion}%
8754 \ifHy@ocgcolorlinks
8755 \pdf@ifdraftmode{}{%
8756 \immediate\pdfobj{%
8757 <<%
8758 /Type/OCG%
8759 /Name(View)%
8760 /Usage<<%
8761 /Print<<%

```

```

8762         /PrintState/OFF%
8763     >>%
8764     /View<<%
8765         /ViewState/ON%
8766     >>%
8767 >>%
8768 >>%
8769 }%
8770 \edef\OBJ@OCG@view{\the\pdflastobj\space 0 R}%
8771 \immediate\pdfobj{%
8772     <<%
8773         /Type/OCG%
8774         /Name(Print)%
8775         /Usage<<%
8776             /Print<<%
8777                 /PrintState/ON%
8778             >>%
8779             /View<<%
8780                 /ViewState/OFF%
8781             >>%
8782             >>%
8783         >>%
8784     }%
8785 \edef\OBJ@OCG@print{\the\pdflastobj\space 0 R}%
8786 \immediate\pdfobj{%
8787     [%
8788         \OBJ@OCG@view\space\OBJ@OCG@print
8789     ]%
8790 }%
8791 \edef\OBJ@OCGs{\the\pdflastobj\space 0 R}%
8792 \pdfcatalog{%
8793     /OCProperties<<%
8794         /OCGs \OBJ@OCGs
8795         /D<<%
8796             /OFF[\OBJ@OCG@print]%
8797             /AS[%
8798                 <<%
8799                     /Event/View%
8800                     /OCGs \OBJ@OCGs
8801                     /Category[/View]%
8802                 >>%
8803                 <<%
8804                     /Event/Print%
8805                     /OCGs \OBJ@OCGs
8806                     /Category[/Print]%
8807                 >>%
8808                 <<%
8809                     /Event/Export%
8810                     /OCGs \OBJ@OCGs
8811                     /Category[/Print]%
8812                 >>%
8813             ]%
8814         >>%
8815     >>%

```

```

8816 }%
8817 \begingroup
8818 \edef\x{\endgroup
8819 \pdfpageresources{%
8820 \the\pdfpageresources
8821 /Properties<<%
8822 /OCView \OBJ@OCG@view
8823 /OCPrint \OBJ@OCG@print
8824 >>%
8825 }%
8826 }%
8827 \x
8828 }%
8829 \Hy@AtBeginDocument{%
8830 \def\Hy@colorlink#1{%
8831 \begingroup
8832 \ifHy@ocgcolorlinks
8833 \def\Hy@ocgcolor{#1}%
8834 \setbox0=\hbox\bgroup\color@begingroup
8835 \else
8836 \HyColor@UseColor#1%
8837 \fi
8838 }%
8839 \def\Hy@endcolorlink{%
8840 \ifHy@ocgcolorlinks
8841 \color@endgroup\egroup
8842 \mbox{%
8843 \pdfliteral page{/OC/OCPrint BDC}%
8844 \rlap{\copy0}%
8845 \pdfliteral page{EMC/OC/OCView BDC}%
8846 \begingroup
8847 \expandafter\HyColor@UseColor\Hy@ocgcolor
8848 \box0 %
8849 \endgroup
8850 \pdfliteral page{EMC}%
8851 }%
8852 \fi
8853 \endgroup
8854 }%
8855 }%
8856 \else
8857 \Hy@DisableOption{ocgcolorlinks}%
8858 \fi

```

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

```

8859 \def\setpdfinkmargin#1{%
8860 \begingroup
8861 \setlength{\dimen@}{#1}%
8862 \expandafter\endgroup
8863 \expandafter\pdfinkmargin\the\dimen@\relax
8864 }
8865 \pdfinkmargin1pt %

```

First set up the default linking

```

8866 \providecommand*\@pdfview{XYZ}

```

First define the anchors:

```

8867 \Hy@WrapperDef\new@pdfink#1{%
8868   \ifhmode
8869     \@savsf\spacefactor
8870   \fi
8871   \Hy@SaveLastskip
8872   \Hy@VerboseAnchor{#1}%
8873   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
8874   \Hy@DestName\Hy@pstringDest\@pdfview
8875   \Hy@RestoreLastskip
8876   \ifhmode
8877     \spacefactor\@savsf
8878   \fi
8879 }
8880 \let\pdf@endanchor\@empty

```

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

```

8881 \def\Hy@DestName#1#2{%
8882   \pdfdest name{#1}#2\relax
8883 }

```

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.

```

8884 \providecommand*\@pdfborder{0 0 1}
8885 \providecommand*\@pdfborderstyle{}
8886 \def\Hy@undefinedname{UNDEFINED}
8887 \def\find@pdfink#1#2{%
8888   \leavevmode
8889   \protected@edef\Hy@testname{#2}%
8890   \ifx\Hy@testname\@empty
8891     \Hy@Warning{%
8892       Empty destination name,\MessageBreak
8893       using '\Hy@undefinedname'%
8894     }%
8895     \let\Hy@testname\Hy@undefinedname
8896   \else
8897     \Hy@pstringdef\Hy@testname{%
8898       \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
8899     }%
8900   \fi
8901   \Hy@StartlinkName{%
8902     \ifHy@pdfa /F 4\fi
8903     \Hy@setpdfborder
8904     \Hy@setpdfhighlight
8905     \ifx\CurrentBorderColor\relax
8906       \else
8907         /C[\CurrentBorderColor]%
8908     \fi
8909   }\Hy@testname
8910   \expandafter\Hy@colorlink\csname @#1color\endcsname

```

```

8911 }
8912 \def\Hy@StartlinkName#1#2{%
8913 \pdfstartlink attr{#1}goto name{#2}\relax
8914 }
8915 \def\close@pdfink{%
8916 \Hy@endcolorlink
8917 \Hy@VerboseLinkStop
8918 \pdfendlink
8919 }
8920 \def\hyper@anchor#1{%
8921 \new@pdfink{#1}\anchor@spot\pdf@endanchor
8922 }
8923 \def\hyper@anchorstart#1{%
8924 \new@pdfink{#1}%
8925 \Hy@activeanchortrue
8926 }
8927 \def\hyper@anchorend{%
8928 \pdf@endanchor
8929 \Hy@activeanchorfalse
8930 }
8931 \def\hyper@linkstart#1#2{%
8932 \Hy@VerboseLinkStart{#1}{#2}%
8933 \ltx@ifundefined{@#1bordercolor}{%
8934 \let\CurrentBorderColor\relax
8935 }{%
8936 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8937 }%
8938 \find@pdfink{#1}{#2}%
8939 }
8940 \def\hyper@linkend{\close@pdfink}
8941 \def\hyper@link#1#2#3{%
8942 \Hy@VerboseLinkStart{#1}{#2}%
8943 \ltx@ifundefined{@#1bordercolor}{%
8944 \let\CurrentBorderColor\relax
8945 }{%
8946 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8947 }%
8948 \find@pdfink{#1}{#2}#3\Hy@xspace@end
8949 \close@pdfink
8950 }
8951 \let\CurrentBorderColor\@linkbordercolor
8952 \def\hyper@linkurl#1#2{%
8953 \begingroup
8954 \Hy@pstringdef\Hy@pstringURI{#2}%
8955 \hyper@chars
8956 \leavevmode
8957 \pdfstartlink
8958 attr{%
8959 \Hy@setpdfborder
8960 \Hy@setpdfhighlight
8961 \ifx\@urlbordercolor\relax
8962 \else
8963 /C[\@urlbordercolor]%
8964 \fi

```

```

8965 }%
8966 user{%
8967 /Subtype/Link%
8968 \ifHy@pdfa /F 4\fi
8969 /A<<%
8970 /Type/Action%
8971 /S/URI%
8972 /URI(\Hy@pstringURI)%
8973 \ifHy@href@ismap
8974 /IsMap true%
8975 \fi
8976 \Hy@href@nextactionraw
8977 >>%
8978 }%
8979 \relax
8980 \Hy@colorlink\@urlcolor#1\Hy@xspace@end
8981 \close@pdfink
8982 \endgroup
8983 }
8984 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
8985 \begingroup
8986 \def\Hy@pstringF{#2}%
8987 \Hy@CleanupFile\Hy@pstringF
8988 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
8989 \Hy@pstringdef\Hy@pstringD{#3}%
8990 \Hy@MakeRemoteAction
8991 \leavevmode
8992 \pdfstartlink
8993 attr{%
8994 \Hy@setpdfborder
8995 \Hy@setpdfhighlight
8996 \ifx\@filebordercolor\relax
8997 \else
8998 /C[\@filebordercolor]%
8999 \fi
9000 }%
9001 user {%
9002 /Subtype/Link%
9003 \ifHy@pdfa /F 4\fi
9004 /A<<%
9005 /F(\Hy@pstringF)%
9006 /S/GoToR%
9007 \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}

```



```

9008      \ifx\\#3\\%
9009      /D[\Hy@href@page\@pdfremotestartview]%
9010      \else
9011      /D(\Hy@pstringD)%
9012      \fi
9013      \Hy@href@nextactionraw
9014      >>%
9015      }%
9016      \relax
9017      \Hy@colorlink\@filecolor#1\Hy@xspace@end
9018      \close@pdflink
9019      \endgroup
9020      }
9021      \def\@hyper@launch run:#1\\#2#3{% filename, anchor text linkname
9022      \begingroup
9023      \Hy@pstringdef\Hy@pstringF{#1}%
9024      \Hy@pstringdef\Hy@pstringP{#3}%
9025      \leavevmode
9026      \pdfstartlink
9027      attr{%
9028      \Hy@setpdfborder
9029      \Hy@setpdfhighlight
9030      \ifx\@runbordercolor\relax
9031      \else
9032      /C[\@runbordercolor]%
9033      \fi
9034      }%
9035      user {%
9036      /Subtype/Link%
9037      \ifHy@pdfa /F 4\fi
9038      /A<<%
9039      /F(\Hy@pstringF)%
9040      /S/Launch%
9041      \Hy@SetNewWindow
9042      \ifx\\#3\\%
9043      \else
9044      /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
9045      \fi
9046      \Hy@href@nextactionraw
9047      >>%
9048      }%
9049      \relax
9050      \Hy@colorlink\@runcolor#2\Hy@xspace@end
9051      \close@pdflink
9052      \endgroup
9053      }

```

\PDF@SetupDox

```

9054      \def\PDF@SetupDoc{%
9055      \ifx\@pdfpagescrop\@empty
9056      \else
9057      \edef\process@me{%
9058      \pdfpagesattr={%

```

```

9059     /CropBox[\@pdfpagescrop]%
9060     \expandafter\ifx\expandafter\\\the\pdfpagesattr\\%
9061     \else
9062     ^^J\the\pdfpagesattr
9063     \fi
9064 }%
9065 }%
9066 \process@me
9067 \fi
9068 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9069 \pdfcatalog{%
9070 /PageMode/\@pdfpagemode
9071 \ifx\@baseurl\@empty
9072 \else
9073 /URI<</Base(\Hy@pstringB)>>%
9074 \fi
9075 }%
9076 \ifx\@pdfstartpage\@empty
9077 \else
9078 \ifx\@pdfstartview\@empty
9079 \else
9080 openaction goto page\@pdfstartpage{\@pdfstartview}%
9081 \fi
9082 \fi
9083 \edef\Hy@temp{%
9084 \ifHy@pdftoolbar\else /HideToolbar true\fi
9085 \ifHy@pdfmenubar\else /HideMenubar true\fi
9086 \ifHy@pdfwindowui\else /HideWindowUI true\fi
9087 \ifHy@pdffitwindow /FitWindow true\fi
9088 \ifHy@pdfcenterwindow /CenterWindow true\fi
9089 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9090 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9091 \Hy@UseNameKey{Direction}\@pdfdirection
9092 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9093 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9094 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9095 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9096 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9097 \Hy@UseNameKey{Duplex}\@pdfduplex
9098 \ifx\@pdfpicktraybypdfsize\@empty
9099 \else
9100 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9101 \fi
9102 \ifx\@pdfprintpagerange\@empty
9103 \else
9104 /PrintPageRange[\@pdfprintpagerange]%
9105 \fi
9106 \ifx\@pdfnumcopies\@empty
9107 \else
9108 /NumCopies \@pdfnumcopies
9109 \fi
9110 }%
9111 \pdfcatalog{%
9112 \ifx\Hy@temp\@empty

```

```

9113 \else
9114 /ViewerPreferences<<\Hy@temp>>%
9115 \fi
9116 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9117 \ifx\@pdflang\relax
9118 \else
9119 /Lang(\@pdflang)%
9120 \fi
9121 }%
9122 }

```

\PDF@FinishDoc

```

9123 \def\PDF@FinishDoc{%
9124 \pdf@ifdraftmode{ }{%
9125 \Hy@UseMaketitleInfos
9126 \HyInfo@GenerateAddons
9127 \pdfinfo{%
9128 /Author(\@pdfauthor)%
9129 /Title(\@pdftitle)%
9130 /Subject(\@pdfsubject)%
9131 /Creator(\@pdfcreator)%
9132 \ifx\@pdfcreationdate\@empty
9133 \else
9134 /CreationDate(\@pdfcreationdate)%
9135 \fi
9136 \ifx\@pdfmoddate\@empty
9137 \else
9138 /ModDate(\@pdfmoddate)%
9139 \fi
9140 \ifx\@pdfproducer\relax
9141 \else
9142 /Producer(\@pdfproducer)%
9143 \fi
9144 /Keywords(\@pdfkeywords)%
9145 \ifx\@pdftrapped\@empty
9146 \else
9147 /Trapped/\@pdftrapped
9148 \fi
9149 \HyInfo@Addons
9150 }%
9151 }%
9152 \Hy@DisableOption{pdfauthor}%
9153 \Hy@DisableOption{pdftitle}%
9154 \Hy@DisableOption{pdfsubject}%
9155 \Hy@DisableOption{pdfcreator}%
9156 \Hy@DisableOption{addtopdfcreator}%
9157 \Hy@DisableOption{pdfcreationdate}%
9158 \Hy@DisableOption{pdfmoddate}%
9159 \Hy@DisableOption{pdfproducer}%
9160 \Hy@DisableOption{pdfkeywords}%
9161 \Hy@DisableOption{pdftrapped}%
9162 \Hy@DisableOption{pdfinfo}%
9163 }

```

\hyper@pagetransition \@pdfpagetransition is initialized with \relax. So it indicates, if option pdfpage-

transition is used. First previous /Trans entries are removed. If a new /Trans key exists, it is appended to \pdfpageattr.

```

9164 \def\hyper@pagetransition{%
9165   \ifx\@pdfpagetransition\relax
9166   \else
9167     \expandafter\Hy@RemoveTransPageAttr
9168     \the\pdfpageattr^^J/Trans{}}>>\END
9169   \ifx\@pdfpagetransition\@empty
9170   \else
9171     \edef\@processme{%
9172       \global\pdfpageattr{%
9173         \the\pdfpageattr
9174         ^^J/Trans << /S /\@pdfpagetransition\space >>%
9175       }%
9176     }%
9177     \@processme
9178   \fi
9179 \fi
9180 }
```

**\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.

```

9181 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
9182   \ifx\#2\%
9183     \global\pdfpageattr{#1}%
9184   \else
9185     \Hy@RemoveTransPageAttr#1#4\END
9186   \fi
9187 }
```

**\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.

```

9188 \def\hyper@pageduration{%
9189   \ifx\@pdfpageduration\relax
9190   \else
9191     \expandafter
9192     \Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{}} \END
9193   \ifx\@pdfpageduration\@empty
9194   \else
9195     \edef\@processme{%
9196       \global\pdfpageattr{%
9197         \the\pdfpageattr
9198         ^^J/Dur \@pdfpageduration\space
9199       }%
9200     }%
9201     \@processme
9202   \fi
9203 \fi
9204 }
```

`\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.

```

9205 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
9206   \ifx\#2\%
9207     \global\pdfpageattr{#1}%
9208   \else
9209     \Hy@RemoveDurPageAttr#1#4\END
9210   \fi
9211 }

9212 \pdf@ifdraftmode{}{%
9213   \g@addto@macro\Hy@EveryPageHook{%
9214     \hyper@pagetransition
9215     \hyper@pageduration
9216   }%
9217 }

```

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

```

9218 \pdfifx{pdf}
9219 \ifx\pdfifx{xetex}
9220 \Hy@AtBeginDocument{%
9221   \ifHy@setpagesize
9222     \expandafter\@firstofone
9223   \else
9224     \expandafter\@gobble
9225   \fi
9226 }%
9227 \ifclassloaded{seminar}{%
9228 (*pdfifx)
9229   \setlength{\pdfhorigin}{1truein}%
9230   \setlength{\pdfvorigin}{1truein}%
9231 \pdfifx}
9232 \ifportrait
9233   \ifdim\paperwidth=\z@
9234   \else
9235     \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
9236   \fi
9237   \ifdim\paperheight=\z@
9238   \else
9239     \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
9240   \fi
9241 \else
9242   \ifdim\paperheight=\z@
9243   \else
9244     \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
9245   \fi
9246   \ifdim\paperwidth=\z@
9247   \else
9248     \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
9249   \fi
9250 \fi

```

```

9251 }{%
9252   \ifnum\mag=\@m
9253     \ifdim\stockwidth>\z@
9254       \ifdim\stockheight>\z@
9255         \setlength{\pdfpagewidth}{\stockwidth}%
9256         \setlength{\pdfpageheight}{\stockheight}%
9257       \else
9258         \ifdim\paperwidth>\z@
9259           \ifdim\paperheight>\z@
9260             \setlength{\pdfpagewidth}{\paperwidth}%
9261             \setlength{\pdfpageheight}{\paperheight}%
9262           \fi
9263         \fi
9264       \fi
9265     \else
9266       \ifdim\stockwidth=\z@
9267         \ifdim\paperwidth>\z@
9268           \ifdim\paperheight>\z@
9269             \setlength{\pdfpagewidth}{\paperwidth}%
9270             \setlength{\pdfpageheight}{\paperheight}%
9271           \fi
9272         \fi
9273       \fi
9274     \fi
9275   }%
9276 }%
9277 }%
9278 \Hy@DisableOption{setpagesize}%
9279 }
9280 </pdfTeX | xetex>
9281 < *pdfTeX>
9282 \def\Acrobatmenu#1#2{%
9283   \Hy@Acrobatmenu{#1}{#2}{%
9284     \leavevmode
9285     \EdefEscapeName\Hy@temp@menu{#1}%
9286     \pdfstartlink
9287     attr{%
9288       \Hy@setpdfborder
9289       \Hy@setpdfhighlight
9290       \ifx\@menubordercolor\relax
9291         \else
9292           /C[\@menubordercolor]%
9293         \fi
9294     }%
9295     user{%
9296       /Subtype/Link%
9297       \ifHy@pdfa /F 4\fi
9298       /A<<%
9299       /S/Named%
9300       /N/\Hy@temp@menu
9301       \Hy@href@nextactionraw
9302     >>%
9303   }%
9304   \relax

```

```

9305 \Hy@colorlink\@menucolor#2%
9306 \close@pdfink
9307 }%
9308 }

```

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

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

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

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

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

```

9309 </pdfTeX>

```

### 43.3 hypertex

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

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

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

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

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

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

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

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

should be escaped with a backslash (\), and if it looks like a URL name it may cause problems.

```

9310 \*hypertex>
9311 \providecommand*\XR@ext}{dvi}
9312 \let\PDF@FinishDoc\ltx@empty
9313 \def\PDF@SetupDoc{%
9314   \ifx\@baseurl\@empty
9315   \else
9316     \special{html:<base href="\@baseurl">}%
9317   \fi
9318 }
9319 \Hy@WrapperDef\hyper@anchor#1{%
9320   \Hy@SaveLastskip
9321   \Hy@VerboseAnchor{#1}%
9322   \begingroup
9323     \let\protect=\string
9324     \hyper@chars
9325     \special{html:<a name=%
9326       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9327   \endgroup
9328   \Hy@activeanchortrue
9329   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9330   \special{html:</a>}%
9331   \Hy@activeanchorfalse
9332   \Hy@RestoreLastskip
9333 }
9334 \Hy@WrapperDef\hyper@anchorstart#1{%
9335   \Hy@SaveLastskip
9336   \Hy@VerboseAnchor{#1}%
9337   \begingroup
9338     \hyper@chars
9339     \special{html:<a name=%
9340       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9341   \endgroup
9342   \Hy@activeanchortrue
9343 }
9344 \def\hyper@anchorend{%
9345   \special{html:</a>}%
9346   \Hy@activeanchorfalse
9347   \Hy@RestoreLastskip
9348 }
9349 \def\@urltype{url}
9350 \def\hyper@linkstart#1#2{%
9351   \Hy@VerboseLinkStart{#1}{#2}%
9352   \expandafter\Hy@colorlink\csname @#1color\endcsname
9353   \def\Hy@tempa{#1}%
9354   \ifx\Hy@tempa\@urltype
9355     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9356   \else
9357     \begingroup
9358       \hyper@chars
9359       \special{html:<a href=%
9360         \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
9361     \endgroup

```



```

9362 \fi
9363 }
9364 \def\hyper@linkend{%
9365 \special{html:</a>}}%
9366 \Hy@endcolorlink
9367 }
9368 \def\hyper@linkfile#1#2#3{%
9369 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
9370 }
9371 \def\hyper@linkurl#1#2{%

```

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

```

9372 \leavevmode
9373 \ifHy@raiselinks
9374 \Hy@SaveSpaceFactor
9375 \Hy@SaveSavedSpaceFactor
9376 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9377 \Hy@RestoreSavedSpaceFactor
9378 \@linkdim\dp\@tempboxa
9379 \lower\@linkdim\hbox{%
9380 \hyper@chars
9381 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
9382 }%
9383 \Hy@colorlink\@urlcolor
9384 \Hy@RestoreSpaceFactor
9385 #1%
9386 \Hy@SaveSpaceFactor
9387 \@linkdim\ht\@tempboxa

```

Because of the interaction with the dvilhs processor, we have to subtract a little from the height. This is not clean, or checked. Check with Mark Doyle about what gives here. It may not be needed with the new dvips (Jan 1997).

```

9388 \advance\@linkdim by -6.5\p@
9389 \raise\@linkdim\hbox{\special{html:</a>}}%
9390 \Hy@endcolorlink
9391 \Hy@RestoreSpaceFactor
9392 \else
9393 \begingroup
9394 \hyper@chars
9395 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
9396 \Hy@colorlink\@urlcolor#1\Hy@xspace@end
9397 \special{html:</a>}}%
9398 \Hy@endcolorlink
9399 \endgroup
9400 \fi
9401 }

```

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

```

9402 \def\hyper@link#1#2#3{%
9403 \Hy@VerboseLinkStart{#1}{#2}%
9404 \hyper@linkurl{#3}{\##\Hy@DestNameFilter{#2}}%
9405 }

```

```

9406 \def\hyper@image#1#2{%
9407   \begingroup
9408     \hyper@chars
9409     \special{html:<img src=\hyper@quote#1\hyper@quote>}%
9410   \endgroup
9411 }
9412 </hypertex>
9413 <*dviwindo>

```

## 43.4 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, L<sup>A</sup>T<sub>E</sub>X must specify the size of the active area for links. For some hooks this information is available but for some, the start and end of the link are specified separately in which case a fixed size area of 10000000sp wide by `\baselineskip` high is used.

```

9414 \providecommand*\XR@ext}{dvi}
9415 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
9416 \Hy@WrapperDef\hyper@anchor#1{%
9417   \Hy@SaveLastskip
9418   \Hy@VerboseAnchor{#1}%
9419   \begingroup
9420     \let\protect=\string
9421     \special{mark: #1}%
9422   \endgroup
9423   \Hy@activeanchortrue
9424   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9425   \Hy@activeanchorfalse
9426   \Hy@RestoreLastskip
9427 }
9428 \Hy@WrapperDef\hyper@anchorstart#1{%
9429   \Hy@SaveLastskip
9430   \Hy@VerboseAnchor{#1}%
9431   \special{mark: #1}%
9432   \Hy@activeanchortrue
9433 }
9434 \def\hyper@anchorend{%
9435   \Hy@activeanchorfalse
9436   \Hy@RestoreLastskip
9437 }
9438 \def\hyper@linkstart#1#2{%
9439   \Hy@VerboseLinkStart{#1}{#2}%
9440   \expandafter\Hy@colorlink\csname @#1color\endcsname
9441   \special{button: %
9442     10000000 %
9443     \number\baselineskip\space
9444     #2%

```

```

9445 }%
9446 }
9447 \def\hyper@linkend{%
9448 \Hy@endcolorlink
9449 }
9450 \def\hyper@link#1#2#3{%
9451 \Hy@VerboseLinkStart{#1}{#2}%
9452 \leavevmode
9453 \ifHy@raiselinks
9454 \Hy@SaveSpaceFactor
9455 \Hy@SaveSavedSpaceFactor
9456 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#3}%
9457 \Hy@RestoreSavedSpaceFactor
9458 \@linkdim\dp\@tempboxa
9459 \lower\@linkdim\hbox{%
9460 \special{button: %
9461 \number\wd\@tempboxa\space
9462 \number\ht\@tempboxa\space
9463 #2%
9464 }%
9465 \expandafter\Hy@colorlink\csname @#1color\endcsname
9466 \Hy@RestoreSpaceFactor
9467 #3\Hy@xspace@end
9468 \Hy@SaveSpaceFactor
9469 \Hy@endcolorlink
9470 }%
9471 \@linkdim\ht\@tempboxa
9472 \advance\@linkdim by -6.5\p@
9473 \raise\@linkdim\hbox{}}%
9474 \Hy@RestoreSpaceFactor
9475 \else
9476 \special{button: %
9477 \number\wd\@tempboxa\space
9478 \number\ht\@tempboxa\space
9479 #2%
9480 }%
9481 \expandafter\Hy@colorlink\csname @#1color\endcsname
9482 #3\Hy@xspace@end
9483 \Hy@endcolorlink
9484 \fi
9485 }
9486 \def\hyper@linkurl#1#2{%
9487 \begingroup
9488 \hyper@chars
9489 \leavevmode
9490 \ifHy@raiselinks
9491 \Hy@SaveSpaceFactor
9492 \Hy@SaveSavedSpaceFactor
9493 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9494 \Hy@RestoreSavedSpaceFactor
9495 \@linkdim\dp\@tempboxa
9496 \lower\@linkdim\hbox{%
9497 \special{button: %
9498 \number\wd\@tempboxa\space

```

```

9499      \number\ht\@tempboxa\space
9500      launch: \wwwbrowser\space
9501      #2%
9502  }%
9503      \Hy@colorlink\@urlcolor
9504      \Hy@RestoreSpaceFactor
9505      #1\Hy@xspace@end
9506      \Hy@SaveSpaceFactor
9507      \Hy@endcolorlink
9508  }%
9509      \@linkdim\ht\@tempboxa
9510      \advance\@linkdim by -6.5\p@
9511      \raise\@linkdim\hbox{}%
9512      \Hy@RestoreSpaceFactor
9513  \else
9514      \special{button: %
9515          \number\wd\@tempboxa\space
9516          \number\ht\@tempboxa\space
9517          launch: \wwwbrowser\space
9518          #2%
9519      }%
9520      \Hy@colorlink\@urlcolor
9521      #1\Hy@xspace@end
9522      \Hy@endcolorlink
9523  \fi
9524  \endgroup
9525 }
9526 \def\hyper@linkfile#1#2#3{%
9527   \begingroup
9528   \hyper@chars
9529   \leavevmode
9530   \ifHy@raiselinks
9531     \Hy@SaveSpaceFactor
9532     \Hy@SaveSavedSpaceFactor
9533     \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9534     \Hy@RestoreSavedSpaceFactor
9535     \@linkdim\dp\@tempboxa
9536     \lower\@linkdim\hbox{%
9537       \special{button: %
9538         \number\wd\@tempboxa\space
9539         \number\ht\@tempboxa\space
9540         #3,%
9541         file: #2%
9542       }%
9543       \Hy@colorlink\@filecolor
9544       \Hy@RestoreSpaceFactor
9545       #1\Hy@xspace@end
9546       \Hy@SaveSpaceFactor
9547       \Hy@endcolorlink
9548     }%
9549     \@linkdim\ht\@tempboxa
9550     \advance\@linkdim by -6.5\p@
9551     \raise\@linkdim\hbox{}%
9552     \Hy@RestoreSpaceFactor

```

```

9553 \else
9554 \special{button: %
9555 \number\wd\@tempboxa\space
9556 \number\ht\@tempboxa\space
9557 #3,%
9558 file: #2%
9559 }%
9560 \Hy@colorlink\@filecolor
9561 #1\Hy@xspace@end
9562 \Hy@endcolorlink
9563 \fi
9564 \endgroup
9565 }
9566 \HyInfo@AddonUnsupportedtrue
9567 \def\PDF@FinishDoc{%
9568 \Hy@UseMaketitleInfos
9569 \HyInfo@TrappedUnsupported
9570 \special{PDF: Keywords \@pdfkeywords}%
9571 \special{PDF: Title \@pdftitle}%
9572 \special{PDF: Creator \@pdfcreator}%
9573 \ifx\@pdfcreationdate\@empty
9574 \else
9575 \special{PDF: CreationDate \@pdfcreationdate}%
9576 \fi
9577 \ifx\@pdfmoddate\@empty
9578 \else
9579 \special{PDF: ModDate \@pdfmoddate}%
9580 \fi
9581 \special{PDF: Author \@pdfauthor}%
9582 \ifx\@pdfproducer\relax
9583 \else
9584 \special{PDF: Producer \@pdfproducer}%
9585 \fi
9586 \special{PDF: Subject \@pdfsubject}%
9587 \Hy@DisableOption{pdfauthor}%
9588 \Hy@DisableOption{pdftitle}%
9589 \Hy@DisableOption{pdfsubject}%
9590 \Hy@DisableOption{pdfcreator}%
9591 \Hy@DisableOption{addtopdfcreator}%
9592 \Hy@DisableOption{pdfcreationdate}%
9593 \Hy@DisableOption{pdfcreationdate}%
9594 \Hy@DisableOption{pdfmoddate}%
9595 \Hy@DisableOption{pdfproducer}%
9596 \Hy@DisableOption{pdfkeywords}%
9597 \Hy@DisableOption{pdftrapped}%
9598 \Hy@DisableOption{pdfinfo}%
9599 }
9600 \def\PDF@SetupDoc{%
9601 \ifx\@baseurl\@empty
9602 \else
9603 \special{PDF: Base \@baseurl}%
9604 \fi
9605 \ifx\@pdfpagescrop\@empty\else
9606 \special{PDF: BBox \@pdfpagescrop}%

```

```

9607 \fi
9608 \def\Hy@temp{}%
9609 \ifx\@pdfstartpage\@empty
9610 \else
9611 \ifx\@pdfstartview\@empty
9612 \else
9613 \edef\Hy@temp{%
9614 ,Page=\@pdfstartpage
9615 ,View=\@pdfstartview
9616 }%
9617 \fi
9618 \fi
9619 \edef\Hy@temp{%
9620 \noexpand\pdfmark{%
9621 pdfmark=/DOCVIEW,%
9622 PageMode=/\@pdfpagemode
9623 \Hy@temp
9624 }%
9625 }%
9626 \Hy@temp
9627 \ifx\@pdfpagescrop\@empty
9628 \else
9629 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9630 \fi
9631 \edef\Hy@temp{%
9632 \ifHy@pdftoolbar\else /HideToolbar true\fi
9633 \ifHy@pdfmenubar\else /HideMenubar true\fi
9634 \ifHy@pdfwindowui\else /HideWindowUI true\fi
9635 \ifHy@pdfwindow /FitWindow true\fi
9636 \ifHy@pdfcenterwindow /CenterWindow true\fi
9637 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9638 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9639 \Hy@UseNameKey{Direction}\@pdfdirection
9640 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9641 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9642 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9643 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9644 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9645 \Hy@UseNameKey{Duplex}\@pdfduplex
9646 \ifx\@pdfpicktraybypdfsize\@empty
9647 \else
9648 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9649 \fi
9650 \ifx\@pdfprintpagerange\@empty
9651 \else
9652 /PrintPageRange[\@pdfprintpagerange]%
9653 \fi
9654 \ifx\@pdfnumcopies\@empty
9655 \else
9656 /NumCopies \@pdfnumcopies
9657 \fi
9658 }%
9659 \pdfmark{pdfmark=/PUT,%
9660 Raw={%

```

```

9661 \string{Catalog\string}<<%
9662 \ifx\Hy@temp\@empty
9663 \else
9664 /ViewerPreferences<<\Hy@temp>>%
9665 \fi
9666 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9667 \ifx\@pdflang\relax
9668 \else
9669 /Lang(\@pdflang)%
9670 \fi
9671 >>%
9672 }%
9673 }%
9674 }
9675 </dviwindo>
9676 <*dvipdfm|xetex>

```

### 43.5 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.

```

9677 \special{dvipdfmx:config C 0x0010}
9678 \providecommand*\XR@ext}{pdf}
9679 \Hy@setbreaklinks{true}
9680 \def\HyPat@ObjRef{%
9681 @[\^ ]+}%
9682 }
9683 \newsavebox{\pdfm@box}
9684 \def\@pdfm@mark#1{\special{pdf:#1}}
9685 \Hy@WrapperDef\@pdfm@dest#1{%
9686 \Hy@SaveLastskip
9687 \Hy@VerboseAnchor{#1}%
9688 \begingroup
9689 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9690 \def\x{XYZ}%
9691 \ifx\x\@pdfview
9692 \def\x{XYZ @xpos @ypos null}%
9693 \else
9694 \def\x{FitH}%
9695 \ifx\x\@pdfview
9696 \def\x{FitH @ypos}%
9697 \else
9698 \def\x{FitBH}%
9699 \ifx\x\@pdfview
9700 \def\x{FitBH @ypos}%
9701 \else
9702 \def\x{FitV}%
9703 \ifx\x\@pdfview
9704 \def\x{FitV @xpos}%
9705 \else
9706 \def\x{FitBV}%

```

```

9707     \ifx\x\@pdfview
9708     \def\x{FitBV @xpos}%
9709     \else
9710     \def\x{Fit}%
9711     \ifx\x\@pdfview
9712     \let\x\@pdfview
9713     \else
9714     \def\x{FitB}%
9715     \ifx\x\@pdfview
9716     \let\x\@pdfview
9717     \else
9718     \def\x{FitR}%
9719     \ifx\x\@pdfview
9720     \Hy@Warning{'pdfview=FitR' is not supported}%
9721     \def\x{XYZ @xpos @ypos null}%
9722     \else
9723     \@onelevel@sanitize\@pdfview
9724     \Hy@Warning{%
9725       Unknown value '\@pdfview' for pdfview%
9726     }%
9727     \def\x{XYZ @xpos @ypos null}%
9728     \fi
9729     \fi
9730     \fi
9731     \fi
9732     \fi
9733     \fi
9734     \fi
9735     \fi
9736     \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
9737 \endgroup
9738 \Hy@RestoreLastskip
9739 }
9740 \providecommand*\@pdfview{XYZ}
9741 \providecommand*\@pdfborder{0 0 1}
9742 \providecommand*\@pdfborderstyle{}
9743 \def\hyper@anchor#1{%
9744   \@pdfm@dest{#1}%
9745 }
9746 \def\hyper@anchorstart#1{%
9747   \Hy@activeanchortrue
9748   \@pdfm@dest{#1}%
9749 }
9750 \def\hyper@anchorend{%
9751   \Hy@activeanchorfalse
9752 }
9753 \newcounter{Hy@AnnotLevel}
9754 \ifHy@ocgcolorlinks
9755   \def\OBJ@OCG@view{@OCG@view}%
9756   \@pdfm@mark{%
9757     obj \OBJ@OCG@view <<%
9758     /Type/OCG%
9759     /Name(View)%

```



```

9760      /Usage<<%
9761      /Print<<%
9762      /PrintState/OFF%
9763      >>%
9764      /View<<%
9765      /ViewState/ON%
9766      >>%
9767      >>%
9768      >>%
9769  }%
9770  \@pdfm@mark{close \OBJ@OCG@view}%
9771  \def\OBJ@OCG@print{@OCG@print}%
9772  \@pdfm@mark{%
9773      obj \OBJ@OCG@print <<%
9774      /Type/OCG%
9775      /Name(Print)%
9776      /Usage<<%
9777      /Print<<%
9778      /PrintState/ON%
9779      >>%
9780      /View<<%
9781      /ViewState/OFF%
9782      >>%
9783      >>%
9784      >>%
9785  }%
9786  \@pdfm@mark{close \OBJ@OCG@print}%
9787  \def\OBJ@OCGs{@OCGs}%
9788  \@pdfm@mark{%
9789      obj \OBJ@OCGs [%
9790          \OBJ@OCG@view\space\OBJ@OCG@print
9791      ]%
9792  }%
9793  \@pdfm@mark{close \OBJ@OCGs}%
9794  \@pdfm@mark{%
9795      put @catalog <<%
9796      /OCProperties<<%
9797      /OCGs \OBJ@OCGs
9798      /D<<%
9799      /OFF[\OBJ@OCG@print]%
9800      /AS[%
9801          <<%
9802              /Event/View%
9803              /OCGs \OBJ@OCGs
9804              /Category[/View]%
9805          >>%
9806          <<%
9807              /Event/Print%
9808              /OCGs \OBJ@OCGs
9809              /Category[/Print]%
9810          >>%
9811          <<%
9812              /Event/Export%
9813              /OCGs \OBJ@OCGs

```

```

9814         /Category[/Print]%
9815         >>%
9816     ]%
9817     >>%
9818     >>%
9819     >>%
9820 }%
9821 \AtBeginShipout{%
9822     \setbox\AtBeginShipoutBox=\hbox{%
9823         \copy\AtBeginShipoutBox
9824         \@pdfm@mark{%
9825             put @resources <<%
9826             /Properties<<%
9827             /OCView \OBJ@OCG@view
9828             /OCPrint \OBJ@OCG@print
9829             >>%
9830             >>%
9831         }%
9832     }%
9833 }%
9834 \Hy@AtBeginDocument{%
9835     \def\Hy@colorlink#1{%
9836         \begingroup
9837         \ifHy@ocgcolorlinks
9838             \def\Hy@ocgcolor{#1}%
9839             \setbox0=\hbox\bgroup\color@begingroup
9840         \else
9841             \HyColor@UseColor#1%
9842         \fi
9843     }%
9844     \def\Hy@endcolorlink{%
9845         \ifHy@ocgcolorlinks
9846             \color@endgroup\egroup
9847             \mbox{%
9848                 \@pdfm@mark{content /OC/OCPrint BDC}%
9849                 \rlap{\copy0}%
9850                 \@pdfm@mark{content EMC/OC/OCView BDC}%
9851             \begingroup
9852                 \expandafter\HyColor@UseColor\Hy@ocgcolor
9853                 \box0 %
9854             \endgroup
9855             \@pdfm@mark{content EMC}%
9856         }%
9857     \fi
9858 \endgroup
9859 }%
9860 }%
9861 \else
9862     \Hy@DisableOption{ocgcolorlinks}%
9863 \fi

```

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

```

9864 \def\Hy@BeginAnnot#1{%

```

```

9865 \global\advance\c@Hy@AnnotLevel\@ne
9866 \ifnum\c@Hy@AnnotLevel=\@ne
9867   #1%
9868 \fi
9869 }
9870 \def\Hy@endAnnot{%
9871   \ifnum\value{Hy@AnnotLevel}=\@ne
9872     \Hy@endcolorlink
9873     \@pdfm@mark{eann}%
9874   \fi
9875 \global\advance\c@Hy@AnnotLevel\m@ne
9876 }

9877 \def\Hy@undefinedname{UNDEFINED}
9878 \def\hyper@linkstart#1#2{%
9879   \Hy@VerboseLinkStart{#1}{#2}%
9880   \leavevmode
9881   \Hy@BeginAnnot{%
9882     \protected@edef\Hy@testname{#2}%
9883     \ifx\Hy@testname\@empty
9884       \Hy@Warning{%
9885         Empty destination name,\MessageBreak
9886         using '\Hy@undefinedname'%
9887       }%
9888       \let\Hy@testname\Hy@undefinedname
9889     \else
9890       \Hy@pstringdef\Hy@testname{%
9891         \expandafter\HyperDestNameFilter\expandafter{%
9892           \Hy@testname
9893         }%
9894       }%
9895     \fi
9896     \@pdfm@mark{%
9897       bann<<%
9898       /Type/Annot%
9899       /Subtype/Link%
9900       \ifHy@pdfa /F 4\fi
9901       \Hy@setpdfborder
9902       \Hy@setpdfhighlight
9903       \expandafter\ifx\csname @#1bordercolor\endcsname\relax
9904         \else
9905           /C[\csname @#1bordercolor\endcsname]%
9906         \fi
9907       /A<<%
9908       /S/GoTo%
9909       /D(\Hy@testname)%
9910       \Hy@href@nextactionraw
9911       >>%
9912     >>%
9913   }%
9914   \expandafter\Hy@colorlink\csname @#1color\endcsname
9915 }%
9916 }
9917 \def\hyper@linkend{\Hy@endAnnot}%
9918 \def\hyper@link#1#2#3{%

```

```

9919 \hyper@linkstart{#1}{#2}#3\Hy@xspace@end\hyper@linkend
9920 }
9921 \def\hyper@linkfile#1#2#3{%
9922 \leavevmode
9923 \Hy@BeginAnnot{%
9924 \def\Hy@pstringF{#2}%
9925 \Hy@CleanupFile\Hy@pstringF
9926 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
9927 \Hy@pstringdef\Hy@pstringD{#3}%
9928 \Hy@MakeRemoteAction
9929 \@pdfm@mark{%
9930 bann<<%
9931 /Type/Annot%
9932 /Subtype/Link%
9933 \ifHy@pdfa /F 4\fi
9934 \Hy@setpdfborder
9935 \Hy@setpdfhighlight
9936 \ifx\@filebordercolor\relax
9937 \else
9938 /C[\@filebordercolor]%
9939 \fi
9940 /A<<%
9941 /S/GoToR%
9942 /F(\Hy@pstringF)%
9943 /D%
9944 \ifx\#3\%
9945 [\Hy@href@page\@pdfremotestartview]%
9946 \else
9947 (\Hy@pstringD)%
9948 \fi
9949 \Hy@SetNewWindow
9950 \Hy@href@nextactionraw
9951 >>%
9952 >>%
9953 }%
9954 \Hy@colorlink\@filecolor
9955 }%
9956 #1\Hy@xspace@end
9957 \Hy@EndAnnot
9958 }
9959 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
9960 \leavevmode
9961 \Hy@BeginAnnot{%
9962 \Hy@pstringdef\Hy@pstringF{#1}%
9963 \Hy@pstringdef\Hy@pstringP{#3}%
9964 \@pdfm@mark{%
9965 bann<<%
9966 /Type/Annot%
9967 /Subtype/Link%
9968 \ifHy@pdfa /F 4\fi
9969 \Hy@setpdfborder
9970 \Hy@setpdfhighlight
9971 \ifx\@runbordercolor\relax
9972 \else

```

```

9973      /C[\@runbordercolor]%
9974      \fi
9975      /A<<%
9976      /F(\Hy@pstringF)%
9977      /S/Launch%
9978      \Hy@SetNewWindow
9979      \ifx\#3\%
9980      \else
9981      /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
9982      \fi
9983      \Hy@href@nextactionraw
9984      >>%
9985      >>%
9986      }%
9987      \Hy@colorlink\@runcolor
9988      }%
9989      #2\Hy@xspace@end
9990      \Hy@EndAnnot
9991      }
9992      \def\hyper@linkurl#1#2{%
9993      \leavevmode
9994      \Hy@BeginAnnot{%
9995      \Hy@pstringdef\Hy@pstringURI{#2}%
9996      \@pdfm@mark{%
9997      bann<<%
9998      /Type/Annot%
9999      /Subtype/Link%
10000      \ifHy@pdfa /F 4\fi
10001      \Hy@setpdfborder
10002      \Hy@setpdfhighlight
10003      \ifx\@urlbordercolor\relax
10004      \else
10005      /C[\@urlbordercolor]%
10006      \fi
10007      /A<<%
10008      /S/URI%
10009      /URI(\Hy@pstringURI)%
10010      \ifHy@href@ismap
10011      /IsMap true%
10012      \fi
10013      \Hy@href@nextactionraw
10014      >>%
10015      >>%
10016      }%
10017      \Hy@colorlink\@urlcolor
10018      }%
10019      #1\Hy@xspace@end
10020      \Hy@EndAnnot
10021      }
10022      \def\Acrobatmenu#1#2{%
10023      \Hy@Acrobatmenu{#1}{#2}{%
10024      \Hy@BeginAnnot{%
10025      \EdefEscapeName\Hy@temp@menu{#1}%
10026      \@pdfm@mark{%

```

```

10027      bann<<%
10028          /Type/Annot%
10029          /Subtype/Link%
10030          \ifHy@pdfa /F 4\fi
10031          \Hy@setpdfborder
10032          \Hy@setpdfhighlight
10033          \ifx\@menubordercolor\relax
10034          \else
10035              /C[\@menubordercolor]%
10036          \fi
10037          /A<<%
10038          /S/Named%
10039          /N/\Hy@temp@menu
10040          \Hy@href@nextactionraw
10041          >>%
10042      >>%
10043  }%
10044      \Hy@colorlink\@menucolor
10045  }%
10046  #2\Hy@xspace@end
10047  \Hy@endAnnot
10048 }%
10049 }
10050
10051 \def\PDF@FinishDoc{%
10052     \Hy@UseMaketitleInfos
10053     \HyInfo@GenerateAddons
10054     \@pdfm@mark{%
10055         docinfo<<%
10056             /Title(\@pdftitle)%
10057             /Subject(\@pdfsubject)%
10058             /Creator(\@pdfcreator)%
10059             \ifx\@pdfcreationdate\@empty
10060             \else
10061                 /CreationDate(\@pdfcreationdate)%
10062             \fi
10063             \ifx\@pdfmoddate\@empty
10064             \else
10065                 /ModDate(\@pdfmoddate)%
10066             \fi
10067             /Author(\@pdfauthor)%
10068             \ifx\@pdfproducer\relax
10069             \else
10070                 /Producer(\@pdfproducer)%
10071             \fi
10072             /Keywords(\@pdfkeywords)%
10073             \ifx\@pdftrapped\@empty
10074             \else
10075                 /Trapped/\@pdftrapped
10076             \fi
10077             \HyInfo@Addons
10078         >>%
10079     }%
10080     \Hy@DisableOption{pdfauthor}%

```

```

10081 \Hy@DisableOption{pdftitle}%
10082 \Hy@DisableOption{pdfsubject}%
10083 \Hy@DisableOption{pdfcreator}%
10084 \Hy@DisableOption{addtopdfcreator}%
10085 \Hy@DisableOption{pdfcreationdate}%
10086 \Hy@DisableOption{pdfcreationdate}%
10087 \Hy@DisableOption{pdfmoddate}%
10088 \Hy@DisableOption{pdfproducer}%
10089 \Hy@DisableOption{pdfkeywords}%
10090 \Hy@DisableOption{pdftrapped}%
10091 \Hy@DisableOption{pdfinfo}%
10092 }

10093 \def\PDF@SetupDoc{%
10094 \edef\Hy@temp{%
10095 \ifHy@pdftoolbar\else /HideToolbar true\fi
10096 \ifHy@pdfmenubar\else /HideMenubar true\fi
10097 \ifHy@pdfwindowui\else /HideWindowUI true\fi
10098 \ifHy@pdffitwindow /FitWindow true\fi
10099 \ifHy@pdfcenterwindow /CenterWindow true\fi
10100 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10101 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10102 \Hy@UseNameKey{Direction}\@pdfdirection
10103 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10104 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10105 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10106 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10107 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10108 \Hy@UseNameKey{Duplex}\@pdfduplex
10109 \ifx\@pdfpicktraybypdfsize\@empty
10110 \else
10111 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10112 \fi
10113 \ifx\@pdfprintpagerange\@empty
10114 \else
10115 /PrintPageRange[\@pdfprintpagerange]%
10116 \fi
10117 \ifx\@pdfnumcopies\@empty
10118 \else
10119 /NumCopies \@pdfnumcopies
10120 \fi
10121 }%
10122 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10123 \@pdfm@mark{%
10124 docview<<%
10125 \ifx\@pdfstartpage\@empty
10126 \else
10127 \ifx\@pdfstartview\@empty
10128 \else
10129 /OpenAction[ @page\@pdfstartpage\@pdfstartview]%
10130 \fi
10131 \fi
10132 \ifx\@baseurl\@empty
10133 \else
10134 /URI<</Base(\Hy@pstringB)>>%

```

```

10135 \fi
10136 /PageMode/\@pdfpagemode
10137 \ifx\Hy@temp\@empty
10138 \else
10139 /ViewerPreferences<<\Hy@temp>>%
10140 \fi
10141 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10142 \ifx\@pdflang\relax
10143 \else
10144 /Lang(\@pdflang)%
10145 \fi
10146 >>%
10147 }%
10148 \ifx\@pdfpagescrop\@empty
10149 \else
10150 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}%
10151 \fi
10152 }
10153 </dvipdfm | xetex>
10154 < *dvipdfm | xetex>

```

\hyper@pagetransition

```

10155 \def\hyper@pagetransition{%
10156 \ifx\@pdfpagetransition\relax
10157 \else
10158 \ifx\@pdfpagetransition\@empty
10159 \else
10160 \special{pdf:put @thispage %
10161 <</Trans<</S/\@pdfpagetransition>>>>%
10162 }%
10163 \fi
10164 \fi
10165 }

```

\hyper@pageduration

```

10166 \def\hyper@pageduration{%
10167 \ifx\@pdfpageduration\relax
10168 \else
10169 \ifx\@pdfpageduration\@empty
10170 \else
10171 \special{pdf:put @thispage %
10172 <</Dur \@pdfpageduration>>>%
10173 }%
10174 \fi
10175 \fi
10176 }

10177 \g@addto@macro\Hy@EveryPageBoxHook{%
10178 \hyper@pagetransition
10179 \hyper@pageduration
10180 }
10181 </dvipdfm | xetex>

```



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

```

10182 <*dvipdfm>
10183 \AtBeginShipoutFirst{%
10184   \ifHy@setpagesize
10185     \begingroup
10186       \ifnum\mag=\@m
10187         \ifdim\stockwidth>\z@
10188           \ifdim\stockheight>\z@
10189             \special{papersize=\the\stockwidth,\the\stockheight}%
10190           \else
10191             \ifdim\paperwidth>\z@
10192               \ifdim\paperheight>\z@
10193                 \special{papersize=\the\paperwidth,\the\paperheight}%
10194               \fi
10195             \fi
10196           \fi
10197         \else
10198           \ifdim\stockwidth=\z@
10199             \ifdim\paperwidth>\z@
10200               \ifdim\paperheight>\z@
10201                 \special{papersize=\the\paperwidth,\the\paperheight}%
10202               \fi
10203             \fi
10204           \fi
10205         \fi
10206       \fi
10207     \endgroup
10208   \fi
10209   \Hy@DisableOption{setpagesize}%
10210 }
10211 </dvipdfm>

```

## 43.6 VTeX typesetting system

Provided by MicroPress, May 1998. They require VTeX version 6.02 or newer; see <http://www.micropress-inc.com/> for details.

```

10212 <*vtexhtml>
10213 \providecommand*{\XR@ext}{.htm}
10214 \RequirePackage{vtexhtml}
10215 \newif\if@Localurl
10216 \let\PDF@FinishDoc\ltx@empty
10217 \def\PDF@SetupDoc{%
10218   \ifx\@baseurl\@empty
10219     \else
10220       \special{!direct <base href="\@baseurl">}%
10221     \fi
10222 }
10223 \def\@urltype{url}
10224 \def\hyper@link#1#2#3{%
10225   \Hy@VerboseLinkStart{#1}{#2}%
10226   \leavevmode
10227   \special{!direct <a href=%

```

```

10228     \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
10229 #3\Hy@xspace@end
10230 \special{!direct </a>}%
10231 }
10232 \def\hyper@linkurl#1#2{%
10233 \begingroup
10234 \hyper@chars
10235 \leavevmode
10236 \MathBSuppress=1\relax
10237 \special{!direct <a href=%
10238     \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}%
10239 #1\Hy@xspace@end
10240 \MathBSuppress=0\relax
10241 \special{!direct </a>}%
10242 \endgroup
10243 }
10244 \def\hyper@linkfile#1#2#3{%
10245 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
10246 }
10247 \def\hyper@linkstart#1#2{%
10248 \Hy@VerboseLinkStart{#1}{#2}%
10249 \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
10250 \@Localurltrue
10251 \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
10252 \else
10253 \@Localurlfalse
10254 \begingroup
10255 \hyper@chars
10256 \special{!aref \HyperDestNameFilter{#2}}%
10257 \endgroup
10258 \fi
10259 }
10260 \def\hyper@linkend{%
10261 \if@Localurl
10262 \special{!endaref}%
10263 \else
10264 \special{!direct </a>}%
10265 \fi
10266 }
10267 \Hy@WrapperDef\hyper@anchorstart#1{%
10268 \Hy@SaveLastskip
10269 \Hy@VerboseAnchor{#1}%
10270 \begingroup
10271 \hyper@chars
10272 \special{!aname #1}%
10273 \special{!direct <a name=%
10274     \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10275 \endgroup
10276 \Hy@activeanchortrue
10277 }
10278 \def\hyper@anchorend{%
10279 \special{!direct </a>}%
10280 \Hy@activeanchorfalse
10281 \Hy@RestoreLastskip

```

```

10282 }
10283 \Hy@WrapperDef\hyper@anchor#1{%
10284   \Hy@SaveLastskip
10285   \Hy@VerboseAnchor{#1}%
10286   \begingroup
10287   \let\protect=\string
10288   \hyper@chars
10289   \leavevmode
10290   \special{!aname #1}%
10291   \special{!direct <a name=%
10292     \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10293   \endgroup
10294   \Hy@activeanchortrue
10295   \bgroup\anchor@spot\egroup
10296   \special{!direct </a>}%
10297   \Hy@activeanchorfalse
10298   \Hy@RestoreLastskip
10299 }
10300 \def\@Form[#1]{%
10301   \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10302 }
10303 \let\@endForm\ltx@empty
10304 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10305   \Hy@Message{Sorry, TeXpider does not yet support FORM gauges}%
10306 }
10307 \def\@TextField[#1]#2{% parameters, label
10308   \Hy@Message{Sorry, TeXpider does not yet support FORM text fields}%
10309 }
10310 \def\@CheckBox[#1]#2{% parameters, label
10311   \Hy@Message{Sorry, TeXpider does not yet support FORM checkboxes}%
10312 }
10313 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10314   \Hy@Message{Sorry, TeXpider does not yet support FORM choice menus}%
10315 }
10316 \def\@PushButton[#1]#2{% parameters, label
10317   \Hy@Message{Sorry, TeXpider does not yet support FORM pushbuttons}%
10318 }
10319 \def\@Reset[#1]#2{%
10320   \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10321 }
10322 \def\@Submit[#1]#2{%
10323   \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10324 }
10325 </vtexhtml>
10326 <*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.

```

10327 \ifcsname mediaheight\endcsname
10328   \ifHy@setpagesize
10329     \providecommand*{\VTeXInitMediaSize}{%
10330       \ifnum\mag=\@m
10331         \ifdim\stockwidth>\z@

```

```

10332     \ifdim\stockheight>\z@
10333         \setlength\mediaheight\stockheight
10334         \setlength\mediawidth\stockwidth
10335     \else
10336         \ifdim\paperwidth>\z@
10337         \ifdim\paperheight>\z@
10338             \setlength\mediaheight\paperheight
10339             \setlength\mediawidth\paperwidth
10340         \fi
10341     \fi
10342 \fi
10343 \else
10344     \ifdim\stockwidth=\z@
10345     \ifdim\paperwidth>\z@
10346         \ifdim\paperheight>\z@
10347             \setlength\mediaheight\paperheight
10348             \setlength\mediawidth\paperwidth
10349         \fi
10350     \fi
10351 \fi
10352 \fi
10353 \fi
10354 }%
10355 \Hy@AtBeginDocument{\VTeXInitMediaSize}%
10356 \fi
10357 \Hy@DisableOption{setpagesize}%
10358 \fi

```

Older versions of VTeX require xyz in lower case.

```

10359 \providecommand*\@pdfview{xyz}
10360 \providecommand*\@pdfborder{0 0 1}
10361 \providecommand*\@pdfborderstyle{}
10362 \let\CurrentBorderColor\@linkbordercolor
10363 \Hy@WrapperDef\hyper@anchor#1{%
10364     \Hy@SaveLastskip
10365     \Hy@VerboseAnchor{#1}%
10366     \begingroup
10367         \let\protect=\string
10368         \hyper@chars
10369         \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10370     \endgroup
10371     \Hy@activeanchortrue
10372     \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
10373     \Hy@activeanchorfalse
10374     \Hy@RestoreLastskip
10375 }
10376 \Hy@WrapperDef\hyper@anchorstart#1{%
10377     \Hy@SaveLastskip
10378     \Hy@VerboseAnchor{#1}%
10379     \begingroup
10380         \hyper@chars
10381         \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10382     \endgroup
10383     \Hy@activeanchortrue
10384 }

```

```

10385 \def\hyper@anchorend{%
10386   \Hy@activeanchorfalse
10387   \Hy@RestoreLastskip
10388 }
10389 \def\@urltype{url}
10390 \def\Hy@undefinedname{UNDEFINED}
10391 \def\hyper@linkstart#1#2{%
10392   \Hy@VerboseLinkStart{#1}{#2}%
10393   \Hy@pstringdef\Hy@pstringURI{#2}%
10394   \expandafter\Hy@colorlink\csname @#1color\endcsname
10395   \ltx@ifundefined{#@#1bordercolor}{%
10396     \let\CurrentBorderColor\relax
10397   }{%
10398     \edef\CurrentBorderColor{%
10399       \csname @#1bordercolor\endcsname
10400     }%
10401   }%
10402   \def\Hy@tempa{#1}%
10403   \ifx\Hy@tempa\@urltype
10404     \special{!%
10405       aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10406         \ifHy@href@ismap
10407           /IsMap true%
10408         \fi
10409         \Hy@href@nextactionraw
10410       >;%
10411       a=<%
10412         \ifHy@pdfa /F 4\fi
10413         \Hy@setpdfborder
10414         \ifx\CurrentBorderColor\relax
10415           \else
10416             /C [\CurrentBorderColor]%
10417           \fi
10418         >%
10419       }%
10420     \else
10421       \protected@edef\Hy@testname{#2}%
10422       \ifx\Hy@testname\@empty
10423         \Hy@Warning{%
10424           Empty destination name,\MessageBreak
10425           using ``\Hy@undefinedname'%
10426         }%
10427         \let\Hy@testname\Hy@undefinedname
10428       \fi
10429       \special{!%
10430         aref \expandafter\HyperDestNameFilter
10431           \expandafter{\Hy@testname};%
10432         a=<%
10433           \ifHy@pdfa /F 4\fi
10434           \Hy@setpdfborder
10435           \ifx\CurrentBorderColor\relax
10436             \else
10437               /C [\CurrentBorderColor]%
10438             \fi

```

```

10439     >%
10440   }%
10441   \fi
10442 }
10443 \def\hyper@linkend{%
10444   \special{!endaref}%
10445   \Hy@endcolorlink
10446 }
10447 \def\hyper@linkfile#1#2#3{%
10448   \leavevmode
10449   \def\Hy@pstringF{#2}%
10450   \Hy@CleanupFile\Hy@pstringF
10451   \special{!%
10452     aref <%
10453     \ifnum\Hy@VTeXversion>753 \ifHy@pdfnewwindow n\fi\fi
10454     f=\Hy@pstringF>#3;%
10455     a=<%
10456       \ifHy@pdfa /F 4\fi
10457       \Hy@setpdfborder
10458       \ifx\@filebordercolor\relax
10459         \else
10460           /C [\@filebordercolor]%
10461         \fi
10462       >%
10463     }%
10464     \Hy@colorlink\@filecolor
10465     #1\Hy@xspace@end
10466     \Hy@endcolorlink
10467     \special{!endaref}%
10468   }
10469 \def\hyper@linkurl#1#2{%
10470   \begingroup
10471   \Hy@pstringdef\Hy@pstringURI{#2}%
10472   \hyper@chars
10473   \leavevmode
10474   \special{!%
10475     aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10476     \ifHy@href@ismap
10477       /IsMap true%
10478     \fi
10479     \Hy@href@nextactionraw
10480     >;%
10481     a=<%
10482       \ifHy@pdfa /F 4\fi
10483       \Hy@setpdfborder
10484       \ifx\@urlbordercolor\relax
10485         \else
10486           /C [\@urlbordercolor]%
10487         \fi
10488       >%
10489     }%
10490     \Hy@colorlink\@urlcolor
10491     #1\Hy@xspace@end
10492     \Hy@endcolorlink

```

```

10493 \special{!endaref}%
10494 \endgroup
10495 }
10496 \def\hyper@link#1#2#3{%
10497 \Hy@VerboseLinkStart{#1}{#2}%
10498 \ltx@ifundefined{#1bordercolor}{%
10499 \let\CurrentBorderColor\relax
10500 }{%
10501 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
10502 }%
10503 \leavevmode
10504 \protected@edef\Hy@testname{#2}%
10505 \ifx\Hy@testname\@empty
10506 \Hy@Warning{%
10507 Empty destination name,\MessageBreak
10508 using \Hy@undefinedname'%
10509 }%
10510 \let\Hy@testname\Hy@undefinedname
10511 \fi
10512 \special{!%
10513 aref \expandafter\HyperDestNameFilter
10514 \expandafter{\Hy@testname};%
10515 a=<%
10516 \ifHy@pdfa /F 4\fi
10517 \Hy@setpdfborder
10518 \ifx\CurrentBorderColor\relax
10519 \else
10520 /C [\CurrentBorderColor]%
10521 \fi
10522 >%
10523 }%
10524 \expandafter
10525 \Hy@colorlink\csname @#1color\endcsname
10526 #3\Hy@xspace@end
10527 \Hy@endcolorlink
10528 \special{!endaref}%
10529 }
10530 \def\hyper@image#1#2{%
10531 \hyper@linkurl{#2}{#1}%
10532 }
10533 \def\@hyper@launch run:#1\#2#3{%
10534 \Hy@pstringdef\Hy@pstringF{#1}%
10535 \Hy@pstringdef\Hy@pstringP{#3}%
10536 \leavevmode
10537 \special{!aref %
10538 <u=%
10539 /Type/Action%
10540 /S/Launch%
10541 /F(\Hy@pstringF)%
10542 \Hy@SetNewWindow
10543 \ifx\#3\%
10544 \else
10545 /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>%
10546 \fi

```

```

10547 \Hy@href@nextactionraw
10548 >:%
10549 a=<%
10550 \ifHy@pdfa /F 4\fi
10551 \Hy@setpdfborder
10552 \ifx\@runbordercolor\relax
10553 \else
10554 /C[\@runbordercolor]%
10555 \fi
10556 >%
10557 }%
10558 \Hy@colorlink\@runcolor
10559 #2\Hy@xspace@end
10560 \Hy@endcolorlink
10561 \special{!endaref}%
10562 }
10563 \def\Acrobatmenu#1#2{%
10564 \EdefEscapeName\Hy@temp@menu{#1}%
10565 \Hy@Acrobatmenu{#1}{#2}{%
10566 \special{!%
10567 aref <u=/S /Named /N /\Hy@temp@menu>;%
10568 a=<%
10569 \ifHy@pdfa /F 4\fi
10570 \Hy@setpdfborder
10571 \ifx\@menubordercolor\relax
10572 \else
10573 /C[\@menubordercolor]%
10574 \fi
10575 >%
10576 }%
10577 \Hy@colorlink\@menucolor
10578 #2\Hy@xspace@end
10579 \Hy@endcolorlink
10580 \special{!endaref}%
10581 }%
10582 }

```

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{V<sub>T</sub>E<sub>X</sub>version}{..}{..} *globally*.

```

10583 \ifnum\Hy@VTeXversion<702 %
10584 \else
10585 \def\hyper@pagetransition{%
10586 \ifx\@pdfpagetransition\relax
10587 \else
10588 \ifx\@pdfpagetransition\@empty

```

Standard incantation.

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

```

10589 \else
10590 \hvtex@parse@trans\@pdfpagetransition
10591 \fi
10592 \fi
10593 }%

```



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:

```
10594 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
10595 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
10596 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
10597 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
10598 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
10599 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
10600 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%
```

Optional parameters:

```
10601 \def\hvtex@par@dimension{/Dm}%
10602 \def\hvtex@par@direction{/Di}%
10603 \def\hvtex@par@duration{/D}%
10604 \def\hvtex@par@motion{/M}%
```

Tokenizer:

```
10605 \def\hvtex@gettoken{%
10606   \expandafter\hvtex@gettoken@\hvtex@buffer\@nil
10607 }%
```

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

```
10608 \def\hvtex@gettoken@#1 #2\@nil{%
10609   \edef\hvtex@token{#1}%
10610   \edef\hvtex@buffer{#2}%
10611 }%
10612 \def\hvtex@parse@trans#1{%
```

Initializing code:

```
10613 \let\hvtex@trans@code\@empty
10614 \let\hvtex@param@dimension\@empty
10615 \let\hvtex@param@direction\@empty
10616 \let\hvtex@param@duration\@empty
10617 \let\hvtex@param@motion\@empty
10618 \edef\hvtex@buffer{#1\space}%
```

First token is the PDF transition name without escape.

```
10619 \hvtex@gettoken
10620 \ifx\hvtex@token\@empty
```

Leading space(s)?

```
10621 \ifx\hvtex@buffer\@empty
```

The buffer is empty, nothing to do.

```
10622 \else
10623 \hvtex@gettoken
10624 \fi
10625 \fi
10626 \csname hvtex@trans@effect@\hvtex@token\endcsname
```

Now is time to parse optional parameters.

```
10627 \hvtex@trans@params
10628 }%
```

Reentrant macro to parse optional parameters.

```
10629 \def\hvtex@trans@params{%
10630 \ifx\hvtex@buffer\@empty
10631 \else
10632 \hvtex@gettoken
10633 \let\hvtex@trans@par\hvtex@token
10634 \ifx\hvtex@buffer\@empty
10635 \else
10636 \hvtex@gettoken
10637 \ifx\hvtex@trans@par\hvtex@par@duration
```

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

```
10638 \let\hvtex@param@duration\hvtex@token
10639 \else \ifx\hvtex@trans@par\hvtex@par@motion
```

/M can be either /I or /O

```
10640 \expandafter\edef\expandafter\hvtex@param@motion
10641 \expandafter{\expandafter\@gobble\hvtex@token}%
10642 \else \ifx\hvtex@trans@par\hvtex@par@dimension
```

/Dm can be either /H or /V

```
10643 \expandafter\edef\expandafter\hvtex@param@dimension
10644 \expandafter{\expandafter\@gobble\hvtex@token}%
10645 \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).

```
10646 \let\hvtex@param@direction\hvtex@token
10647 \fi\fi\fi\fi
10648 \fi
10649 \fi
10650 \ifx\hvtex@buffer\@empty
10651 \let\next\hvtex@produce@trans
10652 \else
10653 \let\next\hvtex@trans@params
10654 \fi
10655 \next
10656 }%
```

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

```

10657 \def\hvtex@produce@trans{%
10658 \let\vtex@trans@special\@empty
10659 \if S\hvtex@trans@code
10660 \edef\vtex@trans@special{\hvtex@trans@code
10661 \hvtex@param@dimension\hvtex@param@motion}%
10662 \else\if B\hvtex@trans@code
10663 \edef\vtex@trans@special{%
10664 \hvtex@trans@code\hvtex@param@dimension
10665 }%
10666 \else\if X\hvtex@trans@code
10667 \edef\vtex@trans@special{%
10668 \hvtex@trans@code\hvtex@param@motion
10669 }%
10670 \else\if W\hvtex@trans@code
10671 \edef\vtex@trans@special{%
10672 \hvtex@trans@code\hvtex@param@direction
10673 }%
10674 \else\if D\hvtex@trans@code
10675 \let\vtex@trans@special\hvtex@trans@code
10676 \else\if R\hvtex@trans@code
10677 \let\vtex@trans@special\hvtex@trans@code
10678 \else\if G\hvtex@trans@code
10679 \edef\vtex@trans@special{%
10680 \hvtex@trans@code\hvtex@param@direction
10681 }%
10682 \fi\fi\fi\fi\fi\fi
10683 \ifx\vtex@trans@special\@empty
10684 \else
10685 \ifx\hvtex@param@duration\@empty
10686 \else
10687 \setlength{\dimen@}{\hvtex@param@duration\p@}%

```

I'm not guilty of possible overflow.

```

10688 \multiply\dimen@\@m
10689 \edef\vtex@trans@special{%
10690 \vtex@trans@special,\strip@pt\dimen@
10691 }%
10692 \fi

```

And all the mess is just for this.

```

10693 \special{!trans \vtex@trans@special}%
10694 \fi
10695 }%

10696 \def\hyper@pageduration{%
10697 \ifx\@pdfpageduration\relax
10698 \else
10699 \ifx\@pdfpageduration\@empty
10700 \special{!duration-}%
10701 \else
10702 \special{!duration \@pdfpageduration}%
10703 \fi
10704 \fi

```

```

10705 }%
10706 \g@addto@macro\Hy@EveryPageBoxHook{%
10707   \hyper@pagetransition
10708   \hyper@pageduration
10709 }%
10710 \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

```

10711 \ifx\@pdfproducer\relax
10712 \def\@pdfproducer{VTeX}%
10713 \ifnum\Hy@VTeXversion>\z@
10714   \count@\VTeXversion
10715   \divide\count@ 100 %
10716   \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
10717   \multiply\count@ -100 %
10718   \advance\count@\VTeXversion
10719   \edef\@pdfproducer{%
10720     \@pdfproducer
10721     .\ifnum\count@<10 0\fi\the\count@
10722     \ifx\VTeXOS\@undefined\else
10723       \ifnum\VTeXOS>0 %
10724         \ifnum\VTeXOS<6 %
10725           \space(
10726           \ifcase\VTeXOS
10727             \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
10728           \fi
10729           )%
10730         \fi
10731       \fi
10732     \fi
10733     ,\space
10734     \ifnum\OpMode=\@ne PDF\else PS\fi
10735     \space backend%
10736     \ifx\gexmode\@undefined\else
10737       \ifnum\gexmode>\z@\space with GeX\fi
10738     \fi
10739   }%
10740 \fi
10741 \fi

```

Current `!pdfinfo` key syntax:

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

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

```

10742 \def\PDF@SetupDoc{%
10743   \ifx\@pdfpagescrop\@empty
10744   \else
10745     \special{!pdfinfo b=<\@pdfpagescrop>}%
10746   \fi
10747   \ifx\@pdfstartpage\@empty
10748   \else
10749     \ifx\@pdfstartview\@empty
10750     \else
10751       \special{!onopen Page\@pdfstartpage}%
10752     \fi
10753   \fi
10754   \special{!pdfinfo p=</\@pdfpagemode>}%
10755   \ifx\@baseurl\@empty
10756   \else
10757     \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
10758   \fi
10759   \special{!pdfinfo v=<<<%
10760     \ifHy@pdftoolbar\else /HideToolbar true\fi
10761     \ifHy@pdfmenubar\else /HideMenubar true\fi
10762     \ifHy@pdfwindowui\else /HideWindowUI true\fi
10763     \ifHy@pdffitwindow /FitWindow true\fi
10764     \ifHy@pdfcenterwindow /CenterWindow true\fi
10765     \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10766     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10767     \Hy@UseNameKey{Direction}\@pdfdirection
10768     \Hy@UseNameKey{ViewArea}\@pdfviewarea
10769     \Hy@UseNameKey{ViewClip}\@pdfviewclip
10770     \Hy@UseNameKey{PrintArea}\@pdfprintarea
10771     \Hy@UseNameKey{PrintClip}\@pdfprintclip
10772     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10773     \Hy@UseNameKey{Duplex}\@pdfduplex
10774     \ifx\@pdfpicktraybypdfsize\@empty
10775     \else
10776       /PickTrayByPDFSize \@pdfpicktraybypdfsize
10777     \fi
10778     \ifx\@pdfprintpagerange\@empty
10779     \else
10780       /PrintPageRange[\@pdfprintpagerange]%
10781     \fi

```

```

10782 \ifx\@pdfnumcopies\@empty
10783 \else
10784 /NumCopies \@pdfnumcopies
10785 \fi
10786 >>>}%
10787 \ifx\@pdfpagelayout\@empty
10788 \else
10789 \special{!pdfinfo l=</\@pdfpagelayout\space>}%
10790 \fi
10791 }%
10792 \HyInfo@AddonUnsupportedtrue
10793 \define@key{Hyp}{pdfcreationdate}{%
10794 \Hy@Warning{%
10795 VTeX does not support pdfcreationdate.\MessageBreak
10796 Therefore its setting is ignored%
10797 }%
10798 }
10799 \define@key{Hyp}{pdfmoddate}{%
10800 \Hy@Warning{%
10801 VTeX does not support pdfmoddate.\MessageBreak
10802 Therefore its setting is ignored%
10803 }%
10804 }
10805 \def\PDF@FinishDoc{%
10806 \Hy@UseMaketitleInfos
10807 \HyInfo@TrappedUnsupported
10808 \special{!pdfinfo a=<\@pdfauthor>}%
10809 \special{!pdfinfo t=<\@pdftitle>}%
10810 \special{!pdfinfo s=<\@pdfsubject>}%
10811 \special{!pdfinfo c=<\@pdfcreator>}%
10812 \ifx\@pdfproducer\relax
10813 \else
10814 \special{!pdfinfo r=<\@pdfproducer>}%
10815 \fi
10816 \special{!pdfinfo k=<\@pdfkeywords>}%
10817 \Hy@DisableOption{pdfauthor}%
10818 \Hy@DisableOption{pdftitle}%
10819 \Hy@DisableOption{pdfsubject}%
10820 \Hy@DisableOption{pdfcreator}%
10821 \Hy@DisableOption{addtopdfcreator}%
10822 \Hy@DisableOption{pdfcreationdate}%
10823 \Hy@DisableOption{pdfcreationdate}%
10824 \Hy@DisableOption{pdfmoddate}%
10825 \Hy@DisableOption{pdfproducer}%
10826 \Hy@DisableOption{pdfkeywords}%
10827 \Hy@DisableOption{pdftrapped}%
10828 \Hy@DisableOption{pdfinfo}%
10829 }
10830 </vtex>

```

### 43.7 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.

```
10831 <dviwindo>\def\literalps@out#1{\special{ps:#1}}}%  
10832 <packageEnd>\providecommand*\Hy@DistillerDestFix{}%  
10833 <*pdfmark | dviwindo>  
10834 \def\Hy@DistillerDestFix{%  
10835   \begingroup  
10836     \let\x\literalps@out
```

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

```
10837   \ifnum \@ifundefined{OpMode}{0}{}%  
10838     \@ifundefined{gexmode}{0}{}%  
10839     \ifnum\gexmode>0 \OpMode\else 0\fi  
10840   }>1 %  
10841   \def\x##1{%  
10842     \immediate\special{!=##1}}%  
10843   }%  
10844   \fi  
10845   \x{%  
10846     /product where{%  
10847       pop %  
10848       product(Distiller)search{%  
10849         pop pop pop %  
10850         version(.)search{%  
10851           exch pop exch pop%  
10852           (3011)eq{%  
10853             gsave %  
10854             newpath 0 0 moveto closepath clip%  
10855             /Courier findfont 10 scalefont setfont %  
10856             72 72 moveto(.).show %  
10857             grestore%  
10858           }if%  
10859         }{pop}ifelse%  
10860       }{pop}ifelse%  
10861     }if%  
10862   }%  
10863   \endgroup  
10864 }  
10865 </pdfmark | dviwindo>
```

### 43.8 Direct pdfmark support

Drivers that load pdfmark.def have to provide the correct macro definitions of

<code>\@pdfproducer</code>	for document information
<code>\literalps@out</code>	PostScript output
<code>\headerps@out</code>	PostScript output that goes in the header area

and the correct definitions of the following PostScript procedures:

<code>H.S</code>	start of anchor, link or rect
<code>#1 H.A</code>	end of anchor, argument=baselineskip in pt
<code>#1 H.L</code>	end of link, argument=baselineskip in pt
<code>H.R</code>	end of rect
<code>H.B</code>	raw rect code

```

10866 (*pdfmark)
10867 \Hy@breaklinks@unsupported
10868 \def\HyPat@ObjRef{%
10869   \[~{}]+\}%
10870 }
10871 \Hy@WrapperDef\hyper@anchor#1{%
10872   \Hy@SaveLastskip
10873   \Hy@VerboseAnchor{#1}%
10874   \begingroup
10875     \pdfmark[\anchor@spot]{%
10876       pdfmark=/DEST,%
10877       linktype=anchor,%
10878       View=/\@pdfview \@pdfviewparams,%
10879       DestAnchor={#1}%
10880     }%
10881   \endgroup
10882   \Hy@RestoreLastskip
10883 }
10884 \ltx@ifundefined{hyper@anchorstart}{\endinput}
10885 \Hy@WrapperDef\hyper@anchorstart#1{%
10886   \Hy@SaveLastskip
10887   \Hy@VerboseAnchor{#1}%
10888   \literalps@out{H.S}%
10889   \Hy@AllowHyphens
10890   \xdef\hyper@currentanchor{#1}%
10891   \Hy@activeanchortrue
10892 }
10893 \def\hyper@anchorend{%
10894   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
10895   \pdfmark{%
10896     pdfmark=/DEST,%
10897     linktype=anchor,%
10898     View=/\@pdfview \@pdfviewparams,%
10899     DestAnchor=\hyper@currentanchor,%
10900   }%
10901   \Hy@activeanchorfalse
10902   \Hy@RestoreLastskip
10903 }
10904 \def\hyper@linkstart#1#2{%
10905   \Hy@VerboseLinkStart{#1}{#2}%
10906   \ifHy@breaklinks
10907     \else
10908     \leavevmode

```



```

10909 \ifmmode
10910   \def\Hy@LinkMath{$}%
10911 \else
10912   \let\Hy@LinkMath\ltx@empty
10913 \fi
10914 \Hy@SaveSpaceFactor
10915 \hbox\bgroup
10916 \Hy@RestoreSpaceFactor
10917 \Hy@LinkMath
10918 \fi
10919 \expandafter\Hy@colorlink\csname @#1color\endcsname
10920 \literalps@out{H.S}%
10921 \Hy@AllowHyphens
10922 \xdef\hyper@currentanchor{#2}%
10923 \gdef\hyper@currentlinktype{#1}%
10924 }
10925 \def\hyper@linkend{%
10926   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
10927   \ltx@ifundefined{@\hyper@currentlinktype bordercolor}{%
10928     \let\Hy@tempcolor\relax
10929   }{%
10930     \edef\Hy@tempcolor{%
10931       \csname @\hyper@currentlinktype bordercolor\endcsname
10932     }%
10933   }%
10934   \pdfmark{%
10935     pdfmark=/ANN,%
10936     linktype=link,%
10937     Subtype=/Link,%
10938     PDFAFlags=4,%
10939     Dest=\hyper@currentanchor,%
10940     AcroHighlight=\@pdfhighlight,%
10941     Border=\@pdfborder,%
10942     BorderStyle=\@pdfborderstyle,%
10943     Color=\Hy@tempcolor,%
10944     Raw=H.B%
10945   }%
10946   \Hy@endcolorlink
10947   \ifHy@breaklinks
10948 \else
10949   \Hy@LinkMath
10950   \Hy@SaveSpaceFactor
10951   \egroup
10952   \Hy@RestoreSpaceFactor
10953 \fi
10954 }

```

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.

```

10955 \begingroup
10956 \catcode`P=12 %
10957 \catcode`T=12 %
10958 \lowercase{\endgroup

```

```

10959 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
10960 }
10961 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

\hyper@pagetransition

```

10962 \def\hyper@pagetransition{%
10963 \ifx\@pdfpagetransition\relax
10964 \else
10965 \ifx\@pdfpagetransition\@empty
10966 % 1. Does an old entry have to be deleted?
10967 % 2. If 1=yes, how to delete?
10968 \else
10969 \pdfmark{%
10970 pdfmark=/PUT,%
10971 Raw={%
10972 \string{ThisPage\string}%
10973 <</Trans << /S /\@pdfpagetransition\space >> >>%
10974 }%
10975 }%
10976 \fi
10977 \fi
10978 }

```

\hyper@pageduration

```

10979 \def\hyper@pageduration{%
10980 \ifx\@pdfpageduration\relax
10981 \else
10982 \ifx\@pdfpageduration\@empty
10983 % 1. Does an old entry have to be deleted?
10984 % 2. If 1=yes, how to delete?
10985 \else
10986 \pdfmark{%
10987 pdfmark=/PUT,%
10988 Raw={%
10989 \string{ThisPage\string}%
10990 <</Dur \@pdfpageduration>>%
10991 }%
10992 }%
10993 \fi
10994 \fi
10995 }

```

```

10996 \g@addto@macro\Hy@EveryPageBoxHook{%
10997 \hyper@pagetransition
10998 \hyper@pageduration
10999 }

```

```

11000 \def\hyper@image#1#2{%
11001 \hyper@linkurl{#2}{#1}%
11002 }
11003 \def\Hy@undefinedname{UNDEFINED}
11004 \def\hyper@link#1#2#3{%
11005 \Hy@VerboseLinkStart{#1}{#2}%
11006 \ltx@ifundefined{@#1bordercolor}{%
11007 \let\Hy@tempcolor\relax

```

```

11008 }{%
11009 \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
11010 }%
11011 \begingroup
11012 \protected@edef\Hy@testname{#2}%
11013 \ifx\Hy@testname\@empty
11014 \Hy@Warning{%
11015 Empty destination name,\MessageBreak
11016 using ``\Hy@undefinedname'%
11017 }%
11018 \let\Hy@testname\Hy@undefinedname
11019 \fi
11020 \pdfmark[{#3}]{%
11021 Color=\Hy@tempcolor,%
11022 linktype={#1},%
11023 AcroHighlight=\@pdfhighlight,%
11024 Border=\@pdfborder,%
11025 BorderStyle=\@pdfborderstyle,%
11026 pdfmark=/ANN,%
11027 Subtype=/Link,%
11028 PDFAFlags=4,%
11029 Dest=\Hy@testname
11030 }%
11031 \endgroup
11032 }
11033 \newtoks\pdf@docset
11034 \def\PDF@FinishDoc{%
11035 \Hy@UseMaketitleInfos
11036 \Hy@Info@GenerateAddons
11037 \let\Hy@temp\@empty
11038 \ifx\@pdfcreationdate\@empty
11039 \else
11040 \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
11041 \fi
11042 \ifx\@pdfmoddate\@empty
11043 \else
11044 \expandafter\def\expandafter\Hy@temp\expandafter{%
11045 \Hy@temp
11046 ModDate=\@pdfmoddate,%
11047 }%
11048 \fi
11049 \ifx\@pdfproducer\relax
11050 \else
11051 \expandafter\def\expandafter\Hy@temp\expandafter{%
11052 \Hy@temp
11053 Producer=\@pdfproducer,%
11054 }%
11055 \fi
11056 \expandafter
11057 \pdfmark\expandafter{%
11058 \Hy@temp
11059 pdfmark=/DOCINFO,%
11060 Title=\@pdftitle,%
11061 Subject=\@pdfsubject,%

```

```

11062   Creator=\@pdfcreator,%
11063   Author=\@pdfauthor,%
11064   Keywords=\@pdfkeywords,%
11065   Trapped=\@pdftrapped
11066 }%
11067 \ifx\HyInfo@Addons\@empty
11068 \else
11069   \pdfmark{%
11070     pdfmark=/DOCINFO,%
11071     Raw={\HyInfo@Addons}%
11072   }%
11073 \fi
11074 \Hy@DisableOption{pdfauthor}%
11075 \Hy@DisableOption{pdftitle}%
11076 \Hy@DisableOption{pdfsubject}%
11077 \Hy@DisableOption{pdfcreator}%
11078 \Hy@DisableOption{addtopdfcreator}%
11079 \Hy@DisableOption{pdfcreationdate}%
11080 \Hy@DisableOption{pdfcreationdate}%
11081 \Hy@DisableOption{pdfmoddate}%
11082 \Hy@DisableOption{pdfproducer}%
11083 \Hy@DisableOption{pdfkeywords}%
11084 \Hy@DisableOption{pdftrapped}%
11085 \Hy@DisableOption{pdfinfo}%
11086 }
11087 \def\PDF@SetupDoc{%
11088   \def\Hy@temp{}%
11089   \ifx\@pdfstartpage\@empty
11090   \else
11091     \ifx\@pdfstartview\@empty
11092     \else
11093       \edef\Hy@temp{%
11094         ,Page=\@pdfstartpage
11095         ,View=\@pdfstartview
11096       }%
11097     \fi
11098   \fi
11099   \edef\Hy@temp{%
11100     \noexpand\pdfmark{%
11101       pdfmark=/DOCVIEW,%
11102       PageMode=/\@pdfpagemode
11103     }\Hy@temp
11104   }%
11105 }%
11106 \Hy@temp
11107 \ifx\@pdfpagescrop\@empty
11108 \else
11109   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
11110 \fi
11111 \edef\Hy@temp{%
11112   \ifHy@pdftoolbar\else /HideToolbar true\fi
11113   \ifHy@pdfmenubar\else /HideMenubar true\fi
11114   \ifHy@pdfwindowui\else /HideWindowUI true\fi
11115   \ifHy@pdfwindow /FitWindow true\fi

```

```

11116 \ifHy@pdfcenterwindow /CenterWindow true\fi
11117 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
11118 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
11119 \Hy@UseNameKey{Direction}\@pdfdirection
11120 \Hy@UseNameKey{ViewArea}\@pdfviewarea
11121 \Hy@UseNameKey{ViewClip}\@pdfviewclip
11122 \Hy@UseNameKey{PrintArea}\@pdfprintarea
11123 \Hy@UseNameKey{PrintClip}\@pdfprintclip
11124 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
11125 \Hy@UseNameKey{Duplex}\@pdfduplex
11126 \ifx\@pdfpicktraybypdfsize\@empty
11127 \else
11128 /PickTrayByPDFSize \@pdfpicktraybypdfsize
11129 \fi
11130 \ifx\@pdfprintpagerange\@empty
11131 \else
11132 /PrintPageRange[\@pdfprintpagerange]%
11133 \fi
11134 \ifx\@pdfnumcopies\@empty
11135 \else
11136 /NumCopies \@pdfnumcopies
11137 \fi
11138 }%
11139 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
11140 \pdfmark{%
11141 pdfmark=/PUT,%
11142 Raw={%
11143 \string{Catalog\string}<<%
11144 \ifx\Hy@temp\@empty
11145 \else
11146 /ViewerPreferences<<\Hy@temp>>%
11147 \fi
11148 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
11149 \ifx\@pdflang\relax
11150 \else
11151 /Lang(\@pdflang)%
11152 \fi
11153 \ifx\@baseurl\@empty
11154 \else
11155 /URI<</Base(\Hy@pstringB)>>%
11156 \fi
11157 >>%
11158 }%
11159 }%
11160 }
11161 </pdfmark>
11162 <*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.

```

11163 \newif\ifHy@pdfmarkerror
11164 \def\pdfmark{\@ifnextchar[{\pdfmark@}{\pdfmark@[]}}
11165 \def\pdfmark@[#1]#2{%
11166   \Hy@pdfmarkerrorfalse
11167   \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
11168   \@processme
11169   \let\pdf@type\relax
11170   \let\pdf@objdef\ltx@empty
11171   \kvsetkeys{PDF}{#2}%
11172   \ifHy@pdfmarkerror
11173   \else
11174     \ifx\pdf@type\relax
11175       \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
11176       \ifx\#1\%
11177         \else
11178           \pdf@rect{#1}%
11179         \fi
11180       \else
11181         \ifx\#1\%
11182           \literalps@out{%
11183             [%
11184             \ifx\pdf@objdef\ltx@empty
11185             \else
11186               /_objdef\string{\pdf@objdef\string}%
11187             \fi
11188             \the\pdf@toks\space\pdf@type\space pdfmark%
11189             ]%
11190           \else
11191             \ltx@ifundefined{@\pdf@linktype color}{%
11192               \Hy@colorlink\@linkcolor
11193             }{%
11194               \expandafter\Hy@colorlink
11195               \csname @\pdf@linktype color\endcsname
11196             }%
11197             \pdf@rect{#1}%
11198             \literalps@out{%
11199               [%
11200               \ifx\pdf@objdef\ltx@empty
11201               \else
11202                 /_objdef\string{\pdf@objdef\string}%
11203               \fi
11204               \the\pdf@toks\space\pdf@type\space pdfmark%
11205               ]%
11206               \Hy@endcolorlink
11207             \fi
11208           \fi
11209         \fi
11210       }

```

The complicated bit is working out the right enclosing rectangle of some piece of  $\text{\TeX}$  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}
```

```
11211 \newsavebox{\pdf@box}
11212 \providecommand*{\Hy@setouterhbox}{\sbox}
11213 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
11214 \def\Hy@DEST{/DEST}
11215 \def\pdf@rect#1{%
11216   \begingroup
11217   \chardef\x=1 %
11218   \def\Hy@temp{#1}%
11219   \ifx\Hy@temp\ltx@empty
11220     \chardef\x=0 %
11221   \else
11222     \def\y{\anchor@spot}%
11223     \ifx\Hy@temp\y
11224       \def\y{\relax}%
11225     \ifx\anchor@spot\y
11226       \chardef\x=0 %
11227     \fi
11228   \fi
11229 \fi
11230 \expandafter\endgroup
11231 \ifcase\x
11232   \literalps@out{H.S}%
11233   \literalps@out{H.R}%
11234 \else
11235   \leavevmode
11236   \Hy@SaveSpaceFactor
11237   \ifmmode
11238     \def\Hy@LinkMath{$}%
11239   \else
11240     \let\Hy@LinkMath\ltx@empty
11241   \fi
11242   \ifHy@breaklinks
11243     \Hy@setouterhbox\pdf@box{%
11244       \Hy@RestoreSpaceFactor
11245       \Hy@LinkMath
11246       \Hy@AllowHyphens#1\Hy@xspace@end
11247       \Hy@LinkMath
11248       \Hy@SaveSpaceFactor
11249     }%
11250   \else
11251     \sbox\pdf@box{%
11252       \Hy@RestoreSpaceFactor
11253       \Hy@LinkMath
11254       #1\Hy@xspace@end
11255       \Hy@LinkMath
11256       \Hy@SaveSpaceFactor
```

```

11257 }%
11258 \fi
11259 \dimen@ht\pdf@box
11260 \ifdim\dp\pdf@box=\z@
11261 \literalps@out{H.S}%
11262 \else
11263 \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
11264 \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...).

```

11265 \ifHy@breaklinks
11266 \ifhmode
11267 \Hy@breaklinksunhbox\pdf@box
11268 \else
11269 \box\pdf@box
11270 \fi
11271 \else
11272 \expandafter\box\pdf@box
11273 \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

11274 \ifdim\dimen@=\z@
11275 \literalps@out{H.R}%
11276 \else
11277 \raise\dimen@\hbox{\literalps@out{H.R}}%
11278 \fi
11279 \Hy@RestoreSpaceFactor
11280 \fi
11281 \ifx\pdf@type\Hy@DEST
11282 \else
11283 \pdf@addtoksx{H.B}%
11284 \fi
11285 }

```

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.

```

11286 \newtoks\pdf@toks
11287 \newtoks\pdf@defaulttoks
11288 \pdf@defaulttoks={}%
11289 \def\pdf@addtoks#1#2{%
11290 \edef\@processme{\pdf@toks{\the\pdf@toks/#2 #1}}%
11291 \@processme
11292 }
11293 \def\pdf@addtoksx#1{%
11294 \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
11295 \@processme
11296 }
11297 \def\PDFdefaults#1{%

```



```

11298 \pdf@defaulttoks={#1}%
11299 }

```

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

```

11300 % what is the type of pdfmark?
11301 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
11302 % what is the link type?
11303 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
11304 \def\pdf@linktype{link}
11305 % named object?
11306 \define@key{PDF}{objdef}{\edef\pdf@objdef{#1}}
11307 \let\pdf@objdef\ltx@empty
11308 % parameter is a stream of PDF
11309 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
11310 % parameter is a name
11311 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
11312 % parameter is a array
11313 \define@key{PDF}{Border}{%
11314   \edef\Hy@temp{#1}%
11315   \ifx\Hy@temp\@empty
11316     \else
11317       \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
11318     \fi
11319 }
11320 \let\Hy@BorderArrayPatch\@empty
11321 % parameter is a dictionary
11322 \define@key{PDF}{BorderStyle}{%
11323   \edef\Hy@temp{#1}%
11324   \ifx\Hy@temp\@empty
11325     \else
11326       \pdf@addtoks{<<#1>>}{BS}%
11327     \fi
11328 }
11329 % parameter is a array
11330 \define@key{PDF}{Color}{%
11331   \ifx\relax#1\relax
11332     \else
11333       \pdf@addtoks{[#1]}{Color}% hash-ok
11334     \fi
11335 }
11336 % parameter is a string
11337 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
11338 % parameter is a integer
11339 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
11340 % parameter is a array
11341 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
11342 % parameter is a string
11343 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
11344 % parameter is a string or file
11345 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
11346 % parameter is a destination
11347 \define@key{PDF}{Dest}{%
11348   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11349   \ifx\Hy@pstringDest\@empty
11350     \Hy@pdfmarkerrortrue

```

```

11351 \Hy@Warning{Destination with empty name ignored}%
11352 \else
11353 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11354 \fi
11355 }
11356 \define@key{PDF}{DestAnchor}{%
11357 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11358 \ifx\Hy@pstringDest\@empty
11359 \Hy@pdfmarkerrortrue
11360 \Hy@Warning{Destination with empty name ignored}%
11361 \else
11362 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11363 \fi
11364 }
11365 % parameter is a string
11366 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
11367 % parameter is a string
11368 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
11369 % parameter is a int
11370 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
11371 \define@key{PDF}{PDFAFlags}{%
11372 \ifHy@pdfa
11373 \pdf@addtoks{#1}{F}%
11374 \fi
11375 }
11376 % parameter is a name
11377 \define@key{PDF}{AcroHighlight}{%
11378 \begingroup
11379 \edef\x{#1}%
11380 \expandafter\endgroup\ifx\x\@empty
11381 \else
11382 \pdf@addtoks{#1}{H}%
11383 \fi
11384 }
11385 % parameter is a string
11386 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
11387 % parameter is a string
11388 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
11389 % parameter is a string
11390 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11391 % parameter is a string
11392 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
11393 % parameter is a Boolean
11394 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
11395 % parameter is a integer or name
11396 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
11397 % parameter is a name
11398 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
11399 % parameter is a string
11400 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
11401 % parameter is a array
11402 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
11403 % parameter is a integer
11404 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}

```

```

11405 % parameter is a name
11406 \define@key{PDF}{Subtype}{\pdf@addtoks{(#1)}{Subtype}}
11407 % parameter is a string
11408 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
11409 % parameter is a string
11410 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
11411 % parameter is a string
11412 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
11413 % parameter is an array
11414 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
11415 % parameter is a string
11416 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

These are the keys used in the DOCINFO section.

11417 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
11418 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
11419 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
11420 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11421 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
11422 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
11423 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
11424 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11425 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
11426 \define@key{PDF}{URI}{\pdf@addtoks{(#1)}{URI}}
11427 \define@key{PDF}{Trapped}{%
11428   \edef\Hy@temp{#1}%
11429   \ifx\Hy@temp\@empty
11430     \else
11431       \pdf@addtoks{/#1}{Trapped}%
11432     \fi
11433 }
11434
11435 </pdfmarkbase>
11436 <*pdfmark>
11437 \def\Acrobatmenu#1#2{%
11438   \EdefEscapeName\Hy@temp@menu{#1}%
11439   \Hy@Acrobatmenu{#1}{#2}{%
11440     \pdfmark[{#2}]{%
11441       linktype=menu,%
11442       pdfmark=/ANN,%
11443       AcroHighlight=\@pdfhighlight,%
11444       Border=\@pdfborder,%
11445       BorderStyle=\@pdfborderstyle,%
11446       Color=\@menubordercolor,%
11447       Action={<</Subtype/Named/N/\Hy@temp@menu>>},%
11448       Subtype=/Link,%
11449       PDFAFlags=4%
11450     }%
11451   }%
11452 }

```

And now for some useful examples:

```

11453 \def\PDFNextPage{\@ifnextchar{\PDFNextPage@}{\PDFNextPage@[]}}
11454 \def\PDFNextPage@[#1]#2{%
11455   \pdfmark[{#2}]{%

```

```

11456   #1,%
11457   Border=\@pdfborder,%
11458   BorderStyle=\@pdfborderstyle,%
11459   Color=.2 .1 .5,%
11460   pdfmark=/ANN,%
11461   Subtype=/Link,%
11462   PDFAFlags=4,%
11463   Page=/Next%
11464 }%
11465 }
11466 \def\PDFPreviousPage{%
11467   \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
11468 }
11469 \def\PDFPreviousPage@[#1]#2{%
11470   \pdfmark[#{#2}]{%
11471     #1,%
11472     Border=\@pdfborder,%
11473     BorderStyle=\@pdfborderstyle,%
11474     Color=.4 .4 .1,%
11475     pdfmark=/ANN,%
11476     Subtype=/Link,%
11477     PDFAFlags=4,%
11478     Page=/Prev%
11479   }%
11480 }
11481 \def\PDFOpen#1{%
11482   \pdfmark{#1,pdfmark=/DOCVIEW}%
11483 }

```

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

```

11484 \def\hyper@linkurl#1#2{%
11485   \begingroup
11486     \Hy@pstringdef\Hy@pstringURI{#2}%
11487     \hyper@chars
11488     \leavevmode
11489     \pdfmark[#{#1}]{%
11490       pdfmark=/ANN,%
11491       linktype=url,%
11492       AcroHighlight=\@pdfhighlight,%
11493       Border=\@pdfborder,%
11494       BorderStyle=\@pdfborderstyle,%
11495       Color=\@urlbordercolor,%
11496       Action={<<%
11497         /Subtype/URI%
11498         /URI(\Hy@pstringURI)%
11499         \ifHy@href@ismap
11500         /IsMap true%
11501       \fi
11502       >>},%
11503       Subtype=/Link,%
11504       PDFAFlags=4%
11505     }%
11506   \endgroup
11507 }
11508 \def\hyper@linkfile#1#2#3{%

```

```

11509 \begingroup
11510 \def\Hy@pstringF{#2}%
11511 \Hy@CleanupFile\Hy@pstringF
11512 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
11513 \Hy@pstringdef\Hy@pstringD{#3}%
11514 \Hy@MakeRemoteAction
11515 \leavevmode
11516 \pdfmark[{#1}]{%
11517   pdfmark=/ANN,%
11518   Subtype=/Link,%
11519   PDFAFlags=4,%
11520   AcroHighlight=\@pdfhighlight,%
11521   Border=\@pdfborder,%
11522   BorderStyle=\@pdfborderstyle,%
11523   linktype=file,%
11524   Color=\@filebordercolor,%
11525   Action={%
11526     <<%
11527     /S/GoToR%
11528     \Hy@SetNewWindow
11529     /F(\Hy@pstringF)%
11530     /D%
11531     \ifx\#3\%
11532     [\Hy@href@page\@pdfremotestartview]%
11533     \else
11534     (\Hy@pstringD)cvn%
11535     \fi
11536     \Hy@href@nextactionraw
11537     >>%
11538   }%
11539 }%
11540 \endgroup
11541 }
11542 \def\@hyper@launch run:#1\#2#3{%
11543 \begingroup
11544 \Hy@pstringdef\Hy@pstringF{#1}%
11545 \Hy@pstringdef\Hy@pstringP{#3}%
11546 \leavevmode
11547 \pdfmark[{#2}]{%
11548   pdfmark=/ANN,%
11549   Subtype=/Link,%
11550   PDFAFlags=4,%
11551   AcroHighlight=\@pdfhighlight,%
11552   Border=\@pdfborder,%
11553   BorderStyle=\@pdfborderstyle,%
11554   linktype=run,%
11555   Color=\@runbordercolor,%
11556   Action={%
11557     <<%
11558     /S/Launch%
11559     \Hy@SetNewWindow
11560     /F(\Hy@pstringF)%
11561     \ifx\#3\%
11562     \else

```

```

11563      /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
11564      \fi
11565      \Hy@href@nextactionraw
11566      >>%
11567      }%
11568      }%
11569 \endgroup
11570 }
11571 </pdfmark>

```

Unfortunately, some parts of the pdfmark PostScript code depend on vagaries of the dvi driver. We isolate here all the problems.

### 43.9 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.

```

11572 (*dvips)
11573 \providecommand*\XR@ext}{pdf}
11574 \let\Hy@raisedlink\ltx@empty
11575 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
11576 \def\headerps@out#1{\special{! #1}}%
11577 \input{pdfmark.def}%
11578 \ifx\@pdfproducer\relax
11579 \def\@pdfproducer{dvips + Distiller}%
11580 \fi
11581 \providecommand*\@pdfborder{0 0 1}
11582 \providecommand*\@pdfborderstyle{}
11583 \providecommand*\@pdfview{XYZ}
11584 \providecommand*\@pdfviewparams{ H.V}
11585 \def\Hy@BorderArrayPatch{BorderArrayPatch}

11586 \g@addto@macro\Hy@FirstPageHook{%
11587 \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.

```

11588 /DvipsToPDF{72.27 mul Resolution div} def%
11589 /PDFToDvips{72.27 div Resolution mul} def%
11590 /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.

```

11591   product (Ghostscript) search {pop pop pop revision 927 gt}%
11592   {pop false} ifelse%
11593   {%
11594     /BorderArrayPatch{} def%
11595   }%
11596   {%
11597     /BorderArrayPatch{%
11598       [exch{%
11599         dup dup type/integertype eq exch type/realtype eq or%
11600         {BPToDvips}if%
11601       }forall]%
11602     }def%
11603   } 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.

```

11604   /HyperBorder {1 PDFToDvips} def%
11605   /H.V {pdf@hoff pdf@voff null} def%
11606   /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

```

11607   /H.S {%
11608     currentpoint %
11609     HyperBorder add /pdf@lly exch def %
11610     dup DvipsToPDF 72 add /pdf@hoff exch def %
11611     HyperBorder sub /pdf@llx exch def%
11612   } 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

```

11613   /H.L {%
11614     2 sub dup%
11615     /HyperBasePt exch def %
11616     PDFToDvips /HyperBaseDvips exch def %
11617     currentpoint %
11618     HyperBaseDvips sub /pdf@ury exch def%
11619     /pdf@urx exch def%
11620   } def%
11621   /H.A {%
11622     H.L %
11623   % |pdf@voff| = the distance from the top of the page to a point

```

```

11624 % |\baselineskip| above the current point in PDF coordinates
11625     currentpoint exch pop %
11626     vsize 72 sub exch DvipsToPDF %
11627     HyperBasePt sub % baseline skip
11628     sub /pdf@voff exch def%
11629 } def%
11630 /H.R {%
11631     currentpoint %
11632     HyperBorder sub /pdf@ury exch def %
11633     HyperBorder add /pdf@urx exch def %
11634 % |/pdf@voff| = the distance from the top of the page to the current point, in
11635 % PDF coordinates
11636     currentpoint exch pop vsize 72 sub %
11637     exch DvipsToPDF sub /pdf@voff exch def%
11638 } def%
11639 }%
11640 }
11641 \AtBeginShipoutFirst{%
11642 \ifHy@setpagesize
11643 \begingroup
11644 \ifnum\mag=\@m
11645 \ifdim\stockwidth>\z@
11646 \ifdim\stockheight>\z@
11647 \special{papersize=\the\stockwidth,\the\stockheight}%
11648 \else
11649 \ifdim\paperwidth>\z@
11650 \ifdim\paperheight>\z@
11651 \special{papersize=\the\paperwidth,\the\paperheight}%
11652 \fi
11653 \fi
11654 \fi
11655 \else
11656 \ifdim\stockwidth=\z@
11657 \ifdim\paperwidth>\z@
11658 \ifdim\paperheight>\z@
11659 \special{papersize=\the\paperwidth,\the\paperheight}%
11660 \fi
11661 \fi
11662 \fi
11663 \fi
11664 \fi
11665 \endgroup
11666 \fi
11667 \Hy@DisableOption{setpagesize}%
11668 }
11669 \def\setpdfinkmargin#1{%
11670 \begingroup
11671 \setlength{\dimen@}{#1}%
11672 \literalps@out{%
11673 /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
11674 }%
11675 \endgroup
11676 }

```



11677  $\langle$ /dvips $\rangle$

### 43.10 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.

```

11678  $\langle$ *vtexpdfmark $\rangle$ 
11679 \providecommand*\XR@ext}{pdf}
11680 \let\Hy@raisedlink\ltx@empty
11681 \def\literalps@out#1{\special{pS:#1}}%
11682 \def\headerps@out#1{\immediate\special{pS:#1}}%
11683 \input{pdfmark.def}%
11684 \ifx\@pdfproducer\relax
11685   \ifnum\OpMode=\@ne
11686     \def\@pdfproducer{VTeX}%
11687   \else
11688     \def\@pdfproducer{VTeX + Distiller}%
11689   \fi
11690 \fi
11691 \providecommand*\@pdfborder{0 0 1}
11692 \providecommand*\@pdfborderstyle{}
11693 \providecommand*\@pdfview{XYZ}
11694 \providecommand*\@pdfviewparams{ H.V}
11695 \g@addto@macro\Hy@FirstPageHook{%
11696   \headerps@out{%
11697     /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.

```

11698   /HyperBorder {1} def%
11699   /H.V {pdf@hoff pdf@voff null} def%
11700   /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: pdf@lly =  $Y_c - \text{HyperBorder}$ , pdf@hoff =  $X_c + 72$ , pdf@llx =  $X_c - \text{HyperBorder}$

```

11701   /H.S {%
11702     currentpoint %
11703     HyperBorder sub%
11704     /pdf@lly exch def %
11705     dup 72 add /pdf@hoff exch def %
11706     HyperBorder sub%
11707     /pdf@llx exch def%
11708   } def%

```

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

```

11709   /H.L {%
11710     2 sub%
11711     /HyperBasePt exch def %
11712     currentpoint %

```

```

11713   HyperBasePt add HyperBorder add%
11714   /pdf@ury exch def %
11715   HyperBorder add%
11716   /pdf@urx exch def%
11717   } def%
11718   /H.A {%
11719   H.L %
11720   currentpoint exch pop %
11721   vsize 72 sub exch %
11722   HyperBasePt add add%
11723   /pdf@voff exch def%
11724   } def%
pdf@ury =  $Y_c$  + HyperBorder, pdf@urx =  $X_c$  + HyperBorder
11725   /H.R {%
11726   currentpoint %
11727   HyperBorder add%
11728   /pdf@ury exch def %
11729   HyperBorder add%
11730   /pdf@urx exch def %
11731   currentpoint exch pop vsize 72 sub add%
11732   /pdf@voff exch def%
11733   } def%
11734   }%
11735   }

11736 \def\setpdfinkmargin#1{%
11737 \begingroup
11738 \setlength{\dimen@}{#1}%
11739 \literalps@out{%
11740 /HyperBorder{\strip@pt\dimen@}def%
11741 }%
11742 \endgroup
11743 }

11744 </vtxpdfmark>

```

### 43.11 Textures

```

11745 <*textures>
11746 \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.

```

11747 \begingroup
11748 \obeylines %
11749 \gdef\Hy@ps@CR{\noexpand
11750 }%
11751 \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`.

```
11752 \def\literalps@out#1{%
11753   \special{postscript 0 0 transform}%
11754   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
11755 }%
11756 %
```

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.

```
11757 \def\headerps@out#1{%
11758   \special{%
11759     prepostscript TeXdict begin\Hy@ps@CR
11760     #1\Hy@ps@CR
11761     end%
11762   }%
11763 }%
11764 %
```

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.

```
11765 \g@addto@macro\Hy@FirstPageHook{%
11766   \headerps@out{%
11767     /betterpdfmark {%
11768       systemdict begin %
11769       dup /BP eq%
11770       {cleartomark gsave nulldevice []}%
11771       {dup /EP eq%
11772        {cleartomark cleartomark grestore}%
11773        {cleartomark}%
11774        ifelse%
11775       }ifelse %
11776     end%
11777   }def\Hy@ps@CR
11778   ___pdfmark___ not{/pdfmark /betterpdfmark load def}if%
11779 }% end of \headerps@out
11780 }% end of \AtBeginShipoutFirst
11781 %
11782 \input{pdfmark.def}%
11783 %
11784 \ifx\@pdfproducer\relax
11785   \def\@pdfproducer{Textures + Distiller}%
11786 \fi
```

```

11787 \providecommand*\@pdfborder{0 0 1}
11788 \providecommand*\@pdfborderstyle{}
11789 \providecommand*\@pdfview{XYZ}
11790 \providecommand*\@pdfviewparams{ H.V}
11791 %

```

These are called at the start and end of unboxed links; their job is to leave available PS variables called `pdf@llx pdf@lly pdf@urx pdf@ury`, which are the coordinates of the bounding rectangle of the link, and `pdf@hoff pdf@voff` which are the PDF page offsets. The `Rect` pair are called at the LL and UR corners of a box known to  $\text{\TeX}$ .

```

11792 \Hy@AtBeginDocument{%
11793   \headerps@out{%

```

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

```

11794   /vsize {\Hy@pageheight} def%
11795   /DvipsToPDF {} def%
11796   /PDFToDvips {} def%
11797   /BPToDvips {} def%
11798   /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
11799   /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
11800   /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
11801   /H.S {%
11802     currentpoint %
11803     HyperBorder add /pdf@lly exch def %
11804     dup DvipsToPDF 72 add /pdf@hoff exch def %
11805     HyperBorder sub /pdf@llx exch def%
11806   } def\Hy@ps@CR
11807   /H.L {%
11808     2 sub %
11809     PDFToDvips /HyperBase exch def %
11810     currentpoint %
11811     HyperBase sub /pdf@ury exch def%
11812     /pdf@urx exch def%
11813   } def\Hy@ps@CR
11814   /H.A {%
11815     H.L %
11816     currentpoint exch pop %
11817     vsize 72 sub exch DvipsToPDF %
11818     HyperBase sub % baseline skip
11819     sub /pdf@voff exch def%
11820   } def\Hy@ps@CR
11821   /H.R {%
11822     currentpoint %
11823     HyperBorder sub /pdf@ury exch def %
11824     HyperBorder add /pdf@urx exch def %
11825     currentpoint exch pop vsize 72 sub %
11826     exch DvipsToPDF sub /pdf@voff exch def%
11827   } def\Hy@ps@CR
11828 }%
11829 }

11830 \def\setpdfinkmargin#1{%
11831   \begingroup

```

```

11832 \setlength{\dimen@}{#1}%
11833 \literalps@out{%
11834   /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
11835 }%
11836 \endgroup
11837 }

11838 \Hy@AtBeginDocument{%
11839   \ifHy@colorlinks
11840     \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
11841   \fi
11842 }

```

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.

```

11843 \expandafter\let\expandafter\keepPDF@SetupDoc
11844   \csname PDF@SetupDoc\endcsname
11845 \def\PDF@SetupDoc{%
11846   \ifx\@baseurl\@empty
11847   \else
11848     \special{html:<base href="\@baseurl">}%
11849   \fi
11850   \keepPDF@SetupDoc
11851 }

11852 \Hy@WrapperDef\hyper@anchor#1{%
11853   \Hy@SaveLastskip
11854   \Hy@VerboseAnchor{#1}%
11855   \begingroup
11856     \let\protect=\string
11857     \special{html:<a name=%
11858       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11859   \endgroup
11860   \Hy@activeanchortrue
11861   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
11862   \special{html:</a>}%
11863   \Hy@activeanchorfalse
11864   \Hy@RestoreLastskip
11865 }

11866 \Hy@WrapperDef\hyper@anchorstart#1{%
11867   \Hy@SaveLastskip
11868   \Hy@VerboseAnchor{#1}%
11869   \begingroup
11870     \hyper@chars
11871     \special{html:<a name=%
11872       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11873   \endgroup
11874   \Hy@activeanchortrue
11875 }

11876 \def\hyper@anchorend{%
11877   \special{html:</a>}%
11878   \Hy@activeanchorfalse
11879   \Hy@RestoreLastskip
11880 }

11881 \def\@urltype{url}

```

```

11882 \def\hyper@linkstart#1#2{%
11883   \Hy@VerboseLinkStart{#1}{#2}%
11884   \expandafter\Hy@colorlink\csname @#1color\endcsname
11885   \def\Hy@tempa{#1}%
11886   \ifx\Hy@tempa\@urltype
11887     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11888   \else
11889     \begingroup
11890       \hyper@chars
11891       \special{%
11892         html:<a href=%
11893         \hyper@quote\#\Hy@DestNameFilter{#2}\hyper@quote>%
11894       }%
11895     \endgroup
11896   \fi
11897 }
11898 \def\hyper@linkend{%
11899   \special{html:</a>}%
11900   \Hy@endcolorlink
11901 }
11902 \def\hyper@linkfile#1#2#3{%
11903   \hyper@linkurl{#1}{%
11904     \Hy@linkfileprefix#2\ifx\#3\\ \else\##3\fi
11905   }%
11906 }
11907 \def\hyper@linkurl#1#2{%
11908   \leavevmode
11909   \ifHy@raiselinks
11910     \Hy@SaveSpaceFactor
11911     \Hy@SaveSavedSpaceFactor
11912     \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
11913     \Hy@RestoreSavedSpaceFactor
11914     \@linkdim\dp\@tempboxa
11915     \lower\@linkdim\hbox{%
11916       \hyper@chars
11917       \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11918     }%
11919     \Hy@colorlink\@urlcolor
11920     \Hy@RestoreSpaceFactor
11921     #1\Hy@xspace@end
11922     \Hy@SaveSpaceFactor
11923     \@linkdim\ht\@tempboxa
11924     \advance\@linkdim by -6.5\p@
11925     \raise\@linkdim\hbox{\special{html:</a>}}%
11926     \Hy@endcolorlink
11927     \Hy@RestoreSpaceFactor
11928   \else
11929     \begingroup
11930       \hyper@chars
11931       \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11932       \Hy@colorlink\@urlcolor#1\Hy@xspace@end
11933       \special{html:</a>}%
11934       \Hy@endcolorlink
11935     \endgroup

```

```

11936 \fi
11937 }
Very poor implementation of \hyper@link without considering #1.
11938 \def\hyper@link#1#2#3{%
11939 \Hy@VerboseLinkStart{#1}{#2}%
11940 \hyper@linkurl{#3}{\# \HyperDestNameFilter{#2}}}%
11941 }
11942 \def\hyper@image#1#2{%
11943 \begingroup
11944 \hyper@chars
11945 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
11946 \endgroup
11947 }
11948 </textures>

```

### 43.12 dvipsone

```

11949 % \subsection{dvipsone driver}
11950 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
11951 % |\special| commands.
11952 (*dvipsone)
11953 \providecommand*\XR@ext}{pdf}
11954 \let\Hy@raisedlink\ltx@empty
11955 \providecommand*\@pdfborder{0 0 1}
11956 \providecommand*\@pdfborderstyle{}
11957 \def\literalps@out#1{\special{ps:#1}}%
11958 \def\headerps@out#1{\special{headertext=#1}}%
11959 \input{pdfmark.def}%
11960 \HyInfo@AddonUnsupportedtrue
11961 \def\PDF@FinishDoc{%
11962 \Hy@UseMaketitleInfos
11963 \HyInfo@TrappedUnsupported
11964 \special{PDF: Keywords \@pdfkeywords}%
11965 \special{PDF: Title \@pdftitle}%
11966 \special{PDF: Creator \@pdfcreator}%
11967 \ifx\@pdfcreationdate\@empty
11968 \else
11969 \special{PDF: CreationDate \@pdfcreationdate}%
11970 \fi
11971 \ifx\@pdfmoddate\@empty
11972 \else
11973 \special{PDF: ModDate \@pdfmoddate}%
11974 \fi
11975 \special{PDF: Author \@pdfauthor}%
11976 \ifx\@pdfproducer\relax
11977 \else
11978 \special{PDF: Producer \@pdfproducer}%
11979 \fi
11980 \special{PDF: Subject \@pdfsubject}%
11981 \Hy@DisableOption{pdfauthor}%
11982 \Hy@DisableOption{pdftitle}%
11983 \Hy@DisableOption{pdfsubject}%
11984 \Hy@DisableOption{pdfcreator}%

```

```

11985 \Hy@DisableOption{addtopdfcreator}%
11986 \Hy@DisableOption{pdfcreationdate}%
11987 \Hy@DisableOption{pdfcreationdate}%
11988 \Hy@DisableOption{pdfmoddate}%
11989 \Hy@DisableOption{pdfproducer}%
11990 \Hy@DisableOption{pdfkeywords}%
11991 \Hy@DisableOption{pdftrapped}%
11992 \Hy@DisableOption{pdfinfo}%
11993 }
11994 \def\PDF@SetupDoc{%
11995 \def\Hy@temp{}%
11996 \ifx\@pdfstartpage\@empty
11997 \else
11998 \ifx\@pdfstartview\@empty
11999 \else
12000 \edef\Hy@temp{%
12001 ,Page=\@pdfstartpage
12002 ,View=\@pdfstartview
12003 }%
12004 \fi
12005 \fi
12006 \edef\Hy@temp{%
12007 \noexpand\pdfmark{%
12008 pdfmark=/DOCVIEW,%
12009 PageMode=/\@pdfpagemode
12010 \Hy@temp
12011 }%
12012 }%
12013 \Hy@temp
12014 \ifx\@pdfpagescrop\@empty
12015 \else
12016 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
12017 \fi
12018 \edef\Hy@temp{%
12019 \ifHy@pdftoolbar\else /HideToolbar true\fi
12020 \ifHy@pdfmenubar\else /HideMenubar true\fi
12021 \ifHy@pdfwindowui\else /HideWindowUI true\fi
12022 \ifHy@pdfwindow /FitWindow true\fi
12023 \ifHy@pdfcenterwindow /CenterWindow true\fi
12024 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
12025 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
12026 \Hy@UseNameKey{Direction}\@pdfdirection
12027 \Hy@UseNameKey{ViewArea}\@pdfviewarea
12028 \Hy@UseNameKey{ViewClip}\@pdfviewclip
12029 \Hy@UseNameKey{PrintArea}\@pdfprintarea
12030 \Hy@UseNameKey{PrintClip}\@pdfprintclip
12031 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
12032 \Hy@UseNameKey{Duplex}\@pdfduplex
12033 \ifx\@pdfpicktraybypdfsize\@empty
12034 \else
12035 /PickTrayByPDFSize \@pdfpicktraybypdfsize
12036 \fi
12037 \ifx\@pdfprintpagerange\@empty
12038 \else

```



```

12039 /PrintPageRange[\@pdfprintpagerange]%
12040 \fi
12041 \ifx\@pdfnumcopies\@empty
12042 \else
12043 /NumCopies \@pdfnumcopies
12044 \fi
12045 }%
12046 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
12047 \pdfmark{%
12048 pdfmark=/PUT,%
12049 Raw={%
12050 \string{Catalog\string}<<%
12051 \ifx\Hy@temp\@empty
12052 \else
12053 /ViewerPreferences<<\Hy@temp>>%
12054 \fi
12055 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
12056 \ifx\@pdflang\relax
12057 \else
12058 /Lang(\@pdflang)%
12059 \fi
12060 \ifx\@baseurl\@empty
12061 \else
12062 /URI<</Base(\Hy@pstringB)>>%
12063 \fi
12064 >>%
12065 }%
12066 }%
12067 }
12068 \providecommand*\@pdfview{XYZ}
12069 \providecommand*\@pdfviewparams{ %
12070 gsave revscl currentpoint grestore %
12071 72 add exch pop null exch null%
12072 }
12073 \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  $\TeX$ .

```

12074 \g@addto@macro\Hy@FirstPageHook{%
12075 \headerps@out{%

```

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

```

12076 /DvipsToPDF { 65781 div } def%
12077 /PDFToDvips { 65781 mul } def%
12078 /BPToDvips{65781 mul}def%
12079 /HyperBorder { 1 PDFToDvips } def%
12080 /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.

```

12081 /BorderArrayPatch{%

```

```

12082 [exch{%
12083   dup dup type/integertype eq exch type/realttype eq or%
12084   {BPToDvips}if%
12085   }forall]%
12086 }def%
12087 /H.S {%
12088   currentpoint %
12089   HyperBorder add /pdf@lly exch def %
12090   dup DvipsToPDF 72 add /pdf@hoff exch def %
12091   HyperBorder sub /pdf@llx exch def%
12092 } def%
12093 /H.L {%
12094   2 sub %
12095   PDFToDvips /HyperBase exch def %
12096   currentpoint %
12097   HyperBase sub /pdf@ury exch def%
12098   /pdf@urx exch def%
12099 } def%
12100 /H.A {%
12101   H.L %
12102   currentpoint exch pop %
12103   HyperBase sub % baseline skip
12104   DvipsToPDF /pdf@voff exch def%
12105 } def%
12106 /H.R {%
12107   currentpoint %
12108   HyperBorder sub /pdf@ury exch def %
12109   HyperBorder add /pdf@urx exch def %
12110   currentpoint exch pop DvipsToPDF /pdf@voff exch def%
12111 } def%
12112 }%
12113 }
12114 \def\setpdfinkmargin#1{%
12115   \begingroup
12116     \setlength{\dimen@}{#1}%
12117     \literalps@out{%
12118       /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
12119     }%
12120   \endgroup
12121 }
12122 </dvipsone>

```

### 43.13 TeX4ht

```

12123 <*tex4ht>
12124 \providecommand*\XR@ext{\html}
12125 \let\Hy@raisedlink\ltx@empty
12126 \@ifpackageloaded{tex4ht}{%
12127   \Hy@InfoNoLine{tex4ht is already loaded}%
12128 }{%
12129   \RequirePackage[htex4ht]{tex4ht}%
12130 }
12131 \hyperlinkfileprefix{}
12132 \let\PDF@FinishDoc\ltx@empty

```

```

12133 \def\PDF@SetupDoc{%
12134   \ifx\@baseurl\@empty
12135   \else
12136     \special{t4ht=<base href="\@baseurl">}%
12137   \fi
12138 }
12139 \Hy@WrapperDef\hyper@anchor#1{%
12140   \Hy@SaveLastskip
12141   \Hy@VerboseAnchor{#1}%
12142   \begingroup
12143     \let\protect=\string
12144     \special{t4ht=<a name=%
12145       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12146   \endgroup
12147   \Hy@Activeanchortrue
12148   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
12149   \special{t4ht=</a>}%
12150   \Hy@Activeanchorfalse
12151   \Hy@RestoreLastskip
12152 }
12153 \Hy@WrapperDef\hyper@anchorstart#1{%
12154   \Hy@SaveLastskip
12155   \Hy@VerboseAnchor{#1}%
12156   \begingroup
12157     \hyper@chars\special{t4ht=<a name=%
12158       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12159   \endgroup
12160   \Hy@Activeanchortrue
12161 }
12162 \def\hyper@anchorend{%
12163   \special{t4ht=</a>}%
12164   \Hy@Activeanchorfalse
12165   \Hy@RestoreLastskip
12166 }
12167 \def\@urltype{url}
12168 \def\hyper@linkstart#1#2{%
12169   \Hy@VerboseLinkStart{#1}{#2}%
12170   \expandafter\Hy@colorlink\csname @#1color\endcsname
12171   \def\Hy@tempa{#1}%
12172   \ifx\Hy@tempa\@urltype
12173     \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12174   \else
12175     \begingroup
12176       \hyper@chars
12177       \special{t4ht=<a href=%
12178         \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
12179     \endgroup
12180   \fi
12181 }
12182 \def\hyper@linkend{%
12183   \special{t4ht=</a>}%
12184   \Hy@endcolorlink
12185 }
12186 \def\hyper@linkfile#1#2#3{%

```

```

12187 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
12188 }
12189 \def\hyper@linkurl#1#2{%
12190 \leavevmode
12191 \ifHy@raiselinks
12192 \Hy@SaveSpaceFactor
12193 \Hy@SaveSavedSpaceFactor
12194 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
12195 \Hy@RestoreSavedSpaceFactor
12196 \@linkdim\dp\@tempboxa
12197 \lower\@linkdim\hbox{%
12198 \begingroup
12199 \hyper@chars
12200 \special{%
12201 t4ht=<a href=\hyper@quote#2\hyper@quote>%
12202 }%
12203 \endgroup
12204 }%
12205 \Hy@colorlink\@urlcolor
12206 \Hy@RestoreSpaceFactor
12207 #1\Hy@xspace@end
12208 \Hy@SaveSpaceFactor
12209 \Hy@endcolorlink
12210 \@linkdim\ht\@tempboxa
12211 \advance\@linkdim by -6.5\p@
12212 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
12213 \Hy@RestoreSpaceFactor
12214 \else
12215 \begingroup
12216 \hyper@chars
12217 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12218 \Hy@colorlink\@urlcolor
12219 #1\Hy@xspace@end
12220 \Hy@endcolorlink
12221 \special{t4ht=</a>}%
12222 \endgroup
12223 \fi
12224 }

```

Poor implementation of \hyper@link without considering #1.

```

12225 \def\hyper@link#1#2#3{%
12226 \Hy@VerboseLinkStart{#1}{#2}%
12227 \hyper@linkurl{#3}{\# \Hy@HyperDestNameFilter{#2}}%
12228 }
12229 \def\hyper@image#1#2{%
12230 \begingroup
12231 \hyper@chars
12232 \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
12233 \endgroup
12234 }
12235 \let\autoref\ref
12236 \ifx \rEfLiNK \UnDef
12237 \def\rEfLiNK #1#2{#2}%
12238 \fi
12239 \let\backref\ltx@gobble

```

Fix for tex4ht.

```
12240 \AtBeginDocument{%
12241   \expandafter
12242   \let\expandafter\Hy@OrgMakeLabel\csname Make:Label\endcsname
12243   \expandafter\def\csname Make:Label\endcsname#1#2{%
12244     \ifhmode
12245       \Hy@SaveSpaceFactor
12246     \else
12247       \global\Hy@SavedSpaceFactor=1000 %
12248     \fi
12249     \Hy@OrgMakeLabel{#1}{%
12250       \Hy@RestoreSpaceFactor
12251       #2\Hy@xspace@end%
12252       \Hy@SaveSpaceFactor
12253     }%
12254     \Hy@RestoreSpaceFactor
12255   }%
12256 }
12257 </tex4ht>
12258 <*tex4htcfg>
12259 \IfFileExists{\jobname.cfg}{\endinput}{}
12260 \Preamble{html}
12261   \begin{document}%
12262 \EndPreamble
12263 \def\TeX{\TeX}
12264 \def\OMEGA{\Omega}
12265 \def\LaTeX{\LaTeX}
12266 \def\LaTeXe{\LaTeX2e}
12267 \def\eTeX{e-TeX}
12268 \def\MF{Metafont}
12269 \def\MP{MetaPost}
12270 </tex4htcfg>
```

## 44 Driver-specific form support

### 44.1 pdfmarks

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

```
12271 <*pdfmark>
12272 \long\def\@Form[#1]{%
12273   \g@addto@macro\Hy@FirstPageHook{%
12274     \headerps@out{%
12275       [%
12276         /_objdef{pdfDocEncoding}%
12277         /type/dict%
12278         /OBJ pdfmark%
12279         [%
12280           {pdfDocEncoding}%
12281           <<%
12282             /Type/Encoding%
12283             /Differences[%
12284               24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
12285               /tilde %
12286               39/quotesingle %
```

12287 96/grave %  
 12288 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%  
 12289 /fraction/guilsinglleft/guilsinglright/minus/perthousand%  
 12290 /quotedblbase/quotedblleft/quotedblright/quoteleft%  
 12291 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%  
 12292 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %  
 12293 160/Euro %  
 12294 164/currency %  
 12295 166/brokenbar %  
 12296 168/dieresis/copyright/ordfeminine %  
 12297 172/logicalnot/.notdef/registered/macron/degree/plusminus%  
 12298 /twosuperior/threesuperior/acute/mu %  
 12299 183/periodcentered/cedilla/onesuperior/ordmasculine %  
 12300 188/onequarter/onehalf/threequarters %  
 12301 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%  
 12302 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%  
 12303 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%  
 12304 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%  
 12305 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%  
 12306 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%  
 12307 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%  
 12308 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%  
 12309 /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%  
 12310 /ucircumflex/udieresis/yacute/thorn/ydieresis%  
 12311 ]%  
 12312 >>%  
 12313 /PUT pdfmark%  
 12314 [%  
 12315 /\_objdef{ZaDb}%  
 12316 /type/dict%  
 12317 /OBJ pdfmark%  
 12318 [%  
 12319 {ZaDb}%  
 12320 <<%  
 12321 /Type/Font%  
 12322 /Subtype/Type1%  
 12323 /Name/ZaDb%  
 12324 /BaseFont/ZapfDingbats%  
 12325 >>%  
 12326 /PUT pdfmark%  
 12327 [%  
 12328 /\_objdef{Helv}%  
 12329 /type/dict%  
 12330 /OBJ pdfmark%  
 12331 [%  
 12332 {Helv}%  
 12333 <<%  
 12334 /Type/Font%  
 12335 /Subtype/Type1%  
 12336 /Name/Helv%  
 12337 /BaseFont/Helvetica%  
 12338 /Encoding{pdfDocEncoding}%  
 12339 >>%  
 12340 /PUT pdfmark%

```

12341 [%
12342  /_objdef{aform}%
12343  /type/dict%
12344 /OBJ pdfmark%
12345 [%
12346  /_objdef{afields}%
12347  /type/array%
12348 /OBJ pdfmark%
12349 [%
12350  /_objdef{corder}%
12351  /type/array%
12352 /OBJ pdfmark%
12353 {%
12354  [%
12355    /BBox[0 0 100 100]%
12356    /_objdef{Check}%
12357    /BP pdfmark %
12358    1 0 0 setrgbcolor%
12359    /ZapfDingbats 80 selectfont %
12360    20 20 moveto%
12361    (4)show%
12362    [/EP pdfmark%
12363    [%
12364      /BBox[0 0 100 100]%
12365      /_objdef{Cross}%
12366      /BP pdfmark %
12367      1 0 0 setrgbcolor%
12368      /ZapfDingbats 80 selectfont %
12369      20 20 moveto%
12370      (8)show%
12371      [/EP pdfmark%
12372      [%
12373        /BBox[0 0 250 100]%
12374        /_objdef{Submit}%
12375        /BP pdfmark %
12376        0.6 setgray %
12377        0 0 250 100 rectfill %
12378        1 setgray %
12379        2 2 moveto %
12380        2 98 lineto %
12381        248 98 lineto %
12382        246 96 lineto %
12383        4 96 lineto %
12384        4 4 lineto %
12385        fill %
12386        0.34 setgray %
12387        248 98 moveto %
12388        248 2 lineto %
12389        2 2 lineto %
12390        4 4 lineto %
12391        246 4 lineto %
12392        246 96 lineto %
12393        fill%
12394    /Helvetica 76 selectfont %

```

```

12395 0 setgray %
12396 8 22.5 moveto%
12397 (Submit)show%
12398 [/EP pdfmark%
12399 [%
12400 /BBox[0 0 250 100]%
12401 /_objdef{SubmitP}%
12402 /BP pdfmark %
12403 0.6 setgray %
12404 0 0 250 100 rectfill %
12405 0.34 setgray %
12406 2 2 moveto %
12407 2 98 lineto %
12408 248 98 lineto %
12409 246 96 lineto %
12410 4 96 lineto %
12411 4 4 lineto %
12412 fill %
12413 1 setgray %
12414 248 98 moveto %
12415 248 2 lineto %
12416 2 2 lineto %
12417 4 4 lineto %
12418 246 4 lineto %
12419 246 96 lineto %
12420 fill%
12421 /Helvetica 76 selectfont %
12422 0 setgray %
12423 10 20.5 moveto%
12424 (Submit)show%
12425 [/EP pdfmark%
12426 } ?pdfmark%
12427 [%
12428 {aform}%
12429 <<%
12430 /Fields{afields}%
12431 /DR<<%
12432 /Font<<%
12433 /ZaDb{ZaDb}%
12434 /Helv{Helv}%
12435 >>%
12436 >>%
12437 /DA(/Helv 10 Tf 0 g)%
12438 /CO{corder}%
12439 \ifHy@pdfa
12440 \else
12441 \ifHyField@NeedAppearances
12442 /NeedAppearances true%
12443 \fi
12444 \fi
12445 >>%
12446 /PUT pdfmark%
12447 [%
12448 {Catalog}%

```



```

12449 <<%
12450 /AcroForm{aform}%
12451 >>%
12452 /PUT pdfmark%
12453 }}%
12454 \kvsetkeys{Form}{#1}%
12455 }
12456 \let\@endForm\ltx@empty
12457 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12458 \Hy@Message{Sorry, pdfmark drivers do not support FORM gauges}%
12459 }

12460 \newcount\HyField@AnnotCount
12461 \HyField@AnnotCount=\z@
12462 \def\HyField@AdvanceAnnotCount{%
12463 \global\advance\HyField@AnnotCount\@ne
12464 }
12465 \def\HyField@TheAnnotCount{%
12466 \the\HyField@AnnotCount
12467 }

12468 \edef\Fld@pageobjref{/P\string{ThisPage\string}}
12469 \def\HyField@AddToFields#1{%
12470 \pdfmark{%
12471 pdfmark=/APPEND,%
12472 Raw={%
12473 \string{afields\string}%
12474 \string{#1\HyField@TheAnnotCount\string}%
12475 }%
12476 }%
12477 \ifx\Fld@calculate@code\ltx@empty
12478 \else
12479 \pdfmark{%
12480 pdfmark=/APPEND,%
12481 Raw={%
12482 \string{corder\string}%
12483 \string{#1\HyField@TheAnnotCount\string}%
12484 }%
12485 }%
12486 \fi
12487 }

12488 \def\@TextField[#1]#2{% parameters, label
12489 \def\Fld@name{#2}%
12490 \let\Fld@default\ltx@empty
12491 \let\Fld@value\@empty
12492 \def\Fld@width{\DefaultWidthofText}%
12493 \def\Fld@height{%
12494 \ifFld@multiline
12495 \DefaultHeightofTextMultiline
12496 \else
12497 \DefaultHeightofText
12498 \fi
12499 }%
12500 \begingroup
12501 \expandafter\HyField@SetKeys\expandafter{%

```

```

12502     \DefaultOptionsofText,#1%
12503 }%
12504 \HyField@FlagsText
12505 \ifFld@hidden\def\Fld@width{1sp}\fi
12506 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12507 \HyField@AdvanceAnnotCount
12508 \LayoutTextField{#2}{%
12509     \leavevmode
12510     \Hy@escapeform\PDFForm@Text
12511     \pdfmark{\MakeTextField{\Fld@width}{\Fld@height}}{%
12512         pdfmark=/ANN,%
12513         objdef=text\HyField@TheAnnotCount,%
12514         Raw={\PDFForm@Text}%
12515     }%
12516 }%
12517 \HyField@AddToFields{text}%
12518 \endgroup
12519 }
12520 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12521     \def\Fld@name{#2}%
12522     \let\Fld@default\relax
12523     \let\Fld@value\relax
12524     \def\Fld@width{\DefaultWidthofChoiceMenu}%
12525     \def\Fld@height{\DefaultHeightofChoiceMenu}%
12526     \begingroup
12527     \Fld@menulength=0 %
12528     \@tempdima\z@
12529     \@for\@curropt:=#3\do{%
12530         \expandafter\Fld@checkequals\@curropt==\%
12531         \Hy@StepCount\Fld@menulength
12532         \settowidth{\@tempdimb}{\@currDisplay}%
12533         \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12534     }%
12535     \advance\@tempdima by 15\p@
12536     \begingroup
12537     \HyField@SetKeys{#1}%
12538     \edef\x{\endgroup
12539         \noexpand\expandafter
12540         \noexpand\HyField@SetKeys
12541         \noexpand\expandafter{%
12542             \expandafter\noexpand\cname DefaultOptionsof%
12543             \ifFld@radio
12544                 Radio%
12545             \else
12546                 \ifFld@combo
12547                     \ifFld@popdown
12548                         PopdownBox%
12549                     \else
12550                         ComboBox%
12551                     \fi
12552                 \else
12553                     ListBox%
12554                 \fi
12555             \fi

```

```

12556     \endcsname
12557   }%
12558 } \x
12559 \HyField@SetKeys{#1}%
12560 \ifFld@hidden\def\Fld@width{1sp}\fi
12561 \ifx\Fld@value\relax
12562   \let\Fld@value\Fld@default
12563 \fi
12564 \LayoutChoiceField{#2}{%
12565   \ifFld@radio
12566     \HyField@FlagsRadioButton
12567     \@@Radio{#3}%
12568   \else
12569     \begingroup
12570     \HyField@FlagsChoice
12571     \ifdim\Fld@width<\@tempdima
12572       \ifdim\@tempdima<1cm\@tempdima1cm\fi
12573       \edef\Fld@width{\the\@tempdima}%
12574     \fi
12575     \ifFld@combo
12576     \else
12577       \@tempdima=\the\Fld@menulength\Fld@charsize
12578       \advance\@tempdima by \Fld@borderwidth bp %
12579       \advance\@tempdima by \Fld@borderwidth bp %
12580       \edef\Fld@height{\the\@tempdima}%
12581     \fi
12582     \@@ListBox{#3}%
12583   \endgroup
12584 \fi
12585 }%
12586 \endgroup
12587 }
12588 \def\@@Radio#1{%
12589   \Fld@listcount=0 %
12590   \EdefEscapeName\Fld@default{\Fld@default}%
12591   \@for\@curropt:=#1\do{%
12592     \expandafter\Fld@checkequals\@curropt==\%
12593     \EdefEscapeName\@currValue{\@currValue}%
12594     \Hy@StepCount\Fld@listcount
12595     \@currDisplay\space
12596     \Hy@escapeform\PDFForm@Radio
12597     \ifnum\Fld@listcount=1 %
12598       \HyField@AdvanceAnnotCount
12599     \fi
12600     \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
12601       pdfmark=/ANN,%
12602       objdef=\ifnum\Fld@listcount=1 radio\HyField@TheAnnotCount\fi,%
12603       Raw={%
12604         \PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>%
12605       }%
12606     } % deliberate space between radio buttons
12607     \ifnum\Fld@listcount=1 %
12608       \HyField@AddToFields{radio}%
12609     \fi

```

```

12610 }%
12611 }
12612 \newcount\Fld@listcount
12613 \def\@@ListBox#1{%
12614   \HyField@PDFChoices{#1}%
12615   \Hy@escapeform\PDFForm@List
12616   \HyField@AdvanceAnnotCount
12617   \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
12618     pdfmark=/ANN,%
12619     objdef=list\HyField@TheAnnotCount,%
12620     Raw={\PDFForm@List}%
12621   }%
12622   \HyField@AddToFields{list}%
12623 }
12624 \def\@PushButton[#1]#2{% parameters, label
12625   \def\Fld@name{#2}%
12626   \begingroup
12627     \expandafter\HyField@SetKeys\expandafter{%
12628       \DefaultOptionsofPushButton,#1%
12629     }%
12630     \ifHy@pdfa
12631       \Hy@Error{%
12632         PDF/A: Push button with JavaScript is prohibited%
12633       }\@ehc
12634       \LayoutPushButtonField{%
12635         \leavevmode
12636         \MakeButtonField{#2}%
12637       }%
12638     \else
12639       \HyField@FlagsPushButton
12640       \iffld@hidden\def\Fld@width{1sp}\fi
12641       \HyField@AdvanceAnnotCount
12642       \LayoutPushButtonField{%
12643         \leavevmode
12644         \Hy@escapeform\PDFForm@Push
12645         \pdfmark[\MakeButtonField{#2}]{%
12646           pdfmark=/ANN,%
12647           objdef=push\HyField@TheAnnotCount,%
12648           Raw={\PDFForm@Push}%
12649         }%
12650       }%
12651       \HyField@AddToFields{push}%
12652     \fi
12653   \endgroup
12654 }
12655 \def\@Submit[#1]#2{%
12656   \def\Fld@width{\DefaultWidthofSubmit}%
12657   \def\Fld@height{\DefaultHeightofSubmit}%
12658   \begingroup
12659     \expandafter\HyField@SetKeys\expandafter{%
12660       \DefaultOptionsofSubmit,#1%
12661     }%
12662     \HyField@FlagsPushButton
12663     \HyField@FlagsSubmit

```

```

12664 \ifFld@hidden\def\Fld@width{1sp}\fi
12665 \Hy@escapeform\PDFForm@Submit
12666 \HyField@AdvanceAnnotCount
12667 \pdfmark[\MakeButtonField{#2}]{%
12668   pdfmark=/ANN,%
12669   objdef=submit\HyField@TheAnnotCount,%
12670   Raw={\PDFForm@Submit /AP<</N{Submit}/D{SubmitP}>>}}%
12671 }%
12672 \HyField@AddToFields{submit}%
12673 \endgroup
12674 }
12675 \def\@Reset[#1]#2{%
12676   \def\Fld@width{\DefaultWidthofReset}%
12677   \def\Fld@height{\DefaultHeightofReset}%
12678   \begingroup
12679     \expandafter\HyField@SetKeys\expandafter{%
12680       \DefaultOptionsofReset,#1%
12681     }%
12682     \leavevmode
12683     \ifHy@pdfa
12684       \Hy@Error{%
12685         PDF/A: Reset action is prohibited%
12686       }\@ehc
12687       \MakeButtonField{#2}%
12688     \else
12689       \HyField@FlagsPushButton
12690       \ifFld@hidden\def\Fld@width{1sp}\fi
12691       \Hy@escapeform\PDFForm@Reset
12692       \HyField@AdvanceAnnotCount
12693       \pdfmark[\MakeButtonField{#2}]{%
12694         pdfmark=/ANN,%
12695         objdef=reset\HyField@TheAnnotCount,%
12696         Raw={\PDFForm@Reset}%
12697       }%
12698       \HyField@AddToFields{reset}%
12699     \fi
12700   \endgroup
12701 }%
12702 \def\@CheckBox[#1]#2{% parameters, label
12703   \def\Fld@name{#2}%
12704   \def\Fld@default{0}%
12705   \begingroup
12706     \def\Fld@width{\DefaultWidthofCheckBox}%
12707     \def\Fld@height{\DefaultHeightofCheckBox}%
12708     \expandafter\HyField@SetKeys\expandafter{%
12709       \DefaultOptionsofCheckBox,#1%
12710     }%
12711     \HyField@FlagsCheckBox
12712     \ifFld@hidden\def\Fld@width{1sp}\fi
12713     \HyField@AdvanceAnnotCount
12714     \LayoutCheckField{#2}{%
12715       \leavevmode
12716       \Hy@escapeform\PDFForm@Check
12717       \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%

```

```

12718 pdfmark=/ANN,%
12719 objdef=check\HyField@TheAnnotCount,%
12720 Raw={\PDFForm@Check}%
12721 }%
12722 }%
12723 \HyField@AddToFields{check}%
12724 \endgroup
12725 }
12726 </pdfmark>

```

## 44.2 HyperTeX

```

12727 <*hypertex>
12728 \def\@Form[#1]{%
12729 \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12730 }
12731 \let\@endForm\ltx@empty
12732 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12733 \Hy@Message{Sorry, HyperTeX does not support FORM gauges}%
12734 }
12735 \def\@TextField[#1]#2{% parameters, label
12736 \Hy@Message{Sorry, HyperTeX does not support FORM text fields}%
12737 }
12738 \def\@CheckBox[#1]#2{% parameters, label
12739 \Hy@Message{Sorry, HyperTeX does not support FORM checkboxes}%
12740 }
12741 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12742 \Hy@Message{Sorry, HyperTeX does not support FORM choice menus}%
12743 }
12744 \def\@PushButton[#1]#2{% parameters, label
12745 \Hy@Message{Sorry, HyperTeX does not support FORM pushbuttons}%
12746 }
12747 \def\@Reset[#1]#2{%
12748 \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12749 }
12750 \def\@Submit[#1]#2{%
12751 \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12752 }
12753 </hypertex>

```

## 44.3 TeX4ht

```

12754 <*tex4ht>
12755 \def\@Form[#1]{%
12756 \kvsetkeys{Form}{#1}%
12757 \HCode{<form action="\Form@action" method="\Form@method">}%
12758 }
12759 \def\@endForm{\HCode{</form>}}
12760 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12761 \Hy@Message{Sorry, TeX4ht does not support gauges}%
12762 }
12763 \def\@TextField[#1]#2{% parameters, label
12764 \let\Hy@reserved@a\@empty
12765 \def\Fld@name{#2}%
12766 \let\Fld@default\ltx@empty

```

```

12767 \bgroup
12768 \Field@toks={ }%
12769 \kvsetkeys{Field}{#1}%
12770 \HCode{<label for="\Fld@name">#2</label>}%
12771 \ifFld@password
12772 \@@PasswordField
12773 \else
12774 \@@TextField
12775 \fi
12776 \egroup
12777 }
12778 \def\@@PasswordField{%
12779 \HCode{%
12780 <input type="password" %
12781 id="\Fld@name" %
12782 name="\Fld@name" %
12783 \ifFld@hidden type="hidden" \fi
12784 value="\Fld@default" %
12785 \the\Field@toks
12786 >%
12787 }%
12788 }
12789 \def\@@TextField{%
12790 \ifFld@multiline
12791 \HCode{<textarea %
12792 \ifFld@readonly readonly \fi
12793 id="\Fld@name" %
12794 name="\Fld@name" %
12795 \ifFld@hidden type="hidden" \fi
12796 \the\Field@toks>%
12797 }%
12798 \Fld@default
12799 \HCode{</textarea>}%
12800 \else
12801 \HCode{<input type="text" %
12802 \ifFld@readonly readonly \fi
12803 id="\Fld@name" %
12804 name="\Fld@name" %
12805 \ifFld@hidden type="hidden" \fi
12806 value="\Fld@default" %
12807 \the\Field@toks>%
12808 }%
12809 \fi
12810 }
12811 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12812 \def\Fld@name{#2}%
12813 \let\Fld@default\tx@empty
12814 \let\Hy@reserved@a\relax
12815 \begingroup
12816 \expandafter\Fld@findlength#3\\%
12817 \Field@toks={ }%
12818 \kvsetkeys{Field}{#1}%
12819 #2%
12820 \ifFld@radio

```

```

12821     \expandafter\@@Radio#3\\%
12822     \else
12823         \expandafter\@@Menu#3\\%
12824     \fi
12825 \endgroup
12826 }
12827 \def\Fld@findlength#1\\{%
12828     \Fld@menulength=0 %
12829     \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
12830 }
12831 \def\@@Menu#1\\{%
12832     \HCode{<select size="\the\Fld@menulength" %
12833         name="\Fld@name" %
12834         \the\Field@toks>%
12835     }%
12836     \@for\@curropt:=#1\do{%
12837         \expandafter\Fld@checkequals\@curropt==\\%
12838         \HCode{<option %
12839             \ifx\@curropt\Fld@default selected \fi
12840             value="\@currValue">\@currDisplay</option>%
12841         }%
12842     }%
12843     \HCode{</select>}%
12844 }
12845 \def\@@Radio#1\\{%
12846     \@for\@curropt:=#1\do{%
12847         \expandafter\Fld@checkequals\@curropt==\\%
12848         \HCode{<input type="radio" %
12849             \ifx\@curropt\Fld@default checked \fi
12850             name="\Fld@name" %
12851             value="\@currValue" %
12852             \the\Field@toks>%
12853         }%
12854         \@currDisplay
12855     }%
12856 }
12857 \def\@PushButton[#1]#2{% parameters, label
12858     \def\Fld@name{#2}%
12859     \bgroup
12860     \Field@toks={ }%
12861     \kvsetkeys{Field}{#1}%
12862     \HCode{<input type="button" %
12863         name="\Fld@name" %
12864         value="#2" %
12865         \the\Field@toks>%
12866     }%
12867     \HCode{</button>}%
12868     \egroup
12869 }
12870 \def\@Submit[#1]#2{%
12871     \HCode{<button type="submit">#2</button>}%
12872 }
12873 \def\@Reset[#1]#2{%
12874     \HCode{<button type="reset">#2</button>}%

```



```

12875 }
12876 \def\@CheckBox[#1]#2{% parameters, label
12877 \let\Hy@reserved@a\@empty
12878 \def\Fld@name{#2}%
12879 \def\Fld@default{0}%
12880 \bgroup
12881 \Field@toks={ }%
12882 \kvsetkeys{Field}{#1}%
12883 \HCode{<input type="checkbox" %
12884 \ifFld@checked checked \fi
12885 \ifFld@disabled disabled \fi
12886 \ifFld@readonly readonly \fi
12887 name="\Fld@name" %
12888 \ifFld@hidden type="hidden" \fi
12889 value="\Fld@default" %
12890 \the\Field@toks>%
12891 #2%
12892 }%
12893 \egroup
12894 }
12895 </tex4ht>

```

#### 44.4 pdfTeX

```

12896 (*pdfTeX)
12897 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12898 \Hy@Message{Sorry, pdfTeX does not support FORM gauges}%
12899 }
12900 \def\MakeFieldObject#1#2{\sbox0{#1}%
12901 \immediate\pdfxform0 %
12902 \expandafter\edef\csname #2Object\endcsname{%
12903 \the\pdffastxform\space 0 R%
12904 }%
12905 % \hbox to 0pt{\hskip-\maxdimen{\pdfrefxform \the\pdffastxform}}}%
12906 }%
12907 \let\HyField@afields\ltx@empty
12908 \let\HyField@cofields\ltx@empty
12909 \@ifundefined{pdffastlink}
12910 {%
12911 \let\HyField@AddToFields\relax
12912 \PackageInfo{hyperref}{%
12913 You need pdfTeX 1.40.0 for setting the /Fields entry.%
12914 \MessageBreak
12915 Adobe Reader/Acrobat accepts an empty /Field array,%
12916 \MessageBreak
12917 but other PDF viewers might complain%
12918 }}%
12919 {%
12920 \let\HyField@AuxAddToFields\ltx@gobble
12921 \let\HyField@AuxAddToCoFields\ltx@gobbletwo
12922 \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.

```

12923 \def\HyField@ABD@AuxAddToCoFields#1#2{%

```

```

12924 \begingroup
12925 \Hy@safe@activestrue
12926 \let\ltx@secondoftwo\relax
12927 \ifx\HyField@cofields\ltx@empty
12928 \xdef\HyField@cofields{%
12929 \ltx@secondoftwo{#1}{ #2 0 R}%
12930 }%
12931 \else
12932 \let\ltx@secondoftwo\relax
12933 \def\HyField@AddCoField##1##2##3{%
12934 \ifx##1\ltx@empty
12935 \ltx@secondoftwo{#1}{ #2 0 R}%
12936 \expandafter\ltx@gobble
12937 \else
12938 \ifnum\pdfstrcmp{##2}{#1}>\ltx@zero
12939 \ltx@secondoftwo{#1}{ #2 0 R}%
12940 \ltx@secondoftwo{##2}{##3}%
12941 \expandafter\expandafter\expandafter\ltx@gobble
12942 \else
12943 \ltx@secondoftwo{##2}{##3}%
12944 \fi
12945 \fi
12946 \HyField@AddCoField
12947 }%
12948 \xdef\HyField@cofields{%
12949 \expandafter\HyField@AddCoField
12950 \HyField@cofields\ltx@empty\ltx@empty\ltx@empty
12951 }%
12952 \fi
12953 \endgroup
12954 }%
12955 \Hy@AtBeginDocument{%
12956 \if@filesw
12957 \immediate\write\@mainaux{%
12958 \string\providecommand\string\HyField@AuxAddToFields[1]{}%
12959 }%
12960 \immediate\write\@mainaux{%
12961 \string\providecommand\string\HyField@AuxAddToCoFields[2]{}%
12962 }%
12963 \fi
12964 \let\HyField@AfterAuxOpen\@firstofone
12965 \def\HyField@AuxAddToFields#1{%
12966 \xdef\HyField@afields{%
12967 \ifx\HyField@afields\@empty
12968 \else
12969 \HyField@afields
12970 \space
12971 \fi
12972 #1 0 R%
12973 }%
12974 }%
12975 \let\HyField@AuxAddToCoFields\HyField@ABD@AuxAddToCoFields
12976 }%
12977 \def\HyField@AddToFields{%

```

```

12978 \expandafter\HyField@@AddToFields\expandafter{%
12979 \the\pdfastlink
12980 }%
12981 \ifx\Fld@calculate@code\ltx@empty
12982 \else
12983 \begingroup
12984 \Hy@safe@activetrue
12985 \edef\Hy@temp{%
12986 \endgroup
12987 \if@files
12988 \write\@mainaux{%
12989 \string\HyField@AuxAddToCoFields{%
12990 \Fld@calculate@sortkey
12991 }{%
12992 \the\pdfastlink
12993 }%
12994 }%
12995 \fi
12996 }%
12997 \Hy@temp
12998 \fi
12999 }%
13000 \def\HyField@@AddToFields#1{%
13001 \HyField@AfterAuxOpen{%
13002 \if@files
13003 \write\@mainaux{%
13004 \string\HyField@AuxAddToFields{#1}%
13005 }%
13006 \fi
13007 }%
13008 }%
13009 }
13010 \def\@Form[#1]{%
13011 \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13012 \kvsetkeys{Form}{#1}%
13013 \pdf@ifdraftmode{}{%
13014 \Hy@FormObjects
13015 \ifnum\pdfTeXversion>13 %
13016 \pdfrefobj\OBJ@pdfdocencoding
13017 \pdfrefobj\OBJ@ZaDb
13018 \pdfrefobj\OBJ@Helv
13019 \fi
13020 \AtVeryEndDocument{%
13021 \immediate\pdfobj{%
13022 <<%
13023 /Fields[\HyField@afields]%
13024 \ifx\HyField@cofields\ltx@empty
13025 \else
13026 /CO[\romannumeral-`\Q\HyField@cofields]%
13027 \fi
13028 /DR<<%
13029 /Font<<%
13030 /ZaDb \OBJ@ZaDb\space 0 R%
13031 /Helv \OBJ@Helv\space 0 R%

```

```

13032     >>%
13033     >>%
13034     /DA(/Helv 10 Tf 0 g)%
13035     \ifHy@pdfa
13036     \else
13037     \ifHyField@NeedAppearances
13038     /NeedAppearances true%
13039     \fi
13040     \fi
13041     >>%
13042     }%
13043     \edef\OBJ@acroform{\the\pdflastobj}%
13044     \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
13045     }%
13046 }%
13047 \MakeFieldObject{%
Same as \ding{123} of package pifont.
13048 \begingroup
13049 \fontfamily{pzd}%
13050 \fontencoding{U}%
13051 \fontseries{m}%
13052 \fontshape{n}%
13053 \selectfont
13054 \char123 %
13055 \endgroup
13056 }{Ding}%
13057 \MakeFieldObject{%
13058 \fbox{\textcolor{yellow}{\textsf{Submit}}}%
13059 }{Submit}%
13060 \MakeFieldObject{%
13061 \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
13062 }{SubmitP}%
13063 }
13064 \let\@endForm\ltx@empty
13065 \let\HyAnn@AbsPageLabel\ltx@empty
13066 \let\Fld@pageobjref\ltx@empty
13067 \ltx@ifUndefined{pdfpageref}{%
13068 }{%
13069 \ltx@ifpackageloaded{zref-abspage}{%
13070 \newcount\HyAnn@Count
13071 \HyAnn@Count=\ltx@zero
13072 \def\HyAnn@AbsPageLabel{%
13073 \global\advance\HyAnn@Count by\ltx@one
13074 \zref@labelbyprops{HyAnn@\the\HyAnn@Count}{abspage}%
13075 \zref@refused{HyAnn@\the\HyAnn@Count}%
13076 }%
13077 \def\Fld@pageobjref{%
13078 \zref@ifrefundefined{HyAnn@\the\HyAnn@Count}{%
13079 }{%
13080 \zref@ifrefcontainsprop{HyAnn@\the\HyAnn@Count}{abspage}{%
13081 /P \pdfpageref
13082 \zref@extractdefault{HyAnn@\the\HyAnn@Count}{abspage}{1} %
13083 \space 0 R%
13084 }{%

```

```

13085     }%
13086     }%
13087     }%
13088   }{%
13089   }%
13090 }

13091 \def\@TextField[#1]#2{% parameters, label
13092   \def\Fld@name{#2}%
13093   \let\Fld@default\ltx@empty
13094   \let\Fld@value\@empty
13095   \def\Fld@width{\DefaultWidthofText}%
13096   \def\Fld@height{%
13097     \ifFld@multiline
13098       \DefaultHeightofTextMultiline
13099     \else
13100       \DefaultHeightofText
13101     \fi
13102   }%
13103   \begingroup
13104     \expandafter\HyField@SetKeys\expandafter{%
13105       \DefaultOptionsofText,#1%
13106     }%
13107     \PDFForm@Name
13108     \HyField@FlagsText
13109     \ifFld@hidden\def\Fld@width{1sp}\fi
13110     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13111     \LayoutTextField{#2}{%
13112       \leavevmode
13113       \HyAnn@AbsPageLabel
13114       \Hy@escapeform\PDFForm@Text
13115       \pdfstartlink user {\PDFForm@Text}\relax
13116       \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
13117       \HyField@AddToFields
13118     }%
13119   \endgroup
13120 }

13121 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13122   \def\Fld@name{#2}%
13123   \let\Fld@default\relax
13124   \let\Fld@value\relax
13125   \def\Fld@width{\DefaultWidthofChoiceMenu}%
13126   \def\Fld@height{\DefaultHeightofChoiceMenu}%
13127   \begingroup
13128     \Fld@menulength=0 %
13129     \@tempdima\z@
13130     \@for\@curropt:=#3\do{%
13131       \expandafter\Fld@checkequals\@curropt==\%
13132       \Hy@StepCount\Fld@menulength
13133       \settowidth{\@tempdimb}{\@currDisplay}%
13134       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13135     }%
13136     \advance\@tempdima by 15\p@
13137     \begingroup
13138       \HyField@SetKeys{#1}%

```

```

13139 \edef\x{\endgroup
13140 \noexpand\expandafter
13141 \noexpand\HyField@SetKeys
13142 \noexpand\expandafter{%
13143 \expandafter\noexpand\csname DefaultOptionsof%
13144 \ifFld@radio
13145 Radio%
13146 \else
13147 \ifFld@combo
13148 \ifFld@popdown
13149 PopdownBox%
13150 \else
13151 ComboBox%
13152 \fi
13153 \else
13154 ListBox%
13155 \fi
13156 \fi
13157 \endcsname
13158 }%
13159 }\x
13160 \HyField@SetKeys{#1}%
13161 \PDFForm@Name
13162 \ifFld@hidden\def\Fld@width{1sp}\fi
13163 \ifx\Fld@value\relax
13164 \let\Fld@value\Fld@default
13165 \fi
13166 \LayoutChoiceField{#2}{%
13167 \ifFld@radio
13168 \HyField@FlagsRadioButton
13169 \@@Radio{#3}%
13170 \else
13171 \begingroup
13172 \HyField@FlagsChoice
13173 \ifdim\Fld@width<\@tempdima
13174 \ifdim\@tempdima<1cm\@tempdima1cm\fi
13175 \edef\Fld@width{\the\@tempdima}%
13176 \fi
13177 \ifFld@combo
13178 \else
13179 \@tempdima=\the\Fld@menulength\Fld@charsize
13180 \advance\@tempdima by \Fld@borderwidth bp %
13181 \advance\@tempdima by \Fld@borderwidth bp %
13182 \edef\Fld@height{\the\@tempdima}%
13183 \fi
13184 \@@ListBox{#3}%
13185 \endgroup
13186 \fi
13187 }%
13188 \endgroup
13189 }
13190 \def\@@Radio#1{%
13191 \Fld@listcount=0 %
13192 \EdefEscapeName\Fld@default{\Fld@default}%

```

```

13193 \@for\@curropt:=#1\do{%
13194   \expandafter\Fld@checkequals\@curropt==\\%
13195   \EdefEscapeName\@currValue{\@currValue}%
13196   \Hy@StepCount\Fld@listcount
13197   \@currDisplay\space
13198   \leavevmode
13199   \HyAnn@AbsPageLabel
13200   \Hy@escapeform\PDFForm@Radio
13201   \pdfstartlink user {%
13202     \PDFForm@Radio
13203     /AP<<%
13204     /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.

```

13205     /\@currValue\space \DingObject
13206     >>%
13207     >>%
13208   }%
13209   \relax
13210   \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
13211   \ifnum\Fld@listcount=1 %
13212     \HyField@AddToFields
13213   \fi
13214   \space % deliberate space between radio buttons
13215 }%
13216 }
13217 \newcount\Fld@listcount
13218 \def\@@Listbox#1{%
13219   \HyField@PDFChoices{#1}%
13220   \leavevmode
13221   \HyAnn@AbsPageLabel
13222   \Hy@escapeform\PDFForm@List
13223   \pdfstartlink user {\PDFForm@List}\relax
13224   \MakeChoiceField{\Fld@width}{\Fld@height}%
13225   \pdfendlink
13226   \HyField@AddToFields
13227 }
13228 \def\@PushButton[#1]#2{% parameters, label
13229   \def\Fld@name{#2}%
13230   \begingroup
13231     \expandafter\HyField@SetKeys\expandafter{%
13232       \DefaultOptionsofPushButton,#1%
13233     }%
13234     \PDFForm@Name
13235     \ifHy@pdfa
13236       \Hy@Error{%
13237         PDF/A: Push button with JavaScript is prohibited%
13238       }\@ehc
13239     \LayoutPushButtonField{%
13240       \leavevmode
13241       \MakeButtonField{#2}%
13242     }%

```

```

13243 \else
13244 \HyField@FlagsPushButton
13245 \ifFld@hidden\def\Fld@width{1sp}\fi
13246 \LayoutPushButtonField{%
13247 \leavevmode
13248 \HyAnn@AbsPageLabel
13249 \Hy@escapeform\PDFForm@Push
13250 \pdfstartlink user {\PDFForm@Push}\relax
13251 \MakeButtonField{#2}%
13252 \pdfendlink
13253 \HyField@AddToFields
13254 }%
13255 \fi
13256 \endgroup
13257 }
13258 \def\@Submit[#1]#2{%
13259 \def\Fld@width{\DefaultWidthofSubmit}%
13260 \def\Fld@height{\DefaultHeightofSubmit}%
13261 \begingroup
13262 \expandafter\HyField@SetKeys\expandafter{%
13263 \DefaultOptionsofSubmit,#1%
13264 }%
13265 \HyField@FlagsPushButton
13266 \HyField@FlagsSubmit
13267 \ifFld@hidden\def\Fld@width{1sp}\fi
13268 \leavevmode
13269 \HyAnn@AbsPageLabel
13270 \Hy@escapeform\PDFForm@Submit
13271 \pdfstartlink user {%
13272 \PDFForm@Submit
13273 /AP<</N \SubmitObject/D \SubmitPObject>>%
13274 }%
13275 \relax
13276 \MakeButtonField{#2}%
13277 \pdfendlink
13278 \HyField@AddToFields
13279 \endgroup
13280 }
13281 \def\@Reset[#1]#2{%
13282 \def\Fld@width{\DefaultWidthofReset}%
13283 \def\Fld@height{\DefaultHeightofReset}%
13284 \begingroup
13285 \expandafter\HyField@SetKeys\expandafter{%
13286 \DefaultOptionsofReset,#1%
13287 }%
13288 \leavevmode
13289 \ifHy@pdfa
13290 \Hy@Error{%
13291 PDF/A: Reset action is prohibited%
13292 }\@ehc
13293 \MakeButtonField{#2}%
13294 \else
13295 \HyField@FlagsPushButton
13296 \ifFld@hidden\def\Fld@width{1sp}\fi

```



```

13297 \HyAnn@AbsPageLabel
13298 \Hy@escapeform\PDFForm@Reset
13299 \pdfstartlink user {\PDFForm@Reset}\relax
13300 \MakeButtonField{#2}%
13301 \pdfendlink
13302 \HyField@AddToFields
13303 \fi
13304 \endgroup
13305 }
13306 \def\@CheckBox[#1]#2{% parameters, label
13307 \def\Fld@name{#2}%
13308 \def\Fld@default{0}%
13309 \begingroup
13310 \def\Fld@width{\DefaultWidthofCheckBox}%
13311 \def\Fld@height{\DefaultHeightofCheckBox}%
13312 \expandafter\HyField@SetKeys\expandafter{%
13313 \DefaultOptionsofCheckBox,#1%
13314 }%
13315 \PDFForm@Name
13316 \HyField@FlagsCheckBox
13317 \ifFld@hidden\def\Fld@width{1sp}\fi
13318 \LayoutCheckField{#2}{%
13319 \leavevmode
13320 \HyAnn@AbsPageLabel
13321 \Hy@escapeform\PDFForm@Check
13322 \pdfstartlink user {\PDFForm@Check}\relax
13323 \MakeCheckField{\Fld@width}{\Fld@height}%
13324 \pdfendlink
13325 \HyField@AddToFields
13326 }%
13327 \endgroup
13328 }
13329 \def\Hy@FormObjects{%
13330 \pdfobj {%
13331 <<%
13332 /Type/Encoding%
13333 /Differences[%
13334 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
13335 /ring/tilde %
13336 39/quotesingle %
13337 96/grave %
13338 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13339 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
13340 /quotedblbase/quotedblleft/quotedblright/quoteleft%
13341 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
13342 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13343 160/Euro %
13344 164/currency %
13345 166/brokenbar %
13346 168/dieresis/copyright/ordfeminine %
13347 172/logicalnot/.notdef/registered/macron/degree/plusminus%
13348 /twosuperior/threesuperior/acute/mu %
13349 183/periodcentered/cedilla/onesuperior/ordmasculine %
13350 188/onequarter/onehalf/threequarters %

```

```

13351      192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13352      /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
13353      /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
13354      /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
13355      /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
13356      /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
13357      /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
13358      /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
13359      /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
13360      /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
13361      ]%
13362      >>%
13363      }%
13364      \xdef\OBJ@pdfdocencoding{\the\pdfastobj}%
13365      \pdfobj{%
13366      <<%
13367      /Type/Font%
13368      /Subtype/Type1%
13369      /Name/ZaDb%
13370      /BaseFont/ZapfDingbats%
13371      >>%
13372      }%
13373      \xdef\OBJ@ZaDb{\the\pdfastobj}%
13374      \pdfobj{%
13375      <<%
13376      /Type/Font%
13377      /Subtype/Type1%
13378      /Name/Helv%
13379      /BaseFont/Helvetica%
13380      /Encoding \OBJ@pdfdocencoding\space 0 R%
13381      >>%
13382      }%
13383      \xdef\OBJ@Helv{\the\pdfastobj}%
13384      \global\let\Hy@FormObjects\relax
13385      }
13386      </pdfTeX>

```

## 44.5 dvipdfm, xetex

D. P. Story adapted the pdf $\TeX$  forms part for dvipdfm, of which version 0.12.7b or higher is required because of a bug.

```
13387 <*\dvipdfm | xetex>
```

\@Gauge

```

13388 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
13389   \Hy@Message{Sorry, dvipdfm/XeTeX does not support FORM gauges}%
13390 }

```

\@Form

```

13391 \def\@Form[#1]{%
13392   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13393   \kvsetkeys{Form}{#1}%
13394   \Hy@FormObjects
13395   \@pdfm@mark{obj @afields []}%

```

```

13396 \@pdfm@mark{obj @corder []}%
13397 \@pdfm@mark{%
13398   obj @aform <<%
13399   /Fields @afields%
13400   /DR<<%
13401   /Font<<%
13402   /ZaDb @OBJZaDb%
13403   /Helv @OBJHelv%
13404   >>%
13405   >>%
13406   /DA(/Helv 10 Tf 0 g)%
13407   /CO @corder%
13408   \ifHy@pdfa
13409   \else
13410     \ifHyField@NeedAppearances
13411       /NeedAppearances true%
13412     \fi
13413   \fi
13414   >>%
13415 }%
13416 \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
13417 }

\@endForm

13418 \let\@endForm\ltx@empty

\dvipdfm@setdim \dvipdfm@setdim sets dimensions for ann using \pdfm@box.
13419 \def\dvipdfm@setdim{%
13420   height \the\ht\pdfm@box\space
13421   width \the\wd\pdfm@box\space
13422   depth \the\dp\pdfm@box\space
13423 }

\HyField@AnnotCount
13424 \newcount\HyField@AnnotCount
13425 \HyField@AnnotCount=\z@

\HyField@AdvanceAnnotCount
13426 \def\HyField@AdvanceAnnotCount{%
13427   \global\advance\HyField@AnnotCount\@ne
13428 }

\HyField@TheAnnotCount
13429 \def\HyField@TheAnnotCount{%
13430   \the\HyField@AnnotCount
13431 }

\Fld@pageobjref
13432 \def\Fld@pageobjref{/P @thispage}%

\HyField@AddToFields
13433 \def\HyField@AddToFields#1{%
13434   \@pdfm@mark{put @afields @#1\HyField@TheAnnotCount}%

```

```

13435 \ifx\Fld@calculate@code\ltx@empty
13436 \else
13437 \@pdfm@mark{put @corder @#1\HyField@TheAnnotCount}%
13438 \fi
13439 }

```

#### \@TextField

```

13440 \def\@TextField[#1]#2{% parameters, label
13441 \def\Fld@name{#2}%
13442 \let\Fld@default\ltx@empty
13443 \let\Fld@value\@empty
13444 \def\Fld@width{\DefaultWidthofText}%
13445 \def\Fld@height{%
13446 \ifFld@multiline
13447 \DefaultHeightofTextMultiline
13448 \else
13449 \DefaultHeightofText
13450 \fi
13451 }%
13452 \begingroup
13453 \expandafter\HyField@SetKeys\expandafter{%
13454 \DefaultOptionsofText,#1%
13455 }%
13456 \PDFForm@Name
13457 \HyField@FlagsText
13458 \ifFld@hidden\def\Fld@width{1sp}\fi
13459 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13460 \setbox\pdfm@box=\hbox{%
13461 \MakeTextField{\Fld@width}{\Fld@height}%
13462 }%
13463 \HyField@AdvanceAnnotCount
13464 \LayoutTextField{#2}{%
13465 \leavevmode
13466 \Hy@escapeform\PDFForm@Text
13467 \@pdfm@mark{%
13468 ann @text\HyField@TheAnnotCount\space
13469 \dvipdfm@setdim << \PDFForm@Text >>%
13470 }%
13471 }%
13472 \unhbox\pdfm@box
13473 \HyField@AddToFields{text}%
13474 % record in @afields array
13475 \endgroup
13476 }

```

#### \@ChoiceMenu

```

13477 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13478 \def\Fld@name{#2}%
13479 \let\Fld@default\relax
13480 \let\Fld@value\relax
13481 \def\Fld@width{\DefaultWidthofChoiceMenu}%
13482 \def\Fld@height{\DefaultHeightofChoiceMenu}%
13483 \begingroup
13484 \Fld@menulength=0 %

```

```

13485 \@tempdima\z@
13486 \@for\@curropt:=#3\do{%
13487   \expandafter\Fld@checkequals\@curropt==\\%
13488   \Hy@StepCount\Fld@menulength
13489   \settowidth{\@tempdimb}{\@currDisplay}%
13490   \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13491 }%
13492 \advance\@tempdima by 15\p@
13493 \begingroup
13494   \HyField@SetKeys{#1}%
13495 \edef\x{\endgroup
13496   \noexpand\expandafter
13497   \noexpand\HyField@SetKeys
13498   \noexpand\expandafter{%
13499     \expandafter\noexpand\csname DefaultOptionsof%
13500       \ifFld@radio
13501         Radio%
13502       \else
13503         \ifFld@combo
13504           \ifFld@popdown
13505             PopdownBox%
13506           \else
13507             ComboBox%
13508           \fi
13509         \else
13510           ListBox%
13511         \fi
13512       \fi
13513     \endcsname
13514   }%
13515 }\x
13516 \HyField@SetKeys{#1}%
13517 \PDFForm@Name
13518 \ifFld@hidden\def\Fld@width{1sp}\fi
13519 \ifx\Fld@value\relax
13520   \let\Fld@value\Fld@default
13521 \fi
13522 \LayoutChoiceField{#2}{%
13523   \ifFld@radio
13524     \HyField@FlagsRadioButton
13525     \@@Radio{#3}%
13526   \else
13527     \begingroup
13528     \HyField@FlagsChoice
13529     \ifdim\Fld@width<\@tempdima
13530       \ifdim\@tempdima<1cm\@tempdima1cm\fi
13531       \edef\Fld@width{\the\@tempdima}%
13532     \fi
13533     \ifFld@combo
13534     \else
13535       \@tempdima=\the\Fld@menulength\Fld@charsize
13536       \advance\@tempdima by \Fld@borderwidth bp %
13537       \advance\@tempdima by \Fld@borderwidth bp %
13538       \edef\Fld@height{\the\@tempdima}%

```

```

13539      \fi
13540      \@@ListBox{#3}%
13541      \endgroup
13542    \fi
13543  }%
13544 \endgroup
13545 }

\@@Radio
13546 \def\@@Radio#1{%
13547   \Fld@listcount=0 %
13548   \EdefEscapeName\Fld@default{\Fld@default}%
13549   \setbox\pdfm@box=\hbox{%
13550     \MakeRadioField{\Fld@width}{\Fld@height}%
13551   }%
13552   \@for\@curropt:=#1\do{%
13553     \expandafter\Fld@checkequals\@curropt==\%
13554     \EdefEscapeName\@currValue{\@currValue}%
13555     \Hy@StepCount\Fld@listcount
13556     \@currDisplay\space
13557     \leavevmode
13558     \Hy@escapeform\PDFForm@Radio
13559     \ifnum\Fld@listcount=1 %
13560       \HyField@AdvanceAnnotCount
13561     \fi
13562     \@pdfm@mark{%
13563       ann %
13564       \ifnum\Fld@listcount=1 %
13565         @radio\HyField@TheAnnotCount%
13566       \space
13567     \fi
13568     \dvipdfm@setdim
13569     <<%
13570     \PDFForm@Radio
13571     /AP<</N<</\@currValue /null>>>>%
13572     >>%
13573   }%
13574   \unhcopy\pdfm@box\space% deliberate space between radio buttons
13575   \ifnum\Fld@listcount=1 %
13576     \HyField@AddToFields{radio}%
13577   \fi
13578 }%
13579 }

\Fld@listcount
13580 \newcount\Fld@listcount

\@@ListBox
13581 \def\@@ListBox#1{%
13582   \HyField@PDFChoices{#1}%
13583   \setbox\pdfm@box=\hbox{%
13584     \MakeChoiceField{\Fld@width}{\Fld@height}%
13585   }%
13586   \leavevmode

```

```

13587 \Hy@escapeform\PDFForm@List
13588 \HyField@AdvanceAnnotCount
13589 \@pdfm@mark{%
13590   ann @list\HyField@TheAnnotCount\space
13591   \dvipdfm@setdim
13592   <<\PDFForm@List>>%
13593 }%
13594 \unhbox\pdfm@box
13595 \HyField@AddToFields{list}%
13596 }

```

#### \@PushButton

```

13597 \def\@PushButton[#1]#2{% parameters, label
13598   \def\Fld@name{#2}%
13599   \begingroup
13600     \expandafter\HyField@SetKeys\expandafter{%
13601       \DefaultOptionsofPushButton,#1%
13602     }%
13603     \PDFForm@Name
13604     \ifHy@pdfa
13605       \Hy@Error{%
13606         PDF/A: Push button with JavaScript is prohibited%
13607       }\@ehc
13608       \LayoutPushButtonField{%
13609         \leavevmode
13610         \MakeButtonField{#2}%
13611       }%
13612     \else
13613       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13614       \HyField@FlagsPushButton
13615       \ifFld@hidden\def\Fld@width{1sp}\fi
13616       \HyField@AdvanceAnnotCount
13617       \LayoutPushButtonField{%
13618         \leavevmode
13619         \Hy@escapeform\PDFForm@Push
13620         \@pdfm@mark{%
13621           ann @push\HyField@TheAnnotCount\space
13622           \dvipdfm@setdim
13623           <<\PDFForm@Push>>%
13624         }%
13625       }%
13626       \unhbox\pdfm@box
13627       \HyField@AddToFields{push}%
13628     \fi
13629   \endgroup
13630 }

```

#### \@Submit

```

13631 \def\@Submit[#1]#2{%
13632   \def\Fld@width{\DefaultWidthofSubmit}%
13633   \def\Fld@height{\DefaultHeightofSubmit}%
13634   \begingroup
13635     \expandafter\HyField@SetKeys\expandafter{%
13636       \DefaultOptionsofSubmit,#1%

```

```

13637 }%
13638 \HyField@FlagsPushButton
13639 \HyField@FlagsSubmit
13640 \ifFld@hidden\def\Fld@width{1sp}\fi
13641 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}}%
13642 \leavevmode
13643 \Hy@escapeform\PDFForm@Submit
13644 \HyField@AdvanceAnnotCount
13645 \@pdfm@mark{%
13646   ann @submit\HyField@TheAnnotCount\space
13647   \dvi pdfm@setdim
13648   <<\PDFForm@Submit>>%
13649 }%
13650 \unhbox\pdfm@box%
13651 \HyField@AddToFields{submit}%
13652 \endgroup
13653 }

```

#### \@Reset

```

13654 \def\@Reset[#1]#2{%
13655   \def\Fld@width{\DefaultWidthofReset}%
13656   \def\Fld@height{\DefaultHeightofReset}%
13657   \begingroup
13658     \expandafter\HyField@SetKeys\expandafter{%
13659       \DefaultOptionsofReset,#1%
13660     }%
13661     \leavevmode
13662     \ifHy@pdfa
13663       \Hy@Error{%
13664         PDF/A: Reset action is prohibited%
13665       }\@ehc
13666       \MakeButtonField{#2}%
13667     \else
13668       \HyField@FlagsPushButton
13669       \ifFld@hidden\def\Fld@width{1sp}\fi
13670       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}}%
13671       \Hy@escapeform\PDFForm@Reset
13672       \HyField@AdvanceAnnotCount
13673       \@pdfm@mark{%
13674         ann @reset\HyField@TheAnnotCount\space
13675         \dvi pdfm@setdim
13676         <<\PDFForm@Reset>>%
13677       }%
13678       \unhbox\pdfm@box
13679       \HyField@AddToFields{reset}%
13680     \fi
13681   \endgroup
13682 }

```

#### \@CheckBox

```

13683 \def\@CheckBox[#1]#2{% parameters, label
13684   \def\Fld@name{#2}%
13685   \def\Fld@default{0}%
13686   \begingroup

```



```

13687 \def\Fld@width{\DefaultWidthofCheckBox}%
13688 \def\Fld@height{\DefaultHeightofCheckBox}%
13689 \expandafter\HyField@SetKeys\expandafter{%
13690 \DefaultOptionsofCheckBox,#1%
13691 }%
13692 \PDFForm@Name
13693 \HyField@FlagsCheckBox
13694 \ifFld@hidden\def\Fld@width{1sp}\fi
13695 \setbox\pdfm@box=\hbox{%
13696 \MakeCheckField{\Fld@width}{\Fld@height}%
13697 }%
13698 \HyField@AdvanceAnnotCount
13699 \LayoutCheckField{#2}{%
13700 \leavevmode
13701 \Hy@escapeform\PDFForm@Check
13702 \@pdfm@mark{%
13703 ann @check\HyField@TheAnnotCount\space
13704 \dvi pdfm@setdim
13705 <<\PDFForm@Check>>%
13706 }%
13707 \unhbox\pdfm@box
13708 \HyField@AddToFields{check}%
13709 }%
13710 \endgroup
13711 }

13712 \def\Hy@FormObjects{%
13713 \@pdfm@mark{obj @OBJpdfdocencoding%
13714 <<%
13715 /Type/Encoding%
13716 /Differences[%
13717 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
13718 39/quotesingle %
13719 96/grave %
13720 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13721 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
13722 /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
13723 /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
13724 /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13725 160/Euro %
13726 164/currency %
13727 166/brokenbar %
13728 168/dieresis/copyright/ordfeminine %
13729 172/logicalnot/.notdef/registered/macron/degree/plusminus%
13730 /twosuperior/threesuperior/acute/mu %
13731 183/periodcentered/cedilla/onesuperior/ordmasculine %
13732 188/onequarter/onehalf/threequarters %
13733 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13734 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
13735 /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
13736 /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
13737 /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
13738 /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
13739 /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%

```

```

13740      /eth/ntilde/ograde/oacute/ocircumflex/otilde/odieresis%
13741      /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
13742      /thorn/ydieresis%
13743    ]%
13744  >>%
13745 }%
13746 \@pdfm@mark{obj @OBJZaDb%
13747   <<%
13748     /Type/Font%
13749     /Subtype/Type1%
13750     /Name/ZaDb%
13751     /BaseFont/ZapfDingbats%
13752   >>%
13753 }%
13754 \@pdfm@mark{obj @OBJHelv%
13755   <<%
13756     /Type/Font%
13757     /Subtype/Type1%
13758     /Name/Helv%
13759     /BaseFont/Helvetica%
13760     /Encoding @OBJpdfdocencoding%
13761   >>%
13762 }%
13763 \global\let\Hy@FormObjects\relax
13764 }
13765 </dvipdfm | xetex>

```

## 44.6 Common forms part

```

13766 (*pdfform)

\Fld@pageobjref

13767 \providecommand*{\Fld@pageobjref}{%

\Hy@escapestring

13768 \@ifundefined{pdf@escapestring}
13769 {%
13770   \let\Hy@escapestring\@firstofone
13771   \def\Hy@escapeform#1{%
13772     \ifHy@pdfescapeform
13773       \def\Hy@escapestring##1{%
13774         \noexpand\Hy@escapestring{\noexpand##1}%
13775       }%
13776       \edef\Hy@temp{#1}%
13777       \expandafter\Hy@@@escapeform\Hy@temp\Hy@escapestring{}\@nil
13778     \def\Hy@escapestring##1{%
13779       \@ifundefined{Hy@esc@\string##1}{%
13780         ##1%
13781         \ThisShouldNotHappen
13782       }{%
13783         \csname Hy@esc@\string##1\endcsname
13784       }%
13785     }%
13786   \else

```

```

13787     \let\Hy@escapestring\@firstofone
13788     \fi
13789 }%
13790 \def\Hy@@escapeform#1\Hy@escapestring#2#3\@nil{%
13791     \ifx\|#3\|
13792     \else
13793     \expandafter
13794     \Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
13795     \ltx@ReturnAfterFi{%
13796     \Hy@@escapeform#3\@nil
13797     }%
13798     \fi
13799 }%
13800 }{%
13801 \def\Hy@escapeform#1{%
13802     \ifHy@pdfescapeform
13803     \let\Hy@escapestring\pdfescapestring
13804     \else
13805     \let\Hy@escapestring\@firstofone
13806     \fi
13807 }%
13808 \Hy@escapeform{}%
13809 }

```

#### \PDFForm@Name

```

13810 \def\PDFForm@Name{%
13811     \PDFForm@@Name\Fld@name
13812     \ifx\Fld@altname\relax
13813     \else
13814     \PDFForm@@Name\Fld@altname
13815     \fi
13816     \ifx\Fld@mappingname\relax
13817     \else
13818     \PDFForm@@Name\Fld@mappingname
13819     \fi
13820 }

```

#### \PDFForm@@Name

```

13821 \def\PDFForm@@Name#1{%
13822     \begingroup
13823     \ifnum\Hy@pdf@major@minor@version<105 % implementation note 117, PDF spec 1.7
13824     \ifHy@unicode
13825     \Hy@unicodetfalse
13826     \fi
13827     \fi
13828     \pdfstringdef\Hy@gtemp#1%
13829     \endgroup
13830     \let#1\Hy@gtemp
13831 }

```

#### \Fld@additionalactions

```

13832 \def\Fld@@additionalactions{%
    K input (keystroke) format

```

```

13833 \ifx\Fld@keystroke@code\@empty
13834 \else
13835 /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
13836 \fi

F display format
13837 \ifx\Fld@format@code\@empty
13838 \else
13839 /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
13840 \fi

V validation
13841 \ifx\Fld@validate@code\@empty
13842 \else
13843 /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
13844 \fi

C calculation
13845 \ifx\Fld@calculate@code\@empty
13846 \else
13847 /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
13848 \fi

Fo receiving the input focus
13849 \ifx\Fld@onfocus@code\@empty
13850 \else
13851 /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
13852 \fi

Bl loosing the input focus (blurred)
13853 \ifx\Fld@onblur@code\@empty
13854 \else
13855 /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
13856 \fi

D pressing the mouse button (down)
13857 \ifx\Fld@onmousedown@code\@empty
13858 \else
13859 /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
13860 \fi

U releasing the mouse button (up)
13861 \ifx\Fld@onmouseup@code\@empty
13862 \else
13863 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
13864 \fi

E cursor enters the annotation's active area.
13865 \ifx\Fld@onenter@code\@empty
13866 \else
13867 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
13868 \fi

X cursor exits the annotation's active area.
13869 \ifx\Fld@onexit@code\@empty
13870 \else
13871 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
13872 \fi

```

```

13873 }
13874 \def\Fld@additionalactions{%
13875 \if-\Fld@@additionalactions-%
13876 \else
13877 \ifHy@pdfa
13878 \else
13879 /AA<<\Fld@@additionalactions>>%
13880 \fi
13881 \fi
13882 }

```

\Fld@annotnames

```

13883 \def\Fld@annotnames{%
13884 /T(\Fld@name)%
13885 \ifx\Fld@altname\relax
13886 \else
13887 /TU(\Fld@altname)%
13888 \fi
13889 \ifx\Fld@mappingname\relax
13890 \else
13891 /TM(\Fld@mappingname)%
13892 \fi
13893 }

```

\PDFForm@Check

```

13894 \def\PDFForm@Check{%
13895 /Subtype/Widget%
13896 \Fld@annotflags
13897 \Fld@pageobjref
13898 \Fld@annotnames
13899 /FT/Btn%
13900 \Fld@flags
13901 /Q \Fld@align
13902 /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
13903 /AP<< /N <</Yes<<>>>> >> %new string /Yes is from below
13904 /MK<<%
13905 \ifnum\Fld@rotation=\z@
13906 \else
13907 /R \Fld@rotation
13908 \fi
13909 \ifx\Fld@bordercolor\relax
13910 \else
13911 /BC[\Fld@bordercolor]%
13912 \fi
13913 \ifx\Fld@bcolor\relax
13914 \else
13915 /BG[\Fld@bcolor]%
13916 \fi
13917 /CA(\Hy@escapestring{\Fld@cbsymbol})%
13918 >>%
13919 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13920 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13921 /H/P%
13922 \ifFld@checked /V/Yes/AS/Yes\else /V/Off/AS/Off\fi

```

```

13923 \Fld@additionalactions
13924 }

```

#### \PDFForm@Push

```

13925 \ifHy@pdfa
13926 \else
13927 \def\PDFForm@Push{%
13928 /Subtype/Widget%
13929 \Fld@annotflags
13930 \Fld@pageobjref
13931 \Fld@annotnames
13932 /FT/Btn%
13933 \Fld@flags
13934 /H/P%
13935 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13936 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13937 \ifx\Fld@bordercolor\relax\else 1\fi
13938 \space
13939 \else
13940 /MK<<%
13941 \ifnum\Fld@rotation=\z@
13942 \else
13943 /R \Fld@rotation
13944 \fi
13945 \ifx\Fld@bordercolor\relax
13946 \else
13947 /BC[\Fld@bordercolor]%
13948 \fi
13949 >>%
13950 \fi
13951 /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick@code})>>%
13952 \Fld@additionalactions
13953 }%
13954 \fi

```

#### \PDFForm@List

```

13955 \def\PDFForm@List{%
13956 /Subtype/Widget%
13957 \Fld@annotflags
13958 \Fld@pageobjref
13959 \Fld@annotnames
13960 /FT/Ch%
13961 \Fld@flags
13962 /Q \Fld@align
13963 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13964 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13965 \ifx\Fld@bordercolor\relax\else 1\fi
13966 \ifx\Fld@bcolor\relax \else 1\fi
13967 \space
13968 \else
13969 /MK<<%
13970 \ifnum\Fld@rotation=\z@
13971 \else
13972 /R \Fld@rotation

```

```

13973     \fi
13974     \ifx\Fld@bordercolor\relax
13975     \else
13976         /BC[\Fld@bordercolor]%
13977     \fi
13978     \ifx\Fld@bcolor\relax
13979     \else
13980         /BG[\Fld@bcolor]%
13981     \fi
13982     >>%
13983 \fi
13984 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
13985     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13986 \Fld@choices
13987 \Fld@additionalactions
13988 }

```

\PDFForm@Radio

```

13989 \def\PDFForm@Radio{%
13990 /Subtype/Widget%
13991 \Fld@annotflags
13992 \Fld@pageobjref
13993 \Fld@annotnames
13994 /FT/Btn%
13995 \Fld@flags
13996 /H/P%
13997 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13998 /MK<<%
13999     \ifnum\Fld@rotation=\z@
14000     \else
14001         /R \Fld@rotation
14002     \fi
14003     \ifx\Fld@bordercolor\relax
14004     \else
14005         /BC[\Fld@bordercolor]%
14006     \fi
14007     \ifx\Fld@bcolor\relax
14008     \else
14009         /BG[\Fld@bcolor]%
14010     \fi
14011     /CA(\Hy@escapestring{\Fld@radiosymbol})%
14012 >>%
14013 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
14014     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%

```

New code, the default value is used for all buttons

```

14015 \ifx\Fld@default\@empty
14016     /V/Off%
14017     /DV/Off%
14018 \else
14019     /V/\Fld@default
14020     /DV/\Fld@default
14021 \fi
14022 \Fld@additionalactions
14023 }

```

\PDFForm@Text

```
14024 \def\PDFForm@Text{%
14025 /Subtype/Widget%
14026 \Fld@annotflags
14027 \Fld@pageobjref
14028 \Fld@annotnames
14029 /FT/Tx%
14030 \Fld@flags
14031 /Q \Fld@align
14032 /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
14033 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14034     \ifx\Fld@bordercolor\relax\else 1\fi
14035     \ifx\Fld@bcolor\relax \else 1\fi
14036     \space
14037 \else
14038 /MK<<%
14039     \ifnum\Fld@rotation=\z@
14040     \else
14041     /R \Fld@rotation
14042     \fi
14043     \ifx\Fld@bordercolor\relax
14044     \else
14045     /BC[\Fld@bordercolor]%
14046     \fi
14047     \ifx\Fld@bcolor\relax
14048     \else
14049     /BG[\Fld@bcolor]%
14050     \fi
14051 >>%
14052 \fi
14053 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
14054     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14055 /DV(\Hy@escapestring{\Fld@default})%
14056 /V(\Hy@escapestring{\Fld@value})%
14057 \Fld@additionalactions
14058 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
14059 }
```

\PDFForm@Submit

```
14060 \def\PDFForm@Submit{%
14061 /Subtype/Widget%
14062 \Fld@annotflags
14063 \Fld@pageobjref
14064 \Fld@annotnames
14065 /FT/Btn%
14066 \Fld@flags
14067 /H/P%
14068 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14069 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14070     \ifx\Fld@bordercolor\relax\else 1\fi
14071     \space
14072 \else
14073 /MK<<%
14074     \ifnum\Fld@rotation=\z@
```



```

14075     \else
14076         /R \Fld@rotation
14077     \fi
14078     \ifx\Fld@bordercolor\relax
14079     \else
14080         /BC[\Fld@bordercolor]%
14081     \fi
14082     >>%
14083 \fi
14084 /A<<%
14085 /S/SubmitForm%
14086 /F<<%
14087 /FS/URL%
14088 /F(\Hy@escapestring{\Form@action})%
14089 >>%
14090 \Fld@submitflags
14091 >>%
14092 \Fld@additionalactions
14093 }

```

\PDFForm@Reset

```

14094 \ifHy@pdfa
14095 \else
14096     \def\PDFForm@Reset{%
14097         /Subtype/Widget%
14098         \Fld@annotflags
14099         \Fld@pageobjref
14100         \Fld@annotnames
14101         /FT/Btn%
14102         \Fld@flags
14103         /H/P%
14104         /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
14105         \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14106             \ifx\Fld@bordercolor\relax\else 1\fi
14107             \space
14108     \else
14109         /MK<<%
14110             \ifnum\Fld@rotation=\z@
14111             \else
14112                 /R \Fld@rotation
14113             \fi
14114             \ifx\Fld@bordercolor\relax
14115             \else
14116                 /BC[\Fld@bordercolor]%
14117             \fi
14118 %         /CA (Clear)
14119 %         /AC (Done)
14120         >>%
14121     \fi
14122     /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14123     /A<</S/ResetForm>>%
14124     \Fld@additionalactions
14125 }%
14126 \fi

```

```

14127 </pdfform>
14128 <*packageEnd>

```

## 45 Bookmarks in the PDF file

This was originally developed by Yannis Haralambous (it was the separate `repere.sty`); it needed the `repere` or `makebook.pl` post-processor to work properly. Now redundant, as it is done entirely in  $\text{\LaTeX}$  macros.

To write out the current section title, and its rationalized number, we have to intercept the `\@sect` command, which is rather dangerous. But how else to see the information we need? We do the *same* for `\@ssect`, giving anchors to unnumbered sections. This allows things like bibliographies to get bookmarks when used with a manual `\addcontentsline`

```

14129 \def\phantomsection{%
14130   \Hy@MakeCurrentHrefAuto{section*}%
14131   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
14132 }
14133 </packageEnd>

```

### 45.1 Bookmarks

```

14134 <*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.

```

14135 \def\Hy@writebookmark#1#2#3#4#5{%
14136   % section number, text, label, level, file
14137   \ifx\WriteBookmarks\relax%
14138     \else
14139     \ifnum#4>\Hy@bookmarksdepth\relax
14140     \else
14141       \@writetorep{#1}{#2}{#3}{#4}{#5}%
14142     \fi
14143   \fi
14144 }
14145 \def\Hy@currentbookmarklevel{0}
14146 \def\Hy@numberline#1{#1 }

```

```

14147 \def\@@writetorep#1#2#3#4#5{%
14148 \begingroup
14149 \edef\Hy@tempa{#5}%
14150 \ifx\Hy@tempa\Hy@bookmarkstype
14151 \edef\Hy@level{#4}%
14152 \ifx\Hy@levelcheck Y%
14153 \@tempcnta\Hy@level\relax
14154 \advance\@tempcnta by -1 %
14155 \ifnum\Hy@currentbookmarklevel<\@tempcnta
14156 \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
14157 \advance\@tempcnta by 1 %
14158 \Hy@Warning{%
14159 Difference (\the\@tempcnta) between bookmark levels is %
14160 greater \MessageBreak than one, level fixed%
14161 }%
14162 \@tempcnta\Hy@currentbookmarklevel
14163 \advance\@tempcnta by 1 %
14164 \edef\Hy@level{\the\@tempcnta}%
14165 \fi
14166 \else
14167 \global\let\Hy@levelcheck Y%
14168 \fi
14169 \global\let\Hy@currentbookmarklevel\Hy@level
14170 \@tempcnta\Hy@level\relax
14171 \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
14172 \advance\@tempcnta by -1 %
14173 \edef\Hy@tempa{#3}%
14174 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
14175 \ifx\Hy@tempa\Hy@tempb
14176 \Hy@Warning{%
14177 The anchor of a bookmark and its parent's must not%
14178 \MessageBreak be the same. Added a new anchor%
14179 }%
14180 \phantomsection
14181 \fi
14182 \ifHy@bookmarksnumbered
14183 \let\numberline\Hy@numberline
14184 \let\booknumberline\Hy@numberline
14185 \let\partnumberline\Hy@numberline
14186 \let\chapternumberline\Hy@numberline
14187 \else
14188 \let\numberline\@gobble
14189 \let\booknumberline\@gobble
14190 \let\partnumberline\@gobble
14191 \let\chapternumberline\@gobble
14192 \fi
14193 \pdfstringdef\Hy@tempa{#2}%
14194 \HyPsd@SanitizeForOutFile\Hy@tempa
14195 \if@filesw
14196 \stepcounter{bookmark@seq@number}%
14197 \@ifundefined{@outlinefile}{%
14198 }{%
14199 \protected@write\@outlinefile{}{%
14200 \protect\BOOKMARK

```

```

14201      [\Hy@level][\@bookmarkopenstatus{\Hy@level}]{#3}%
14202      {\Hy@tempa}{\Hy@tempb}%
14203      \@percentchar\space\thebookmark@seq@number
14204      }%
14205      }%
14206      \fi
14207      \fi
14208      \endgroup
14209  }
14210  \newcounter{bookmark@seq@number}

14211  \begingroup
14212  \lccode`(`=`{%
14213  \lccode`)`=`}%
14214  \lccode`1`=\z@
14215  \lccode`2`=\z@
14216  \lccode`3`=\z@
14217  \lccode`5`=\z@
14218  \lccode`7`=\z@
14219  \lccode`#\`=\z@
14220  \lccode`^\`=\z@
14221  \lccode`{\`=\z@
14222  \lccode`}\`=\z@
14223  \lowercase{%
14224  \endgroup
14225  \def\HyPsd@SanitizeForOutFile#1{%
14226    \@onelevel@sanitize\Hy@tempa
14227    \escapechar`\\%
14228    \edef\Hy@tempa{%
14229      \expandafter\HyPsd@SanitizeOut@BraceLeft\Hy@tempa(\@nil
14230      }%
14231      \edef\Hy@tempa{%
14232        \expandafter\HyPsd@SanitizeOut@BraceRight\Hy@tempa)\@nil
14233      }%
14234    }%
14235    \def\HyPsd@SanitizeOut@BraceLeft#1(#2\@nil{%
14236      #1%
14237      \ifx\\#2\\%
14238        \expandafter\ltx@gobble
14239      \else
14240        \expandafter\ltx@firstofone
14241        \fi
14242      {%
14243        \string\173%
14244        \HyPsd@SanitizeOut@BraceLeft#2\@nil
14245      }%
14246    }%
14247    \def\HyPsd@SanitizeOut@BraceRight#1)#2\@nil{%
14248      #1%
14249      \ifx\\#2\\%
14250        \expandafter\ltx@gobble
14251      \else
14252        \expandafter\ltx@firstofone
14253        \fi
14254      {%

```

```

14255 \string\175%
14256 \HyPsd@SanitizeOut@BraceRight#2\@nil
14257 }%
14258 }%
14259 }

```

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

```

14260 \newcommand{\currentpdfbookmark}{%
14261 \pdfbookmark[\Hy@currentbookmarklevel]%
14262 }
14263 \newcommand{\subpdfbookmark}{%
14264 \@tempcnta\Hy@currentbookmarklevel
14265 \Hy@StepCount\@tempcnta
14266 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
14267 }
14268 \newcommand{\belowpdfbookmark}[2]{%
14269 \@tempcnta\Hy@currentbookmarklevel
14270 \Hy@StepCount\@tempcnta
14271 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
14272 \advance\@tempcnta by -1 %
14273 \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
14274 }

```

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.

```

14275 \renewcommand\pdfbookmark[3][0]{%
14276 \Hy@writebookmark[{#2}]{#3.#1}{#1}{toc}%
14277 \hyper@anchorstart{#3.#1}\hyper@anchorend
14278 }
14279 \def\BOOKMARK{%
14280 \@ifnextchar[{\@BOOKMARK}{\@@BOOKMARK[1][-]}%
14281 }
14282 \def\@BOOKMARK[#1]{%
14283 \@ifnextchar[{\@@BOOKMARK[{#1}]}{\@@BOOKMARK[{#1}][-]}%
14284 }

```

The macros for calculating structure of outlines are derived from those by Petr Olsak used in the `texinfopdf` macros.

#### 45.1.1 Rerun warning

`\Hy@OutlineRerunCheck`

```

14285 \RequirePackage{rerunfilecheck}[2009/12/10]
14286 \def\Hy@OutlineRerunCheck{%
14287 \RerunFileCheck{\jobname.out}{%
14288 \immediate\closeout\@outlinefile
14289 }{%
14290 Rerun to get outlines right\MessageBreak
14291 or use package `bookmark'%
14292 }%
14293 }

```

### 45.1.2 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 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.

14294 `\*vtex`

14295 `\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.

14296 `\begingroup`

14297 `\catcode\'=12 %`

14298 `\ifnum\Hy@VTeXversion<650 %`

14299 `\catcode\"=12 %`

14300 `\gdef\hv@pdf@char#1#2#3{%`

14301 `\char`

14302 `\ifcase'#1#2#3 %`

14303 `"00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%`

14304 `\or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%`

14305 `\or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%`

14306 `\or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%`

14307 `\or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%`

14308 `\or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%`

14309 `\or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%`

14310 `\or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%`

14311 `\or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%`

14312 `\or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%`

14313 `\or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%`

14314 `\or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%`

14315 `\or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%`

14316 `\or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%`

14317 `\or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%`

14318 `\or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%`

14319 `\or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%`

14320 `\or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%`

14321 `\or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%`

14322 `\or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%`

14323 `\or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%`

14324 `\or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%`

14325 `\or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%`

14326 `\or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%`

14327 `\or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%`

14328 `\or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%`

14329 `\or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%`

14330 `\or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%`

14331 `\or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%`

14332 `\or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%`

14333 `\or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%`

14334 `\or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%`

14335 `\fi`

14336 `}%`

```

14337 \else
14338 \gdef\hv@pdf@char{\char'}%
14339 \fi
14340 \endgroup

```

\@@BOOKMARK

```

14341 \def\@@BOOKMARK[#1][#2]#3#4#5{%
14342 \expandafter\edef\csname @count@#3\endcsname{%
14343 \the\@serial@counter
14344 }%
14345 \edef\@mycount{\the\@serial@counter}%
14346 \Hy@StepCount\@serial@counter
14347 \edef\@parcount{%
14348 \expandafter\ifx\csname @count@#5\endcsname\relax
14349 0%
14350 \else
14351 \csname @count@#5\endcsname
14352 \fi
14353 }%
14354 \immediate\special{%
14355 !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
14356 s=\ifx#2-c\else o\fi,t=#4%
14357 }%
14358 }%

```

\ReadBookmarks

```

14359 \def\ReadBookmarks{%
14360 \begingroup
14361 \def\0{\hv@pdf@char 0}%
14362 \def\1{\hv@pdf@char 1}%
14363 \def\2{\hv@pdf@char 2}%
14364 \def\3{\hv@pdf@char 3}%
14365 \def\({}%
14366 \def\)}%
14367 \def\do##1{%
14368 \ifnum\catcode`##1=\active
14369 \@makeother##1%
14370 \else
14371 \ifnum\catcode`##1=6 %
14372 \@makeother##1%
14373 \fi
14374 \fi
14375 }%
14376 \dospecials
14377 \Hy@safe@activetrue
14378 \InputIfFileExists{jobname.out}{\}{}%
14379 \endgroup
14380 \ifx\WriteBookmarks\relax
14381 \else
14382 \if@filesw
14383 \newwrite\@outlinefile
14384 \Hy@OutlineRerunCheck
14385 \immediate\openout\@outlinefile=jobname.out\relax
14386 \fi

```

```

14387 \fi
14388 }

14389 </vtex>
14390 <*\vtex>
14391 \def\ReadBookmarks{%
14392 \pdf@ifdraftmode{}{%
14393 \begingroup
14394 \def\do##1{%
14395 \ifnum\catcode`##1=\active
14396 \@makeother##1%
14397 \else
14398 \ifnum\catcode`##1=6 %
14399 \@makeother##1%
14400 \fi
14401 \fi
14402 }%
14403 \dospecials
14404 \Hy@safe@activetrue
14405 \escapechar=`\%
14406 \def\@@BOOKMARK[##1][##2]##3##4##5{%
14407 \calc@bm@number{##5}%
14408 }%
14409 \InputIfFileExists{jobname.out}{\relax}{\relax}%
14410 \ifx\WriteBookmarks\relax
14411 \global\let\WriteBookmarks\relax
14412 \fi
14413 \def\@@BOOKMARK[##1][##2]##3##4##5{%
14414 \def\Hy@temp{##4}%
14415 <*\pdfTeX>
14416 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14417 \Hy@OutlineName{}\Hy@pstringName{%
14418 ##2\check@bm@number{##3}}%
14419 }{%
14420 \expandafter\strip@prefix\meaning\Hy@temp
14421 }%
14422 </pdfTeX>
14423 <*\pdfmark>
14424 \pdfmark{%
14425 pdfmark=/OUT,%
14426 Count={##2\check@bm@number{##3}},%
14427 Dest={##3},%
14428 Title=\expandafter\strip@prefix\meaning\Hy@temp
14429 }%
14430 </pdfmark>
14431 <*\dviPDFM|xetex>
14432 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14433 \@pdfm@mark{%
14434 outline \ifHy@DviPDFMxOutlineOpen
14435 [%
14436 \ifnum##21>\z@
14437 \else
14438 -%
14439 \fi

```



```

14440         l %
14441         \fi
14442         ##1<<%
14443         /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
14444         /A<<%
14445         /S/GoTo%
14446         /D(\Hy@pstringName)%
14447         >>%
14448         >>%
14449         }%
14450 </dvipdfm | xetex>
14451     }%
14452     \begingroup
14453     \def\WriteBookmarks{0}%
14454     \InputIfFileExists{jobname.out}{-}{-}%
14455     \endgroup
14456     {%\escapechar\m@ne\InputIfFileExists{jobname.out}{-}{-}}%
14457     \endgroup
14458 }%
14459 \ifx\WriteBookmarks\relax
14460 \else
14461     \if@files
14462     \newwrite\@outlinefile
14463     \Hy@OutlineRerunCheck
14464     \immediate\openout\@outlinefile=jobname.out\relax
14465     \fi
14466 \fi
14467 }
14468 <*pdfTeX>
14469 \def\Hy@OutlineName#1#2#3#4{%
14470     \pdfoutline goto name{#2}count#3{#4}%
14471 }
14472 </pdfTeX>
14473 \def\check@bm@number#1{%
14474     \expandafter\ifx\csname B_#1\endcsname\relax
14475     0%
14476     \else
14477     \csname B_#1\endcsname
14478     \fi
14479 }
14480 \def\calc@bm@number#1{%
14481     \@tempcnta=\check@bm@number{#1}\relax
14482     \advance\@tempcnta by 1 %
14483     \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
14484 }
14485 </!vTeX>
14486 \ifHy@implicit
14487 \else
14488     \expandafter\endinput
14489 \fi
14490 </outlines>
14491 <*outlines | hypertex>
14492 \newlength\Hy@SectionHShift

```

```

14493 \def\Hy@SectionAnchorHref#1{%
14494   \ifx\protect\@typeset@protect
14495     \Hy@@@SectionAnchor{#1}%
14496   \fi
14497 }
14498 \DeclareRobustCommand*{\Hy@@@SectionAnchor}[1]{%
14499   \leavevmode
14500   \hbox to 0pt{%
14501     \kern-\Hy@SectionHShift
14502     \Hy@raisedlink{%
14503       \hyper@anchorstart{#1}\hyper@anchorend
14504     }%
14505     \hss
14506   }%
14507 }
14508 \@ifundefined{hyper@nopatch@sectioning}
14509 {
14510   \let\H@old@ssect\@ssect
14511   \def\@ssect#1#2#3#4#5{%
14512     \Hy@MakeCurrentHrefAuto{section*}%
14513     \setlength{\Hy@SectionHShift}{#1}%
14514     \begingroup
14515       \toks@{\H@old@ssect{#1}{#2}{#3}{#4}}%
14516       \toks\tw@\expandafter{%
14517         \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14518         #5%
14519       }%
14520     \edef\x{\endgroup
14521       \the\toks@\the\toks\tw@}%
14522   }\x
14523 }
14524 \let\H@old@schapter\@chapter
14525 \def\@chapter#1{%
14526   \begingroup
14527     \let\@mkboth\@gobbletwo
14528     \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14529     \Hy@raisedlink{%
14530       \hyper@anchorstart{\@currentHref}\hyper@anchorend
14531     }%
14532   \endgroup
14533   \H@old@schapter{#1}%
14534 }

```

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:

```

14535 \ltx@ifundefined{chapter}{}{%
14536   \let\Hy@org@chapter\@chapter
14537   \def\@chapter{%
14538     \def\Hy@next{%
14539       \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14540       \Hy@raisedlink{%
14541         \hyper@anchorstart{\@currentHref}\hyper@anchorend
14542       }%

```

```

14543 }%
14544 \ifnum\c@secnumdepth>\m@ne
14545 \ltx@ifundefined{if@mainmatter}%
14546 \iftrue{\csname if@mainmatter\endcsname}%
14547 \let\Hy@next\relax
14548 \fi
14549 \fi
14550 \Hy@next
14551 \Hy@org@chapter
14552 }%
14553 }

14554 \let\H@old@part\@part
14555 \@ifundefined{chapter}
14556 {\let\Hy@secnum@part\z@}
14557 {\let\Hy@secnum@part\m@ne}
14558 \def\@part{%
14559 \ifnum\Hy@secnum@part>\c@secnumdepth
14560 \phantomsection
14561 \fi
14562 \H@old@part
14563 }

14564 \let\H@old@spart\@spart
14565 \def\@spart#1{%
14566 \Hy@MakeCurrentHrefAuto{part*}%
14567 \Hy@raisedlink{%
14568 \hyper@anchorstart{\@currentHref}\hyper@anchorend
14569 }%
14570 \H@old@spart{#1}%
14571 }

14572 \let\H@old@sect\@sect
14573 \def\@sect#1#2#3#4#5#6[#7]#8{%
14574 \ifnum #2>\c@secnumdepth
14575 \expandafter\@firstoftwo
14576 \else
14577 \expandafter\@secondoftwo
14578 \fi
14579 {%
14580 \Hy@MakeCurrentHrefAuto{section*}%
14581 \setlength{\Hy@SectionHShift}{#3}%
14582 \begingroup
14583 \toks@{\H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}}%
14584 \toks\tw@\expandafter{%
14585 \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14586 #8%
14587 }%
14588 \edef\x{\endgroup
14589 \the\toks@\the\toks\tw@}%
14590 }\x
14591 }{%
14592 \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}{#8}%
14593 }%
14594 }
14595 }{}

```

```

14596 </outlines | hypertex>
14597 <*outlines>

14598 \expandafter\def\csname Parent-4\endcsname{}
14599 \expandafter\def\csname Parent-3\endcsname{}
14600 \expandafter\def\csname Parent-2\endcsname{}
14601 \expandafter\def\csname Parent-1\endcsname{}
14602 \expandafter\def\csname Parent0\endcsname{}
14603 \expandafter\def\csname Parent1\endcsname{}
14604 \expandafter\def\csname Parent2\endcsname{}
14605 \expandafter\def\csname Parent3\endcsname{}
14606 \expandafter\def\csname Parent4\endcsname{}

14607 </outlines>

```

## 46 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek.

### 46.1 PD1 encoding

```

14608 <*pd1enc>
14609 \DeclareFontEncoding{PD1}{}{}

Accents
14610 \DeclareTextAccent{\`}{PD1}{\textasciigrave}
14611 \DeclareTextAccent{\'}{PD1}{\textacute}
14612 \DeclareTextAccent{\^}{PD1}{\textasciicircum}
14613 \DeclareTextAccent{\~}{PD1}{\texttilde}
14614 \DeclareTextAccent{\"}{PD1}{\textasciidieresis}
14615 \DeclareTextAccent{\r}{PD1}{\textring}
14616 \DeclareTextAccent{\v}{PD1}{\textasciicaron}
14617 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
14618 \DeclareTextAccent{\c}{PD1}{\textcedilla}
14619 \DeclareTextAccent{\=}{PD1}{\textasciimacron}
14620 \DeclareTextAccent{\b}{PD1}{\textmacronbelow}
14621 \DeclareTextAccent{\d}{PD1}{\textdotbelow}
14622 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textasciigrave}
14623 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
14624 \DeclareTextCompositeCommand{\^}{PD1}{\@empty}{\textasciicircum}
14625 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
14626 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textasciidieresis}
14627 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
14628 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textasciicaron}
14629 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
14630 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
14631 \DeclareTextCompositeCommand{\=}{PD1}{\@empty}{\textasciimacron}
14632 \DeclareTextCompositeCommand{\b}{PD1}{\@empty}{\textmacronbelow}
14633 \DeclareTextCompositeCommand{\d}{PD1}{\@empty}{\textdotbelow}
14634 \DeclareTextCompositeCommand{\`}{PD1}{\ }{\textasciigrave}
14635 \DeclareTextCompositeCommand{\'}{PD1}{\ }{\textacute}
14636 \DeclareTextCompositeCommand{\^}{PD1}{\ }{\textasciicircum}
14637 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\texttilde}

```

```

14638 \DeclareTextCompositeCommand{"}{PD1}{\ }{\textasciidieresis}
14639 \DeclareTextCompositeCommand{\r}{PD1}{\ }{\textstring}
14640 \DeclareTextCompositeCommand{\v}{PD1}{\ }{\textasciicaron}
14641 \DeclareTextCompositeCommand{\.}{PD1}{\ }{\textdotaccent}
14642 \DeclareTextCompositeCommand{\c}{PD1}{\ }{\textcedilla}
14643 \DeclareTextCompositeCommand{\=}{PD1}{\ }{\textasciimacron}
14644 \DeclareTextCompositeCommand{\b}{PD1}{\ }{\textmacronbelow}
14645 \DeclareTextCompositeCommand{\d}{PD1}{\ }{\textdotbelow}
14646 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}
14647 \DeclareTextCommand{\t}{PD1}[1]{\TextSymbolUnavailable{\t{#1}}#1}
14648 \DeclareTextCommand{\newtie}{PD1}[1]{%
14649 \TextSymbolUnavailable{\newtie{#1}}#1%
14650 }

```

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

```

14651 % U+0009 (CHARACTER TABULATION)
14652 \DeclareTextCommand{\textHT}{PD1}{\011}% U+0009
14653 % U+000A (LINE FEED)
14654 \DeclareTextCommand{\textLF}{PD1}{\012}% U+000A
14655 % U+000D (CARRIAGE RETURN)
14656 \DeclareTextCommand{\textCR}{PD1}{\015}% U+000D

```

Accent glyph names

```

14657 % U+02D8 BREVE; breve
14658 \DeclareTextCommand{\textasciibreve}{PD1}{\030}% U+02D8
14659 % U+02C7 CARON; caron
14660 \DeclareTextCommand{\textasciicaron}{PD1}{\031}% U+02C7
14661 % U+02C6 MODIFIER LETTER CIRCUMFLEX ACCENT; circumflex
14662 \DeclareTextCommand{\textcircumflex}{PD1}{\032}% U+02C6
14663 % U+02D9 DOT ABOVE; dotaccent
14664 \DeclareTextCommand{\textdotaccent}{PD1}{\033}% U+02D9
14665 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut
14666 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034}% U+02DD
14667 % U+02DB OGONEK; ogonek
14668 \DeclareTextCommand{\textogonek}{PD1}{\035}% U+02DB
14669 % U+02DA RING ABOVE; ring
14670 \DeclareTextCommand{\textring}{PD1}{\036}% U+02DA
14671 % U+02DC SMALL TILDE; ilde, *tilde
14672 \DeclareTextCommand{\texttilde}{PD1}{\037}% U+02DC

```

\040: U+0020 SPACE; \*space, spacehackarabic

\041: U+0021 EXCLAMATION MARK; exclam

```

14673 % U+0022 QUOTATION MARK; quotedbl
14674 \DeclareTextCommand{\textquotedbl}{PD1}{"}% \042 U+0022
14675 % U+0023 NUMBER SIGN; numbersign
14676 \DeclareTextCommand{\textnumbersign}{PD1}{\043}% U+0023
14677 % U+0024 DOLLAR SIGN; dollar
14678 \DeclareTextCommand{\textdollar}{PD1}{\$}% \044 U+0024
14679 % U+0025 PERCENT SIGN; percent
14680 \DeclareTextCommand{\textpercent}{PD1}{\045}% U+0025
14681 % U+0026 AMPERSAND; ampersand
14682 \DeclareTextCommand{\textampersand}{PD1}{\046}% U+0026
\047: U+0027 APOSTROPHE; quotesingle

```

14683 % U+0028 LEFT PARENTHESIS; parenleft  
14684 \DeclareTextCommand{\textparenleft}{PD1}{\string\{}% \050 U+0028  
14685 % U+0029 RIGHT PARENTHESIS; parenright  
14686 \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  
14687 % U+002E FULL STOP; period  
14688 \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  
14689 % U+003C LESS-THAN SIGN; less  
14690 \DeclareTextCommand{\textless}{PD1}{<}% \074 U+003C  
  
\075: U+003D EQUALS SIGN; equal  
14691 % U+003E GREATER-THAN SIGN; greater  
14692 \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  
14693 % U+005C REVERSE SOLIDUS; backslash  
14694 \DeclareTextCommand{\textbackslash}{PD1}{\134}% U+005C  
14695 % "U+2216 SET MINUS" simulated by "U+005C REVERSE SOLIDUS"  
14696 \DeclareTextCommand{\textsetminus}{PD1}{\textbackslash}  
  
\135: U+005D RIGHT SQUARE BRACKET; bracketright  
14697 % U+005E CIRCUMFLEX ACCENT; asciicircum  
14698 \DeclareTextCommand{\textasciicircum}{PD1}{\136}% U+005E  
14699 % U+005F LOW LINE; underscore  
14700 \DeclareTextCommand{\textunderscore}{PD1}{\137}% U+005F  
14701 \DeclareTextCommand{\textmacronbelow}{PD1}{\137}% U+005F  
14702 % U+0060 GRAVE ACCENT; grave  
14703 \DeclareTextCommand{\textasciigrave}{PD1}{\140}% U+0060  
  
\141: U+0061 LATIN SMALL LETTER A; a  
  
...  
\150: U+0068 LATIN SMALL LETTER H; h  
14704 % U+0069 LATIN SMALL LETTER I; i  
14705 \DeclareTextCompositeCommand{\.}{PD1}{i}{i}% \151 U+0069  
  
\152: U+006A LATIN SMALL LETTER J; j  
  
...  
\172: U+007A LATIN SMALL LETTER Z; z  
14706 % U+007B LEFT CURLY BRACKET; braceleft  
14707 \DeclareTextCommand{\textbraceleft}{PD1}{\173}% U+007B

14708 % U+007C VERTICAL LINE; \*bar, verticalbar  
 14709 \DeclareTextCommand{\textbar}{PD1}{|}% U+007C  
 14710 % U+007D RIGHT CURLY BRACKET; braceright  
 14711 \DeclareTextCommand{\textbraceright}{PD1}{\175}% U+007D  
 14712 % U+007E TILDE; asciitilde  
 14713 \DeclareTextCommand{\textasciitilde}{PD1}{\176}% U+007E  
 Slot \177 (0x7F) is undefined in PDFDocEncoding.  
 14714 % U+2022 BULLET; bullet  
 14715 \DeclareTextCommand{\textbullet}{PD1}{\200}% U+2022  
 14716 % U+2020 DAGGER; dagger  
 14717 \DeclareTextCommand{\textdagger}{PD1}{\201}% U+2020  
 14718 % U+2021 DOUBLE DAGGER; daggerdbl; \ddagger (LaTeX)  
 14719 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202}% U+2021  
 14720 \DeclareTextCommand{\textddagger}{PD1}{\textddagger}  
 14721 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 14722 \DeclareTextCommand{\textellipsis}{PD1}{\203}% U+2026  
 14723 % U+2014 EM DASH; emdash  
 14724 \DeclareTextCommand{\textemdash}{PD1}{\204}% U+2014  
 14725 % U+2013 EN DASH; endash  
 14726 \DeclareTextCommand{\textendash}{PD1}{\205}% U+2013  
 14727 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
 14728 \DeclareTextCommand{\textflorin}{PD1}{\206}% U+0192  
 14729 % U+2044 FRACTION SLASH; fraction  
 14730 \DeclareTextCommand{\textfractionsolidus}{PD1}{\207}% U+2044  
 14731 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
 ingleft  
 14732 \DeclareTextCommand{\guilsingleft}{PD1}{\210}% U+2039  
 14733 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
 singright  
 14734 \DeclareTextCommand{\guilsingright}{PD1}{\211}% U+203A  
 14735 % U+2212 MINUS SIGN; minus  
 14736 \DeclareTextCommand{\textminus}{PD1}{\212}% U+2212  
 14737 % U+2030 PER MILLE SIGN; perthousand  
 14738 \DeclareTextCommand{\textperthousand}{PD1}{\213}% U+2030  
 14739 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 14740 \DeclareTextCommand{\quotedblbase}{PD1}{\214}% U+201E  
 14741 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 14742 \DeclareTextCommand{\textquotedblleft}{PD1}{\215}% U+201C  
 14743 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 14744 \DeclareTextCommand{\textquotedblright}{PD1}{\216}% U+201D  
 14745 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 14746 \DeclareTextCommand{\textquoteleft}{PD1}{\217}% U+2018  
 14747 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 14748 \DeclareTextCommand{\textquoteright}{PD1}{\220}% U+2019  
 14749 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 14750 \DeclareTextCommand{\quotesinglbase}{PD1}{\221}% U+201A  
 14751 % U+2122 TRADE MARK SIGN; trademark  
 14752 \DeclareTextCommand{\texttrademark}{PD1}{\222}% U+2122  
 14753 % U+FB01 LATIN SMALL LIGATURE FI; fi  
 14754 \DeclareTextCommand{\textfi}{PD1}{\223}% U+FB01  
 14755 % U+FB02 LATIN SMALL LIGATURE FL; fl  
 14756 \DeclareTextCommand{\textfl}{PD1}{\224}% U+FB02  
 14757 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
 14758 \DeclareTextCommand{\L}{PD1}{\225}% U+0141

14759 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
14760 \DeclareTextCommand{\OE}{PD1}{\226}% U+0152  
14761 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
14762 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227}% U+0160  
14763 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
14764 \DeclareTextCompositeCommand{"}{PD1}{Y}{\230}% U+0178  
14765 \DeclareTextCommand{\IJ}{PD1}{IJ}% ligature U+0049 U+004A  
14766 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
14767 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231}% U+017D  
14768 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
14769 \DeclareTextCommand{\i}{PD1}{\232}% U+0131  
14770 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
14771 \DeclareTextCommand{\l}{PD1}{\233}% U+0142  
14772 % U+0153 LATIN SMALL LIGATURE OE; oe  
14773 \DeclareTextCommand{\oe}{PD1}{\234}% U+0153  
14774 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
14775 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235}% U+0161  
14776 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
14777 \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.  
14778 % U+20AC EURO SIGN; \*Euro, euro  
14779 \DeclareTextCommand{\texteuro}{PD1}{\240}% U+20AC  
14780 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
14781 \DeclareTextCommand{\textexclamdown}{PD1}{\241}% U+00A1  
14782 % U+00A2 CENT SIGN; cent  
14783 \DeclareTextCommand{\textcent}{PD1}{\242}% U+00A2  
14784 % U+00A3 POUND SIGN; sterling  
14785 \DeclareTextCommand{\textsterling}{PD1}{\243}% U+00A3  
14786 % U+00A4 CURRENCY SIGN; currency  
14787 \DeclareTextCommand{\textcurrency}{PD1}{\244}% U+00A4  
14788 % U+00A5 YEN SIGN; yen  
14789 \DeclareTextCommand{\textyen}{PD1}{\245}% U+00A5  
14790 % U+00A6 BROKEN BAR; brokenbar  
14791 \DeclareTextCommand{\textbrokenbar}{PD1}{\246}% U+00A6  
14792 % U+00A7 SECTION SIGN; section  
14793 \DeclareTextCommand{\textsection}{PD1}{\247}% U+00A7  
14794 % U+00A8 DIAERESIS; dieresis  
14795 \DeclareTextCommand{\textasciidieresis}{PD1}{\250}% U+00A8  
14796 % U+00A9 COPYRIGHT SIGN; copyright  
14797 \DeclareTextCommand{\textcopyright}{PD1}{\251}% U+00A9  
14798 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
14799 \DeclareTextCommand{\textordfeminine}{PD1}{\252}% U+00AA  
14800 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetleft  
14801 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB  
14802 \DeclareTextCommand{\guillemetleft}{PD1}{\253}% U+00AB  
14803 % U+00AC NOT SIGN; logicalnot  
14804 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC  
14805 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not  
No glyph \255 in PDFDocEncoding.  
14806 % U+00AE REGISTERED SIGN; registered  
14807 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE  
14808 % U+00AF MACRON; \*macron, overscore



14809 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF  
14810 % U+00B0 DEGREE SIGN; degree  
14811 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0  
14812 % U+00B1 PLUS-MINUS SIGN; plusminus  
14813 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1  
14814 % U+00B2 SUPERSCRIPT TWO; twosuperior  
14815 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}%\* U+00B2  
14816 % U+00B3 SUPERSCRIPT THREE; threesuperior  
14817 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}%\* U+00B3  
14818 % U+00B4 ACUTE ACCENT; acute  
14819 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4  
14820 % U+00B5 MICRO SIGN; mu, mul  
14821 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5  
14822 % U+00B6 PILCROW SIGN; paragraph  
14823 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6  
14824 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
14825 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7  
14826 % U+00B8 CEDILLA; cedilla  
14827 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8  
14828 % U+00B9 SUPERSCRIPT ONE; onesuperior  
14829 \DeclareTextCommand{\textonesuperior}{PD1}{\271}%\* U+00B9  
14830 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
14831 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA  
14832 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetright  
14833 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB  
14834 \DeclareTextCommand{\guillemetright}{PD1}{\273}% U+00BB  
14835 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
14836 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC  
14837 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
14838 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD  
14839 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
14840 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE  
14841 % U+00BF INVERTED QUESTION MARK; questiondown  
14842 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF  
14843 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
14844 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0  
14845 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
14846 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1  
14847 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
14848 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2  
14849 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
14850 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3  
14851 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
14852 \DeclareTextCompositeCommand{\\"}{PD1}{A}{\304}% U+00C4  
14853 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
14854 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5  
14855 % U+00C6 LATIN CAPITAL LETTER AE; AE  
14856 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6  
14857 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
14858 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7  
14859 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
14860 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310}% U+00C8  
14861 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
14862 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311}% U+00C9

14863 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
14864 \DeclareTextCompositeCommand{\`}{PD1}{E}{\312}% U+00CA  
14865 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
14866 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313}% U+00CB  
14867 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
14868 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314}% U+00CC  
14869 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
14870 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315}% U+00CD  
14871 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
14872 \DeclareTextCompositeCommand{\`}{PD1}{I}{\316}% U+00CE  
14873 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
14874 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317}% U+00CF  
14875 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
14876 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0  
14877 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0  
14878 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
14879 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321}% U+00D1  
14880 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
14881 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322}% U+00D2  
14882 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
14883 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323}% U+00D3  
14884 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
14885 \DeclareTextCompositeCommand{\`}{PD1}{O}{\324}% U+00D4  
14886 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
14887 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325}% U+00D5  
14888 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
14889 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326}% U+00D6  
14890 % U+00D7 MULTIPLICATION SIGN; multiply  
14891 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7  
14892 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
14893 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8  
14894 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
14895 \DeclareTextCompositeCommand{\`}{PD1}{U}{\331}% U+00D9  
14896 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
14897 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332}% U+00DA  
14898 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
14899 \DeclareTextCompositeCommand{\`}{PD1}{U}{\333}% U+00DB  
14900 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
14901 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334}% U+00DC  
14902 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
14903 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335}% U+00DD  
14904 % U+00DE LATIN CAPITAL LETTER THORN; Thorn; \TH, \Thorn (wasysym)  
14905 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE  
14906 \DeclareTextCommand{\textThorn}{PD1}{\336}%\* U+00DE  
14907 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
14908 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF  
14909 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
14910 \DeclareTextCompositeCommand{\`}{PD1}{a}{\340}% U+00E0  
14911 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
14912 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341}% U+00E1  
14913 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
14914 \DeclareTextCompositeCommand{\`}{PD1}{a}{\342}% U+00E2  
14915 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
14916 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343}% U+00E3

14917 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
14918 \DeclareTextCompositeCommand{"}{PD1}{a}{\344}% U+00E4  
14919 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
14920 \DeclareTextCompositeCommand{r}{PD1}{a}{\345}% U+00E5  
14921 % U+00E6 LATIN SMALL LETTER AE; ae  
14922 \DeclareTextCommand{ae}{PD1}{\346}% U+00E6  
14923 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
14924 \DeclareTextCompositeCommand{c}{PD1}{c}{\347}% U+00E7  
14925 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
14926 \DeclareTextCompositeCommand{`}{PD1}{e}{\350}% U+00E8  
14927 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
14928 \DeclareTextCompositeCommand{'}{PD1}{e}{\351}% U+00E9  
14929 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
14930 \DeclareTextCompositeCommand{^}{PD1}{e}{\352}% U+00EA  
14931 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
14932 \DeclareTextCompositeCommand{"}{PD1}{e}{\353}% U+00EB  
14933 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
14934 \DeclareTextCompositeCommand{`}{PD1}{i}{\354}% U+00EC  
14935 \DeclareTextCompositeCommand{`}{PD1}{i}{\354}% U+00EC  
14936 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
14937 \DeclareTextCompositeCommand{'}{PD1}{i}{\355}% U+00ED  
14938 \DeclareTextCompositeCommand{'}{PD1}{i}{\355}% U+00ED  
14939 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
14940 \DeclareTextCompositeCommand{^}{PD1}{i}{\356}% U+00EE  
14941 \DeclareTextCompositeCommand{^}{PD1}{i}{\356}% U+00EE  
14942 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
14943 \DeclareTextCompositeCommand{"}{PD1}{i}{\357}% U+00EF  
14944 \DeclareTextCompositeCommand{"}{PD1}{i}{\357}% U+00EF  
14945 % U+00F0 LATIN SMALL LETTER ETH; eth  
14946 \DeclareTextCommand{dh}{PD1}{\360}% U+00F0  
14947 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
14948 \DeclareTextCompositeCommand{~}{PD1}{n}{\361}% U+00F1  
14949 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
14950 \DeclareTextCompositeCommand{`}{PD1}{o}{\362}% U+00F2  
14951 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
14952 \DeclareTextCompositeCommand{'}{PD1}{o}{\363}% U+00F3  
14953 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
14954 \DeclareTextCompositeCommand{^}{PD1}{o}{\364}% U+00F4  
14955 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
14956 \DeclareTextCompositeCommand{~}{PD1}{o}{\365}% U+00F5  
14957 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
14958 \DeclareTextCompositeCommand{"}{PD1}{o}{\366}% U+00F6  
14959 % U+00F7 DIVISION SIGN; divide  
14960 \DeclareTextCommand{textdivide}{PD1}{\367}% U+00F7  
14961 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
14962 \DeclareTextCommand{o}{PD1}{\370}% U+00F8  
14963 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
14964 \DeclareTextCompositeCommand{`}{PD1}{u}{\371}% U+00F9  
14965 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
14966 \DeclareTextCompositeCommand{'}{PD1}{u}{\372}% U+00FA  
14967 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
14968 \DeclareTextCompositeCommand{^}{PD1}{u}{\373}% U+00FB  
14969 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
14970 \DeclareTextCompositeCommand{"}{PD1}{u}{\374}% U+00FC

```

14971 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute
14972 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375}% U+00FD
14973 % U+00FE LATIN SMALL LETTER THORN; thorn; \th, \thorn (wasysym)
14974 \DeclareTextCommand{\th}{PD1}{\376}% U+00FE
14975 \DeclareTextCommand{\textthorn}{PD1}{\376}%* U+00FE
14976 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis
14977 \DeclareTextCompositeCommand{"}{PD1}{y}{\377}% U+00FF
14978 \DeclareTextCommand{\ij}{PD1}{ij}% ligature U+0069 U+006A

```

Glyphs that consist of several characters.

```

14979 \DeclareTextCommand{\SS}{PD1}{SS}%
14980 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}%

```

Aliases (german.sty)

```

14981 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}%
14982 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}%
14983 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}%
14984 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}%
14985 \DeclareTextCommand{\textflqq}{PD1}{\guillemetleft}%
14986 \DeclareTextCommand{\textfrqq}{PD1}{\guillemetright}%
14987 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}%
14988 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}%

```

Aliases (math names)

```

14989 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}%
14990 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}%
14991 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}%
14992 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}%
14993 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}%
14994 \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).

```

14995 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek
14996 \DeclareTextCompositeCommand{'}{PD1}{c}{c}% cacute
14997 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek
14998 \DeclareTextCompositeCommand{'}{PD1}{n}{n}% nacute
14999 \DeclareTextCompositeCommand{'}{PD1}{s}{s}% sacute
15000 \DeclareTextCompositeCommand{'}{PD1}{z}{z}% zacute
15001 \DeclareTextCompositeCommand{\.}{PD1}{z}{z}% zdot
15002 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek
15003 \DeclareTextCompositeCommand{'}{PD1}{C}{C}% Cacute
15004 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek
15005 \DeclareTextCompositeCommand{'}{PD1}{N}{N}% Nacute
15006 \DeclareTextCompositeCommand{'}{PD1}{S}{S}% Sacute
15007 \DeclareTextCompositeCommand{'}{PD1}{Z}{Z}% Zacute
15008 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z}% Zdot

```

```

15009 </pd1enc>

```

## 46.2 PU encoding

```

15010 <*puenc>
15011 \DeclareFontEncoding{PU}{}{}

```

### 46.2.1 NFSS2 accents

15012 % U+0300 COMBINING GRAVE ACCENT; gravecmb, \*gravecomb  
15013 \DeclareTextCommand{\`}{PU}[1]{#1\83\000}% U+0300  
15014 % U+0301 COMBINING ACUTE ACCENT; acutecmb, \*acutecomb  
15015 \DeclareTextCommand{\'}{PU}[1]{#1\83\001}% U+0301  
15016 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb  
15017 \DeclareTextCommand{\^}{PU}[1]{#1\83\002}% U+0302  
15018 % U+0303 COMBINING TILDE; tildecmb, \*tildecmb  
15019 \DeclareTextCommand{\~}{PU}[1]{#1\83\003}% U+0303  
15020 % U+0304 COMBINING MACRON; macroncmb  
15021 \DeclareTextCommand{\=}{PU}[1]{#1\83\004}% U+0304  
15022 % U+0306 COMBINING BREVE; brevecmb  
15023 \DeclareTextCommand{\u}{PU}[1]{#1\83\006}% U+0306  
15024 \ifx\CYRDZE\@undefined \else  
15025 \DeclareTextCommand{\U}{PU}[1]{#1\83\006}% U+0306  
15026 \fi  
15027 % U+0307 COMBINING DOT ABOVE; dotaccentcmb  
15028 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307  
15029 % U+0308 COMBINING DIAERESIS; dieresiscmb  
15030 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308  
15031 % U+030A COMBINING RING ABOVE; ringcmb  
15032 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A  
15033 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb  
15034 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B  
15035 % U+030C COMBINING CARON; caroncmb  
15036 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C  
15037 \end{puenc}  
15038 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb  
15039 \puextra\DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F  
15040 \end{puenc}  
15041 \ifx\CYRDZE\@undefined \else  
15042 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F  
15043 \fi  
15044 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
15045 \DeclareTextCommand{\textinvbreve}{PU}[1]{#1\83\021}% U+0311  
15046 \DeclareTextCommand{\newtie}{PU}[1]{#1\83\021}% U+0311  
15047 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcomb  
15048 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323  
15049 % U+0324 COMBINING DIAERESIS BELOW; dieresisbelowcmb; \textsubum-  
laut (tipa)  
15050 \DeclareTextCommand{\textsubumlaut}{PU}[1]{#1\83\044}% U+0324  
15051 % U+0325 COMBINING RING BELOW; ringbelowcmb; \textsubring (tipa)  
15052 \DeclareTextCommand{\textsubring}{PU}[1]{#1\83\045}% U+0325  
15053 % U+0327 COMBINING CEDILLA; cedillacmb  
15054 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327  
15055 % U+0328 COMBINING OGONEK; ogonekcmb  
15056 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328  
15057 % U+032D COMBINING CIRCUMFLEX ACCENT BELOW;  
15058 % \textsubcircum (tipa)  
15059 \DeclareTextCommand{\textsubcircum}{PU}[1]{#1\83\055}% U+032D  
15060 % U+032E COMBINING BREVE BELOW; brevebelowcmb  
15061 \DeclareTextCommand{\textsubbreve}{PU}[1]{#1\83\056}% U+032E  
15062 % U+0330 COMBINING TILDE BELOW; tildebelowcmb; \textsubtilde (tipa)  
15063 \DeclareTextCommand{\textsubtilde}{PU}[1]{#1\83\060}% U+0330  
15064 % U+0331 COMBINING MACRON BELOW; macronbelowcmb

```

15065 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331
15066 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddou-
      blecmb
15067 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361
15068 % U+20DD COMBINING ENCLOSING CIRCLE
15069 \DeclareTextCommand{\textcircled}{PU}[1]{#1\9040\335}% U+20DD

```

Double accents.

```

15070 \DeclareTextCommand{\textacutemacron}{PU}[1]{#1\83\001\83\004}% U+0301 U+0304
15071 \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.

```

15072 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textasciigrave}%
15073 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}%
15074 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\textasciicircum}%
15075 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}%
15076 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textasciidieresis}%
15077 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}%
15078 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textasciicaron}%
15079 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}%
15080 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}%
15081 \DeclareTextCompositeCommand{\u}{PU}{\@empty}{\textasciibreve}%
15082 \puenc)
15083 \puextra)\DeclareTextCompositeCommand{\G}{PU}{\@empty}{\textdoublegrave}%
15084 \puenc)
15085 \DeclareTextCompositeCommand{\=}{PU}{\@empty}{\textasciimacron}%
15086 \DeclareTextCompositeCommand{\H}{PU}{\@empty}{\texthungarumlaut}%
15087 \DeclareTextCompositeCommand{\k}{PU}{\@empty}{\textogonek}%
15088 \DeclareTextCompositeCommand{\textinvbreve}{PU}{\@empty}{\83\021}% U+0311
15089 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{\@empty}{\83\044}% U+0324
15090 \DeclareTextCompositeCommand{\textsubring}{PU}{\@empty}{\textringlow}%
15091 \DeclareTextCompositeCommand{\textsubcircum}{PU}{\@empty}{\textcircum-
      low}%
15092 \DeclareTextCompositeCommand{\textsubbreve}{PU}{\@empty}{\83\056}% U+032E
15093 \DeclareTextCompositeCommand{\textsubtilde}{PU}{\@empty}{\texttildebelow}%
15094 \DeclareTextCompositeCommand{\b}{PU}{\@empty}{\textmacronbelow}%
15095 \DeclareTextCompositeCommand{\d}{PU}{\@empty}{\textdotbelow}%
15096 \DeclareTextCompositeCommand{\t}{PU}{\@empty}{\texttie}%
15097 \DeclareTextCompositeCommand{\newtie}{PU}{\@empty}{\textnewtie}%
15098 \DeclareTextCompositeCommand{\textcircled}{PU}{\@empty}{\textbigcircle}%
15099 \DeclareTextCompositeCommand{\textacutemacron}{PU}{\@empty}{\83\001\83\004}% U+0301 U
15100 \DeclareTextCompositeCommand{\textgravemacron}{PU}{\@empty}{\83\000\83\004}% U+0300 U
15101 \DeclareTextCompositeCommand{\`}{PU}{\ }{\textasciigrave}%
15102 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textacute}%
15103 \DeclareTextCompositeCommand{\~}{PU}{\ }{\textasciicircum}%
15104 \DeclareTextCompositeCommand{\~}{PU}{\ }{\texttilde}%
15105 \DeclareTextCompositeCommand{\"}{PU}{\ }{\textasciidieresis}%
15106 \DeclareTextCompositeCommand{\r}{PU}{\ }{\textring}%
15107 \DeclareTextCompositeCommand{\v}{PU}{\ }{\textasciicaron}%
15108 \DeclareTextCompositeCommand{\.}{PU}{\ }{\textdotaccent}%
15109 \DeclareTextCompositeCommand{\c}{PU}{\ }{\textcedilla}%
15110 \DeclareTextCompositeCommand{\u}{PU}{\ }{\textasciibreve}%
15111 \puenc)
15112 \puextra)\DeclareTextCompositeCommand{\G}{PU}{\ }{\textdoublegrave}%

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15113 (\*puenc)  
 15114 \DeclareTextCompositeCommand{\=}{PU}{\ }{\textasciimacron}%  
 15115 \DeclareTextCompositeCommand{\H}{PU}{\ }{\texthungarumlaut}%  
 15116 \DeclareTextCompositeCommand{\k}{PU}{\ }{\textogonek}%  
 15117 \DeclareTextCompositeCommand{\textinvbreve}{PU}{\ }{\ \83\021}}% U+0311  
 15118 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{\ }{\ \83\044}}% U+0324  
 15119 \DeclareTextCompositeCommand{\textsubring}{PU}{\ }{\textringlow}%  
 15120 \DeclareTextCompositeCommand{\textsubcircum}{PU}{\ }{\textcircumlow}%  
 15121 \DeclareTextCompositeCommand{\textsubbreve}{PU}{\ }{\ \83\056}}% U+032E  
 15122 \DeclareTextCompositeCommand{\textsubtilde}{PU}{\ }{\texttildelow}%  
 15123 \DeclareTextCompositeCommand{\b}{PU}{\ }{\textmacronbelow}%  
 15124 \DeclareTextCompositeCommand{\d}{PU}{\ }{\textdotbelow}%  
 15125 \DeclareTextCompositeCommand{\t}{PU}{\ }{\texttie}%  
 15126 \DeclareTextCompositeCommand{\newtie}{PU}{\ }{\textnewtie}%  
 15127 \DeclareTextCompositeCommand{\textcircled}{PU}{\ }{\textbigcircle}%  
 15128 \DeclareTextCompositeCommand{\textacutemacron}{PU}{\ }{\ \83\001\83\004}}% U+0301 U+0304  
 15129 \DeclareTextCompositeCommand{\textgravemacron}{PU}{\ }{\ \83\000\83\004}}% U+0300 U+0304

Accents for capitals (see encoding TS1)

15130 \DeclareTextCommand{\capitalcedilla}{PU}[1]{\c{#1}}%  
 15131 \DeclareTextCommand{\capitalogonek}{PU}[1]{\k{#1}}%  
 15132 \DeclareTextCommand{\capitalgrave}{PU}[1]{\`{#1}}%  
 15133 \DeclareTextCommand{\capitalacute}{PU}[1]{\'{#1}}%  
 15134 \DeclareTextCommand{\capitalcircumflex}{PU}[1]{\^{#1}}%  
 15135 \DeclareTextCommand{\capitaltilde}{PU}[1]{\~{#1}}%  
 15136 \DeclareTextCommand{\capitaldieresis}{PU}[1]{\"{#1}}%  
 15137 \DeclareTextCommand{\capitalhungarumlaut}{PU}[1]{\H{#1}}%  
 15138 \DeclareTextCommand{\capitalring}{PU}[1]{\r{#1}}%  
 15139 \DeclareTextCommand{\capitalcaron}{PU}[1]{\v{#1}}%  
 15140 \DeclareTextCommand{\capitalbreve}{PU}[1]{\u{#1}}%  
 15141 \DeclareTextCommand{\capitalmacron}{PU}[1]{\={#1}}%  
 15142 \DeclareTextCommand{\capitaldotaccent}{PU}[1]{\.\{#1}}%  
 15143 \DeclareTextCommand{\capitaltie}{PU}[1]{\t{#1}}%  
 15144 \DeclareTextCommand{\capitalnewtie}{PU}[1]{\newtie{#1}}%

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

Special white space escape characters.

15145 % U+0009 (CHARACTER TABULATION)  
 15146 \DeclareTextCommand{\textHT}{PU}{\80\011}% U+0009  
 15147 % U+000A (LINE FEED)  
 15148 \DeclareTextCommand{\textLF}{PU}{\80\012}% U+000A  
 15149 % U+000D (CARRIAGE RETURN)  
 15150 \DeclareTextCommand{\textCR}{PU}{\80\015}% U+000D  
 \80\040: U+0020 SPACE; space, spacehackarabic  
 \80\041: U+0021 EXCLAMATION MARK; exclam  
 15151 % U+0022 QUOTATION MARK; quotedbl  
 15152 \DeclareTextCommand{\textquotedbl}{PU}{\"}% \80\042 U+0022  
 15153 % U+0023 NUMBER SIGN; numbersign  
 15154 \DeclareTextCommand{\textnumbersign}{PU}{\80\043}% U+0023  
 15155 % U+0024 DOLLAR SIGN; dollar  
 15156 \DeclareTextCommand{\textdollar}{PU}{\80\044}% U+0024  
 15157 %\* \textdollar -> \mathdollar  
 15158 %\* \textdollar -> \EyesDollar (marvosym)  
 15159 % U+0025 PERCENT SIGN; percent

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15160 \DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025
15161 % U+0026 AMPERSAND; ampersand
15162 \DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026
15163 %* \textampersand -> \binampersand (stmaryrd)
15164 %* \textampersand -> \with (cml)
15165 % U+0027 APOSTROPHE; quotesingle
15166 \DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027
15167 % U+0028 LEFT PARENTHESIS; parenleft
15168 \DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028
15169 % U+0029 RIGHT PARENTHESIS; parenright
15170 \DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029
15171 % U+002A ASTERISK; asterisk; (?)
15172 \DeclareTextCommand{\textasteriskcentered}{PU}{\80\052}% U+002A
15173 % U+002B PLUS SIGN; plus; \MVPlus (marvosym)
15174 \DeclareTextCommand{\textMVPlus}{PU}{\80\053}%* U+002B
15175 % U+002C COMMA; comma; \MVComma (marvosym)
15176 \DeclareTextCommand{\textMVComma}{PU}{\80\054}%* U+002C
15177 % U+002D HYPHEN-MINUS; hyphen; \MVMinus (marvosym)
15178 \DeclareTextCommand{\textMVMinus}{PU}{\80\055}%* U+002D
15179 % U+002E FULL STOP; period; \MVPeriod (marvosym)
15180 \DeclareTextCommand{\textMVPeriod}{PU}{\80\056}%* U+002E
15181 % U+002F SOLIDUS; slash; \MVDivision (marvosym)
15182 \DeclareTextCommand{\textMVDivision}{PU}{\80\057}%* U+002F
15183 % U+0030 DIGIT ZERO; zero; \MVZero (marvosym)
15184 \DeclareTextCommand{\textMVZero}{PU}{\80\060}%* U+0030
15185 % U+0031 DIGIT ONE; one; \MVOne (marvosym)
15186 \DeclareTextCommand{\textMVOne}{PU}{\80\061}%* U+0031
15187 % U+0032 DIGIT TWO; two; \MVTwo (marvosym)
15188 \DeclareTextCommand{\textMVTwo}{PU}{\80\062}%* U+0032
15189 % U+0033 DIGIT THREE; three; \MVThree (marvosym)
15190 \DeclareTextCommand{\textMVThree}{PU}{\80\063}%* U+0033
15191 % U+0034 DIGIT FOUR; four; \MVFour (marvosym)
15192 \DeclareTextCommand{\textMVFour}{PU}{\80\064}%* U+0034
15193 % U+0035 DIGIT FIVE; five; \MVFive (marvosym)
15194 \DeclareTextCommand{\textMVFive}{PU}{\80\065}%* U+0035
15195 % U+0036 DIGIT SIX; six; \MVSix (marvosym)
15196 \DeclareTextCommand{\textMVSix}{PU}{\80\066}%* U+0036
15197 % U+0037 DIGIT SEVEN; seven; \MVSeven (marvosym)
15198 \DeclareTextCommand{\textMVSeven}{PU}{\80\067}%* U+0037
15199 % U+0038 DIGIT EIGHT; eight; \MVEight (marvosym)
15200 \DeclareTextCommand{\textMVEight}{PU}{\80\070}%* U+0038
15201 % U+0039 DIGIT NINE; nine; \MVNine (marvosym)
15202 \DeclareTextCommand{\textMVNine}{PU}{\80\071}%* U+0039
\80\072: U+003A COLON; colon
\80\073: U+003B SEMICOLON; semicolon
15203 % U+003C LESS-THAN SIGN; less
15204 \DeclareTextCommand{\textless}{PU}{<}% \80\074 U+003C
\80\075: U+003D EQUALS SIGN; equal
15205 % U+003E GREATER-THAN SIGN; greater
15206 \DeclareTextCommand{\textgreater}{PU}{>}% \80\076 U+003E
\80\077: U+003F QUESTION MARK; question
15207 % U+0040 COMMERCIAL AT; at; \MVAt (marvosym)

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15208 \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
15209 % U+005C REVERSE SOLIDUS; backslash
15210 \DeclareTextCommand{\textbackslash}{PU}{\80\134}% U+005C
\80\135: U+005D RIGHT SQUARE BRACKET; bracketright
15211 % U+005E CIRCUMFLEX ACCENT; asciicircum
15212 \DeclareTextCommand{\textasciicircum}{PU}{\80\136}% U+005E
15213 % U+005F LOW LINE; underscore
15214 \DeclareTextCommand{\textunderscore}{PU}{\80\137}% U+005F
15215 %* \textunderscore -> \mathunderscore (LaTeX)
15216 % U+0060 GRAVE ACCENT; grave
15217 \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
15218 % U+0069 LATIN SMALL LETTER I; i
15219 \DeclareTextCompositeCommand{\.}{PU}{i}{i}% \80\151 U+0069
15220 \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
15221 % U+007B LEFT CURLY BRACKET; braceleft
15222 \DeclareTextCommand{\textbraceleft}{PU}{\80\173}% U+007B
15223 % U+007C VERTICAL LINE; *bar, verticalbar
15224 \DeclareTextCommand{\textbar}{PU}{|}% \80\174 U+007C
15225 %* \textbar -> \textvtrline (tipa)
15226 % U+007D RIGHT CURLY BRACKET; braceright
15227 \DeclareTextCommand{\textbraceright}{PU}{\80\175}% U+007D
15228 % U+007E TILDE; asciitilde
15229 \DeclareTextCommand{\textasciitilde}{PU}{\80\176}% U+007E

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

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\80\240: U+00A0 NO-BREAK SPACE; nbspace, nonbreakingspace
15230 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown
15231 \DeclareTextCommand{\textexclamdown}{PU}{\80\241}% U+00A1
15232 % U+00A2 CENT SIGN; cent
15233 \DeclareTextCommand{\textcent}{PU}{\80\242}% U+00A2
15234 % U+00A3 POUND SIGN; sterling
15235 \DeclareTextCommand{\textsterling}{PU}{\80\243}% U+00A3
15236 %* \textsterling -> \mathsterling (LaTeX)
15237 %* \textsterling -> \pounds (LaTeX)
15238 % U+00A4 CURRENCY SIGN; currency
15239 \DeclareTextCommand{\textcurrency}{PU}{\80\244}% U+00A4
15240 % U+00A5 YEN SIGN; yen
15241 \DeclareTextCommand{\textyen}{PU}{\80\245}% U+00A5
15242 % U+00A6 BROKEN BAR; brokenbar
15243 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246}% U+00A6

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15244 %\* \textbrokenbar -> \brokenvert (wasysym)  
 15245 % U+00A7 SECTION SIGN; section  
 15246 \DeclareTextCommand{\textsection}{PU}{\80\247}% U+00A7  
 15247 %\* \textsection -> \mathsection (LaTeX)  
 15248 %\* \textsection -> \S (LaTeX)  
 15249 % U+00A8 DIAERESIS; dieresis  
 15250 \DeclareTextCommand{\textasciidieresis}{PU}{\80\250}% U+00A8  
 15251 % U+00A9 COPYRIGHT SIGN; copyright  
 15252 \DeclareTextCommand{\textcopyright}{PU}{\80\251}%\* U+00A9  
 15253 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
 15254 \DeclareTextCommand{\textordfeminine}{PU}{\80\252}% U+00AA  
 15255 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetleft  
 15256 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB  
 15257 \DeclareTextCommand{\guillemetleft}{PU}{\80\253}% U+00AB  
 15258 % U+00AC NOT SIGN; logicalnot  
 15259 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254}% U+00AC  
 15260 \DeclareTextCommand{\textlnot}{PU}{\80\254}% U+00AC  
 \80\255: U+00AD SOFT HYPHEN; sfthyphen, softthyphen  
 15261 % U+00AE REGISTERED SIGN; registered  
 15262 \DeclareTextCommand{\textregistered}{PU}{\80\256}% U+00AE  
 15263 % U+00AF MACRON; \*macron, overscore  
 15264 \DeclareTextCommand{\textasciimacron}{PU}{\80\257}% U+00AF  
 15265 % U+00B0 DEGREE SIGN; degree  
 15266 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0  
 15267 % U+00B1 PLUS-MINUS SIGN; plusminus  
 15268 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1  
 15269 % U+00B2 SUPERSCRIPT TWO; twosuperior  
 15270 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}%\* U+00B2  
 15271 % U+00B3 SUPERSCRIPT THREE; threesuperior  
 15272 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}%\* U+00B3  
 15273 % U+00B4 ACUTE ACCENT; acute  
 15274 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4  
 15275 \DeclareTextCommand{\textasciiacute}{PU}{\80\264}% U+00B4  
 15276 % U+00B5 MICRO SIGN; mu, mul  
 15277 \DeclareTextCommand{\textmu}{PU}{\80\265}% U+00B5  
 15278 % U+00B6 PILCROW SIGN; paragraph  
 15279 \DeclareTextCommand{\textparagraph}{PU}{\80\266}% U+00B6  
 15280 %\* \textparagraph -> \mathparagraph (LaTeX)  
 15281 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
 15282 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267}% U+00B7  
 15283 %\* \textperiodcentered -> \MultiplicationDot (marvosym)  
 15284 %\* \textperiodcentered -> \Squaredot (marvosym)  
 15285 % U+00B8 CEDILLA; cedilla  
 15286 \DeclareTextCommand{\textcedilla}{PU}{\80\270}% U+00B8  
 15287 % U+00B9 SUPERSCRIPT ONE; onesuperior  
 15288 \DeclareTextCommand{\textonesuperior}{PU}{\80\271}%\* U+00B9  
 15289 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
 15290 \DeclareTextCommand{\textordmasculine}{PU}{\80\272}% U+00BA  
 15291 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetright  
 15292 \DeclareTextCommand{\guillemotright}{PU}{\80\273}% U+00BB  
 15293 \DeclareTextCommand{\guillemetright}{PU}{\80\273}% U+00BB  
 15294 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
 15295 \DeclareTextCommand{\textonequarter}{PU}{\80\274}% U+00BC  
 15296 % U+00BD VULGAR FRACTION ONE HALF; onehalf

15297 \DeclareTextCommand{\textonehalf}{PU}{\80\275}% U+00BD  
15298 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
15299 \DeclareTextCommand{\textthreequarters}{PU}{\80\276}% U+00BE  
15300 % U+00BF INVERTED QUESTION MARK; questiondown  
15301 \DeclareTextCommand{\textquestiondown}{PU}{\80\277}% U+00BF  
15302 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
15303 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
15304 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
15305 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
15306 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
15307 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302}% U+00C2  
15308 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
15309 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
15310 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
15311 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304}% U+00C4  
15312 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
15313 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305}% U+00C5  
15314 % U+00C6 LATIN CAPITAL LETTER AE; AE  
15315 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6  
15316 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
15317 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7  
15318 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
15319 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
15320 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
15321 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
15322 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
15323 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312}% U+00CA  
15324 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
15325 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313}% U+00CB  
15326 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
15327 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
15328 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
15329 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
15330 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
15331 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316}% U+00CE  
15332 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
15333 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317}% U+00CF  
15334 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
15335 \DeclareTextCommand{\DH}{PU}{\80\320}% U+00D0  
15336 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
15337 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321}% U+00D1  
15338 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
15339 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
15340 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
15341 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
15342 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
15343 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324}% U+00D4  
15344 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
15345 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
15346 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
15347 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326}% U+00D6  
15348 % U+00D7 MULTIPLICATION SIGN; multiply  
15349 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7  
15350 %\* \textmultiply -> \vartimes (stmaryrd)

15351 %\* \textmultiply -> \MVMultiplication (marvosym)  
15352 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
15353 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8  
15354 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
15355 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9  
15356 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
15357 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA  
15358 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
15359 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333}% U+00DB  
15360 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
15361 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334}% U+00DC  
15362 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
15363 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD  
15364 % U+00DE LATIN CAPITAL LETTER THORN; Thorn; \TH, \Thorn (wasysym)  
15365 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE  
15366 \DeclareTextCommand{\textThorn}{PU}{\80\336}%\* U+00DE  
15367 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
15368 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF  
15369 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
15370 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0  
15371 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
15372 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1  
15373 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
15374 \DeclareTextCompositeCommand{\^}{PU}{a}{\80\342}% U+00E2  
15375 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
15376 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
15377 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
15378 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344}% U+00E4  
15379 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
15380 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5  
15381 % U+00E6 LATIN SMALL LETTER AE; ae  
15382 \DeclareTextCommand{\ae}{PU}{\80\346}% U+00E6  
15383 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
15384 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7  
15385 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
15386 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8  
15387 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
15388 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
15389 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
15390 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA  
15391 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
15392 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353}% U+00EB  
15393 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
15394 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
15395 \DeclareTextCompositeCommand{\~}{PU}{i}{\80\354}% U+00EC  
15396 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
15397 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
15398 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\355}% U+00ED  
15399 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
15400 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
15401 \DeclareTextCompositeCommand{\~}{PU}{i}{\80\356}% U+00EE  
15402 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
15403 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
15404 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\357}% U+00EF

15405 % U+00F0 LATIN SMALL LETTER ETH; eth  
 15406 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0  
 15407 %\* \dh -> \eth (wsuipa, phonetic)  
 15408 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntild  
 15409 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361}% U+00F1  
 15410 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
 15411 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
 15412 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
 15413 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
 15414 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
 15415 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364}% U+00F4  
 15416 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otild  
 15417 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
 15418 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
 15419 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366}% U+00F6  
 15420 % U+00F7 DIVISION SIGN; divide  
 15421 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7  
 15422 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
 15423 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8  
 15424 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
 15425 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
 15426 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
 15427 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
 15428 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
 15429 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373}% U+00FB  
 15430 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
 15431 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374}% U+00FC  
 15432 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
 15433 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
 15434 % U+00FE LATIN SMALL LETTER THORN; thorn;  
 15435 % \th, \thorn (wasysym), \textthorn (tipa)  
 15436 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE  
 15437 \DeclareTextCommand{\textthorn}{PU}{\80\376}%\* U+00FE  
 15438 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
 15439 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377}% U+00FF

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

15440 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron  
 15441 \DeclareTextCompositeCommand{=} {PU}{A}{\81\000}% U+0100  
 15442 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron  
 15443 \DeclareTextCompositeCommand{=} {PU}{a}{\81\001}% U+0101  
 15444 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve  
 15445 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% U+0102  
 15446 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve  
 15447 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% U+0103  
 15448 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek  
 15449 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% U+0104  
 15450 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek  
 15451 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% U+0105  
 15452 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacut  
 15453 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% U+0106  
 15454 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacut  
 15455 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% U+0107

15456 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex  
 15457 \DeclareTextCompositeCommand{\~}{PU}{C}{\81\010}% U+0108  
 15458 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex  
 15459 \DeclareTextCompositeCommand{\~}{PU}{c}{\81\011}% U+0109  
 15460 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotaccent  
 cent  
 15461 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% U+010A  
 15462 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent  
 15463 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% U+010B  
 15464 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron  
 15465 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% U+010C  
 15466 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron  
 15467 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% U+010D  
 15468 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron  
 15469 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% U+010E  
 15470 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron  
 15471 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% U+010F  
 15472 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash  
 15473 \DeclareTextCommand{\DJ}{PU}{\81\020}% U+0110  
 15474 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron;  
 15475 % \textcrd (tipa)  
 15476 \DeclareTextCommand{\dj}{PU}{\81\021}% U+0111  
 15477 \DeclareTextCommand{\textcrd}{PU}{\81\021}% U+0111  
 15478 %\* \textcrd -> \crossd (wsuipa)  
 15479 % An alternate glyph with the stroke through the bowl:  
 15480 %\* \textcrd -> \textbard (tipa)  
 15481 %\* \textcrd -> \bard (wsuipa)  
 15482 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron  
 15483 \DeclareTextCompositeCommand{=} {PU}{E}{\81\022}% U+0112  
 15484 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron  
 15485 \DeclareTextCompositeCommand{=} {PU}{e}{\81\023}% U+0113  
 15486 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve  
 15487 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% U+0114  
 15488 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve  
 15489 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% U+0115  
 15490 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent  
 15491 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% U+0116  
 15492 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent  
 15493 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% U+0117  
 15494 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek  
 15495 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% U+0118  
 15496 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek  
 15497 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% U+0119  
 15498 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron  
 15499 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% U+011A  
 15500 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron  
 15501 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% U+011B  
 15502 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex  
 15503 \DeclareTextCompositeCommand{\~}{PU}{G}{\81\034}% U+011C  
 15504 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex  
 15505 \DeclareTextCompositeCommand{\~}{PU}{g}{\81\035}% U+011D  
 15506 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve  
 15507 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% U+011E  
 15508 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve

15509 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% U+011F  
15510 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotac-  
cent  
15511 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% U+0120  
15512 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent  
15513 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% U+0121  
15514 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcom-  
maaccent  
15515 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% U+0122  
15516 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent  
15517 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% U+0123  
15518 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex  
15519 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% U+0124  
15520 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex  
15521 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% U+0125  
15522 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar  
15523 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126  
15524 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar; \hbar (Ams)  
15525 \DeclareTextCommand{\textthbar}{PU}{\81\047}%\* U+0127  
15526 %\* \textthbar -> \textcrh (tipa)  
15527 %\* \textthbar -> \crossh (wsuipa)  
15528 %\* \textthbar -> \planck (phonetic)  
15529 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; Itilde  
15530 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128  
15531 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde  
15532 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
15533 \DeclareTextCompositeCommand{\~}{PU}{\i}{\81\051}% U+0129  
15534 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron  
15535 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% U+012A  
15536 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron  
15537 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
15538 \DeclareTextCompositeCommand{\=}{PU}{\i}{\81\053}% U+012B  
15539 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibreve  
15540 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C  
15541 % U+012D LATIN SMALL LETTER I WITH BREVE; ibreve  
15542 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
15543 \DeclareTextCompositeCommand{\u}{PU}{\i}{\81\055}% U+012D  
15544 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek  
15545 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E  
15546 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek  
15547 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
15548 \DeclareTextCompositeCommand{\k}{PU}{\i}{\81\057}% U+012F  
15549 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent  
15550 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% U+0130  
15551 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
15552 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131  
15553 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ  
15554 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132  
15555 % U+0133 LATIN SMALL LIGATURE IJ; ij  
15556 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133  
15557 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex  
15558 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% U+0134  
15559 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex  
15560 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135

15561 \DeclareTextCompositeCommand{\~}{PU}{j}{\81\065}% U+0135  
 15562 % U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaaccent  
 cent  
 15563 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136  
 15564 % U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent  
 15565 \DeclareTextCompositeCommand{\c}{PU}{k}{\81\067}% U+0137

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

15566 % U+0138 LATIN SMALL LETTER KRA; kgreenlandic  
 15567 \DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138  
 15568 % U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute  
 15569 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071}% U+0139  
 15570 % U+013A LATIN SMALL LETTER L WITH ACUTE; lacute  
 15571 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072}% U+013A  
 15572 % U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaaccent  
 cent  
 15573 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B  
 15574 % U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent  
 15575 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C  
 15576 % U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron  
 15577 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D  
 15578 % U+013E LATIN SMALL LETTER L WITH CARON; lcaron  
 15579 \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.

15580 % U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotaccent  
 cent  
 15581 \DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F  
 15582 % U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent  
 15583 \DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140  
 15584 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
 15585 \DeclareTextCommand{\L}{PU}{\81\101}% U+0141  
 15586 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
 15587 \DeclareTextCommand{\l}{PU}{\81\102}% U+0142  
 15588 % U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute  
 15589 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103}% U+0143  
 15590 % U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute  
 15591 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104}% U+0144  
 15592 % U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaaccent  
 cent  
 15593 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105}% U+0145  
 15594 % U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent  
 15595 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106}% U+0146  
 15596 % U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron  
 15597 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107}% U+0147  
 15598 % U+0148 LATIN SMALL LETTER N WITH CARON; ncaron  
 15599 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110}% U+0148  
 15600 % U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napostrophe, quoterightn  
 15601 \DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149  
 15602 % U+014A LATIN CAPITAL LETTER ENG; Eng



15603 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A  
15604 % U+014B LATIN SMALL LETTER ENG; eng  
15605 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B  
15606 %\* \ng -> \eng (wsuipa)  
15607 %\* \ng -> \engma (phonetic)  
15608 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron  
15609 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114}% U+014C  
15610 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron  
15611 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115}% U+014D  
15612 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve  
15613 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116}% U+014E  
15614 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve  
15615 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117}% U+014F  
15616 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odbla-  
cute, Ohungarumlaut  
15617 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120}% U+0150  
15618 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odbla-  
cute, ohungarumlaut  
15619 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121}% U+0151  
15620 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
15621 \DeclareTextCommand{\OE}{PU}{\81\122}% U+0152  
15622 % U+0153 LATIN SMALL LIGATURE OE; oe  
15623 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153  
15624 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute  
15625 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124}% U+0154  
15626 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute  
15627 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125}% U+0155  
15628 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcommaac-  
cent  
15629 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126}% U+0156  
15630 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcommaaccent  
15631 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127}% U+0157  
15632 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron  
15633 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130}% U+0158  
15634 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron  
15635 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131}% U+0159  
15636 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute  
15637 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132}% U+015A  
15638 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute  
15639 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133}% U+015B  
15640 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex  
15641 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134}% U+015C  
15642 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex  
15643 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135}% U+015D  
15644 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla  
15645 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136}% U+015E  
15646 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla  
15647 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137}% U+015F  
15648 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
15649 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140}% U+0160  
15650 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
15651 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141}% U+0161  
15652 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcommaac-  
cent

15653 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162  
15654 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcommaaccent  
15655 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163  
15656 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron  
15657 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164  
15658 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron  
15659 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165  
15660 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar  
15661 \DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166  
15662 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar  
15663 \DeclareTextCommand{\texttslash}{PU}{\81\147}% U+0167  
15664 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde  
15665 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168  
15666 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde  
15667 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
15668 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron  
15669 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152}% U+016A  
15670 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron  
15671 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153}% U+016B  
15672 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve  
15673 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154}% U+016C  
15674 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve  
15675 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155}% U+016D  
15676 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring  
15677 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156}% U+016E  
15678 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring  
15679 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157}% U+016F  
15680 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Udblacute, Uhungarumlaut  
15681 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160}% U+0170  
15682 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; udblacute, uhungarumlaut  
15683 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161}% U+0171  
15684 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek  
15685 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162}% U+0172  
15686 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek  
15687 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163}% U+0173  
15688 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex  
15689 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164}% U+0174  
15690 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex  
15691 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165}% U+0175  
15692 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex  
15693 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166}% U+0176  
15694 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex  
15695 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167}% U+0177  
15696 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
15697 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170}% U+0178  
15698 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute  
15699 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171}% U+0179  
15700 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute  
15701 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172}% U+017A  
15702 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent  
15703 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173}% U+017B  
15704 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent

15705 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174}% U+017C  
 15706 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
 15707 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175}% U+017D  
 15708 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
 15709 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176}% U+017E  
 15710 % U+017F LATIN SMALL LETTER LONG S; longs, slong  
 15711 \DeclareTextCommand{\textlongS}{PU}{\81\177}% U+017F

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

15712 % U+0180 LATIN SMALL LETTER B WITH STROKE; bstroke; \textcrb (tipa)  
 15713 \DeclareTextCommand{\textcrb}{PU}{\81\200}% U+0180  
 15714 %\* \textcrb -> \crossb (wsuipa)  
 15715 % An alternate glyph with the stroke through the bowl:  
 15716 %\* \textcrb -> \textbarb (tipa)  
 15717 %\* \textcrb -> \barb (wsuipa)  
 15718 % U+0181 LATIN CAPITAL LETTER B WITH HOOK; Bhook; \hausab (pho-  
     netic)  
 15719 \DeclareTextCommand{\texthausab}{PU}{\81\201}%\* U+0181  
 15720 % U+0188 LATIN SMALL LETTER C WITH HOOK; chook; \texthtc (tipa)  
 15721 \DeclareTextCommand{\texthtc}{PU}{\81\210}% U+0188  
 15722 % U+018A LATIN CAPITAL LETTER D WITH HOOK; Dhook; \hausad (pho-  
     netic)  
 15723 \DeclareTextCommand{\texthausad}{PU}{\81\212}%\* U+018A  
 15724 % U+018E LATIN CAPITAL LETTER REVERSED E; Eversed  
 15725 \DeclareTextCommand{\textEversed}{PU}{\81\216}% U+018E  
 15726 \DeclareTextCommand{\textrevE}{PU}{\81\216}% U+018E  
 15727 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
 15728 \DeclareTextCommand{\textflorin}{PU}{\81\222}% U+0192  
 15729 %\* \textflorin -> \Florin (marvosym)  
 15730 % U+0195 LATIN SMALL LETTER HV; hv; \texthvlig (tipa)  
 15731 \DeclareTextCommand{\texthvlig}{PU}{\81\225}% U+0195  
 15732 %\* \texthvlig -> \hv (wsuipa)  
 15733 % U+0198 LATIN CAPITAL LETTER K WITH HOOK; Khook; \hausak (pho-  
     netic)  
 15734 \DeclareTextCommand{\texthausak}{PU}{\81\230}%\* U+0198  
 15735 % U+0199 LATIN SMALL LETTER K WITH HOOK; khook; \texthtk (tipa)  
 15736 \DeclareTextCommand{\texthtk}{PU}{\81\231}% U+0199  
 15737 %\* \texthtk -> \hausak (phonetic)  
 15738 % U+019A LATIN SMALL LETTER L WITH BAR; lbar;  
 15739 % \textbarl (tipa), \barl (wsuipa)  
 15740 \DeclareTextCommand{\textbarl}{PU}{\81\232}%\* U+019A  
 15741 % U+019B LATIN SMALL LETTER LAMBDA WITH STROKE/  
 15742 % LATIN SMALL LETTER BARRED LAMBDA; lambdastroke;  
 15743 % \textcrlambda (tipa)  
 15744 \DeclareTextCommand{\textcrlambda}{PU}{\81\233}% U+019B  
 15745 %\* \textcrlambda -> \crossnilambda (wsuipa)  
 15746 %\* \textcrlambda -> \barlambd (phonetic)  
 15747 %\* \textcrlambda -> \lambdabar (txfonts/pxfonts)  
 15748 %\* \textcrlambda -> \lambdash (txfonts/pxfonts)  
 15749 % U+019E LATIN SMALL LETTER N WITH LONG RIGHT LEG; nlegright-  
     long;  
 15750 % \textnrleg (tipx)  
 15751 \DeclareTextCommand{\textPUnrleg}{PU}{\81\236}% U+019E  
 15752 %\* \textPUnrleg -> \textnrleg (tipx)

15753 % U+01A5 LATIN SMALL LETTER P WITH HOOK; phook; \texthpt (tipa)  
 15754 \DeclareTextCommand{\texthpt}{PU}{\81\245}% U+01A5  
 15755 % U+01AB LATIN SMALL LETTER T WITH PALATAL HOOK; tpalatalhook;  
 15756 % \textlhookt (tipa)  
 15757 \DeclareTextCommand{\textlhookt}{PU}{\81\253}% U+01AB  
 15758 % U+01AD LATIN SMALL LETTER T WITH HOOK; thook; \texthtt (tipa)  
 15759 \DeclareTextCommand{\texthtt}{PU}{\81\255}% U+01AD  
 15760 % U+01B9 LATIN SMALL LETTER EZH REVERSED/  
 15761 % LATIN SMALL LETTER REVERSED YOGH; \textrevyogh (tipa)  
 15762 \DeclareTextCommand{\textrevyogh}{PU}{\81\271}% U+01B9  
 15763 % U+01BB LATIN LETTER TWO WITH STROKE; twostroke; \textcrtwo (tipa)  
 15764 \DeclareTextCommand{\textcrtwo}{PU}{\81\273}% U+01BB  
 15765 % U+01BE LATIN LETTER INVERTED GLOTTAL STOP WITH STROKE;  
 15766 % glottalinvertedstroke; \textcrinvglotstop (tipa)  
 15767 \DeclareTextCommand{\textcrinvglotstop}{PU}{\81\276}% U+01BE  
 15768 % U+01BF LATIN LETTER WYNN; wynn; \textwynn (tipa)  
 15769 \DeclareTextCommand{\textwynn}{PU}{\81\277}% U+01BF  
 15770 % U+01C0 LATIN LETTER DENTAL CLICK/LATIN LETTER PIPE; clickden-  
 tal;  
 15771 % \textpipe (tipa)  
 15772 \DeclareTextCommand{\textpipe}{PU}{\81\300}% U+01C0  
 15773 %\* \textpipe -> \textpipevar (tipx)  
 15774 % U+01C1 LATIN LETTER LATERAL CLICK/LATIN LETTER  
 15775 % DOUBLE PIPE; clicklateral; \textdoublepipe (tipa)  
 15776 \DeclareTextCommand{\textdoublepipe}{PU}{\81\301}% U+01C1  
 15777 %\* \textdoublepipe -> \textdoublepipevar (tipx)  
 15778 % U+01C2 LATIN LETTER ALVEOLAR CLICK/LATIN LETTER PIPE DOU-  
 BLE BAR;  
 15779 % clickalveolar; \textdoublebarpipe (tipa)  
 15780 \DeclareTextCommand{\textdoublebarpipe}{PU}{\81\302}% U+01C2  
 15781 %\* \textdoublebarpipe -> \textdoublebarpipevar (tipx)  
 15782 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron  
 15783 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315}% U+01CD  
 15784 % U+01CE LATIN SMALL LETTER A WITH CARON; acarón  
 15785 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316}% U+01CE  
 15786 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icaron  
 15787 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317}% U+01CF  
 15788 % U+01D0 LATIN SMALL LETTER I WITH CARON; icarón  
 15789 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 15790 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 15791 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocaron  
 15792 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1  
 15793 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocarón  
 15794 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2  
 15795 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucaron  
 15796 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3  
 15797 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucarón  
 15798 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4  
 15799 % U+01DD LATIN SMALL LETTER TURNED E; eturned; \inve (wasysym)  
 15800 \DeclareTextCommand{\textinve}{PU}{\81\335}% U+01DD  
 15801 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke  
 15802 \DeclareTextCommand{\textGslash}{PU}{\81\344}% U+01E4  
 15803 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke  
 15804 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5

15805 %\* \textgslash -> \textcrg (tipa)  
15806 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcaron  
15807 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6  
15808 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcaron  
15809 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7  
15810 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcaron  
15811 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8  
15812 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcaron  
15813 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9  
15814 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek  
15815 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA  
15816 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek  
15817 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB  
15818 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcaron  
15819 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
15820 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
15821 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute  
15822 \DeclareTextCompositeCommand{\'}{PU}{G}{\81\364}% U+01F4  
15823 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute  
15824 \DeclareTextCompositeCommand{\'}{PU}{g}{\81\365}% U+01F5  
15825 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE  
15826 \DeclareTextCompositeCommand{\`}{PU}{N}{\81\370}% U+01F8  
15827 % U+01F9 LATIN SMALL LETTER N WITH GRAVE  
15828 \DeclareTextCompositeCommand{\`}{PU}{n}{\81\371}% U+01F9  
15829 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute  
15830 \DeclareTextCompositeCommand{\'}{PU}{\AE}{\81\374}% U+01FC  
15831 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute  
15832 \DeclareTextCompositeCommand{\'}{PU}{\ae}{\81\375}% U+01FD  
15833 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE;  
15834 % \*Oslashacute, Ostrokeacut  
15835 \DeclareTextCompositeCommand{\'}{PU}{\O}{\81\376}% U+01FE  
15836 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE;  
15837 % \*oslashacute, ostrokeacute  
15838 \DeclareTextCompositeCommand{\'}{PU}{\o}{\81\377}% U+01FF  
15839 </puenc>  
15840 <\*puextra>  
15841 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave  
15842 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200  
15843 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave  
15844 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201  
15845 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave  
15846 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204  
15847 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave  
15848 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205  
15849 </puextra>  
15850 <\*puenc>  
15851 % U+0206 LATIN CAPITAL LETTER E WITH INVERTED BREVE; Einvert-  
edbreve  
15852 \DeclareTextCompositeCommand{\textinvbreve}{PU}{E}{\82\006}% U+0206  
15853 % U+0207 LATIN SMALL LETTER E WITH INVERTED BREVE; einverted-  
breve  
15854 \DeclareTextCompositeCommand{\textinvbreve}{PU}{e}{\82\007}% U+0207  
15855 </puenc>  
15856 <\*puextra>

15857 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; Idblgrave  
15858 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208  
15859 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave  
15860 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
15861 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
15862 </puextra>  
15863 <\*puenc>  
15864 % U+020A LATIN CAPITAL LETTER I WITH INVERTED BREVE; Iinverted-  
breve  
15865 \DeclareTextCompositeCommand{\textinvbreve}{PU}{I}{\82\012}% U+020A  
15866 % U+020B LATIN SMALL LETTER I WITH INVERTED BREVE; iinverted-  
breve  
15867 \DeclareTextCompositeCommand{\textinvbreve}{PU}{i}{\82\013}% U+020B  
15868 \DeclareTextCompositeCommand{\textinvbreve}{PU}{i}{\82\013}% U+020B  
15869 </puenc>  
15870 <\*puextra>  
15871 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave  
15872 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C  
15873 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave  
15874 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D  
15875 </puextra>  
15876 <\*puenc>  
15877 % U+020E LATIN CAPITAL LETTER O WITH INVERTED BREVE; Oinvert-  
edbreve  
15878 \DeclareTextCompositeCommand{\textinvbreve}{PU}{O}{\82\016}% U+020E  
15879 % U+020F LATIN SMALL LETTER O WITH INVERTED BREVE; oinverted-  
breve  
15880 \DeclareTextCompositeCommand{\textinvbreve}{PU}{o}{\82\017}% U+020F  
15881 </puenc>  
15882 <\*puextra>  
15883 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave  
15884 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210  
15885 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave  
15886 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211  
15887 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave  
15888 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214  
15889 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave  
15890 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215  
15891 </puextra>  
15892 <\*puenc>  
15893 % U+0216 LATIN CAPITAL LETTER U WITH INVERTED BREVE; Uinvert-  
edbreve  
15894 \DeclareTextCompositeCommand{\textinvbreve}{PU}{U}{\82\026}% U+0216  
15895 % U+0217 LATIN SMALL LETTER U WITH INVERTED BREVE; uinverted-  
breve  
15896 \DeclareTextCompositeCommand{\textinvbreve}{PU}{u}{\82\027}% U+0217  
15897 % U+021E LATIN CAPITAL LETTER H WITH CARON  
15898 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E  
15899 % U+021F LATIN SMALL LETTER H WITH CARON  
15900 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F  
15901 % U+0221 LATIN SMALL LETTER D WITH CURL; \textctd (tipa)  
15902 \DeclareTextCommand{\textctd}{PU}{\82\041}% U+0221  
15903 % U+0225 LATIN SMALL LETTER Z WITH HOOK; \textcommatailz (tipa)  
15904 \DeclareTextCommand{\textcommatailz}{PU}{\82\045}% U+0225

15905 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE  
 15906 \DeclareTextCompositeCommand{\.}{PU}{A}{\82\046}% U+0226  
 15907 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE  
 15908 \DeclareTextCompositeCommand{\.}{PU}{a}{\82\047}% U+0227  
 15909 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA  
 15910 \DeclareTextCompositeCommand{\c}{PU}{E}{\82\050}% U+0228  
 15911 % U+0229 LATIN SMALL LETTER E WITH CEDILLA  
 15912 \DeclareTextCompositeCommand{\c}{PU}{e}{\82\051}% U+0229  
 15913 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE  
 15914 \DeclareTextCompositeCommand{\.}{PU}{O}{\82\056}% U+022E  
 15915 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE  
 15916 \DeclareTextCompositeCommand{\.}{PU}{o}{\82\057}% U+022F  
 15917 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON  
 15918 \DeclareTextCompositeCommand{\=}{PU}{Y}{\82\062}% U+0232  
 15919 % U+0233 LATIN SMALL LETTER Y WITH MACRON  
 15920 \DeclareTextCompositeCommand{\=}{PU}{y}{\82\063}% U+0233  
 15921 % U+0235 LATIN SMALL LETTER N WITH CURL; \textctn (tipa)  
 15922 \DeclareTextCommand{\textctn}{PU}{\82\065}% U+0235  
 15923 % U+0236 LATIN SMALL LETTER T WITH CURL; \textctt (tipa)  
 15924 \DeclareTextCommand{\textctt}{PU}{\82\066}% U+0236  
 15925 % U+0237 LATIN SMALL LETTER DOTLESS J  
 15926 \DeclareTextCommand{\j}{PU}{\82\067}% U+0237  
 15927 % U+0238 LATIN SMALL LETTER DB DIGRAPH; \textdblig (tipx)  
 15928 \DeclareTextCommand{\textPDbliɡ}{PU}{\82\070}% U+0238  
 15929 %\* \textPDbliɡ -> \textdbliɡ (tipx)  
 15930 % U+0239 LATIN SMALL LETTER QP DIGRAPH; \textqplig (tipx)  
 15931 \DeclareTextCommand{\textPUqpliɡ}{PU}{\82\071}% U+0239  
 15932 %\* \textPUqpliɡ -> \textqpliɡ (tipx)  
 15933 % U+023C LATIN SMALL LETTER C WITH STROKE; \slashc (wsuipa)  
 15934 \DeclareTextCommand{\textslashc}{PU}{\82\074}%\* U+023C  
 15935 %\* \textslashc -> \textcentoldstyle (textcomp)  
 15936 % With bar instead of stroke:  
 15937 %\* \textslashc -> \textbarc (tipa)

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

15938 % U+0250 LATIN SMALL LETTER TURNED A; aturned; \textturna (tipa)  
 15939 \DeclareTextCommand{\textturna}{PU}{\82\120}% U+0250  
 15940 %\* \textturna -> \inva (wasysym)  
 15941 % U+0251 LATIN SMALL LETTER ALPHA/LATIN SMALL LETTER  
 15942 % SCRIPT A; ascript; \textscripta (tipa), \scripta (wsuipa)  
 15943 \DeclareTextCommand{\textscripta}{PU}{\82\121}%\* U+0251  
 15944 %\* \textscripta -> \vara (phonetic)  
 15945 % U+0252 LATIN SMALL LETTER TURNED ALPHA; ascriptturned;  
 15946 % \textturnscripta (tipa)  
 15947 \DeclareTextCommand{\textturnscripta}{PU}{\82\122}% U+0252  
 15948 %\* \textturnscripta -> \invscripta (wsuipa)  
 15949 %\* \textturnscripta -> \rotvara (phonetic)  
 15950 % U+0253 LATIN CAPITAL LETTER B WITH HOOK; bhook; \texthtb (tipa)  
 15951 \DeclareTextCommand{\texthtb}{PU}{\82\123}% U+0253  
 15952 %\* \texthtb -> \hookb (wsuipa)  
 15953 %\* \texthtb -> \hausab (phonetic)  
 15954 % U+0254 LATIN SMALL LETTER OPEN O; oopen;  
 15955 % \textopeno (tipa), \openo (wasysym)  
 15956 \DeclareTextCommand{\textopeno}{PU}{\82\124}%\* U+0254

15957 %\* \textopeno -> \varopeno (phonetic)  
 15958 % U+0255 LATIN SMALL LETTER C WITH CURL; ccurl; \textctc (tipa)  
 15959 \DeclareTextCommand{\textctc}{PU}{\82\125}% U+0255  
 15960 %\* \textctc -> \curlyc (wsuipa)  
 15961 % U+0256 LATIN SMALL LETTER D WITH TAIL; dtail; \textrtaild (tipa)  
 15962 \DeclareTextCommand{\textrtaild}{PU}{\82\126}% U+0256  
 15963 %\* \textrtaild -> \taild (wsuipa)  
 15964 % U+0257 LATIN SMALL LETTER D WITH HOOK; dhook; \texthtd (tipa)  
 15965 \DeclareTextCommand{\texthtd}{PU}{\82\127}% U+0257  
 15966 %\* \texthtd -> \hookd (wsuipa)  
 15967 %\* \texthtd -> \hausad (phonetic)  
 15968 % U+0258 LATIN SMALL LETTER REVERSED E; ereversed;  
 15969 % \textreve (tipa), \reve (wsuipa)  
 15970 \DeclareTextCommand{\textreve}{PU}{\82\130}% U+0258  
 15971 % U+0259 LATIN SMALL LETTER SCHWA; schwa;  
 15972 % \textschwa (tipa), \schwa (wsuipa, phonetic)  
 15973 \DeclareTextCommand{\textschwa}{PU}{\82\131}% U+0259  
 15974 % U+025A LATIN SMALL LETTER SCHWA WITH HOOK; schwahook;  
 15975 % \textrhookschwa (tipa)  
 15976 \DeclareTextCommand{\textrhookschwa}{PU}{\82\132}% U+025A  
 15977 %\* \textrhookschwa -> \er (wsuipa)  
 15978 % U+025B LATIN SMALL LETTER OPEN E/LATIN SMALL LETTER EP-  
 SILON; eopen;  
 15979 % \niepsilon (wsuipa)  
 15980 \DeclareTextCommand{\textniepsilon}{PU}{\82\133}% U+025B  
 15981 %\* \textniepsilon -> \epsi (phonetic)  
 15982 % U+025C LATIN SMALL LETTER REVERSED OPEN E; eopenreversed;  
 15983 % \textrevepsilon (tipa), \revepsilon (wsuipa)  
 15984 \DeclareTextCommand{\textrevepsilon}{PU}{\82\134}% U+025C  
 15985 % U+025D LATIN SMALL LETTER REVERSED OPEN E WITH HOOK; eopen-  
 reversedhook;  
 15986 % \textrhookrevepsilon (tipa)  
 15987 \DeclareTextCommand{\textrhookrevepsilon}{PU}{\82\135}% U+025D  
 15988 %\* \textrhookrevepsilon -> \hookrevepsilon (wsuipa)  
 15989 % U+025E LATIN SMALL LETTER CLOSED REVERSED OPEN E; eopenre-  
 versedclosed;  
 15990 % \textcloserevepsilon (tipa)  
 15991 \DeclareTextCommand{\textcloserevepsilon}{PU}{\82\136}% U+025E  
 15992 %\* \textcloserevepsilon -> \closedrevepsilon (wsuipa)  
 15993 % U+025F LATIN SMALL LETTER DOTLESS J WITH STROKE; jdot-  
 lessstroke;  
 15994 % \textbardotlessj (tipa)  
 15995 \DeclareTextCommand{\textbardotlessj}{PU}{\82\137}% U+025F  
 15996 %\* \textbardotlessj -> \barj (phonetic)  
 15997 % U+0260 LATIN SMALL LETTER G WITH HOOK; ghook; \texthtg (tipa)  
 15998 \DeclareTextCommand{\texthtg}{PU}{\82\140}% U+0260  
 15999 %\* \texthtg -> \hookg (wsuipa)  
 16000 % U+0261 LATIN SMALL LETTER SCRIPT G; gscript;  
 16001 % \textscriptg (tipa), \scriptg (wsuipa)  
 16002 \DeclareTextCommand{\textscriptg}{PU}{\82\141}% U+0261  
 16003 %\* \textscriptg -> \varg (phonetic)  
 16004 % U+0262 LATIN LETTER SMALL CAPITAL G; \textscg (tipa), \scg (wsuipa)  
 16005 \DeclareTextCommand{\textscg}{PU}{\82\142}% U+0262  
 16006 % U+0263 LATIN SMALL LETTER GAMMA; gammalatinsmall;



16007 % \ipagamma (wsuipa), \vod (phonetic)  
16008 \DeclareTextCommand{\textipagamma}{PU}{\82\143}%\* U+0263  
16009 %\* \textipagamma -> \vod (pnonetic)  
16010 % U+0264 LATIN SMALL LETTER RAMS HORN; ramshorn;  
16011 % \babygamma (wsuipa)  
16012 \DeclareTextCommand{\textbabygamma}{PU}{\82\144}%\* U+0264  
16013 % U+0265 LATIN SMALL LETTER TURNED H; hturned; \textturnh (tipa)  
16014 \DeclareTextCommand{\textturnh}{PU}{\82\145}% U+0265  
16015 %\* \textturnh -> \invh (wsuipa)  
16016 %\* \textturnh -> \udesc (phonetic)  
16017 % U+0266 LATIN SMALL LETTER H WITH HOOK; hhook; \texthth (tipa)  
16018 \DeclareTextCommand{\texthth}{PU}{\82\146}% U+0266  
16019 %\* \texthth -> \hookh (wsuipa)  
16020 %\* \texthth -> \voicedh (phonetic)  
16021 % U+0267 LATIN SMALL LETTER HENG WITH HOOK; henghook; \tex-  
ththeng (tipa)  
16022 \DeclareTextCommand{\texththeng}{PU}{\82\147}% U+0267  
16023 %\* \texththeng -> \hookheng (wsuipa)  
16024 % U+0268 LATIN SMALL LETTER I WITH STROKE;  
16025 % \textbari (tipa), \bari (wsuipa)  
16026 \DeclareTextCommand{\textbari}{PU}{\82\150}%\* U+0268  
16027 %\* \textbari -> \ibar (phonetic)  
16028 % U+0269 LATIN SMALL LETTER IOTA; iotalatin; \niiota (wsuipa)  
16029 \DeclareTextCommand{\textniiota}{PU}{\82\151}%\* U+0269  
16030 %\* \textniiota -> \vari (phonetic)  
16031 % U+026A LATIN LETTER SMALL CAPITAL I; \textsci (tipa), \sci (wsuipa)  
16032 \DeclareTextCommand{\textsci}{PU}{\82\152}%\* U+026A  
16033 % U+026B LATIN SMALL LETTER L WITH MIDDLE TILDE; lmiddletilde;  
16034 % \textltilde (tipa)  
16035 \DeclareTextCommand{\textltilde}{PU}{\82\153}% U+026B  
16036 %\* \textltilde -> \tildel (wsuipa)  
16037 % U+026C LATIN SMALL LETTER L WITH BELT; lbelt; \textbeltl (tipa)  
16038 \DeclareTextCommand{\textbeltl}{PU}{\82\154}% U+026C  
16039 %\* \textbeltl -> \latfric (wsuipa)  
16040 % U+026D LATIN SMALL LETTER L WITH RETROFLEX HOOK;  
16041 % lhookretroflex; \textrtaill (tipa)  
16042 \DeclareTextCommand{\textrtaill}{PU}{\82\155}% U+026D  
16043 %\* \textrtaill -> \taill (wsuipa)  
16044 % U+026E LATIN SMALL LETTER LEZH; lezh; \textlyoghlig (tipa)  
16045 \DeclareTextCommand{\textlyoghlig}{PU}{\82\156}% U+026E  
16046 %\* \textlyoghlig -> \lz (wsuipa)  
16047 % U+026F LATIN SMALL LETTER TURNED M; mturned; \textturnm (tipa)  
16048 \DeclareTextCommand{\textturnm}{PU}{\82\157}% U+026F  
16049 %\* \textturnm -> \invm (wsuipa)  
16050 %\* \textturnm -> \rotm (phonetic)  
16051 % U+0270 LATIN SMALL LETTER TURNED M WITH LONG LEG; mlongleg-  
turned;  
16052 % \textturnmrleg (tipa)  
16053 \DeclareTextCommand{\textturnmrleg}{PU}{\82\160}% U+0270  
16054 %\* \textturnmrleg -> \legm (wsuipa)  
16055 % U+0271 LATIN SMALL LETTER M WITH HOOK; mhook; \textltailm (tipa)  
16056 \DeclareTextCommand{\textltailm}{PU}{\82\161}% U+0271  
16057 %\* \textltailm -> \labdentalnas (wsuipa)  
16058 %\* \textltailm -> \emgma (phonetic)

16059 % U+0272 LATIN SMALL LETTER N WITH LEFT HOOK; nhookleft; \textl-  
 tailn (tipa)  
 16060 \DeclareTextCommand{\textltailn}{PU}{\82\162}% U+0272  
 16061 %\* \textltailn -> \nj (wsuipa)  
 16062 %\* \textltailn -> \enya (phonetic)  
 16063 % U+0273 LATIN SMALL LETTER N WITH RETROFLEX HOOK;  
 16064 % nhookretroflex; \textrtailn (tipa)  
 16065 \DeclareTextCommand{\textrtailn}{PU}{\82\163}% U+0273  
 16066 %\* \textrtailn -> \tailn (wsuipa)  
 16067 % U+0274 LATIN LETTER SMALL CAPITAL N; \textscn (tipa), \scn (wsuipa)  
 16068 \DeclareTextCommand{\textscn}{PU}{\82\164}% U+0274  
 16069 % U+0275 LATIN CAPITAL LETTER O WITH MIDDLE TILDE/  
 16070 % LATIN CAPITAL LETTER BARRED O; obarred;  
 16071 % \textbaro (tipa), \baro (wsuipa)  
 16072 % But \baro from stmaryrd is different!  
 16073 \DeclareTextCommand{\textbaro}{PU}{\82\165}% U+0275  
 16074 % U+0276 LATIN LETTER SMALL CAPITAL OE; \textscelig (tipa)  
 16075 \DeclareTextCommand{\textscelig}{PU}{\82\166}% U+0276  
 16076 % U+0277 LATIN SMALL LETTER CLOSED OMEGA; omegalatinclosed;  
 16077 % \textcloseomega (tipa)  
 16078 \DeclareTextCommand{\textcloseomega}{PU}{\82\167}% U+0277  
 16079 %\* \textcloseomega -> \closedniomega (wsuipa)  
 16080 %\* \textcloseomega -> \varomega (phonetic)  
 16081 % U+0278 LATIN SMALL LETTER PHI; philatin; \nphi (wsuipa)  
 16082 \DeclareTextCommand{\textnphi}{PU}{\82\170}% U+0278  
 16083 % U+0279 LATIN SMALL LETTER TURNED R; rturned; \textturnr (tipa)  
 16084 \DeclareTextCommand{\textturnr}{PU}{\82\171}% U+0279  
 16085 %\* \textturnr -> \invr (wsuipa)  
 16086 %\* \textturnr -> \rotr (phonetic)  
 16087 % U+027A LATIN SMALL LETTER TURNED R WITH LONG LEG;  
 16088 % rlonglegturned; \textturnlongleg (tipa)  
 16089 \DeclareTextCommand{\textturnlongleg}{PU}{\82\172}% U+027A  
 16090 %\* \textturnlongleg -> \invleg (wsuipa)  
 16091 % U+027B LATIN SMALL LETTER TURNED R WITH HOOK; rhookturned;  
 16092 % \textturnrrtail (tipa)  
 16093 \DeclareTextCommand{\textturnrrtail}{PU}{\82\173}% U+027B  
 16094 %\* \textturnrrtail -> \tailinvr (wsuipa)  
 16095 % U+027C LATIN SMALL LETTER R WITH LONG LEG; rlongleg; \textlon-  
 glegr (tipa)  
 16096 \DeclareTextCommand{\textlongleg}{PU}{\82\174}% U+027C  
 16097 %\* \textlongleg -> \leg (wsuipa)  
 16098 % U+027D LATIN SMALL LETTER R WITH TAIL; rhook; \textrtailr (tipa)  
 16099 \DeclareTextCommand{\textrtailr}{PU}{\82\175}% U+027D  
 16100 %\* \textrtailr -> \tailr (wsuipa)  
 16101 % U+027E LATIN SMALL LETTER R WITH FISHHOOK; rfishhook;  
 16102 % \textfishhookr (tipa)  
 16103 \DeclareTextCommand{\textfishhookr}{PU}{\82\176}% U+027E  
 16104 %\* \textfishhookr -> \flapr (wsuipa)  
 16105 %\* \textfishhookr -> \flap (phonetic)  
 16106 % U+027F LATIN SMALL LETTER REVERSED R WITH FISHHOOK; rfish-  
 hookreversed;  
 16107 % \textlhtlongi (tipa)  
 16108 \DeclareTextCommand{\textlhtlongi}{PU}{\82\177}% U+027F  
 16109 % U+0280 LATIN LETTER SMALL CAPITAL R; \textscr (tipa), \scr (wsuipa)

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16110 \DeclareTextCommand{\textscr}{PU}{\82\200}%* U+0280
16111 % U+0281 LATIN LETTER SMALL CAPITAL INVERTED R; Rsmallinverted;
16112 % \textinvscr (tipa), \invscr (wsuipa)
16113 \DeclareTextCommand{\textinvscr}{PU}{\82\201}%* U+0281
16114 % U+0282 LATIN SMALL LETTER S WITH HOOK; shook; \textrtails (tipa)
16115 \DeclareTextCommand{\textrtails}{PU}{\82\202}% U+0282
16116 %* \textrtails -> \tails (wsuipa)
16117 % U+0283 LATIN SMALL LETTER ESH; esh; \textesh (tipa), \esh (wsuipa)
16118 \DeclareTextCommand{\textesh}{PU}{\82\203}%* U+0283
16119 % U+0284 LATIN SMALL LETTER DOTLESS J WITH STROKE AND HOOK;
16120 % dotlessjstrokehook; \texthtbardotlessj (tipa)
16121 \DeclareTextCommand{\texthtbardotlessj}{PU}{\82\204}% U+0284
16122 % U+0285 LATIN SMALL LETTER SQUAT REVERSED ESH; eshsquatre-
    versed;
16123 % \textvibyi (tipa)
16124 \DeclareTextCommand{\textvibyi}{PU}{\82\205}% U+0285
16125 % U+0286 LATIN SMALL LETTER ESH WITH CURL; eshcurl; \textctesh (tipa)
16126 \DeclareTextCommand{\textctesh}{PU}{\82\206}% U+0286
16127 %* \textctesh -> \curlyesh (wsuipa)
16128 % U+0287 LATIN SMALL LETTER TURNED T; tturned; \textturnt (tipa)
16129 \DeclareTextCommand{\textturnt}{PU}{\82\207}% U+0287
16130 %* \textturnt -> \clickt (wsuipa)
16131 % U+0288 LATIN SMALL LETTER T WITH RETROFLEX HOOK; retroflex-
    hook;
16132 % \textrtailt (tipa)
16133 \DeclareTextCommand{\textrtailt}{PU}{\82\210}% U+0288
16134 %* \textrtailt -> \tailt (wsuipa)
16135 % U+0289 LATIN SMALL LETTER U BAR; ubar;
16136 % \textbaru (tipa), \baru (wsuipa)
16137 \DeclareTextCommand{\textbaru}{PU}{\82\211}%* U+0289
16138 %* \textbaru -> \ubar (phonetic)
16139 % U+028A LATIN SMALL LETTER UPSILON; \niupsilon (wsuipa)
16140 \DeclareTextCommand{\textniupsilon}{PU}{\82\212}%* U+028A
16141 %* \textniupsilon -> \rotOmega (phonetic)
16142 % U+028B LATIN SMALL LETTER V WITH HOOK/LATIN SMALL LET-
    TER SCRIPT V;
16143 % vhook; \textscriptv (tipa), \scriptv (wsuipa)
16144 \DeclareTextCommand{\textscriptv}{PU}{\82\213}%* U+028B
16145 % U+028C LATIN SMALL LETTER TURNED V; vturned; \textturnv (tipa)
16146 \DeclareTextCommand{\textturnv}{PU}{\82\214}%* U+028C
16147 %* \textturnv -> \invv (wsuipa)
16148 %* \textturnv -> \pwedge (phonetic)
16149 % U+028D LATIN SMALL LETTER TURNED W; wturned; \textturnw (tipa)
16150 \DeclareTextCommand{\textturnw}{PU}{\82\215}%* U+028D
16151 %* \textturnw -> \invw (wsuipa)
16152 %* \textturnw -> \rotw (phonetic)
16153 % U+028E LATIN SMALL LETTER TURNED Y; yturned; \textturny (tipa)
16154 \DeclareTextCommand{\textturny}{PU}{\82\216}%* U+028E
16155 %* \textturny -> \invy (wsuipa)
16156 %* \textturny -> \roty (phonetic)
16157 % U+028F LATIN LETTER SMALL CAPITAL Y; \textscy (tipa), \scy (wsuipa)
16158 \DeclareTextCommand{\textscy}{PU}{\82\217}%* U+028F
16159 % U+0290 LATIN SMALL LETTER Z WITH RETROFLEX HOOK; zretroflex-
    hook;

```

16160 % \texttrtailz (tipa)  
16161 \DeclareTextCommand{\texttrtailz}{PU}{\82\220}% U+0290  
16162 %\* \texttrtailz -> \tailz (wsuipa)  
16163 % U+0291 LATIN SMALL LETTER Z WITH CURL; zcurl; \textctz (tipa)  
16164 \DeclareTextCommand{\textctz}{PU}{\82\221}% U+0291  
16165 %\* \textctz -> \curlyz (wsuipa)  
16166 % U+0292 LATIN SMALL LETTER EZH/LATIN SMALL LETTER YOGH; ezh;  
16167 % \textyogh (tipa), \yogh (wsuipa)  
16168 \DeclareTextCommand{\textyogh}{PU}{\82\222}%\* U+0292  
16169 % U+0293 LATIN SMALL LETTER EZH WITH CURL/LATIN SMALL LETTER YOGH CURL;  
16170 % ezhcurl; \textctyogh (tipa)  
16171 \DeclareTextCommand{\textctyogh}{PU}{\82\223}% U+0293  
16172 %\* \textctyogh -> \curlyyogh (wsuipa)  
16173 % U+0294 LATIN LETTER GLOTTAL STOP; glottalstop;  
16174 % \textglotstop (tipa), \glotstop (wsuipa)  
16175 \DeclareTextCommand{\textglotstop}{PU}{\82\224}%\* U+0294  
16176 %\* \textglotstop -> \ejjective (wsuipa)  
16177 %\* \textglotstop -> \glottal (phonetic)  
16178 % U+0295 LATIN LETTER PHARYNGEAL VOICED FRICATIVE/  
16179 % LATIN LETTER REVERSED GLOTTAL STOP; glottalstopreversed;  
16180 % \textrevglotstop (tipa), \revglotstop (wsuipa)  
16181 \DeclareTextCommand{\textrevglotstop}{PU}{\82\225}%\* U+0295  
16182 %\* \textrevglotstop -> \reveject (wsuipa)  
16183 % U+0296 LATIN LETTER INVERTED GLOTTAL STOP; glottalstopinverted;  
16184 % \textinvglotstop (tipa), \invglotstop (wsuipa)  
16185 \DeclareTextCommand{\textinvglotstop}{PU}{\82\226}%\* U+0296  
16186 % U+0297 LATIN LETTER STRETCHED C; cstretched; \textstretchc (tipa)  
16187 \DeclareTextCommand{\textstretchc}{PU}{\82\227}% U+0297  
16188 %\* \textstretchc -> \clickc (wsuipa)  
16189 %\* \textstretchc -> \textstretchcvar (tipx)  
16190 % U+0298 LATIN LETTER BILABIAL CLICK; bilabialclick;  
16191 % \textbullseye (tipa)  
16192 \DeclareTextCommand{\textbullseye}{PU}{\82\230}% U+0298  
16193 %\* \textbullseye -> \clickb (wsuipa)  
16194 %\* \textbullseye -> \textObullseye (tipx)  
16195 % U+0299 LATIN LETTER SMALL CAPITAL B; \textscb (tipa)  
16196 \DeclareTextCommand{\textscb}{PU}{\82\231}% U+0299  
16197 % U+029A LATIN SMALL LETTER CLOSED OPEN E; eopenclosed;  
16198 % \textcloseepsilon (tipa)  
16199 \DeclareTextCommand{\textcloseepsilon}{PU}{\82\232}% U+029A  
16200 % U+029B LATIN LETTER SMALL CAPITAL G WITH HOOK; Gsmallhook;  
16201 % \texthtscg (tipa)  
16202 \DeclareTextCommand{\texthtscg}{PU}{\82\233}% U+029B  
16203 % U+029C LATIN LETTER SMALL CAPITAL H; \textsch (tipa)  
16204 \DeclareTextCommand{\textsch}{PU}{\82\234}% U+029C  
16205 % U+029D LATIN SMALL LETTER J WITH CROSSED-TAIL; jcrossetail;  
16206 \DeclareTextCommand{\textctj}{PU}{\82\235}% U+029D  
16207 %\* \textctj -> \textctjvar (tipx)  
16208 % U+029E LATIN SMALL LETTER TURNED K; kturned; \textturnk (tipa)  
16209 \DeclareTextCommand{\textturnk}{PU}{\82\236}% U+029E  
16210 %\* \textturnk -> \textturnsck (tipx)  
16211 % U+029F LATIN LETTER SMALL CAPITAL L; \textscL (tipa)

16212 \DeclareTextCommand{\textscsl}{PU}{\82\237}% U+029F  
 16213 % U+02A0 LATIN SMALL LETTER Q WITH HOOK; qhook; \texthtq (tipa)  
 16214 \DeclareTextCommand{\texthtq}{PU}{\82\240}% U+02A0  
 16215 % U+02A1 LATIN LETTER GLOTTAL STOP WITH STROKE; glottalstop-  
 stroke;  
 16216 % \textbarglotstop (tipa)  
 16217 \DeclareTextCommand{\textbarglotstop}{PU}{\82\241}% U+02A1  
 16218 % U+02A2 LATIN LETTER REVERSED GLOTTAL STOP WITH STROKE/  
 16219 % LATIN LETTER REVERSED GLOTTAL STOP BAR; glottalstopstrokere-  
 versed;  
 16220 % \textbarrevglotstop (tipa)  
 16221 \DeclareTextCommand{\textbarrevglotstop}{PU}{\82\242}% U+02A2  
 16222 % U+02A3 LATIN SMALL LETTER DZ DIGRAPH; dzaltone; \textdzlig (tipa)  
 16223 \DeclareTextCommand{\textdzlig}{PU}{\82\243}% U+02A3  
 16224 %\* \textdzlig -> \dz (wsupipa)  
 16225 % U+02A4 LATIN SMALL LETTER DEZH DIGRAPH; dezh; \textdyogh-  
 lig (tipa)  
 16226 \DeclareTextCommand{\textdyoghlig}{PU}{\82\244}% U+02A4  
 16227 % U+02A5 LATIN SMALL LETTER DZ DIGRAPH WITH CURL; dzcurl;  
 16228 % \textdctzlig (tipa)  
 16229 \DeclareTextCommand{\textdctzlig}{PU}{\82\245}% U+02A5  
 16230 % U+02A6 LATIN SMALL LETTER TS DIGRAPH; ts; \texttslig (tipa)  
 16231 \DeclareTextCommand{\texttslig}{PU}{\82\246}% U+02A6  
 16232 % U+02A7 LATIN SMALL LETTER TESH DIGRAPH; tesh; \textteshlig (tipa)  
 16233 \DeclareTextCommand{\textteshlig}{PU}{\82\247}% U+02A7  
 16234 %\* \textteshlig -> \tesh (wsuipa)  
 16235 % U+02A8 LATIN SMALL LETTER TC DIGRAPH WITH CURL; tccurl;  
 16236 % \texttctclig (tipa)  
 16237 \DeclareTextCommand{\texttctclig}{PU}{\82\250}% U+02A8  
 16238 % U+02AE LATIN SMALL LETTER TURNED H WITH FISHHOOK;  
 16239 % \textlhtlongy (tipa)  
 16240 \DeclareTextCommand{\textlhtlongy}{PU}{\82\256}% U+02AE  
 16241 % U+02AF LATIN SMALL LETTER TURNED H WITH FISHHOOK AND TAIL;  
 16242 % \textvibyy (tipa)  
 16243 \DeclareTextCommand{\textvibyy}{PU}{\82\257}% U+02AF

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

16244 % U+02BD MODIFIER LETTER REVERSED COMMA;  
 16245 % commareversedmod, afii64937; \textrevapostrophe (tipa)  
 16246 \DeclareTextCommand{\textrevapostrophe}{PU}{\82\275}% U+02BD  
 16247 % U+02C0 MODIFIER LETTER GLOTTAL STOP; glottalstopmod;  
 16248 % \textraiseglotstop (tipa)  
 16249 \DeclareTextCommand{\textraiseglotstop}{PU}{\82\300}% U+02C0  
 16250 % U+02C2 MODIFIER LETTER LEFT ARROWHEAD; arrowheadleftmod;  
 16251 % \textlptr (tipa)  
 16252 \DeclareTextCommand{\textlptr}{PU}{\82\302}% U+02C2  
 16253 % U+02C3 MODIFIER LETTER RIGHT ARROWHEAD; arrowheadrightmod;  
 16254 % \textrptr (tipa)  
 16255 \DeclareTextCommand{\textrptr}{PU}{\82\303}% U+02C3  
 16256 % U+02C7 CARON; caron  
 16257 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7  
 16258 % U+02C8 MODIFIER LETTER VERTICAL LINE; verticallinemod;  
 16259 % \textprimstress (tipa)  
 16260 \DeclareTextCommand{\textprimstress}{PU}{\82\310}% U+02C8

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16261 % U+02CC MODIFIER LETTER LOW VERTICAL LINE; verticallinelowmod;
16262 % \textsecstress (tipa)
16263 \DeclareTextCommand{\textsecstress}{PU}{\82\314}% U+02CC
16264 % U+02D0 MODIFIER LETTER TRIANGULAR COLON; colontriangularmod;
16265 % \textlengthmark (tipa)
16266 \DeclareTextCommand{\textlengthmark}{PU}{\82\320}% U+02D0
16267 % U+02D1 MODIFIER LETTER HALF TRIANGULAR COLON; colontriangu-
    larhalfmod;
16268 % \texthalflength (tipa)
16269 \DeclareTextCommand{\texthalflength}{PU}{\82\321}% U+02D1
16270 % U+02D8 BREVE; breve
16271 \DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8
16272 % U+02D9 DOT ABOVE; dotaccent
16273 \DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9
16274 % U+02DA RING ABOVE; ring
16275 \DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA
16276 % U+02DB OGONEK; ogonek
16277 \DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB
16278 % U+02DC SMALL TILDE; ilde, *tilde
16279 \DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC
16280 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut
16281 \DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD
16282 \DeclareTextCommand{\textacutedbl}{PU}{\82\335}% U+02DD
16283 % U+02F3 MODIFIER LETTER LOW RING
16284 \DeclareTextCommand{\textringlow}{PU}{\82\363}% U+02F3
16285 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT
16286 \DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5
16287 % U+02F7 MODIFIER LETTER LOW TILDE
16288 \DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7
16289 % U+02F9 MODIFIER LETTER BEGIN HIGH TONE; \textopencorner (tipa)
16290 \DeclareTextCommand{\textopencorner}{PU}{\82\371}% U+02F9
16291 % U+02FA MODIFIER LETTER END HIGH TONE; \textcorner (tipa)
16292 \DeclareTextCommand{\textcorner}{PU}{\82\372}% U+02FA

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

```

16293 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb
16294 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017}% U+030F
16295 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb
16296 \DeclareTextCommand{\textnewtie}{PU}{\83\021}% U+0311
16297 % U+0323 COMBINING DOT BELOW; dotbelowcmb, *dotbelowcomb
16298 \DeclareTextCommand{\textdotbelow}{PU}{\83\043}% U+0323
16299 % U+0331 COMBINING MACRON BELOW; macronbelowcmb
16300 \DeclareTextCommand{\textmacronbelow}{PU}{\83\061}% U+0331
16301 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddou-
    blecmb
16302 \DeclareTextCommand{\texttie}{PU}{\83\141}% U+0361

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#### 46.2.9 Greek and Coptic: U+0370 to U+03FF

Greek is only loaded if \textBeta is defined.

```

16303 \ifx\textBeta\@undefined \else
16304 \input{puenc-greek.def}
16305 \fi
16306 \end{puenc}

```

#### 46.2.10 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.

```
16307 (*puenc)
16308 \ifx\CYRDZE\@undefined \else
16309 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE
16310 \DeclareTextCompositeCommand{\`}{PU}{\CYRE}{\84\000}% U+0400
16311 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrrilic, *afii10023
16312 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401
16313 \DeclareTextCompositeCommand{\"}{PU}{\CYRE}{\84\001}% U+0401
16314 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, *afii10051
16315 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402
16316 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, *afii10052
16317 \DeclareTextCompositeCommand{\'}{PU}{\CYRG}{\84\003}% U+0403
16318 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrrilic, *afii10053
16319 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404
16320 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzecyrillic, *afii10054
16321 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405
16322 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I;
16323 % Icyrrilic, *afii10055
16324 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406
16325 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrrilic, *afii10056
16326 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407
16327 \DeclareTextCompositeCommand{\"}{PU}{\CYRII}{\84\007}% U+0407
16328 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, *afii10057
16329 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408
16330 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, *afii10058
16331 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409
16332 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, *afii10059
16333 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A
16334 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, *afii10060
16335 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B
16336 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, *afii10061
16337 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% U+040C
16338 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE
16339 \DeclareTextCompositeCommand{\`}{PU}{\CYRI}{\84\015}% U+040D
16340 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrrilic, *afii10062
16341 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E
16342 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\016}% U+040E
16343 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrrilic, *afii10145
16344 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F
16345 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, *afii10017
16346 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410
16347 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrillic, *afii10018
16348 \DeclareTextCommand{\CYRB}{PU}{\84\021}% U+0411
16349 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, *afii10019
16350 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412
16351 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, *afii10020
16352 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413
16353 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, *afii10021
16354 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414
16355 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, *afii10022
16356 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415
```

16357 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, \*afii10024  
 16358 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416  
 16359 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, \*afii10025  
 16360 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417  
 16361 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrillic, \*afii10026  
 16362 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418  
 16363 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; Iishortcyrillic, \*afii10027  
 16364 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419  
 16365 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}% U+0419  
 16366 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, \*afii10028  
 16367 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A  
 16368 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, \*afii10029  
 16369 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B  
 16370 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, \*afii10030  
 16371 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C  
 16372 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, \*afii10031  
 16373 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D  
 16374 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, \*afii10032  
 16375 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E  
 16376 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, \*afii10033  
 16377 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F  
 16378 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, \*afii10034  
 16379 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420  
 16380 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, \*afii10035  
 16381 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421  
 16382 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, \*afii10036  
 16383 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422  
 16384 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, \*afii10037  
 16385 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423  
 16386 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, \*afii10038  
 16387 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424  
 16388 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, \*afii10039  
 16389 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425  
 16390 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, \*afii10040  
 16391 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426  
 16392 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, \*afii10041  
 16393 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427  
 16394 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, \*afii10042  
 16395 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428  
 16396 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, \*afii10043  
 16397 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429  
 16398 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN;  
 16399 % Hardsigncyrillic, \*afii10044  
 16400 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A  
 16401 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, \*afii10045  
 16402 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B  
 16403 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN;  
 16404 % Softsigncyrillic, \*afii10046  
 16405 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C  
 16406 % U+042D CYRILLIC CAPITAL LETTER E; Eversedcyrillic, \*afii10047  
 16407 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D  
 16408 % U+042E CYRILLIC CAPITAL LETTER YU; IUcyrillic, \*afii10048  
 16409 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E  
 16410 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, \*afii10049



16411 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F  
16412 % U+0430 CYRILLIC SMALL LETTER A; acyrillic, \*afii10065  
16413 \DeclareTextCommand{\cyra}{PU}{\84\060}% U+0430  
16414 % U+0431 CYRILLIC SMALL LETTER BE; \*afii10066, becyrillic  
16415 \DeclareTextCommand{\cyrb}{PU}{\84\061}% U+0431  
16416 % U+0432 CYRILLIC SMALL LETTER VE; \*afii10067, vecyrillic  
16417 \DeclareTextCommand{\cyrv}{PU}{\84\062}% U+0432  
16418 % U+0433 CYRILLIC SMALL LETTER GHE; \*afii10068, gecyrillic  
16419 \DeclareTextCommand{\cyrg}{PU}{\84\063}% U+0433  
16420 % U+0434 CYRILLIC SMALL LETTER DE; \*afii10069, decyrillic  
16421 \DeclareTextCommand{\cyrd}{PU}{\84\064}% U+0434  
16422 % U+0435 CYRILLIC SMALL LETTER IE; \*afii10070, iecyrillic  
16423 \DeclareTextCommand{\cyre}{PU}{\84\065}% U+0435  
16424 % U+0436 CYRILLIC SMALL LETTER ZHE; \*afii10072, zhecyrillic  
16425 \DeclareTextCommand{\cyrzh}{PU}{\84\066}% U+0436  
16426 % U+0437 CYRILLIC SMALL LETTER ZE; \*afii10073, zecyrillic  
16427 \DeclareTextCommand{\cyrz}{PU}{\84\067}% U+0437  
16428 % U+0438 CYRILLIC SMALL LETTER I; \*afii10074, iicyrillic  
16429 \DeclareTextCommand{\cyri}{PU}{\84\070}% U+0438  
16430 % U+0439 CYRILLIC SMALL LETTER SHORT I; \*afii10075, iishortcyrillic  
16431 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% U+0439  
16432 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}% U+0439  
16433 % U+043A CYRILLIC SMALL LETTER KA; \*afii10076, kacyrillic  
16434 \DeclareTextCommand{\cyrk}{PU}{\84\072}% U+043A  
16435 % U+043B CYRILLIC SMALL LETTER EL; \*afii10077, elcyrillic  
16436 \DeclareTextCommand{\cyl}{PU}{\84\073}% U+043B  
16437 % U+043C CYRILLIC SMALL LETTER EM; \*afii10078, emcyrillic  
16438 \DeclareTextCommand{\cyrm}{PU}{\84\074}% U+043C  
16439 % U+043D CYRILLIC SMALL LETTER EN; \*afii10079, encyrillic  
16440 \DeclareTextCommand{\cyrn}{PU}{\84\075}% U+043D  
16441 % U+043E CYRILLIC SMALL LETTER O; \*afii10080, ocyrillic  
16442 \DeclareTextCommand{\cyro}{PU}{\84\076}% U+043E  
16443 % U+043F CYRILLIC SMALL LETTER PE; \*afii10081, pecyrillic  
16444 \DeclareTextCommand{\cyrp}{PU}{\84\077}% U+043F  
16445 % U+0440 CYRILLIC SMALL LETTER ER; \*afii10082, ercyrillic  
16446 \DeclareTextCommand{\cyrr}{PU}{\84\100}% U+0440  
16447 % U+0441 CYRILLIC SMALL LETTER ES; \*afii10083, escyrillic  
16448 \DeclareTextCommand{\cyrs}{PU}{\84\101}% U+0441  
16449 % U+0442 CYRILLIC SMALL LETTER TE; \*afii10084, tecyrillic  
16450 \DeclareTextCommand{\cyrt}{PU}{\84\102}% U+0442  
16451 % U+0443 CYRILLIC SMALL LETTER U; \*afii10085, ucyrillic  
16452 \DeclareTextCommand{\cyru}{PU}{\84\103}% U+0443  
16453 % U+0444 CYRILLIC SMALL LETTER EF; \*afii10086, efcyrillic  
16454 \DeclareTextCommand{\cyrf}{PU}{\84\104}% U+0444  
16455 % U+0445 CYRILLIC SMALL LETTER HA; \*afii10087, khacyrillic  
16456 \DeclareTextCommand{\cyrh}{PU}{\84\105}% U+0445  
16457 % U+0446 CYRILLIC SMALL LETTER TSE; \*afii10088, tsecyrillic  
16458 \DeclareTextCommand{\cyrc}{PU}{\84\106}% U+0446  
16459 % U+0447 CYRILLIC SMALL LETTER CHE; \*afii10089, checyrillic  
16460 \DeclareTextCommand{\cyrch}{PU}{\84\107}% U+0447  
16461 % U+0448 CYRILLIC SMALL LETTER SHA; \*afii10090, shacyrillic  
16462 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% U+0448  
16463 % U+0449 CYRILLIC SMALL LETTER SHCHA; \*afii10091, shchacyrillic  
16464 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% U+0449

16465 % U+044A CYRILLIC SMALL LETTER HARD SIGN; \*afii10092, hardsigncyril-  
 lic  
 16466 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% U+044A  
 16467 %\* \cyrhrdsn -> \hardsign (tipa)  
 16468 % U+044B CYRILLIC SMALL LETTER YERU; \*afii10093, yericyrillic  
 16469 \DeclareTextCommand{\cyrery}{PU}{\84\113}% U+044B  
 16470 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; \*afii10094, softsigncyrillic  
 16471 \DeclareTextCommand{\cyrstfn}{PU}{\84\114}% U+044C  
 16472 %\* \cyrstfn -> \softsign (tipa)  
 16473 % U+044D CYRILLIC SMALL LETTER E; \*afii10095, ereversedcyrillic  
 16474 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% U+044D  
 16475 % U+044E CYRILLIC SMALL LETTER YU; \*afii10096, iucyrillic  
 16476 \DeclareTextCommand{\cyrju}{PU}{\84\116}% U+044E  
 16477 % U+044F CYRILLIC SMALL LETTER YA; \*afii10097, iacyrillic  
 16478 \DeclareTextCommand{\cyrja}{PU}{\84\117}% U+044F  
 16479 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE  
 16480 \DeclareTextCompositeCommand{\`}{PU}{\cyrj}{\84\120}% U+0450  
 16481 % U+0451 CYRILLIC SMALL LETTER IO; \*afii10071, iocyrillic  
 16482 \DeclareTextCommand{\cyrjo}{PU}{\84\121}% U+0451  
 16483 \DeclareTextCompositeCommand{\'}{PU}{\cyrj}{\84\121}% U+0451  
 16484 % U+0452 CYRILLIC SMALL LETTER DJE; \*afii10099, djecyrillic  
 16485 \DeclareTextCommand{\cyrjde}{PU}{\84\122}% U+0452  
 16486 % U+0453 CYRILLIC SMALL LETTER GJE; \*afii10100, gjecyrillic  
 16487 \DeclareTextCompositeCommand{\'}{PU}{\cyrj}{\84\123}% U+0453  
 16488 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; \*afii10101, ecyrillic  
 16489 \DeclareTextCommand{\cyrje}{PU}{\84\124}% U+0454  
 16490 % U+0455 CYRILLIC SMALL LETTER DZE; \*afii10102, dzecyrillic  
 16491 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% U+0455  
 16492 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I;  
 16493 % \*afii10103, icyrillic  
 16494 \DeclareTextCommand{\cyrji}{PU}{\84\126}% U+0456  
 16495 % U+0457 CYRILLIC SMALL LETTER YI; \*afii10104, yicyrillic  
 16496 \DeclareTextCommand{\cyrji}{PU}{\84\127}% U+0457  
 16497 \DeclareTextCompositeCommand{\'}{PU}{\cyrji}{\84\127}% U+0457  
 16498 % U+0458 CYRILLIC SMALL LETTER JE; \*afii10105, jecyrillic  
 16499 \DeclareTextCommand{\cyrje}{PU}{\84\130}% U+0458  
 16500 % U+0459 CYRILLIC SMALL LETTER LJE; \*afii10106, ljecyrillic  
 16501 \DeclareTextCommand{\cyrlje}{PU}{\84\131}% U+0459  
 16502 % U+045A CYRILLIC SMALL LETTER NJE; \*afii10107, njecyrillic  
 16503 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% U+045A  
 16504 % U+045B CYRILLIC SMALL LETTER TSHE; \*afii10108, tshecyrillic  
 16505 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% U+045B  
 16506 % U+045C CYRILLIC SMALL LETTER KJE; \*afii10109, kjecyrillic  
 16507 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% U+045C  
 16508 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE  
 16509 \DeclareTextCompositeCommand{\`}{PU}{\cyrj}{\84\135}% U+045D  
 16510 % U+045E CYRILLIC SMALL LETTER SHORT U; \*afii10110, ushortcyrillic  
 16511 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E  
 16512 \DeclareTextCompositeCommand{\U}{PU}{\curu}{\84\136}% U+045E  
 16513 % U+045F CYRILLIC SMALL LETTER DZHE; \*afii10193, dzhecyrillic  
 16514 \DeclareTextCommand{\cyrdze}{PU}{\84\137}% U+045F  
 16515 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic  
 16516 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460  
 16517 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrillic

16518 \DeclareTextCommand{\cyromega}{PU}{\84\141}% U+0461  
 16519 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, \*afii10146  
 16520 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462  
 16521 % U+0463 CYRILLIC SMALL LETTER YAT; \*afii10194, yatcyrillic  
 16522 \DeclareTextCommand{\cyryat}{PU}{\84\143}% U+0463  
 16523 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic  
 16524 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464  
 16525 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrillic  
 16526 \DeclareTextCommand{\cyriote}{PU}{\84\145}% U+0465  
 16527 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslittlecyrillic  
 16528 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466  
 16529 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslittlecyrillic  
 16530 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467  
 16531 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslittlei-  
 otifiedcyrillic  
 16532 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468  
 16533 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslittlei-  
 otifiedcyrillic  
 16534 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469  
 16535 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbigcyrillic  
 16536 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A  
 16537 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbigcyrillic  
 16538 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B  
 16539 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbigiotified-  
 cyrillic  
 16540 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C  
 16541 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbigiotified-  
 cyrillic  
 16542 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D  
 16543 % U+046E CYRILLIC CAPITAL LETTER KSI; Ksicyrillic  
 16544 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% U+046E  
 16545 % U+046F CYRILLIC SMALL LETTER KSI; ksicyrillic  
 16546 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F  
 16547 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psicyrillic  
 16548 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470  
 16549 % U+0471 CYRILLIC SMALL LETTER PSI; psicyrillic  
 16550 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471  
 16551 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, \*afii10147  
 16552 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472  
 16553 % U+0473 CYRILLIC SMALL LETTER FITA; \*afii10195, fitacyrillic  
 16554 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473  
 16555 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, \*afii10148  
 16556 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474  
 16557 % U+0475 CYRILLIC SMALL LETTER IZHITSA; \*afii10196, izhitsacyrillic  
 16558 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475  
 16559 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE  
 GRAVE ACCENT; Izhitsadblgravecyrillic  
 16560 % GRAVE ACCENT; Izhitsadblgravecyrillic  
 16561 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% U+0476  
 16562 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE  
 GRAVE ACCENT; izhitsadblgravecyrillic  
 16563 % GRAVE ACCENT; izhitsadblgravecyrillic  
 16564 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477  
 16565 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic  
 16566 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478  
 16567 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic

16568 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479  
 16569 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyrillic  
 16570 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A  
 16571 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic  
 16572 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B  
 16573 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatitlocyrillic  
 16574 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C  
 16575 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlocyrillic  
 16576 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D  
 16577 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic  
 16578 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E  
 16579 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic  
 16580 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F  
 16581 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic  
 16582 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480  
 16583 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic  
 16584 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481  
 16585 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic  
 16586 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% U+0482  
 \84\203: U+0483 COMBINING CYRILLIC TITLO; titlocyrillicmb  
 \84\204: U+0484 COMBINING CYRILLIC PALATALIZATION; palatalizationcyrillicmb  
 \84\205: U+0485 COMBINING CYRILLIC DASIA PNEUMATA; dasiapneumatacyrillicmb  
 \84\206: U+0486 COMBINING CYRILLIC PSILI PNEUMATA; psilipneumatcyrillicmb  
 \84\207: U+0487 COMBINING CYRILLIC POKRYTIE  
 \84\210: U+0488 COMBINING CYRILLIC HUNDRED THOUSANDS SIGN  
 \84\211: U+0489 COMBINING CYRILLIC MILLIONS SIGN  
 16587 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL  
 16588 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A  
 16589 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL  
 16590 \DeclareTextCommand{\cyrishrtdsc}{PU}{\84\213}% U+048B  
 16591 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN  
 16592 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C  
 16593 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN  
 16594 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D  
 16595 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK  
 16596 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E  
 16597 % U+048F CYRILLIC SMALL LETTER ER WITH TICK  
 16598 \DeclareTextCommand{\cyrrtick}{PU}{\84\217}% U+048F  
 16599 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturncyrillic, \*afii10050  
 16600 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490  
 16601 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; \*afii10098, gheupturncyrillic  
 16602 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491  
 16603 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestrokecyrillic  
 16604 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492

16605 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic  
 16606 \DeclareTextCommand{\cyrgchrs}{PU}{\84\223}% U+0493  
 16607 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK;  
 16608 % Ghemiddlehookcyrillic  
 16609 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494  
 16610 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK;  
 16611 % ghemiddlehookcyrillic  
 16612 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495  
 16613 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER;  
 16614 % Zhedescendercyrillic  
 16615 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496  
 16616 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER;  
 16617 % zhedescendercyrillic  
 16618 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% U+0497  
 16619 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescen-  
 dercyrillic  
 16620 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498  
 16621 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498  
 16622 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescender-  
 cyrillic  
 16623 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% U+0499  
 16624 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499  
 16625 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescen-  
 dercyrillic  
 16626 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A  
 16627 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kadescen-  
 dercyrillic  
 16628 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% U+049B  
 16629 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE;  
 16630 % Kavertikalstrokecyrillic  
 16631 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C  
 16632 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE;  
 16633 % kavertikalstrokecyrillic  
 16634 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D  
 16635 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic  
 16636 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E  
 16637 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic  
 16638 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% U+049F  
 16639 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic  
 16640 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0  
 16641 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic  
 16642 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1  
 16643 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescen-  
 dercyrillic  
 16644 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2  
 16645 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endescender-  
 cyrillic  
 16646 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3  
 16647 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic  
 16648 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4  
 16649 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic  
 16650 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5  
 16651 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemid-  
 dlehookcyrillic

16652 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6  
16653 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddlehookcyrillic  
16654 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7  
16655 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyrillic  
16656 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8  
16657 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic  
16658 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% U+04A9  
16659 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescendercyrillic  
16660 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA  
16661 \DeclareTextCompositeCommand{\CYRSDSC}{PU}{\CYRS}{\84\252}% U+04AA  
16662 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescendercyrillic  
16663 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% U+04AB  
16664 \DeclareTextCompositeCommand{\k}{PU}{\cyr}{\84\253}% U+04AB  
16665 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescendercyrillic  
16666 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC  
16667 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescendercyrillic  
16668 \DeclareTextCommand{\cyrtasc}{PU}{\84\255}% U+04AD  
16669 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic  
16670 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE  
16671 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; ustraightcyrillic  
16672 \DeclareTextCommand{\cyry}{PU}{\84\257}% U+04AF  
16673 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Ustraightstrokecyrillic  
16674 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0  
16675 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; usstraightstrokecyrillic  
16676 \DeclareTextCommand{\cyrhcrs}{PU}{\84\261}% U+04B1  
16677 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hadesdescendercyrillic  
16678 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% U+04B2  
16679 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadescendercyrillic  
16680 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% U+04B3  
16681 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetsecyrillic  
16682 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4  
16683 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetsecyrillic  
16684 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% U+04B5  
16685 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER;  
16686 % Chedescendercyrillic  
16687 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6  
16688 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescendercyrillic  
16689 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% U+04B7  
16690 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE;  
16691 % Cheverticalstrokecyrillic  
16692 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8  
16693 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE;  
16694 % cheverticalstrokecyrillic

16695 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9  
 16696 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic  
 16697 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA  
 16698 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic  
 16699 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB  
 16700 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasian-cyrillic  
 16701 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC  
 16702 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyrillic  
 16703 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% U+04BD  
 16704 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCENDER; Chedescenderabkhasiancyrillic  
 16705 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE  
 16706 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE  
 16707 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCENDER; chedescenderabkhasiancyrillic  
 16708 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% U+04BF  
 16709 \DeclareTextCompositeCommand{\k}{PU}{\cyrabhch}{\84\277}% U+04BF  
 16710 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic  
 16711 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0  
 16712 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic  
 16713 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1  
 16714 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic  
 16715 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% U+04C2  
 16716 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic  
 16717 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3  
 16718 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic  
 16719 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% U+04C4  
 16720 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL  
 16721 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5  
 16722 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL  
 16723 \DeclareTextCommand{\cyrldsc}{PU}{\84\306}% U+04C6  
 16724 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic  
 16725 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7  
 16726 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic  
 16727 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% U+04C8  
 16728 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakassiancyrillic  
 16729 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB  
 16730 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassiancyrillic  
 16731 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% U+04CC  
 16732 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL  
 16733 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD  
 16734 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL  
 16735 \DeclareTextCommand{\cyrmdsc}{PU}{\84\316}% U+04CE  
 \84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA  
 16736 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevecyrillic  
 16737 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0  
 16738 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevecyrillic  
 16739 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% U+04D1  
 16740 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyrillic

16741 \DeclareTextCompositeCommand{"}{PU}{\CYRA}{\84\322}% U+04D2  
 16742 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresis Cyrillic  
 16743 \DeclareTextCompositeCommand{"}{PU}{\cyra}{\84\323}% U+04D3  
 16744 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aie Cyrillic  
 16745 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4  
 16746 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aie Cyrillic  
 16747 \DeclareTextCommand{\cyrae}{PU}{\84\325}% U+04D5  
 16748 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrev Cyrillic  
 16749 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6  
 16750 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrev Cyrillic  
 16751 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% U+04D7  
 16752 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwac Cyrillic  
 16753 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8  
 16754 % U+04D9 CYRILLIC SMALL LETTER SCHWA; \*afii10846, schwac Cyrillic  
 16755 \DeclareTextCommand{\cyrschwa}{PU}{\84\331}% U+04D9  
 16756 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS;  
 16757 % Schwadieresis Cyrillic  
 16758 \DeclareTextCompositeCommand{"}{PU}{\CYRSCHWA}{\84\332}% U+04DA  
 16759 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS;  
 16760 % schwadieresis Cyrillic  
 16761 \DeclareTextCompositeCommand{"}{PU}{\cyrschwa}{\84\333}% U+04DB  
 16762 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhedieresis Cyrillic  
 16763 \DeclareTextCompositeCommand{"}{PU}{\CYRZH}{\84\334}% U+04DC  
 16764 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedieresis Cyrillic  
 16765 \DeclareTextCompositeCommand{"}{PU}{\cyrzh}{\84\335}% U+04DD  
 16766 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedieresis Cyrillic  
 16767 \DeclareTextCompositeCommand{"}{PU}{\CYRZ}{\84\336}% U+04DE  
 16768 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedieresis Cyrillic  
 16769 \DeclareTextCompositeCommand{"}{PU}{\cyrz}{\84\337}% U+04DF  
 16770 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasian Cyrillic  
 16771 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0  
 16772 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasian Cyrillic  
 16773 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% U+04E1  
 16774 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Imacron Cyrillic  
 16775 \DeclareTextCompositeCommand{=}{PU}{\CYRI}{\84\342}% U+04E2  
 16776 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacron Cyrillic  
 16777 \DeclareTextCompositeCommand{=}{PU}{\cyri}{\84\343}% U+04E3  
 16778 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresis Cyrillic  
 16779 \DeclareTextCompositeCommand{"}{PU}{\CYRI}{\84\344}% U+04E4  
 16780 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresis Cyrillic  
 16781 \DeclareTextCompositeCommand{"}{PU}{\cyri}{\84\345}% U+04E5  
 16782 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresis Cyrillic  
 16783 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% U+04E6  
 16784 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresis Cyrillic  
 16785 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% U+04E7  
 16786 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarred Cyrillic  
 16787 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8



16788 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarredcyrillic  
 16789 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9  
 16790 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERESIS;  
 16791 % Obarreddieresiscyrillic  
 16792 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% U+04EA  
 16793 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS;  
 16794 % obarreddieresiscyrillic  
 16795 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% U+04EB  
 16796 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS  
 16797 \DeclareTextCompositeCommand{"}{PU}{\CYREREV}{\84\354}% U+04EC  
 16798 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS  
 16799 \DeclareTextCompositeCommand{"}{PU}{\cyreref}{\84\355}% U+04ED  
 16800 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacroncyrillic  
 16801 \DeclareTextCompositeCommand{=}{PU}{\CYRU}{\84\356}% U+04EE  
 16802 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacroncyrillic  
 16803 \DeclareTextCompositeCommand{\=}{PU}{\cyru}{\84\357}% U+04EF  
 16804 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udieresiscyrillic  
 16805 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U+04F0  
 16806 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udieresiscyrillic  
 16807 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% U+04F1  
 16808 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhungarumlautcyrillic  
 16809 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U+04F2  
 16810 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhungarumlautcyrillic  
 16811 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% U+04F3  
 16812 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chedieresiscyrillic  
 16813 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% U+04F4  
 16814 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieresiscyrillic  
 16815 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% U+04F5  
 16816 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER  
 16817 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6  
 16818 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER  
 16819 \DeclareTextCommand{\cyrgdsc}{PU}{\84\367}% U+04F7  
 16820 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudieresiscyrillic  
 16821 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% U+04F8  
 16822 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudieresiscyrillic  
 16823 \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  
 16824 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK  
 16825 \DeclareTextCommand{\CYRHHK}{PU}{\84\374}% U+04FC  
 16826 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK  
 16827 \DeclareTextCommand{\cyrrhk}{PU}{\84\375}% U+04FD  
 16828 \fi  
 \84\376: U+04FE CYRILLIC CAPITAL LETTER HA WITH STROKE

\84\377: U+04FF CYRILLIC SMALL LETTER HA WITH STROKE

#### 46.2.11 Hebrew: U+0590 to U+05FF

Macro names are taken from `he8enc.def`. `hebrew` is only loaded if `\hebdalet` is defined

```
16829 \ifx\hebdalet\@undefined\else
16830 % U+05C3 HEBREW PUNCTUATION SOF PASUQ
16831 \DeclareTextCommand{\sofpasuq}{PU}{\85\303}% U+05C3
16832 % U+05D0 HEBREW LETTER ALEF
16833 \DeclareTextCommand{\hebalef}{PU}{\85\320}% U+05D0
16834 % U+05D1 HEBREW LETTER BET
16835 \DeclareTextCommand{\hebbet}{PU}{\85\321}% U+05D1
16836 % U+05D2 HEBREW LETTER GIMEL
16837 \DeclareTextCommand{\hebgimel}{PU}{\85\322}% U+05D2
16838 % U+05D3 HEBREW LETTER DALET
16839 \DeclareTextCommand{\hebdalet}{PU}{\85\323}% U+05D3
16840 % U+05D4 HEBREW LETTER HE
16841 \DeclareTextCommand{\hebhe}{PU}{\85\324}% U+05D4
16842 % U+05D5 HEBREW LETTER VAV
16843 \DeclareTextCommand{\hebvav}{PU}{\85\325}% U+05D5
16844 % U+05D6 HEBREW LETTER ZAYIN
16845 \DeclareTextCommand{\hebzayin}{PU}{\85\326}% U+05D6
16846 % U+05D7 HEBREW LETTER HET
16847 \DeclareTextCommand{\hebbet}{PU}{\85\327}% U+05D7
16848 % U+05D8 HEBREW LETTER TET
16849 \DeclareTextCommand{\hebtet}{PU}{\85\330}% U+05D8
16850 % U+05D9 HEBREW LETTER YOD
16851 \DeclareTextCommand{\hebyod}{PU}{\85\331}% U+05D9
16852 % U+05DA HEBREW LETTER FINAL KAF
16853 \DeclareTextCommand{\hebfinalkaf}{PU}{\85\332}% U+05DA
16854 % U+05DB HEBREW LETTER KAF
16855 \DeclareTextCommand{\hebkaf}{PU}{\85\333}% U+05DB
16856 % U+05DC HEBREW LETTER LAMED
16857 \DeclareTextCommand{\heblamed}{PU}{\85\334}% U+05DC
16858 % U+05DD HEBREW LETTER FINAL MEM
16859 \DeclareTextCommand{\hebfinalmem}{PU}{\85\335}% U+05DD
16860 % U+05DE HEBREW LETTER MEM
16861 \DeclareTextCommand{\hebmeme}{PU}{\85\336}% U+05DE
16862 % U+05DF HEBREW LETTER FINAL NUN
16863 \DeclareTextCommand{\hebfinalnun}{PU}{\85\337}% U+05DF
16864 % U+05E0 HEBREW LETTER NUN
16865 \DeclareTextCommand{\hebnun}{PU}{\85\340}% U+05E0
16866 % U+05E1 HEBREW LETTER SAMEKH
16867 \DeclareTextCommand{\hebsamekh}{PU}{\85\341}% U+05E1
16868 % U+05E2 HEBREW LETTER AYIN
16869 \DeclareTextCommand{\hebayin}{PU}{\85\342}% U+05E2
16870 % U+05E3 HEBREW LETTER FINAL PE
16871 \DeclareTextCommand{\hebfinalpe}{PU}{\85\343}% U+05E3
16872 % U+05E4 HEBREW LETTER PE
16873 \DeclareTextCommand{\hebpe}{PU}{\85\344}% U+05E4
16874 % U+05E5 HEBREW LETTER FINAL TSADI
16875 \DeclareTextCommand{\hebfinaltsadi}{PU}{\85\345}% U+05E5
16876 % U+05E6 HEBREW LETTER TSADI
```

16877 \DeclareTextCommand{\hebtsadi}{PU}{\85\346}% U+05E6  
 16878 % U+05E7 HEBREW LETTER QOF  
 16879 \DeclareTextCommand{\hebqof}{PU}{\85\347}% U+05E7  
 16880 % U+05E8 HEBREW LETTER RESH  
 16881 \DeclareTextCommand{\hebresh}{PU}{\85\350}% U+05E8  
 16882 % U+05E9 HEBREW LETTER SHIN  
 16883 \DeclareTextCommand{\hebshin}{PU}{\85\351}% U+05E9  
 16884 %\* \hebshin -> \hebsin (he8)  
 16885 % U+05EA HEBREW LETTER TAV  
 16886 \DeclareTextCommand{\hebtav}{PU}{\85\352}% U+05EA  
 16887 % U+05F0 HEBREW LIGATURE YIDDISH DOUBLE VAV  
 16888 \DeclareTextCommand{\doublevav}{PU}{\85\360}% U+05F0  
 16889 % U+05F1 HEBREW LIGATURE YIDDISH VAV YOD  
 16890 \DeclareTextCommand{\vavyod}{PU}{\85\361}% U+05F1  
 16891 % U+05F2 HEBREW LIGATURE YIDDISH DOUBLE YOD  
 16892 \DeclareTextCommand{\doubleyod}{PU}{\85\362}% U+05F2  
 16893 \fi

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

16894 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai  
 16895 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

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

16896 % U+1D00 LATIN LETTER SMALL CAPITAL A; \textscA (tipa)  
 16897 \DeclareTextCommand{\textscA}{PU}{\9035\000}% U+1D00  
 16898 % U+1D05 LATIN LETTER SMALL CAPITAL D; \scd (wsuipa)  
 16899 \DeclareTextCommand{\textscD}{PU}{\9035\005}%\* U+1D05  
 16900 % U+1D07 LATIN LETTER SMALL CAPITAL E; \textscE (tipa)  
 16901 \DeclareTextCommand{\textscE}{PU}{\9035\007}% U+1D07  
 16902 % U+1D0A LATIN LETTER SMALL CAPITAL J; \textscJ (tipa)  
 16903 \DeclareTextCommand{\textscJ}{PU}{\9035\012}% U+1D0A  
 16904 % U+1D0B LATIN LETTER SMALL CAPITAL K; \textscK (tipx)  
 16905 \DeclareTextCommand{\textPUscK}{PU}{\9035\013}% U+1D0B  
 16906 %\* \textPUscK -> \textscK (tipx)  
 16907 % U+1D0D LATIN LETTER SMALL CAPITAL M; \textscM (tipx)  
 16908 \DeclareTextCommand{\textPUscM}{PU}{\9035\015}% U+1D0D  
 16909 %\* \textPUscM -> \textscM (tipx)  
 16910 % U+1D18 LATIN LETTER SMALL CAPITAL P; \textscP (tipx)  
 16911 \DeclareTextCommand{\textPUscP}{PU}{\9035\030}% U+1D18  
 16912 %\* \textPUscP -> \textscP (tipx)  
 16913 % U+1D19 LATIN LETTER SMALL CAPITAL REVERSED R; \textrevscr (tipx)  
 16914 \DeclareTextCommand{\textPUrevscr}{PU}{\9035\031}% U+1D19  
 16915 %\* \textPUrevscr -> \textrevscr (tipx)  
 16916 % U+1D1C LATIN LETTER SMALL CAPITAL U; \textscU (tipa), \scu (wsuipa)  
 16917 \DeclareTextCommand{\textscU}{PU}{\9035\034}%\* U+1D1C  
 16918 % U+1D62 LATIN SUBSCRIPT SMALL LETTER I  
 16919 \DeclareTextCommand{\textiinferior}{PU}{\9035\142}%\* U+1D62  
 16920 % U+1D63 LATIN SUBSCRIPT SMALL LETTER R  
 16921 \DeclareTextCommand{\textrinferior}{PU}{\9035\143}%\* U+1D63  
 16922 % U+1D64 LATIN SUBSCRIPT SMALL LETTER U  
 16923 \DeclareTextCommand{\textuinferior}{PU}{\9035\144}%\* U+1D64  
 16924 % U+1D65 LATIN SUBSCRIPT SMALL LETTER V  
 16925 \DeclareTextCommand{\textvinferior}{PU}{\9035\145}%\* U+1D65

16926 % U+1D66 GREEK SUBSCRIPT SMALL LETTER BETA  
 16927 \DeclareTextCommand{\textbetainferior}{PU}{\9035\146}%\* U+1D66  
 16928 % U+1D67 GREEK SUBSCRIPT SMALL LETTER GAMMA  
 16929 \DeclareTextCommand{\textgammainferior}{PU}{\9035\147}%\* U+1D67  
 16930 % U+1D68 GREEK SUBSCRIPT SMALL LETTER RHO  
 16931 \DeclareTextCommand{\textrhoinferior}{PU}{\9035\150}%\* U+1D68  
 16932 % U+1D69 GREEK SUBSCRIPT SMALL LETTER PHI  
 16933 \DeclareTextCommand{\textphiinferior}{PU}{\9035\151}%\* U+1D69  
 16934 % U+1D6A GREEK SUBSCRIPT SMALL LETTER CHI  
 16935 \DeclareTextCommand{\textchiinferior}{PU}{\9035\152}%\* U+1D6A  
 16936 % U+1D7B LATIN SMALL CAPITAL LETTER I WITH STROKE;  
 16937 % \barsci (wsuipa)  
 16938 \DeclareTextCommand{\textbarsci}{PU}{\9035\173}%\* U+1D7B  
 16939 % U+1D7D LATIN SMALL LETTER P WITH STROKE; \barp (wsuipa)  
 16940 \DeclareTextCommand{\textbarp}{PU}{\9035\175}%\* U+1D7D  
 16941 % U+1D7E LATIN SMALL CAPITAL LETTER U WITH STROKE;  
 16942 % \barscu (wsuipa)  
 16943 \DeclareTextCommand{\textbarscu}{PU}{\9035\176}%\* U+1D7E

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

16944 % U+1D8F LATIN SMALL LETTER A WITH RETROFLEX HOOK; \tex-  
 trhooka (tipx)  
 16945 \DeclareTextCommand{\textPURhooka}{PU}{\9035\217}% U+1D8F  
 16946 %\* \textPURhooka -> \textrhooka (tipx)  
 16947 % U+1D91 LATIN SMALL LETTER D WITH HOOK AND TAIL; \texthtr-  
 taild (tipa)  
 16948 \DeclareTextCommand{\texthtrtaild}{PU}{\9035\221}%\* U+1D91  
 16949 % U+1D92 LATIN SMALL LETTER E WITH RETROFLEX HOOK; \tex-  
 trhooke (tipx)  
 16950 \DeclareTextCommand{\textPURhooke}{PU}{\9035\222}% U+1D92  
 16951 %\* \textPURhooke -> \textrhooke (tipx)  
 16952 % U+1D93 LATIN SMALL LETTER OPEN E WITH RETROFLEX HOOK;  
 16953 % \textrhookepsilon (tipx)  
 16954 \DeclareTextCommand{\textPURhookepsilon}{PU}{\9035\223}% U+1D93  
 16955 %\* \textPURhookepsilon -> \textrhookepsilon (tipx)  
 16956 % U+1D97 LATIN SMALL LETTER OPEN O WITH RETROFLEX HOOK;  
 16957 % \textrhookopeno (tipx)  
 16958 \DeclareTextCommand{\textPURhookopeno}{PU}{\9035\227}% U+1D97  
 16959 %\* \textPURhookopeno -> \textrhookopeno (tipx)

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

16960 % U+1E00 LATIN CAPITAL LETTER A WITH RING BELOW; Aringbelow  
 16961 \DeclareTextCompositeCommand{\textsubring}{PU}{A}{\9036\000}% U+1E00  
 16962 % U+1E01 LATIN SMALL LETTER A WITH RING BELOW; aringbelow  
 16963 \DeclareTextCompositeCommand{\textsubring}{PU}{a}{\9036\001}% U+1E01  
 16964 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent  
 16965 \DeclareTextCompositeCommand{.}{PU}{B}{\9036\002}% U+1E02  
 16966 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent  
 16967 \DeclareTextCompositeCommand{.}{PU}{b}{\9036\003}% U+1E03  
 16968 % U+1E04 LATIN CAPITAL LETTER B WITH DOT BELOW; Bdotbelow  
 16969 \DeclareTextCompositeCommand{\d}{PU}{B}{\9036\004}% U+1E04  
 16970 % U+1E05 LATIN SMALL LETTER B WITH DOT BELOW; bdotbelow  
 16971 \DeclareTextCompositeCommand{\d}{PU}{b}{\9036\005}% U+1E05  
 16972 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow

16973 \DeclareTextCompositeCommand{\b}{PU}{B}{\9036\006}% U+1E06  
16974 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow  
16975 \DeclareTextCompositeCommand{\b}{PU}{b}{\9036\007}% U+1E07  
16976 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent  
16977 \DeclareTextCompositeCommand{\.}{PU}{D}{\9036\012}% U+1E0A  
16978 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent  
16979 \DeclareTextCompositeCommand{\.}{PU}{d}{\9036\013}% U+1E0B  
16980 % U+1E0C LATIN CAPITAL LETTER D WITH DOT BELOW; Ddotbelow  
16981 \DeclareTextCompositeCommand{\d}{PU}{D}{\9036\014}% U+1E0C  
16982 % U+1E0D LATIN SMALL LETTER D WITH DOT BELOW; ddotbelow  
16983 \DeclareTextCompositeCommand{\d}{PU}{d}{\9036\015}% U+1E0D  
16984 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow  
16985 \DeclareTextCompositeCommand{\b}{PU}{D}{\9036\016}% U+1E0E  
16986 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow  
16987 \DeclareTextCompositeCommand{\b}{PU}{d}{\9036\017}% U+1E0F  
16988 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla  
16989 \DeclareTextCompositeCommand{\c}{PU}{D}{\9036\020}% U+1E10  
16990 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla  
16991 \DeclareTextCompositeCommand{\c}{PU}{d}{\9036\021}% U+1E11  
16992 % U+1E12 LATIN CAPITAL LETTER D WITH CIRCUMFLEX BELOW; Dcir-  
cumflexbelow  
16993 \DeclareTextCompositeCommand{\textsubcircum}{PU}{D}{\9036\022}% U+1E12  
16994 % U+1E13 LATIN SMALL LETTER D WITH CIRCUMFLEX BELOW; dcir-  
cumflexbelow  
16995 \DeclareTextCompositeCommand{\textsubcircum}{PU}{d}{\9036\023}% U+1E13  
16996 % U+1E14 LATIN CAPITAL LETTER E WITH MACRON AND GRAVE;  
16997 % Emacrongrave  
16998 \DeclareTextCompositeCommand{\textgravemacron}{PU}{E}{\9036\024}% U+1E14  
16999 % U+1E15 LATIN SMALL LETTER E WITH MACRON AND GRAVE;  
17000 % emacrongrave  
17001 \DeclareTextCompositeCommand{\textgravemacron}{PU}{e}{\9036\025}% U+1E15  
17002 % U+1E16 LATIN CAPITAL LETTER E WITH MACRON AND ACUTE;  
17003 % Emacronacute  
17004 \DeclareTextCompositeCommand{\textacutemacron}{PU}{E}{\9036\026}% U+1E16  
17005 % U+1E17 LATIN SMALL LETTER E WITH MACRON AND ACUTE;  
17006 % emacronacute  
17007 \DeclareTextCompositeCommand{\textacutemacron}{PU}{e}{\9036\027}% U+1E17  
17008 % U+1E18 LATIN CAPITAL LETTER E WITH CIRCUMFLEX BELOW; Ecir-  
cumflexbelow  
17009 \DeclareTextCompositeCommand{\textsubcircum}{PU}{E}{\9036\030}% U+1E18  
17010 % U+1E19 LATIN SMALL LETTER E WITH CIRCUMFLEX BELOW; ecir-  
cumflexbelow  
17011 \DeclareTextCompositeCommand{\textsubcircum}{PU}{e}{\9036\031}% U+1E19  
17012 % U+1E1A LATIN CAPITAL LETTER E WITH TILDE BELOW; Etildebelow  
17013 \DeclareTextCompositeCommand{\textsubtilde}{PU}{E}{\9036\032}% U+1E1A  
17014 % U+1E1B LATIN SMALL LETTER E WITH TILDE BELOW; etildebelow  
17015 \DeclareTextCompositeCommand{\textsubtilde}{PU}{e}{\9036\033}% U+1E1B  
17016 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent  
17017 \DeclareTextCompositeCommand{\.}{PU}{F}{\9036\036}% U+1E1E  
17018 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent  
17019 \DeclareTextCompositeCommand{\.}{PU}{f}{\9036\037}% U+1E1F  
17020 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron  
17021 \DeclareTextCompositeCommand{\=}{PU}{G}{\9036\040}% U+1E20  
17022 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron

17023 \DeclareTextCompositeCommand{=} {PU}{g}{\9036\041}% U+1E21  
17024 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent  
17025 \DeclareTextCompositeCommand{.} {PU}{H}{\9036\042}% U+1E22  
17026 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent  
17027 \DeclareTextCompositeCommand{.} {PU}{h}{\9036\043}% U+1E23  
17028 % U+1E24 LATIN CAPITAL LETTER H WITH DOT BELOW; Hdotbelow  
17029 \DeclareTextCompositeCommand{d} {PU}{H}{\9036\044}% U+1E24  
17030 % U+1E25 LATIN SMALL LETTER H WITH DOT BELOW; hdotbelow  
17031 \DeclareTextCompositeCommand{d} {PU}{h}{\9036\045}% U+1E25  
17032 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis  
17033 \DeclareTextCompositeCommand{"} {PU}{H}{\9036\046}% U+1E26  
17034 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis  
17035 \DeclareTextCompositeCommand{"} {PU}{h}{\9036\047}% U+1E27  
17036 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla  
17037 \DeclareTextCompositeCommand{c} {PU}{H}{\9036\050}% U+1E28  
17038 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla  
17039 \DeclareTextCompositeCommand{c} {PU}{h}{\9036\051}% U+1E29  
17040 % U+1E2A LATIN CAPITAL LETTER H WITH BREVE BELOW; Hbrevebelow  
17041 \DeclareTextCompositeCommand{\textsubbreve} {PU}{H}{\9036\052}% U+1E2A  
17042 % U+1E2B LATIN SMALL LETTER H WITH BREVE BELOW; hbrevebelow  
17043 \DeclareTextCompositeCommand{\textsubbreve} {PU}{h}{\9036\053}% U+1E2B  
17044 % U+1E2C LATIN CAPITAL LETTER I WITH TILDE BELOW; Itildebelow  
17045 \DeclareTextCompositeCommand{\textsubtilde} {PU}{I}{\9036\054}% U+1E2C  
17046 % U+1E2D LATIN SMALL LETTER I WITH TILDE BELOW; itildebelow  
17047 \DeclareTextCompositeCommand{\textsubtilde} {PU}{i}{\9036\055}% U+1E2D  
17048 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute  
17049 \DeclareTextCompositeCommand{'} {PU}{K}{\9036\060}% U+1E30  
17050 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute  
17051 \DeclareTextCompositeCommand{'} {PU}{k}{\9036\061}% U+1E31  
17052 % U+1E32 LATIN CAPITAL LETTER K WITH DOT BELOW; Kdotbelow  
17053 \DeclareTextCompositeCommand{d} {PU}{K}{\9036\062}% U+1E32  
17054 % U+1E33 LATIN SMALL LETTER K WITH DOT BELOW; kdotbelow  
17055 \DeclareTextCompositeCommand{d} {PU}{k}{\9036\063}% U+1E33  
17056 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow  
17057 \DeclareTextCompositeCommand{b} {PU}{K}{\9036\064}% U+1E34  
17058 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow  
17059 \DeclareTextCompositeCommand{b} {PU}{k}{\9036\065}% U+1E35  
17060 % U+1E36 LATIN CAPITAL LETTER L WITH DOT BELOW; Ldotbelow  
17061 \DeclareTextCompositeCommand{d} {PU}{L}{\9036\066}% U+1E36  
17062 % U+1E37 LATIN SMALL LETTER L WITH DOT BELOW; ldotbelow  
17063 \DeclareTextCompositeCommand{d} {PU}{l}{\9036\067}% U+1E37  
17064 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow  
17065 \DeclareTextCompositeCommand{b} {PU}{L}{\9036\072}% U+1E3A  
17066 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow  
17067 \DeclareTextCompositeCommand{b} {PU}{l}{\9036\073}% U+1E3B  
17068 % U+1E3C LATIN CAPITAL LETTER L WITH CIRCUMFLEX BELOW; Lcir-  
cumflexbelow  
17069 \DeclareTextCompositeCommand{\textsubcircum} {PU}{L}{\9036\074}% U+1E3C  
17070 % U+1E3D LATIN SMALL LETTER L WITH CIRCUMFLEX BELOW; lcir-  
cumflexbelow  
17071 \DeclareTextCompositeCommand{\textsubcircum} {PU}{l}{\9036\075}% U+1E3D  
17072 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute  
17073 \DeclareTextCompositeCommand{'} {PU}{M}{\9036\076}% U+1E3E  
17074 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute

17075 \DeclareTextCompositeCommand{\'}{PU}{m}{\9036\077}% U+1E3F  
17076 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent  
17077 \DeclareTextCompositeCommand{\.}{PU}{M}{\9036\100}% U+1E40  
17078 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent  
17079 \DeclareTextCompositeCommand{\.}{PU}{m}{\9036\101}% U+1E41  
17080 % U+1E42 LATIN CAPITAL LETTER M WITH DOT BELOW; Mdotbelow  
17081 \DeclareTextCompositeCommand{\d}{PU}{M}{\9036\102}% U+1E42  
17082 % U+1E43 LATIN SMALL LETTER M WITH DOT BELOW; mdotbelow  
17083 \DeclareTextCompositeCommand{\d}{PU}{m}{\9036\103}% U+1E43  
17084 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent  
17085 \DeclareTextCompositeCommand{\.}{PU}{N}{\9036\104}% U+1E44  
17086 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent  
17087 \DeclareTextCompositeCommand{\.}{PU}{n}{\9036\105}% U+1E45  
17088 % U+1E46 LATIN CAPITAL LETTER N WITH DOT BELOW; Ndotbelow  
17089 \DeclareTextCompositeCommand{\d}{PU}{N}{\9036\106}% U+1E46  
17090 % U+1E47 LATIN SMALL LETTER N WITH DOT BELOW; ndotbelow  
17091 \DeclareTextCompositeCommand{\d}{PU}{n}{\9036\107}% U+1E47  
17092 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow  
17093 \DeclareTextCompositeCommand{\b}{PU}{N}{\9036\110}% U+1E48  
17094 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow  
17095 \DeclareTextCompositeCommand{\b}{PU}{n}{\9036\111}% U+1E49  
17096 % U+1E4A LATIN CAPITAL LETTER N WITH CIRCUMFLEX BELOW; Ncir-  
cumflexbelow  
17097 \DeclareTextCompositeCommand{\textsubcircum}{PU}{N}{\9036\112}% U+1E4A  
17098 % U+1E4B LATIN SMALL LETTER N WITH CIRCUMFLEX BELOW; ncir-  
cumflexbelow  
17099 \DeclareTextCompositeCommand{\textsubcircum}{PU}{n}{\9036\113}% U+1E4B  
17100 % U+1E50 LATIN CAPITAL LETTER O WITH MACRON AND GRAVE;  
17101 % Omacrongrave  
17102 \DeclareTextCompositeCommand{\textgravemacron}{PU}{O}{\9036\120}% U+1E50  
17103 % U+1E51 LATIN SMALL LETTER O WITH MACRON AND GRAVE;  
17104 % omacrongrave  
17105 \DeclareTextCompositeCommand{\textgravemacron}{PU}{o}{\9036\121}% U+1E51  
17106 % U+1E52 LATIN CAPITAL LETTER O WITH MACRON AND ACUTE;  
17107 % Omacronacute  
17108 \DeclareTextCompositeCommand{\textacutemacron}{PU}{O}{\9036\122}% U+1E52  
17109 % U+1E53 LATIN SMALL LETTER O WITH MACRON AND ACUTE;  
17110 % omacronacute  
17111 \DeclareTextCompositeCommand{\textacutemacron}{PU}{o}{\9036\123}% U+1E53  
17112 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute  
17113 \DeclareTextCompositeCommand{\'}{PU}{P}{\9036\124}% U+1E54  
17114 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute  
17115 \DeclareTextCompositeCommand{\'}{PU}{p}{\9036\125}% U+1E55  
17116 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent  
17117 \DeclareTextCompositeCommand{\.}{PU}{P}{\9036\126}% U+1E56  
17118 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent  
17119 \DeclareTextCompositeCommand{\.}{PU}{p}{\9036\127}% U+1E57  
17120 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent  
17121 \DeclareTextCompositeCommand{\.}{PU}{R}{\9036\130}% U+1E58  
17122 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent  
17123 \DeclareTextCompositeCommand{\.}{PU}{r}{\9036\131}% U+1E59  
17124 % U+1E5A LATIN CAPITAL LETTER R WITH DOT BELOW; Rdotbelow  
17125 \DeclareTextCompositeCommand{\d}{PU}{R}{\9036\132}% U+1E5A  
17126 % U+1E5B LATIN SMALL LETTER R WITH DOT BELOW; rdotbelow

17127 \DeclareTextCompositeCommand{\d}{PU}{r}{\9036\133}% U+1E5B  
17128 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow  
17129 \DeclareTextCompositeCommand{\b}{PU}{R}{\9036\136}% U+1E5E  
17130 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow  
17131 \DeclareTextCompositeCommand{\b}{PU}{r}{\9036\137}% U+1E5F  
17132 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent  
17133 \DeclareTextCompositeCommand{\.}{PU}{S}{\9036\140}% U+1E60  
17134 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent  
17135 \DeclareTextCompositeCommand{\.}{PU}{s}{\9036\141}% U+1E61  
17136 % U+1E62 LATIN CAPITAL LETTER S WITH DOT BELOW; Sdotbelow  
17137 \DeclareTextCompositeCommand{\d}{PU}{S}{\9036\142}% U+1E62  
17138 % U+1E63 LATIN SMALL LETTER S WITH DOT BELOW; sdotbelow  
17139 \DeclareTextCompositeCommand{\d}{PU}{s}{\9036\143}% U+1E63  
17140 % U+1E6A LATIN CAPITAL LETTER T WITH DOT ABOVE; Tdotaccent  
17141 \DeclareTextCompositeCommand{\.}{PU}{T}{\9036\152}% U+1E6A  
17142 % U+1E6B LATIN SMALL LETTER T WITH DOT ABOVE; tdotaccent  
17143 \DeclareTextCompositeCommand{\.}{PU}{t}{\9036\153}% U+1E6B  
17144 % U+1E6C LATIN CAPITAL LETTER T WITH DOT BELOW; Tdotbelow  
17145 \DeclareTextCompositeCommand{\d}{PU}{T}{\9036\154}% U+1E6C  
17146 % U+1E6D LATIN SMALL LETTER T WITH DOT BELOW; tdotbelow  
17147 \DeclareTextCompositeCommand{\d}{PU}{t}{\9036\155}% U+1E6D  
17148 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow  
17149 \DeclareTextCompositeCommand{\b}{PU}{T}{\9036\156}% U+1E6E  
17150 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow  
17151 \DeclareTextCompositeCommand{\b}{PU}{t}{\9036\157}% U+1E6F  
17152 % U+1E70 LATIN CAPITAL LETTER T WITH CIRCUMFLEX BELOW; Tcir-  
cumflexbelow  
17153 \DeclareTextCompositeCommand{\textsubcircum}{PU}{T}{\9036\160}% U+1E70  
17154 % U+1E71 LATIN SMALL LETTER T WITH CIRCUMFLEX BELOW; tcir-  
cumflexbelow  
17155 \DeclareTextCompositeCommand{\textsubcircum}{PU}{t}{\9036\161}% U+1E71  
17156 % U+1E72 LATIN CAPITAL LETTER U WITH DIAERESIS BELOW; Udiere-  
sisbelow  
17157 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{U}{\9036\162}% U+1E72  
17158 % U+1E73 LATIN SMALL LETTER U WITH DIAERESIS BELOW; udiere-  
sisbelow  
17159 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{u}{\9036\163}% U+1E73  
17160 % U+1E74 LATIN CAPITAL LETTER U WITH TILDE BELOW; Utildebelow  
17161 \DeclareTextCompositeCommand{\textsubtilde}{PU}{U}{\9036\164}% U+1E74  
17162 % U+1E75 LATIN SMALL LETTER U WITH TILDE BELOW; utildebelow  
17163 \DeclareTextCompositeCommand{\textsubtilde}{PU}{u}{\9036\165}% U+1E75  
17164 % U+1E76 LATIN CAPITAL LETTER U WITH CIRCUMFLEX BELOW; Ucir-  
cumflexbelow  
17165 \DeclareTextCompositeCommand{\textsubcircum}{PU}{U}{\9036\166}% U+1E76  
17166 % U+1E77 LATIN SMALL LETTER U WITH CIRCUMFLEX BELOW; ucir-  
cumflexbelow  
17167 \DeclareTextCompositeCommand{\textsubcircum}{PU}{u}{\9036\167}% U+1E77  
17168 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde  
17169 \DeclareTextCompositeCommand{\~}{PU}{V}{\9036\174}% U+1E7C  
17170 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde  
17171 \DeclareTextCompositeCommand{\~}{PU}{v}{\9036\175}% U+1E7D  
17172 % U+1E7E LATIN CAPITAL LETTER V WITH DOT BELOW; Vdotbelow  
17173 \DeclareTextCompositeCommand{\d}{PU}{V}{\9036\176}% U+1E7E  
17174 % U+1E7F LATIN SMALL LETTER V WITH DOT BELOW; vdotbelow



17175 \DeclareTextCompositeCommand{\d}{PU}{v}{\9036\177}% U+1E7F  
17176 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave  
17177 \DeclareTextCompositeCommand{\`}{PU}{W}{\9036\200}% U+1E80  
17178 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave  
17179 \DeclareTextCompositeCommand{\`}{PU}{w}{\9036\201}% U+1E81  
17180 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute  
17181 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\202}% U+1E82  
17182 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute  
17183 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\203}% U+1E83  
17184 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis  
17185 \DeclareTextCompositeCommand{\"}{PU}{W}{\9036\204}% U+1E84  
17186 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis  
17187 \DeclareTextCompositeCommand{\"}{PU}{w}{\9036\205}% U+1E85  
17188 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent  
17189 \DeclareTextCompositeCommand{\.}{PU}{W}{\9036\206}% U+1E86  
17190 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent  
17191 \DeclareTextCompositeCommand{\.}{PU}{w}{\9036\207}% U+1E87  
17192 % U+1E88 LATIN CAPITAL LETTER W WITH DOT BELOW; wdotbelow  
17193 \DeclareTextCompositeCommand{\d}{PU}{W}{\9036\210}% U+1E88  
17194 % U+1E89 LATIN SMALL LETTER W WITH DOT BELOW; wdotbelow  
17195 \DeclareTextCompositeCommand{\d}{PU}{w}{\9036\211}% U+1E89  
17196 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent  
17197 \DeclareTextCompositeCommand{\.}{PU}{X}{\9036\212}% U+1E8A  
17198 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent  
17199 \DeclareTextCompositeCommand{\.}{PU}{x}{\9036\213}% U+1E8B  
17200 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis  
17201 \DeclareTextCompositeCommand{\"}{PU}{X}{\9036\214}% U+1E8C  
17202 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis  
17203 \DeclareTextCompositeCommand{\"}{PU}{x}{\9036\215}% U+1E8D  
17204 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent  
17205 \DeclareTextCompositeCommand{\.}{PU}{Y}{\9036\216}% U+1E8E  
17206 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent  
17207 \DeclareTextCompositeCommand{\.}{PU}{y}{\9036\217}% U+1E8F  
17208 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex  
17209 \DeclareTextCompositeCommand{\^}{PU}{Z}{\9036\220}% U+1E90  
17210 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex  
17211 \DeclareTextCompositeCommand{\^}{PU}{z}{\9036\221}% U+1E91  
17212 % U+1E92 LATIN CAPITAL LETTER Z WITH DOT BELOW; Zdotbelow  
17213 \DeclareTextCompositeCommand{\d}{PU}{Z}{\9036\222}% U+1E92  
17214 % U+1E93 LATIN SMALL LETTER Z WITH DOT BELOW; zdotbelow  
17215 \DeclareTextCompositeCommand{\d}{PU}{z}{\9036\223}% U+1E93  
17216 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow  
17217 \DeclareTextCompositeCommand{\b}{PU}{Z}{\9036\224}% U+1E94  
17218 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow  
17219 \DeclareTextCompositeCommand{\b}{PU}{z}{\9036\225}% U+1E95  
17220 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow  
17221 \DeclareTextCompositeCommand{\b}{PU}{h}{\9036\226}% U+1E96  
17222 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis  
17223 \DeclareTextCompositeCommand{\"}{PU}{t}{\9036\227}% U+1E97  
17224 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring  
17225 \DeclareTextCompositeCommand{\r}{PU}{w}{\9036\230}% U+1E98  
17226 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring  
17227 \DeclareTextCompositeCommand{\r}{PU}{y}{\9036\231}% U+1E99  
17228 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdo-

taccent

17229 \DeclareTextCompositeCommand{\.}{PU}{\textlongs}{\9036\233}% U+1E9B

17230 % U+1EA0 LATIN CAPITAL LETTER A WITH DOT BELOW; Adotbelow

17231 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}% U+1EA0

17232 % U+1EA1 LATIN SMALL LETTER A WITH DOT BELOW; adotbelow

17233 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}% U+1EA1

17234 % U+1EB8 LATIN CAPITAL LETTER E WITH DOT BELOW; Edotbelow

17235 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}% U+1EB8

17236 % U+1EB9 LATIN SMALL LETTER E WITH DOT BELOW; edotbelow

17237 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}% U+1EB9

17238 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde

17239 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC

17240 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde

17241 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD

17242 % U+1ECA LATIN CAPITAL LETTER I WITH DOT BELOW; Idotbelow

17243 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}% U+1ECA

17244 % U+1ECB LATIN SMALL LETTER I WITH DOT BELOW; idotbelow

17245 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}% U+1ECB

17246 % U+1ECC LATIN CAPITAL LETTER O WITH DOT BELOW; Odotbelow

17247 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}% U+1ECC

17248 % U+1ECD LATIN SMALL LETTER O WITH DOT BELOW; odotbelow

17249 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}% U+1ECD

17250 % U+1EE4 LATIN CAPITAL LETTER U WITH DOT BELOW; Udotbelow

17251 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4

17252 % U+1EE5 LATIN SMALL LETTER U WITH DOT BELOW; udotbelow

17253 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}% U+1EE5

17254 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave

17255 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2

17256 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave

17257 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3

17258 % U+1EF4 LATIN CAPITAL LETTER Y WITH DOT BELOW; Ydotbelow

17259 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4

17260 % U+1EF5 LATIN SMALL LETTER Y WITH DOT BELOW; ydotbelow

17261 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}% U+1EF5

17262 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde

17263 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8

17264 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde

17265 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9

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

17266 % U+200C ZERO WIDTH NON-JOINER; \*afii61664, zerowidthnonjoiner

17267 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C

17268 % U+2013 EN DASH; endash

17269 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013

17270 % U+2014 EM DASH; emdash

17271 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014

17272 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar

17273 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016

17274 %\* \textbardbl -> \textdoublevertline (tipa)

17275 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft

17276 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018

17277 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright

17278 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019

17279 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase

17280 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A  
17281 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
17282 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034}% U+201C  
17283 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
17284 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035}% U+201D  
17285 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
17286 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E  
17287 % U+2020 DAGGER; dagger  
17288 \DeclareTextCommand{\textdagger}{PU}{\9040\040}%\* U+2020  
17289 %\* \textdagger -> \dag (LaTeX)  
17290 % U+2021 DOUBLE DAGGER; daggerdbl; \ddagger (LaTeX)  
17291 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021  
17292 %\* \textdaggerdbl -> \ddagger (LaTeX)  
17293 %\* \textdaggerdbl -> \ddag (LaTeX)  
17294 % U+2022 BULLET; bullet  
17295 \DeclareTextCommand{\textbullet}{PU}{\9040\042}%\* U+2022  
17296 % U+2025 TWO DOT LEADER; \hdotfor (MnSymbol)  
17297 \DeclareTextCommand{\texthdotfor}{PU}{\9040\045}%\* U+2025  
17298 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
17299 \DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026  
17300 %\* \textellipsis -> \mathellipsis  
17301 % U+2030 PER MILLE SIGN; perthousand  
17302 \DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030  
17303 % U+2031 PER TEN THOUSAND SIGN  
17304 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031  
17305 % U+2032 PRIME; minute; \prime (MnSymbol)  
17306 \DeclareTextCommand{\textprime}{PU}{\9040\062}%\* U+2032  
17307 % U+2033 DOUBLE PRIME; \second (mathabx)  
17308 \DeclareTextCommand{\textsecond}{PU}{\9040\063}%\* U+2033  
17309 % U+2034 TRIPLE PRIME; \third (mathabx)  
17310 \DeclareTextCommand{\textthird}{PU}{\9040\064}%\* U+2034  
17311 % U+2035 REVERSED PRIME; \backprime (AmS)  
17312 \DeclareTextCommand{\textbackprime}{PU}{\9040\065}%\* U+2035  
17313 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
inglleft  
17314 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071}% U+2039  
17315 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
inglright  
17316 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072}% U+203A  
17317 % U+203B REFERENCE MARK; referencemark  
17318 \DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B  
17319 % U+203D INTERROBANG  
17320 \DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D  
17321 % U+2044 FRACTION SLASH; fraction  
17322 \DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044  
17323 % U+2045 LEFT SQUARE BRACKET WITH QUILL  
17324 \DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045  
17325 % U+2046 RIGHT SQUARE BRACKET WITH QUILL  
17326 \DeclareTextCommand{\textrquill}{PU}{\9040\106}% U+2046  
17327 % U+2052 COMMERCIAL MINUS SIGN  
17328 \DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052  
17329 % U+2056 THREE DOT PUNCTUATION; \lefttherefore (MnSymbol)  
17330 \DeclareTextCommand{\textlefttherefore}{PU}{\9040\126}%\* U+2056  
17331 % U+2057 QUADRUPLE PRIME; \fourth (mathabx)

17332 \DeclareTextCommand{\textfourth}{PU}{\9040\127}%\* U+2057  
 17333 % U+2058 FOUR DOT PUNCTUATION; \diamonddots (MnSymbol)  
 17334 \DeclareTextCommand{\textdiamonddots}{PU}{\9040\130}%\* U+2058

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

17335 % U+2070 SUPERSCRIPT ZERO; zerosuperior  
 17336 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}%\* U+2070  
 17337 % U+2071 SUPERSCRIPT LATIN SMALL LETTER I  
 17338 \DeclareTextCommand{\textisuperior}{PU}{\9040\161}%\* U+2071  
 17339 % U+2074 SUPERSCRIPT FOUR; foursuperior  
 17340 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}%\* U+2074  
 17341 % U+2075 SUPERSCRIPT FIVE; fivesuperior  
 17342 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}%\* U+2075  
 17343 % U+2076 SUPERSCRIPT SIX; sixsuperior  
 17344 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}%\* U+2076  
 17345 % U+2077 SUPERSCRIPT SEVEN; sevensuperior  
 17346 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}%\* U+2077  
 17347 % U+2078 SUPERSCRIPT EIGHT; eightsuperior  
 17348 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170}%\* U+2078  
 17349 % U+2079 SUPERSCRIPT NINE; ninesuperior  
 17350 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171}%\* U+2079  
 17351 % U+207A SUPERSCRIPT PLUS SIGN; plussuperior  
 17352 \DeclareTextCommand{\textplussuperior}{PU}{\9040\172}%\* U+207A  
 17353 % U+207B SUPERSCRIPT MINUS  
 17354 \DeclareTextCommand{\textminussuperior}{PU}{\9040\173}%\* U+207B  
 17355 % U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior  
 17356 \DeclareTextCommand{\textequalsuperior}{PU}{\9040\174}%\* U+207C  
 17357 % U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftsuperior  
 17358 \DeclareTextCommand{\textparenleftsuperior}{PU}{\9040\175}%\* U+207D  
 17359 % U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightsuperior  
 17360 \DeclareTextCommand{\textparenrightsuperior}{PU}{\9040\176}%\* U+207E  
 17361 % U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior  
 17362 \DeclareTextCommand{\textnsuperior}{PU}{\9040\177}%\* U+207F  
 17363 % U+2080 SUBSCRIPT ZERO; zeroinferior  
 17364 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}%\* U+2080  
 17365 % U+2081 SUBSCRIPT ONE; oneinferior  
 17366 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201}%\* U+2081  
 17367 % U+2082 SUBSCRIPT TWO; twoinferior  
 17368 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}%\* U+2082  
 17369 % U+2083 SUBSCRIPT THREE; threeinferior  
 17370 \DeclareTextCommand{\textthreeinferior}{PU}{\9040\203}%\* U+2083  
 17371 % U+2084 SUBSCRIPT FOUR; fourinferior  
 17372 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204}%\* U+2084  
 17373 % U+2085 SUBSCRIPT FIVE; fiveinferior  
 17374 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}%\* U+2085  
 17375 % U+2086 SUBSCRIPT SIX; sixinferior  
 17376 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}%\* U+2086  
 17377 % U+2087 SUBSCRIPT SEVEN; seveninferior  
 17378 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}%\* U+2087  
 17379 % U+2088 SUBSCRIPT EIGHT; eightinferior  
 17380 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}%\* U+2088  
 17381 % U+2089 SUBSCRIPT NINE; nineinferior  
 17382 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}%\* U+2089  
 17383 % U+208A SUBSCRIPT PLUS SIGN

17384 \DeclareTextCommand{\textplusinferior}{PU}{\9040\212}%\* U+208A  
 17385 % U+208B SUBSCRIPT MINUS  
 17386 \DeclareTextCommand{\textminusinferior}{PU}{\9040\213}%\* U+208B  
 17387 % U+208C SUBSCRIPT EQUALS SIGN  
 17388 \DeclareTextCommand{\textequalsinferior}{PU}{\9040\214}%\* U+208C  
 17389 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior  
 17390 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}%\* U+208D  
 17391 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior  
 17392 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}%\* U+208E  
 17393 % U+2090 LATIN SUBSCRIPT SMALL LETTER A  
 17394 \DeclareTextCommand{\textainferior}{PU}{\9040\220}%\* U+2090  
 17395 % U+2091 LATIN SUBSCRIPT SMALL LETTER E  
 17396 \DeclareTextCommand{\texteinferior}{PU}{\9040\221}%\* U+2091  
 17397 % U+2092 LATIN SUBSCRIPT SMALL LETTER O  
 17398 \DeclareTextCommand{\textoinferior}{PU}{\9040\222}%\* U+2092  
 17399 % U+2093 LATIN SUBSCRIPT SMALL LETTER X  
 17400 \DeclareTextCommand{\textxinferior}{PU}{\9040\223}%\* U+2093  
 17401 % U+2094 LATIN SUBSCRIPT SMALL LETTER SCHWA  
 17402 \DeclareTextCommand{\textschwainferior}{PU}{\9040\224}%\* U+2094  
 17403 % U+2095 LATIN SUBSCRIPT SMALL LETTER H  
 17404 \DeclareTextCommand{\texthinferior}{PU}{\9040\225}%\* U+2095  
 17405 % U+2096 LATIN SUBSCRIPT SMALL LETTER K  
 17406 \DeclareTextCommand{\textkinferior}{PU}{\9040\226}%\* U+2096  
 17407 % U+2097 LATIN SUBSCRIPT SMALL LETTER L  
 17408 \DeclareTextCommand{\textlinferior}{PU}{\9040\227}%\* U+2097  
 17409 % U+2098 LATIN SUBSCRIPT SMALL LETTER M  
 17410 \DeclareTextCommand{\textminferior}{PU}{\9040\230}%\* U+2098  
 17411 % U+2099 LATIN SUBSCRIPT SMALL LETTER N  
 17412 \DeclareTextCommand{\textninferior}{PU}{\9040\231}%\* U+2099  
 17413 % U+209A LATIN SUBSCRIPT SMALL LETTER P  
 17414 \DeclareTextCommand{\textpinferior}{PU}{\9040\232}%\* U+209A  
 17415 % U+209B LATIN SUBSCRIPT SMALL LETTER S  
 17416 \DeclareTextCommand{\textsinferior}{PU}{\9040\233}%\* U+209B  
 17417 % U+209C LATIN SUBSCRIPT SMALL LETTER T  
 17418 \DeclareTextCommand{\texttinferior}{PU}{\9040\234}%\* U+209C

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

17419 % U+20A1 COLON SIGN; \*colonmonetary, colonsign  
 17420 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1  
 17421 % U+20A4 LIRA SIGN; afii08941, \*lira  
 17422 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4  
 17423 % U+20A6 NAIRA SIGN  
 17424 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6  
 17425 % U+20A7 PESETA SIGN; peseta  
 17426 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7  
 17427 % U+20A9 WON SIGN; won  
 17428 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9  
 17429 % U+20AB DONG SIGN; dong  
 17430 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB  
 17431 % U+20AC EURO SIGN; \*Euro, euro  
 17432 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC  
 17433 %\* \texteuro -> \EurDig (marvosym)  
 17434 %\* \texteuro -> \EURdig (marvosym)  
 17435 %\* \texteuro -> \EurHv (marvosym)

17436 %\* \texteuro -> \EURhv (marvosym)  
 17437 %\* \texteuro -> \EurCr (marvosym)  
 17438 %\* \texteuro -> \EURcr (marvosym)  
 17439 %\* \texteuro -> \EurTm (marvosym)  
 17440 %\* \texteuro -> \EURtm (marvosym)  
 17441 %\* \texteuro -> \Eur (marvosym)  
 17442 % U+20B0 GERMAN PENNY SIGN; \Deleatur (marvosym)  
 17443 \DeclareTextCommand{\textDeleatur}{PU}{\9040\260}%\* U+20B0  
 17444 %\* \textDeleatur -> \Denarius (marvosym)  
 17445 % U+20B1 PESO SIGN  
 17446 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1  
 17447 % U+20B2 GUARANI SIGN  
 17448 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

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

17449 % U+2103 DEGREE CELSIUS; centigrade  
 17450 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103  
 17451 % U+210F PLANCK CONSTANT OVER TWO PI; \hslash (AmS)  
 17452 \DeclareTextCommand{\texthslash}{PU}{\9041\017}%\* U+210F  
 17453 % U+2111 BLACK-LETTER CAPITAL I (=imaginary part); Ifraktur; \Im (LaTeX)  
 17454 \DeclareTextCommand{\textIm}{PU}{\9041\021}%\* U+2111  
 17455 % U+2113 SCRIPT SMALL L (=ell, liter); affi61289, lsquare; \ell (LaTeX)  
 17456 \DeclareTextCommand{\textell}{PU}{\9041\023}%\* U+2113  
 17457 % U+2116 NUMERO SIGN; \*affi61352, numero  
 17458 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116  
 17459 % U+2117 SOUND RECORDING COPYRIGHT  
 17460 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117  
 17461 % U+2118 SCRIPT CAPITAL P (=Weierstrass elliptic function);  
 17462 % weierstrass; \wp (LaTeX)  
 17463 \DeclareTextCommand{\textwp}{PU}{\9041\030}%\* U+2118  
 17464 % U+211C BLACK-LETTER CAPITAL R (=real part); Rfraktur; \Re (LaTeX)  
 17465 \DeclareTextCommand{\textRe}{PU}{\9041\034}%\* U+211C  
 17466 % U+211E PRESCRIPTION TAKE; prescription  
 17467 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E  
 17468 % U+2120 SERVICE MARK  
 17469 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120  
 17470 % U+2122 TRADE MARK SIGN; trademark  
 17471 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122  
 17472 % U+2126 OHM SIGN; Ohm, Omega  
 17473 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126  
 17474 % U+2127 INVERTED OHM SIGN  
 17475 \DeclareTextCommand{\textmho}{PU}{\9041\047}%\* U+2127  
 17476 %\* \textmho -> \agemO (wasysym)  
 17477 % U+2129 TURNED GREEK SMALL LETTER IOTA; \riota (phonetic)  
 17478 \DeclareTextCommand{\textriota}{PU}{\9041\051}%\* U+2129  
 17479 % U+212B ANGSTROM SIGN; angstrom  
 17480 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B  
 17481 % U+212E ESTIMATED SYMBOL; estimated  
 17482 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E  
 17483 %\* \textestimated -> \EstimatedSign (marvosym)  
 17484 %\* \textestimated -> \Ecommerce (marvosym)  
 17485 % U+2132 TURNED CAPITAL F; \Finv (AmS)  
 17486 \DeclareTextCommand{\textFinv}{PU}{\9041\062}%\* U+2132

17487 % U+2135 ALEF SYMBOL; aleph; \aleph (LaTeX)  
 17488 \DeclareTextCommand{\textaleph}{PU}{\9041\065}%\* U+2135  
 17489 % U+2136 BET SYMBOL; \beth (AmS, MnSymbol)  
 17490 \DeclareTextCommand{\textbeth}{PU}{\9041\066}%\* U+2136  
 17491 % U+2137 GIMEL SYMBOL; \gimel (AmS, MnSymbol)  
 17492 \DeclareTextCommand{\textgimel}{PU}{\9041\067}%\* U+2137  
 17493 % U+2138 DALET SYMBOL; \daleth (AmS, MnSymbol)  
 17494 \DeclareTextCommand{\textdaleth}{PU}{\9041\070}%\* U+2138  
 17495 % U+213B FACSIMILE SIGN; \fax (marvosym)  
 17496 \DeclareTextCommand{\textfax}{PU}{\9041\073}%\* U+213B  
 17497 % U+2141 TURNED SANS-SERIF CAPITAL G (=game); \Game  
 17498 \DeclareTextCommand{\textGame}{PU}{\9041\101}%\* U+2141  
 17499 % U+214B TURNED AMPERSAND; \invamp (txfonts/pxfonts)  
 17500 \DeclareTextCommand{\textinvamp}{PU}{\9041\113}%\* U+214B  
 17501 %\* \textinvamp -> \bindnasrepma (stmaryrd)  
 17502 %\* \textinvamp -> \parr (cml)

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

17503 % U+2150 VULGAR FRACTION ONE SEVENTH  
 17504 \DeclareTextCommand{\textoneseventh}{PU}{\9041\120}% U+2150  
 17505 % U+2151 VULGAR FRACTION ONE NINTH  
 17506 \DeclareTextCommand{\textoneninth}{PU}{\9041\121}% U+2151  
 17507 % U+2152 VULGAR FRACTION ONE TENTH  
 17508 \DeclareTextCommand{\textonetenth}{PU}{\9041\122}% U+2152  
 17509 % U+2153 VULGAR FRACTION ONE THIRD; onethird  
 17510 \DeclareTextCommand{\textonethird}{PU}{\9041\123}% U+2153  
 17511 % U+2154 VULGAR FRACTION TWO THIRDS; twothirds  
 17512 \DeclareTextCommand{\texttwothirds}{PU}{\9041\124}% U+2154  
 17513 % U+2155 VULGAR FRACTION ONE FIFTH  
 17514 \DeclareTextCommand{\textonefifth}{PU}{\9041\125}% U+2155  
 17515 % U+2156 VULGAR FRACTION TWO FIFTHS  
 17516 \DeclareTextCommand{\texttwofifths}{PU}{\9041\126}% U+2156  
 17517 % U+2157 VULGAR FRACTION THREE FIFTHS  
 17518 \DeclareTextCommand{\textthreefifths}{PU}{\9041\127}% U+2157  
 17519 % U+2158 VULGAR FRACTION FOUR FIFTHS  
 17520 \DeclareTextCommand{\textfourfifths}{PU}{\9041\130}% U+2158  
 17521 % U+2159 VULGAR FRACTION ONE SIXTH  
 17522 \DeclareTextCommand{\textonesixth}{PU}{\9041\131}% U+2159  
 17523 % U+215A VULGAR FRACTION FIVE SIXTHS  
 17524 \DeclareTextCommand{\textfivesixths}{PU}{\9041\132}% U+215A  
 17525 % U+215B VULGAR FRACTION ONE EIGHTH; oneeighth  
 17526 \DeclareTextCommand{\textoneeighth}{PU}{\9041\133}% U+215B  
 17527 % U+215C VULGAR FRACTION THREE EIGHTHS; threeeighths  
 17528 \DeclareTextCommand{\textthreeeighths}{PU}{\9041\134}% U+215C  
 17529 % U+215D VULGAR FRACTION FIVE EIGHTHS; fiveeighths  
 17530 \DeclareTextCommand{\textfiveeighths}{PU}{\9041\135}% U+215D  
 17531 % U+215E VULGAR FRACTION SEVEN EIGHTHS; seveneighths  
 17532 \DeclareTextCommand{\textseveneighths}{PU}{\9041\136}% U+215E  
 17533 % U+2184 LATIN SMALL LETTER REVERSED C  
 17534 \DeclareTextCommand{\textrevc}{PU}{\9041\204}% U+2184  
 17535 % U+2189 VULGAR FRACTION ZERO THIRDS  
 17536 \DeclareTextCommand{\textzerthirds}{PU}{\9041\211}% U+2189

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

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17537 % U+2190 LEFTWARDS ARROW; arrowleft
17538 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}%* U+2190
17539 % U+2191 UPWARDS ARROW; arrowup
17540 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}%* U+2191
17541 % U+2192 RIGHTWARDS ARROW; arrowright
17542 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}%* U+2192
17543 %* \textrightarrow -> \MVRightArrow (marvosym)
17544 %* \textrightarrow -> \MVRightarrow (marvosym)
17545 % U+2193 DOWNWARDS ARROW; arrowdown
17546 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}%* U+2193
17547 %* \textdownarrow -> \MVArrowDown (marvosym)
17548 %* \textdownarrow -> \Force (marvosym)
17549 % U+2194 LEFT RIGHT ARROW; arrowboth; \leftrightharrow (LaTeX)
17550 \DeclareTextCommand{\textleftrightharrow}{PU}{\9041\224}%* U+2194
17551 % U+2195 UP DOWN ARROW; arrowupdn; \updownarrow (LaTeX)
17552 \DeclareTextCommand{\textupdownarrow}{PU}{\9041\225}%* U+2195
17553 % U+2196 NORTH WEST ARROW; arrowupleft; \nwarrow (LaTeX)
17554 \DeclareTextCommand{\textnwarrow}{PU}{\9041\226}%* U+2196
17555 % U+2197 NORTH EAST ARROW; arrowupright; \nearrow (LaTeX)
17556 \DeclareTextCommand{\textnearrow}{PU}{\9041\227}%* U+2197
17557 %* \textnearrow -> \textglobrise (tipa)
17558 % U+2198 SOUTH EAST ARROW; arrowdownright; \searrow (LaTeX)
17559 \DeclareTextCommand{\textsearrow}{PU}{\9041\230}%* U+2198
17560 %* \textsearrow -> \textglobfall (tipa)
17561 % U+2199 SOUTH WEST ARROW; arrowdownleft; \swarrow (LaTeX)
17562 \DeclareTextCommand{\textswarrow}{PU}{\9041\231}%* U+2199
17563 % U+219A LEFTWARDS ARROW WITH STROKE; \leftarrow (AmS)
17564 \DeclareTextCommand{\textnleftarrow}{PU}{\9041\232}%* U+219A
17565 % U+219B RIGHTWARDS ARROW WITH STROKE; \rightarrow (AmS)
17566 \DeclareTextCommand{\textnrightarrow}{PU}{\9041\233}%* U+219B
17567 % U+219E LEFTWARDS TWO HEADED ARROW; \twoheadleftarrow (AmS)
17568 \DeclareTextCommand{\texttwoheadleftarrow}{PU}{\9041\236}%* U+219E
17569 % \twoheadleftarrow (txfonts/pxfonts)
17570 \DeclareTextCommand{\textntwoheadleftarrow}{PU}{\9041\236\83\070}%* U+219E U+0338
17571 % U+219F UPWARDS TWO HEADED ARROW; \twoheaduparrow (MnSymbol)
17572 \DeclareTextCommand{\texttwoheaduparrow}{PU}{\9041\237}%* U+219F
17573 % U+21A0 RIGHTWARDS TWO HEADED ARROW;
17574 % \twoheadrightarrow (AmS)
17575 \DeclareTextCommand{\texttwoheadrightarrow}{PU}{\9041\240}%* U+21A0
17576 % \twoheadrightarrow (txfonts/pxfonts)
17577 \DeclareTextCommand{\textntwoheadrightarrow}{PU}{\9041\240\83\070}%* U+21A0 U+0338
17578 % U+21A1 DOWNWARDS TWO HEADED ARROW; \twoheaddownarrow (Mn-
Symbol)
17579 \DeclareTextCommand{\texttwoheaddownarrow}{PU}{\9041\241}%* U+21A1
17580 % U+21A2 LEFTWARDS ARROW WITH TAIL; \leftarrowtail (AmS)
17581 \DeclareTextCommand{\textleftarrowtail}{PU}{\9041\242}%* U+21A2
17582 % U+21A3 RIGHTWARDS ARROW WITH TAIL; \rightarrowtail (AmS)
17583 \DeclareTextCommand{\textrightarrowtail}{PU}{\9041\243}%* U+21A3
17584 % U+21A6 RIGHTWARDS ARROW FROM BAR; \mapsto (LaTeX)
17585 \DeclareTextCommand{\textmapsto}{PU}{\9041\246}%* U+21A6
17586 % U+21A9 LEFTWARDS ARROW WITH HOOK; \hookleftarrow (LaTeX)
17587 \DeclareTextCommand{\texthookleftarrow}{PU}{\9041\251}%* U+21A9
17588 % U+21AA RIGHTWARDS ARROW WITH HOOK; \hookrightarrow (LaTeX)
17589 \DeclareTextCommand{\texthookrightarrow}{PU}{\9041\252}%* U+21AA

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17590 % U+21AB LEFTWARDS ARROW WITH LOOP; \looparrowleft (AmS)
17591 \DeclareTextCommand{\textlooparrowleft}{PU}{\9041\253}%* U+21AB
17592 % U+21AC RIGHTWARDS ARROW WITH LOOP; \looparrowright (AmS)
17593 \DeclareTextCommand{\textlooparrowright}{PU}{\9041\254}%* U+21AC
17594 % U+21AE LEFT RIGHT ARROW WITH STROKE; \leftrightharpoon (AmS)
17595 \DeclareTextCommand{\textnleftrightharpoon}{PU}{\9041\256}%* U+21AE
17596 % U+21AF DOWNWARDS ZIGZAG ARROW; \lightning (stmaryrd)
17597 \DeclareTextCommand{\textlightning}{PU}{\9041\257}%* U+21AF
17598 %* \textlightning -> \Lightning (marvosym)
17599 % U+21B5 DOWNWARDS ARROW WITH CORNER LEFTWARDS;
17600 % \dlsh (mathabx)
17601 \DeclareTextCommand{\textdlsh}{PU}{\9041\265}%* U+21B5
17602 % U+21B6 ANTICLOCKWISE TOP SEMICIRCLE ARROW;
17603 % \curvearrowleft (AmS)
17604 \DeclareTextCommand{\textcurvearrowleft}{PU}{\9041\266}%* U+21B6
17605 % U+21B7 CLOCKWISE TOP SEMICIRCLE ARROW; \curvearrowright (AmS)
17606 \DeclareTextCommand{\textcurvearrowright}{PU}{\9041\267}%* U+21B7
17607 % U+21BC LEFTWARDS HARPOON WITH BARB UPWARDS; harpoonleft-
    barbup;
17608 % \leftharpoonup (LaTeX)
17609 \DeclareTextCommand{\textleftharpoonup}{PU}{\9041\274}%* U+21BC
17610 % U+21BD LEFTWARDS HARPOON WITH BARB DOWNWARDS;
17611 % \leftharpoondown (LaTeX)
17612 \DeclareTextCommand{\textleftharpoondown}{PU}{\9041\275}%* U+21BD
17613 % U+21BE UPWARDS HARPOON WITH BARB RIGHTWARDS;
17614 % \upharpoonright (AmS)
17615 \DeclareTextCommand{\textupharpoonright}{PU}{\9041\276}%* U+21BE
17616 % U+21BF UPWARDS HARPOON WITH BARB LEFTWARDS;
17617 % \upharpoonleft (AmS)
17618 \DeclareTextCommand{\textupharpoonleft}{PU}{\9041\277}%* U+21BF
17619 % U+21C0 RIGHTWARDS HARPOON WITH BARB UPWARDS; harpoonright-
    barbup
17620 % \rightharpoonup (LaTeX)
17621 \DeclareTextCommand{\textrightharpoonup}{PU}{\9041\300}%* U+21C0
17622 % U+21C1 RIGHTWARDS HARPOON WITH BARB DOWNWARDS;
17623 % \rightharpoondown (LaTeX)
17624 \DeclareTextCommand{\textrightharpoondown}{PU}{\9041\301}%* U+21C1
17625 % U+21C2 DOWNWARDS HARPOON WITH BARB RIGHTWARDS;
17626 % \downharpoonright (AmS)
17627 \DeclareTextCommand{\textdownharpoonright}{PU}{\9041\302}%* U+21C2
17628 % U+21C3 DOWNWARDS HARPOON WITH BARB LEFTWARDS;
17629 % \downharpoonleft (AmS)
17630 \DeclareTextCommand{\textdownharpoonleft}{PU}{\9041\303}%* U+21C3
17631 % U+21C4 RIGHTWARDS ARROW OVER LEFTWARDS ARROW;
17632 % \rightarrowoverleft; \rightleftarrows (MnSymbol)
17633 \DeclareTextCommand{\textrightleftarrows}{PU}{\9041\304}%* U+21C4
17634 % U+21C5 UPWARDS ARROW LEFTWARDS OF DOWNWARDS ARROW; ar-
    rowupleftofdown;
17635 % \updownarrows (MnSymbol)
17636 \DeclareTextCommand{\textupdownarrows}{PU}{\9041\305}%* U+21C5
17637 % U+21C6 LEFTWARDS ARROW OVER RIGHTWARDS ARROW; arrowleft-
    overright;
17638 % \leftrightarrows (AmS)
17639 \DeclareTextCommand{\textleftrightarrows}{PU}{\9041\306}%* U+21C6

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17640 % U+21C7 LEFTWARDS PAIRED ARROWS; \leftleftarrows (AmS)
17641 \DeclareTextCommand{\textleftleftarrows}{PU}{\9041\307}%* U+21C7
17642 % U+21C8 UPWARDS PAIRED ARROWS; \upuparrows (AmS)
17643 \DeclareTextCommand{\textupuparrows}{PU}{\9041\310}%* U+21C8
17644 % U+21C9 RIGHTWARDS PAIRED ARROWS; \rightrightarrows (AmS)
17645 \DeclareTextCommand{\textrightarrows}{PU}{\9041\311}%* U+21C9
17646 % U+21CA DOWNWARDS PAIRED ARROWS; \downdownarrows (AmS)
17647 \DeclareTextCommand{\textdowndownarrows}{PU}{\9041\312}%* U+21CA
17648 % U+21CB LEFTWARDS HARPOON OVER RIGHTWARDS HARPOON;
17649 % \leftrightharpoons (AmS);
17650 \DeclareTextCommand{\textleftrightharpoons}{PU}{\9041\313}%* U+21CB
17651 % U+21CC RIGHTWARDS HARPOON OVER LEFTWARDS HARPOON;
17652 % \rightleftharpoons (LaTeX, AmS)
17653 \DeclareTextCommand{\textrightleftharpoons}{PU}{\9041\314}%* U+21CC
17654 % U+21CD LEFTWARDS DOUBLE ARROW WITH STROKE; arrowleftd-
    blstroke;
17655 % \nLeftarrow (AmS)
17656 \DeclareTextCommand{\textnLeftarrow}{PU}{\9041\315}%* U+21CD
17657 % U+21CE LEFT RIGHT DOUBLE ARROW WITH STROKE; \nLeftrightarrow (AmS)
17658 \DeclareTextCommand{\textnLeftrightarrow}{PU}{\9041\316}%* U+21CE
17659 % U+21CF RIGHTWARDS DOUBLE ARROW WITH STROKE; arrowrightdblstroke;
17660 % \rightarrow (AmS)
17661 \DeclareTextCommand{\textrightarrow}{PU}{\9041\317}%* U+21CF
17662 % U+21D0 LEFTWARDS DOUBLE ARROW; arrowdblleft, arrowleftdbl;
17663 % \Leftarrow (LaTeX)
17664 \DeclareTextCommand{\textLeftarrow}{PU}{\9041\320}%* U+21D0
17665 % U+21D1 UPWARDS DOUBLE ARROW; arrowdblup; \Uparrow (LaTeX)
17666 \DeclareTextCommand{\textUparrow}{PU}{\9041\321}%* U+21D1
17667 % U+21D2 RIGHTWARDS DOUBLE ARROW; arrowdblright, dblarrowright;
17668 % \Rightarrow (LaTeX)
17669 \DeclareTextCommand{\textRightarrow}{PU}{\9041\322}%* U+21D2
17670 %* \textRightarrow -> \Conclusion (marvosym)
17671 % U+21D3 DOWNWARDS DOUBLE ARROW; arrowdbldown; \Downarrow (LaTeX)
17672 \DeclareTextCommand{\textDownarrow}{PU}{\9041\323}%* U+21D3
17673 % U+21D4 LEFT RIGHT DOUBLE ARROW; arrowdblboth;
17674 % \Leftrightarrow (LaTeX)
17675 \DeclareTextCommand{\textLeftrightarrow}{PU}{\9041\324}%* U+21D4
17676 %* \textLeftrightarrow -> \Equivalence (marvosym)
17677 % U+21D5 UP DOWN DOUBLE ARROW; \Updownarrow (LaTeX)
17678 \DeclareTextCommand{\textUpdownarrow}{PU}{\9041\325}%* U+21D5
17679 % U+21D6 NORTH WEST DOUBLE ARROW; \Nwarrow (MnSymbol)
17680 \DeclareTextCommand{\textNwarrow}{PU}{\9041\326}%* U+21D6
17681 % U+21D7 NORTH EAST DOUBLE ARROW; \Nearrow (MnSymbol)
17682 \DeclareTextCommand{\textNearrow}{PU}{\9041\327}%* U+21D7
17683 % U+21D8 SOUTH EAST DOUBLE ARROW; \Searrow (MnSymbol)
17684 \DeclareTextCommand{\textSearrow}{PU}{\9041\330}%* U+21D8
17685 % U+21D9 SOUTH WEST DOUBLE ARROW; \Svarrow (MnSymbol)
17686 \DeclareTextCommand{\textSvarrow}{PU}{\9041\331}%* U+21D9
17687 % U+21DA LEFTWARDS TRIPLE ARROW; \Lleftarrow (AmS)
17688 \DeclareTextCommand{\textLleftarrow}{PU}{\9041\332}%* U+21DA
17689 % U+21DB RIGHTWARDS TRIPLE ARROW; \Rrightarrow (MnSymbol)

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17690 \DeclareTextCommand{\textRrightarrow}{PU}{\9041\333}%* U+21DB
17691 % U+21DC LEFTWARDS SQUIGGLE ARROW; \leftsquigarrow (mathabx)
17692 \DeclareTextCommand{\textleftsquigarrow}{PU}{\9041\334}%* U+21DC
17693 % U+21DD RIGHTWARDS SQUIGGLE ARROW; \rightsquigarrow (mathabx)
17694 \DeclareTextCommand{\textright squigarrow}{PU}{\9041\335}%* U+21DD
17695 % U+21E0 LEFTWARDS DASHED ARROW; arrowdashleft;
17696 % \dashleftarrow (AmS)
17697 \DeclareTextCommand{\textdashleftarrow}{PU}{\9041\340}%* U+21E0
17698 %* \textdashleftarrow -> \dashedleftarrow (MnSymbol)
17699 % U+21E1 UPWARDS DASHED ARROW; arrowdashup; \dasheduparrow (Mn-
Symbol)
17700 \DeclareTextCommand{\textdasheduparrow}{PU}{\9041\341}%* U+21E1
17701 % U+21E2 RIGHTWARDS DASHED ARROW; arrowdashright; \dashrightarrow
(AmS)
17702 \DeclareTextCommand{\textdashrightarrow}{PU}{\9041\342}%* U+21E2
17703 %* \textdashrightarrow -> \dashedrightarrow (MnSymbol)
17704 % U+21E3 DOWNWARDS DASHED ARROW; arrowdashdown; \dasheddownar-
row (MnSymbol)
17705 \DeclareTextCommand{\textdasheddownarrow}{PU}{\9041\343}%* U+21E3
17706 % U+21E8 RIGHTWARDS WHITE ARROW; \pointer (wasysym)
17707 \DeclareTextCommand{\textpointer}{PU}{\9041\350}%* U+21E8
17708 % U+21F5 DOWNWARDS ARROW LEFTWARDS OF UPWARDS ARROW;
17709 % \downuparrows (MnSymbol)
17710 \DeclareTextCommand{\textdownuparrows}{PU}{\9041\365}%* U+21F5
17711 % U+21FD LEFTWARDS OPEN-HEADED ARROW; \leftarrowtriangle (stmaryrd)
17712 \DeclareTextCommand{\textleftarrowtriangle}{PU}{\9041\375}%* U+21FD
17713 % U+21FE RIGHTWARDS OPEN-HEADED ARROW; \rightarrowtriangle (stmaryrd)
17714 \DeclareTextCommand{\textrightarrowtriangle}{PU}{\9041\376}%* U+21FE
17715 % U+21FF LEFT RIGHT OPEN-HEADED ARROW; \leftrightarrowtriangle
(stmaryrd)
17716 \DeclareTextCommand{\textleftrightarrowtriangle}{PU}{\9041\377}%* U+21FF

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

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17717 % U+2200 FOR ALL; forall; \forall (LaTeX)
17718 \DeclareTextCommand{\textforall}{PU}{\9042\000}%* U+2200
17719 % U+2201 COMPLEMENT; \complement (AmS)
17720 \DeclareTextCommand{\textcomplement}{PU}{\9042\001}%* U+2201
17721 % U+2202 PARTIAL DIFFERENTIAL; partialdiff; \partial (LaTeX)
17722 \DeclareTextCommand{\textpartial}{PU}{\9042\002}%* U+2202
17723 % U+2203 THERE EXISTS; existential; \exists (LaTeX)
17724 \DeclareTextCommand{\textexists}{PU}{\9042\003}%* U+2203
17725 % U+2204 THERE DOES NOT EXIST; \nexists (AmS)
17726 \DeclareTextCommand{\textnexists}{PU}{\9042\004}%* U+2204
17727 % U+2205 EMPTY SET; emptyset; \emptyset (LaTeX), \varnothing (AmS)
17728 \DeclareTextCommand{\textemptyset}{PU}{\9042\005}%* U+2205
17729 %* \textemptyset -> \varnothing (AmS)
17730 % U+2206 INCREMENT; increment, Delta; \triangle (LaTeX)
17731 \DeclareTextCommand{\texttriangle}{PU}{\9042\006}%* U+2206
17732 % U+2207 NABLA; nabla, gradient; \nabla (LaTeX)
17733 \DeclareTextCommand{\textnabla}{PU}{\9042\007}%* U+2207
17734 % U+2208 ELEMENT OF; element; \in (LaTeX)
17735 \DeclareTextCommand{\textin}{PU}{\9042\010}%* U+2208
17736 % U+2209 NOT AN ELEMENT OF; notelement, notelementof; \notin (LaTeX)
17737 \DeclareTextCommand{\textnotin}{PU}{\9042\011}%* U+2209

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17738 % U+220A SMALL ELEMENT OF; \smallin (mathdesign)
17739 \DeclareTextCommand{\textsmallin}{PU}{\9042\012}%* U+220A
17740 % U+220B CONTAINS AS MEMBER; suchthat; \ni (LaTeX)
17741 \DeclareTextCommand{\textni}{PU}{\9042\013}%* U+220B
17742 %* \textni -> \owns (mathabx)
17743 % U+220C DOES NOT CONTAIN AS MEMBER; \notowner (mathabx)
17744 \DeclareTextCommand{\textnotowner}{PU}{\9042\014}%* U+220C
17745 %* \textnotowner -> \notni (txfonts/pxfonts)
17746 % U+220D SMALL CONTAINS AS MEMBER; \smallowns (mathdesign)
17747 \DeclareTextCommand{\textsmallowns}{PU}{\9042\015}%* U+220D
17748 % U+220F N-ARY PRODUCT; \prod (LaTeX)
17749 \DeclareTextCommand{\textprod}{PU}{\9042\017}%* U+220F
17750 % U+2210 N-ARY COPRODUCT; \amalg (LaTeX)
17751 \DeclareTextCommand{\textamalg}{PU}{\9042\020}%* U+2210
17752 % U+2211 N-ARY SUMMATION; summation; \sum (LaTeX)
17753 \DeclareTextCommand{\textsum}{PU}{\9042\021}%* U+2211
17754 % U+2212 MINUS SIGN; minus
17755 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212
17756 % U+2213 MINUS-OR-PLUS SIGN; minusplus; \mp (LaTeX)
17757 \DeclareTextCommand{\textmp}{PU}{\9042\023}%* U+2213
17758 % U+2214 DOT PLUS; \dotplus (AmS)
17759 \DeclareTextCommand{\textdotplus}{PU}{\9042\024}%* U+2214
17760 % U+2215 DIVISION SLASH; divisionslash; \Divides (marvosym)
17761 \DeclareTextCommand{\textDivides}{PU}{\9042\025}%* U+2215
17762 % \DividesNot (marvosym)
17763 \DeclareTextCommand{\textDividesNot}{PU}{\9042\025\9040\322}%* U+2215 U+20D2
17764 % U+2216 SET MINUS; \setminus (LaTeX)
17765 \DeclareTextCommand{\textsetminus}{PU}{\9042\026}%* U+2216
17766 % U+2217 ASTERISK OPERATOR; asteriskmath; \ast (LaTeX)
17767 \DeclareTextCommand{\textast}{PU}{\9042\027}%* U+2217
17768 % U+2218 RING OPERATOR; \circ (LaTeX)
17769 \DeclareTextCommand{\textcirc}{PU}{\9042\030}%* U+2218
17770 % U+2219 BULLET OPERATOR; bulletoperator; \bullet (LaTeX)
17771 \DeclareTextCommand{\textbulletoperator}{PU}{\9042\031}% U+2219
17772 % U+221A SQUARE ROOT; radical
17773 \DeclareTextCommand{\textsurd}{PU}{\9042\032}%* U+221A
17774 % U+221D PROPORTIONAL TO; proportional; \propto (LaTeX)
17775 \DeclareTextCommand{\textpropto}{PU}{\9042\035}%* U+221D
17776 %* \textpropto -> \varprop (wasysym)
17777 % U+221E INFINITY; infinity; \infty (LaTeX)
17778 \DeclareTextCommand{\textinfty}{PU}{\9042\036}%* U+221E
17779 % U+2220 ANGLE; angle; \angle (LaTeX)
17780 \DeclareTextCommand{\textangle}{PU}{\9042\040}%* U+2220
17781 % U+2221 MEASURED ANGLE; \measuredangle (mathabx, MnSymbol)
17782 \DeclareTextCommand{\textmeasuredangle}{PU}{\9042\041}%* U+2221
17783 % U+2222 SPHERICAL ANGLE; \sphericalangle (AmS)
17784 \DeclareTextCommand{\textsphericalangle}{PU}{\9042\042}%* U+2222
17785 %* \textsphericalangle -> \varangle (wasysym)
17786 %* \textsphericalangle -> \Anglesign (marvosym)
17787 %* \textsphericalangle -> \AngleSign (marvosym)
17788 % U+2223 DIVIDES; divides; \mid (LaTeX)
17789 \DeclareTextCommand{\textmid}{PU}{\9042\043}%* U+2223
17790 % U+2224 DOES NOT DIVIDE; \nmid (AmS)
17791 \DeclareTextCommand{\textnmid}{PU}{\9042\044}%* U+2224

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17792 %* \textnmid -> \notdivides (mathabx)
17793 % U+2225 PARALLEL TO; parallel; \parallel (LaTeX)
17794 \DeclareTextCommand{\textparallel}{PU}{\9042\045}%* U+2225
17795 % U+2226 NOT PARALLEL TO; notparallel; \nparallel (AmS)
17796 \DeclareTextCommand{\textnparallel}{PU}{\9042\046}%* U+2226
17797 %* \textnparallel -> nUpdownline (MnSymbol)
17798 % U+2227 LOGICAL AND; logicaland; \wedge (LaTeX)
17799 \DeclareTextCommand{\textwedge}{PU}{\9042\047}%* U+2227
17800 % \owedge (stmaryrd)
17801 \DeclareTextCommand{\textowedge}{PU}{\9042\047\9040\335}%* U+2227 U+20DD
17802 %* \textowedge -> \varowedge (stmaryrd)
17803 % U+2228 LOGICAL OR; logicalor; \vee (LaTeX)
17804 \DeclareTextCommand{\textvee}{PU}{\9042\050}%* U+2228
17805 % \ovee (stmaryrd)
17806 \DeclareTextCommand{\textovee}{PU}{\9042\050\9040\335}%* U+2228 U+20DD
17807 %* \textovee -> \varovee (stmaryrd)
17808 % U+2229 INTERSECTION; intersection; \cap (LaTeX)
17809 \DeclareTextCommand{\textcap}{PU}{\9042\051}%* U+2229
17810 % U+222A UNION; union; \cup (LaTeX)
17811 \DeclareTextCommand{\textcup}{PU}{\9042\052}%* U+222A
17812 % U+222B INTEGRAL; integral; \int (LaTeX)
17813 \DeclareTextCommand{\textint}{PU}{\9042\053}%* U+222B
17814 %* \textint -> \varint (wasysym)
17815 % U+222C DOUBLE INTEGRAL; dblintegral; \iint (AmS)
17816 \DeclareTextCommand{\textiint}{PU}{\9042\054}%* U+222C
17817 % U+222D TRIPLE INTEGRAL; \iiint (AmS)
17818 \DeclareTextCommand{\textiiint}{PU}{\9042\055}%* U+222D
17819 % U+222E CONTOUR INTEGRAL; contourintegral; \oint (LaTeX)
17820 \DeclareTextCommand{\textoint}{PU}{\9042\056}%* U+222E
17821 %* \textoint -> \varoint (wasysym)
17822 % U+222F SURFACE INTEGRAL; \oiint (wasysym)
17823 \DeclareTextCommand{\textoiint}{PU}{\9042\057}%* U+222F
17824 % U+2232 CLOCKWISE CONTOUR INTEGRAL;
17825 % \ointclockwise (txfonts/pxfonts)
17826 \DeclareTextCommand{\textointclockwise}{PU}{\9042\062}%* U+2232
17827 % U+2233 ANTICLOCKWISE CONTOUR INTEGRAL; \ointctrackwise (tx-
    fonts/pxfonts)
17828 \DeclareTextCommand{\textointctrackwise}{PU}{\9042\063}%* U+2233
17829 % U+2234 THEREFORE; therefore; \therefore (AmS)
17830 \DeclareTextCommand{\texttherefore}{PU}{\9042\064}%* U+2234
17831 %* \texttherefore -> uptherefore (MnSymbol)
17832 % U+2235 BECAUSE; because; \because (AmS)
17833 \DeclareTextCommand{\textbecause}{PU}{\9042\065}%* U+2235
17834 %* \textbecause -> \downtherefore (MnSymbol)
17835 % U+2236 RATIO; \vdotdot (MnSymbol)
17836 \DeclareTextCommand{\textvdotdot}{PU}{\9042\066}%* U+2236
17837 % U+2237 PROPORTION; \squaredots (MnSymbol)
17838 \DeclareTextCommand{\textsquaredots}{PU}{\9042\067}%* U+2237
17839 % U+2238 DOT MINUS; \dotminus (MnSymbol)
17840 \DeclareTextCommand{\textdotminus}{PU}{\9042\070}%* U+2238
17841 %* \textdotminus -> \textdotdiv (mathabx)
17842 % U+2239 EXCESS; \eqcolon (txfonts/pxfonts)
17843 \DeclareTextCommand{\texteqcolon}{PU}{\9042\071}%* U+2239
17844 % U+223C TILDE OPERATOR; similar; \sim (LaTeX)

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17845 \DeclareTextCommand{\textsim}{PU}{\9042\074}%* U+223C
17846 %* \textsim -> \AC (wasysym)
17847 % U+223D REVERSED TILDE; reversedtilde; \backsim (AmS)
17848 \DeclareTextCommand{\textbacksim}{PU}{\9042\075}%* U+223D
17849 % \nbacksim (txfonts/pxfonts)
17850 \DeclareTextCommand{\textnbacksim}{PU}{\9042\075\83\070}%* U+223D U+0338
17851 % U+2240 WREATH PRODUCT; \wr (LaTeX)
17852 \DeclareTextCommand{\textwr}{PU}{\9042\100}%* U+2240
17853 %* \textwr -> \wreath (MnSymbol)
17854 % U+2241 NOT TILDE; \nsim (AmS)
17855 \DeclareTextCommand{\textnsim}{PU}{\9042\101}%* U+2241
17856 % U+2242 MINUS TILDE; \eqsim (MnSymbol)
17857 \DeclareTextCommand{\texteqsim}{PU}{\9042\102}%* U+2242
17858 % \neqsim (MnSymbol)
17859 \DeclareTextCommand{\textneqsim}{PU}{\9042\102\83\070}%* U+2242 U+0338
17860 % U+2243 ASYMPTOTICALLY EQUAL TO; asymptoticallyequal; \simeq (La-
      TeX)
17861 \DeclareTextCommand{\textsimeq}{PU}{\9042\103}%* U+2243
17862 % U+2244 NOT ASYMPTOTICALLY EQUAL TO; \nsimeq (txfonts/pxfonts)
17863 \DeclareTextCommand{\textnsimeq}{PU}{\9042\104}%* U+2244
17864 % U+2245 APPROXIMATELY EQUAL TO; approximatelyequal; \cong (LaTeX)
17865 \DeclareTextCommand{\textcong}{PU}{\9042\105}%* U+2245
17866 % U+2247 NEITHER APPROXIMATELY NOR ACTUALLY EQUAL TO;
17867 % \ncong (AmS)
17868 \DeclareTextCommand{\textncong}{PU}{\9042\107}%* U+2247
17869 % U+2248 ALMOST EQUAL TO; approxequal; \approx (LaTeX)
17870 \DeclareTextCommand{\textapprox}{PU}{\9042\110}%* U+2248
17871 % U+2249 NOT ALMOST EQUAL TO; \napprox (txfonts/pxfonts0
17872 \DeclareTextCommand{\textnapprox}{PU}{\9042\111}%* U+2249
17873 %* \textnapprox -> \nthickapprox (txfonts/pxfonts)
17874 % U+224A ALMOST EQUAL OR EQUAL TO; \approxeq (AmS)
17875 \DeclareTextCommand{\textapproxeq}{PU}{\9042\112}%* U+224A
17876 % \napproxeq (txfonts/pxfonts)
17877 \DeclareTextCommand{\textnapproxeq}{PU}{\9042\112\83\070}%* U+224A U+0338
17878 % U+224B TRIPLE TILDE; \triple sim (MnSymbol)
17879 \DeclareTextCommand{\texttriple sim}{PU}{\9042\113}%* U+224B
17880 %* \texttriple sim -> \VHF (wasysym)
17881 % \ntriple sim (MnSymbol)
17882 \DeclareTextCommand{\textntriple sim}{PU}{\9042\113\83\070}%* U+224B U+0338
17883 % U+224C ALL EQUAL TO; allequal; \backcong (MnSymbol)
17884 \DeclareTextCommand{\textbackcong}{PU}{\9042\114}%* U+224C
17885 % \nbackcong (MnSymbol)
17886 \DeclareTextCommand{\textnbackcong}{PU}{\9042\114\83\070}%* U+224C U+0338
17887 % U+224D EQUIVALENT TO; \asymp (LaTeX)
17888 \DeclareTextCommand{\textasymp}{PU}{\9042\115}%* U+224D
17889 % \nasymp (txfonts/pxfonts)
17890 \DeclareTextCommand{\textnasymp}{PU}{\9042\115\83\070}%* U+224D U+0338
17891 %* \textnasymp -> \notasym (mathabx)
17892 % U+224E GEOMETRICALLY EQUIVALENT TO; \Bumpeq (AmS)
17893 \DeclareTextCommand{\textBumpeq}{PU}{\9042\116}%* U+224E
17894 % \nBumpeq (txfonts/pxfonts)
17895 \DeclareTextCommand{\textnBumpeq}{PU}{\9042\116\83\070}%* U+224E U+0338
17896 % U+224F DIFFERENCE BETWEEN; \bumpeq (AmS)
17897 \DeclareTextCommand{\textbumpeq}{PU}{\9042\117}%* U+224F

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17898 % \nbumpeq (txfonts/pxfonts)  
17899 \DeclareTextCommand{\textnbumpeq}{PU}{\9042\117\83\070}%\* U+224F U+0338  
17900 % U+2250 APPROACHES THE LIMIT; approaches; \doteq (LaTeX)  
17901 \DeclareTextCommand{\textdoteq}{PU}{\9042\120}%\* U+2250  
17902 % \ndoteq (MnSymbol)  
17903 \DeclareTextCommand{\textndoteq}{PU}{\9042\120\83\070}%\* U+2250 U+0338  
17904 % U+2251 GEOMETRICALLY EQUAL TO; geometricallyequal;  
17905 % \doteqdot (AmS)  
17906 \DeclareTextCommand{\textdoteqdot}{PU}{\9042\121}%\* U+2251  
17907 %\* \textdoteqdot -> \Doteq (MnSymbol)  
17908 % \nDoteq (MnSymbol)  
17909 \DeclareTextCommand{\textnDoteq}{PU}{\9042\121\83\070}%\* U+2251 U+0338  
17910 % U+2252 APPROXIMATELY EQUAL TO OR THE IMAGE OF; approx-  
qualorimage;  
17911 % \fallingdotseq (AmS)  
17912 \DeclareTextCommand{\textfallingdotseq}{PU}{\9042\122}%\* U+2252  
17913 % \nfallingdotseq (MnSymbol)  
17914 \DeclareTextCommand{\textnfallingdotseq}{PU}{\9042\122\83\070}%\* U+2252 U+0338  
17915 % U+2253 IMAGE OF OR APPROXIMATELY EQUAL TO; imageorapproxi-  
matelyequal;  
17916 % \risingdotseq (AmS)  
17917 \DeclareTextCommand{\textrisingdotseq}{PU}{\9042\123}%\* U+2253  
17918 % \nrisingdotseq (MnSymbol)  
17919 \DeclareTextCommand{\textnrisingdotseq}{PU}{\9042\123\83\070}%\* U+2253 U+0338  
17920 % U+2254 COLON EQUALS; \colonequals (colonequals)  
17921 \DeclareTextCommand{\textcolonequals}{PU}{\9042\124}%\* U+2254  
17922 % U+2255 EQUALS COLON; \equalscolon (colonequals)  
17923 \DeclareTextCommand{\textequalscolon}{PU}{\9042\125}%\* U+2255  
17924 % U+2256 RING IN EQUAL TO; \eqcirc (AmS)  
17925 \DeclareTextCommand{\texteqcirc}{PU}{\9042\126}%\* U+2256  
17926 % \neqcirc (MnSymbol)  
17927 \DeclareTextCommand{\textneqcirc}{PU}{\9042\126\83\070}%\* U+2256 U+0338  
17928 % U+2257 RING EQUAL TO; \circeq (AmS)  
17929 \DeclareTextCommand{\textcirceq}{PU}{\9042\127}%\* U+2257  
17930 % \ncirceq (MnSymbol)  
17931 \DeclareTextCommand{\textncirceq}{PU}{\9042\127\83\070}%\* U+2257 U+0338  
17932 % U+2259 ESTIMATES; \hateq (MnSymbol)  
17933 \DeclareTextCommand{\texthateq}{PU}{\9042\131}%\* U+2259  
17934 %\* \texthateq -> \corresponds (mathabx)  
17935 %\* \texthateq -> \Corresponds (marvosym)  
17936 % \nhateq (MnSymbol)  
17937 \DeclareTextCommand{\textnhateq}{PU}{\9042\131\83\070}%\* U+2259 U+0338  
17938 % U+225C DELTA EQUAL TO; \triangleeq (AmS)  
17939 \DeclareTextCommand{\texttriangleeq}{PU}{\9042\134}%\* U+225C  
17940 % U+2260 NOT EQUAL TO; notequal; \ne (LaTeX), \neq (LaTeX)  
17941 \DeclareTextCommand{\textneq}{PU}{\9042\140}%\* U+2260  
17942 \DeclareTextCommand{\textne}{PU}{\9042\140}%\* U+2260  
17943 %\* \textneq -> \nequal (MnSymbol)  
17944 % U+2261 IDENTICAL TO; equivalence; \equiv (LaTeX)  
17945 \DeclareTextCommand{\textequiv}{PU}{\9042\141}%\* U+2261  
17946 %\* \textequiv -> \Congruent (marvosym)  
17947 % U+2262 NOT IDENTICAL TO; notidentical; \nequiv (txfonts/pxfonts)  
17948 \DeclareTextCommand{\textnequiv}{PU}{\9042\142}%\* U+2262  
17949 %\* \textnequiv -> \NotCongruent (marvosym)

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17950 %* \textnequiv -> \notequiv (mathabx)
17951 % U+2264 LESS-THAN OR EQUAL TO; lessequal; \le (LaTeX), \leq (LaTeX)
17952 \DeclareTextCommand{\textleq}{PU}{\9042\144}%* U+2264
17953 \DeclareTextCommand{\textile}{PU}{\9042\144}%* U+2264
17954 %* \textleq -> \LessOrEqual (marvosym)
17955 % U+2265 GREATER-THAN OR EQUAL TO; greaterequal;
17956 % \ge (LaTeX), \geq (LaTeX)
17957 \DeclareTextCommand{\textgeq}{PU}{\9042\145}%* U+2265
17958 \DeclareTextCommand{\textge}{PU}{\9042\145}%* U+2265
17959 %* \textgeq -> \LargerOrEqual (marvosym)
17960 % U+2266 LESS-THAN OVER EQUAL TO; lessorequal; \leqq (AmS)
17961 \DeclareTextCommand{\textleqq}{PU}{\9042\146}%* U+2266
17962 % \nleqq (txfonts/pxfonts)
17963 \DeclareTextCommand{\textnleqq}{PU}{\9042\146\83\070}%* U+2266 U+0338
17964 % U+2267 GREATER-THAN OVER EQUAL TO; greaterorequal; \geqq (AmS)
17965 \DeclareTextCommand{\textgeqq}{PU}{\9042\147}%* U+2267
17966 % \ngeqq (txfonts/pxfonts)
17967 \DeclareTextCommand{\textngeqq}{PU}{\9042\147\83\070}%* U+2267 U+0338
17968 % U+2268 LESS-THAN BUT NOT EQUAL TO; \lneqq (AmS)
17969 \DeclareTextCommand{\textlneqq}{PU}{\9042\150}%* U+2268
17970 % U+2269 GREATER-THAN BUT NOT EQUAL TO; \gneqq (AmS)
17971 \DeclareTextCommand{\textgneqq}{PU}{\9042\151}%* U+2269
17972 % U+226A MUCH LESS-THAN; muchless; \ll (LaTeX)
17973 \DeclareTextCommand{\textll}{PU}{\9042\152}%* U+226A
17974 % \nll (txfonts/pxfonts)
17975 \DeclareTextCommand{\textnll}{PU}{\9042\152\83\070}%* U+226A U+0338
17976 % U+226B MUCH GREATER-THAN; muchgreater; \gg (LaTeX)
17977 \DeclareTextCommand{\textgg}{PU}{\9042\153}%* U+226B
17978 % \ngg (txfonts/pxfonts)
17979 \DeclareTextCommand{\textngg}{PU}{\9042\153\83\070}%* U+226B U+0338
17980 % U+226C BETWEEN; \between (AmS)
17981 \DeclareTextCommand{\textbetween}{PU}{\9042\154}%* U+226C
17982 % U+226E NOT LESS-THAN; notless; \nless (AmS)
17983 \DeclareTextCommand{\textnless}{PU}{\9042\156}%* U+226E
17984 % U+226F NOT GREATER-THAN; notgreater; \ngtr (AmS)
17985 \DeclareTextCommand{\textngtr}{PU}{\9042\157}%* U+226F
17986 % U+2270 NEITHER LESS-THAN NOR EQUAL TO; notlessnorequal;
17987 % \nleq (AmS)
17988 \DeclareTextCommand{\textnleq}{PU}{\9042\160}%* U+2270
17989 % U+2271 NEITHER GREATER-THAN NOR EQUAL TO; notgreaternorequal; \ngeq (AmS)
17990 \DeclareTextCommand{\textngeq}{PU}{\9042\161}%* U+2271
17991 % U+2272 LESS-THAN OR EQUIVALENT TO; lessorequivalent; \lessim (AmS)
17992 \DeclareTextCommand{\textlessim}{PU}{\9042\162}%* U+2272
17993 %* \textlessim -> \apprle (wasysym)
17994 % U+2273 GREATER-THAN OR EQUIVALENT TO; greaterorequivalent; \gtrsim (AmS)
17995 \DeclareTextCommand{\textgtrsim}{PU}{\9042\163}%* U+2273
17996 %* \textgtrsim -> \apprge (wasysym)
17997 % U+2274 NEITHER LESS-THAN NOR EQUIVALENT TO; \nlessim (txfonts/pxfonts)
17998 \DeclareTextCommand{\textnlessim}{PU}{\9042\164}%* U+2274
17999 % U+2275 NEITHER GREATER-THAN NOR EQUIVALENT TO; \ngtrsim (txfonts/pxfonts)

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18000 \DeclareTextCommand{\textngtrsim}{PU}{\9042\165}%\* U+2275  
18001 % U+2276 LESS-THAN OR GREATER-THAN; lessorgreater; \lessgtr (AmS)  
18002 \DeclareTextCommand{\textlessgtr}{PU}{\9042\166}%\* U+2276  
18003 % U+2277 GREATER-THAN OR LESS-THAN; greaterorless; \gtrless (AmS)  
18004 \DeclareTextCommand{\textgtrless}{PU}{\9042\167}%\* U+2277  
18005 % U+2278 NEITHER LESS-THAN NOR GREATER-THAN; \ngtrless (tx-  
fonts/pxfonts)  
18006 \DeclareTextCommand{\textngtrless}{PU}{\9042\170}%\* U+2278  
18007 % U+2279 NEITHER GREATER-THAN NOR LESS-THAN; \nlessgtr (tx-  
fonts/pxfonts)  
18008 \DeclareTextCommand{\textnlessgtr}{PU}{\9042\171}%\* U+2279  
18009 % U+227A PRECEDES; precedes; \prec (LaTeX)  
18010 \DeclareTextCommand{\textprec}{PU}{\9042\172}%\* U+227A  
18011 % U+227B SUCCEEDS; succeeds; \succ (LaTeX)  
18012 \DeclareTextCommand{\textsucc}{PU}{\9042\173}%\* U+227B  
18013 % U+227C PRECEDES OR EQUAL TO; \preccurlyeq (AmS)  
18014 \DeclareTextCommand{\textpreccurlyeq}{PU}{\9042\174}%\* U+227C  
18015 % U+227D SUCCEEDS OR EQUAL TO; \succcurlyeq (AmS)  
18016 \DeclareTextCommand{\textsucccurlyeq}{PU}{\9042\175}%\* U+227D  
18017 % U+227E PRECEDES OR EQUIVALENT TO; \precsim (AmS)  
18018 \DeclareTextCommand{\textprecsim}{PU}{\9042\176}%\* U+227E  
18019 % \nprecsim (txfonts/pxfonts)  
18020 \DeclareTextCommand{\textnprecsim}{PU}{\9042\176\83\070}%\* U+227E U+0338  
18021 % U+227F SUCCEEDS OR EQUIVALENT TO; \succsim (AmS)  
18022 \DeclareTextCommand{\textsuccsim}{PU}{\9042\177}%\* U+227F  
18023 % \nsuccsim (txfonts/pxfonts)  
18024 \DeclareTextCommand{\textnsuccsim}{PU}{\9042\177\83\070}%\* U+227F U+0338  
18025 % U+2280 DOES NOT PRECEDE; notprecedes; \nprec (AmS)  
18026 \DeclareTextCommand{\textnprec}{PU}{\9042\200}%\* U+2280  
18027 % U+2281 DOES NOT SUCCEED; notsucceds; \nsucc (AmS)  
18028 \DeclareTextCommand{\textnsucc}{PU}{\9042\201}%\* U+2281  
18029 % U+2282 SUBSET OF; propersubset; \subset (LaTeX)  
18030 \DeclareTextCommand{\textsubset}{PU}{\9042\202}%\* U+2282  
18031 % U+2283 SUPERSET OF; propersuperset; \supset (LaTeX)  
18032 \DeclareTextCommand{\textsupset}{PU}{\9042\203}%\* U+2283  
18033 % U+2284 NOT A SUBSET OF; notsubset; \nsubset (mathabx)  
18034 \DeclareTextCommand{\textnsubset}{PU}{\9042\204}%\* U+2284  
18035 % U+2285 NOT A SUPERSET OF; notsuperset; \nsupset (mathabx)  
18036 \DeclareTextCommand{\textnsupset}{PU}{\9042\205}%\* U+2285  
18037 % U+2286 SUBSET OF OR EQUAL TO; reflexsubset; \subseteq (LaTeX)  
18038 \DeclareTextCommand{\textsubseteq}{PU}{\9042\206}%\* U+2286  
18039 % U+2287 SUPERSET OF OR EQUAL TO; reflexsuperset; \supseteq (LaTeX)  
18040 \DeclareTextCommand{\textsupseteq}{PU}{\9042\207}%\* U+2287  
18041 % U+2288 NEITHER A SUBSET OF NOR EQUAL TO; \nsubseteq (AmS)  
18042 \DeclareTextCommand{\textnsubseteq}{PU}{\9042\210}%\* U+2288  
18043 % U+2289 NEITHER A SUPERSET OF NOR EQUAL TO; \nsupseteq (AmS)  
18044 \DeclareTextCommand{\textnsupseteq}{PU}{\9042\211}%\* U+2289  
18045 % U+228A SUBSET OF WITH NOT EQUAL TO; subsetnotequal; \subset-  
neq (AmS)  
18046 \DeclareTextCommand{\textsubsetneq}{PU}{\9042\212}%\* U+228A  
18047 % U+228B SUPERSET OF WITH NOT EQUAL TO; supersetnotequal; \supset-  
neq (AmS)  
18048 \DeclareTextCommand{\textsupsetneq}{PU}{\9042\213}%\* U+228B  
18049 % U+228D MULTiset MULTIPLICATION; \cupdot (MnSymbol)

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18050 \DeclareTextCommand{\textcupdot}{PU}{\9042\215}%* U+228D
18051 % U+228E MULTISSET UNION; \cupplus (MnSymbol)
18052 \DeclareTextCommand{\textcupplus}{PU}{\9042\216}%* U+228E
18053 % U+228F SQUARE IMAGE OF; \sqsubset (latexsym, ...)
18054 \DeclareTextCommand{\textsqsubset}{PU}{\9042\217}%* U+228F
18055 % \nsqsubset (txfonts/pxfonts)
18056 \DeclareTextCommand{\textnsqsubset}{PU}{\9042\217\83\070}%* U+228F U+0338
18057 % U+2290 SQUARE ORIGINAL OF; \sqsupset (latexsym, ...)
18058 \DeclareTextCommand{\textsqsupset}{PU}{\9042\220}%* U+2290
18059 % \nsqsupset (txfonts/pxfonts)
18060 \DeclareTextCommand{\textnsqsupset}{PU}{\9042\220\83\070}%* U+2290 U+0338
18061 % U+2291 SQUARE IMAGE OF OR EQUAL TO; \sqsubseq (LaTeX)
18062 \DeclareTextCommand{\textsqsubseq}{PU}{\9042\221}%* U+2291
18063 % \nsqsubseq (txfonts/pxfonts)
18064 \DeclareTextCommand{\textnsqsubseq}{PU}{\9042\221\83\070}%* U+2291 U+0338
18065 % U+2292 SQUARE ORIGINAL OF OR EQUAL TO; \sqsupseq (LaTeX)
18066 \DeclareTextCommand{\textsqsupseq}{PU}{\9042\222}%* U+2292
18067 % \nsqsupseq (txfonts/pxfonts)
18068 \DeclareTextCommand{\textnsqsupseq}{PU}{\9042\222\83\070}%* U+2292 U+0338
18069 % U+2293 SQUARE CAP; \sqcap (LaTeX)
18070 \DeclareTextCommand{\textsqcap}{PU}{\9042\223}%* U+2293
18071 % U+2294 SQUARE CUP; \sqcup (LaTeX)
18072 \DeclareTextCommand{\textsqcup}{PU}{\9042\224}%* U+2294
18073 % U+2295 CIRCLED PLUS; circleplus; \oplus (LaTeX)
18074 \DeclareTextCommand{\textoplus}{PU}{\9042\225}%* U+2295
18075 %* \textoplus -> \varoplus (stmaryrd)
18076 % U+2296 CIRCLED MINUS; minuscircle; \ominus (LaTeX)
18077 \DeclareTextCommand{\textominus}{PU}{\9042\226}%* U+2296
18078 %* \textominus -> \varominus (stmaryrd)
18079 % U+2297 CIRCLED TIMES; circlemultiply; \otimes (LaTeX)
18080 \DeclareTextCommand{\textotimes}{PU}{\9042\227}%* U+2297
18081 %* \textotimes -> \varotimes (stmaryrd)
18082 % U+2298 CIRCLED DIVISION SLASH; \oslash (LaTeX)
18083 \DeclareTextCommand{\textoslash}{PU}{\9042\230}%* U+2298
18084 %* \textoslash -> \varoslash (stmaryrd)
18085 % U+2299 CIRCLED DOT OPERATOR; circle(d?)ot; \odot (LaTeX)
18086 \DeclareTextCommand{\textodot}{PU}{\9042\231}%* U+2299
18087 %* \textodot -> \varodot (stmaryrd)
18088 % U+229A CIRCLED RING OPERATOR; \circledcirc (AmS)
18089 \DeclareTextCommand{\textcircledcirc}{PU}{\9042\232}%* U+229A
18090 %* \textcircledcirc -> \ocirc (mathabx)
18091 %* \textcircledcirc -> \varocircle (stmaryrd)
18092 % U+229B CIRCLED ASTERISK OPERATOR; \circledast (AmS)
18093 \DeclareTextCommand{\textcircledast}{PU}{\9042\233}%* U+229B
18094 %* \textcircledast -> \varoast (stmaryrd)
18095 %* \textcircledast -> \oasterisk (mathabx)
18096 % U+229D CIRCLED DASH; \circleddash (AmS)
18097 \DeclareTextCommand{\textcircleddash}{PU}{\9042\235}%* U+229D
18098 % U+229E SQUARED PLUS; \boxplus (AmS)
18099 \DeclareTextCommand{\textboxplus}{PU}{\9042\236}%* U+229E
18100 % U+229F SQUARED MINUS; \boxminus (AmS)
18101 \DeclareTextCommand{\textboxminus}{PU}{\9042\237}%* U+229F
18102 % U+22A0 SQUARED TIMES; \boxtimes (AmS)
18103 \DeclareTextCommand{\textboxtimes}{PU}{\9042\240}%* U+22A0

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18104 % U+22A1 SQUARED DOT OPERATOR; \boxdot (AmS)
18105 \DeclareTextCommand{\textboxdot}{PU}{\9042\241}%* U+22A1
18106 % U+22A2 RIGHT TACK; \vdash (LaTeX)
18107 \DeclareTextCommand{\textvdash}{PU}{\9042\242}%* U+22A2
18108 %* \textvdash -> \rightvdash (MnSymbol)
18109 % U+22A3 LEFT TACK; \dashv (LaTeX)
18110 \DeclareTextCommand{\textdashv}{PU}{\9042\243}%* U+22A3
18111 %* \textdashv -> \leftvdash (MnSymbol)
18112 % \ndashv (mathabx)
18113 \DeclareTextCommand{\textndashv}{PU}{\9042\243\83\070}%* U+22A3 U+0338
18114 %* \textndashv -> \nleftvdash (MnSymbol)
18115 % U+22A4 DOWN TACK (=top); \tackdown; \top (LaTeX)
18116 \DeclareTextCommand{\texttop}{PU}{\9042\244}%* U+22A4
18117 %* \texttop -> \downvdash (MnSymbol)
18118 % \ndownvdash (MnSymbol)
18119 \DeclareTextCommand{\textndownvdash}{PU}{\9042\244\83\070}%* U+22A4 U+0338
18120 % U+22A5 UP TACK (=base, bottom); \bot (LaTeX)
18121 \DeclareTextCommand{\textbot}{PU}{\9042\245}%* U+22A5
18122 %* \textbot -> \upvdash (MnSymbol)
18123 % \nupvdash (MnSymbol)
18124 \DeclareTextCommand{\textnupvdash}{PU}{\9042\245\83\070}%* U+22A5 U+0338
18125 %* \textnupvdash -> \nperp (MnSymbol)
18126 % U+22A8 TRUE; \vDash (AmS)
18127 \DeclareTextCommand{\textvDash}{PU}{\9042\250}%* U+22A8
18128 %* \textvDash -> \models (LaTeX)
18129 %* \textvDash -> \rightmodels (MnSymbol)
18130 % U+22A9 FORCES; \Vdash (AmS)
18131 \DeclareTextCommand{\textVdash}{PU}{\9042\251}%* U+22A9
18132 %* \textVdash -> \rightVdash (MnSymbol)
18133 % U+22AA TRIPLE VERTICAL BAR RIGHT TURNSTILE; \Vvdash (AmS)
18134 \DeclareTextCommand{\textVvdash}{PU}{\9042\252}%* U+22AA
18135 % \nVvdash (mathabx)
18136 \DeclareTextCommand{\textnVvdash}{PU}{\9042\252\83\070}%* U+22AA U+0338
18137 % U+22AB DOUBLE VERTICAL BAR DOUBLE RIGHT TURNSTILE;
18138 % \VDash (mathabx)
18139 \DeclareTextCommand{\textVDash}{PU}{\9042\253}%* U+22AB
18140 %* \textVDash -> \rightModels (MnSymbol)
18141 % U+22AC DOES NOT PROVE; \nvdash (AmS)
18142 \DeclareTextCommand{\textnvdash}{PU}{\9042\254}%* U+22AC
18143 %* \textnvdash -> \nrightvdash (MnSymbol)
18144 % U+22AD NOT TRUE; \nvDash (AmS)
18145 \DeclareTextCommand{\textnvDash}{PU}{\9042\255}%* U+22AD
18146 %* \textnvDash -> \nrightmodels (MnSymbol)
18147 %* \textnvDash -> \nmodels (MnSymbol)
18148 % U+22AE DOES NOT FORCE; \nVdash (txfonts/pxfonts)
18149 \DeclareTextCommand{\textnVdash}{PU}{\9042\256}%* U+22AE
18150 %* \textnVdash -> \nrightVdash (MnSymbol)
18151 % U+22AF NEGATED DOUBLE VERTICAL BAR DOUBLE RIGHT TURN-
      STILE; \nVDash (AmS)
18152 \DeclareTextCommand{\textnVDash}{PU}{\9042\257}%* U+22AF
18153 %* \textnVDash -> \nrightModels (MnSymbol)
18154 % U+22B2 NORMAL SUBGROUP OF; \lhd (latexsym, ...)
18155 \DeclareTextCommand{\textlhd}{PU}{\9042\262}%* U+22B2
18156 %* \textlhd -> \lessclosed (MnSymbol)

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18157 % U+22B3 CONTAINS AS NORMAL SUBGROUP; \rhd (latexsym, ...)
18158 \DeclareTextCommand{\textrhd}{PU}{\9042\263}%* U+22B3
18159 %* \textrhd -> \gtrclosed (MnSymbol)
18160 % U+22B4 NORMAL SUBGROUP OF OR EQUAL TO; \unlhd (latexsym, ...)
18161 \DeclareTextCommand{\textunlhd}{PU}{\9042\264}%* U+22B4
18162 %* \textunlhd -> \leqclosed (MnSymbol)
18163 %* \textunlhd -> \trianglelefteq (MnSymbol)
18164 % U+22B5 CONTAINS AS NORMAL SUBGROUP OR EQUAL TO; \unrhd (la-
texsym, ...)
18165 \DeclareTextCommand{\textunrhd}{PU}{\9042\265}%* U+22B5
18166 %* \textunrhd -> \geqclosed (MnSymbol)
18167 %* \textunrhd -> \trianglerighteq (MnSymbol)
18168 % U+22B6 ORIGINAL OF; \multimapdotbothA (txfonts/pxfonts)
18169 \DeclareTextCommand{\textmultimapdotbothA}{PU}{\9042\266}%* U+22B6
18170 % U+22B7 IMAGE OF; \multimapdotbothB (txfonts/pxfonts)
18171 \DeclareTextCommand{\textmultimapdotbothB}{PU}{\9042\267}%* U+22B7
18172 % U+22B8 MULTIMAP; \multimap (AmS, txfonts/pxfonts)
18173 \DeclareTextCommand{\textmultimap}{PU}{\9042\270}%* U+22B8
18174 % U+22BB XOR; \veebar (AmS)
18175 \DeclareTextCommand{\textveebar}{PU}{\9042\273}%* U+22BB
18176 % U+22BC NAND; \barwedge (mathabx)
18177 \DeclareTextCommand{\textbarwedge}{PU}{\9042\274}%* U+22BC
18178 % U+22C6 STAR OPERATOR; \star (LaTeX)
18179 \DeclareTextCommand{\textstar}{PU}{\9042\306}%* U+22C6
18180 % U+22C7 DIVISION TIMES; \divideontimes (AmS)
18181 \DeclareTextCommand{\textdivideontimes}{PU}{\9042\307}%* U+22C7
18182 % U+22C8 BOWTIE; \bowtie (LaTeX)
18183 \DeclareTextCommand{\textbowtie}{PU}{\9042\310}%* U+22C8
18184 %* \textbowtie -> \Bowtie (wasysym)
18185 % U+22C9 LEFT NORMAL FACTOR SEMIDIRECT PRODUCT; \ltimes (AmS)
18186 \DeclareTextCommand{\textltimes}{PU}{\9042\311}%* U+22C9
18187 % U+22CA RIGHT NORMAL FACTOR SEMIDIRECT PRODUCT;
18188 % \rtimes (AmS)
18189 \DeclareTextCommand{\textrtimes}{PU}{\9042\312}%* U+22CA
18190 % U+22CB LEFT SEMIDIRECT PRODUCT; \leftthreetimes (AmS)
18191 \DeclareTextCommand{\textleftthreetimes}{PU}{\9042\313}%* U+22CB
18192 % U+22CC RIGHT SEMIDIRECT PRODUCT; \rightthreetimes (AmS)
18193 \DeclareTextCommand{\textrightthreetimes}{PU}{\9042\314}%* U+22CC
18194 % U+22CD REVERSED TILDE EQUALS; \backsimeq (AmS)
18195 \DeclareTextCommand{\textbacksimeq}{PU}{\9042\315}%* U+22CD
18196 % \nbacksimeq (txfonts/pxfonts)
18197 \DeclareTextCommand{\textnbacksimeq}{PU}{\9042\315\83\070}%* U+22CD U+0338
18198 % U+22CE CURLY LOGICAL OR; curlyor; \curlyvee (AmS)
18199 \DeclareTextCommand{\textcurlyvee}{PU}{\9042\316}%* U+22CE
18200 %* \textcurlyvee -> \varcurlyvee (stmaryrd)
18201 % U+22CF CURLY LOGICAL AND; curlyand; \curlywedge (AmS)
18202 \DeclareTextCommand{\textcurlywedge}{PU}{\9042\317}%* U+22CF
18203 %* \textcurlywedge -> \varcurlywedge (stmaryrd)
18204 % U+22D0 DOUBLE SUBSET; \Subset (AmS)
18205 \DeclareTextCommand{\textSubset}{PU}{\9042\320}%* U+22D0
18206 % \nSubset (txfonts/pxfonts)
18207 \DeclareTextCommand{\textnSubset}{PU}{\9042\320\83\070}%* U+22D0 U+0338
18208 % U+22D1 DOUBLE SUPERSET; \Supset (AmS)
18209 \DeclareTextCommand{\textSupset}{PU}{\9042\321}%* U+22D1

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18210 % \nSupset (txfonts/pxfonts)
18211 \DeclareTextCommand{\textnSupset}{PU}{\9042\321\83\070}%* U+22D1 U+0338
18212 % U+22D2 DOUBLE INTERSECTION; \Cap (AmS)
18213 \DeclareTextCommand{\textCap}{PU}{\9042\322}%* U+22D2
18214 %* \textCap -> \doublecap (mathabx)
18215 % U+22D3 DOUBLE UNION; \Cup (AmS)
18216 \DeclareTextCommand{\textCup}{PU}{\9042\323}%* U+22D3
18217 %* \textCup -> \doublecup (mathabx)
18218 % U+22D4 PITCHFORK; \pitchfork (mathabx)
18219 \DeclareTextCommand{\textpitchfork}{PU}{\9042\324}%* U+22D4
18220 % U+22D6 LESS-THAN WITH DOT; \lessdot (AmS)
18221 \DeclareTextCommand{\textlessdot}{PU}{\9042\326}%* U+22D6
18222 % U+22D7 GREATER-THAN WITH DOT; \gtrdot (AmS)
18223 \DeclareTextCommand{\textgtrdot}{PU}{\9042\327}%* U+22D7
18224 % U+22D8 VERY MUCH LESS-THAN; \lll (AmS)
18225 \DeclareTextCommand{\textlll}{PU}{\9042\330}%* U+22D8
18226 % U+22D9 VERY MUCH GREATER-THAN; \ggg (AmS)
18227 \DeclareTextCommand{\textggg}{PU}{\9042\331}%* U+22D9
18228 % U+22DA LESS-THAN EQUAL TO OR GREATER-THAN; lessequalorgreater;
18229 % \lesseqgtr (AmS)
18230 \DeclareTextCommand{\textlesseqgtr}{PU}{\9042\332}%* U+22DA
18231 % U+22DB GREATER-THAN EQUAL TO OR LESS-THAN; greaterequalorless;
18232 % \gtreqless (AmS)
18233 \DeclareTextCommand{\textgtreqless}{PU}{\9042\333}%* U+22DB
18234 % U+22DE EQUAL TO OR PRECEDES; \curlyeqprec (MnSymbol)
18235 \DeclareTextCommand{\textcurlyeqprec}{PU}{\9042\336}%* U+22DE
18236 % \ncurlyeqprec (mathabx)
18237 \DeclareTextCommand{\textncurlyeqprec}{PU}{\9042\336\83\070}%* U+22DE U+0338
18238 % U+22DF EQUAL TO OR SUCCEEDS; \curlyeqsucc (MnSymbol)
18239 \DeclareTextCommand{\textcurlyeqsucc}{PU}{\9042\337}%* U+22DF
18240 % \ncurlyeqsucc (mathabx)
18241 \DeclareTextCommand{\textncurlyeqsucc}{PU}{\9042\337\83\070}%* U+22DF U+0338
18242 % U+22E0 DOES NOT PRECEDE OR EQUAL; \npreccurlyeq (txfonts/pxfonts)
18243 \DeclareTextCommand{\textnpreccurlyeq}{PU}{\9042\340}%* U+22E0
18244 % U+22E1 DOES NOT SUCCEED OR EQUAL; \nsucccurlyeq (txfonts/pxfonts)
18245 \DeclareTextCommand{\textnsucccurlyeq}{PU}{\9042\341}%* U+22E1
18246 % U+22E2 NOT SQUARE IMAGE OF OR EQUAL TO; \nsqsubseteq (tx-
    fonts/pxfonts)
18247 \DeclareTextCommand{\textnqsubseteq}{PU}{\9042\342}%* U+22E2
18248 % U+22E3 NOT SQUARE ORIGINAL OF OR EQUAL TO; \nsqsupseteq (tx-
    fonts/pxfonts)
18249 \DeclareTextCommand{\textnqsupseteq}{PU}{\9042\343}%* U+22E3
18250 % U+22E4 SQUARE IMAGE OF OR NOT EQUAL TO; \sqsubsetneq (mathabx)
18251 \DeclareTextCommand{\textsqsubsetneq}{PU}{\9042\344}%* U+22E4
18252 %* \textsqsubsetneq -> \varsqsubsetneq (mathabx)
18253 % U+22E5 SQUARE ORIGINAL OF OR NOT EQUAL TO; \sqsupsetneq (math-
    abx)
18254 \DeclareTextCommand{\textsqsupsetneq}{PU}{\9042\345}%* U+22E5
18255 %* \textsqsupsetneq -> \varsqsupsetneq (mathabx)
18256 % U+22E6 LESS-THAN BUT NOT EQUIVALENT TO; \lnsim (AmS)
18257 \DeclareTextCommand{\textlnsim}{PU}{\9042\346}%* U+22E6
18258 % U+22E7 GREATER-THAN BUT NOT EQUIVALENT TO; \gnsim (AmS)
18259 \DeclareTextCommand{\textgnsim}{PU}{\9042\347}%* U+22E7
18260 % U+22E8 PRECEDES BUT NOT EQUIVALENT TO; \precnsim (AmS)

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18261 \DeclareTextCommand{\textprecnsim}{PU}{\9042\350}%\* U+22E8  
 18262 % U+22E9 SUCCEEDS BUT NOT EQUIVALENT TO; \succnsim (AmS)  
 18263 \DeclareTextCommand{\textsuccnsim}{PU}{\9042\351}%\* U+22E9  
 18264 % U+22EA NOT NORMAL SUBGROUP OF; \ntriangleleft (AmS)  
 18265 \DeclareTextCommand{\textntriangleleft}{PU}{\9042\352}%\* U+22EA  
 18266 %\* \textntriangleleft -> \nlessclosed (MnSymbol)  
 18267 % U+22EB DOES NOT CONTAIN AS NORMAL SUBGROUP; \ntriangleright (AmS)  
 18268 \DeclareTextCommand{\textntriangleright}{PU}{\9042\353}%\* U+22EB  
 18269 %\* \textntriangleright -> \ngtrclosed (MnSymbol)  
 18270 % U+22EC NOT NORMAL SUBGROUP OF OR EQUAL TO;  
 18271 % \ntrianglelefteq (AmS)  
 18272 \DeclareTextCommand{\textntrianglelefteq}{PU}{\9042\354}%\* U+22EC  
 18273 % U+22ED DOES NOT CONTAIN AS NORMAL SUBGROUP OR EQUAL;  
 18274 % \ntrianglerighteq (AmS)  
 18275 \DeclareTextCommand{\textntrianglerighteq}{PU}{\9042\355}%\* U+22ED  
 18276 %\* \textntrianglerighteq -> \textngeqclosed  
 18277 % U+22EE VERTICAL ELLIPSIS; ellipsisvertical; \vdots (LaTeX)  
 18278 \DeclareTextCommand{\textvdots}{PU}{\9042\356}%\* U+22EE  
 18279 % U+22EF MIDLINE HORIZONTAL ELLIPSIS; \cdots (LaTeX)  
 18280 \DeclareTextCommand{\textcdots}{PU}{\9042\357}%\* U+22EF  
 18281 % U+22F0 UP RIGHT DIAGONAL ELLIPSIS; \udots (MnSymbol)  
 18282 \DeclareTextCommand{\textudots}{PU}{\9042\360}%\* U+22F0  
 18283 % U+22F1 DOWN RIGHT DIAGONAL ELLIPSIS; \ddots (LaTeX)  
 18284 \DeclareTextCommand{\textddots}{PU}{\9042\361}%\* U+22F1  
 18285 % U+22F6 ELEMENT OF WITH OVERBAR; \barin (mathabx)  
 18286 \DeclareTextCommand{\textbarin}{PU}{\9042\366}%\* U+22F6

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

18287 % U+2300 DIAMETER SIGN; \diameter (mathabx,wasysym)  
 18288 \DeclareTextCommand{\textdiameter}{PU}{\9043\000}%\* U+2300  
 18289 % U+2310 REVERSED NOT SIGN; \backneg (MnSymbol)  
 18290 \DeclareTextCommand{\textbackneg}{PU}{\9043\020}%\* U+2310  
 18291 % U+2311 SQUARE LOZENGE; \wasylozenge (wasysym)  
 18292 \DeclareTextCommand{\textwasylozenge}{PU}{\9043\021}%\* U+2311  
 18293 % U+2319 TURNED NOT SIGN; \invbackneg (MnSymbol)  
 18294 \DeclareTextCommand{\textinvbackneg}{PU}{\9043\031}%\* U+2319  
 18295 % U+231A WATCH; \clock (wasysym)  
 18296 \DeclareTextCommand{\textclock}{PU}{\9043\032}%\* U+231A  
 18297 %\* \textclock -> \Clocklogo (marvosym)  
 18298 %\* \textclock -> \ClockLogo (marvosym)  
 18299 % U+231C TOP LEFT CORNER; \ulcorner (AmS)  
 18300 \DeclareTextCommand{\textulcorner}{PU}{\9043\034}%\* U+231C  
 18301 % U+231D TOP RIGHT CORNER; \urcorner (AmS)  
 18302 \DeclareTextCommand{\texturcorner}{PU}{\9043\035}%\* U+231D  
 18303 % U+231E BOTTOM LEFT CORNER; \llcorner (AmS)  
 18304 \DeclareTextCommand{\textllcorner}{PU}{\9043\036}%\* U+231E  
 18305 % U+231F BOTTOM RIGHT CORNER; \lrcorner (AmS)  
 18306 \DeclareTextCommand{\textlrcorner}{PU}{\9043\037}%\* U+231F  
 18307 % U+2322 FROWN; \frown (LaTeX)  
 18308 \DeclareTextCommand{\textfrown}{PU}{\9043\042}%\* U+2322  
 18309 % U+2323 SMILE; \smile (LaTeX)  
 18310 \DeclareTextCommand{\textsmile}{PU}{\9043\043}%\* U+2323  
 18311 % U+2328 KEYBOARD; \Keyboard (marvosym)

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18312 \DeclareTextCommand{\textKeyboard}{PU}{\9043\050}%* U+2328
18313 % U+2329 LEFT-POINTING ANGLE BRACKET; angleleft; \langle (LaTeX)
18314 \DeclareTextCommand{\textlangle}{PU}{\9043\051}%* U+2329
18315 % U+232A RIGHT-POINTING ANGLE BRACKET; angleright; \rangle (LaTeX)
18316 \DeclareTextCommand{\textrangle}{PU}{\9043\052}%* U+232A
18317 % U+2339 APL FUNCTIONAL SYMBOL QUAD DIVIDE; \APLinv (wasysym)
18318 \DeclareTextCommand{\textAPLinv}{PU}{\9043\071}%* U+2339
18319 % U+233C APL FUNCTIONAL SYMBOL QUAD CIRCLE; \Tumbler (marvosym)
18320 \DeclareTextCommand{\textTumbler}{PU}{\9043\074}%* U+233C
18321 % U+233D APL FUNCTIONAL SYMBOL CIRCLE STILE; \baro (stmaryrd)
18322 \DeclareTextCommand{\textstmaryrdbaro}{PU}{\9043\075}% U+233D
18323 %* \textstmaryrdbaro -> \baro (stmaryrd)
18324 % U+233F APL FUNCTIONAL SYMBOL SLASH BAR; \notslash (wasysym)
18325 \DeclareTextCommand{\textnotslash}{PU}{\9043\077}%* U+233F
18326 % U+2340 APL FUNCTIONAL SYMBOL BACKSLASH BAR;
18327 % \notbackslash (wasysym)
18328 \DeclareTextCommand{\textnotbackslash}{PU}{\9043\100}%* U+2340
18329 % U+2342 APL FUNCTIONAL SYMBOL QUAD BACKSLASH; \boxbackslash (mathabx)
18330 \DeclareTextCommand{\textboxbackslash}{PU}{\9043\102}%* U+2342
18331 % U+2347 APL FUNCTIONAL SYMBOL QUAD LEFTWARDS ARROW;
18332 % \APLleftarrowbox (wasysym)
18333 \DeclareTextCommand{\textAPLleftarrowbox}{PU}{\9043\107}%* U+2347
18334 % U+2348 APL FUNCTIONAL SYMBOL QUAD RIGHTWARDS ARROW;
18335 % \APLrightarrowbox (wasysym)
18336 \DeclareTextCommand{\textAPLrightarrowbox}{PU}{\9043\110}%* U+2348
18337 % U+2350 APL FUNCTIONAL SYMBOL QUAD UPWARDS ARROW; \APLuparrowbox (wasysym)
18338 \DeclareTextCommand{\textAPLuparrowbox}{PU}{\9043\120}%* U+2350
18339 % U+2357 APL FUNCTIONAL SYMBOL QUAD DOWNWARDS ARROW;
18340 % \APLdownarrowbox (wasysym)
18341 \DeclareTextCommand{\textAPLdownarrowbox}{PU}{\9043\127}%* U+2357
18342 % U+235E APL FUNCTIONAL SYMBOL QUOTE QUAD;
18343 % \APLinput (wasysym)
18344 \DeclareTextCommand{\textAPLinput}{PU}{\9043\136}%* U+235E
18345 % U+2370 APL FUNCTIONAL SYMBOL QUAD QUESTION; \Request (china2e)
18346 \DeclareTextCommand{\textRequest}{PU}{\9043\160}%* U+2370
18347 % U+2393 DIRECT CURRENT SYMBOL FORM TWO; \Beam (marvosym)
18348 \DeclareTextCommand{\textBeam}{PU}{\9043\223}%* U+2393
18349 % U+2394 SOFTWARE-FUNCTION SYMBOL; \hexagon (wasysym)
18350 \DeclareTextCommand{\texthexagon}{PU}{\9043\224}%* U+2394
18351 % U+2395 APL FUNCTIONAL SYMBOL QUAD; \APLbox (wasysym)
18352 \DeclareTextCommand{\textAPLbox}{PU}{\9043\225}%* U+2395
18353 % U+23ED BLACK RIGHT-POINTING DOUBLE TRIANGLE WITH VERTICAL BAR;
18354 % \ForwardToIndex (marvosym)
18355 \DeclareTextCommand{\textForwardToIndex}{PU}{\9043\355}%* U+23ED
18356 % U+23EE BLACK LEFT-POINTING DOUBLE TRIANGLE WITH VERTICAL BAR;
18357 % \RewindToIndex (marvosym)
18358 \DeclareTextCommand{\textRewindToIndex}{PU}{\9043\356}%* U+23EE

```

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

18359 % U+2422 BLANK SYMBOL  
 18360 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422  
 18361 % U+2423 OPEN BOX; blank  
 18362 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

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

18363 % U+244A OCR DOUBLE BACKSLASH; \bbslash (stmaryrd)  
 18364 \DeclareTextCommand{\textbbslash}{PU}{\9044\112}%\* U+244A  
 18365 %\* \textbbslash -> \varparallelinv (txfonts/pxfonts)

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

18366 % U+2460 CIRCLED DIGIT ONE; onecircle  
 18367 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460  
 18368 % U+2461 CIRCLED DIGIT TWO; twocircle  
 18369 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461  
 18370 % U+2462 CIRCLED DIGIT THREE; threecircle  
 18371 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462  
 18372 % U+2463 CIRCLED DIGIT FOUR; fourcircle  
 18373 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463  
 18374 % U+2464 CIRCLED DIGIT FIVE; fivecircle  
 18375 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464  
 18376 % U+2465 CIRCLED DIGIT SIX; sixcircle  
 18377 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465  
 18378 % U+2466 CIRCLED DIGIT SEVEN; sevendigit  
 18379 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466  
 18380 % U+2467 CIRCLED DIGIT EIGHT; eightcircle  
 18381 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467  
 18382 % U+2468 CIRCLED DIGIT NINE; ninecircle  
 18383 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468  
 18384 % U+2469 CIRCLED NUMBER TEN; tencircle  
 18385 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469  
 18386 % U+246A CIRCLED NUMBER ELEVEN; elevencircle  
 18387 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A  
 18388 % U+246B CIRCLED NUMBER TWELVE; twelvecircle  
 18389 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B  
 18390 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle  
 18391 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C  
 18392 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle  
 18393 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D  
 18394 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle  
 18395 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E  
 18396 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle  
 18397 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F  
 18398 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle  
 18399 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470  
 18400 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle  
 18401 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471  
 18402 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle  
 18403 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472  
 18404 % U+2473 CIRCLED NUMBER TWENTY; twentycircle  
 18405 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473  
 18406 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle  
 18407 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6  
 18408 % \CircledA (marvosym)



18409 \DeclareTextCommand{\textCircledA}{PU}{\9044\266}%\* U+24B6  
18410 %\* \textCircledA -> \CleaningA  
18411 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle  
18412 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7  
18413 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle  
18414 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8  
18415 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle  
18416 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9  
18417 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle  
18418 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA  
18419 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle  
18420 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB  
18421 % \CleaningF (marvosym)  
18422 \DeclareTextCommand{\textCleaningF}{PU}{\9044\273}%\* U+24BB  
18423 % \CleaningFF (marvosym)  
18424 \DeclareTextCommand{\textCleaningFF}{PU}{\9044\273\83\062}%\* U+24BB U+0332  
18425 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle  
18426 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC  
18427 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle  
18428 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD  
18429 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle  
18430 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE  
18431 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle  
18432 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF  
18433 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle  
18434 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0  
18435 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle  
18436 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1  
18437 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle  
18438 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2  
18439 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle  
18440 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3  
18441 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle  
18442 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4  
18443 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle  
18444 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5  
18445 % \CleaningP (marvosym)  
18446 \DeclareTextCommand{\textCleaningP}{PU}{\9044\305}%\* U+24C5  
18447 % \CleaningPP (marvosym)  
18448 \DeclareTextCommand{\textCleaningPP}{PU}{\9044\305\83\062}%\* U+24C5 U+0332  
18449 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle  
18450 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6  
18451 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle  
18452 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7  
18453 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle  
18454 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8  
18455 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle  
18456 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9  
18457 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle  
18458 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA  
18459 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle  
18460 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB  
18461 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle  
18462 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC

18463 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle  
 18464 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD  
 18465 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle  
 18466 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE  
 18467 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle  
 18468 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF  
 18469 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle  
 18470 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0  
 18471 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle  
 18472 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1  
 18473 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle  
 18474 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2  
 18475 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle  
 18476 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3  
 18477 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle  
 18478 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4  
 18479 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle  
 18480 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5  
 18481 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle  
 18482 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6  
 18483 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle  
 18484 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7  
 18485 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle  
 18486 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8  
 18487 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcircle  
 18488 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9  
 18489 % U+24DA CIRCLED LATIN SMALL LETTER K; kcircle  
 18490 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA  
 18491 % U+24DB CIRCLED LATIN SMALL LETTER L; lcircle  
 18492 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB  
 18493 % U+24DC CIRCLED LATIN SMALL LETTER M; mcircle  
 18494 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC  
 18495 % U+24DD CIRCLED LATIN SMALL LETTER N; ncircle  
 18496 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD  
 18497 % U+24DE CIRCLED LATIN SMALL LETTER O; ocircle  
 18498 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE  
 18499 % U+24DF CIRCLED LATIN SMALL LETTER P; pcircle  
 18500 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF  
 18501 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcircle  
 18502 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0  
 18503 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcircle  
 18504 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1  
 18505 % U+24E2 CIRCLED LATIN SMALL LETTER S; scircle  
 18506 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2  
 18507 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcircle  
 18508 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3  
 18509 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucircle  
 18510 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4  
 18511 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcircle  
 18512 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5  
 18513 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcircle  
 18514 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6  
 18515 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcircle  
 18516 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7

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18517 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycircle
18518 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8
18519 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcircle
18520 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9
18521 % U+24EA CIRCLED DIGIT ZERO
18522 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

```

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

```

18523 % U+2504 BOX DRAWINGS LIGHT TRIPLE DASH HORIZONTAL; \Cutting-
      Line (marvosym)
18524 \DeclareTextCommand{\textCuttingLine}{PU}{\9045\004}%* U+2504
18525 %* \textCuttingLine -> \Kutline (marvosym)
18526 %* \textCuttingLine -> \CutLine (marvosym)
18527 %* \textCuttingLine -> \Cutline (marvosym)

```

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

```

18528 % U+25B2 BLACK UP-POINTING TRIANGLE; \UParrow (wasysym)
18529 \DeclareTextCommand{\textUParrow}{PU}{\9045\262}%* U+25B2
18530 %* \textUParrow -> \MoveUp (marvosym)
18531 % U+25B3 WHITE UP-POINTING TRIANGLE; whiteuppointingtriangle;
18532 % \bigtriangleup (LaTeX)
18533 \DeclareTextCommand{\textbigtriangleup}{PU}{\9045\263}%* U+25B3
18534 %* \textbigtriangleup -> \APLup (wasysym)
18535 %* \textbigtriangleup -> \Bleech (marvosym)
18536 % U+25B6 BLACK RIGHT-POINTING TRIANGLE; \Forward (marvosym)
18537 \DeclareTextCommand{\textForward}{PU}{\9045\266}%* U+25B6
18538 % U+25B7 WHITE RIGHT-POINTING TRIANGLE (= z notation range restric-
      tion);
18539 % whiterightpointingtriangle; \triangleright (LaTeX)
18540 \DeclareTextCommand{\texttrangleright}{PU}{\9045\267}%* U+25B7
18541 % U+25BA BLACK RIGHT-POINTING POINTER; \RHD (wasysym)
18542 \DeclareTextCommand{\textRHD}{PU}{\9045\272}%* U+25BA
18543 % U+25BC BLACK DOWN-POINTING TRIANGLE; \DOWNarrow (wasysym)
18544 \DeclareTextCommand{\textDOWNarrow}{PU}{\9045\274}%* U+25BC
18545 %* \textDOWNarrow -> \MoveDown (marvosym)
18546 % U+25BD WHITE DOWN-POINTING TRIANGLE; whitedownpointingtri-
      angle;
18547 % \bigtriangledown (LaTeX)
18548 \DeclareTextCommand{\textbigtriangledown}{PU}{\9045\275}%* U+25BD
18549 %* \textbigtriangledown -> \APLdown (wasysym)
18550 % U+25C0 BLACK LEFT-POINTING TRIANGLE; \Rewind (marvosym)
18551 \DeclareTextCommand{\textRewind}{PU}{\9045\300}%* U+25C0
18552 % U+25C1 WHITE RIGHT-POINTING TRIANGLE (= z notation domain re-
      striction);
18553 % whiteleftpointingtriangle; \triangleleft (LaTeX)
18554 \DeclareTextCommand{\texttriangleleft}{PU}{\9045\301}%* U+25C1
18555 % U+25C4 BLACK LEFT-POINTING POINTER; \LHD (wasysym)
18556 \DeclareTextCommand{\textLHD}{PU}{\9045\304}%* U+25C4
18557 % U+25C7 WHITE DIAMOND; whitediamond; \diamond (LaTeX)
18558 \DeclareTextCommand{\textdiamond}{PU}{\9045\307}%* U+25C7
18559 %* \textdiamond -> \Diamond (wasysym)
18560 % U+25CA LOZENGE; lozenge; \lozenge (AmS)
18561 \DeclareTextCommand{\textlozenge}{PU}{\9045\312}%* U+25CA
18562 % U+25D6 LEFT HALF BLACK CIRCLE; \LEFTCIRCLE (wasysym)

```

```

18563 \DeclareTextCommand{\textLEFTCIRCLE}{PU}{\9045\326}%* U+25D6
18564 % U+25D7 RIGHT HALF BLACK CIRCLE; \RIGHTCIRCLE (wasysym)
18565 \DeclareTextCommand{\textRIGHTCIRCLE}{PU}{\9045\327}%* U+25D7
18566 % U+25E6 WHITE BULLET; *openbullet, whitebullet
18567 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}%* U+25E6
18568 % U+25EB WHITE SQUARE WITH VERTICAL BISECTING LINE;
18569 % \boxbar (stmaryrd)
18570 \DeclareTextCommand{\textboxbar}{PU}{\9045\353}%* U+25EB
18571 % U+25EF LARGE CIRCLE; largecircle
18572 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}%* U+25EF
18573 %* \textbigcircle -> \varbigcirc (stmaryrd)
18574 %

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

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18575 % U+2601 CLOUD; \Cloud (ifsym)
18576 \DeclareTextCommand{\textCloud}{PU}{\9046\001}%* U+2601
18577 % U+2605 BLACK STAR; \FiveStar (bbding)
18578 \DeclareTextCommand{\textFiveStar}{PU}{\9046\005}%* U+2605
18579 % U+2606 WHITE STAR; \FiveStarOpen (bbding)
18580 \DeclareTextCommand{\textFiveStarOpen}{PU}{\9046\006}%* U+2606
18581 % U+260E BLACK TELEPHONE; telephoneblack; \Phone (bbding)
18582 \DeclareTextCommand{\textPhone}{PU}{\9046\016}%* U+260E
18583 %* \textPhone -> \Telefon (marvosym)
18584 % U+2610 BALLOT BOX; \boxempty (stmaryrd)
18585 \DeclareTextCommand{\textboxempty}{PU}{\9046\020}%* U+2610
18586 %* \textboxempty -> \Box (wasysym)
18587 % U+2611 BALLOT BOX WITH CHECK; \Checkedbox (marvosym)
18588 \DeclareTextCommand{\textCheckedbox}{PU}{\9046\021}%* U+2611
18589 %* \textCheckedbox -> \CheckedBox (marvosym)
18590 % U+2612 BALLOT BOX WITH X; \Crossedbox (marvosym)
18591 \DeclareTextCommand{\textCrossedbox}{PU}{\9046\022}%* U+2612
18592 %* \textCrossedbox -> \XBox (wasysym)
18593 %* \textCrossedbox -> \CrossedBox (marvosym)
18594 % U+2615 HOT BEVERAGE; \Coffeecup (marvosym)
18595 \DeclareTextCommand{\textCoffeecup}{PU}{\9046\025}%* U+2615
18596 % U+261A BLACK LEFT POINTING INDEX; \HandCuffLeft (bbding)
18597 \DeclareTextCommand{\textHandCuffLeft}{PU}{\9046\032}%* U+261A
18598 % U+261B BLACK RIGHT POINTING INDEX; \HandCuffRight (bbding)
18599 \DeclareTextCommand{\textHandCuffRight}{PU}{\9046\033}%* U+261B
18600 % U+261C WHITE LEFT POINTING INDEX; \HandLeft (bbding)
18601 \DeclareTextCommand{\textHandLeft}{PU}{\9046\034}%* U+261C
18602 %* \textHandLeft -> \rightpointleft (fourier)
18603 % U+261E WHITE RIGHT POINTING INDEX; \HandRight (bbding)
18604 \DeclareTextCommand{\textHandRight}{PU}{\9046\036}%* U+261E
18605 %* \textHandRight -> \leftpointright (fourier)
18606 %* \textHandRight -> \PointingHand (marvosym)
18607 %* \textHandRight -> \Pointinghand (marvosym)
18608 % U+2622 RADIOACTIVE SIGN; \Radioactivity (marvosym)
18609 \DeclareTextCommand{\textRadioactivity}{PU}{\9046\042}%* U+2622
18610 %* \textRadioactivity -> \Radiation (ifsym)
18611 % U+2623 BIOHAZARD SIGN; \Biohazard (marvosym)
18612 \DeclareTextCommand{\textBiohazard}{PU}{\9046\043}%* U+2623
18613 % U+2625 ANKH; \Ankh (marvosym)
18614 \DeclareTextCommand{\textAnkh}{PU}{\9046\045}%* U+2625

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18615 % U+262F YIN YANG; \YinYang (marvosym)  
18616 \DeclareTextCommand{\textYinYang}{PU}{\9046\057}%\* U+262F  
18617 %\* \textYinYang -> \Yinyang (marvosym)  
18618 %\* \textYinYang -> \YingYang (marvosym)  
18619 %\* \textYinYang -> \Yingyang (marvosym)  
18620 % U+2639 WHITE FROWNING FACE; \frownie (wasysym)  
18621 \DeclareTextCommand{\textfrownie}{PU}{\9046\071}%\* U+2639  
18622 %\* \textfrownie -> \Frowny (marvosym)  
18623 % U+263A WHITE SMILING FACE; \smiley (wasysym)  
18624 \DeclareTextCommand{\textsmiley}{PU}{\9046\072}%\* U+263A  
18625 %\* \textsmiley -> \Smiley (marvosym)  
18626 % U+263B BLACK SMILING FACE; \blacksmiley (wasysym)  
18627 \DeclareTextCommand{\textblacksmiley}{PU}{\9046\073}%\* U+263B  
18628 % U+263C WHITE SUN WITH RAYS; \sun (wasysym)  
18629 \DeclareTextCommand{\textsun}{PU}{\9046\074}%\* U+263C  
18630 %\* \textsun -> \Sun (marvosym)  
18631 % U+263D FIRST QUARTER MOON; \leftmoon (wasysym, mathabx)  
18632 \DeclareTextCommand{\textleftmoon}{PU}{\9046\075}%\* U+263D  
18633 % U+263E LAST QUARTER MOON; \rightmoon (wasysym, mathabx)  
18634 \DeclareTextCommand{\textrightmoon}{PU}{\9046\076}%\* U+263E  
18635 % U+263F MERCURY; \mercury (wasysym)  
18636 \DeclareTextCommand{\textmercury}{PU}{\9046\077}%\* U+263F  
18637 %\* \textmercury -> \Mercury (marvosym)  
18638 % U+2640 FEMALE SIGN; female; \female (wasysym)  
18639 \DeclareTextCommand{\textPUfemale}{PU}{\9046\100}% U+2640  
18640 %\* \textPUfemale -> \textfemale (tipx)  
18641 %\* \textPUfemale -> \female (wasysym)  
18642 %\* \textPUfemale -> \venus (wasysym)  
18643 %\* \textPUfemale -> \Venus (marvosym)  
18644 %\* \textPUfemale -> \Female (marvosym)  
18645 % U+2641 EARTH; \earth (wasysym)  
18646 \DeclareTextCommand{\textearth}{PU}{\9046\101}%\* U+2641  
18647 %\* \textearth -> \Earth (marvosym)  
18648 % U+2642 MALE SIGN; male, mars; \male (wasysym)  
18649 \DeclareTextCommand{\textmale}{PU}{\9046\102}%\* U+2642  
18650 %\* \textmale -> \mars (wasysym)  
18651 %\* \textmale -> \Mars (marvosym)  
18652 %\* \textmale -> \Male (marvosym)  
18653 % U+2643 JUPITER; \jupiter (wasysym)  
18654 \DeclareTextCommand{\textjupiter}{PU}{\9046\103}%\* U+2643  
18655 %\* \textjupiter -> \Jupiter (marvosym)  
18656 % U+2644 SATURN; \saturn (wasysym)  
18657 \DeclareTextCommand{\textsaturn}{PU}{\9046\104}%\* U+2644  
18658 %\* \textsaturn -> \Saturn (marvosym)  
18659 % U+2645 URANUS; \uranus (wasysym)  
18660 \DeclareTextCommand{\texturanus}{PU}{\9046\105}%\* U+2645  
18661 %\* \texturanus -> \Uranus (marvosym)  
18662 % U+2646 NEPTUNE; \neptune (wasysym)  
18663 \DeclareTextCommand{\textneptune}{PU}{\9046\106}%\* U+2646  
18664 %\* \textneptune -> \Neptune (marvosym)  
18665 % U+2647 PLUTO; \pluto (wasysym)  
18666 \DeclareTextCommand{\textpluto}{PU}{\9046\107}%\* U+2647  
18667 %\* \textpluto -> \Pluto (marvosym)  
18668 % U+2648 ARIES; \aries (wasysym)

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18669 \DeclareTextCommand{\textaries}{PU}{\9046\110}%* U+2648
18670 %* \textaries -> \Aries (marvosym)
18671 % U+2649 TAURUS; \taurus (wasysym)
18672 \DeclareTextCommand{\texttaurus}{PU}{\9046\111}%* U+2649
18673 %* \texttaurus -> \Taurus (marvosym)
18674 % U+264A GEMINI; \gemini (wasysym)
18675 \DeclareTextCommand{\textgemini}{PU}{\9046\112}%* U+264A
18676 %* \textgemini -> \Gemini (marvosym)
18677 % U+264B CANCER; \cancer (wasysym)
18678 \DeclareTextCommand{\textcancer}{PU}{\9046\113}%* U+264B
18679 %* \textcancer -> \Cancer (marvosym)
18680 % U+264C LEO; \leo (wasysym)
18681 \DeclareTextCommand{\textleo}{PU}{\9046\114}%* U+264C
18682 %* \textleo -> \Leo (marvosym)
18683 % U+264D VIRGO; \virgo (wasysym)
18684 \DeclareTextCommand{\textvirgo}{PU}{\9046\115}%* U+264D
18685 %* \textvirgo -> \Virgo (marvosym)
18686 % U+264E LIBRA; \libra (wasysym)
18687 \DeclareTextCommand{\textlibra}{PU}{\9046\116}%* U+264E
18688 %* \textlibra -> \Libra (marvosym)
18689 % U+264F SCORPIO; \scorpio (wasysym)
18690 \DeclareTextCommand{\textscorpio}{PU}{\9046\117}%* U+264F
18691 %* \textscorpio -> \Scorpio (marvosym)
18692 % U+2650 SAGITTARIUS; \sagittarius (wasysym)
18693 \DeclareTextCommand{\textsagittarius}{PU}{\9046\120}%* U+2650
18694 %* \textsagittarius -> \Sagittarius (marvosym)
18695 % U+2651 CAPRICORN; \capricornus (wasysym)
18696 \DeclareTextCommand{\textcapricornus}{PU}{\9046\121}%* U+2651
18697 %* \textcapricornus -> \Capricorn (marvosym)
18698 % U+2652 AQUARIUS; \aquarius (wasysym)
18699 \DeclareTextCommand{\textaquarius}{PU}{\9046\122}%* U+2652
18700 %* \textaquarius -> \Aquarius (marvosym)
18701 % U+2653 PISCES; \pisces (wasysym)
18702 \DeclareTextCommand{\textpisces}{PU}{\9046\123}%* U+2653
18703 %* \textpisces -> \Pisces (marvosym)
18704 % U+2660 BLACK SPADE SUIT; spade, spadesuitblack; \spadesuit (LaTeX)
18705 \DeclareTextCommand{\textspadesuitblack}{PU}{\9046\140}% U+2660
18706 %* \textspadesuitblack -> \spadesuit (MnSymbol)
18707 % U+2661 WHITE HEART SUIT; heartsuitwhite; \heartsuit (LaTeX)
18708 \DeclareTextCommand{\textheartsuitwhite}{PU}{\9046\141}% U+2661
18709 %* \textheartsuitwhite -> \Heart (marvosym)
18710 %* \textheartsuitwhite -> \heartsuit (MnSymbol)
18711 % U+2662 WHITE DIAMOND SUIT; diamondsuitwhite; \diamondsuit (LaTeX)
18712 \DeclareTextCommand{\textdiamondsuitwhite}{PU}{\9046\142}% U+2662
18713 %* \textdiamondsuitwhite -> \diamondsuit (MnSymbol)
18714 % U+2663 BLACK CLUB SUIT; club, clubsuitblack; \clubsuit (LaTeX)
18715 \DeclareTextCommand{\textclubsuitblack}{PU}{\9046\143}% U+2663
18716 %* \textclubsuitblack -> \clubsuit (MnSymbol)
18717 % U+2664 WHITE SPADE SUIT; spadesuitwhite
18718 \DeclareTextCommand{\textspadesuitwhite}{PU}{\9046\144}% U+2664
18719 % U+2665 BLACK HEART SUIT; heartsuitblack, heart
18720 \DeclareTextCommand{\textheartsuitblack}{PU}{\9046\145}% U+2665
18721 % U+2666 BLACK DIAMOND SUIT; diamond
18722 \DeclareTextCommand{\textdiamondsuitblack}{PU}{\9046\146}% U+2666

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18723 % U+2667 WHITE CLUB SUIT; clubsuitwhite  
18724 \DeclareTextCommand{\textclubsuitwhite}{PU}{\9046\147}% U+2667  
18725 % U+2669 QUARTER NOTE; quarternote; \quarternote (wasysym, arev)  
18726 \DeclareTextCommand{\textquarternote}{PU}{\9046\151}%\* U+2669  
18727 % U+266A EIGHTH NOTE; musicalnote; \textmusicalnote (textcomp)  
18728 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}% U+266A  
18729 %\* \textmusicalnote -> \eighthnote (wasysym, arev)  
18730 % U+266B BEAMED EIGHTH NOTES; eighthnotebeamed; \twonotes (wasysym)  
18731 \DeclareTextCommand{\texttwonotes}{PU}{\9046\153}%\* U+266B  
18732 % U+266C BEAMED SIXTEENTH NOTES; beamedsixteenthnotes; \sixteenth-  
note (arev)  
18733 \DeclareTextCommand{\textsixteenthnote}{PU}{\9046\154}%\* U+266C  
18734 % U+266D MUSIC FLAT SIGN; musicflatsign; \flat (LaTeX)  
18735 \DeclareTextCommand{\textflat}{PU}{\9046\155}%\* U+266D  
18736 % U+266E MUSIC NATURAL SIGN; \natural (LaTeX)  
18737 \DeclareTextCommand{\textnatural}{PU}{\9046\156}%\* U+266E  
18738 % U+266F MUSIC SHARP SIGN; musicsharpsign; \sharp (LaTeX)  
18739 \DeclareTextCommand{\textsharp}{PU}{\9046\157}%\* U+266F  
18740 % U+2672 UNIVERSAL RECYCLING SYMBOL; \recycle (recycle)  
18741 \DeclareTextCommand{\textrecycle}{PU}{\9046\162}%\* U+2672  
18742 %\* \textrecycle -> \Recycling (marvosym)  
18743 % U+267F WHEELCHAIR SYMBOL; \Wheelchair (marvosym)  
18744 \DeclareTextCommand{\textWheelchair}{PU}{\9046\177}%\* U+267F  
18745 % U+2691 BLACK FLAG; \Flag (ifsym)  
18746 \DeclareTextCommand{\textFlag}{PU}{\9046\221}%\* U+2691  
18747 %\* \textFlag -> \VarFlag (ifsym)  
18748 % U+2692 HAMMER AND PICK; \MineSign (marvosym)  
18749 \DeclareTextCommand{\textMineSign}{PU}{\9046\222}%\* U+2692  
18750 % U+2694 CROSSED SWORDS; \dsmilitary (dictsym)  
18751 \DeclareTextCommand{\textdsmilitary}{PU}{\9046\224}%\* U+2694  
18752 %\* \textdsmilitary -> \textxswup (fourier)  
18753 % U+2695 STAFF OF AESCULAPIUS; \dsmedical (dictsym)  
18754 \DeclareTextCommand{\textdsmedical}{PU}{\9046\225}%\* U+2695  
18755 % U+2696 SCALES; \dsjuridical (dictsym)  
18756 \DeclareTextCommand{\textdsjuridical}{PU}{\9046\226}%\* U+2696  
18757 % U+2697 ALEMBIC; \dschemical (dictsym)  
18758 \DeclareTextCommand{\textdschemical}{PU}{\9046\227}%\* U+2697  
18759 % U+2698 FLOWER; \dsbiological (dictsym)  
18760 \DeclareTextCommand{\textdsbiological}{PU}{\9046\230}%\* U+2698  
18761 % U+269A STAFF OF HERMES; \dscommercial (dictsym)  
18762 \DeclareTextCommand{\textdscommercial}{PU}{\9046\232}%\* U+269A  
18763 % U+269D OUTLINED WHITE STAR; \manstar (manfnt)  
18764 \DeclareTextCommand{\textmanstar}{PU}{\9046\235}%\* U+269D  
18765 % U+26A0 WARNING SIGN; \danger (fourier)  
18766 \DeclareTextCommand{\textdanger}{PU}{\9046\240}%\* U+26A0  
18767 % U+26A2 DOUBLED FEMALE SIGN; \FemaleFemale (marvosym)  
18768 \DeclareTextCommand{\textFemaleFemale}{PU}{\9046\242}%\* U+26A2  
18769 % U+26A3 DOUBLED MALE SIGN; \MaleMale (marvosym)  
18770 \DeclareTextCommand{\textMaleMale}{PU}{\9046\243}%\* U+26A3  
18771 % U+26A4 INTERLOCKED FEMALE AND MALE SIGN; \FemaleMale (mar-  
vosym)  
18772 \DeclareTextCommand{\textFemaleMale}{PU}{\9046\244}%\* U+26A4  
18773 % U+26A5 MALE AND FEMALE SIGN; \Hermaphrodite (marvosym)  
18774 \DeclareTextCommand{\textHermaphrodite}{PU}{\9046\245}%\* U+26A5

18775 % U+26AA MEDIUM WHITE CIRCLE; \Neural (marvosym)  
 18776 \DeclareTextCommand{\textNeutral}{PU}{\9046\252}%\* U+26AA  
 18777 % U+26AD MARRIAGE SYMBOL  
 18778 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD  
 18779 % U+26AE DIVORCE SYMBOL  
 18780 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE  
 18781 % U+26B2 NEUTER; \textunconfemale (tipx)  
 18782 \DeclareTextCommand{\textPUunconfemale}{PU}{\9046\262}% U+26B2  
 18783 %\* \textPUunconfemale -> \textunconfemale (tipx)  
 18784 % U+26B9 SEXTILE; \hexstar (wasysym)  
 18785 \DeclareTextCommand{\texthexstar}{PU}{\9046\271}%\* U+26B9  
 18786 % U+26BD SOCCER BALL; \Football (marvosym)  
 18787 \DeclareTextCommand{\textSoccerBall}{PU}{\9046\275}% U+26BD  
 18788 %\* \textSoccerBall -> \Football (marvosym)  
 18789 % U+26C5 SUN BEHIND CLOUD; \SunCloud (ifsym)  
 18790 \DeclareTextCommand{\textSunCloud}{PU}{\9046\305}%\* U+26C5  
 18791 % U+26C6 RAIN; \Rain (ifsym)  
 18792 \DeclareTextCommand{\textRain}{PU}{\9046\306}%\* U+26C6  
 18793 % U+26D4 NO ENTRY; \noway (fourier)  
 18794 \DeclareTextCommand{\textnoway}{PU}{\9046\324}%\* U+26D4  
 18795 % U+26F0 MOUNTAIN; \Mountain (ifsym)  
 18796 \DeclareTextCommand{\textMountain}{PU}{\9046\360}%\* U+26F0  
 18797 % U+26FA TENT; \Tent (ifsym)  
 18798 \DeclareTextCommand{\textTent}{PU}{\9046\372}%\* U+26FA

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

18799 % U+2701 UPPER BLADE SCISSORS; \ScissorRightBrokenBottom (bbding)  
 18800 \DeclareTextCommand{\textScissorRightBrokenBottom}{PU}{\9047\001}% U+2701  
 18801 %\* \textScissorRightBrokenBottom -> \CutLeft (marvosym)  
 18802 %\* \textScissorRightBrokenBottom -> \Cutright (marvosym)  
 18803 % U+2702 BLACK SCISSORS; \ScissorRight (bbding)  
 18804 \DeclareTextCommand{\textScissorRight}{PU}{\9047\002}%\* U+2702  
 18805 %\* \textScissorRight -> \RightScissors (marvosym)  
 18806 %\* \textScissorRight -> \Leftscissors (marvosym)  
 18807 % U+2703 LOWER BLADE SCISSORS; \ScissorRightBrokenTop (bbding)  
 18808 \DeclareTextCommand{\textScissorRightBrokenTop}{PU}{\9047\003}%\* U+2703  
 18809 % U+2704 WHITE SCISSORS; \ScissorHollowRight (bbding)  
 18810 \DeclareTextCommand{\textScissorHollowRight}{PU}{\9047\004}%\* U+2704  
 18811 % U+2706 TELEPHONE LOCATION SIGN; \PhoneHandset (bbding)  
 18812 \DeclareTextCommand{\textPhoneHandset}{PU}{\9047\006}%\* U+2706  
 18813 % U+2707 TAPE DRIVE; \Tape (bbding)  
 18814 \DeclareTextCommand{\textTape}{PU}{\9047\007}%\* U+2707  
 18815 % U+2708 AIRPLANE; \Plane (bbding)  
 18816 \DeclareTextCommand{\textPlane}{PU}{\9047\010}%\* U+2708  
 18817 % U+2709 ENVELOPE; \Envelope (bbding),  
 18818 \DeclareTextCommand{\textEnvelope}{PU}{\9047\011}%\* U+2709  
 18819 %\* \textEnvelope -> \Letter (marvosym)  
 18820 % U+270C VICTORY HAND; \Peace (bbding)  
 18821 \DeclareTextCommand{\textPeace}{PU}{\9047\014}%\* U+270C  
 18822 % U+270D WRITING HAND; \WritingHand (marvosym)  
 18823 \DeclareTextCommand{\textWritingHand}{PU}{\9047\015}%\* U+270D  
 18824 %\* \textWritingHand -> \Writinghand (marvosym)  
 18825 % U+270E LOWER RIGHT PENCIL; \PencilRightDown (bbding)  
 18826 \DeclareTextCommand{\textPencilRightDown}{PU}{\9047\016}%\* U+270E



18827 % U+270F PENCIL; \PencilRight (bding)  
18828 \DeclareTextCommand{\textPencilRight}{PU}{\9047\017}%\* U+270F  
18829 % U+2710 UPPER RIGHT PENCIL; \PencilRightUp (bding)  
18830 \DeclareTextCommand{\textPencilRightUp}{PU}{\9047\020}%\* U+2710  
18831 % U+2711 WHITE NIB; \NibRight (bding)  
18832 \DeclareTextCommand{\textNibRight}{PU}{\9047\021}%\* U+2711  
18833 % U+2712 BLACK NIB; \NibSolidRight (bding)  
18834 \DeclareTextCommand{\textNibSolidRight}{PU}{\9047\022}%\* U+2712  
18835 % U+2713 CHECK MARK; checkmark; \Checkmark (bding)  
18836 \DeclareTextCommand{\textCheckmark}{PU}{\9047\023}%\* U+2713  
18837 %\* \textCheckmark -> \checkmark (MnSymbol)  
18838 % U+2714 HEAVY CHECK MARK; \CheckmarkBold (bding)  
18839 \DeclareTextCommand{\textCheckmarkBold}{PU}{\9047\024}%\* U+2714  
18840 % U+2715 MULTIPLICATION X; \XSolid (bding)  
18841 \DeclareTextCommand{\textXSolid}{PU}{\9047\025}%\* U+2715  
18842 % U+2716 HEAVY MULTIPLICATION X; \XSolidBold (bding)  
18843 \DeclareTextCommand{\textXSolidBold}{PU}{\9047\026}%\* U+2716  
18844 % U+2717 BALLOT X; \XSolidBrush (bding)  
18845 \DeclareTextCommand{\textXSolidBrush}{PU}{\9047\027}%\* U+2717  
18846 % U+2719 OUTLINED GREEK CROSS; \PlusOutline (bding)  
18847 \DeclareTextCommand{\textPlusOutline}{PU}{\9047\031}%\* U+2719  
18848 % U+271A HEAVY GREEK CROSS; \Plus (bding)  
18849 \DeclareTextCommand{\textPlus}{PU}{\9047\032}%\* U+271A  
18850 % U+271B OPEN CENTRE CROSS; \PlusThinCenterOpen (bding)  
18851 \DeclareTextCommand{\textPlusThinCenterOpen}{PU}{\9047\033}%\* U+271B  
18852 % U+271C HEAVY OPEN CENTRE CROSS; \PlusCenterOpen (bding)  
18853 \DeclareTextCommand{\textPlusCenterOpen}{PU}{\9047\034}%\* U+271C  
18854 % U+271D LATIN CROSS; \Cross (bding)  
18855 \DeclareTextCommand{\textCross}{PU}{\9047\035}%\* U+271D  
18856 % U+271E SHADOWED WHITE LATIN CROSS; \CrossOpenShadow (bding)  
18857 \DeclareTextCommand{\textCrossOpenShadow}{PU}{\9047\036}%\* U+271E  
18858 % U+271F OUTLINED LATIN CROSS; \CrossOutline (bding)  
18859 \DeclareTextCommand{\textCrossOutline}{PU}{\9047\037}%\* U+271F  
18860 % U+2720 MALTESE CROSS; \CrossMaltese (bding)  
18861 \DeclareTextCommand{\textCrossMaltese}{PU}{\9047\040}%\* U+2720  
18862 % U+2721 STAR OF DAVID; \DavidStar (bding)  
18863 \DeclareTextCommand{\textDavidStar}{PU}{\9047\041}%\* U+2721  
18864 %\* \textDavidStar -> \davidstar (wasysym)  
18865 % U+2722 FOUR TEARDROP-SPOKED ASTERISK; \FourAsterisk (bding)  
18866 \DeclareTextCommand{\textFourAsterisk}{PU}{\9047\042}%\* U+2722  
18867 % U+2723 FOUR BALLOON-SPOKED ASTERISK; \JackStar (bding)  
18868 \DeclareTextCommand{\textJackStar}{PU}{\9047\043}%\* U+2723  
18869 % U+2724 HEAVY FOUR BALLOON-SPOKED ASTERISK; \JackStarBold (bding)  
18870 \DeclareTextCommand{\textJackStarBold}{PU}{\9047\044}%\* U+2724  
18871 % U+2725 FOUR CLUB-SPOKED ASTERISK; \CrossClowerTips (bding)  
18872 \DeclareTextCommand{\textClowerTips}{PU}{\9047\045}%\* U+2725  
18873 % U+2726 BLACK FOUR POINTED STAR; \FourStar (bding)  
18874 \DeclareTextCommand{\textFourStar}{PU}{\9047\046}%\* U+2726  
18875 % U+2727 WHITE FOUR POINTED STAR; \FourStarOpen (bding)  
18876 \DeclareTextCommand{\textFourStarOpen}{PU}{\9047\047}%\* U+2727  
18877 % U+272A CIRCLED WHITE STAR; \FiveStarOpenCircled (bding)  
18878 \DeclareTextCommand{\textFiveStarOpenCircled}{PU}{\9047\052}%\* U+272A  
18879 % U+272B OPEN CENTRE BLACK STAR; \FiveStarCenterOpen (bding)

18880 \DeclareTextCommand{\textFiveStarCenterOpen}{PU}{\9047\053}%\* U+272B  
18881 % U+272C BLACK CENTRE WHITE STAR; \FiveStarOpenDotted (bding)  
18882 \DeclareTextCommand{\textFiveStarOpenDotted}{PU}{\9047\054}%\* U+272C  
18883 % U+272D OUTLINED BLACK STAR; \FiveStarOutline (bding)  
18884 \DeclareTextCommand{\textFiveStarOutline}{PU}{\9047\055}%\* U+272D  
18885 % U+272E HEAVY OUTLINED BLACK STAR; \FiveStarOutlineHeavy (bding)  
18886 \DeclareTextCommand{\textFiveStarOutlineHeavy}{PU}{\9047\056}%\* U+272E  
18887 % U+272F PINWHEEL STAR; \FiveStarConvex (bding)  
18888 \DeclareTextCommand{\textFiveStarConvex}{PU}{\9047\057}%\* U+272F  
18889 % U+2730 SHADOWED WHITE STAR; \FiveStarShadow (bding)  
18890 \DeclareTextCommand{\textFiveStarShadow}{PU}{\9047\060}%\* U+2730  
18891 % U+2731 HEAVY ASTERISK; \AsteriskBold (bding)  
18892 \DeclareTextCommand{\textAsteriskBold}{PU}{\9047\061}%\* U+2731  
18893 % U+2732 OPEN CENTRE ASTERISK; \AsteriskCenterOpen (bding)  
18894 \DeclareTextCommand{\textAsteriskCenterOpen}{PU}{\9047\062}%\* U+2732  
18895 % U+2734 EIGHT POINTED BLACK STAR; \EightStarTaper (bding)  
18896 \DeclareTextCommand{\textEightStarTaper}{PU}{\9047\064}%\* U+2734  
18897 % U+2735 EIGHT POINTED PINWHEEL STAR; \EightStarConvex (bding)  
18898 \DeclareTextCommand{\textEightStarConvex}{PU}{\9047\065}%\* U+2735  
18899 % U+2736 SIX POINTED BLACK STAR; \SixStar (bding)  
18900 \DeclareTextCommand{\textSixStar}{PU}{\9047\066}%\* U+2736  
18901 % U+2737 EIGHT POINTED RECTILINEAR BLACK STAR; \EightStar (bding)  
18902 \DeclareTextCommand{\textEightStar}{PU}{\9047\067}%\* U+2737  
18903 % U+2738 HEAVY EIGHT POINTED RECTILINEAR BLACK STAR; \EightStarBold (bding)  
18904 \DeclareTextCommand{\textEightStarBold}{PU}{\9047\070}%\* U+2738  
18905 % U+2739 TWELVE POINTED BLACK STAR; \TwelveStar (bding)  
18906 \DeclareTextCommand{\textTwelveStar}{PU}{\9047\071}%\* U+2739  
18907 % U+273A SIXTEEN POINTED ASTERISK; \SixteenStarLight (bding)  
18908 \DeclareTextCommand{\textSixteenStarLight}{PU}{\9047\072}%\* U+273A  
18909 % U+273B TEARDROP-SPOKED ASTERISK; \SixFlowerPetalRemoved (bding)  
18910 \DeclareTextCommand{\textSixFlowerPetalRemoved}{PU}{\9047\073}%\* U+273B  
18911 % U+273C OPEN CENTRE TEARDROP-SPOKED ASTERISK;  
18912 % \SixFlowerOpenCenter (bding)  
18913 \DeclareTextCommand{\textSixFlowerOpenCenter}{PU}{\9047\074}%\* U+273C  
18914 % U+273D HEAVY TEARDROP-SPOKED ASTERISK; \Asterisk (bding)  
18915 \DeclareTextCommand{\textAsterisk}{PU}{\9047\075}%\* U+273D  
18916 % U+273E SIX PETALLED BLACK AND WHITE FLORETTE; \SixFlowerAlternate (bding)  
18917 \DeclareTextCommand{\textSixFlowerAlternate}{PU}{\9047\076}%\* U+273E  
18918 % U+273F BLACK FLORETTE; \FiveFlowerPetal (bding)  
18919 \DeclareTextCommand{\textFiveFlowerPetal}{PU}{\9047\077}%\* U+273F  
18920 % U+2740 WHITE FLORETTE; \FiveFlowerOpen (bding)  
18921 \DeclareTextCommand{\textFiveFlowerOpen}{PU}{\9047\100}%\* U+2740  
18922 % U+2741 EIGHT PETALLED OUTLINED BLACK FLORETTE; \EightFlowerPetal (bding)  
18923 \DeclareTextCommand{\textEightFlowerPetal}{PU}{\9047\101}%\* U+2741  
18924 % U+2742 CIRCLED OPEN CENTRE EIGHT POINTED STAR; \SunshineOpenCircled (bding)  
18925 \DeclareTextCommand{\textSunshineOpenCircled}{PU}{\9047\102}%\* U+2742  
18926 % U+2743 HEAVY TEARDROP-SPOKED PINWHEEL ASTERISK; \SixFlowerAltPetal (bding)

18927 \DeclareTextCommand{\textSixFlowerAltPetal}{PU}{\9047\103}%\* U+2743  
 18928 % U+2744 SNOWFLAKE; \SnowflakeChevron (bding)  
 18929 \DeclareTextCommand{\textSnowflakeChevron}{PU}{\9047\104}%\* U+2744  
 18930 % U+2745 TIGHT TRIFOLIATE SNOWFLAKE; \Snowflake (bding)  
 18931 \DeclareTextCommand{\textSnowflake}{PU}{\9047\105}%\* U+2745  
 18932 % U+2746 HEAVY CHEVRON SNOWFLAKE; \SnowflakeChevronBold (bding)  
 18933 \DeclareTextCommand{\textSnowflakeChevronBold}{PU}{\9047\106}%\* U+2746  
 18934 % U+2747 SPARKLE; \Sparkle (bding)  
 18935 \DeclareTextCommand{\textSparkle}{PU}{\9047\107}%\* U+2747  
 18936 % U+2748 HEAVY SPARKLE; \SparkleBold (bding)  
 18937 \DeclareTextCommand{\textSparkleBold}{PU}{\9047\110}%\* U+2748  
 18938 % U+2749 BALLOON-SPOKED ASTERISK; \AsteriskRoundedEnds (bding)  
 18939 \DeclareTextCommand{\textAsteriskRoundedEnds}{PU}{\9047\111}%\* U+2749  
 18940 % U+274A EIGHT TEARDROP-SPOKED PROPELLER ASTERISK;  
 18941 % \EightFlowerPetalRemoved (bding)  
 18942 \DeclareTextCommand{\textEightFlowerPetalRemoved}{PU}{\9047\112}%\* U+274A  
 18943 % U+274B HEAVY EIGHT TEARDROP-SPOKED PROPELLER ASTERISK;  
 18944 % \EightAsterisk (bding)  
 18945 \DeclareTextCommand{\textEightAsterisk}{PU}{\9047\113}%\* U+274B  
 18946 % U+274D SHADOWED WHITE CIRCLE; \CircleShadow (bding)  
 18947 \DeclareTextCommand{\textCircleShadow}{PU}{\9047\115}%\* U+274D  
 18948 % U+274F LOWER RIGHT DROP-SHADOWED WHITE SQUARE;  
 18949 % \SquareShadowBottomRight (bding)  
 18950 \DeclareTextCommand{\textSquareShadowBottomRight}{PU}{\9047\117}%\* U+274F  
 18951 % U+2750 UPPER RIGHT DROP-SHADOWED WHITE SQUARE;  
 18952 % \SquareShadowTopRight (bding)  
 18953 \DeclareTextCommand{\textSquareShadowTopRight}{PU}{\9047\120}%\* U+2750  
 18954 % U+2751 LOWER RIGHT SHADOWED WHITE SQUARE;  
 18955 % \SquareCastShadowBottomRight (bding)  
 18956 \DeclareTextCommand{\textSquareCastShadowBottomRight}{PU}{\9047\121}%\* U+2751  
 18957 % U+2752 UPPER RIGHT SHADOWED WHITE SQUARE;  
 18958 % \SquareCastShadowTopRight (bding)  
 18959 \DeclareTextCommand{\textSquareCastShadowTopRight}{PU}{\9047\122}%\* U+2752  
 18960 % U+2756 BLACK DIAMOND MINUS WHITE X; \OrnamentDiamandSolid (bding)  
 18961 \DeclareTextCommand{\textDiamandSolid}{PU}{\9047\126}%\* U+2756  
 18962 % U+2758 LIGHT VERTICAL BAR; \RectangleThin (bding)  
 18963 \DeclareTextCommand{\textRectangleThin}{PU}{\9047\130}%\* U+2758  
 18964 % U+2759 MEDIUM VERTICAL BAR; \Rectangle (bding)  
 18965 \DeclareTextCommand{\textRectangle}{PU}{\9047\131}%\* U+2759  
 18966 % U+275A HEAVY VERTICAL BAR; \RectangleBold (bding)  
 18967 \DeclareTextCommand{\textRectangleBold}{PU}{\9047\132}%\* U+275A

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

18968 % U+27C2 PERPENDICULAR; perpendicular; \perp (LaTeX)  
 18969 \DeclareTextCommand{\textperp}{PU}{\9047\302}%\* U+27C2  
 18970 % \notperp (mathabx)  
 18971 \DeclareTextCommand{\textnotperp}{PU}{\9047\302\83\070}%\* U+27C2 U+0338  
 18972 % U+27C7 OR WITH DOT INSIDE; \veedot (MnSymbol)  
 18973 \DeclareTextCommand{\textveedot}{PU}{\9047\307}%\* U+27C7  
 18974 % U+27D1 AND WITH DOT; \wedgedot (MnSymbol)  
 18975 \DeclareTextCommand{\textwedgedot}{PU}{\9047\321}%\* U+27D1  
 18976 % U+27DC LEFT MULTIMAP; \leftspoon (MnSymbol)  
 18977 \DeclareTextCommand{\textleftspoon}{PU}{\9047\334}%\* U+27DC

```

18978 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET
18979 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}%* U+27E6
18980 %* \textlbrackdbl -> \lbracket (stmaryrd)
18981 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET
18982 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}%* U+27E7
18983 %* \textrbrackdbl -> \rrbracket (stmaryrd)

```

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

```

18984 % U+27F2 ANTICLOCKWISE GAPPED CIRCLE ARROW;
18985 % \circlearrowleft (AmS)
18986 \DeclareTextCommand{\textcirclearrowleft}{PU}{\9047\362}%* U+27F2
18987 % U+27F3 CLOCKWISE GAPPED CIRCLE ARROW; \circlearrowright (AmS)
18988 \DeclareTextCommand{\textcirclearrowright}{PU}{\9047\363}%* U+27F3
18989 % U+27F5 LONG LEFTWARDS ARROW; \longleftarrow (AmS)
18990 \DeclareTextCommand{\textlongleftarrow}{PU}{\9047\365}%* U+27F5
18991 % U+27F6 LONG RIGHTWARDS ARROW; \longrightarrow (AmS)
18992 \DeclareTextCommand{\textlongrightarrow}{PU}{\9047\366}%* U+27F6
18993 % U+27F7 LONG LEFT RIGHT ARROW; \longleftrightarrow (AmS)
18994 \DeclareTextCommand{\textlongleftrightarrow}{PU}{\9047\367}%* U+27F7
18995 % U+27F8 LONG LEFTWARDS DOUBLE ARROW; \Longleftarrow (AmS)
18996 \DeclareTextCommand{\textLongleftarrow}{PU}{\9047\370}%* U+27F8
18997 % U+27F9 LONG RIGHTWARDS DOUBLE ARROW; \longrightarrow (AmS)
18998 \DeclareTextCommand{\textLongrightarrow}{PU}{\9047\371}%* U+27F9
18999 % U+27FA LONG LEFT RIGHT DOUBLE ARROW; \Longleftrightarrow (AmS)
19000 \DeclareTextCommand{\textLongleftrightarrow}{PU}{\9047\372}%* U+27FA
19001 % U+27FC LONG RIGHTWARDS ARROW FROM BAR; \longmapsto (AmS)
19002 \DeclareTextCommand{\textlongmapsto}{PU}{\9047\374}%* U+27FC
19003 % U+27FD LONG LEFTWARDS DOUBLE ARROW FROM BAR; \Longmaps-
    from (stmaryrd)
19004 \DeclareTextCommand{\textLongmapsfrom}{PU}{\9047\375}%* U+27FD
19005 % U+27FE LONG RIGHTWARDS DOUBLE ARROW FROM BAR; \Longmap-
    sto (stmaryrd)
19006 \DeclareTextCommand{\textLongmapsto}{PU}{\9047\376}%* U+27FE

```

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

```

19007 % U+2921 NORTH WEST AND SOUTH EAST ARROW; \nwsearrow (MnSym-
    bol)
19008 \DeclareTextCommand{\textnwsearrow}{PU}{\9051\041}%* U+2921
19009 % U+2922 NORTH EAST AND SOUTH WEST ARROW; \neswarrow (MnSym-
    bol)
19010 \DeclareTextCommand{\textneswarrow}{PU}{\9051\042}%* U+2922
19011 % U+2923 NORTH WEST ARROW WITH HOOK; \hooknwarrow (MnSymbol)
19012 \DeclareTextCommand{\texthooknwarrow}{PU}{\9051\043}%* U+2923
19013 % U+2924 NORTH EAST ARROW WITH HOOK; \hooknearrow (MnSymbol)
19014 \DeclareTextCommand{\textrhooknearrow}{PU}{\9051\044}%* U+2924
19015 % U+2925 SOUTH EAST ARROW WITH HOOK; \hooksearrow (MnSymbol)
19016 \DeclareTextCommand{\texthooksearrow}{PU}{\9051\045}%* U+2925
19017 % U+2926 SOUTH WEST ARROW WITH HOOK; \hookswarrow (MnSymbol)
19018 \DeclareTextCommand{\textrhookswarrow}{PU}{\9051\046}%* U+2926
19019 % U+2933 WAVE ARROW POINTING DIRECTLY RIGHT; \leadsto (wasysym)
19020 \DeclareTextCommand{\textleadsto}{PU}{\9051\063}%* U+2933
19021 % U+2934 ARROW POINTING RIGHTWARDS THEN CURVING UPWARDS;
19022 % \rcurvearrowne (MnSymbol)
19023 \DeclareTextCommand{\textrcurvearrowne}{PU}{\9051\064}%* U+2934

```

19024 % U+2935 ARROW POINTING RIGHTWARDS THEN CURVING DOWN-  
 WARDS;  
 19025 % \lcurvearrowse (MnSymbol)  
 19026 \DeclareTextCommand{\textlcurvearrowse}{PU}{\9051\065}%\* U+2935  
 19027 % U+2936 ARROW POINTING DOWNWARDS THEN CURVING LEFT-  
 WARDS;  
 19028 % \lcurvearrowsw (MnSymbol)  
 19029 \DeclareTextCommand{\textlcurvearrowsw}{PU}{\9051\066}%\* U+2936  
 19030 % U+2937 ARROW POINTING DOWNWARDS THEN CURVING RIGHT-  
 WARDS;  
 19031 % \rcurvearrowse (MnSymbol)  
 19032 \DeclareTextCommand{\textrcurvearrowse}{PU}{\9051\067}%\* U+2937  
 19033 % U+2938 RIGHT-SIDE ARC CLOCKWISE ARROW; \lcurvearrowdown (Mn-  
 Symbol)  
 19034 \DeclareTextCommand{\textlcurvearrowdown}{PU}{\9051\070}%\* U+2938  
 19035 %\* \textlcurvearrowdown -> \RightTorque (marvosym)  
 19036 %\* \textlcurvearrowdown -> \Righttorque (marvosym)  
 19037 % U+2939 LEFT-SIDE ARC ANTICLOCKWISE ARROW;  
 19038 % \rcurvearrowdown (MnSymbol)  
 19039 \DeclareTextCommand{\textrcurvearrowdown}{PU}{\9051\071}%\* U+2939  
 19040 %\* \textrcurvearrowdown -> \LeftTorque (marvosym)  
 19041 %\* \textrcurvearrowdown -> \Lefttorque (marvosym)  
 19042 % U+293A TOP ARC ANTICLOCKWISE ARROW; \rcurvearrowleft (MnSym-  
 bol)  
 19043 \DeclareTextCommand{\textrcurvearrowleft}{PU}{\9051\072}%\* U+293A  
 19044 % U+293B BOTTOM ARC ANTICLOCKWISE ARROW;  
 19045 % \rcurvearrowright (MnSymbol)  
 19046 \DeclareTextCommand{\textrcurvearrowright}{PU}{\9051\073}%\* U+293B  
 19047 % U+294A LEFT BARB UP RIGHT BARB DOWN HARPOON; \lefttrighthar-  
 poon (mathabx)  
 19048 \DeclareTextCommand{\textlefttrightharpoon}{PU}{\9051\112}%\* U+294A  
 19049 % U+294B LEFT BARB DOWN RIGHT BARB UP HARPOON; \rightlefthar-  
 poon (mathabx)  
 19050 \DeclareTextCommand{\textrightleftharpoon}{PU}{\9051\113}%\* U+294B  
 19051 % U+294C UP BARB RIGHT DOWN BARB LEFT HARPOON;  
 19052 % \updownharpoonrightleft (MnSymbol)  
 19053 \DeclareTextCommand{\textupdownharpoonrightleft}{PU}{\9051\114}%\* U+294C  
 19054 % U+294D UP BARB LEFT DOWN BARB RIGHT HARPOON;  
 19055 % \updownharpoonleftright (MnSymbol)  
 19056 \DeclareTextCommand{\textupdownharpoonleftright}{PU}{\9051\115}%\* U+294D  
 19057 % U+2962 LEFTWARDS HARPOON WITH BARB UP ABOVE LEFTWARDS  
 19058 % HARPOON WITH BARB DOWN; \leftleftharpoons (mathabx)  
 19059 \DeclareTextCommand{\textleftleftharpoons}{PU}{\9051\142}%\* U+2962  
 19060 % U+2963 UPWARDS HARPOON WITH BARB LEFT BESIDE UPWARDS  
 19061 % HARPOON WITH BARB RIGHT; \upupharpoons (mathabx)  
 19062 \DeclareTextCommand{\textupupharpoons}{PU}{\9051\143}%\* U+2963  
 19063 % U+2964 RIGHTWARDS HARPOON WITH BARB UP ABOVE RIGHT-  
 WARDS HARPOON  
 19064 % WITH BARB DOWN; \righttrightharpoons (mathabx)  
 19065 \DeclareTextCommand{\textrighttrightharpoons}{PU}{\9051\144}%\* U+2964  
 19066 % U+2965 DOWNWARDS HARPOON WITH BARB LEFT BESIDE DOWN-  
 WARDS HARPOON  
 19067 % WITH BARB RIGHT; \downdownharpoons (mathabx)  
 19068 \DeclareTextCommand{\textdowndownharpoons}{PU}{\9051\145}%\* U+2965

19069 % U+296A LEFTWARDS HARPOON WITH BARB UP ABOVE LONG DASH;  
 19070 % \leftbarharpoon (mathabx)  
 19071 \DeclareTextCommand{\textleftbarharpoon}{PU}{\9051\152}%\* U+296A  
 19072 % U+296B LEFTWARDS HARPOON WITH BARB DOWN BELOW  
 19073 % LONG DASH; \barleftharpoon (mathabx)  
 19074 \DeclareTextCommand{\textbarleftharpoon}{PU}{\9051\153}%\* U+296B  
 19075 % U+296C RIGHTWARDS HARPOON WITH BARB UP ABOVE  
 19076 % LONG DASH; \rightbarharpoon (mathabx)  
 19077 \DeclareTextCommand{\textrightbarharpoon}{PU}{\9051\154}%\* U+296C  
 19078 % U+296D RIGHTWARDS HARPOON WITH BARB DOWN BELOW  
 19079 % LONG DASH; \barrightharpoon (mathabx)  
 19080 \DeclareTextCommand{\textbarrightharpoon}{PU}{\9051\155}%\* U+296D  
 19081 % U+296E UPWARDS HARPOON WITH BARB LEFT BESIDE DOWN-  
 WARDS HARPOON  
 19082 % WITH BARB RIGHT; \updownharpoons (mathabx)  
 19083 \DeclareTextCommand{\textupdownharpoons}{PU}{\9051\156}%\* U+296E  
 19084 % U+296F DOWNWARDS HARPOON WITH BARB LEFT BESIDE UP-  
 WARDS HARPOON  
 19085 % WITH BARB RIGHT; \downupharpoons (mathabx)  
 19086 \DeclareTextCommand{\textdownupharpoons}{PU}{\9051\157}%\* U+296F  
 19087 % U+297F DOWN FISH TAIL  
 19088 \DeclareTextCommand{\textmoo}{PU}{\9051\177\83\066}%\* U+297F U+0336

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

19089 % U+2987 Z NOTATION LEFT IMAGE BRACKET; \lparenthesis (stmaryrd)  
 19090 \DeclareTextCommand{\textllparenthesis}{PU}{\9051\207}%\* U+2987  
 19091 % U+2988 Z NOTATION RIGHT IMAGE BRACKET; \rrparenthesis (stmaryrd)  
 19092 \DeclareTextCommand{\textrrparenthesis}{PU}{\9051\210}%\* U+2988  
 19093 % U+29B0 REVERSED EMPTY SET; \invdiameter (wasysym)  
 19094 \DeclareTextCommand{\textinvdiameter}{PU}{\9051\260}%\* U+29B0  
 19095 % U+29B6 CIRCLED VERTICAL BAR; \obar (stmaryrd)  
 19096 \DeclareTextCommand{\textobar}{PU}{\9051\266}%\* U+29B6  
 19097 %\* \textobar -> \textvarobar (stmaryrd)  
 19098 % U+29B8 CIRCLED REVERSE SOLIDUS; \obslash (stmaryrd)  
 19099 \DeclareTextCommand{\textobslash}{PU}{\9051\270}%\* U+29B8  
 19100 %\* \textobslash -> \circledbslash (txfonts/pxfonts)  
 19101 %\* \textobslash -> \obackslash (mathabx)  
 19102 %\* \textobslash -> \varobslash (stmaryrd)  
 19103 % U+29BA CIRCLE DIVIDED BY HORIZONTAL BAR AND TOP HALF  
 19104 % DIVIDED BY VERTICAL BAR; \obot (mathabx)  
 19105 \DeclareTextCommand{\textobot}{PU}{\9051\272}%\* U+29BA  
 19106 %\* \textobot -> \odplus (ulsy)  
 19107 % U+29BB CIRCLE WITH SUPERIMPOSED X; \NoChemicalCleaning (mar-  
 vosym)  
 19108 \DeclareTextCommand{\textNoChemicalCleaning}{PU}{\9051\273}%\* U+29BB  
 19109 % U+29C0 CIRCLED LESS-THAN; \olessthan (stmaryrd)  
 19110 \DeclareTextCommand{\textolessthan}{PU}{\9051\300}%\* U+29C0  
 19111 %\* \textolessthan -> \varolessthan (stmaryrd)  
 19112 % U+29C1 CIRCLED GREATER-THAN; \ogreaterthan (stmaryrd)  
 19113 \DeclareTextCommand{\textogreaterthan}{PU}{\9051\301}%\* U+29C1  
 19114 %\* \textogreaterthan -> \varogreaterthan (stmaryrd)  
 19115 % U+29C4 SQUARED RISING DIAGONAL SLASH; \boxslash (mathabx, stmaryrd)  
 19116 \DeclareTextCommand{\textboxslash}{PU}{\9051\304}%\* U+29C4  
 19117 % U+29C5 SQUARED FALLING DIAGONAL SLASH; \boxbslash (stmaryrd)

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19118 \DeclareTextCommand{\textboxslash}{PU}{\9051\305}%* U+29C5
19119 % U+29C6 SQUARED ASTERISK; \boxast (stmaryrd)
19120 \DeclareTextCommand{\textboxast}{PU}{\9051\306}%* U+29C6
19121 % U+29C7 SQUARED SMALL CIRCLE; \boxcircle (stmaryrd)
19122 \DeclareTextCommand{\textboxcircle}{PU}{\9051\307}%* U+29C7
19123 % U+29C8 SQUARED SQUARE; \boxbox (stmaryrd)
19124 \DeclareTextCommand{\textboxbox}{PU}{\9051\310}%* U+29C8
19125 % U+29D3 BLACK BOWTIE; \Valve (marvosym)
19126 \DeclareTextCommand{\textValve}{PU}{\9051\323}%* U+29D3
19127 % U+29DF DOUBLE-ENDED MULTIMAP; \multimapboth (txfonts/pxfonts)
19128 \DeclareTextCommand{\textmultimapboth}{PU}{\9051\337}%* U+29DF
19129 % U+29E2 SHUFFLE PRODUCT; \shuffle (shuffle)
19130 \DeclareTextCommand{\textshuffle}{PU}{\9051\342}%* U+29E2

```

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

```

19131 % U+2A04 N-ARY UNION OPERATOR WITH PLUS; \uplus (LaTeX)
19132 \DeclareTextCommand{\textuplus}{PU}{\9052\004}%* U+2A04
19133 % U+2A07 TWO LOGICAL AND OPERATOR; \bigdoublewedge (MnSymbol)
19134 \DeclareTextCommand{\textbigdoublewedge}{PU}{\9052\007}%* U+2A07
19135 % U+2A08 TWO LOGICAL OR OPERATOR; \bigdoublevee (MnSymbol)
19136 \DeclareTextCommand{\textbigdoublevee}{PU}{\9052\010}%* U+2A08
19137 % U+2A1D JOIN; \Join (latexsym, amsfonts, amssymb, mathabx, txfonts,
19138 %   pxfonts, wasysym)
19139 \DeclareTextCommand{\textJoin}{PU}{\9052\035}%* U+2A1D
19140 % U+2A1F Z NOTATION SCHEMA COMPOSITION; \fatsemi (stmaryrd)
19141 \DeclareTextCommand{\textfatsemi}{PU}{\9052\037}%* U+2A1F
19142 % U+2A22 PLUS SIGN WITH SMALL CIRCLE ABOVE; \circplus (mathabx)
19143 \DeclareTextCommand{\textcircplus}{PU}{\9052\042}%* U+2A22
19144 % U+2A2A MINUS SIGN WITH DOT BELOW; \minusdot (MnSymbol)
19145 \DeclareTextCommand{\textminusdot}{PU}{\9052\052}%* U+2A2A
19146 %* \textminusdot -> \divdot (mathabx)
19147 % U+2A30 MULTIPLICATION SIGN WITH DOT ABOVE; \dottimes (mathabx)
19148 \DeclareTextCommand{\textdottimes}{PU}{\9052\060}%* U+2A30
19149 % U+2A32 SEMIDIRECT PRODUCT WITH BOTTOM CLOSED;
19150 %   \dtimes (mathdesign)
19151 \DeclareTextCommand{\textdtimes}{PU}{\9052\062}%* U+2A32
19152 % U+2A38 CIRCLED DIVISION SIGN; \odiv (mathabx)
19153 \DeclareTextCommand{\textodiv}{PU}{\9052\070}%* U+2A38
19154 % U+2A3C INTERIOR PRODUCT; \invneg (MnSymbol)
19155 \DeclareTextCommand{\textinvneg}{PU}{\9052\074}%* U+2A3C
19156 % U+2A4E DOUBLE SQUARE INTERSECTION; \sqdoublecap (mathabx)
19157 \DeclareTextCommand{\textsqdoublecap}{PU}{\9052\116}%* U+2A4E
19158 %* \textsqdoublecap -> \doublesqcap (MnSymbol)
19159 % U+2A40 INTERSECTION WITH DOT; \capdot (MnSymbol)
19160 \DeclareTextCommand{\textcapdot}{PU}{\9052\100}%* U+2A40
19161 % U+2A4F DOUBLE SQUARE UNION; \sqdoublecup (mathabx)
19162 \DeclareTextCommand{\textsqdoublecup}{PU}{\9052\117}%* U+2A4F
19163 %* \textsqdoublecup -> \doublesqcup (MnSymbol)
19164 % U+2A55 TWO INTERSECTING LOGICAL AND; \doublewedge (MnSymbol)
19165 \DeclareTextCommand{\textdoublewedge}{PU}{\9052\125}%* U+2A55
19166 % U+2A56 TWO INTERSECTING LOGICAL OR; \doublevee (MnSymbol)
19167 \DeclareTextCommand{\textdoublevee}{PU}{\9052\126}%* U+2A56
19168 %* \textdoublevee -> \merge (stmaryrd)
19169 % U+2A5E LOGICAL AND WITH DOUBLE OVERBAR;

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19170 % \doublebarwedge (AmS)
19171 \DeclareTextCommand{\textdoublebarwedge}{PU}{\9052\136}%* U+2A5E
19172 % U+2A63 LOGICAL OR WITH DOUBLE UNDERBAR;
19173 % \veedoublebar (mahtabx)
19174 \DeclareTextCommand{\textveedoublebar}{PU}{\9052\143}%* U+2A63
19175 % U+2A66 EQUALS SIGN WITH DOT BELOW; \eqdot (MnSymbol)
19176 \DeclareTextCommand{\texteqdot}{PU}{\9052\146}%* U+2A66
19177 % \neqdot (MnSymbol)
19178 \DeclareTextCommand{\textneqdot}{PU}{\9052\146\83\070}%* U+2A66 U+0338
19179 % U+2A74 DOUBLE COLON EQUAL; \coloncolonequals (colonequals)
19180 \DeclareTextCommand{\textcoloncolonequals}{PU}{\9052\164}%* U+2A74
19181 % U+2A7D LESS-THAN OR SLANTED EQUAL TO; \leqslant (AmS)
19182 \DeclareTextCommand{\textleqslant}{PU}{\9052\175}%* U+2A7D
19183 % \nleqslant (txfonts/pxfonts)
19184 \DeclareTextCommand{\textnleqslant}{PU}{\9052\175\83\070}%* U+2A7D U+0338
19185 % U+2A7E GREATER-THAN OR SLANTED EQUAL TO; \geqslant (AmS)
19186 \DeclareTextCommand{\textgeqslant}{PU}{\9052\176}%* U+2A7E
19187 % \ngeqslant (txfonts/pxfonts)
19188 \DeclareTextCommand{\textngeqslant}{PU}{\9052\176\83\070}%* U+2A7E U+0338
19189 % U+2A85 LESS-THAN OR APPROXIMATE; \lessapprox (AmS)
19190 \DeclareTextCommand{\textlessapprox}{PU}{\9052\205}%* U+2A85
19191 % \nlessapprox (txfonts/pxfonts)
19192 \DeclareTextCommand{\textnlessapprox}{PU}{\9052\205\83\070}%* U+2A85 U+0338
19193 % U+2A86 GREATER-THAN OR APPROXIMATE; \gtrapprox (AmS)
19194 \DeclareTextCommand{\textgtrapprox}{PU}{\9052\206}%* U+2A86
19195 % \ngtrapprox (txfonts/pxfonts)
19196 \DeclareTextCommand{\textngtrapprox}{PU}{\9052\206\83\070}%* U+2A86 U+0338
19197 % U+2A87 LESS-THAN AND SINGLE-LINE NOT EQUAL TO; \lneq (AmS)
19198 \DeclareTextCommand{\textlneq}{PU}{\9052\207}%* U+2A87
19199 % U+2A88 GREATER-THAN AND SINGLE-LINE NOT EQUAL TO;
19200 % \gneq (AmS)
19201 \DeclareTextCommand{\textgneq}{PU}{\9052\210}%* U+2A88
19202 % U+2A89 LESS-THAN AND NOT APPROXIMATE; \lnapprox (AmS)
19203 \DeclareTextCommand{\textlnapprox}{PU}{\9052\211}%* U+2A89
19204 % U+2A8A GREATER-THAN AND NOT APPROXIMATE; \gnapprox (AmS)
19205 \DeclareTextCommand{\textgnapprox}{PU}{\9052\212}%* U+2A8A
19206 % U+2A8B LESS-THAN ABOVE DOUBLE-LINE EQUAL ABOVE GREATER-
    THAN;
19207 % \lesseqgtr (AmS)
19208 \DeclareTextCommand{\textlesseqgtr}{PU}{\9052\213}%* U+2A8B
19209 % U+2A8C GREATER-THAN ABOVE DOUBLE-LINE EQUAL ABOVE LESS-
    THAN;
19210 % \gtreqless (AmS)
19211 \DeclareTextCommand{\textgtreqless}{PU}{\9052\214}%* U+2A8C
19212 % U+2A95 SLANTED EQUAL TO OR LESS-THAN; \eqslantless (AmS)
19213 \DeclareTextCommand{\texteqslantless}{PU}{\9052\225}%* U+2A95
19214 % U+2A96 SLANTED EQUAL TO OR GREATER-THAN; \eqslantgtr (AmS)
19215 \DeclareTextCommand{\texteqslantgtr}{PU}{\9052\226}%* U+2A96
19216 % U+2AA6 LESS-THAN CLOSED BY CURVE; \leftslice (stmaryrd)
19217 \DeclareTextCommand{\textleftslice}{PU}{\9052\246}%* U+2AA6
19218 % U+2AA7 GREATER-THAN CLOSED BY CURVE; \rightslice (stmaryrd)
19219 \DeclareTextCommand{\textright slice}{PU}{\9052\247}%* U+2AA7
19220 % U+2AAF PRECEDES ABOVE SINGLE-LINE EQUALS SIGN; \preceq (Mn-
    Symbol)

```



```

19221 \DeclareTextCommand{\textpreceq}{PU}{\9052\257}%* U+2AAF
19222 % \npreceq (txfonts/pxfonts)
19223 \DeclareTextCommand{\textnpreceq}{PU}{\9052\257\83\070}%* U+2AAF U+0338
19224 % U+2AB0 SUCCEEDS ABOVE SINGLE-LINE EQUALS SIGN; \succeq (Mn-
Symbol)
19225 \DeclareTextCommand{\textsucceq}{PU}{\9052\260}%* U+2AB0
19226 % \nsucceq (txfonts/pxfonts)
19227 \DeclareTextCommand{\textnsucceq}{PU}{\9052\260\83\070}%* U+2AB0 U+0338
19228 % U+2AB1 PRECEDES ABOVE SINGLE-LINE NOT EQUAL TO; \prec-
neq (mathabx)
19229 \DeclareTextCommand{\textprecneq}{PU}{\9052\261}%* U+2AB1
19230 % U+2AB2 SUCCEEDS ABOVE SINGLE-LINE NOT EQUAL TO; \succ-
neq (mathabx)
19231 \DeclareTextCommand{\textsuccneq}{PU}{\9052\262}%* U+2AB2
19232 % U+2AB3 PRECEDES ABOVE EQUALS SIGN; \preceqq (txfonts/pxfonts)
19233 \DeclareTextCommand{\textpreceqq}{PU}{\9052\263}%* U+2AB3
19234 % \npreceqq (txfonts/pxfonts)
19235 \DeclareTextCommand{\textnpreceqq}{PU}{\9052\263\83\070}%* U+2AB3 U+0338
19236 % U+2AB4 SUCCEEDS ABOVE EQUALS SIGN; \succeqq (txfonts/pxfonts)
19237 \DeclareTextCommand{\textsuccqq}{PU}{\9052\264}%* U+2AB4
19238 % \nsucceqq (txfonts/pxfonts)
19239 \DeclareTextCommand{\textnsucceqq}{PU}{\9052\264\83\070}%* U+2AB4 U+0338
19240 % U+2AB5 PRECEDES ABOVE NOT EQUAL TO; \precneqq (txfonts/pxfonts)
19241 \DeclareTextCommand{\textprecneqq}{PU}{\9052\265}%* U+2AB5
19242 % U+2AB6 SUCCEEDS ABOVE NOT EQUAL TO; \succneqq (txfonts/pxfonts)
19243 \DeclareTextCommand{\textsuccneqq}{PU}{\9052\266}%* U+2AB6
19244 % U+2AB7 PRECEDES ABOVE ALMOST EQUAL TO; \precapprox (AmS)
19245 \DeclareTextCommand{\textprecapprox}{PU}{\9052\267}%* U+2AB7
19246 % \nprecapprox (txfonts/pxfonts)
19247 \DeclareTextCommand{\textnprecapprox}{PU}{\9052\267\83\070}%* U+2AB7 U+0338
19248 % U+2AB8 SUCCEEDS ABOVE ALMOST EQUAL TO; \succapprox (AmS)
19249 \DeclareTextCommand{\textsuccapprox}{PU}{\9052\270}%* U+2AB8
19250 % \nsuccapprox (txfonts/pxfonts)
19251 \DeclareTextCommand{\textnsuccapprox}{PU}{\9052\270\83\070}%* U+2AB8 U+0338
19252 % U+2AB9 PRECEDES ABOVE NOT ALMOST EQUAL TO; \precnap-
prox (AmS)
19253 \DeclareTextCommand{\textprecnapprox}{PU}{\9052\271}%* U+2AB9
19254 % U+2ABA SUCCEEDS ABOVE NOT ALMOST EQUAL TO; \succnap-
prox (AmS)
19255 \DeclareTextCommand{\textsuccnapprox}{PU}{\9052\272}%* U+2ABA
19256 % U+2AC5 SUBSET OF ABOVE EQUALS SIGN; \subseteqq (AmS)
19257 \DeclareTextCommand{\textsubseteqq}{PU}{\9052\305}%* U+2AC5
19258 % \nsubseteqq (txfonts/pxfonts, mathabx)
19259 \DeclareTextCommand{\textnsubseteqq}{PU}{\9052\305\83\070}%* U+2AC5 U+0338
19260 % U+2AC6 SUPERSET OF ABOVE EQUALS SIGN; \supseteqq (AmS)
19261 \DeclareTextCommand{\textsupseteqq}{PU}{\9052\306}%* U+2AC6
19262 % \nsupseteqq (mathabx)
19263 \DeclareTextCommand{\textnsupseteqq}{PU}{\9052\306\83\070}%* U+2AC6 U+0338
19264 % U+2AE3 DOUBLE VERTICAL BAR LEFT TURNSTILE
19265 \DeclareTextCommand{\textdashV}{PU}{\9052\343}%* U+2AE3
19266 %* \textdashV -> \leftVdash (MnSymbol)
19267 % \ndashV (mathabx)
19268 \DeclareTextCommand{\textndashV}{PU}{\9052\343\83\070}%* U+2AE3 U+0338
19269 %* \textndashV -> \nleftVdash (MnSymbol)

```

19270 % U+2AE4 VERTICAL BAR DOUBLE LEFT TURNSTILE; \Dashv (mathabx)  
 19271 \DeclareTextCommand{\textDashv}{PU}{\9052\344}%\* U+2AE4  
 19272 %\* \textDashv -> \leftmodels (MnSymbol)  
 19273 % \nDashv (mathabx)  
 19274 \DeclareTextCommand{\textnDashv}{PU}{\9052\344\83\070}%\* U+2AE4 U+0338  
 19275 %\* \textnDashv -> \nleftmodels (MnSymbol)  
 19276 % U+2AE5 DOUBLE VERTICAL BAR DOUBLE LEFT TURNSTILE;  
 19277 % \DashV (mathabx)  
 19278 \DeclareTextCommand{\textDashV}{PU}{\9052\345}%\* U+2AE5  
 19279 %\* \textDashV -> \leftModels (MnSymbol)  
 19280 % \nDashV (mathabx)  
 19281 \DeclareTextCommand{\textnDashV}{PU}{\9052\345\83\070}%\* U+2AE5 U+0338  
 19282 %\* \textnDashV -> \nleftModels (MnSymbol)  
 19283 % U+2AEA DOUBLE DOWN TACK; \downmodels (MnSymbol)  
 19284 \DeclareTextCommand{\textdownmodels}{PU}{\9052\352}%\* U+2AEA  
 19285 % \ndownmodels (MnSymbol)  
 19286 \DeclareTextCommand{\textndownmodels}{PU}{\9052\352\83\070}%\* U+2AEA U+0338  
 19287 % U+2AEB DOUBLE UP TACK; \upmodels (MnSymbol)  
 19288 \DeclareTextCommand{\textupmodels}{PU}{\9052\353}%\* U+2AEB  
 19289 % \nupmodels (MnSymbol)  
 19290 \DeclareTextCommand{\textnupmodels}{PU}{\9052\353\83\070}%\* U+2AEB U+0338  
 19291 % U+2AEF VERTICAL LINE WITH CIRCLE ABOVE; \upspoon (MnSymbol)  
 19292 \DeclareTextCommand{\textupspoon}{PU}{\9052\357}%\* U+2AEF  
 19293 % U+2AF4 TRIPLE VERTICAL BAR BINARY RELATION;  
 19294 % \interleave (stmaryrd)  
 19295 \DeclareTextCommand{\textinterleave}{PU}{\9052\364}%\* U+2AF4  
 19296 % U+2AFD DOUBLE SOLIDUS OPERATOR; \sslash (stmaryrd)  
 19297 \DeclareTextCommand{\textsslash}{PU}{\9052\375}%\* U+2AFD  
 19298 %\* \textsslash -> \varparallel (txfonts\pxfonts)

#### 46.2.36 Miscellaneous Symbols and Arrows: U+2B00 to U+2BFF

19299 % U+2B20 WHITE PENTAGON; \pentagon (wasysym)  
 19300 \DeclareTextCommand{\textpentagon}{PU}{\9053\040}%\* U+2B20  
 19301 % U+2B21 WHITE HEXAGON; \varhexagon (wasysym)  
 19302 \DeclareTextCommand{\textvarhexagon}{PU}{\9053\041}%\* U+2B21

#### 46.2.37 Latin Extended-C: U+2C60 to U+2C7F

19303 % U+2C7C LATIN SUBSCRIPT SMALL LETTER J  
 19304 \DeclareTextCommand{\textjinferior}{PU}{\9054\174}%\* U+2C7C

#### 46.2.38 Supplemental Punctuation: U+2E00 to U+2E7F

19305 % U+2E13 DOTTED OBELOS; \slashdiv (MnSymbol)  
 19306 \DeclareTextCommand{\textslashdiv}{PU}{\9056\023}%\* U+2E13  
 19307 % U+2E18 INVERTED INTERROBANG; \textinterrobangdown (textcomp)  
 19308 \DeclareTextCommand{\textinterrobangdown}{PU}{\9056\030}% U+2E18  
 19309 % U+2E2D FIVE DOT MARK; \fivedots (MnSymbol)  
 19310 \DeclareTextCommand{\textfivedots}{PU}{\9056\055}%\* U+2E2D

#### 46.2.39 Modifier Tone Letters: U+A700 to U+A71F

19311 % U+A71B MODIFIER LETTER RAISED UP ARROW; \textupstep (tipa)  
 19312 \DeclareTextCommand{\textupstep}{PU}{\9247\033}% U+A71B  
 19313 % U+A71C MODIFIER LETTER RAISED DOWN ARROW;  
 19314 % \textdownstep (tipa)  
 19315 \DeclareTextCommand{\textdownstep}{PU}{\9247\034}% U+A71C

#### 46.2.40 Latin Extended-D: U+A720 to U+A7FF

```
19316 % U+A727 LATIN SMALL LETTER HENG; \textheng (tipx)
19317 \DeclareTextCommand{\textPUheng}{PU}{\9247\047}% U+A727
19318 %* \textPUheng -> \textheng (tipx)
19319 % U+A72C LATIN CAPITAL LETTER CUATRILLO; \textlhookfour (tipx)
19320 \DeclareTextCommand{\textPULhookfour}{PU}{\9247\054}% U+A72C
19321 %* \textPULhookfour -> \textlhookfour (tipx)
19322 % U+A730 LATIN LETTER SMALL CAPITAL F; \textscf (tipx)
19323 \DeclareTextCommand{\textPUScf}{PU}{\9247\060}% U+A730
19324 %* \textPUScf -> \textscf (tipx)
19325 % U+A735 LATIN SMALL LETTER AO; \textao lig (tipx)
19326 \DeclareTextCommand{\textPUaolig}{PU}{\9247\065}% U+A735
19327 %* \textPUaolig -> \textao lig (tipx)
19328 % U+A74F LATIN SMALL LETTER OO; \oo (wsuipa)
19329 \DeclareTextCommand{\textoo}{PU}{\9247\117}%* U+A74F
19330 % U+A788 MODIFIER LETTER LOW CIRCUMFLEX ACCENT
19331 \DeclareTextCommand{\textcircumlw}{PU}{\9247\210}% U+A788
```

#### 46.2.41 Alphabetic Presentation Forms: U+FB00 to U+FB4F

```
19332 % U+FB01 LATIN SMALL LIGATURE FI; fi
19333 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01
19334 % U+FB02 LATIN SMALL LIGATURE FL; fl
19335 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02
```

#### 46.2.42 Musical Symbols: U+1D100 to U+1D1FF

```
19336 % U+1D13B MUSICAL SYMBOL WHOLE REST; \GaPa (harmony)
19337 \DeclareTextCommand{\textGaPa}{PU}{\9330\064\9335\073}%* U+1D13B
19338 % U+1D13C MUSICAL SYMBOL HALF REST; \HaPa (harmony)
19339 \DeclareTextCommand{\textHaPa}{PU}{\9330\064\9335\074}%* U+1D13C
19340 % U+1D13D MUSICAL SYMBOL QUARTER REST; \ViPa (harmony)
19341 \DeclareTextCommand{\textViPa}{PU}{\9330\064\9335\075}%* U+1D13D
19342 % U+1D13E MUSICAL SYMBOL EIGHTH REST; \AcPa (harmony)
19343 \DeclareTextCommand{\textAcPa}{PU}{\9330\064\9335\076}%* U+1D13E
19344 % U+1D13F MUSICAL SYMBOL SIXTEENTH REST; \SePa (harmony)
19345 \DeclareTextCommand{\textSePa}{PU}{\9330\064\9335\077}%* U+1D13F
19346 % U+1D140 MUSICAL SYMBOL THIRTY-SECOND REST; \ZwPa (harmony)
19347 \DeclareTextCommand{\textZwPa}{PU}{\9330\064\9335\100}%* U+1D140
19348 % U+1D15D MUSICAL SYMBOL WHOLE NOTE; \fullnote (wasysym)
19349 \DeclareTextCommand{\textfullnote}{PU}{\9330\064\9335\135}%* U+1D15D
19350 %* \textfullnote -> \Ganz (harmony)
19351 % U+1D15E MUSICAL SYMBOL HALF NOTE; \halfnote (wasysym)
19352 \DeclareTextCommand{\texthalfnote}{PU}{\9330\064\9335\136}%* U+1D15E
19353 %* \texthalfnote -> \Halb (harmony)
19354 % U+1D15F MUSICAL SYMBOL QUARTER NOTE; \Vier (harmony)
19355 \DeclareTextCommand{\textVier}{PU}{\9330\064\9335\137}%* U+1D15F
19356 % U+1D160 MUSICAL SYMBOL EIGHTH NOTE; \Acht (harmony)
19357 \DeclareTextCommand{\textAcht}{PU}{\9330\064\9335\140}%* U+1D160
19358 % U+1D161 MUSICAL SYMBOL SIXTEENTH NOTE; \Sech (harmony)
19359 \DeclareTextCommand{\textSech}{PU}{\9330\064\9335\141}%* U+1D161
19360 % U+1D162 MUSICAL SYMBOL THIRTY-SECOND NOTE; \Zwdr (harmony)
19361 \DeclareTextCommand{\textZwdr}{PU}{\9330\064\9335\142}%* U+1D162
```

#### 46.2.43 Miscellaneous Symbols and Pictographs: U+1F300 to U+1F5FF

19362 % U+1F30D EARTH GLOBE EUROPE-AFRICA; \Mundus (marvosym)  
 19363 \DeclareTextCommand{\textMundus}{PU}{\9330\074\9337\015}%\* U+1F30D  
 19364 % U+1F319 CRESCENT MOON; \Moon (marvosym)  
 19365 \DeclareTextCommand{\textMoon}{PU}{\9330\074\9337\031}%\* U+1F319  
 19366 % U+1F468 MAN; \ManFace (marvosym)  
 19367 \DeclareTextCommand{\textManFace}{PU}{\9330\075\9334\150}%\* U+1F468  
 19368 % U+1F469 WOMAN; \WomanFace (marvosym)  
 19369 \DeclareTextCommand{\textWomanFace}{PU}{\9330\075\9334\151}%\* U+1F469  
 19370 %\* \textWomanFace -> \Womanface (marvosym)  
 19371 % U+1F4E0 FAX MACHINE; \Fax (marvosym)  
 19372 \DeclareTextCommand{\textFax}{PU}{\9330\075\9334\340}%\* U+1F4E0  
 19373 %\* \textFax -> \Faxmachine (marvosym)  
 19374 % U+1F525 FIRE; \Fire (ifsym)  
 19375 \DeclareTextCommand{\textFire}{PU}{\9330\075\9335\045}%\* U+1F525

#### 46.2.44 Transport and Map Symbols: U+1F680 to U+1F6FF

19376 % U+1F6B2 BICYCLE; \Bicycle (marvosym)  
 19377 \DeclareTextCommand{\textBicycle}{PU}{\9330\075\9336\262}%\* U+1F6B2  
 19378 % U+1F6B9 MENS SYMBOL; \Gentsroom (marvosym)  
 19379 \DeclareTextCommand{\textGentsroom}{PU}{\9330\075\9336\271}%\* U+1F6B9  
 19380 % U+1F6BA WOMENS SYMBOL; \Ladiesroom (marvosym)  
 19381 \DeclareTextCommand{\textLadiesroom}{PU}{\9330\075\9336\272}%\* U+1F6BA

#### 46.2.45 Miscellaneous

19382 \DeclareTextCommand{\SS}{PU}{SS}%  
 19383 % \textcopyleft (textcomp)  
 19384 \DeclareTextCommand{\textcopyleft}{PU}{\9041\204\9040\335}% U+2184 U+20DD  
 19385 % \ccnc (ccllicenses)  
 19386 \DeclareTextCommand{\textccnc}{PU}{\80\044\9040\340}%\* U+0024 U+20E0  
 19387 % \ccnd (ccllicenses)  
 19388 \DeclareTextCommand{\textccnd}{PU}{=\9040\335}%\* U+003D U+20DD  
 19389 % \ccsa (ccllicenses)  
 19390 \DeclareTextCommand{\textccsa}{PU}{\9047\362\9040\335}%\* U+27F2 U+20DD  
 19391 % \Info (marvosym, china2e)  
 19392 \DeclareTextCommand{\textInfo}{PU}{\9330\065\9334\042\9040\336}%\* U+1D422 U+20DE  
 19393 % \CESign (marvosym)  
 19394 \DeclareTextCommand{\textCESign}{PU}{\80\103\80\105}%\* U+0043 U+0045  
 19395 %\* \textCESign -> \CESign (marvosym)

#### 46.2.46 Aliases

Aliases (german.sty)

19396 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}%  
 19397 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}%  
 19398 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}%  
 19399 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}%  
 19400 \DeclareTextCommand{\textflqq}{PU}{\guillemetleft}%  
 19401 \DeclareTextCommand{\textfrqq}{PU}{\guillemetright}%  
 19402 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}%  
 19403 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}%  
 Aliases (math names)

19404 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}%\*  
 19405 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}%\*  
 19406 \DeclareTextCommand{\textdiv}{PU}{\textdivide}%\*

```

19407 \DeclareTextCommand{\textpm}{PU}{\textplusminus}%*
19408 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}%*
19409 </puenc>

```

## 46.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```

19410 <*puvnenc>

19411 \DeclareTextCommand{\abreve}{PU}{\81\003}% U+0103
19412 \DeclareTextCommand{\acircumflex}{PU}{\80\342}% U+00E2
19413 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}% U+00EA
19414 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}% U+00F4
19415 \DeclareTextCommand{\ohorn}{PU}{\81\241}% U+01A1
19416 \DeclareTextCommand{\uhorn}{PU}{\81\260}% U+01B0
19417 \DeclareTextCommand{\ABREVE}{PU}{\81\002}% U+0102
19418 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}% U+00C2
19419 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}% U+00CA
19420 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}% U+00D4
19421 \DeclareTextCommand{\OHORN}{PU}{\81\240}% U+01A0
19422 \DeclareTextCommand{\UHORN}{PU}{\81\257}% U+01AF

19423 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1
19424 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}% U+1EA1
19425 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0
19426 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}% U+1EA3
19427 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3
19428 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}% U+1EAF
19429 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}% U+1EB7
19430 \DeclareTextCompositeCommand{\`}{PU}{\abreve}{\9036\261}% U+1EB1
19431 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}% U+1EB3
19432 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}% U+1EB5
19433 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}% U+1EA5
19434 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}% U+1EAD
19435 \DeclareTextCompositeCommand{\`}{PU}{\acircumflex}{\9036\247}% U+1EA7
19436 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}% U+1EA9
19437 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}% U+1EAB
19438 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9
19439 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}% U+1EB9
19440 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8
19441 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}% U+1EBB
19442 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD
19443 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}% U+1EBF
19444 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}% U+1EC7
19445 \DeclareTextCompositeCommand{\`}{PU}{\ecircumflex}{\9036\301}% U+1EC1
19446 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}% U+1EC3
19447 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}% U+1EC5
19448 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED
19449 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}% U+1ECB
19450 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC
19451 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}% U+1EC9
19452 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129
19453 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3
19454 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}% U+1ECD

```

19455 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
19456 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}% U+1ECF  
19457 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
19458 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}% U+1ED1  
19459 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}% U+1ED9  
19460 \DeclareTextCompositeCommand{\`}{PU}{\ocircumflex}{\9036\323}% U+1ED3  
19461 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}% U+1ED5  
19462 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}% U+1ED7  
19463 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}% U+1EDB  
19464 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}% U+1EE3  
19465 \DeclareTextCompositeCommand{\`}{PU}{\ohorn}{\9036\335}% U+1EDD  
19466 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}% U+1EDF  
19467 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}% U+1EE1  
19468 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
19469 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}% U+1EE5  
19470 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
19471 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}% U+1EE7  
19472 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
19473 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}% U+1EE9  
19474 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}% U+1EF1  
19475 \DeclareTextCompositeCommand{\`}{PU}{\uhorn}{\9036\353}% U+1EEB  
19476 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}% U+1EED  
19477 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}% U+1EEF  
19478 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
19479 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}% U+1EF5  
19480 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3  
19481 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}% U+1EF7  
19482 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9  
19483 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
19484 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}% U+1EA0  
19485 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
19486 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}% U+1EA2  
19487 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
19488 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}% U+1EAE  
19489 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}% U+1EB6  
19490 \DeclareTextCompositeCommand{\`}{PU}{\ABREVE}{\9036\260}% U+1EB0  
19491 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}% U+1EB2  
19492 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}% U+1EB4  
19493 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}% U+1EA4  
19494 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}% U+1EAC  
19495 \DeclareTextCompositeCommand{\`}{PU}{\ACIRCUMFLEX}{\9036\246}% U+1EA6  
19496 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}% U+1EA8  
19497 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}% U+1EAA  
19498 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
19499 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}% U+1EB8  
19500 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
19501 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}% U+1EBA  
19502 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EB C  
19503 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\276}% U+1EBE  
19504 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}% U+1EC6  
19505 \DeclareTextCompositeCommand{\`}{PU}{\ECIRCUMFLEX}{\9036\300}% U+1EC0  
19506 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}% U+1EC2  
19507 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}% U+1EC4  
19508 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD

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19509 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}% U+1ECA
19510 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC
19511 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}% U+1EC8
19512 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128
19513 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3
19514 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}% U+1ECC
19515 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2
19516 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}% U+1ECE
19517 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5
19518 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}% U+1ED0
19519 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}% U+1ED8
19520 \DeclareTextCompositeCommand{\`}{PU}{\OCIRCUMFLEX}{\9036\322}% U+1ED2
19521 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}% U+1ED4
19522 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}% U+1ED6
19523 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\332}% U+1EDA
19524 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}% U+1EE2
19525 \DeclareTextCompositeCommand{\`}{PU}{\OHORN}{\9036\334}% U+1EDC
19526 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}% U+1EDE
19527 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}% U+1EE0
19528 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA
19529 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4
19530 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9
19531 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}% U+1EE6
19532 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168
19533 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}% U+1EE8
19534 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}% U+1EF0
19535 \DeclareTextCompositeCommand{\`}{PU}{\UHORN}{\9036\352}% U+1EEA
19536 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}% U+1EEC
19537 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}% U+1EEE
19538 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD
19539 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4
19540 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2
19541 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}% U+1EF6
19542 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8
19543 </p>

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## 46.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

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19544 (*puarenc)

19545 % U+0621;afi57409;ARABIC LETTER HAMZA
19546 \DeclareTextCommand{\hamza}{PU}{\86\041}% U+0621
19547 % U+0622;afi57410;ARABIC LETTER ALEF WITH MADDA ABOVE
19548 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% U+0622
19549 % U+0623;afi57411;ARABIC LETTER ALEF WITH HAMZA ABOVE
19550 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% U+0623
19551 % U+0624;afi57412;ARABIC LETTER WAW WITH HAMZA ABOVE
19552 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% U+0624
19553 % U+0625;afi57413;ARABIC LETTER ALEF WITH HAMZA BELOW
19554 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% U+0625
19555 % U+0626;afi57414;ARABIC LETTER YEH WITH HAMZA ABOVE
19556 \DeclareTextCommand{\yahamza}{PU}{\86\046}% U+0626
19557 % U+0627;afi57415;ARABIC LETTER ALEF

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19558 \DeclareTextCommand{\alef}{PU}{\86\047}% U+0627  
 19559 % U+0628;afii57416;ARABIC LETTER BEH  
 19560 \DeclareTextCommand{\baa}{PU}{\86\050}% U+0628  
 19561 % U+0629;afii57417;ARABIC LETTER TEH MARBUTA  
 19562 \DeclareTextCommand{\T}{PU}{\86\051}% U+0629  
 19563 % U+062A;afii57418;ARABIC LETTER TEH  
 19564 \DeclareTextCommand{\taa}{PU}{\86\052}% U+062A  
 19565 % U+062B;afii57419;ARABIC LETTER THEH  
 19566 \DeclareTextCommand{\thaa}{PU}{\86\053}% U+062B  
 19567 % U+062C;afii57420;ARABIC LETTER JEEM  
 19568 \DeclareTextCommand{\jeem}{PU}{\86\054}% U+062C  
 19569 % U+062D;afii57421;ARABIC LETTER HAH  
 19570 \DeclareTextCommand{\Haa}{PU}{\86\055}% U+062D  
 19571 % U+062E;afii57422;ARABIC LETTER KHAH  
 19572 \DeclareTextCommand{\kha}{PU}{\86\056}% U+062E  
 19573 % U+062F;afii57423;ARABIC LETTER DAL  
 19574 \DeclareTextCommand{\dal}{PU}{\86\057}% U+062F  
 19575 % U+0630;afii57424;ARABIC LETTER THAL  
 19576 \DeclareTextCommand{\dhal}{PU}{\86\060}% U+0630  
 19577 % U+0631;afii57425;ARABIC LETTER REH  
 19578 \DeclareTextCommand{\ra}{PU}{\86\061}% U+0631  
 19579 % U+0632;afii57426;ARABIC LETTER ZAIN  
 19580 \DeclareTextCommand{\zay}{PU}{\86\062}% U+0632  
 19581 % U+0633;afii57427;ARABIC LETTER SEEN  
 19582 \DeclareTextCommand{\seen}{PU}{\86\063}% U+0633  
 19583 % U+0634;afii57428;ARABIC LETTER SHEEN  
 19584 \DeclareTextCommand{\sheen}{PU}{\86\064}% U+0634  
 19585 % U+0635;afii57429;ARABIC LETTER SAD  
 19586 \DeclareTextCommand{\sad}{PU}{\86\065}% U+0635  
 19587 % U+0636;afii57430;ARABIC LETTER DAD  
 19588 \DeclareTextCommand{\dad}{PU}{\86\066}% U+0636  
 19589 % U+0637;afii57431;ARABIC LETTER TAH  
 19590 \DeclareTextCommand{\Ta}{PU}{\86\067}% U+0637  
 19591 % U+0638;afii57432;ARABIC LETTER ZAH  
 19592 \DeclareTextCommand{\za}{PU}{\86\070}% U+0638  
 19593 % U+0639;afii57433;ARABIC LETTER AIN  
 19594 \DeclareTextCommand{\ayn}{PU}{\86\071}% U+0639  
 19595 % U+063A;afii57434;ARABIC LETTER GHAIN  
 19596 \DeclareTextCommand{\ghayn}{PU}{\86\072}% U+063A  
 19597 % U+0640;afii57440;ARABIC TATWEEL  
 19598 \DeclareTextCommand{\tatweel}{PU}{\86\100}% U+0640  
 19599 % U+0641;afii57441;ARABIC LETTER FEH  
 19600 \DeclareTextCommand{\fa}{PU}{\86\101}% U+0641  
 19601 % U+0642;afii57442;ARABIC LETTER QAF  
 19602 \DeclareTextCommand{\qaf}{PU}{\86\102}% U+0642  
 19603 % U+0643;afii57443;ARABIC LETTER KAF  
 19604 \DeclareTextCommand{\kaf}{PU}{\86\103}% U+0643  
 19605 % U+0644;afii57444;ARABIC LETTER LAM  
 19606 \DeclareTextCommand{\lam}{PU}{\86\104}% U+0644  
 19607 % U+0645;afii57445;ARABIC LETTER MEEM  
 19608 \DeclareTextCommand{\meem}{PU}{\86\105}% U+0645  
 19609 % U+0646;afii57446;ARABIC LETTER NOON  
 19610 \DeclareTextCommand{\nun}{PU}{\86\106}% U+0646  
 19611 % U+0647;afii57470;ARABIC LETTER HEH



19612 \DeclareTextCommand{\ha}{PU}{\86\107}% U+0647  
 19613 % U+0648;afii57448;ARABIC LETTER WAW  
 19614 \DeclareTextCommand{\waw}{PU}{\86\110}% U+0648  
 19615 % U+0649;afii57449;ARABIC LETTER ALEF MAKSURA  
 19616 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% U+0649  
 19617 % U+064A;afii57450;ARABIC LETTER YEH  
 19618 \DeclareTextCommand{\ya}{PU}{\86\112}% U+064A  
  
 19619 % U+064B;afii57451;ARABIC FATHATAN  
 19620 \DeclareTextCommand{\nasb}{PU}{\86\113}% U+064B  
 19621 % U+064C;afii57452;ARABIC DAMMATAN  
 19622 \DeclareTextCommand{\raff}{PU}{\86\114}% U+064C  
 19623 % U+064D;afii57453;ARABIC KASRATAN  
 19624 \DeclareTextCommand{\jarr}{PU}{\86\115}% U+064D  
 19625 % U+064E;afii57454;ARABIC FATHA  
 19626 \DeclareTextCommand{\fatha}{PU}{\86\116}% U+064E  
 19627 % U+064F;afii57455;ARABIC DAMMA  
 19628 \DeclareTextCommand{\damma}{PU}{\86\117}% U+064F  
 19629 % U+0650;afii57456;ARABIC KASRA  
 19630 \DeclareTextCommand{\kasra}{PU}{\86\120}% U+0650  
 19631 % U+0651;afii57457;ARABIC SHADDA  
 19632 \DeclareTextCommand{\shadda}{PU}{\86\121}% U+0651  
 19633 % U+0652;afii57458;ARABIC SUKUN  
 19634 \DeclareTextCommand{\sukun}{PU}{\86\122}% U+0652  
  
 Farsi  
 19635 % U+067E ARABIC LETTER PEH; afii57506  
 19636 \DeclareTextCommand{\peh}{PU}{\86\176}% U+067E  
 19637 % U+0686 ARABIC LETTER TCHEH; afii57507  
 19638 \DeclareTextCommand{\tcheh}{PU}{\86\206}% U+0686  
 19639 % U+0698 ARABIC LETTER JEH; afii57508  
 19640 \DeclareTextCommand{\jeh}{PU}{\86\230}% U+0698  
 19641 % U+06A9 ARABIC LETTER KEHEH  
 19642 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% U+06A9  
 19643 % U+06AF ARABIC LETTER GAF; afii57509  
 19644 \DeclareTextCommand{\gaf}{PU}{\86\257}% U+06AF  
 19645 % U+06CC ARABIC LETTER FARSI YEH  
 19646 \DeclareTextCommand{\farsiya}{PU}{\86\314}% U+06CC  
  
 19647 % U+200C ZERO WIDTH NON-JOINER; afii61664  
 19648 \DeclareTextCommand{\ZWJ}{PU}{\9040\014}% U+200C  
 19649 % U+200D ZERO WIDTH JOINER; afii301  
 19650 \DeclareTextCommand{\textEncodingNoboundary}{PU}{\9040\015}% U+200D  
 19651 \langle \rangle  
 19652 \langle \*psdextra \rangle  
 19653 \Hy@VersionCheck{psdextra.def}  
 19654 \DeclareTextCommand{\textGamma}{PU}{\83\223}%\* U+0393  
 19655 \DeclareTextCommand{\textDelta}{PU}{\83\224}%\* U+0394  
 19656 \DeclareTextCommand{\textTheta}{PU}{\83\230}%\* U+0398  
 19657 \DeclareTextCommand{\textLambda}{PU}{\83\233}%\* U+039B  
 19658 \DeclareTextCommand{\textXi}{PU}{\83\236}%\* U+039E  
 19659 \DeclareTextCommand{\textPi}{PU}{\83\240}%\* U+03A0  
 19660 \DeclareTextCommand{\textSigma}{PU}{\83\243}%\* U+03A3  
 19661 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}%\* U+03A5  
 19662 \DeclareTextCommand{\textPhi}{PU}{\83\246}%\* U+03A6

19663 \DeclareTextCommand{\textChi}{PU}{\83\247}% U+03A7  
 19664 \DeclareTextCommand{\textPsi}{PU}{\83\250}%\* U+03A8  
 19665 \DeclareTextCommand{\textOmega}{PU}{\83\251}%\* U+03A9  
 19666 \DeclareTextCommand{\textalpha}{PU}{\83\261}%\* U+03B1  
 19667 \DeclareTextCommand{\textbeta}{PU}{\83\262}%\* U+03B2  
 19668 \DeclareTextCommand{\textgamma}{PU}{\83\263}%\* U+03B3  
 19669 \DeclareTextCommand{\textdelta}{PU}{\83\264}%\* U+03B4  
 19670 \DeclareTextCommand{\textepsilon}{PU}{\83\265}%\* U+03B5  
 19671 \DeclareTextCommand{\textzeta}{PU}{\83\266}%\* U+03B6  
 19672 \DeclareTextCommand{\texteta}{PU}{\83\267}%\* U+03B7  
 19673 \DeclareTextCommand{\texttheta}{PU}{\83\270}%\* U+03B8  
 19674 \DeclareTextCommand{\textiota}{PU}{\83\271}%\* U+03B9  
 19675 \DeclareTextCommand{\textkappa}{PU}{\83\272}%\* U+03BA  
 19676 \DeclareTextCommand{\textlambda}{PU}{\83\273}%\* U+03BB  
 19677 \DeclareTextCommand{\textmugreek}{PU}{\83\274}%\* U+03BC  
 19678 \DeclareTextCommand{\textnu}{PU}{\83\275}%\* U+03BD  
 19679 \DeclareTextCommand{\textxi}{PU}{\83\276}%\* U+03BE  
 19680 \DeclareTextCommand{\textpi}{PU}{\83\300}%\* U+03C0  
 19681 \DeclareTextCommand{\textrho}{PU}{\83\301}%\* U+03C1  
 19682 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}%\* U+03C2  
 19683 \DeclareTextCommand{\textsigma}{PU}{\83\303}%\* U+03C3  
 19684 \DeclareTextCommand{\texttau}{PU}{\83\304}%\* U+03C4  
 19685 \DeclareTextCommand{\textupsilon}{PU}{\83\305}%\* U+03C5  
 19686 \DeclareTextCommand{\textphi}{PU}{\83\306}%\* U+03C6  
 19687 \DeclareTextCommand{\textchi}{PU}{\83\307}%\* U+03C7  
 19688 \DeclareTextCommand{\textpsi}{PU}{\83\310}%\* U+03C8  
 19689 \DeclareTextCommand{\textomega}{PU}{\83\311}%\* U+03C9  
 19690 \newcommand\*{\psdmapshortnames}{%  
 19691 \let\MVPlus\textMVPlus  
 19692 \let\MVComma\textMVComma  
 19693 \let\MVMinus\textMVMinus  
 19694 \let\MVPeriod\textMVPeriod  
 19695 \let\MVDivision\textMVDivision  
 19696 \let\MVZero\textMVZero  
 19697 \let\MVOne\textMVOne  
 19698 \let\MVTwo\textMVTwo  
 19699 \let\MVThree\textMVThree  
 19700 \let\MVFour\textMVFfour  
 19701 \let\MVFive\textMVFfive  
 19702 \let\MVSix\textMVSix  
 19703 \let\MVSeven\textMVSeven  
 19704 \let\MVEight\textMVEight  
 19705 \let\MVNine\textMVNine  
 19706 \let\MVAt\textMVAt  
 19707 \let\copyright\textcopyright  
 19708 \let\twosuperior\texttwosuperior  
 19709 \let\threesuperior\textthreesuperior  
 19710 \let\onesuperior\textonesuperior  
 19711 \let\Thorn\textThorn  
 19712 \let\thorn\textthorn  
 19713 \let\hbar\texthbar  
 19714 \let\hausA\texthausA  
 19715 \let\hausD\texthausD  
 19716 \let\hausK\texthausK

19717 \let\barl\textbarl  
 19718 \let\inve\textinve  
 19719 \let\slashc\textslashc  
 19720 \let\scripta\textscripta  
 19721 \let\openo\textopeno  
 19722 \let\rtaild\textrtaild  
 19723 \let\reve\textreve  
 19724 \let\schwa\textschwa  
 19725 \let\niepsilon\textniepsilon  
 19726 \let\revepsilon\textrevepsilon  
 19727 \let\rhookrepsilon\text\rhookrepsilon  
 19728 \let\scriptg\textscriptg  
 19729 \let\scg\textscg  
 19730 \let\ipagamma\textipagamma  
 19731 \let\babygamma\textbabygamma  
 19732 \let\bari\textbari  
 19733 \let\niiota\textniiota  
 19734 \let\sci\textsci  
 19735 \let\scn\textscn  
 19736 \let\niphi\textniphi  
 19737 \let\longlegr\textlonglegr  
 19738 \let\scr\textscr  
 19739 \let\invscr\textinvscr  
 19740 \let\esh\textesh  
 19741 \let\baru\textbaru  
 19742 \let\niupsilon\textniupsilon  
 19743 \let\scriptv\textscriptv  
 19744 \let\turnv\textturnv  
 19745 \let\turnw\textturnw  
 19746 \let\turny\textturny  
 19747 \let\scy\textscy  
 19748 \let\yogh\textyogh  
 19749 \let\glotstop\textglotstop  
 19750 \let\revglotstop\textrevglotstop  
 19751 \let\invglotstop\textinvglotstop  
 19752 \let\Gamma\textGamma  
 19753 \let\Delta\textDelta  
 19754 \let\Theta\textTheta  
 19755 \let\Lambda\textLambda  
 19756 \let\Xi\textXi  
 19757 \let\Pi\textPi  
 19758 \let\Sigma\textSigma  
 19759 \let\Upsilon\textUpsilon  
 19760 \let\Phi\textPhi  
 19761 \let\Psi\textPsi  
 19762 \let\Omega\textOmega  
 19763 \let\alpha\textalpha  
 19764 \let\beta\textbeta  
 19765 \let\gamma\textgamma  
 19766 \let\delta\textdelta  
 19767 \let\epsilon\textepsilon  
 19768 \let\zeta\textzeta  
 19769 \let\eta\texteta  
 19770 \let\theta\texttheta

19771 \let\iota\textiota  
 19772 \let\kappa\textkappa  
 19773 \let\lambda\textlambda  
 19774 \let\mu\textmu  
 19775 \let\mugreek\textmugreek  
 19776 \let\nu\textnu  
 19777 \let\xi\textxi  
 19778 \let\pi\textpi  
 19779 \let\rho\textrho  
 19780 \let\varsigma\textvarsigma  
 19781 \let\sigma\textsigma  
 19782 \let\tau\texttau  
 19783 \let\upsilon\textupsilon  
 19784 \let\phi\textphi  
 19785 \let\chi\textchi  
 19786 \let\psi\textpsi  
 19787 \let\omega\textomega  
 19788 \let\scd\textscd  
 19789 \let\scu\textscu  
 19790 \let\iinferior\textiinferior  
 19791 \let\rinferior\extrinferior  
 19792 \let\uiinferior\textuiinferior  
 19793 \let\vinferior\textvinferior  
 19794 \let\betainferior\textbetainferior  
 19795 \let\gammainferior\textgammainferior  
 19796 \let\rhoinferior\textrhoinferior  
 19797 \let\phiinferior\textphiinferior  
 19798 \let\chiinferior\textchiinferior  
 19799 \let\barsci\textbarsci  
 19800 \let\barp\textbarp  
 19801 \let\barscu\textbarscu  
 19802 \let\htrtaild\texthtrtaild  
 19803 \let\dagger\textdagger  
 19804 \let\bullet\textbullet  
 19805 \let\hdotfor\texthdotfor  
 19806 \let\prime\textprime  
 19807 \let\second\textsecond  
 19808 \let\third\textthird  
 19809 \let\backprime\textbackprime  
 19810 \let\lefttherefore\textlefttherefore  
 19811 \let\fourth\textfourth  
 19812 \let\diamonddots\textdiamonddots  
 19813 \let\zerosuperior\textzerosuperior  
 19814 \let\isuperior\textisuperior  
 19815 \let\foursuperior\textfoursuperior  
 19816 \let\fivesuperior\textfivesuperior  
 19817 \let\sixsuperior\textsixsuperior  
 19818 \let\sevensuperior\textsevensuperior  
 19819 \let\eightsuperior\texteightsuperior  
 19820 \let\ninesuperior\textninesuperior  
 19821 \let\plussuperior\textplussuperior  
 19822 \let\minussuperior\textminussuperior  
 19823 \let\equalsuperior\textequalsuperior  
 19824 \let\parenleftsuperior\textparenleftsuperior

19825 \let\parenrightsuperior\textparenrightsuperior  
 19826 \let\nsuperior\textnsuperior  
 19827 \let\zeroinferior\textzeroinferior  
 19828 \let\oneinferior\textoneinferior  
 19829 \let\twoinferior\texttwoinferior  
 19830 \let\threeinferior\textthreeinferior  
 19831 \let\fourinferior\textfourinferior  
 19832 \let\fiveinferior\textfiveinferior  
 19833 \let\sixinferior\textsixinferior  
 19834 \let\seveninferior\textseveninferior  
 19835 \let\eightinferior\texteightinferior  
 19836 \let\nineinferior\textnineinferior  
 19837 \let\plusinferior\textplusinferior  
 19838 \let\minusinferior\textminusinferior  
 19839 \let\equalsinferior\textequalsinferior  
 19840 \let\parenleftinferior\textparenleftinferior  
 19841 \let\parenrightinferior\textparenrightinferior  
 19842 \let\ainferior\textainferior  
 19843 \let\einferior\texteinferior  
 19844 \let\oinferior\textoinferior  
 19845 \let\xinferior\textxinferior  
 19846 \let\schwainferior\textschwainferior  
 19847 \let\hinferior\texthinferior  
 19848 \let\kinferior\textkinferior  
 19849 \let\linferior\textlinferior  
 19850 \let\minferior\textminferior  
 19851 \let\ninferior\textninferior  
 19852 \let\pinferior\textpinferior  
 19853 \let\sinferior\textsinferior  
 19854 \let\tinferior\texttinferior  
 19855 \let\Deleatur\textDeleatur  
 19856 \let\hslash\texthslash  
 19857 \let\Im\textIm  
 19858 \let\ell\textell  
 19859 \let\wp\textwp  
 19860 \let\Re\textRe  
 19861 \let\mho\textmho  
 19862 \let\riota\textriota  
 19863 \let\Finv\textFinv  
 19864 \let\aleph\textaleph  
 19865 \let\beth\textbeth  
 19866 \let\gimel\textgimel  
 19867 \let\daleth\textdaleth  
 19868 \let\xrightarrow\textxrightarrow  
 19869 \let\Game\textGame  
 19870 \let\leftarrow\textleftarrow  
 19871 \let\uparrow\textuparrow  
 19872 \let\rightarrow\textrightarrow  
 19873 \let\downarrow\textdownarrow  
 19874 \let\leftrightarrow\textleftrightarrow  
 19875 \let\updownarrow\textupdownarrow  
 19876 \let\nwarrow\textnwarrow  
 19877 \let\nearrow\textnearrow  
 19878 \let\searrow\textsearrow

19879 \let\swarrow\textswarrow  
 19880 \let\nleftarrow\textnleftarrow  
 19881 \let\nrightarrow\textnrightarrow  
 19882 \let\twoheadleftarrow\texttwoheadleftarrow  
 19883 \let\ntwoheadleftarrow\textntwoheadleftarrow  
 19884 \let\twoheaduparrow\texttwoheaduparrow  
 19885 \let\twoheadrightarrow\texttwoheadrightarrow  
 19886 \let\ntwoheadrightarrow\textntwoheadrightarrow  
 19887 \let\twoheaddownarrow\texttwoheaddownarrow  
 19888 \let\leftarrowtail\textleftarrowtail  
 19889 \let\rightarrowtail\textrightarrowtail  
 19890 \let\mapsto\textmapsto  
 19891 \let\hookleftarrow\texthookleftarrow  
 19892 \let\hookrightarrow\texthookrightarrow  
 19893 \let\looparrowleft\textlooparrowleft  
 19894 \let\looparrowright\textlooparrowright  
 19895 \let\nlefttrightharpoon\textnlefttrightharpoon  
 19896 \let\lightning\textlightning  
 19897 \let\dlsh\textdlsh  
 19898 \let\curvearrowleft\textcurvearrowleft  
 19899 \let\curvearrowright\textcurvearrowright  
 19900 \let\leftharpoonup\textleftharpoonup  
 19901 \let\leftharpoondown\textleftharpoondown  
 19902 \let\upharpoonright\textupharpoonright  
 19903 \let\upharpoonleft\textupharpoonleft  
 19904 \let\rightharpoonup\text\rightharpoonup  
 19905 \let\rightharpoondown\text\rightharpoondown  
 19906 \let\downharpoonright\textdownharpoonright  
 19907 \let\downharpoonleft\textdownharpoonleft  
 19908 \let\rightleftarrows\textrightleftarrows  
 19909 \let\updownarrows\textupdownarrows  
 19910 \let\leftrightarrows\textleftrightarrows  
 19911 \let\leftleftarrows\textleftleftarrows  
 19912 \let\upuparrows\textupuparrows  
 19913 \let\righttrightarrows\textrighttrightarrows  
 19914 \let\downdownarrows\textdowndownarrows  
 19915 \let\leftrightharpoons\textleftrightharpoons  
 19916 \let\rightleftharpoons\textrightleftharpoons  
 19917 \let\nLeftarrow\textnLeftarrow  
 19918 \let\nLeftrightarrow\textnLeftrightarrow  
 19919 \let\nRrightarrow\textnRrightarrow  
 19920 \let\Leftarrow\textLeftarrow  
 19921 \let\Uparrow\textUparrow  
 19922 \let\Rrightarrow\textRrightarrow  
 19923 \let\Downarrow\textDownarrow  
 19924 \let\Leftrightarrow\textLeftrightarrow  
 19925 \let\Updownarrow\textUpdownarrow  
 19926 \let\Nwarrow\textNwarrow  
 19927 \let\Nearrow\textNearrow  
 19928 \let\searrow\textsearrow  
 19929 \let\swarrow\textswarrow  
 19930 \let\Lleftarrow\textLleftarrow  
 19931 \let\Rrightarrow\textRrightarrow  
 19932 \let\leftsquigarrow\textleftsquigarrow

19933  $\backslash\mathrm{rightsquigarrow}\text{rightsquigarrow}$   
19934  $\backslash\mathrm{dashleftarrow}\text{dashleftarrow}$   
19935  $\backslash\mathrm{dasheduparrow}\text{dasheduparrow}$   
19936  $\backslash\mathrm{dashrightarrow}\text{dashrightarrow}$   
19937  $\backslash\mathrm{dasheddownarrow}\text{dasheddownarrow}$   
19938  $\backslash\mathrm{pointer}\text{pointer}$   
19939  $\backslash\mathrm{downuparrows}\text{downuparrows}$   
19940  $\backslash\mathrm{leftarrowtriangle}\text{leftarrowtriangle}$   
19941  $\backslash\mathrm{rightarrowtriangle}\text{rightarrowtriangle}$   
19942  $\backslash\mathrm{leftrightarrowtriangle}\text{leftrightarrowtriangle}$   
19943  $\backslash\mathrm{forall}\text{forall}$   
19944  $\backslash\mathrm{complement}\text{complement}$   
19945  $\backslash\mathrm{partial}\text{partial}$   
19946  $\backslash\mathrm{exists}\text{exists}$   
19947  $\backslash\mathrm{nexists}\text{nexists}$   
19948  $\backslash\mathrm{emptyset}\text{emptyset}$   
19949  $\backslash\mathrm{triangle}\text{triangle}$   
19950  $\backslash\mathrm{nabla}\text{nabla}$   
19951  $\backslash\mathrm{in}\text{in}$   
19952  $\backslash\mathrm{notin}\text{notin}$   
19953  $\backslash\mathrm{smallin}\text{smallin}$   
19954  $\backslash\mathrm{ni}\text{ni}$   
19955  $\backslash\mathrm{notowner}\text{notowner}$   
19956  $\backslash\mathrm{smallowns}\text{smallowns}$   
19957  $\backslash\mathrm{prod}\text{prod}$   
19958  $\backslash\mathrm{amalg}\text{amalg}$   
19959  $\backslash\mathrm{sum}\text{sum}$   
19960  $\backslash\mathrm{mp}\text{mp}$   
19961  $\backslash\mathrm{dotplus}\text{dotplus}$   
19962  $\backslash\mathrm{Divides}\text{Divides}$   
19963  $\backslash\mathrm{DividesNot}\text{DividesNot}$   
19964  $\backslash\mathrm{setminus}\text{setminus}$   
19965  $\backslash\mathrm{ast}\text{ast}$   
19966  $\backslash\mathrm{circ}\text{circ}$   
19967  $\backslash\mathrm{surd}\text{surd}$   
19968  $\backslash\mathrm{propto}\text{propto}$   
19969  $\backslash\mathrm{infty}\text{infty}$   
19970  $\backslash\mathrm{angle}\text{angle}$   
19971  $\backslash\mathrm{measuredangle}\text{measuredangle}$   
19972  $\backslash\mathrm{sphericalangle}\text{sphericalangle}$   
19973  $\backslash\mathrm{mid}\text{mid}$   
19974  $\backslash\mathrm{nmid}\text{nmid}$   
19975  $\backslash\mathrm{parallel}\text{parallel}$   
19976  $\backslash\mathrm{nparallel}\text{nparallel}$   
19977  $\backslash\mathrm{wedge}\text{wedge}$   
19978  $\backslash\mathrm{owedge}\text{owedge}$   
19979  $\backslash\mathrm{vee}\text{vee}$   
19980  $\backslash\mathrm{ovee}\text{ovee}$   
19981  $\backslash\mathrm{cap}\text{cap}$   
19982  $\backslash\mathrm{cup}\text{cup}$   
19983  $\backslash\mathrm{int}\text{int}$   
19984  $\backslash\mathrm{iint}\text{iint}$   
19985  $\backslash\mathrm{iiint}\text{iiint}$   
19986  $\backslash\mathrm{ooint}\text{ooint}$

19987 \let\oiint\textoiint  
 19988 \let\ointclockwise\textointclockwise  
 19989 \let\ointctrlockwise\textointctrlockwise  
 19990 \let\therefore\texttherefore  
 19991 \let\because\textbecause  
 19992 \let\vdotdot\textvdotdot  
 19993 \let\squaredots\textsquaredots  
 19994 \let\dotminus\textdotminus  
 19995 \let\eqcolon\texteqcolon  
 19996 \let\sim\textsim  
 19997 \let\backsim\textbacksim  
 19998 \let\nbacksim\textnbacksim  
 19999 \let\wr\textwr  
 20000 \let\nsim\textnsim  
 20001 \let\eqsim\texteqsim  
 20002 \let\neqsim\textneqsim  
 20003 \let\simeq\textsimeq  
 20004 \let\nsimeq\textnsimeq  
 20005 \let\cong\textcong  
 20006 \let\ncong\textncong  
 20007 \let\approx\textapprox  
 20008 \let\napprox\textnapprox  
 20009 \let\approxeq\textapproxeq  
 20010 \let\napproxeq\textnapproxeq  
 20011 \let\triplesim\texttriplesim  
 20012 \let\ntriplesim\textntriplesim  
 20013 \let\backcong\textbackcong  
 20014 \let\nbackcong\textnbackcong  
 20015 \let\asymp\textasymp  
 20016 \let\nasymp\textnasymp  
 20017 \let\Bumpeq\textBumpeq  
 20018 \let\nBumpeq\textnBumpeq  
 20019 \let\bumpeq\textbumpeq  
 20020 \let\nbumpeq\textnbumpeq  
 20021 \let\doteq\textdoteq  
 20022 \let\ndoteq\textndoteq  
 20023 \let\doteqdot\textdoteqdot  
 20024 \let\ndoteq\textndoteq  
 20025 \let\fallingdoteq\textfallingdoteq  
 20026 \let\nfallingdoteq\textnfallingdoteq  
 20027 \let\risingdoteq\textrisingdoteq  
 20028 \let\nrisingdoteq\textnrisingdoteq  
 20029 \let\colonequals\textcolonequals  
 20030 \let\equalscolon\textequalscolon  
 20031 \let\eqcirc\texteqcirc  
 20032 \let\neqcirc\textneqcirc  
 20033 \let\circeq\textcirceq  
 20034 \let\ncirceq\textncirceq  
 20035 \let\hateq\texthateq  
 20036 \let\nhateq\textnhateq  
 20037 \let\triangleeq\texttriangleeq  
 20038 \let\neq\textneq  
 20039 \let\ne\textne  
 20040 \let\equiv\textequiv



20041 \let\nequiv\textnequiv  
 20042 \let\leq\textleq  
 20043 \let\le\textle  
 20044 \let\geq\textgeq  
 20045 \let\ge\textge  
 20046 \let\leqq\textleqq  
 20047 \let\leqq\textnleqq  
 20048 \let\geqq\textgeqq  
 20049 \let\geqq\textngeqq  
 20050 \let\lneqq\textlneqq  
 20051 \let\gneqq\textgneqq  
 20052 \let\ll\textll  
 20053 \let\nll\textnll  
 20054 \let\gg\textgg  
 20055 \let\ngg\textngg  
 20056 \let\between\textbetween  
 20057 \let\nless\textnless  
 20058 \let\ngtr\textngtr  
 20059 \let\leq\textnleq  
 20060 \let\ngtr\textngeq  
 20061 \let\less\textless  
 20062 \let\gtr\textgtr  
 20063 \let\nless\textnless  
 20064 \let\ngtr\textngtr  
 20065 \let\less\textless  
 20066 \let\gtr\textgtr  
 20067 \let\ngtr\textngtr  
 20068 \let\nless\textnless  
 20069 \let\prec\textprec  
 20070 \let\succ\textsucc  
 20071 \let\preccurlyeq\textpreccurlyeq  
 20072 \let\succcurlyeq\textsucccurlyeq  
 20073 \let\prec\textprec  
 20074 \let\nprec\textnprec  
 20075 \let\succ\textsucc  
 20076 \let\nsucc\textnsucc  
 20077 \let\prec\textprec  
 20078 \let\nsucc\textnsucc  
 20079 \let\subset\textsubset  
 20080 \let\supset\textsupset  
 20081 \let\nsubset\textnsubset  
 20082 \let\nsupset\textnsupset  
 20083 \let\subseteq\textsubseteq  
 20084 \let\supseteq\textsupseteq  
 20085 \let\nsubseteq\textnsubseteq  
 20086 \let\nsupseteq\textnsupseteq  
 20087 \let\subsetneq\textsubsetneq  
 20088 \let\supsetneq\textsupsetneq  
 20089 \let\cup\textcup  
 20090 \let\cup\textcup  
 20091 \let\sqsubset\textsqsubset  
 20092 \let\nsqsubset\textnsqsubset  
 20093 \let\sqsupset\textsqsupset  
 20094 \let\nsqsupset\textnsqsupset

20095  $\backslash\text{let}\backslash\text{sqsubseteq}\backslash\text{textsqsubseteq}$   
 20096  $\backslash\text{let}\backslash\text{nsqsubseteq}\backslash\text{textnsqsubseteq}$   
 20097  $\backslash\text{let}\backslash\text{sqsupseteq}\backslash\text{textsqsupseteq}$   
 20098  $\backslash\text{let}\backslash\text{nsqsupseteq}\backslash\text{textnsqsupseteq}$   
 20099  $\backslash\text{let}\backslash\text{sqcap}\backslash\text{textsqcap}$   
 20100  $\backslash\text{let}\backslash\text{sqcup}\backslash\text{textsqcup}$   
 20101  $\backslash\text{let}\backslash\text{oplus}\backslash\text{textoplus}$   
 20102  $\backslash\text{let}\backslash\text{ominus}\backslash\text{textominus}$   
 20103  $\backslash\text{let}\backslash\text{otimes}\backslash\text{textotimes}$   
 20104  $\backslash\text{let}\backslash\text{oslash}\backslash\text{textoslash}$   
 20105  $\backslash\text{let}\backslash\text{odot}\backslash\text{textodot}$   
 20106  $\backslash\text{let}\backslash\text{circledcirc}\backslash\text{textcircledcirc}$   
 20107  $\backslash\text{let}\backslash\text{circledast}\backslash\text{textcircledast}$   
 20108  $\backslash\text{let}\backslash\text{circleddash}\backslash\text{textcircleddash}$   
 20109  $\backslash\text{let}\backslash\text{boxplus}\backslash\text{textboxplus}$   
 20110  $\backslash\text{let}\backslash\text{boxminus}\backslash\text{textboxminus}$   
 20111  $\backslash\text{let}\backslash\text{boxtimes}\backslash\text{textboxtimes}$   
 20112  $\backslash\text{let}\backslash\text{boxdot}\backslash\text{textboxdot}$   
 20113  $\backslash\text{let}\backslash\text{vdash}\backslash\text{textvdash}$   
 20114  $\backslash\text{let}\backslash\text{dashv}\backslash\text{textdashv}$   
 20115  $\backslash\text{let}\backslash\text{ndashv}\backslash\text{textndashv}$   
 20116  $\backslash\text{let}\backslash\text{top}\backslash\text{texttop}$   
 20117  $\backslash\text{let}\backslash\text{ndownvdash}\backslash\text{textndownvdash}$   
 20118  $\backslash\text{let}\backslash\text{bot}\backslash\text{textbot}$   
 20119  $\backslash\text{let}\backslash\text{nupvdash}\backslash\text{textnupvdash}$   
 20120  $\backslash\text{let}\backslash\text{vDash}\backslash\text{textvDash}$   
 20121  $\backslash\text{let}\backslash\text{VDash}\backslash\text{textVDash}$   
 20122  $\backslash\text{let}\backslash\text{Vvdash}\backslash\text{textVvdash}$   
 20123  $\backslash\text{let}\backslash\text{nVdash}\backslash\text{textnVdash}$   
 20124  $\backslash\text{let}\backslash\text{VDash}\backslash\text{textVDash}$   
 20125  $\backslash\text{let}\backslash\text{nvDash}\backslash\text{textnvDash}$   
 20126  $\backslash\text{let}\backslash\text{nvDash}\backslash\text{textnvDash}$   
 20127  $\backslash\text{let}\backslash\text{nVdash}\backslash\text{textnVdash}$   
 20128  $\backslash\text{let}\backslash\text{nVDash}\backslash\text{textnVDash}$   
 20129  $\backslash\text{let}\backslash\text{lhs}\backslash\text{textrhs}$   
 20130  $\backslash\text{let}\backslash\text{rhd}\backslash\text{textrhd}$   
 20131  $\backslash\text{let}\backslash\text{unlhd}\backslash\text{textunlhd}$   
 20132  $\backslash\text{let}\backslash\text{unrhd}\backslash\text{textunrhd}$   
 20133  $\backslash\text{let}\backslash\text{multimapdotbothA}\backslash\text{textmultimapdotbothA}$   
 20134  $\backslash\text{let}\backslash\text{multimapdotbothB}\backslash\text{textmultimapdotbothB}$   
 20135  $\backslash\text{let}\backslash\text{multimap}\backslash\text{textmultimap}$   
 20136  $\backslash\text{let}\backslash\text{veebar}\backslash\text{textveebar}$   
 20137  $\backslash\text{let}\backslash\text{barwedge}\backslash\text{textbarwedge}$   
 20138  $\backslash\text{let}\backslash\text{star}\backslash\text{textstar}$   
 20139  $\backslash\text{let}\backslash\text{divideontimes}\backslash\text{textdivideontimes}$   
 20140  $\backslash\text{let}\backslash\text{bowtie}\backslash\text{textbowtie}$   
 20141  $\backslash\text{let}\backslash\text{ltimes}\backslash\text{textrtimes}$   
 20142  $\backslash\text{let}\backslash\text{rtimes}\backslash\text{textrtimes}$   
 20143  $\backslash\text{let}\backslash\text{leftthreetimes}\backslash\text{textleftthreetimes}$   
 20144  $\backslash\text{let}\backslash\text{rightthreetimes}\backslash\text{textrightthreetimes}$   
 20145  $\backslash\text{let}\backslash\text{backsimeq}\backslash\text{textbacksimeq}$   
 20146  $\backslash\text{let}\backslash\text{nbacksimeq}\backslash\text{textnbacksimeq}$   
 20147  $\backslash\text{let}\backslash\text{curlyvee}\backslash\text{textcurlyvee}$   
 20148  $\backslash\text{let}\backslash\text{curlywedge}\backslash\text{textcurlywedge}$

20149 \let\Subset\textSubset  
 20150 \let\NSubset\textNSubset  
 20151 \let\Supset\textSupset  
 20152 \let\NSupset\textNSupset  
 20153 \let\Cap\textCap  
 20154 \let\Cup\textCup  
 20155 \let\pitchfork\textpitchfork  
 20156 \let\lessdot\textlessdot  
 20157 \let\gtrdot\textgtrdot  
 20158 \let\lll\textlll  
 20159 \let\ggg\textggg  
 20160 \let\lesseqgtr\textlesseqgtr  
 20161 \let\gtreqless\textgtreqless  
 20162 \let\curlyeqprec\textcurlyeqprec  
 20163 \let\ncurlyeqprec\textncurlyeqprec  
 20164 \let\curlyeqsucc\textcurlyeqsucc  
 20165 \let\ncurlyeqsucc\textncurlyeqsucc  
 20166 \let\preccurlyeq\textpreccurlyeq  
 20167 \let\nsucccurlyeq\textnsucccurlyeq  
 20168 \let\sqsubseteq\textsqsubseteq  
 20169 \let\sqsupseteq\textsqsupseteq  
 20170 \let\sqsubsetneq\textsqsubsetneq  
 20171 \let\sqsupsetneq\textsqsupsetneq  
 20172 \let\lnsim\textlnsim  
 20173 \let\gnsim\textgnsim  
 20174 \let\precnsim\textprecnsim  
 20175 \let\succnsim\textsuccnsim  
 20176 \let\triangleleft\texttriangleleft  
 20177 \let\triangleright\texttriangleright  
 20178 \let\trianglelefteq\texttrianglelefteq  
 20179 \let\trianglerighteq\texttrianglerighteq  
 20180 \let\vdots\textvdots  
 20181 \let\cdots\textcdots  
 20182 \let\udots\textudots  
 20183 \let\ddots\textddots  
 20184 \let\barin\textbarin  
 20185 \let\diameter\textdiameter  
 20186 \let\backneg\textbackneg  
 20187 \let\wasylozenge\textwasylozenge  
 20188 \let\invbackneg\textinvbackneg  
 20189 \let\clock\textclock  
 20190 \let\ulcorner\textulcorner  
 20191 \let\urcorner\texturcorner  
 20192 \let\llcorner\textllcorner  
 20193 \let\lrcorner\textlrcorner  
 20194 \let\frown\textfrown  
 20195 \let\smile\textsmile  
 20196 \let\Keyboard\textKeyboard  
 20197 \let\langle\textlangle  
 20198 \let\rangle\textrangle  
 20199 \let\APLinv\textAPLinv  
 20200 \let\Tumbler\textTumbler  
 20201 \let\notslash\textnotslash  
 20202 \let\notbackslash\textnotbackslash

20203 \let\boxbackslash\textboxbackslash  
 20204 \let\APLleftarrowbox\textAPLleftarrowbox  
 20205 \let\APLrightarrowbox\textAPLrightarrowbox  
 20206 \let\APLuparrowbox\textAPLuparrowbox  
 20207 \let\APLdownarrowbox\textAPLdownarrowbox  
 20208 \let\APLinput\textAPLinput  
 20209 \let\Request\textRequest  
 20210 \let\Beam\textBeam  
 20211 \let\hexagon\texthexagon  
 20212 \let\APLbox\textAPLbox  
 20213 \let\ForwardToIndex\textForwardToIndex  
 20214 \let\RewindToIndex\textRewindToIndex  
 20215 \let\bbslash\textbbslash  
 20216 \let\CircledA\textCircledA  
 20217 \let\CleaningF\textCleaningF  
 20218 \let\CleaningFF\textCleaningFF  
 20219 \let\CleaningP\textCleaningP  
 20220 \let\CleaningPP\textCleaningPP  
 20221 \let\CuttingLine\textCuttingLine  
 20222 \let\UParrow\textUParrow  
 20223 \let\bigtriangleup\textbigtriangleup  
 20224 \let\Forward\textForward  
 20225 \let\triangleright\texttriangleright  
 20226 \let\RHD\textRHD  
 20227 \let\DOWNarrow\textDOWNarrow  
 20228 \let\bigtriangledown\textbigtriangledown  
 20229 \let\Rewind\textRewind  
 20230 \let\triangleleft\texttriangleleft  
 20231 \let\LHD\textLHD  
 20232 \let\diamond\textdiamond  
 20233 \let\lozenge\textlozenge  
 20234 \let\LEFTCIRCLE\textLEFTCIRCLE  
 20235 \let\RIGHTCIRCLE\textRIGHTCIRCLE  
 20236 \let\openbullet\textopenbullet  
 20237 \let\boxbar\textboxbar  
 20238 \let\bigcircle\textbigcircle  
 20239 \let\Cloud\textCloud  
 20240 \let\FiveStar\textFiveStar  
 20241 \let\FiveStarOpen\textFiveStarOpen  
 20242 \let\Phone\textPhone  
 20243 \let\boxempty\textboxempty  
 20244 \let\Checkedbox\textCheckedbox  
 20245 \let\Crossedbox\textCrossedbox  
 20246 \let\Coffeecup\textCoffeecup  
 20247 \let\HandCuffLeft\textHandCuffLeft  
 20248 \let\HandCuffRight\textHandCuffRight  
 20249 \let\HandLeft\textHandLeft  
 20250 \let\HandRight\textHandRight  
 20251 \let\Radioactivity\textRadioactivity  
 20252 \let\Biohazard\textBiohazard  
 20253 \let\Ankh\textAnkh  
 20254 \let\YinYang\textYinYang  
 20255 \let\frownie\textfrownie  
 20256 \let\smiley\textsmiley

20257 \let\blacksmiley\textblacksmiley  
 20258 \let\sun\textsun  
 20259 \let\leftmoon\textleftmoon  
 20260 \let\rightmoon\textrightmoon  
 20261 \let\mercury\textmercury  
 20262 \let\earth\textearth  
 20263 \let\male\textmale  
 20264 \let\jupiter\textjupiter  
 20265 \let\saturn\textsaturn  
 20266 \let\uranus\texturanus  
 20267 \let\neptune\textneptune  
 20268 \let\pluto\textpluto  
 20269 \let\aries\textaries  
 20270 \let\taurus\texttaurus  
 20271 \let\gemini\textgemini  
 20272 \let\cancer\textcancer  
 20273 \let\leo\textleo  
 20274 \let\virgo\textvirgo  
 20275 \let\libra\textlibra  
 20276 \let\scorpio\textscorpio  
 20277 \let\sagittarius\textsagittarius  
 20278 \let\capricornus\textcapricornus  
 20279 \let\aquarius\textaquarius  
 20280 \let\pisces\textpisces  
 20281 \let\quarternote\textquarternote  
 20282 \let\twonotes\texttwonotes  
 20283 \let\sixteenthnote\textsixteenthnote  
 20284 \let\flat\textflat  
 20285 \let\natural\textnatural  
 20286 \let\sharp\textsharp  
 20287 \let\recycle\textrecycle  
 20288 \let\Wheelchair\textWheelchair  
 20289 \let\Flag\textFlag  
 20290 \let\MineSign\textMineSign  
 20291 \let\ds\textds  
 20292 \let\dsmedical\textdsmedical  
 20293 \let\dsjuridical\textdsjuridical  
 20294 \let\dschemical\textdschemical  
 20295 \let\dsbiological\textdsbiological  
 20296 \let\dscommercial\textdscommercial  
 20297 \let\manstar\textmanstar  
 20298 \let\danger\textdanger  
 20299 \let\FemaleFemale\textFemaleFemale  
 20300 \let\MaleMale\textMaleMale  
 20301 \let\FemaleMale\textFemaleMale  
 20302 \let\Hermaphrodite\textHermaphrodite  
 20303 \let\Neutral\textNeutral  
 20304 \let\hexstar\texthexstar  
 20305 \let\SunCloud\textSunCloud  
 20306 \let\Rain\textRain  
 20307 \let\noway\textnoway  
 20308 \let\Mountain\textMountain  
 20309 \let\Tent\textTent  
 20310 \let\ScissorRight\textScissorRight

20311 \let\ScissorRightBrokenTop\textScissorRightBrokenTop  
 20312 \let\ScissorHollowRight\textScissorHollowRight  
 20313 \let\PhoneHandset\textPhoneHandset  
 20314 \let\Tape\textTape  
 20315 \let\Plane\textPlane  
 20316 \let\Envelope\textEnvelope  
 20317 \let\Peace\textPeace  
 20318 \let\WritingHand\textWritingHand  
 20319 \let\PencilRightDown\textPencilRightDown  
 20320 \let\PencilRight\textPencilRight  
 20321 \let\PencilRightUp\textPencilRightUp  
 20322 \let\NibRight\textNibRight  
 20323 \let\NibSolidRight\textNibSolidRight  
 20324 \let\Checkmark\textCheckmark  
 20325 \let\CheckmarkBold\textCheckmarkBold  
 20326 \let\XSolid\textXSolid  
 20327 \let\XSolidBold\textXSolidBold  
 20328 \let\XSolidBrush\textXSolidBrush  
 20329 \let\PlusOutline\textPlusOutline  
 20330 \let\Plus\textPlus  
 20331 \let\PlusThinCenterOpen\textPlusThinCenterOpen  
 20332 \let\PlusCenterOpen\textPlusCenterOpen  
 20333 \let\Cross\textCross  
 20334 \let\CrossOpenShadow\textCrossOpenShadow  
 20335 \let\CrossOutline\textCrossOutline  
 20336 \let\CrossMaltese\textCrossMaltese  
 20337 \let\DavidStar\textDavidStar  
 20338 \let\FourAsterisk\textFourAsterisk  
 20339 \let\JackStar\textJackStar  
 20340 \let\JackStarBold\textJackStarBold  
 20341 \let\ClowerTips\textClowerTips  
 20342 \let\FourStar\textFourStar  
 20343 \let\FourStarOpen\textFourStarOpen  
 20344 \let\FiveStarOpenCircled\textFiveStarOpenCircled  
 20345 \let\FiveStarCenterOpen\textFiveStarCenterOpen  
 20346 \let\FiveStarOpenDotted\textFiveStarOpenDotted  
 20347 \let\FiveStarOutline\textFiveStarOutline  
 20348 \let\FiveStarOutlineHeavy\textFiveStarOutlineHeavy  
 20349 \let\FiveStarConvex\textFiveStarConvex  
 20350 \let\FiveStarShadow\textFiveStarShadow  
 20351 \let\AsteriskBold\textAsteriskBold  
 20352 \let\AsteriskCenterOpen\textAsteriskCenterOpen  
 20353 \let\EightStarTaper\textEightStarTaper  
 20354 \let\EightStarConvex\textEightStarConvex  
 20355 \let\SixStar\textSixStar  
 20356 \let\EightStar\textEightStar  
 20357 \let\EightStarBold\textEightStarBold  
 20358 \let\TwelveStar\textTwelveStar  
 20359 \let\SixteenStarLight\textSixteenStarLight  
 20360 \let\SixFlowerPetalRemoved\textSixFlowerPetalRemoved  
 20361 \let\SixFlowerOpenCenter\textSixFlowerOpenCenter  
 20362 \let\Asterisk\textAsterisk  
 20363 \let\SixFlowerAlternate\textSixFlowerAlternate  
 20364 \let\FiveFlowerPetal\textFiveFlowerPetal

20365 \let\FiveFlowerOpen\textFiveFlowerOpen  
 20366 \let\EightFlowerPetal\textEightFlowerPetal  
 20367 \let\SunshineOpenCircled\textSunshineOpenCircled  
 20368 \let\SixFlowerAltPetal\textSixFlowerAltPetal  
 20369 \let\SnowflakeChevron\textSnowflakeChevron  
 20370 \let\Snowflake\textSnowflake  
 20371 \let\SnowflakeChevronBold\textSnowflakeChevronBold  
 20372 \let\Sparkle\textSparkle  
 20373 \let\SparkleBold\textSparkleBold  
 20374 \let\AsteriskRoundedEnds\textAsteriskRoundedEnds  
 20375 \let\EightFlowerPetalRemoved\textEightFlowerPetalRemoved  
 20376 \let\EightAsterisk\textEightAsterisk  
 20377 \let\CircleShadow\textCircleShadow  
 20378 \let\SquareShadowBottomRight\textSquareShadowBottomRight  
 20379 \let\SquareTopRight\textSquareTopRight  
 20380 \let\SquareCastShadowBottomRight\textSquareCastShadowBottomRight  
 20381 \let\SquareCastShadowTopRight\textSquareCastShadowTopRight  
 20382 \let\DiamondSolid\textDiamondSolid  
 20383 \let\RectangleThin\textRectangleThin  
 20384 \let\Rectangle\textRectangle  
 20385 \let\RectangleBold\textRectangleBold  
 20386 \let\perp\textperp  
 20387 \let\notperp\textnotperp  
 20388 \let\veedot\textveedot  
 20389 \let\wedgedot\textwedgedot  
 20390 \let\leftspoon\textleftspoon  
 20391 \let\lbrackdbl\textlbrackdbl  
 20392 \let\rbrackdbl\textrbrackdbl  
 20393 \let\circlearrowleft\textcirclearrowleft  
 20394 \let\circlearrowright\textcirclearrowright  
 20395 \let\longleftarrow\textlongleftarrow  
 20396 \let\longrightarrow\textlongrightarrow  
 20397 \let\longleftarrow\textlongleftarrow  
 20398 \let\Longleftarrow\textLongleftarrow  
 20399 \let\Longrightarrow\textLongrightarrow  
 20400 \let\Longleftarrow\textLongleftarrow  
 20401 \let\longmapsto\textlongmapsto  
 20402 \let\Longmapsfrom\textLongmapsfrom  
 20403 \let\Longmapsto\textLongmapsto  
 20404 \let\nwsearrow\textnwsearrow  
 20405 \let\neswarrow\textneswarrow  
 20406 \let\hookrightarrow\texthookrightarrow  
 20407 \let\rhookrightarrow\text\rhookrightarrow  
 20408 \let\hookrightarrow\texthookrightarrow  
 20409 \let\rhookrightarrow\text\rhookrightarrow  
 20410 \let\leadsto\textleadsto  
 20411 \let\curvearrowright\textcurvearrowright  
 20412 \let\lcurvearrowright\textlcurvearrowright  
 20413 \let\lcurvearrowright\textlcurvearrowright  
 20414 \let\curvearrowright\textcurvearrowright  
 20415 \let\lcurvearrowdown\textlcurvearrowdown  
 20416 \let\curvearrowdown\textcurvearrowdown  
 20417 \let\curvearrowleft\textcurvearrowleft  
 20418 \let\curvearrowright\textcurvearrowright

20419  $\backslash\text{leftrightharpoon}\backslash\text{textleftrightharpoon}$   
 20420  $\backslash\text{rightleftharpoon}\backslash\text{textrightleftharpoon}$   
 20421  $\backslash\text{updownharpoonrightleft}\backslash\text{textupdownharpoonrightleft}$   
 20422  $\backslash\text{updownharpoonleftright}\backslash\text{textupdownharpoonleftright}$   
 20423  $\backslash\text{leftleftharpoons}\backslash\text{textleftleftharpoons}$   
 20424  $\backslash\text{upupharpoons}\backslash\text{textupupharpoons}$   
 20425  $\backslash\text{rightrightarpoons}\backslash\text{textrighttrightarpoons}$   
 20426  $\backslash\text{downdownharpoons}\backslash\text{textdowndownharpoons}$   
 20427  $\backslash\text{leftbarharpoon}\backslash\text{textleftbarharpoon}$   
 20428  $\backslash\text{barleftharpoon}\backslash\text{textbarleftharpoon}$   
 20429  $\backslash\text{rightbarharpoon}\backslash\text{textrightbarharpoon}$   
 20430  $\backslash\text{barrightharpoon}\backslash\text{textbarrightharpoon}$   
 20431  $\backslash\text{updownharpoons}\backslash\text{textupdownharpoons}$   
 20432  $\backslash\text{downupharpoons}\backslash\text{textdownupharpoons}$   
 20433  $\backslash\text{moo}\backslash\text{textmoo}$   
 20434  $\backslash\text{llparenthesis}\backslash\text{textllparenthesis}$   
 20435  $\backslash\text{rrparenthesis}\backslash\text{textrrparenthesis}$   
 20436  $\backslash\text{invdiameter}\backslash\text{textinvdiameter}$   
 20437  $\backslash\text{oobar}\backslash\text{textobar}$   
 20438  $\backslash\text{obslash}\backslash\text{textobslash}$   
 20439  $\backslash\text{obot}\backslash\text{textobot}$   
 20440  $\backslash\text{NoChemicalCleaning}\backslash\text{textNoChemicalCleaning}$   
 20441  $\backslash\text{olessthan}\backslash\text{textolessthan}$   
 20442  $\backslash\text{ogreaterthan}\backslash\text{textogreaterthan}$   
 20443  $\backslash\text{boxslash}\backslash\text{textboxslash}$   
 20444  $\backslash\text{boxbslash}\backslash\text{textboxbslash}$   
 20445  $\backslash\text{boxast}\backslash\text{textboxast}$   
 20446  $\backslash\text{boxcircle}\backslash\text{textboxcircle}$   
 20447  $\backslash\text{boxbox}\backslash\text{textboxbox}$   
 20448  $\backslash\text{Valve}\backslash\text{textValve}$   
 20449  $\backslash\text{multimapboth}\backslash\text{textmultimapboth}$   
 20450  $\backslash\text{shuffle}\backslash\text{textshuffle}$   
 20451  $\backslash\text{uplus}\backslash\text{textuplus}$   
 20452  $\backslash\text{bigdoublewedge}\backslash\text{textbigdoublewedge}$   
 20453  $\backslash\text{bigdoublevee}\backslash\text{textbigdoublevee}$   
 20454  $\backslash\text{Join}\backslash\text{textJoin}$   
 20455  $\backslash\text{fatsemi}\backslash\text{textfatsemi}$   
 20456  $\backslash\text{cirplus}\backslash\text{textcirplus}$   
 20457  $\backslash\text{minusdot}\backslash\text{textminusdot}$   
 20458  $\backslash\text{dottimes}\backslash\text{textdottimes}$   
 20459  $\backslash\text{dtimes}\backslash\text{textdtimes}$   
 20460  $\backslash\text{odiv}\backslash\text{textodiv}$   
 20461  $\backslash\text{invneg}\backslash\text{textinvneg}$   
 20462  $\backslash\text{sqdoublecap}\backslash\text{textsqdoublecap}$   
 20463  $\backslash\text{capdot}\backslash\text{textcapdot}$   
 20464  $\backslash\text{sqdoublecup}\backslash\text{textsqdoublecup}$   
 20465  $\backslash\text{doublewedge}\backslash\text{textdoublewedge}$   
 20466  $\backslash\text{doublevee}\backslash\text{textdoublevee}$   
 20467  $\backslash\text{doublebarwedge}\backslash\text{textdoublebarwedge}$   
 20468  $\backslash\text{veedoublebar}\backslash\text{textveedoublebar}$   
 20469  $\backslash\text{eqdot}\backslash\text{texteqdot}$   
 20470  $\backslash\text{neqdot}\backslash\text{textneqdot}$   
 20471  $\backslash\text{coloncolonequals}\backslash\text{textcoloncolonequals}$   
 20472  $\backslash\text{leqslant}\backslash\text{textleqslant}$



20473  $\backslash\mathrm{let}\backslash\mathrm{nleqslant}\backslash\mathrm{textnleqslant}$   
 20474  $\backslash\mathrm{let}\backslash\mathrm{geqslant}\backslash\mathrm{textgeqslant}$   
 20475  $\backslash\mathrm{let}\backslash\mathrm{ngeqslant}\backslash\mathrm{textngeqslant}$   
 20476  $\backslash\mathrm{let}\backslash\mathrm{lessapprox}\backslash\mathrm{textlessapprox}$   
 20477  $\backslash\mathrm{let}\backslash\mathrm{nlessapprox}\backslash\mathrm{textnlessapprox}$   
 20478  $\backslash\mathrm{let}\backslash\mathrm{gtrapprox}\backslash\mathrm{textgtrapprox}$   
 20479  $\backslash\mathrm{let}\backslash\mathrm{ngtrapprox}\backslash\mathrm{textngtrapprox}$   
 20480  $\backslash\mathrm{let}\backslash\mathrm{ineq}\backslash\mathrm{textineq}$   
 20481  $\backslash\mathrm{let}\backslash\mathrm{gneq}\backslash\mathrm{textgneq}$   
 20482  $\backslash\mathrm{let}\backslash\mathrm{lnapprox}\backslash\mathrm{textlnapprox}$   
 20483  $\backslash\mathrm{let}\backslash\mathrm{gnapprox}\backslash\mathrm{textgnapprox}$   
 20484  $\backslash\mathrm{let}\backslash\mathrm{lesseqqgtr}\backslash\mathrm{textlesseqqgtr}$   
 20485  $\backslash\mathrm{let}\backslash\mathrm{gtreqqless}\backslash\mathrm{textgtreqqless}$   
 20486  $\backslash\mathrm{let}\backslash\mathrm{eqslantless}\backslash\mathrm{texteqslantless}$   
 20487  $\backslash\mathrm{let}\backslash\mathrm{eqslantgtr}\backslash\mathrm{texteqslantgtr}$   
 20488  $\backslash\mathrm{let}\backslash\mathrm{leftslice}\backslash\mathrm{textleftslice}$   
 20489  $\backslash\mathrm{let}\backslash\mathrm{rightslice}\backslash\mathrm{textrightslice}$   
 20490  $\backslash\mathrm{let}\backslash\mathrm{preceq}\backslash\mathrm{textpreceq}$   
 20491  $\backslash\mathrm{let}\backslash\mathrm{npreceq}\backslash\mathrm{textnpreceq}$   
 20492  $\backslash\mathrm{let}\backslash\mathrm{succeq}\backslash\mathrm{textsucceq}$   
 20493  $\backslash\mathrm{let}\backslash\mathrm{nsucceq}\backslash\mathrm{textnsucceq}$   
 20494  $\backslash\mathrm{let}\backslash\mathrm{precneq}\backslash\mathrm{textprecneq}$   
 20495  $\backslash\mathrm{let}\backslash\mathrm{succneq}\backslash\mathrm{textsuccneq}$   
 20496  $\backslash\mathrm{let}\backslash\mathrm{preceqq}\backslash\mathrm{textpreceqq}$   
 20497  $\backslash\mathrm{let}\backslash\mathrm{npreceqq}\backslash\mathrm{textnpreceqq}$   
 20498  $\backslash\mathrm{let}\backslash\mathrm{succeqq}\backslash\mathrm{textsucceqq}$   
 20499  $\backslash\mathrm{let}\backslash\mathrm{nsucceqq}\backslash\mathrm{textnsucceqq}$   
 20500  $\backslash\mathrm{let}\backslash\mathrm{precneqq}\backslash\mathrm{textprecneqq}$   
 20501  $\backslash\mathrm{let}\backslash\mathrm{succneqq}\backslash\mathrm{textsuccneqq}$   
 20502  $\backslash\mathrm{let}\backslash\mathrm{precapprox}\backslash\mathrm{textprecapprox}$   
 20503  $\backslash\mathrm{let}\backslash\mathrm{nprecapprox}\backslash\mathrm{textnprecapprox}$   
 20504  $\backslash\mathrm{let}\backslash\mathrm{succapprox}\backslash\mathrm{textsuccapprox}$   
 20505  $\backslash\mathrm{let}\backslash\mathrm{nsuccapprox}\backslash\mathrm{textnsuccapprox}$   
 20506  $\backslash\mathrm{let}\backslash\mathrm{precnapprox}\backslash\mathrm{textprecnapprox}$   
 20507  $\backslash\mathrm{let}\backslash\mathrm{succnapprox}\backslash\mathrm{textsuccnapprox}$   
 20508  $\backslash\mathrm{let}\backslash\mathrm{subseteqq}\backslash\mathrm{textsubseteqq}$   
 20509  $\backslash\mathrm{let}\backslash\mathrm{nsubseteqq}\backslash\mathrm{textnsubseteqq}$   
 20510  $\backslash\mathrm{let}\backslash\mathrm{supseteqq}\backslash\mathrm{textsupseteqq}$   
 20511  $\backslash\mathrm{let}\backslash\mathrm{nsupseteqq}\backslash\mathrm{textnsupseteqq}$   
 20512  $\backslash\mathrm{let}\backslash\mathrm{dashV}\backslash\mathrm{textdashV}$   
 20513  $\backslash\mathrm{let}\backslash\mathrm{ndashV}\backslash\mathrm{textndashV}$   
 20514  $\backslash\mathrm{let}\backslash\mathrm{Dashv}\backslash\mathrm{textDashv}$   
 20515  $\backslash\mathrm{let}\backslash\mathrm{nDashv}\backslash\mathrm{textnDashv}$   
 20516  $\backslash\mathrm{let}\backslash\mathrm{DashV}\backslash\mathrm{textDashV}$   
 20517  $\backslash\mathrm{let}\backslash\mathrm{nDashV}\backslash\mathrm{textnDashV}$   
 20518  $\backslash\mathrm{let}\backslash\mathrm{downmodels}\backslash\mathrm{textdownmodels}$   
 20519  $\backslash\mathrm{let}\backslash\mathrm{ndownmodels}\backslash\mathrm{textndownmodels}$   
 20520  $\backslash\mathrm{let}\backslash\mathrm{upmodels}\backslash\mathrm{textupmodels}$   
 20521  $\backslash\mathrm{let}\backslash\mathrm{nupmodels}\backslash\mathrm{textnupmodels}$   
 20522  $\backslash\mathrm{let}\backslash\mathrm{upspoon}\backslash\mathrm{textupspoon}$   
 20523  $\backslash\mathrm{let}\backslash\mathrm{interleave}\backslash\mathrm{textinterleave}$   
 20524  $\backslash\mathrm{let}\backslash\mathrm{slash}\backslash\mathrm{textslash}$   
 20525  $\backslash\mathrm{let}\backslash\mathrm{pentagon}\backslash\mathrm{textpentagon}$   
 20526  $\backslash\mathrm{let}\backslash\mathrm{varhexagon}\backslash\mathrm{textvarhexagon}$

20527 \let\jinferior\textjinferior  
 20528 \let\slashdiv\textslashdiv  
 20529 \let\fivedots\textfivedots  
 20530 \let\oo\textoo  
 20531 \let\GaPa\textGaPa  
 20532 \let\HaPa\textHaPa  
 20533 \let\ViPa\textViPa  
 20534 \let\AcPa\textAcPa  
 20535 \let\SePa\textSePa  
 20536 \let\ZwPa\textZwPa  
 20537 \let\fullnote\textfullnote  
 20538 \let\halfnote\texthalfnote  
 20539 \let\Vier\textVier  
 20540 \let\Acht\textAcht  
 20541 \let\Sech\textSech  
 20542 \let\Zwdr\textZwdr  
 20543 \let\Mundus\textMundus  
 20544 \let\Moon\textMoon  
 20545 \let\ManFace\textManFace  
 20546 \let\WomanFace\textWomanFace  
 20547 \let\Fax\textFax  
 20548 \let\Fire\textFire  
 20549 \let\Bicycle\textBicycle  
 20550 \let\Gentsroom\textGentsroom  
 20551 \let\Ladiesroom\textLadiesroom  
 20552 \let\ccnc\textccnc  
 20553 \let\ccsa\textccsa  
 20554 \let\Info\textInfo  
 20555 \let\CESign\textCESign  
 20556 \let\neg\textneg  
 20557 \let\times\texttimes  
 20558 \let\div\textdiv  
 20559 \let\pm\textpm  
 20560 \let\cdot\textcdot  
 20561 }% \psdmapshortnames  
 20562 \newcommand\*{\psdaliasnames}{%  
 20563 \let\epsdice\HyPsd@DieFace  
 20564 \let\fcdice\HyPsd@DieFace  
 20565 \let\MoonPha\HyPsd@MoonPha  
 20566 \let\mathdollar\textdollar  
 20567 \let\EyesDollar\textdollar  
 20568 \let\binampersand\textampersand  
 20569 \let\with\textampersand  
 20570 \let\mathunderscore\textunderscore  
 20571 \let\textvertline\textbar  
 20572 \let\mathsterling\textsterling  
 20573 \let\pounds\textsterling  
 20574 \let\brokenvert\textbrokenbar  
 20575 \let\mathsection\textsection  
 20576 \let\S\textsection  
 20577 \let\mathparagraph\textparagraph  
 20578 \let\MultiplicationDot\textperiodcentered  
 20579 \let\Squaredot\textperiodcentered  
 20580 \let\vartimes\textmultiply

20581 \let\MVMultiplication\textmultiply  
 20582 \let\eth\dh  
 20583 \let\crossd\textcrd  
 20584 \let\textbard\textcrd  
 20585 \let\bard\textcrd  
 20586 \let\textcrh\texthbar  
 20587 \let\crossh\texthbar  
 20588 \let\planck\texthbar  
 20589 \let\eng\ng  
 20590 \let\engma\ng  
 20591 \let\crossb\textcrb  
 20592 \let\textbarb\textcrb  
 20593 \let\barb\textcrb  
 20594 \let\Florin\textflorin  
 20595 \let\hv\texthvl  
 20596 \let\hausak\texthtk  
 20597 \let\crossnilambda\textcrlambda  
 20598 \let\barlambda\textcrlambda  
 20599 \let\lambdabar\textcrlambda  
 20600 \let\lambdash\textcrlambda  
 20601 \let\textnrleg\textPUnrleg  
 20602 \let\textpipevar\textpipe  
 20603 \let\textdoublepipevar\textdoublepipe  
 20604 \let\textdoublebarpipevar\textdoublebarpipe  
 20605 \let\textcrg\textgslash  
 20606 \let\textdblig\textPUdblig  
 20607 \let\textqplig\textPUqplig  
 20608 \let\textcentoldstyle\textslashc  
 20609 \let\textbarc\textslashc  
 20610 \let\inva\textturna  
 20611 \let\vara\textscripta  
 20612 \let\invscripta\textturnscripta  
 20613 \let\rotvara\textturnscripta  
 20614 \let\hookb\texthtb  
 20615 \let\hausab\texthtb  
 20616 \let\varopeno\textopeno  
 20617 \let\curlyc\textctc  
 20618 \let\taild\textrtaild  
 20619 \let\hookd\texthtd  
 20620 \let\hausad\texthtd  
 20621 \let\er\textrhookschwa  
 20622 \let\epsi\textniepsilon  
 20623 \let\hookrepsilon\texthookrepsilon  
 20624 \let\closedrepsilon\textcloserepsilon  
 20625 \let\barj\textbardotlessj  
 20626 \let\hookg\texthtg  
 20627 \let\varg\textscriptg  
 20628 \let\vod\texttipagamma  
 20629 \let\invh\textturnh  
 20630 \let\udesc\textturnh  
 20631 \let\hookh\texthth  
 20632 \let\voicedh\texthth  
 20633 \let\hookheng\texththeng  
 20634 \let\ibar\textbari

20635 \let\vari\textnniota  
 20636 \let\tildel\textltilde  
 20637 \let\latfric\textbeltl  
 20638 \let\tail\texttrtail  
 20639 \let\lz\textlyoghlig  
 20640 \let\invn\textturnm  
 20641 \let\rotr\textturnm  
 20642 \let\legm\textturnmrleg  
 20643 \let\labdentainas\textltailm  
 20644 \let\emgma\textltailm  
 20645 \let\nj\textltailn  
 20646 \let\enya\textltailn  
 20647 \let\tailn\texttrtailn  
 20648 \let\closedniomega\textcloseomega  
 20649 \let\varomega\textcloseomega  
 20650 \let\invr\textturnr  
 20651 \let\rotr\textturnr  
 20652 \let\invlegr\textturnlonglegr  
 20653 \let\tailinvr\textturnrrtail  
 20654 \let\legr\textlonglegr  
 20655 \let\tailr\texttrtailr  
 20656 \let\flapr\textfishhookr  
 20657 \let\flap\textfishhookr  
 20658 \let\tails\texttrtails  
 20659 \let\curlyesh\textctesh  
 20660 \let\clickt\textturnt  
 20661 \let\tailt\texttrtailt  
 20662 \let\ubar\textbaru  
 20663 \let\rotOmega\textniupsilon  
 20664 \let\invv\textturnv  
 20665 \let\pwedge\textturnv  
 20666 \let\invw\textturnw  
 20667 \let\rotrw\textturnw  
 20668 \let\invy\textturny  
 20669 \let\roty\textturny  
 20670 \let\tailz\texttrtailz  
 20671 \let\curlyz\textctz  
 20672 \let\curlyyogh\textctyogh  
 20673 \let\ejjective\textglotstop  
 20674 \let\glottal\textglotstop  
 20675 \let\reveject\textrevglotstop  
 20676 \let\clickc\textstretchc  
 20677 \let\textstretchcvar\textstretchc  
 20678 \let\clickb\textbullseye  
 20679 \let\textObullseye\textbullseye  
 20680 \let\textctjvar\textctj  
 20681 \let\textturnsck\textturnk  
 20682 \let\dz\textdzlig  
 20683 \let\tesh\textteshlig  
 20684 \let\digamma\textdigammagreek  
 20685 \let\hardsign\cyrrhdsn  
 20686 \let\softsign\cyrsftsn  
 20687 \let\hebsin\hebshin  
 20688 \let\textsck\textPUscck

20689 \let\textscm\textPUscm  
 20690 \let\textscp\textPUscp  
 20691 \let\textrevscr\textPUrevscr  
 20692 \let\textrhoaka\textPURhooka  
 20693 \let\textrhooke\textPURhooko  
 20694 \let\textrhookepsilon\textPURhookepsilon  
 20695 \let\texthookopeno\textPURhookopeno  
 20696 \let\textdoublevertline\textbardbl  
 20697 \let\dag\textdagger  
 20698 \let\ddagger\textdaggerdbl  
 20699 \let\ddag\textdaggerdbl  
 20700 \let\mathellipsis\textellipsis  
 20701 \let\EurDig\texteuro  
 20702 \let\EURdig\texteuro  
 20703 \let\EurHv\texteuro  
 20704 \let\EURhv\texteuro  
 20705 \let\EurCr\texteuro  
 20706 \let\EURcr\texteuro  
 20707 \let\EurTm\texteuro  
 20708 \let\EURtm\texteuro  
 20709 \let\Eur\texteuro  
 20710 \let\Denarius\textDeleatur  
 20711 \let\agemO\textmho  
 20712 \let\EstimatedSign\textestimated  
 20713 \let\Ecommerce\textestimated  
 20714 \let\bindnasrepma\textinvamp  
 20715 \let\parr\textinvamp  
 20716 \let\MVRightArrow\textrightarrow  
 20717 \let\MVRightarrow\textrightarrow  
 20718 \let\MVArrowDown\textdownarrow  
 20719 \let\Force\textdownarrow  
 20720 \let\textglobrise\textnearrow  
 20721 \let\textglobfall\textsearrow  
 20722 \let\Lightning\textlightning  
 20723 \let\Conclusion\textrightarrow  
 20724 \let\dashedleftarrow\textdashleftarrow  
 20725 \let\dashedrightarrow\textdashrightarrow  
 20726 \let\varnothing\textemptyset  
 20727 \let\owns\textni  
 20728 \let\notni\textnotowner  
 20729 \let\varprop\textpropto  
 20730 \let\varangle\textsphericalangle  
 20731 \let\Anglesign\textsphericalangle  
 20732 \let\AngleSign\textsphericalangle  
 20733 \let\notdivides\textnmid  
 20734 \let\varowedge\textowedge  
 20735 \let\varovee\textovee  
 20736 \let\varint\textint  
 20737 \let\varoint\textoint  
 20738 \let\downtherefore\textbecause  
 20739 \let\textdotdiv\textdotminus  
 20740 \let\AC\textsim  
 20741 \let\wreath\textwr  
 20742 \let\nthickapprox\textnapprox

20743 \let\VHF\texttriplesim  
 20744 \let\notasymp\textnasymp  
 20745 \let\Doteq\textdoteqdot  
 20746 \let\corresponds\texthateq  
 20747 \let\Corresponds\texthateq  
 20748 \let\nequal\textneq  
 20749 \let\Congruent\textequiv  
 20750 \let\NotCongruent\textnequiv  
 20751 \let\notequiv\textnequiv  
 20752 \let\LessOrEqual\textleq  
 20753 \let\LargerOrEqual\textgeq  
 20754 \let\apprle\textless  
 20755 \let\apprge\textgtr  
 20756 \let\varoplus\textoplus  
 20757 \let\varominus\textominus  
 20758 \let\varotimes\textotimes  
 20759 \let\varoslash\textoslash  
 20760 \let\varodot\textodot  
 20761 \let\ocirc\textcircledcirc  
 20762 \let\varocircle\textcircledcirc  
 20763 \let\varoast\textcircledast  
 20764 \let\oasterisk\textcircledast  
 20765 \let\rightvdash\textvdash  
 20766 \let\leftvdash\textdashv  
 20767 \let\leftdashv\textdashv  
 20768 \let\downvdash\texttop  
 20769 \let\upvdash\textbot  
 20770 \let\perp\textnupvdash  
 20771 \let\models\textvDash  
 20772 \let\models\textvDash  
 20773 \let\models\textVdash  
 20774 \let\models\textVdash  
 20775 \let\models\textnvDash  
 20776 \let\models\textnvDash  
 20777 \let\models\textnvDash  
 20778 \let\models\textnVdash  
 20779 \let\models\textnVdash  
 20780 \let\lessclosed\textlhd  
 20781 \let\gtrclosed\textrhd  
 20782 \let\leqclosed\textunlhd  
 20783 \let\trianglelefteq\textunlhd  
 20784 \let\geqclosed\textunrhd  
 20785 \let\trianglerighteq\textunrhd  
 20786 \let\Bowtie\textbowtie  
 20787 \let\varcurlyvee\textcurlyvee  
 20788 \let\varcurlywedge\textcurlywedge  
 20789 \let\doublecap\textCap  
 20790 \let\doublecup\textCup  
 20791 \let\varsubsetneq\textsubsetneq  
 20792 \let\varsupsetneq\textsupsetneq  
 20793 \let\lessclosed\texttriangleleft  
 20794 \let\ngtrclosed\texttriangleleft  
 20795 \let\Clocklogo\textclock  
 20796 \let\ClockLogo\textclock

20797 \let\baro\textstmaryrdbaro  
 20798 \let\varparallelinv\textbbslash  
 20799 \let\CleaningA\textCircledA  
 20800 \let\Kutline\textCuttingLine  
 20801 \let\CutLine\textCuttingLine  
 20802 \let\Cutline\textCuttingLine  
 20803 \let\MoveUp\textUParrow  
 20804 \let\APLup\textbigtriangleup  
 20805 \let\Bleech\textbigtriangleup  
 20806 \let\MoveDown\textDOWNarrow  
 20807 \let\APLdown\textbigtriangledown  
 20808 \let\Diamond\textdiamond  
 20809 \let\varbigcirc\textbigcircle  
 20810 \let\Telefon\textPhone  
 20811 \let\Box\textboxempty  
 20812 \let\CheckedBox\textCheckedbox  
 20813 \let\XBox\textCrossedbox  
 20814 \let\CrossedBox\textCrossedbox  
 20815 \let\rightpointleft\textHandLeft  
 20816 \let\leftpointright\textHandRight  
 20817 \let\PointingHand\textHandRight  
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 20819 \let\Radiation\textRadioactivity  
 20820 \let\Yinyang\textYinYang  
 20821 \let\YingYang\textYinYang  
 20822 \let\Yingyang\textYinYang  
 20823 \let\Frowny\textfrownie  
 20824 \let\Smiley\textsmiley  
 20825 \let\Sun\textsun  
 20826 \let\Mercury\textmercury  
 20827 \let\textfemale\textPUfemale  
 20828 \let\female\textPUfemale  
 20829 \let\venus\textPUfemale  
 20830 \let\Venus\textPUfemale  
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 20847 \let\Libra\textlibra  
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 20849 \let\Sagittarius\textsagittarius  
 20850 \let\Capricorn\textcapricornus

20851 \let\Aquarius\textaquarius  
 20852 \let\Pisces\textpisces  
 20853 \let\spadesuit\textspadesuitblack  
 20854 \let\Heart\textheartsuitwhite  
 20855 \let\heartsuit\textheartsuitwhite  
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 20860 \let\VarFlag\textFlag  
 20861 \let\textxswup\textdsmilitary  
 20862 \let\textuncrfemale\textPUuncrfemale  
 20863 \let\Football\textSoccerBall  
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 20865 \let\Cutright\textScissorRightBrokenBottom  
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 20867 \let\Leftscissors\textScissorRight  
 20868 \let\Letter\textEnvelope  
 20869 \let\Writinghand\textWritingHand  
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 20879 \let\circledbslash\textobslash  
 20880 \let\obackslash\textobslash  
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 20882 \let\odplus\textobot  
 20883 \let\varolessthan\textolessthan  
 20884 \let\varogreaterthan\textogreaterthan  
 20885 \let\divdot\textminusdot  
 20886 \let\doublesqcap\textsqdoublecap  
 20887 \let\doublesqcup\textsqdoublecup  
 20888 \let\merge\textdoublevee  
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 20890 \let\nleftVdash\textndashV  
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 20894 \let\nleftModels\textnDashV  
 20895 \let\varparallel\textsslash  
 20896 \let\textheng\textPUheng  
 20897 \let\textlhookfour\textPUlhookfour  
 20898 \let\textscf\textPUscf  
 20899 \let\textaoig\textPUaoig  
 20900 \let\Ganz\textfullnote  
 20901 \let\Halb\texthalfnote  
 20902 \let\Womanface\textWomanFace  
 20903 \let\Faxmachine\textFax  
 20904 \let\CEsign\textCESign



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20905 }% \psdaliasnames
20906 \psdextra
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## 47 End of file hycheck.tex

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20907 \*check
20908 \typeout{}
20909 \begin{document}
20910 \end{document}
20911 \check
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