

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

Sebastian Rahtz (deceased)

Heiko Oberdiek (inactive)

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

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

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## 1 Documentation overview for hyperref

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

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

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

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

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

Source code documentation:

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

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

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

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### 3 File hyccheck.tex

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

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

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

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

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

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

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

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

`\HyC@checkPackage`

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```



```

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

```

`\HyC@noValue`

```

85 \def\HyC@noValue{NoValue}

```

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

```

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

```

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

```

90 \newtoks\HyC@Toks

```

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

```

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

```

`\HyC@nc@opt` This macro scans the first optional argument of a  $\text{\LaTeX}$  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#1{%
126 \HyC@Toks={#1}%
127 \HyC@nc@noopt
128 }
129 \let\HyC@edef\HyC@def

```

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

```

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

```

`\HyC@checkItem` A single check.

```

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

```

`\HyC@string` Some shorthands.

```

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

```

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

```

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

```

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

```

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

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

```

## 4 Package options and setup

### 4.1 Save catcodes

There are many packages that change the standard catcodes.

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

```

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

```

\Hy@SetCatcodes

```

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

```

```

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

```

\Hy@RestoreCatcodes

```

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

```

231 \Hy@SetCatcodes

change 2020-07-24: require newer pdftexcmds and remove fallback code for version older than 2010. change 2021-08-14: require expl3 change 2023-11-26: no longer require pdftexcmds change 2023-11-26: no longer require expl3, we assume kernel is new enough.

```

232 \RequirePackage{iftex}[2019/10/24]
233 \RequirePackage{keyval}[1997/11/10]
234 \RequirePackage{kvsetkeys}[2007/09/29]
235 \RequirePackage{kvdefinekeys}[2011/04/07]
236 \RequirePackage{pdfescape}[2007/11/11]
237 \RequirePackage{hycolor}
238 \RequirePackage{auxhook}[2009/12/14]
239 \RequirePackage{nameref}[2012/07/28]
240 \RequirePackage{etoolbox}
241 \def\Hy@Error{\PackageError{hyperref}}
242 \def\Hy@Warning{\PackageWarning{hyperref}}

```

```

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

```

## 4.2 Version check

\Hy@VersionChecked

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

\Hy@VersionCheck

```

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

```

```

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

```

\Hy@@VersionCheck

```

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

```

### 4.3 Checks with regular expressions

```

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

```

## 4.4 Compatibility with format dumps

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

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

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

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

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

`\Hy@AtEndOfPackage`

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

`\Hy@AtBeginDocumentHook`

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

`\Hy@AtEndOfPackageHook`

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

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

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

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

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

## 4.5 Switches

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

Defaults for the switches are now set.

```
414 \Hy@backreffalse
```



```

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

```

## 5 Common help macros

\Hy@StepCount

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

\Hy@GlobalStepCount

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

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

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

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

```

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

```

## 5.1 Macros for recursions

```

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

```

## 5.2 Babel's protection of shorthand characters

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

```

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

```

## 5.3 Coordinate transformations

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

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

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

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

Example (TeX):

```

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

```

`\hypercalcbp`

```

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

```

## 6 Dealing with PDF strings

The PDF string stuff done by Heiko Oberdiek.

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

## 6.1 Description of PDF strings

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

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

## 6.2 Definition of `\pdfstringdef`

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

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

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

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

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

`ppercaseUnsupportedInPdfStrings`  
`owercaseUnsupportedInPdfStrings`

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

```

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

```

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

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

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

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

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

```
497 \begingroup
```

### 6.2.1 Preprocessing

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

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

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

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

From the view of  $\TeX$  an octal sequence consists of the command tokens `\0` until `\3` and two digits. For saving tokens `\0`, `\1`, `\2`, and `\3` are directly used without a preceding `\string` in the glyph definitions. This is done here locally by defining the `\0` until `\3` commands. So the user can use octal escape sequences directly, the disadvantage is that a previous definition of these short commands does not apply.

```

499 \edef\0{\string\0}%
500 \edef\1{\string\1}%
501 \edef\2{\string\2}%
502 \edef\3{\string\3}%

```

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

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

```

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

```

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

```

515 \@inmathwarn\pdfstringdef

```

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

```

516 \let\@inmathwarn\HyPsd@inmathwarn

```

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

```

517 \let\add@accent\HyPsd@add@accent

```

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

```

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

```

```

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

```

**Newline** `\newline` or `\\` do not work in bookmarks, in text annotations they should expand to `\r`. In pdf strings `\\` stands for a backslash. Therefore the commands are disabled now. The user can redefine them for a result what he want:

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

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

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

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

```

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

```

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

```

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

```

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

```

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

```

```

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

```

#### Package pifont.

```

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

```

#### Environments.

```

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

```

#### Package color.

```

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

```

#### Upper- and lowercase.

```

598 \def\MakeUppercase{\MakeUppercaseUnsupportedInPdfStrings}%
599 \def\MakeLowercase{\MakeLowercaseUnsupportedInPdfStrings}%

```

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

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

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

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

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

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

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

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

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

**Package german.**

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

**Package french.** The support is deferred, because it needs `\GenericError` to be disabled (see below).

**Package FrenchPro.** This package uses:

```
\if@mid@expandable{not fully expandable code}{fully expandable
code}
```

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

**AMS classes.**

```
625 \HyPsd@AMSclassfix
```



**Redefinition of `\hspace`** `\hspace` don't work in bookmarks, the following fix tries to set a space if the argument is a positive length.

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

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

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

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

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

**Miscellaneous commands.**

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

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

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

**Patch for `cjk` bookmarks.**

```
642 \HyPsd@CJKhook
```

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

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

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

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

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

### Package xspace.

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

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

```
657 \let\discretionary@gobbletwo
```

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

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

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

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

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

Support for package 'xargs':

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

### 6.2.2 Expansion

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

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

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

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

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

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

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

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

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

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

### 6.2.3 Postprocessing

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

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

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

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

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

```
682 \HyPsd@ProtectSpaces#1%
683 \let\HyPsd@String\@empty
684 \expandafter\HyPsd@RemoveBraces\expandafter{#1|}%
685 \global\let#1\HyPsd@String
```

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

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

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

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

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

`\HyPsd@CheckCatcodes` should no have removed the tokens with catcode 3, 4, 7, and 8. Because a parameter token (6) would cause to many errors before, there should now be only tokens with catcodes 11 or 12. So I think there is no need for a safety step like:

```
\xdef#1{\expandafter\strip@prefix\meaning#1}%
```

**Looking for wrong glyphs.** The case that glyphs aren't defined in the PD1 encoding is caught above in such a way, that the glyph name and a marker is inserted into the string. Now we can safely scan the string for this marker and provide a descriptive warning.

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

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

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

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

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

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

**Right parenthesis.** Also `\xspace` detects a right parenthesis. For the `\xspace` support and the following parenthesis check the different parenthesis notations `)`, `\)`, and `\051` are converted to one type `\)` and before `\HyPsd@empty` with the meaning of `\relax` is introduced for `\xspace`. By redefining to `\@empty` `\HyPsd@empty` can easily removed later.

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

```

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

```

**Support for package `xspace`.** `\xspace` looks for the next token and decides if it expands to a space or not. Following tokens prevent its transformation to a space: Beginning and end of group, handled above by replacing by an italic correction, several punctuation marks, a closing parentheses, and several spaces.

Without package `xspace` there are tokens with catcode 11 and 12, `\HyPsd@empty` and `\HyPsd@SPACEOPTI`. With package `xspace` marker for the italic correction `\/` and `\xspace` come with. In the package `xspace` case the two markers are replaced by commands and an `\edef` performs the `\xspace` processing.

In the opposite of the original `\xspace` `\HyPsd@xspace` uses an argument instead of a `\futurelet`, so we have to provide such an argument, if `\HyPsd@xspace` comes last. Because `\HyPsd@Subst` with several equal tokens (`--`) needs a safe last token, in both cases the string gets an additional `\HyPsd@empty`.

```

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

```

**Ligatures.**  $\TeX$  forms ligatures in its stomach, but the PDF strings are treated only by  $\TeX$ 's mouth. The PDFDocEncoding contains some ligatures, but the current version 3 of the AcrobatReader lacks the `fi` and `fl` glyphs, and the Linux version lacks the `emdash` and `endash` glyphs. So the necessary code is provided here, but currently disabled, hoping that version 4 of the AcrobatReader is better. To break the ligatures the user can use an empty group, because it leads to an insertion of an `\HyPsd@empty`. If this ligature code will be enabled some day, then the italic correction should also break the ligatures. Currently this occurs only, if package `xspace` is loaded.

Since newer AcrobatReader versions now show the en- and emdash in a correct way (AR7/Linux, AR8/Linux), the substitution code for them is enabled starting with version 6.78l.

```

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

```

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

```
739 \let\HyPsd@empty\@empty
```

**Left parentheses.** Left parentheses are now converted to safe forms to avoid problems with unmatched ones (`\(` with `PDFDocEncoding`, the octal sequence with `Unicode`).

An optimization is possible. Matched parentheses can be replaced by a `()` pair. But this code is removed to save `TeX` memory and time.

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

**Optimizing spaces.** Spaces are often used, but they have a very long form `\040`. They are converted back to real spaces, but not all, so that no space follows after another. In the bookmark case several spaces are written to the `.out` file, but if the entries are read back, several spaces are merged to a single one.

With `Unicode` the spaces are replaced by their octal sequences.

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

**Converting to Unicode.** At last the eight bit letters have to be converted to `Unicode`, the masks `\8` and `\9` are removed and the `Unicode` marker is added.

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

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

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

```

772     \HyPsd@EscapeTeX#1%
773   }%
774   \else
775     \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
776         {utf16be}{pdfdoc}{%
777     \EdefEscapeString\HyPsd@temp\HyPsd@temp
778     \global\let#1\HyPsd@temp
779     \HyPsd@EscapeTeX#1%
780     \Hy@unicodedefalse
781   }{}%
782   \fi
783 }%
784 \fi
785 \fi

```

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

```

786 \pdfstringdefPostHook#1%
787 \endgroup
788 }

```

`\Hy@pdfstringdef`

```

789 \def\Hy@pdfstringdef#1#2{%
790 \pdfstringdef\Hy@gtemp{#2}%
791 \let#1\Hy@gtemp
792 }

```

## 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

```

793 \@ifpackageloaded{linguex}{%
794 \let\HyLinguex@OrgB\b
795 \let\HyLinguex@OrgC\c
796 \let\HyLinguex@OrgD\d
797 \def\HyLinguex@Restore{%
798 \let\b\HyLinguex@OrgB
799 \let\c\HyLinguex@OrgC
800 \let\d\HyLinguex@OrgD
801 }%
802 \Hy@AtEndOfPackage{%
803 \pdfstringdefDisableCommands{%
804 \ifundefined{oldb}{\let\b\oldb}%
805 \ifundefined{oldc}{\let\c\oldc}%
806 \ifundefined{oldd}{\let\d\oldd}%
807 }%
808 }%
809 }{%

```



```

810 \let\HyLinguex@Restore\relax
811 }%

```

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

```
\Hy@SaveCatcodeSettings
```

```

812 \def\Hy@SaveCatcodeSettings#1{%
813 \expandafter\edef\csname Hy@cat@#1\endcsname{%
814 \endlinechar=\the\endlinechar\relax
815 \catcode32 \the\catcode32\relax % (space)
816 \catcode34 \the\catcode34\relax % "
817 \catcode35 \the\catcode35\relax % #
818 \catcode37 \the\catcode37\relax % (percent)
819 \catcode40 \the\catcode40\relax % (
820 \catcode41 \the\catcode41\relax % )
821 \catcode42 \the\catcode42\relax % *
822 \catcode46 \the\catcode46\relax % .
823 \catcode58 \the\catcode58\relax % :
824 \catcode60 \the\catcode60\relax % <
825 \catcode61 \the\catcode61\relax % =
826 \catcode62 \the\catcode62\relax % >
827 \catcode64 \the\catcode64\relax % @
828 \catcode91 \the\catcode91\relax % [
829 \catcode92 \the\catcode92\relax % (backslash)
830 \catcode93 \the\catcode93\relax % ]
831 \catcode123 \the\catcode123\relax % {
832 \catcode124 \the\catcode124\relax % |
833 \catcode125 \the\catcode125\relax % }
834 }%
835 \endlinechar=-1 %
836 \catcode32 10 % (space)
837 \catcode34 12 % "
838 \catcode35 6 % #
839 \catcode37 14 % (percent)
840 \catcode40 12 % (
841 \catcode41 12 % )
842 \catcode42 12 % *
843 \catcode46 12 % .
844 \catcode58 12 % :
845 \catcode60 12 % <
846 \catcode61 12 % =
847 \catcode62 12 % >
848 \catcode91 12 % [
849 \catcode92 0 % (backslash)
850 \catcode93 12 % ]
851 \catcode123 1 % {
852 \catcode124 12 % |
853 \catcode125 2 % }
854 \makeatletter
855 }

```

```
\Hy@RestoreCatcodeSettings
```

```

856 \def\Hy@RestoreCatcodeSettings#1{%
857 \csname Hy@cat@#1\endcsname
858 \expandafter\let\csname Hy@cat@#1\endcsname\relax

```

### 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.

```

860 \@ifundefined{T@PD1}{%
861   \Hy@SaveCatcodeSettings{pd1}%
862   \input{pd1enc.def}%
863   \Hy@RestoreCatcodeSettings{pd1}%
864   \HyLinguex@Restore
865 }{}
866 \DeclareFontFamily{PD1}{pdf}{}
867 \DeclareFontShape{PD1}{pdf}{m}{n}{ <-> cmr10 }{}
868 \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`.

```

869 \def\HyPsd@LoadUnicode{%
870   \@ifundefined{T@PU}{%
871     \Hy@SaveCatcodeSettings{pu}%
872     \input{puenc.def}%
873     \Hy@RestoreCatcodeSettings{pu}%
874     \HyLinguex@Restore
875   }{}%
876   \DeclareFontFamily{PU}{pdf}{}%
877   \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%
878   \DeclareFontSubstitution{PU}{pdf}{m}{n}%
879   \HyPsd@LoadExtra
880   \let\HyPsd@LoadUnicode\relax
881 }

```

`\HyPsd@LoadExtra`

```

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

```

```

889   \input{psdextra.def}%
890   \Hy@RestoreCatcodeSettings{psdextra}%
891   \let\HyPsd@LoadExtra\relax
892   }{}%
893 \fi
894 }

```

## 6.4 Additional user commands

### 6.4.1 `\texorpdfstring`

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

```

895 \def\texorpdfstring{%
896   \ifHy@pdfstring
897   \expandafter\@secondoftwo
898   \else
899   \expandafter\@firstoftwo
900   \fi
901 }

```

### 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`.

```

902 \@ifundefined{pdfstringdefPreHook}{%
903   \let\pdfstringdefPreHook\@empty
904 }{}
905 \@ifundefined{pdfstringdefPostHook}{%
906   \let\pdfstringdefPostHook\@gobble
907 }{}

```

`\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`.

```

908 \def\pdfstringdefDisableCommands{%
909   \begingroup

```

```

910 \makeatletter
911 \HyPsd@DisableCommands
912 }

```

`\HyPsd@DisableCommands`

```

913 \long\def\HyPsd@DisableCommands#1{%
914   \Hy@GlobalAppendToMacro\pdfstringdefPreHook{#1}%
915   \endgroup
916 }

```

`\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`.

```

917 \def\pdfstringdefWarn#1{%
918   \expandafter\noexpand\csname<>-string#1\endcsname
919 }

```

## 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.

```

920 \begingroup
921 \catcode0=12 %
922 \def\x{\endgroup
923   \def\HyPsd@ignorespaces{%
924     \romannumeral\expandafter`\expandafter^^@%
925     \romannumeral`^^@%
926   }%
927 }%
928 \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.

```

929 \newif\ifHy@next
930 </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.

```
931 (*package)
```

### 6.5.3 CJK patch

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

```
\HyPsd@CJKhook
```

```
933 \def\HyPsd@CJKhook{%
934   \@ifpackageloaded{CJK}{%
935     \let\CJK@kern\relax
936     \let\CJKkern\relax
937     \let\CJK@CJK\relax
938     \ifHy@CJKbookmarks
939       \HyPsd@CJKhook@bookmarks
940     \fi
941     \HyPsd@CJKhook@unicode
942   }{%
943 }
```

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

```
944 \begingroup
945   \catcode"7F=\active
946   \toks@{%
947     \let\CJK@ignorespaces\empty
948     \def\CJK@char#1{\@gobbletwo}%
949     \let\CJK@charx\@gobblefour
950     \let\CJK@punctchar\@gobblefour
951     \def\CJK@punctcharx#1{\@gobblefour}%

```

```

952 \catcode"7F=\active
953 \def^^7f#1^^7f#2^^7f{%
954 \string #1\HyPsd@DecimalToOctal{#2}%
955 }%
956 % ... ?
957 \ifHy@unicode
958 \def\Hy@cjku{\80}%
959 \else
960 \let\Hy@cjku\@empty
961 \fi
962 \HyPsd@CJKActiveChars
963 }%
964 \count@=127 %
965 \@whilenum\count@<255 \do{%
966 \advance\count@ by 1 %
967 \lccode`\~=\count@
968 \lowercase{%
969 \toks@\expandafter{\the\toks@ ~}%
970 }%
971 }%
972 \toks@\expandafter{\the\toks@ !}%
973 \xdef\HyPsd@CJKhook@bookmarks{%
974 \the\toks@
975 }%
976 \endgroup

```

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

```

977 \def\HyPsd@CJKActiveChars#1{%
978 \ifx#1!%
979 \let\HyPsd@CJKActiveChars\relax
980 \else
981 \edef#1{\noexpand\Hy@cjku\string#1}%
982 \fi
983 \HyPsd@CJKActiveChars
984 }

```

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

```

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

```

```

1001 \or p\or q\or r\or s\or t\or u\or v\or w%
1002 \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
1003 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
1004 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
1005 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1006 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
1007 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1008 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1009 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1010 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1011 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1012 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1013 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1014 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1015 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1016 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1017 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1018 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1019 \fi
1020 }

```

### 6.5.5 CJK unicode

\HyPsd@CJKhook@unicode

```

1021 \def\HyPsd@CJKhook@unicode{%
1022 \let\Unicode\HyPsd@CJK@Unicode
1023 \let\CJKnumber\HyPsd@CJKnumber
1024 \let\CJKdigits\HyPsd@CJKdigits
1025 }

```

\HyPsd@CJK@Unicode

```

1026 \def\HyPsd@CJK@Unicode#1#2{%
1027 \ifnum#1<256 %
1028 \HyPsd@DecimalToOctalFirst{#1}%
1029 \HyPsd@DecimalToOctalSecond{#2}%
1030 \else
1031 \933%
1032 \expandafter\expandafter\expandafter\HyPsd@HighA
1033 \intcalcDiv{#1}{4}!%
1034 \933%
1035 \ifcase\intcalcMod{#1}{4} %
1036 4\or 5\or 6\or 7%
1037 \fi
1038 \HyPsd@DecimalToOctalSecond{#2}%
1039 \fi
1040 }

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

```

```

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

```



```

1102 \ifcase #1 %
1103     \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
1104     \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
1105     \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
1106     \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
1107     \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
1108     \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
1109     \or \060\or \061\or \062\or \063\or \064\or \065\or \066\or \067%
1110     \or \070\or \071\or \072\or \073\or \074\or \075\or \076\or \077%
1111     \or \100\or \101\or \102\or \103\or \104\or \105\or \106\or \107%
1112     \or \110\or \111\or \112\or \113\or \114\or \115\or \116\or \117%
1113     \or \120\or \121\or \122\or \123\or \124\or \125\or \126\or \127%
1114     \or \130\or \131\or \132\or \133\or \134\or \135\or \136\or \137%
1115     \or \140\or \141\or \142\or \143\or \144\or \145\or \146\or \147%
1116     \or \150\or \151\or \152\or \153\or \154\or \155\or \156\or \157%
1117     \or \160\or \161\or \162\or \163\or \164\or \165\or \166\or \167%
1118     \or \170\or \171\or \172\or \173\or \174\or \175\or \176\or \177%
1119     \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
1120     \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
1121     \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1122     \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
1123     \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1124     \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1125     \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1126     \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1127     \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1128     \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1129     \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1130     \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1131     \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1132     \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1133     \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1134     \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1135 \fi
1136 }

1137 \def\HyPsd@CJKnumber#1{%
1138     \ifnum#1<\z@
1139         \CJK@minus
1140     \expandafter\HyPsd@@CJKnumber\expandafter{\number-\number#1}%
1141     \else
1142         \expandafter\HyPsd@@CJKnumber\expandafter{\number#1}%
1143     \fi
1144 }

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

```

```

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

```

```

1210    #2%
1211    \HyPsd@CJKnumberTwo#1!{#3}%
1212    \else
1213    \HyPsd@@CJKnumber{\IntCalcDiv#1!100!}%
1214    \CJK@hundred
1215    \expandafter\expandafter\expandafter\HyPsd@CJKnumberTwo
1216    \IntCalcMod#1!100!%
1217    !\CJK@zero{10}%
1218    \fi
1219    \fi
1220 }
1221 \def\HyPsd@CJKnumberTwo#1!#2#3{%
1222 \ifnum#1=\z@
1223 \else
1224 \ifnum#1<#3 %
1225    #2%
1226    \HyPsd@@CJKnumber{#1}%
1227    \else
1228    \HyPsd@@CJKnumber{\IntCalcDiv#1!10!}%
1229    \CJK@ten
1230    \ifnum\IntCalcMod#1!10!=\z@
1231    \else
1232    \HyPsd@@CJKnumber{\IntCalcMod#1!10!}%
1233    \fi
1234    \fi
1235    \fi
1236 }

1237 \def\HyPsd@CJKdigits#1{%
1238 \ifx*#1\relax
1239 \expandafter\HyPsd@@CJKdigits\expandafter\CJK@zero
1240 \else
1241 \HyPsd@@CJKdigits\CJK@null{#1}%
1242 \fi
1243 }
1244 \def\HyPsd@@CJKdigits#1#2{%
1245 \ifx\#2\%
1246 \else
1247 \HyPsd@@@CJKdigits#1#2\@nil
1248 \fi
1249 }%
1250 \def\HyPsd@@@CJKdigits#1#2#3\@nil{%
1251 \HyPsd@CJKdigit#1{#2}%
1252 \ifx\#3\%
1253 \expandafter\@gobble
1254 \else
1255 \expandafter\@firstofone
1256 \fi
1257 }%
1258 \HyPsd@@@CJKdigits#1#3\@nil
1259 }%
1260 }
1261 \def\HyPsd@CJKdigit#1#2{%
1262 \ifcase#2 %
1263    #1\or

```

```

1264 \CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1265 \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine
1266 \fi
1267 }

```

### 6.5.6 \@inmathwarn-Patch

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

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

```

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

1268 \def\HyPsd@inmathwarn#1#2{%
1269 \ifx#2\expandafter
1270 \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
1271 \HyPsd@GLYPHERR

```

```

1272 \expandafter\@gobble\string#1%
1273 >%
1274 \expandafter\expandafter\expandafter\HyPsd@EndWithElse
1275 \else
1276 \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
1277 \fi
1278 \else
1279 \expandafter#2%
1280 \fi
1281 }
1282 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
1283 \def\HyPsd@EndWithElse#1\else{else}

```

`\HyPsd@add@accent`

```

1284 \def\HyPsd@add@accent#1#2{%
1285 \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
1286 #2%
1287 }%

```

### 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, `dimen`, and `skip` assignments.

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

```

1288 \def\HyPsd@LetUnexpandableSpace#1{%
1289 \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
1290 }

```

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

```

1291 \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.

```

1292 \edef\HyPsd@XSPACE{\string#\string X}
1293 \edef\HyPsd@ITALCORR{\string#\string I}
1294 \edef\HyPsd@GLYPHERR{\string#\string G}

```

### 6.5.9 `\hspace fix`

`\HyPsd@hspace`

```

1295 \def\HyPsd@hspace#1{\HyPsd@@hspace#1*\END}

```

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

```
1296 \def\HyPsd@@hspace#1*#2\END{%
1297   \ifx\#2\%
1298     \HyPsd@hspacetest{#1}%
1299   \else
1300     \expandafter\HyPsd@hspacetest
1301   \fi
1302 }
```

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

```
1303 \def\HyPsd@hspacetest#1{\ifdim\dimexpr#1\relax>\z@\space\fi}
```

### 6.5.10 Fix for AMS classes

```
1304 \@ifundefined{tocsection}{%
1305   \let\HyPsd@AMSclassfix\relax
1306 }{%
1307   \def\HyPsd@AMSclassfix{%
1308     \let\tocpart\HyPsd@tocsection
1309     \let\tocchapter\HyPsd@tocsection
1310     \let\tocappendix\HyPsd@tocsection
1311     \let\tocsection\HyPsd@tocsection
1312     \let\tocsubsection\HyPsd@tocsection
1313     \let\tocsubsubsection\HyPsd@tocsection
1314     \let\tocparagraph\HyPsd@tocsection
1315   }%
1316   \def\HyPsd@tocsection#1#2#3{%
1317     \if @#2@\else\if @#1@\else#1 \fi#2. \fi
1318     #3%
1319   }%
1320 }
```

### 6.5.11 Reference commands

`\HyPsd@href`

```
1321 \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.

```
1322 \def\HyPsd@ref#1{\HyPsd@@ref#1*\END}%
```

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

```
1323 \def\HyPsd@@ref#1*#2\END{%
1324   \ifx\#2\%
1325     \HyPsd@@@ref{#1}%
1326   \else
1327     \expandafter\HyPsd@@@ref
1328   \fi
1329 }
```

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

```
1330 \def\HyPsd@@@ref#1{%
1331   \expandafter\ifx\csname r@#1\endcsname\relax
```

```

1332  ??%
1333  \else
1334  \expandafter\expandafter\expandafter
1335  \@car\csname r@#1\endcsname\@nil
1336  \fi
1337  }

```

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

```

1338 \def\HyPsd@pageref#1{\HyPsd@@pageref#1*\END}

```

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

```

1339 \def\HyPsd@@pageref#1*#2\END{%
1340  \ifx\#2\%
1341  \HyPsd@@@pageref{#1}%
1342  \else
1343  \expandafter\HyPsd@@@pageref
1344  \fi
1345  }

```

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

```

1346 \def\HyPsd@@@pageref#1{%
1347  \expandafter\ifx\csname r@#1\endcsname\relax
1348  ??%
1349  \else
1350  \expandafter\expandafter\expandafter\expandafter
1351  \expandafter\expandafter\expandafter\@car
1352  \expandafter\expandafter\expandafter\@gobble
1353  \csname r@#1\endcsname{ }\@nil
1354  \fi
1355  }

```

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

```

1356 \def\HyPsd@nameref#1{\HyPsd@@nameref#1*\END}

```

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

```

1357 \def\HyPsd@@nameref#1*#2\END{%
1358  \ifx\#2\%
1359  \HyPsd@@@nameref{#1}%
1360  \else
1361  \expandafter\HyPsd@@@nameref
1362  \fi
1363  }

```

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

```

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

```

```

1371 \csname r@#1\endcsname{}{}\@nil
1372 \fi
1373 }

```

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

```

1374 \def\HyPsd@autoref#1{\HyPsd@@autoref#1*\END}

```

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

```

1375 \def\HyPsd@@autoref#1*#2\END{%
1376 \ifx\#2\%
1377 \HyPsd@@@autoref{#1}%
1378 \else
1379 \expandafter\HyPsd@@@autoref
1380 \fi
1381 }

```

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

```

1382 \def\HyPsd@@@autoref#1{%
1383 \expandafter\ifx\csname r@#1\endcsname\relax
1384 ??%
1385 \else
1386 \expandafter\expandafter\expandafter\HyPsd@autorefname
1387 \csname r@#1\endcsname{}{}{}{}\@nil
1388 \expandafter\expandafter\expandafter
1389 \@car\csname r@#1\endcsname\@nil
1390 \fi
1391 }

```

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

```

1392 \def\HyPsd@autorefname#1#2#3#4#5\@nil{%
1393 \ifx\#4\%
1394 \else
1395 \HyPsd@@autorefname#4.\@nil
1396 \fi
1397 }

```

`\HyPsd@@autorefname`

```

1398 \def\HyPsd@@autorefname#1.#2\@nil{%
1399 \@ifundefined{#1autorefname}{%
1400 \@ifundefined{#1name}{%
1401 }{%
1402 \csname#1name\endcsname\space
1403 }%
1404 }{%
1405 \csname#1autorefname\endcsname\space
1406 }%
1407 }

```

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

```

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

```

```

1434   \fi
1435 }%
1436 }%
1437 \expandafter\x\csname <def>-command\expandafter\endcsname
1438   \csname <let>-command\endcsname
1439 \def\HyPsd@LetCommand#1{%
1440   \expandafter\expandafter\expandafter\HyPsd@@LetCommand
1441   \expandafter\expandafter\expandafter{%
1442   \expandafter\@gobble\string#1\@empty
1443 }%
1444 }

```

### 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).

```

1445 \def\HyPsd@ifnextchar#1{%
1446   \pdfstringdefWarn#1%
1447   \expandafter\@gobbletwo\@gobble
1448 }

```

### 6.5.14 \@protected@testoptifnextchar

`\HyPsd@protected@testopt` Macros with optional arguments doesn't work properly, because they call `\@ifnextchar` to detect the optional argument (see the explanation of `\HyPsd@ifnextchar`). But a warning, that `\@ifnextchar` doesn't work, doesn't help the user very much. Therefore `\@protected@testopt` is also disabled, because its first argument is the problematic macro with the optional argument and it is called before `\@ifnextchar`.

```

1449 \def\HyPsd@protected@testopt#1{%
1450   \pdfstringdefWarn#1%
1451   \@gobbletwo
1452 }

```

## 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:

```

1453 \def\HyPsd@Warning#1{%
1454   \begingroup
1455   \let\space\Hy@space
1456   \Hy@Warning{#1}%

```

```

1457 \endgroup
1458 }

```

## 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`.

```

1459 \let\HyPsd@fi\fi
1460 \def\HyPsd@ProtectSpaces#1{%
1461   \xdef#1{%
1462     \iftrue
1463       \expandafter\HyPsd@@ProtectSpacesFi
1464       \expandafter|\expandafter\@empty#1| %
1465     \HyPsd@fi
1466   }%
1467   \expandafter\HyPsd@RemoveMask#1\HyPsd@End#1%
1468 }%

```

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

```

1469 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@fi{%
1470   \fi
1471   \unexpanded{#1}%
1472   \ifx\scrollmode#2\scrollmode
1473   \else
1474     \HyPsd@@ProtectSpacesFi\HyPsd@UnexpandableSpace#2%
1475   \HyPsd@fi
1476 }%

```

### 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.

```

1477 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1478   \xdef#2{\unexpanded\expandafter{#1}}%
1479 }%

```

## 6.6.3 Remove grouping braces

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

```

1480 \def\HyPsd@RemoveBraces#1{%
1481   \ifx\scrollmode#1\scrollmode
1482   \else
1483     \HyPsd@@RemoveBracesFi#1\HyPsd@End{#1}%
1484   \fi
1485 }

```

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

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

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

```

1486 \def\HyPsd@@RemoveBracesFi#1#2\HyPsd@End#3\fi{%
1487 \fi
1488 \def\Hy@temp@A{#1#2}%
1489 \def\Hy@temp@B{#3}%
1490 \ifx\Hy@temp@A\Hy@temp@B
1491 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1492 \HyPsd@String#1%
1493 }%
1494 \ifx\scrollmode#2\scrollmode
1495 \else
1496 \Hy@ReturnAfterFiFiEnd{%
1497 \HyPsd@RemoveBraces{#2}%
1498 }%
1499 \fi
1500 \else
1501 \def\Hy@temp@A{#1}%
1502 \HyPsd@AppendItalcorr\HyPsd@String
1503 \ifx\Hy@temp@A\@empty
1504 \Hy@ReturnAfterElseFiFiEnd{%
1505 \HyPsd@RemoveBraces{#2}%
1506 }%
1507 \else
1508 \HyPsd@ProtectSpaces\Hy@temp@A
1509 \HyPsd@AppendItalcorr\Hy@temp@A
1510 \Hy@ReturnAfterFiFiEnd{%
1511 \expandafter\HyPsd@RemoveBraces\expandafter
1512 {\Hy@temp@A#2}%
1513 }%
1514 \fi
1515 \fi
1516 \Hy@ReturnEnd
1517 }

```

`\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`.

```

1518 \def\HyPsd@AppendItalcorr#1{%
1519 \expandafter\HyPsd@@AppendItalcorr\expandafter{\#1%
1520 }
1521 \def\HyPsd@@AppendItalcorr#1#2{%
1522 \expandafter\def\expandafter#2\expandafter{#2#1}%
1523 }

```

#### 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>.

```
1524 \@ifundefined{directlua}{%
1525 }{%
1526   \expandafter\ifx\csname\endcsname\relax\fi
1527 }
```

#### Check catcodes.

`\HyPsd@CheckCatcodes` Because `\ifcat` expands its arguments, this is prevented by `\noexpand`. In case of command tokens and active characters `\ifcat` now sees a `\relax`. After protecting spaces and removing braces #1 should be a single token, no group of several tokens, nor an empty group. (So the `\expandafter\relax` between `\ifcat` and `\noexpand` is only for safety and it should be possible to remove it.)

`\protect` and `\relax` should be removed silently. But it is too dangerous and breaks some code giving them the meaning of `\@empty`. So commands with the meaning of `\protect` are removed here. (`\protect` should have the meaning of `\@typeset@protect` that is equal to `\relax`).

For the comparison with active characters, `~` cannot be used because it has the meaning of a blank space here. And active characters need to be checked, if they have been defined using `\protected`.

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

```

1557     \fi
1558     \fi
1559   \else
1560     \ifcat\noexpand#1\noexpandQ% active character
1561     \expandafter\expandafter\expandafter\def
1562     \expandafter\expandafter\expandafter\HyPsd@String
1563     \expandafter\expandafter\expandafter{%
1564     \expandafter\HyPsd@String\string#1%
1565     }%
1566   \else
1567     \ifcat#1A% letter
1568     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1569     \HyPsd@String#1%
1570     }%
1571   \else
1572     \ifcat#1 % SPACE
1573     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1574     \HyPsd@String\HyPsd@SPACEOPTI
1575     }%
1576   \else
1577     \ifcat$#1%
1578     \HyPsd@CatcodeWarning{math shift}%
1579   \else
1580     \ifcat&#1%
1581     \HyPsd@CatcodeWarning{alignment tab}%
1582   \else
1583     \ifcat^#1%
1584     \HyPsd@CatcodeWarning{superscript}%
1585   \else
1586     \ifcat_#1%
1587     \HyPsd@CatcodeWarning{subscript}%
1588   \else
1589     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1590     \HyPsd@String#1%
1591     }%
1592     \fi
1593     \fi
1594     \fi
1595     \fi
1596     \fi
1597     \fi
1598     \fi
1599   \fi
1600 \ifx\HyPsd@Rest\relax
1601 \ifx\scrollmode#2\scrollmode
1602 \else
1603 \Hy@ReturnAfterFiFiEnd{%
1604 \HyPsd@CheckCatcodes#2\HyPsd@End
1605 }%
1606 \fi
1607 \else
1608 \ifx\HyPsd@Rest\@empty
1609 \else
1610 \Hy@ReturnAfterFiFiEnd{%

```

```

1611     \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@End
1612     }%
1613     \fi
1614     \fi
1615     \Hy@ReturnEnd
1616 }%
1617 \endgroup

```

### Remove counts, dimens, skips.

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

```

1618 \def\HyPsd@AfterCountRemove#1\HyPsd@End{%
1619   \gdef\HyPsd@Rest{#1}%
1620 }

```

`\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.

```

1621 \def\HyPsd@AfterDimenRemove#1\HyPsd@End{%
1622   \ifdim\ifx\HyPsd@String@empty\z@\else\dimen@>1ex %
1623     \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1624     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1625   \else
1626     \ifdim\dimen@=\z@
1627     \else
1628       \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1629     \fi
1630   \gdef\HyPsd@Rest{#1}%
1631   \fi
1632 }

```

`\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).

```

1633 \def\HyPsd@AfterSkipRemove#1\HyPsd@End{%
1634   \ifdim\ifx\HyPsd@String@empty\z@\else\skip@>1ex %
1635     \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1636     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1637   \else
1638     \ifdim\skip@=\z@
1639     \else
1640       \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1641     \fi
1642   \gdef\HyPsd@Rest{#1}%
1643   \fi
1644 }

```

### Catcode warnings.

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

```

1645 \def\HyPsd@CatcodeWarning#1{%
1646   \HyPsd@Warning{%
1647     Token not allowed in a PDF string (%

```

```

1648 \ifHy@unicode
1649 Unicode%
1650 \else
1651 PDFDocEncoding%
1652 \fi
1653 ):%
1654 \MessageBreak removing `\'HyPsd@RemoveCmdPrefix#1'%
1655 }%
1656 }
1657 \begingroup
1658 \catcode`\|=0 %
1659 \catcode`\|=12 %
1660 |gdef|HyPsd@RemoveCmdPrefix#1{%
1661 |expandafter|HyPsd@@RemoveCmdPrefix
1662 |string#1|@empty\<>-|@empty|@empty
1663 }%
1664 |gdef|HyPsd@@RemoveCmdPrefix#1\<>-#2|@empty#3|@empty{#1#2}%
1665 |endgroup

```

\HyPsd@RemoveSpaceWarning

```

1666 \def\HyPsd@RemoveSpaceWarning#1{%
1667 \HyPsd@Warning{%
1668 Token not allowed in a PDF string (%
1669 \ifHy@unicode
1670 Unicode%
1671 \else
1672 PDFDocEncoding%
1673 \fi
1674 ):%
1675 \MessageBreak #1\MessageBreak
1676 removed%
1677 }%
1678 }

```

\HyPsd@ReplaceSpaceWarning

```

1679 \def\HyPsd@ReplaceSpaceWarning#1{%
1680 \HyPsd@Warning{%
1681 Token not allowed in a PDF string (%
1682 \ifHy@unicode
1683 Unicode%
1684 \else
1685 PDFDocEncoding%
1686 \fi
1687 ):%
1688 \MessageBreak #1\MessageBreak
1689 replaced by space%
1690 }%
1691 }

```

### 6.6.5 Check for wrong glyphs

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



```

1692 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
1693 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1694 \HyPsd@String#1%
1695 }%
1696 \ifx\#2\%
1697 \else
1698 \Hy@ReturnAfterFi{%
1699 \HyPsd@GlyphProcessWarning#2\@empty
1700 }%
1701 \fi
1702 }
1703 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
1704 \HyPsd@@GlyphProcessWarning#1++>%
1705 \HyPsd@GlyphProcess#2\@empty
1706 }
1707 \def\HyPsd@@GlyphProcessWarning#1+#2+#3>{%
1708 \ifx\#2\%
1709 \HyPsd@Warning{%
1710 Glyph not defined in %
1711 P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
1712 removing \@backslashchar#1'%
1713 }%
1714 \else
1715 \HyPsd@Warning{%
1716 Composite letter \@backslashchar#1+#2'\MessageBreak
1717 not defined in P\ifHy@unicode U\else D1\fi\space encoding,%
1718 \MessageBreak
1719 removing \@backslashchar#1'%
1720 }%
1721 \fi
1722 }

```

### 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`.

```

1723 \def\HyPsd@spaceopti#1{ % first space
1724 \ifx\HyPsd@spaceopti#1%
1725 \040%
1726 \else
1727 #1%
1728 \fi
1729 }%

```

### 6.6.6 Replacing tokens

`\HyPsd@Subst` To save tokens `\HyPsd@StringSubst` is an wrapper for the command `\HyPsd@Subst` that does all the work: In string stored in command `#3` it replaces the tokens `#1` with `#2`.

```

#1 Exact the tokens that should be replaced.
#2 The replacement (don't need to be expanded).
#3 Command with the string.
1730 \def\HyPsd@Subst#1#2#3{%
1731 \def\HyPsd@@ReplaceFi##1#1##2\END\fi{%
1732 \fi
1733 ##1%
1734 \ifx\scrollmode##2\scrollmode
1735 \else
1736 #2%
1737 \HyPsd@@@ReplaceFi##2\END
1738 \fi
1739 }%
1740 \xdef##3{%
1741 \iftrue
1742 \expandafter\HyPsd@@@ReplaceFi##3#1\END
1743 \fi
1744 }%
1745 }

```

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

```

1746 \def\HyPsd@StringSubst#1{%
1747 \expandafter\HyPsd@Subst\expandafter{\string#1}%
1748 }

```

`\HyPsd@EscapeTeX`

```

1749 \begingroup
1750 \lccode`!\=``\%%
1751 \lccode`|\=``\%%
1752 \lccode`\(=``\{%
1753 \lccode`\)=``\}%
1754 \lccode`0=\z@
1755 \lccode`1=\z@
1756 \lccode`3=\z@
1757 \lccode`4=\z@
1758 \lccode`5=\z@
1759 \lccode`7=\z@
1760 \lowercase{\endgroup
1761 \def\HyPsd@EscapeTeX#1{%
1762 \HyPsd@Subst!{|045}#1%
1763 \HyPsd@Subst({|173}#1%
1764 \HyPsd@Subst){|175}#1%
1765 }%
1766 }

```

### 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.

```

1767 \def\HyPsd@doxspace#1{%

```

```

1768 \ifx#1\relax\else
1769 \ifx#1.\else
1770 \ifx#1:\else
1771 \ifx#1,\else
1772 \ifx#1;\else
1773 \ifx#1!\else
1774 \ifx#1?\else
1775 \ifx#1/\else
1776 \ifx#1-\else
1777 \ifx#1'\else
1778 \HyPsd@SPACEOPTI
1779 \fi
1780 \fi
1781 \fi
1782 \fi
1783 \fi
1784 \fi
1785 \fi
1786 \fi
1787 \fi
1788 \fi
1789 #1%
1790 }%

```

### 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.

```

1791 \begingroup
1792 \catcode`\|=0 %
1793 \catcode`\|=12 %

```

\HyPsd@ConvertToUnicode

```

1794 |gdef|HyPsd@ConvertToUnicode#1{%
1795 |xdef#1{%
1796 |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
1797 }%
1798 |ifx#1|@empty
1799 |else
1800 |xdef#1{%
1801 \376\377%
1802 #1%
1803 }%
1804 |fi
1805 }%

```

\HyPsd@DoConvert

```

1806 |gdef|HyPsd@DoConvert#1{%
1807 |ifx#1|@empty
1808 |else
1809 |Hy@ReturnAfterFi{%
1810 |ifx#1\%%

```

```

1811     \%%
1812     |expandafter|HyPsd@DoEscape
1813     |else
1814     |HyPsd@Char{#1}%
1815     |expandafter|HyPsd@DoConvert
1816     |fi
1817     }%
1818     |fi
1819     }%

```

\HyPsd@DoEscape

```

1820 |gdef|HyPsd@DoEscape#1{%
1821   |ifx#19%
1822   |expandafter|HyPsd@GetTwoBytes
1823   |else
1824   |Hy@ReturnAfterFi{%
1825   |ifx#18%
1826     00%
1827   |expandafter|HyPsd@GetTwoBytes
1828   |else
1829     #1%
1830   |expandafter|HyPsd@GetOneByte
1831   |fi
1832   }%
1833   |fi
1834   }%

```

\HyPsd@GetTwoBytes

```

1835 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
1836   #1\#2#3#4%
1837   |HyPsd@DoConvert
1838   }%

```

\HyPsd@GetOneByte

```

1839 |gdef|HyPsd@GetOneByte#1#2{%
1840   #1#2%
1841   |HyPsd@DoConvert
1842   }%
1843 |endgroup

```

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

```

1844 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
1845   \xdef#4{#4#1#2}%
1846   \HyPsd@@ConvertToUnicode#3\END#4%
1847 }

```

\HyPsd@Char

```

1848 \begingroup
1849 \catcode0=9 %
1850 \catcode`\^=7 %
1851 \catcode`\^^=12 %
1852 \def\x{^^^0000}%

```

```

1853 \expandafter\endgroup
1854 \ifx\x\@empty
1855 \def\HyPsd@Char#1{%
1856 \ifnum`#1<128 %
1857 \@backslashchar 000#1%
1858 \else
1859 \ifnum`#1<65536 %
1860 \expandafter\HyPsd@CharTwoByte\number`#1!%
1861 \else
1862 \expandafter\expandafter\expandafter\HyPsd@CharSurrogate
1863 \intcalcSub{`#1}{65536}!%
1864 \fi
1865 \fi
1866 }%
1867 \def\HyPsd@CharTwoByte#1!{%
1868 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1869 \IntCalcDiv#1!256!!%
1870 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1871 \IntCalcMod#1!256!!%
1872 }%
1873 \def\HyPsd@CharOctByte#1!{%
1874 \@backslashchar
1875 \IntCalcDiv#1!64!%
1876 \intcalcDiv{\IntCalcMod#1!64!}{8}%
1877 \IntCalcMod#1!8!%
1878 }%
1879 \def\HyPsd@CharSurrogate#1!{%
1880 \@backslashchar 33%
1881 \IntCalcDiv#1!262144!%
1882 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1883 \intcalcDiv{\IntCalcMod#1!262144!}{1024}!%
1884 \@backslashchar 33%
1885 \expandafter\expandafter\expandafter\IntCalcAdd
1886 \intcalcDiv{\IntCalcMod#1!1024!}{256}!4!%
1887 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1888 \IntCalcMod#1!256!!%
1889 }%
1890 \else
1891 \def\HyPsd@Char#1{%
1892 \@backslashchar 000#1%
1893 }%
1894 \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.

```

1895 \ifcsname UTFviii@loop\endcsname
1896 \def\HyPsd@expand@utfviii {%
1897 \count@"C2
1898 \@tempcnta"F5
1899 \def\UTFviii@tmp{\expandafter\def\expandafter~\expandafter{~}}%
1900 \UTFviii@loop
1901 }
1902 \else

```

```

1903 \def\HyPsd@expand@utfviii {}
1904 \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

```

```

1905 \begingroup
1906   \lccode\~=\^^f4\relax
1907 \lowercase{\endgroup
1908   \def\HyPsd@UTFviii{%
1909     \HyPsd@expand@utfviii
1910     \let\UTFviii@two@octets\HyPsd@UTFviii@two
1911     \let\UTFviii@three@octets\HyPsd@UTFviii@three
1912     \let\UTFviii@four@octets\HyPsd@UTFviii@four
1913     \ifx~\HyPsd@UTFviii@cccxiv@undef
1914       \let~\HyPsd@UTFviii@cccxiv@def
1915     \fi
1916     \let\unichar\HyPsd@unichar
1917   }%
1918 }%
1919 \def\HyPsd@UTFviii@cccxiv@undef{\@inpenc@undefined@{utf8}}%
1920 \edef\HyPsd@UTFviii@cccxiv@def{%
1921   \noexpand\UTFviii@four@octets\string ^^f4%
1922 }%

```

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

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

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

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

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

$$\tag{5}$$

```

1923 \def\HyPsd@UTFviii@two#1#2{%
1924   \expandafter\HyPsd@UTFviii@@two
1925   \number\dimexpr.25\dimexpr`#1sp\expandafter\relax\expandafter| %
1926   \number`#1\expandafter| %
1927   \number\dimexpr.125\dimexpr`#2sp\expandafter\relax\expandafter| %
1928   \number`#2 \@nil
1929 }%
1930 \def\HyPsd@UTFviii@@two#1|#2|#3|#4\@nil{%

```

```

1931 \expandafter\8%
1932 \number\numexpr #1-48\expandafter\relax
1933 \csname\number\numexpr #2-4*#1\relax\expandafter\endcsname
1934 \number\numexpr #3-8*%
1935 \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
1936 \number\numexpr #4-8*#3\relax
1937 }%

```

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

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

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

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

$$d := B - 4 * (B/4) \tag{9}$$

$$e := C/8 - 16 \tag{10}$$

$$f := C - 8 * (C/8) \tag{11}$$

$$\tag{12}$$

```

1938 \def\HyPsd@UTFviii@three#1#2#3{%
1939 \expandafter\HyPsd@UTFviii@@three
1940 \number\dimexpr.25\dimexpr`#1sp\expandafter\relax\expandafter|%
1941 \number`#1\expandafter|%
1942 \number\ifnum\numexpr`#2-128\relax <32 0\else 1\fi\expandafter|%
1943 \number\dimexpr.25\dimexpr`#2sp\expandafter\relax\expandafter|%
1944 \number`#2\expandafter|%
1945 \number\dimexpr.125\dimexpr`#3sp\expandafter\relax\expandafter|%
1946 \number`#3 \@nil
1947 }%
1948 \def\HyPsd@UTFviii@@three#1|#2|#3|#4|#5|#6|#7\@nil{%
1949 \expandafter\9%
1950 \number\numexpr #1-56\expandafter\relax
1951 \number\numexpr 2*(#2-4*#1)+#3\expandafter\relax
1952 \number\numexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax
1953 \csname\number\numexpr #5-4*#4\relax\expandafter\endcsname
1954 \number\numexpr #6-16\expandafter\relax
1955 \number\numexpr #7-8*#6\relax
1956 }%

```

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

```

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

```

```

1957 \def\HyPsd@UTFviii@four#1#2{%
1958 \expandafter\HyPsd@@UTFviii@four\number
1959 \numexpr-1+(\`#1-240)*4+\dimexpr.0625\dimexpr`#2sp-128sp%
1960 \expandafter|\number
1961 \numexpr`#2-16*\dimexpr.0625\dimexpr`#2sp|%
1962 }%
1963 \def\HyPsd@@UTFviii@four#1|#2|#3{%

```

```

1964 \933\number\dimexpr.25\dimexpr#1sp\relax\relax
1965 \csname\number\numexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1966 \ifodd#2 %
1967 \number\numexpr(#2-1)/2\relax
1968 \else
1969 \number\numexpr#2/2\relax
1970 \fi
1971 \number\numexpr\ifodd#2 4+\fi
1972 \dimexpr.0625\dimexpr`#3sp-128sp\relax\relax\relax
1973 \933%
1974 \expandafter\HyPsd@@@UTFviii@four\number
1975 \numexpr`#3-16*\dimexpr.0625\dimexpr`#3sp| %
1976 }%
1977 \def\HyPsd@@@UTFviii@four#1|#2{%
1978 \number\numexpr4+\dimexpr.25\dimexpr#1sp\relax\relax\relax
1979 \csname\number\numexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1980 \number\dimexpr.125\dimexpr`#2sp-128sp\relax\relax
1981 \number\numexpr`#2-8*\dimexpr.125\dimexpr`#2sp\relax\relax\relax
1982 }%

```

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

```

1983 \def\HyPsd@unichar#1{%
1984 \ifHy@unicode
1985 \ifnum#1>"10FFFF %
1986 \HyPsd@UnicodeReplacementCharacter % illegal
1987 \else
1988 \ifnum#1>"FFFF %

```

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

```

1989 \expandafter\HyPsd@unichar\expandafter{%
1990 \number\numexpr 55296+%
1991 \dimexpr.0009765625\dimexpr\number#1sp-\p@
1992 \relax\relax\relax
1993 }%

```

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

```

1994 \expandafter\HyPsd@unichar\expandafter{%
1995 \number\numexpr#1-9216%
1996 -1024*\dimexpr.0009765625\dimexpr\number#1sp-\p@
1997 \relax\relax\relax
1998 }%
1999 \else
2000 \ifnum#1>"7FFF %
2001 \9%
2002 \expandafter\HyPsd@unichar@first@byte\expandafter{%
2003 \number
2004 \dimexpr.00390625\dimexpr\number#1sp\relax\relax
2005 }%
2006 \else
2007 \8%
2008 \number\dimexpr.00390625\dimexpr\number#1sp\relax\relax
2009 \fi
2010 \expandafter\HyPsd@unichar@second@byte\expandafter{%
2011 \number

```



```

2012     \numexpr#1-256*\number
2013     \dimexpr.00390625\dimexpr\number#1sp\relax\relax\relax
2014     }%
2015     \fi
2016     \fi
2017     \else
2018     .% unsupported (Unicode -> PDF Doc Encoding)
2019     \fi
2020     }%
2021     \def\HyPsd@UnicodeReplacementCharacter{\9377\375}%
2022     \def\HyPsd@unichar@first@byte#1{%
2023     \number\dimexpr.015625\dimexpr#1sp\relax\relax
2024     \expandafter\HyPsd@unichar@octtwo\expandafter{%
2025     \number
2026     \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2027     \relax\relax\relax
2028     }%
2029     }%
2030     \def\HyPsd@unichar@second@byte#1{%
2031     \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
2032     \expandafter\HyPsd@unichar@octtwo\expandafter{%
2033     \number
2034     \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2035     \relax\relax\relax
2036     }%
2037     }%
2038     \def\HyPsd@unichar@octtwo#1{%
2039     \number\dimexpr.125\dimexpr#1sp\relax\relax
2040     \number\numexpr#1-8*\number\dimexpr.125\dimexpr#1sp%
2041     \relax\relax\relax
2042     }%

```

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

```

2043 \def\HyPsd@utf@viii@undeferr#1#2#3#4#5#6{%
2044 \ifx@gobble#1%
2045 \else
2046 [Please insert \textbackslash PrerenderUnicode%
2047 \textbraceleft#1\textbraceright\space
2048 into preamble]%
2049 \fi
2050 }%

```

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

`\HyPsd@DieFace` Die faces are provided by

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

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

```

2051 \def\HyPsd@DieFace#1{%
2052   \ifHy@unicode
2053     \ifnum#1<1 %
2054       \HyPsd@UnicodeReplacementCharacter
2055     \else
2056       \ifnum#1>6 %
2057         \9046\205%
2058         \expandafter\expandafter\expandafter
2059         \HyPsd@DieFaceLarge\intcalcSub{#1}{6}!%
2060       \else
2061         \9046\20\intcalcDec{#1}%
2062       \fi
2063     \fi
2064   \else
2065     .% Die faces are not part of PDFDocEncoding
2066   \fi
2067 }

```

\HyPsd@DieFaceLarge

```

2068 \def\HyPsd@DieFaceLarge#1!{%
2069   \ifnum#1>6 %
2070     \expandafter\@firstoftwo
2071   \else
2072     \expandafter\@secondoftwo
2073   \fi
2074   {%
2075     \9046\205%
2076     \expandafter\expandafter\expandafter
2077     \HyPsd@DieFaceLarge\IntCalcSub#1!6!!%
2078   }{%
2079     \9046\20\IntCalcDec#1!%
2080   }%
2081 }

```

### 6.6.11 Support for moon phases of package china2e

```

2082 \def\HyPsd@MoonPha#1{%
2083   \ifcase\intcalcNum{#1} %
2084     \HyPsd@UnicodeReplacementCharacter
2085   \or % 1
2086   % U+1F31A NEW MOON WITH FACE; \MoonPha{1} (china2e)
2087   \9330\074\9337\032%
2088   \or % 2
2089   \HyPsd@UnicodeReplacementCharacter
2090   \or % 3
2091   % U+1F31D FULL MOON WITH FACE; \MoonPha{3} (china2e)
2092   \9330\074\9337\035%
2093   \or % 4
2094   % U+1F31C LAST QUARTER MOON WITH FACE; \MoonPha{4} (china2e)
2095   \9330\074\9337\034%
2096   \else
2097     \HyPsd@UnicodeReplacementCharacter
2098   \fi
2099 }

```

2100 %\* \HyPsd@MoonPha -> \MoonPha

### 6.6.12 Support for package pifont

\HyPsd@ding

```
2101 \def\HyPsd@ding#1{%
2102   \ifHy@unicode
2103     \ifnum#1<32 %
2104       \HyPsd@UnicodeReplacementCharacter
2105     \else
2106       \ifnum#1>254 %
2107         \HyPsd@UnicodeReplacementCharacter
2108       \else
2109         \ifnum#1<127 %
2110           \expandafter\expandafter\expandafter
2111             \HyPsd@@ding\intcalcNum{#1}!%
2112         \else
2113           \ifnum#1>160 %
2114             \expandafter\expandafter\expandafter
2115               \HyPsd@@ding\intcalcNum{#1}!%
2116           \else
2117             \HyPsd@UnicodeReplacementCharacter
2118           \fi
2119         \fi
2120       \fi
2121     \fi
2122   \else
2123     .% Dingbats are not part of PDFDocEncoding
2124   \fi
2125 }
```

\HyPsd@@ding

```
2126 \def\HyPsd@@ding#1!{%
2127   \@ifundefined{HyPsd@ding@#1}{%
2128     \ifnum#1<127 %
2129       \9047%
2130       \HyPsd@DecimalToOctalSecond{\IntCalcSub#1!32!}%
2131     \else
2132       \ifnum#1<168 %
2133         \9047\14\IntCalcSub#1!160!%
2134       \else
2135         \ifnum#1>181 %
2136           \9047\HyPsd@DecimalToOctalSecond{\IntCalcSub#1!64!}%
2137         \else
2138           % 172..181 -> U+2460..U+2469
2139           \9044\HyPsd@DecimalToOctalSecond{\IntCalcSub#1!76!}%
2140         \fi
2141       \fi
2142     \fi
2143   }{%
2144     \csname HyPsd@ding@#1\endcsname
2145   }%
2146 }

2147 \@namedef{HyPsd@ding@32}{\space}
```

```

2148 % U+260E BLACK TELEPHONE
2149 \@namedef{HyPsd@ding@37}{\9046\016}% U+260E
2150 % U+261B BLACK RIGHT POINTING INDEX
2151 \@namedef{HyPsd@ding@42}{\9046\033}% U+261B
2152 % U+261E WHITE RIGHT POINTING INDEX
2153 \@namedef{HyPsd@ding@43}{\9046\036}% U+261E
2154 % U+2605 BLACK STAR
2155 \@namedef{HyPsd@ding@72}{\9046\005}% U+2605
2156 % U+25CF BLACK CIRCLE
2157 \@namedef{HyPsd@ding@108}{\9045\317}% U+25CF
2158 % U+25A0 BLACK SQUARE
2159 \@namedef{HyPsd@ding@110}{\9045\240}% U+25A0
2160 % U+25B2 BLACK UP-POINTING TRIANGLE
2161 \@namedef{HyPsd@ding@115}{\9045\262}% U+25B2
2162 % U+25BC BLACK DOWN-POINTING TRIANGLE
2163 \@namedef{HyPsd@ding@116}{\9045\274}% U+25BC
2164 % U+25C6 BLACK DIAMOND
2165 \@namedef{HyPsd@ding@117}{\9045\306}% U+25C6
2166 % U+25D7 RIGHT HALF BLACK CIRCLE
2167 \@namedef{HyPsd@ding@119}{\9045\327}% U+25D7
2168 \@namedef{HyPsd@ding@168}{\textclubsuitblack}%
2169 \@namedef{HyPsd@ding@169}{\textdiamondsuitblack}%
2170 \@namedef{HyPsd@ding@170}{\textheartsuitblack}%
2171 \@namedef{HyPsd@ding@171}{\textspadesuitblack}%
2172 \@namedef{HyPsd@ding@213}{\textrightarrow}%
2173 \@namedef{HyPsd@ding@214}{\textleftarrow}%
2174 \@namedef{HyPsd@ding@215}{\textupdownarrow}%
2175 \@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.

```

2176 \@ifpackageloaded{subfigure}{%
2177   \@ifundefined{sub@label}{%
2178     \Hy@hypertexnamesfalse
2179   }{%
2180     \renewcommand*{\sub@label}[1]{%
2181       \@bsphack
2182       \subfig@oldlabel{#1}%
2183       \if@filesw
2184         \begingroup
2185           \edef\@currentlabstr{%
2186             \expandafter\strip@prefix\meaning\@currentlabelname
2187           }%
2188           \protected@write\@auxout{}{%
2189             \string\newlabel{sub@#1}{%
2190               {\@nameuse{@@thesub\@capttype}}%
2191               {\thepage}%
2192             }%
2193             \expandafter\strip@period\@currentlabstr
2194             \relax.\relax\@@@%

```

```

2195         }%
2196         {\@currentHref}%
2197         }%
2198     }%
2199 }%
2200 \endgroup
2201 \fi
2202 \@esphack
2203 }%
2204 }%
2205 }{}

```

## 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.

```

2206 \def\Hy@true{true}
2207 \def\Hy@false{false}

```

Providing dummy definitions.

```

2208 \let\literalps@out\@gobble
2209 \newcommand\pdfbookmark[3][]{ }
2210 \def\Acrobatmenu#1#2{\leavevmode#2}
2211 \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

```

2212 \let\HyperRaiseLinkHook\@empty
2213 \def\HyperRaiseLinkDefault{\baselineskip}

```

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

```

2214 \newcount\Hy@SavedSpaceFactor
2215 \def\Hy@SaveSpaceFactor{%
2216   \global\Hy@SavedSpaceFactor=\ifhmode\spacefactor\else\z@\fi
2217 }
2218 \def\Hy@RestoreSpaceFactor{%
2219   \relax
2220   \ifhmode

```

```

2221 \ifnum\Hy@SavedSpaceFactor>\z@
2222 \spacefactor=\Hy@SavedSpaceFactor
2223 \fi
2224 \fi
2225 }
2226 \def\Hy@SaveSavedSpaceFactor{%
2227 \edef\Hy@RestoreSavedSpaceFactor{%
2228 \global\Hy@SavedSpaceFactor=\the\Hy@SavedSpaceFactor\relax
2229 }%
2230 }

```

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

```

2231 \@if@t@r\fmtversion{2023-11-01}
2232 {\NewSocket{hyp/raisedlink}{1}}
2233 {\providecommand\UseSocket[2]{#2}}
2234 \def\Hy@raisedlink#1{%
2235 \ifvmode
2236 \UseSocket{hyp/raisedlink}{#1}%
2237 \else
2238 \Hy@SaveSpaceFactor
2239 \penalty\@M
2240 \smash{%
2241 \begingroup
2242 \let\HyperRaiseLinkLength\@tempdima
2243 \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
2244 \HyperRaiseLinkHook
2245 \expandafter\endgroup
2246 \expandafter\raise\the\HyperRaiseLinkLength\hbox{%
2247 \Hy@RestoreSpaceFactor
2248 #1%
2249 \Hy@SaveSpaceFactor
2250 }%
2251 }%
2252 \Hy@RestoreSpaceFactor
2253 \fi
2254 }

```

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

```

2255 \def\Hy@SaveLastskip{%
2256 \let\Hy@RestoreLastskip\relax
2257 \ifvmode
2258 \ifdim\lastskip=\z@
2259 \ifnum\lastnodetype=1 %
2260 \let\Hy@RestoreLastskip\relax
2261 \else
2262 \let\Hy@RestoreLastskip\nobreak
2263 \fi
2264 \else
2265 \begingroup
2266 \skip@=-\lastskip
2267 \edef\x{%
2268 \endgroup
2269 \def\noexpand\Hy@RestoreLastskip{%

```

```

2270     \noexpand\ifvmode
2271     \noexpand\nobreak
2272     \vskip\the\skip@
2273     \vskip\the\lastskip\relax
2274     \noexpand\fi
2275   }%
2276 }%
2277 \x
2278 \fi
2279 \else
2280 \ifhmode
2281 \ifdim\lastskip=\z@
2282 \let\Hy@RestoreLastskip\nobreak
2283 \else
2284 \begingroup
2285 \skip@=-\lastskip
2286 \edef\x{%
2287 \endgroup
2288 \def\noexpand\Hy@RestoreLastskip{%
2289 \noexpand\ifhmode
2290 \noexpand\nobreak
2291 \hskip\the\skip@
2292 \hskip\the\lastskip\relax
2293 \noexpand\fi
2294 }%
2295 }%
2296 \x
2297 \fi
2298 \fi
2299 \fi
2300 }%

```

## 9 Options

```

2301 \SetupKeyvalOptions{%
2302 family=Hyp,%
2303 prefix=HyOpt%
2304 }

```

### 9.1 Help macros

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

```

\AddToDocumentProperties
\GetDocumentProperties 2305 \ExplSyntaxOn
2306 \@ifundefined{AddToDocumentProperties}
2307 {
2308 \prop_new:N \g__hyp_documentproperties_prop
2309 \NewDocumentCommand\AddToDocumentProperties{O{\@currname}mm}
2310 {
2311 \exp_args:NNx
2312 \prop_gput:Nnn \g__hyp_documentproperties_prop

```

```

2313     {
2314     \tl_if_blank:eTF {#1}{top-level/}{#1/} #2
2315     }
2316     { #3}
2317   }
2318   \NewExpandableDocumentCommand\GetDocumentProperties{m}
2319   {
2320     \prop_item:Nn \g__hyp_documentproperties_prop {#1}
2321   }
2322 }{}
2323 \ExplSyntaxOff

```

#### \IfHyperBooleanExists

```

2324 \def\IfHyperBooleanExists#1{%
2325   \@ifundefined{Hy@#1false}\@secondoftwo{%
2326     \@ifundefined{KV@Hyp@#1@default}\@secondoftwo\@firstoftwo
2327   }%
2328 }

2329 \@namedef{KV@Hyp@stoppedearly@default}{}

```

#### \IfHyperBoolean

```

2330 \def\IfHyperBoolean#1{%
2331   \IfHyperBooleanExists{#1}{%
2332     \csname ifHy@#1\endcsname
2333     \expandafter\@firstoftwo
2334     \else
2335     \expandafter\@secondoftwo
2336     \fi
2337   }\@secondoftwo
2338 }

```

#### \Hy@boolkey

```

2339 \def\Hy@boolkey#1#2{%
2340   \edef\Hy@tempa{#2}%
2341   \lowercase\expandafter{%
2342     \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
2343   }%
2344   \ifx\Hy@tempa\@empty
2345     \let\Hy@tempa\Hy@true
2346   \fi
2347   \ifx\Hy@tempa\Hy@true
2348     \else
2349     \ifx\Hy@tempa\Hy@false
2350     \else
2351     \let\Hy@tempa\relax
2352     \fi
2353   \fi
2354   \ifx\Hy@tempa\relax
2355     \Hy@WarnOptionValue{#2}{#1}{`true' or `false'}%
2356   \else
2357     \Hy@Info{Option `#1' set ``\Hy@tempa'}%
2358     \csname Hy@#1\Hy@tempa\endcsname
2359   \fi
2360 }

```



`\Hy@WarnOptionValue`

```
2361 \def\Hy@WarnOptionValue#1#2#3{%
2362 \Hy@Warning{%
2363   Unexpected value `#1'\MessageBreak
2364   of option `#2' instead of\MessageBreak
2365   #3%
2366 }%
2367 }
```

`\Hy@DisableOption`

```
2368 \def\Hy@DisableOption#1{%
2369 \ifundefined{KV@Hyp@#1@default}{%
2370 \define@key{Hyp}{#1}%
2371 }{%
2372 \define@key{Hyp}{#1}[]%
2373 }%
2374 {\Hy@WarnOptionDisabled{#1}}%
2375 }
2376 }
```

`\Hy@WarnOptionDisabled`

```
2377 \def\Hy@WarnOptionDisabled#1{%
2378 \Hy@Warning{%
2379   Option `#1' has already been used,\MessageBreak
2380   setting the option has no effect%
2381 }%
2382 }
```

`\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`.

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

```

2405     #3%
2406     * An empty value disables the option.\MessageBreak
2407     Unknown value `\'x'%
2408     }%
2409     \fi
2410 \endgroup
2411 }

```

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

```

2412 \def\Hy@DefNameKey#1{%
2413 \expandafter\Hy@@DefNameKey\csname @#1\endcsname{#1}%
2414 }

```

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

```

2415 \def\Hy@@DefNameKey#1#2#3{%
2416 \define@key{Hyp}{#2}{%
2417 \edef#1{##1}%
2418 \ifx#1\@empty
2419 \else
2420 \Hy@CheckOptionValue{##1}{#2}{#3}%
2421 \fi
2422 }%
2423 \let#1\@empty
2424 }

```

`\Hy@UseNameKey`

```

2425 \def\Hy@UseNameKey#1#2{%
2426 \ifx#2\@empty
2427 \else
2428 /#1/#2%
2429 \fi
2430 }

```

## 9.2 Defining the options

```

2431 \define@key{Hyp}{implicit}[true]{%
2432 \Hy@boolkey{implicit}{#1}%
2433 }
2434 \define@key{Hyp}{draft}[true]{%
2435 \Hy@boolkey{draft}{#1}%
2436 }
2437 \define@key{Hyp}{final}[true]{%
2438 \Hy@boolkey{final}{#1}%
2439 }
2440 \let\KV@Hyp@nolinks\KV@Hyp@draft
2441 \def\Hy@ObsoletePaperOption#1{%
2442 \Hy@WarningNoLine{%
2443 Option `#1' is no longer used%
2444 }%

```

```

2445 \define@key{Hyp}{#1}[true]{}%
2446 }
2447 \def\Hy@temp#1{%
2448 \define@key{Hyp}{#1}[true]{}%
2449 \Hy@ObsoletePaperOption{#1}%
2450 }%
2451 }
2452 \Hy@temp{a4paper}
2453 \Hy@temp{a5paper}
2454 \Hy@temp{b5paper}
2455 \Hy@temp{letterpaper}
2456 \Hy@temp{legalpaper}
2457 \Hy@temp{executivepaper}

2458 \define@key{Hyp}{setpagesize}[true]{}%
2459 \Hy@boolkey{setpagesize}{#1}%
2460 }
2461 \define@key{Hyp}{debug}[true]{}%
2462 \Hy@boolkey{debug}{#1}%
2463 }
2464 \define@key{Hyp}{linktocpage}[true]{}%
2465 \Hy@boolkey{linktocpage}{#1}%
2466 \ifHy@linktocpage
2467 \let\Hy@linktoc\Hy@linktoc@page
2468 \else
2469 \let\Hy@linktoc\Hy@linktoc@section
2470 \fi
2471 }
2472 \chardef\Hy@linktoc@none=0 %
2473 \chardef\Hy@linktoc@section=1 %
2474 \chardef\Hy@linktoc@page=2 %
2475 \chardef\Hy@linktoc@all=3 %
2476 \ifHy@linktocpage
2477 \let\Hy@linktoc\Hy@linktoc@page
2478 \else
2479 \let\Hy@linktoc\Hy@linktoc@section
2480 \fi
2481 \define@key{Hyp}{linktoc}{}%
2482 \@ifundefined{Hy@linktoc@#1}{}%
2483 \Hy@Warning{}%
2484 Unexpected value `#1' of\MessageBreak
2485 option `linktoc' instead of `none',\MessageBreak
2486 `section', `page' or `all'%
2487 }%
2488 }{}%
2489 \expandafter\let\expandafter\Hy@linktoc
2490 \csname Hy@linktoc@#1\endcsname
2491 }%
2492 }
2493 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
2494 \let\XR@ext\relax
2495 \define@key{Hyp}{verbose}[true]{}%
2496 \Hy@boolkey{verbose}{#1}%
2497 }

```

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.

```
2498 \define@key{Hyp}{raiselinks}[true]{%
2499   \Hy@boolkey{raiselinks}{#1}%
2500 }
```

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

```
2501 \def\Hy@setbreaklinks#1{%
2502   \csname breaklinks#1\endcsname
2503 }

2504 \def\Hy@breaklinks@unsupported{%
2505   \ifx\Hy@setbreaklinks@gobble
2506     \ifHy@breaklinks
2507       \Hy@WarningNoLine{%
2508         You have enabled option `breaklinks'.\MessageBreak
2509         But driver `Hy@driver.def' does not support this.\MessageBreak
2510         Expect trouble with the link areas of broken links%
2511       }%
2512     \fi
2513   \fi
2514 }

2515 \define@key{Hyp}{breaklinks}[true]{%
2516   \Hy@boolkey{breaklinks}{#1}%
2517   \let\Hy@setbreaklinks@gobble
2518 }
```

```
2519 \define@key{Hyp}{localanchorname}[true]{%
2520   \Hy@WarningNoLine{%
2521     Option `localanchorname' is deprecated%
2522   }%
2523   \Hy@boolkey{localanchorname}{#1}%
2524 }
```

Determines whether an automatic anchor is put on each page

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

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.

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

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?

```
2531 \define@key{Hyp}{naturalnames}[true]{%
2532   \Hy@boolkey{naturalnames}{#1}%
2533 }
```

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

```
2534 \define@key{Hyp}{hypertexnames}[true]{%
2535   \Hy@boolkey{hypertexnames}{#1}%
2536 }
```

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

```

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

2540 \define@key{Hyp}{destlabel}[true]{%
2541   \Hy@boolkey{destlabel}{#1}%
2542 }

2543 \define@key{Hyp}{unicode}[true]{%
2544   \Hy@boolkey{unicode}{#1}%
2545   \ifHy@unicode
2546     \def\HyPsd@pdfencoding{unicode}%
2547     \HyPsd@LoadUnicode
2548   \else
2549     \def\HyPsd@pdfencoding{pdfdoc}%
2550   \fi
2551 }

2552 \Hy@AtBeginDocument{%
2553   \ifx\HyPsd@LoadUnicode\relax
2554   \else
2555     \def\HyPsd@LoadUnicode{%
2556       \Hy@Error{%
2557         Unicode support for bookmarks is not available.\MessageBreak
2558         Activate unicode support by using one of the options\MessageBreak
2559         `unicode', `pdfencoding=unicode', `pdfencoding=auto'\MessageBreak
2560         in the preamble%
2561       } \@ehc
2562       \global\let\HyPsd@LoadUnicode\relax
2563       \global\Hy@unicodetrue
2564       \global\let\Hy@unicodetrue\Hy@unicodetrue\Hy@unicodetrue
2565     }%
2566   \fi
2567 }

2568 \define@key{Hyp}{pdfencoding}{%
2569   \edef\HyPsd@temp{#1}%
2570   \ifx\HyPsd@temp\HyPsd@pdfencoding@pdfdoc
2571     \let\HyPsd@pdfencoding\HyPsd@temp
2572     \Hy@unicodetrue
2573   \else
2574     \ifcase\ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
2575       \z@
2576     \else
2577       \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
2578         \z@
2579       \else
2580         \@ne
2581       \fi
2582     \fi
2583     \let\HyPsd@pdfencoding\HyPsd@temp
2584     \hypersetup{unicode}%
2585     \ifHy@unicode
2586       \def\HyPsd@pdfencoding{#1}%
2587     \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto

```

```

2588     \HyPsd@LoadStringEnc
2589     \fi
2590 \else
2591     \Hy@Warning{Cannot switch to unicode bookmarks}%
2592     \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
2593     \fi
2594 \else
2595     \@onelevel@sanitize\HyPsd@temp
2596     \Hy@Warning{%
2597       Values of option `pdfencoding':\MessageBreak
2598       `pdfdoc', `unicode', `auto'.\MessageBreak
2599       Ignoring unknown value `\HyPsd@temp'%
2600     }%
2601     \fi
2602 \fi
2603 }
2604 \def\HyPsd@pdfencoding@auto{auto}
2605 \def\HyPsd@pdfencoding@pdfdoc{pdfdoc}
2606 \def\HyPsd@pdfencoding@unicode{unicode}
change 2020-08-14, use unicode by default:
2607 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
2608 \HyPsd@LoadUnicode
2609 \def\HyPsd@LoadStringEnc{%
2610   \RequirePackage{stringenc}[2009/12/15]%
2611   \let\HyPsd@LoadStringEnc\relax
2612 }
2613 \Hy@AtBeginDocument{%
2614   \@ifpackageloaded{stringenc}{%
2615     \let\HyPsd@LoadStringEnc\relax
2616   }{%
2617     \def\HyPsd@LoadStringEnc{%
2618       \Hy@WarningNoLine{%
2619         Missing package `stringenc'. Use `pdfencoding=auto'\MessageBreak
2620         in the preamble or load the package there%
2621       }%
2622     }%
2623   }%
2624 }
2625 \define@key{Hyp}{psdextra}[true]{%
2626   \Hy@boolkey{psdextra}{#1}%
2627   \HyPsd@LoadExtra
2628 }
2629 \def\hypersetup{\kvsetkeys{Hyp}}
2630 \newif\ifHy@setpdfversion
2631 \define@key{Hyp}{pdfversion}{%
2632   \@ifundefined{Hy@pdfversion@#1}{%
2633     \PackageWarning{hyperref}{%
2634       Unsupported PDF version `#1'.\MessageBreak
2635       Valid values: 1.2-1.7, 2.0%
2636     }%
2637   }{%
2638     \Hy@setpdfversiontrue
2639     \@nameuse{Hy@pdfversion@#1}%

```

```

2640 }%
2641 }

\Hy@pdfminorversion already used elsewhere to denote \pdfminorversion or
\pdfvariable majorversion} so introduce new names here.
2642 \@namedef{Hy@pdfversion@1.2}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
  norversion{2}}%
2643 \@namedef{Hy@pdfversion@1.3}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
  norversion{3}}%
2644 \@namedef{Hy@pdfversion@1.4}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
  norversion{4}}%
2645 \@namedef{Hy@pdfversion@1.5}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
  norversion{5}}%
2646 \@namedef{Hy@pdfversion@1.6}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
  norversion{6}}%
2647 \@namedef{Hy@pdfversion@1.7}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
  norversion{7}}%
2648 \@namedef{Hy@pdfversion@2.0}{\def\Hy@pdf@majorversion{2}\def\Hy@pdf@mi-
  norversion{0}}%
2649 \def\Hy@pdf@majorversion{1}\def\Hy@pdf@minorversion{5}

Legacy name, earlier releases assumed 1.x
2650 \let\Hy@pdfversion\Hy@pdf@minorversion
2651 \def\Hy@pdf@majorminor@version{\numexpr100*\Hy@pdf@majorversion+\Hy@pdf@mi-
  norversion\relax}
2652 \def\Hy@pdfmajorminor@version{\numexpr100*\Hy@pdfmajorversion+\Hy@pdfmi-
  norversion\relax}

if pdfminorversion is defined, make sure pdfmajorversion is too.
2653 \@ifundefined{pdfminorversion}{}{}%
2654 \@ifundefined{pdfmajorversion}{}{}%
2655 \newcount\pdfmajorversion
2656 \pdfmajorversion=1
2657 }{}%
2658 }
2659 \ifx\pdfmajorversion\undefined\else
2660 \def\Hy@pdfmajorversion{\pdfmajorversion}
2661 \fi

```

## 10 Options for different drivers

```

2662 \newif\ifHy@DviMode
2663 \let\Hy@DviErrMsg\@empty
2664 \ifpdf
2665   \def\Hy@DviErrMsg{pdfTeX or LuaTeX is running in PDF mode}%
2666 \else
2667   \ifxetex
2668     \def\Hy@DviErrMsg{XeTeX is running}%
2669   \else
2670     \ifvtex
2671       \ifnum\OpMode=\z@
2672         \Hy@DviModetrue
2673       \else
2674         \def\Hy@DviErrMsg{VTeX is running, but not in DVI mode}%
2675       \fi
2676     \else

```

```

2677 \Hy@DviModetrue
2678 \fi
2679 \fi
2680 \fi
2681 \def\HyOpt@CheckDvi#1{%
2682 \ifHy@DviMode
2683 \expandafter\@firstofone
2684 \else
2685 \Hy@Error{%
2686 Wrong DVI mode driver option `#1',\MessageBreak
2687 because \Hy@DviErrMsg
2688 }\@ehc
2689 \expandafter\@gobble
2690 \fi
2691 }

2692 \DeclareVoidOption{tex4ht}{%
2693 \Hy@texhttrue
2694 \kvsetkeys{Hyp}{colorlinks=true}%
2695 \def\BeforeTeXIVht{\RequirePackage{color}}%
2696 \def\Hy@driver{htex4ht}%
2697 \def\MaybeStopEarly{%
2698 \Hy@Message{Stopped early}%
2699 \Hy@AtBeginDocument{%
2700 \PDF@FinishDoc
2701 \gdef\PDF@FinishDoc{}%
2702 }%
2703 \endinput
2704 }%
2705 }

2706 \DeclareVoidOption{pdftex}{%
2707 \ifpdf
2708 \def\Hy@driver{hpdtex}%
2709 \PassOptionsToPackage{pdftex}{color}%
2710 \else
2711 \Hy@Error{%
2712 Wrong driver option `pdftex',\MessageBreak
2713 because pdfTeX in PDF mode is not detected%
2714 }\@ehc
2715 \fi
2716 }

2717 \DeclareVoidOption{luatex}{%
2718 \ifpdf
2719 \ifx\pdfextension\@undefined
2720 \def\Hy@driver{hpdtex}%
2721 \PassOptionsToPackage{pdftex}{color}%
2722 \else
2723 \def\Hy@driver{hluatex}%
2724 \PassOptionsToPackage{luatex}{color}%
2725 \fi
2726 \else
2727 \Hy@Error{%
2728 Wrong driver option `luatex',\MessageBreak
2729 because luaTeX in PDF mode is not detected%
2730 }\@ehc

```



```

2731 \fi
2732 }
2733 \DeclareVoidOption{nativepdf}{%
2734 \HyOpt@CheckDvi{nativepdf}{%
2735 \def\Hy@driver{hdvips}%
2736 \PassOptionsToPackage{dvips}{color}%
2737 }%
2738 }
2739 \DeclareVoidOption{dvipdfm}{%
2740 \HyOpt@CheckDvi{dvipdfm}{%
2741 \def\Hy@driver{hdvipdfm}%
2742 }%
2743 }
2744 \DeclareVoidOption{dvipdfmx}{%
2745 \HyOpt@CheckDvi{dvipdfmx}{%
2746 \def\Hy@driver{hdvipdfm}%
2747 \PassOptionsToPackage{dvipdfmx}{color}%
2748 }%
2749 }
2750 \define@key{Hyp}{dvipdfmx-outline-open}[true]{%
2751 \expandafter\ifx\csname if#1\expandafter\endcsname
2752 \csname iftrue\endcsname
2753 \chardef\SpecialDvipdfmxOutlineOpen\@ne
2754 \else
2755 \chardef\SpecialDvipdfmxOutlineOpen\z@
2756 \fi
2757 }
2758 \DeclareVoidOption{xetex}{%
2759 \ifxetex
2760 \def\Hy@driver{hxetex}%
2761 \else
2762 \Hy@Error{%
2763 Wrong driver option `xetex',\MessageBreak
2764 because XeTeX is not detected%
2765 }\@ehc
2766 \fi
2767 }
2768 \DeclareVoidOption{pdfmark}{%
2769 \HyOpt@CheckDvi{pdfmark}{%
2770 \def\Hy@driver{hdvips}%
2771 }%
2772 }
2773 \DeclareVoidOption{dvips}{%
2774 \HyOpt@CheckDvi{dvips}{%
2775 \def\Hy@driver{hdvips}%
2776 \PassOptionsToPackage{dvips}{color}%
2777 }%
2778 }
2779 \DeclareVoidOption{hypertex}{%
2780 \HyOpt@CheckDvi{hypertex}{%
2781 \def\Hy@driver{hypertex}%
2782 }%
2783 }
2784 \let\Hy@MaybeStopNow\relax

```

```

2785 \DeclareVoidOption{vtex}{%
2786   \ifvtex
2787     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2788     \def\Hy@driver{hvtex}%
2789   \else
2790     \ifnum\OpMode=10\relax
2791       \def\Hy@driver{hvtexhtm}%
2792       \def\MaybeStopEarly{%
2793         \Hy@Message{Stopped early}%
2794         \Hy@AtBeginDocument{%
2795           \PDF@FinishDoc
2796           \gdef\PDF@FinishDoc{}}%
2797         }%
2798       \endinput
2799     }%
2800   \else
2801     \Hy@Error{%
2802       Wrong driver option `vtex',\MessageBreak
2803       because of wrong OpMode (\the\OpMode)%
2804     }\@ehc
2805   \fi
2806 \fi
2807 \else
2808   \Hy@Error{%
2809     Wrong driver option `vtex',\MessageBreak
2810     because VTeX is not running%
2811   }\@ehc
2812 \fi
2813 }
2814 \DeclareVoidOption{vtexpdfmark}{%
2815   \ifvtex
2816     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2817     \def\Hy@driver{hvtexmrk}%
2818   \else
2819     \Hy@Error{%
2820       Wrong driver option `vtexpdfmark',\MessageBreak
2821       because of wrong OpMode (\the\OpMode)%
2822     }\@ehc
2823   \fi
2824 \else
2825   \Hy@Error{%
2826     Wrong driver option `vtexpdfmark',\MessageBreak
2827     because VTeX is not running%
2828   }\@ehc
2829 \fi
2830 }
2831 \DeclareVoidOption{dviwindo}{%
2832   \HyOpt@CheckDvi{dviwindo}{%
2833     \def\Hy@driver{hdviwind}%
2834     \kvsetkeys{Hyp}{colorlinks}%
2835     \PassOptionsToPackage{dviwindo}{color}%
2836   }%
2837 }
2838 \DeclareVoidOption{dvipsone}{%

```

```

2839 \HyOpt@CheckDvi{dvipsone}{%
2840 \def\Hy@driver{hdvipson}%
2841 \PassOptionsToPackage{dvipsone}{color}%
2842 }%
2843 }
2844 \DeclareVoidOption{textures}{%
2845 \HyOpt@CheckDvi{textures}{%
2846 \def\Hy@driver{htexture}%
2847 }%
2848 }
2849 \DeclareVoidOption{latex2html}{%
2850 \Hy@Warning{Option `latex2html` is obsolete. \MessageBreak
2851 A current html.sty will do all necessary (re)definitions%
2852 }%
2853 }
2854 \DeclareVoidOption{hitex}{%
2855 \ifhint
2856 \IfFileExists{hhitex.def}
2857 {\def\Hy@driver{hhitex}}%
2858 {\Hy@Warning{%
2859 Missing driver file `hhitex.def',\MessageBreak
2860 ignoring hitex driver%
2861 }}%
2862 \else
2863 \Hy@Error{%
2864 Wrong driver option `hitex',\MessageBreak
2865 because HiTeX is not detected%
2866 }\@ehc
2867 \fi
2868 }

```

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

```

2869 \DeclareVoidOption{ps2pdf}{%
2870 \HyOpt@CheckDvi{ps2pdf}{%
2871 \def\Hy@driver{hdvips}%
2872 \PassOptionsToPackage{dvips}{color}%
2873 }%
2874 }
2875 \let\HyOpt@DriverFallback\@empty
2876 \define@key{Hyp}{driverfallback}{%
2877 \ifHy@DviMode
2878 \def\HyOpt@DriverFallback{#1}%
2879 \Hy@Match\HyOpt@DriverFallback{}{%
2880 ~(|dvipdfm|dvipdfmx|dvips|dvipsone|dviwindo|hypertex|ps2pdf|
2881 latex2html|tex4ht)$%
2882 }{}%
2883 \Hy@Warning{%
2884 Invalid driver `#1' for option\MessageBreak
2885 `driverfallback'%
2886 }%
2887 \let\HyOpt@DriverFallback\@empty
2888 }%
2889 \fi
2890 }

```

```

2891 \let\HyOpt@CustomDriver\@empty
2892 \define@key{Hyp}{customdriver}{%
2893   \IfFileExists{#1.def}{%
2894     \def\HyOpt@CustomDriver{#1}%
2895   }{%
2896     \Hy@Warning{%
2897       Missing driver file `#1.def',\MessageBreak
2898       ignoring custom driver%
2899     }%
2900   }%
2901 }

```

## 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.

```

2902 \define@key{Hyp}{hyperfigures}[true]{%
2903   \Hy@boolkey{hyperfigures}{#1}%
2904 }

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

2905 \define@key{Hyp}{hyperfootnotes}[true]{%
2906   \Hy@boolkey{hyperfootnotes}{#1}%
2907 }

```

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

```

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

```

```

2937   \fi
2938   \fi
2939   \fi
2940 }
2941 \define@key{Hyp}{pagebackref}[true]{%
2942   \edef\Hy@tempa{#1}%
2943   \lowercase\expandafter{%
2944     \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
2945   }%
2946   \ifx\Hy@tempa\@empty
2947     \let\Hy@tempa\Hy>true
2948   \fi
2949   \ifx\Hy@tempa\Hy>true
2950     \PassOptionsToPackage{hyperpageref}{backref}%
2951     \Hy@backreftrue
2952   \else
2953     \ifx\Hy@tempa\Hy>false
2954       \Hy@backreffalse
2955     \else
2956       \Hy@WarnOptionValue{#1}{pagebackref}`true' or `false'%
2957     \fi
2958   \fi
2959 }

```

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

```

2960 \define@key{Hyp}{hyperindex}[true]{%
2961   \Hy@boolkey{hyperindex}{#1}%
2962 }

```

Configuration of encap char.

```

2963 \define@key{Hyp}{encap}{\|}{%
2964   \def\HyInd@EncapChar{#1}%
2965 }

```

## 12 Language options

The \autoref feature depends on the language.

```

2966 \def\HyLang@afrikaans{%
2967   \def\equationautorefname{Vergelyking}%
2968   \def\footnoteautorefname{Voetnota}%
2969   \def\itemautorefname{Item}%
2970   \def\figureautorefname{Figuur}%
2971   \def\tableautorefname{Tabel}%
2972   \def\partautorefname{Deel}%
2973   \def\appendixautorefname{Bylae}%
2974   \def\chapterautorefname{Hoofstuk}%
2975   \def\sectionautorefname{Afdeling}%
2976   \def\subsectionautorefname{Subafdeling}%
2977   \def\subsubsectionautorefname{Subsubafdeling}%
2978   \def\paragraphautorefname{Paragraaf}%
2979   \def\subparagraphautorefname{Subparagraaf}%
2980   \def\FancyVerbLineautorefname{Lyn}%
2981   \def\theoremautorefname{Teorema}%

```

```

2982 \def\pageautorefname{Bladsy}%
2983 }
2984 \def\HyLang@english{%
2985 \def\equationautorefname{Equation}%
2986 \def\footnoteautorefname{footnote}%
2987 \def\itemautorefname{item}%
2988 \def\figureautorefname{Figure}%
2989 \def\tableautorefname{Table}%
2990 \def\partautorefname{Part}%
2991 \def\appendixautorefname{Appendix}%
2992 \def\chapterautorefname{chapter}%
2993 \def\sectionautorefname{section}%
2994 \def\subsectionautorefname{subsection}%
2995 \def\subsubsectionautorefname{subsubsection}%
2996 \def\paragraphautorefname{paragraph}%
2997 \def\subparagraphautorefname{subparagraph}%
2998 \def\FancyVerbLineautorefname{line}%
2999 \def\theoremautorefname{Theorem}%
3000 \def\pageautorefname{page}%
3001 }
3002 \def\HyLang@french{%
3003 \def\equationautorefname{'equation}%
3004 \def\footnoteautorefname{note}%
3005 \def\itemautorefname{item}%
3006 \def\figureautorefname{figure}%
3007 \def\tableautorefname{tableau}%
3008 \def\partautorefname{partie}%
3009 \def\appendixautorefname{annexe}%
3010 \def\chapterautorefname{chapitre}%
3011 \def\sectionautorefname{section}%
3012 \def\subsectionautorefname{sous-section}%
3013 \def\subsubsectionautorefname{sous-sous-section}%
3014 \def\paragraphautorefname{paragraphe}%
3015 \def\subparagraphautorefname{sous-paragraphe}%
3016 \def\FancyVerbLineautorefname{ligne}%
3017 \def\theoremautorefname{th'eor`eme}%
3018 \def\pageautorefname{page}%
3019 }
3020 \def\HyLang@german{%
3021 \def\equationautorefname{Gleichung}%
3022 \def\footnoteautorefname{Fu\ss note}%
3023 \def\itemautorefname{Punkt}%
3024 \def\figureautorefname{Abbildung}%
3025 \def\tableautorefname{Tabelle}%
3026 \def\partautorefname{Teil}%
3027 \def\appendixautorefname{Anhang}%
3028 \def\chapterautorefname{Kapitel}%
3029 \def\sectionautorefname{Abschnitt}%
3030 \def\subsectionautorefname{Unterabschnitt}%
3031 \def\subsubsectionautorefname{Unterunterabschnitt}%
3032 \def\paragraphautorefname{Absatz}%
3033 \def\subparagraphautorefname{Unterabsatz}%
3034 \def\FancyVerbLineautorefname{Zeile}%
3035 \def\theoremautorefname{Theorem}%

```

```

3036 \def\pageautorefname{Seite}%
3037 }
3038 \def\HyLang@italian{%
3039 \def\equationautorefname{Equazione}%
3040 \def\footnoteautorefname{nota}%
3041 \def\itemautorefname{punto}%
3042 \def\figureautorefname{Figura}%
3043 \def\tableautorefname{Tabella}%
3044 \def\partautorefname{Parte}%
3045 \def\appendixautorefname{Appendice}%
3046 \def\chapterautorefname{Capitolo}%
3047 \def\sectionautorefname{sezione}%
3048 \def\subsectionautorefname{sottosezione}%
3049 \def\subsubsectionautorefname{sottosottosezione}%
3050 \def\paragraphautorefname{paragrafo}%
3051 \def\subparagraphautorefname{sottoparagrafo}%
3052 \def\FancyVerbLineautorefname{linea}%
3053 \def\theoremautorefname{Teorema}%
3054 \def\pageautorefname{Pag.\@}%
3055 }
3056 \def\HyLang@magyar{%
3057 \def\equationautorefname{Egyenlet}%
3058 \def\footnoteautorefname{1\abjegyzet}%
3059 \def\itemautorefname{Elem}%
3060 \def\figureautorefname{\A bra}%
3061 \def\tableautorefname{T\abl\azat}%
3062 \def\partautorefname{R\esz}%
3063 \def\appendixautorefname{F"uggel\ek}%
3064 \def\chapterautorefname{fejezet}%
3065 \def\sectionautorefname{szakasz}%
3066 \def\subsectionautorefname{alszakasz}%
3067 \def\subsubsectionautorefname{alalszakasz}%
3068 \def\paragraphautorefname{bekezd\es}%
3069 \def\subparagraphautorefname{albekezd\es}%
3070 \def\FancyVerbLineautorefname{sor}%
3071 \def\theoremautorefname{T\etel}%
3072 \def\pageautorefname{oldal}%
3073 }
3074 \def\HyLang@portuges{%
3075 \def\equationautorefname{Equa\c c\~ao}%
3076 \def\footnoteautorefname{Nota de rodap\e}%
3077 \def\itemautorefname{Item}%
3078 \def\figureautorefname{Figura}%
3079 \def\tableautorefname{Tabela}%
3080 \def\partautorefname{Parte}%
3081 \def\appendixautorefname{Ap\~endice}%
3082 \def\chapterautorefname{Cap\itulo}%
3083 \def\sectionautorefname{Se\c c\~ao}%
3084 \def\subsectionautorefname{Subse\c c\~ao}%
3085 \def\subsubsectionautorefname{Subsubse\c c\~ao}%
3086 \def\paragraphautorefname{par\agrafo}%
3087 \def\subparagraphautorefname{subpar\agrafo}%
3088 \def\FancyVerbLineautorefname{linha}%
3089 \def\theoremautorefname{Teorema}%

```

```
3090 \def\pageautorefname{P\'agina}%
3091 }
```

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`.

```
3092 \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`?

```
3093 \def\equationautorefname{\cyr\cyrv\cyrery\cyrr.}%
```

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

```
3094 % \def\equationautorefname{%
3095 %   \cyr\cyrv\cyrery\cyrr\cyra\cyrzh\cyre\cyrn\cyri\cyre
3096 % }%
```

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

```
3097 \def\footnoteautorefname{%
3098   \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr.\ \cyrp\cyrr\cyri\cyrm.%
3099 }%
```

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}`”

```
3100 % \def\footnoteautorefname{%
3101 %   \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr\cyro\cyrch\cyrn\cyro\cyre\ %
3102 %   \cyrp\cyrr\cyri\cyrm\cyre\cyrch\cyra\cyrn\cyri\cyre
3103 % }%
```

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

```
3104 % \def\Nomfootnoteautorefname{\cyr\cyrs\cyrn\cyro\cyrs\cyrk\cyra}%
3105 % \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.

```
3106 \def\itemautorefname{\cyr\cyrp.}%
3107 % \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.

```
3108 \def\figureautorefname{\cyr\cyrr\cyri\cyrs.}%
3109 \def\tableautorefname{\cyr\cyrt\cyra\cyrb\cyrl.}%
```





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

```
3130 \def\pageautorefname{\cyr\cyr.}%
3131 }

3132 \def\HyLang@spanish{%
3133 \def\equationautorefname{Ecuaci'on}%
3134 \def\footnoteautorefname{Nota a pie de p'agina}%
3135 \def\itemautorefname{Elemento}%
3136 \def\figureautorefname{Figura}%
3137 \def\tableautorefname{Tabla}%
3138 \def\partautorefname{Parte}%
3139 \def\appendixautorefname{Ap'endice}%
3140 \def\chapterautorefname{Cap'itulo}%
3141 \def\sectionautorefname{Secci'on}%
3142 \def\subsectionautorefname{Subsecci'on}%
3143 \def\subsubsectionautorefname{Subsubsecci'on}%
3144 \def\paragraphautorefname{P'arrafo}%
3145 \def\subparagraphautorefname{Subp'arrafo}%
3146 \def\FancyVerbLineautorefname{L'inea}%
3147 \def\theoremautorefname{Teorema}%
3148 \def\pageautorefname{P'agina}%
3149 }

3150 \def\HyLang@catalan{%
3151 \def\equationautorefname{Equaci'o}%
3152 \def\footnoteautorefname{Nota al peu de p'agina}%
3153 \def\itemautorefname{Element}%
3154 \def\figureautorefname{Figura}%
3155 \def\tableautorefname{Taula}%
3156 \def\partautorefname{Part}%
3157 \def\appendixautorefname{Ap`endix}%
3158 \def\chapterautorefname{Cap`itol}%
3159 \def\sectionautorefname{Secci'o}%
3160 \def\subsectionautorefname{Subsecci'o}%
3161 \def\subsubsectionautorefname{Subsubsecci'o}%
3162 \def\paragraphautorefname{Par`agraf}%
3163 \def\subparagraphautorefname{Subpar`agraf}%
3164 \def\FancyVerbLineautorefname{L'inia}%
3165 \def\theoremautorefname{Teorema}%
3166 \def\pageautorefname{P`agina}%
3167 }

3168 \def\HyLang@vietnamese{%
3169 \def\equationautorefname{Ph\uhorn{}}\ohorn{}}ng tr`inh}%
3170 \def\footnoteautorefname{Ch`u th`ich}%
3171 \def\itemautorefname{m\d{u}c}%
3172 \def\figureautorefname{H`inh}%
3173 \def\tableautorefname{B`h{a}ng}%
3174 \def\partautorefname{Ph`\acircumflex{}n}%
3175 \def\appendixautorefname{Ph\d{u}l\d{u}c}%
3176 \def\chapterautorefname{ch\uhorn{}}\ohorn{}}ng}%
3177 \def\sectionautorefname{m\d{u}c}%
3178 \def\subsectionautorefname{m\d{u}c}%
3179 \def\subsubsectionautorefname{m\d{u}c}%
3180 \def\paragraphautorefname{\dj{}}o\d{a}n}%
3181 \def\subparagraphautorefname{\dj{}}o\d{a}n}%

```

```

3182 \def\FancyVerbLineautorefname{d`ong}%
3183 \def\theoremautorefname{\DJ{d{i}nh l`y}%
3184 \def\pageautorefname{Trang}%
3185 }

Greek, see github issue 52
3186 \def\HyLang@greek{%
3187 \def\equationautorefname{\textEpsilon\textxi\acctonos\textiota\textsigma\textomega\textsigma\texteta}%
3188 \def\footnoteautorefname{\textupsilon\textpi\textomicron\textsigma\texteta\textmu\textepsilon\acctonos\textiota\textomega\textsigma\texteta}%
3189 \def\itemautorefname{\textalpha\textnu\texttau\textiota\textkappa\textepsilon\acctonos\textiota\textmu\textepsilon\textnu\textomicron}%
3190 \def\figureautorefname{\textSigma\textchi\acctonos\texteta\textmu\textalpha}%
3191 \def\tableautorefname{\textPi\acctonos\textiota\textnu\textalpha\textkappa\textalpha}%
3192 \def\partautorefname{\textMu\acctonos\textepsilon\textrho\textomicron\textvarsigma}%
3193 \def\appendixautorefname{\textPi\textalpha\textrho\acctonos\textalpha\textrho\texttau\texteta\textmu\textalpha}%
3194 \def\chapterautorefname{\textkappa\textepsilon\textphi\acctonos\textalpha\textlambda\textalpha\textiota\textomicron}%
3195 \def\sectionautorefname{\textepsilon\textnu\acctonos\textomicron\texttau\texteta\texttau\textalpha}%
3196 \def\subsectionautorefname{\textupsilon\textpi\textomicron\textepsilon\textnu\acctonos\textomicron\texttau\texteta\texttau\textalpha}%
3197 \def\subsubsectionautorefname{\textupsilon\textpi\textomicron-\textupsilon\textpi\textomicron\textrho\texteta\textmu\textalpha}%
3198 \def\paragraphautorefname{\textpi\textalpha\textrho\acctonos\textalpha\textgamma\textrho\textalpha\textphi\textomicron\textvarsigma}%
3199 \def\subparagraphautorefname{\textupsilon\textpi\textomicron\textpi\textalpha\textrho\acctonos\textalpha\textgamma\textrho\textalpha\textphi\textomicron\textvarsigma}%
3200 \def\FancyVerbLineautorefname{\textgamma\textrho\textalpha\textmu\textmu\acctonos\texteta}%
3201 \def\theoremautorefname{\textTheta\textepsilon\acctonos\textomega\textrho\texteta\textmu\textalpha}%
3202 \def\pageautorefname{\textsigma\textepsilon\textlambda\acctonos\textiota\textdelta\textalpha}%
3203 }

3204 \def\HyLang@dutch{%
3205 \def\equationautorefname{Vergelijking}%
3206 \def\footnoteautorefname{voetnoot}%
3207 \def\itemautorefname{punt}%
3208 \def\figureautorefname{Figuur}%
3209 \def\tableautorefname{Tabel}%
3210 \def\partautorefname{Deel}%
3211 \def\appendixautorefname{Bijlage}%
3212 \def\chapterautorefname{hoofdstuk}%
3213 \def\sectionautorefname{paragraaf}%
3214 \def\subsectionautorefname{deelparagraaf}%
3215 \def\subsubsectionautorefname{deel-deelparagraaf}%
3216 \def\paragraphautorefname{alinea}%
3217 \def\subparagraphautorefname{deelalinea}%

```

```

3218 \def\FancyVerbLineautorefname{regel}%
3219 \def\theoremautorefname{Stelling}%
3220 \def\pageautorefname{pagina}%
3221 }
3222 \def\HyLang@norsk{%
3223 \def\equationautorefname{Ligning}%
3224 \def\footnoteautorefname{fotnote}%
3225 \def\itemautorefname{element}%
3226 \def\figureautorefname{Figur}%
3227 \def\tableautorefname{Tabell}%
3228 \def\partautorefname{Del}%
3229 \def\appendixautorefname{Tillegg}%
3230 \def\chapterautorefname{kapittel}%
3231 \def\sectionautorefname{seksjon}%
3232 \def\subsectionautorefname{underseksjon}%
3233 \def\subsubsectionautorefname{under-underseksjon}%
3234 \def\paragraphautorefname{avsnitt}%
3235 \def\subparagraphautorefname{underavsnitt}%
3236 \def\FancyVerbLineautorefname{Linje}%
3237 \def\theoremautorefname{Teorem}%
3238 \def\pageautorefname{side}%
3239 }
3240 \def\HyLang@danish{%
3241 \def\equationautorefname{Ligning}%
3242 \def\footnoteautorefname{fodnote}%
3243 \def\itemautorefname{element}%
3244 \def\figureautorefname{Figur}%
3245 \def\tableautorefname{Tabel}%
3246 \def\partautorefname{Del}%
3247 \def\appendixautorefname{Bilag}%
3248 \def\chapterautorefname{kapitel}%
3249 \def\sectionautorefname{sektion}%
3250 \def\subsectionautorefname{under-sektion}%
3251 \def\subsubsectionautorefname{under-under-sektion}%
3252 \def\paragraphautorefname{afsnit}%
3253 \def\subparagraphautorefname{underafsnit}%
3254 \def\FancyVerbLineautorefname{linje}%
3255 \def\theoremautorefname{Teorem}%
3256 \def\pageautorefname{side}%
3257 }
3258 \def\HyLang@swedish{%
3259 \def\equationautorefname{Ekvation}%
3260 \def\footnoteautorefname{fotnot}%
3261 \def\itemautorefname{punkt}%
3262 \def\figureautorefname{Figur}%
3263 \def\tableautorefname{Tabell}%
3264 \def\partautorefname{Del}%
3265 \def\appendixautorefname{Bilaga}%
3266 \def\chapterautorefname{kapitel}%
3267 \def\sectionautorefname{avsnitt}%
3268 \def\subsectionautorefname{underavsnitt}%
3269 \def\subsubsectionautorefname{under-underavsnitt}%
3270 \def\paragraphautorefname{paragraf}%
3271 \def\subparagraphautorefname{underparagraf}%

```

```

3272 \def\FancyVerbLineautorefname{linje}%
3273 \def\theoremautorefname{Teorem}%
3274 \def\pageautorefname{sida}%
3275 }

```

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

```

3276 \def\HyLang@addto#1#2{%
3277   #2%
3278   \@temptokena{#2}%
3279   \ifx#1\relax
3280     \let#1\@empty
3281   \fi
3282   \ifx#1\@undefined
3283     \edef#1{\the\@temptokena}%
3284   \else
3285     \toks@\expandafter{#1}%
3286     \edef#1{\the\toks@\the\@temptokena}%
3287   \fi
3288   \@temptokena{\}\toks@\@temptokena
3289 }

3290 \def\HyLang@DeclareLang#1#2#3{%
3291   \ifcsname extras#1\endcsname
3292     \expandafter\HyLang@addto
3293       \csname extras#1\expandafter\endcsname
3294       \csname HyLang@#2\endcsname
3295   \begingroup
3296     \edef\x{\endgroup
3297       #3%
3298     }%
3299   \x
3300   \@namedef{HyLang@#1@done}{}%
3301   \fi
3302   \begingroup
3303     \edef\x##1##2{%
3304       \noexpand\ifx##2\relax
3305         \errmessage{No definitions for language #2' found!}%
3306       \noexpand\fi
3307     \endgroup
3308     \noexpand\define@key{Hyp}{#1}[]{%
3309       \noexpand\@ifundefined{HyLang@#1@done}{%
3310         \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
3311         #3%
3312         \noexpand\@namedef{HyLang@#1@done}{}%
3313       }{}%
3314     }%
3315   }%
3316   \expandafter\x\csname extras#1\expandafter\endcsname
3317     \csname HyLang@#2\endcsname
3318 }

3319 \HyLang@DeclareLang{english}{english}{}
3320 \HyLang@DeclareLang{UKenglish}{english}{}
3321 \HyLang@DeclareLang{british}{english}{}
3322 \HyLang@DeclareLang{USenglish}{english}{}

```

```

3323 \HyLang@DeclareLang{american}{english}{}
3324 \HyLang@DeclareLang{german}{german}{}
3325 \HyLang@DeclareLang{austrian}{german}{}
3326 \HyLang@DeclareLang{ngerman}{german}{}
3327 \HyLang@DeclareLang{naustrian}{german}{}
3328 \HyLang@DeclareLang{nswissgerman}{german}{}
3329 \HyLang@DeclareLang{swissgerman}{german}{}
3330 \HyLang@DeclareLang{russian}{russian}{\noexpand\hypersetup{unicode}}
3331 \HyLang@DeclareLang{brazil}{portuges}{}
3332 \HyLang@DeclareLang{brazilian}{portuges}{}
3333 \HyLang@DeclareLang{portuguese}{portuges}{}
3334 \HyLang@DeclareLang{spanish}{spanish}{}
3335 \HyLang@DeclareLang{catalan}{catalan}{}
3336 \HyLang@DeclareLang{afrikaans}{afrikaans}{}
3337 \HyLang@DeclareLang{french}{french}{}
3338 \HyLang@DeclareLang{frenchb}{french}{}
3339 \HyLang@DeclareLang{français}{french}{}
3340 \HyLang@DeclareLang{acadian}{french}{}
3341 \HyLang@DeclareLang{canadien}{french}{}
3342 \HyLang@DeclareLang{italian}{italian}{}
3343 \HyLang@DeclareLang{magyar}{magyar}{}
3344 \HyLang@DeclareLang{hungarian}{magyar}{}
3345 \HyLang@DeclareLang{greek}{greek}{}
3346 \HyLang@DeclareLang{dutch}{dutch}{}
3347 \HyLang@DeclareLang{norsk}{norsk}{}
3348 \HyLang@DeclareLang{norwegian}{norsk}{}
3349 \HyLang@DeclareLang{danish}{danish}{}
3350 \HyLang@DeclareLang{swedish}{swedish}{}

```

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

```

3351 \DeclareVoidOption{vietnamese}{%
3352 \HyLang@addto\extrasvietnamese\HyLang@vietnamese
3353 \Hy@AtEndOfPackage{%
3354 \ifundefined{T@PU}{}{}%
3355 \input{pvnenc.def}%
3356 }%
3357 }%
3358 }
3359 \DeclareVoidOption{vietnam}{%
3360 \HyLang@addto\extrasvietnam\HyLang@vietnamese
3361 \Hy@AtEndOfPackage{%
3362 \ifundefined{T@PU}{}{}%
3363 \input{pvnenc.def}%
3364 }%
3365 }%
3366 }

```

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

```

3367 \DeclareVoidOption{arabic}{%
3368 \Hy@AtEndOfPackage{%
3369 \ifundefined{T@PU}{}{}%
3370 \input{puarenc.def}%
3371 }%
3372 }%
3373 }

```

## 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.

```
3374 \define@key{Hyp}{colorlinks}[true]{%
3375   \Hy@boolkey{colorlinks}{#1}%
3376 }
3377 \DeclareVoidOption{hidelinks}{%
3378   \Hy@colorlinksfalse
3379   \Hy@ocgcolorlinksfalse
3380   \Hy@frenchlinksfalse
3381   \def\Hy@colorlink##1{\begingroup}%
3382   \def\Hy@endcolorlink{\endgroup}%
3383   \def\@pdfborder{0 0 0}%
3384   \let\@pdfborderstyle\@empty
3385 }
3386 \define@key{Hyp}{ocgcolorlinks}[true]{%
3387   \Hy@boolkey{ocgcolorlinks}{#1}%
3388 }
3389 \Hy@AtBeginDocument{%
3390   \begingroup
3391   \@ifundefined{OBJ@OCG@view}{%
3392     \ifHy@ocgcolorlinks
3393       \Hy@Warning{%
3394         Driver does not support `ocgcolorlinks',\MessageBreak
3395         using `colorlinks' instead%
3396       }%
3397     \fi
3398   }{%
3399   \endgroup
3400 }
3401 \define@key{Hyp}{frenchlinks}[true]{%
3402   \Hy@boolkey{frenchlinks}{#1}%
3403 }
```

## 14 Bookmarking

```
3404 \begingroup\expandafter\expandafter\expandafter\endgroup
3405 \expandafter\ifx\csname chapter\endcsname\relax
3406   \def\toclevel@part{0}%
3407 \else
3408   \def\toclevel@part{-1}%
3409 \fi
3410 \def\toclevel@chapter{0}
3411 \def\toclevel@section{1}
3412 \def\toclevel@subsection{2}
3413 \def\toclevel@subsubsection{3}
3414 \def\toclevel@paragraph{4}
3415 \def\toclevel@subparagraph{5}
3416 \def\toclevel@figure{0}
3417 \def\toclevel@table{0}
3418 \define@key{Hyp}{bookmarks}[true]{%
3419   \Hy@boolkey{bookmarks}{#1}%
3420 }
```

```

3421 \define@key{Hyp}{bookmarksopen}[true]{%
3422 \Hy@boolkey{bookmarksopen}{#1}%
3423 }

```

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.

```

3424 \let\Hy@bookmarksdepth\c@tocdepth
3425 \define@key{Hyp}{bookmarksdepth}[]{%
3426 \begingroup
3427 \edef\x{#1}%
3428 \ifx\x\empty
3429 \global\let\Hy@bookmarksdepth\c@tocdepth
3430 \else
3431 \@ifundefined{toclevel@\x}{%
3432 \@onelevel@sanitize\x
3433 \edef\y{\expandafter\@car\x\@nil}%
3434 \ifcase 0\expandafter\ifx\y-1\fi
3435 \expandafter\ifnum\expandafter`y>47 %
3436 \expandafter\ifnum\expandafter`y<58 1\fi\fi\relax
3437 \Hy@Warning{Unknown document division name (\x)}%
3438 \else
3439 \setbox\z@=\hbox{%
3440 \count@=\x
3441 \xdef\Hy@bookmarksdepth{\the\count@}%
3442 }%
3443 \fi
3444 }{%
3445 \setbox\z@=\hbox{%
3446 \count@=\csname toclevel@\x\endcsname
3447 \xdef\Hy@bookmarksdepth{\the\count@}%
3448 }%
3449 }%
3450 \fi
3451 \endgroup
3452 }

```

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

```

3453 \define@key{Hyp}{bookmarksopenlevel}{%
3454 \def\@bookmarksopenlevel{#1}%
3455 }
3456 \def\@bookmarksopenlevel{\maxdimen}
3457 % `bookmarkstype' to specify which `toc' file to mimic
3458 \define@key{Hyp}{bookmarkstype}{%
3459 \def\Hy@bookmarkstype{#1}%
3460 }
3461 \def\Hy@bookmarkstype{toc}

```



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

```

3462 \define@key{Hyp}{bookmarksnumbered}[true]{%
3463   \Hy@boolkey{bookmarksnumbered}{#1}%
3464 }

Option CJKbookmarks enables the patch for CJK bookmarks.
3465 \define@key{Hyp}{CJKbookmarks}[true]{%
3466   \Hy@boolkey{CJKbookmarks}{#1}%
3467 }

3468 \def\Hy@temp#1{%
3469   \expandafter\Hy@@temp\csname @#1color\endcsname{#1}%
3470 }
3471 \def\Hy@@temp#1#2#3{%
3472   \define@key{Hyp}{#2color}{%
3473     \HyColor@HyperrefColor{##1}#1%
3474   }%
3475   \def#1{#3}%
3476 }
3477 \Hy@temp{link}{red}
3478 \Hy@temp{anchor}{black}
3479 \Hy@temp{cite}{green}
3480 \Hy@temp{file}{cyan}
3481 \Hy@temp{url}{magenta}
3482 \Hy@temp{menu}{red}
3483 \Hy@temp{run}{\@filecolor}
3484 \define@key{Hyp}{pagecolor}{%
3485   \Hy@WarningPageColor
3486 }
3487 \def\Hy@WarningPageColor{%
3488   \Hy@WarningNoLine{Option `pagecolor' is not available anymore}%
3489   \global\let\Hy@WarningPageColor\relax
3490 }
3491 \define@key{Hyp}{allcolors}{%
3492   \HyColor@HyperrefColor{#1}\@linkcolor
3493   \HyColor@HyperrefColor{#1}\@anchorcolor
3494   \HyColor@HyperrefColor{#1}\@citecolor
3495   \HyColor@HyperrefColor{#1}\@filecolor
3496   \HyColor@HyperrefColor{#1}\@urlcolor
3497   \HyColor@HyperrefColor{#1}\@menucolor
3498   \HyColor@HyperrefColor{#1}\@runcolor
3499 }

3500 \def\hyperbaseurl#1{\def\@baseurl{#1}}
3501 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
3502 \let\@baseurl\@empty
3503 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
3504 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
3505 \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.

```

3506 \let\@pdfpagetransition\relax
3507 \define@key{Hyp}{pdfpagetransition}{%
3508   \def\@pdfpagetransition{#1}%
3509 }

```

`\@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.

```

3510 \let\@pdfpageduration\relax
3511 \define@key{Hyp}{pdfpageduration}{%
3512   \def\@pdfpageduration{#1}%
3513   \Hy@Match\@pdfpageduration}{%
3514     ^(|[0-9]+\.[0-9]*|[0-9]*\.[0-9]+)$%
3515   }{%
3516     \Hy@Warning{%
3517       Invalid value '\@pdfpageduration'\MessageBreak
3518       of option `pdfpageduration'\MessageBreak
3519       is replaced by an empty value%
3520     }%
3521     \let\@pdfpageduration\@empty
3522   }%
3523 }

```

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).

```

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

```

```

3545 \def\Hy@temp##1##2{%
3546   \HyColor@HyperrefBorderColor{#1}##1{hyperref}{##2bordercolor}%
3547 }%
3548 \Hy@temp\@citebordercolor{cite}%
3549 \Hy@temp\@filebordercolor{file}%
3550 \Hy@temp\@linkbordercolor{link}%
3551 \Hy@temp\@menubordercolor{menu}%
3552 \Hy@temp\@runbordercolor{run}%
3553 \Hy@temp\@urlbordercolor{url}%
3554 }

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

```

```

3599     Option setting is ignored%
3600   }%
3601   \let\@pdfborderstyle\Hy@temp
3602 }%
3603 }
3604 \def\Hy@setpdfborder{%
3605   \ifx\@pdfborder\@empty
3606   \else
3607     /Border[\@pdfborder]%
3608   \fi
3609   \ifx\@pdfborderstyle\@empty
3610   \else
3611     /BS<<\@pdfborderstyle>>%
3612   \fi
3613 }
3614 \Hy@DefNameKey{pdfpagemode}{%
3615   \do{UseNone}{}%
3616   \do{UseOutlines}{}%
3617   \do{UseThumbs}{}%
3618   \do{FullScreen}{}%
3619   \do{UseOC}{PDF 1.5}%
3620   \do{UseAttachments}{PDF 1.6}%
3621 }
3622 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
3623   \do{UseNone}{}%
3624   \do{UseOutlines}{}%
3625   \do{UseThumbs}{}%
3626   \do{FullScreen}{}%
3627   \do{UseOC}{PDF 1.5}%
3628   \do{UseAttachments}{PDF 1.6}%
3629 }
3630 \Hy@DefNameKey{pdfdirection}{%
3631   \do{L2R}{Left to right}%
3632   \do{R2L}{Right to left}%
3633 }
3634 \Hy@DefNameKey{pdfviewarea}{%
3635   \do{MediaBox}{}%
3636   \do{CropBox}{}%
3637   \do{BleedBox}{}%
3638   \do{TrimBox}{}%
3639   \do{ArtBox}{}%
3640 }
3641 \Hy@DefNameKey{pdfviewclip}{%
3642   \do{MediaBox}{}%
3643   \do{CropBox}{}%
3644   \do{BleedBox}{}%
3645   \do{TrimBox}{}%
3646   \do{ArtBox}{}%
3647 }
3648 \Hy@DefNameKey{pdfprintarea}{%
3649   \do{MediaBox}{}%
3650   \do{CropBox}{}%
3651   \do{BleedBox}{}%
3652   \do{TrimBox}{}%

```

```

3653 \do{ArtBox}{}%
3654 }
3655 \Hy@DefNameKey{pdfprintclip}{%
3656 \do{MediaBox}{}%
3657 \do{CropBox}{}%
3658 \do{BleedBox}{}%
3659 \do{TrimBox}{}%
3660 \do{ArtBox}{}%
3661 }
3662 \Hy@DefNameKey{pdfprintsclaling}{%
3663 \do{AppDefault}{}%
3664 \do{None}{}%
3665 }
3666 \Hy@DefNameKey{pdfduplex}{%
3667 \do{Simplex}{}%
3668 \do{DuplexFlipShortEdge}{}%
3669 \do{DuplexFlipLongEdge}{}%
3670 }
3671 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
3672 \do{true}{}%
3673 \do{false}{}%
3674 }
3675 \define@key{Hyp}{pdfprintpagerange}{%
3676 \def\@pdfprintpagerange{#1}%
3677 }
3678 \Hy@DefNameKey{pdfnumcopies}{%
3679 \do{2}{two copies}%
3680 \do{3}{three copies}%
3681 \do{4}{four copies}%
3682 \do{5}{five copies}%
3683 }

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

```

```

3707     \let\GenericWarning\@gobbletwo
3708     \let\GenericError\@gobblefour
3709     \PrerenderUnicode{#1}%
3710     }%
3711     \fi
3712 \endgroup
3713 }
3714 \define@key{Hyp}{pdftitle}{%
3715   \AddToDocumentProperties[hyperref]{pdftitle}{#1}%
3716   \HyXeTeX@CheckUnicode
3717   \HyPsd@PrerenderUnicode{#1}%
3718   \pdfstringdef\@pdftitle{#1}%
3719 }
3720 \define@key{Hyp}{pdfauthor}{%
3721   \AddToDocumentProperties[hyperref]{pdfauthor}{#1}%
3722   \HyXeTeX@CheckUnicode
3723   \HyPsd@PrerenderUnicode{#1}%
3724   \pdfstringdef\@pdfauthor{#1}%
3725 }
3726 \define@key{Hyp}{pdfproducer}{%
3727   \AddToDocumentProperties[hyperref]{pdfproducer}{#1}%
3728   \HyXeTeX@CheckUnicode
3729   \HyPsd@PrerenderUnicode{#1}%
3730   \pdfstringdef\@pdfproducer{#1}%
3731 }
3732 \define@key{Hyp}{pdfcreator}{%
3733   \AddToDocumentProperties[hyperref]{pdfcreator}{#1}%
3734   \HyXeTeX@CheckUnicode
3735   \HyPsd@PrerenderUnicode{#1}%
3736   \pdfstringdef\@pdfcreator{#1}%
3737 }
3738 \define@key{Hyp}{addtopdfcreator}{%
3739   \HyXeTeX@CheckUnicode
3740   \HyPsd@PrerenderUnicode{#1}%
3741   \pdfstringdef\@pdfcreator{\@pdfcreator, #1}%
3742 }
3743 \define@key{Hyp}{pdfcreationdate}{%
3744   \begingroup
3745     \Hy@unicodedefalse
3746     \pdfstringdef\@pdfcreationdate{#1}%
3747   \endgroup
3748 }
3749 \define@key{Hyp}{pdfmoddate}{%
3750   \begingroup
3751     \Hy@unicodedefalse
3752     \pdfstringdef\@pdfmoddate{#1}%
3753   \endgroup
3754 }
3755 \define@key{Hyp}{pdfsubject}{%
3756   \AddToDocumentProperties[hyperref]{pdfsubject}{#1}%
3757   \HyXeTeX@CheckUnicode
3758   \HyPsd@PrerenderUnicode{#1}%
3759   \pdfstringdef\@pdfsubject{#1}%
3760 }

```

```

3761 \define@key{Hyp}{pdfkeywords}{%
3762   \AddToDocumentProperties[hyperref]{pdfkeywords}{#1}%
3763   \HyXeTeX@CheckUnicode
3764   \HyPsd@PrerenderUnicode{#1}%
3765   \pdfstringdef\@pdfkeywords{#1}%
3766 }
3767 \define@key{Hyp}{pdftrapped}{%
3768   \lowercase{\edef\Hy@temp{#1}}%
3769   \ifx\Hy@temp\HyInfo@trapped@true
3770     \def\@pdftrapped{True}%
3771   \else
3772     \ifx\Hy@temp\HyInfo@trapped@false
3773       \def\@pdftrapped{False}%
3774     \else
3775       \ifx\Hy@temp\HyInfo@trapped@unknown
3776         \def\@pdftrapped{Unknown}%
3777       \else
3778         \ifx\Hy@temp\@empty
3779           \else
3780             \Hy@Warning{%
3781               Unsupported value `#1'\MessageBreak
3782               for option `pdftrapped'%
3783             }%
3784           \fi
3785         \def\@pdftrapped{}%
3786       \fi
3787     \fi
3788   \fi
3789 }
3790 \def\HyInfo@trapped@true{true}
3791 \def\HyInfo@trapped@false{false}
3792 \def\HyInfo@trapped@unknown{unknown}
3793 \def\HyInfo@TrappedUnsupported{%
3794   \ifx\@pdftrapped\@empty
3795     \else
3796       \Hy@WarningNoLine{`pdftrapped' is not supported by this driver}%
3797     \gdef\HyInfo@TrappedUnsupported{}%
3798   \fi
3799 }
3800 \define@key{Hyp}{pdfinfo}{%
3801   \kvsetkeys{pdfinfo}{#1}%
3802 }
3803 \def\Hy@temp#1{%
3804   \lowercase{\Hy@temp@A{#1}}{#1}%
3805 }
3806 \def\Hy@temp@A#1#2{%
3807   \define@key{pdfinfo}{#2}{%
3808     \hypersetup{pdf#1={##1}}%
3809   }%
3810 }
3811 \Hy@temp{Title}
3812 \Hy@temp{Author}
3813 \Hy@temp{Keywords}
3814 \Hy@temp{Subject}

```

```

3815 \Hy@temp{Creator}
3816 \Hy@temp{Producer}
3817 \Hy@temp{CreationDate}
3818 \Hy@temp{ModDate}
3819 \Hy@temp{Trapped}
3820 \newif\ifHyInfo@AddonUnsupported
3821 \kv@set@family@handler{pdfinfo}{%
3822   \HyInfo@AddonHandler{#1}{#2}%
3823 }
3824 \let\HyInfo@do\relax
3825 \def\HyInfo@AddonHandler#1#2{%
3826   \ifx\kv@value\relax
3827     \Hy@Warning{%
3828       Option `pdfinfo': ignoring key `\'kv@key' without value%
3829     }%
3830   \else
3831     \EdefEscapeName\HyInfo@KeyEscaped{\'kv@key}%
3832     \EdefUnescapeName\HyInfo@Key{\HyInfo@KeyEscaped}%
3833     \expandafter\ifx\csname KV@pdfinfo@\HyInfo@Key\endcsname\relax
3834     \ifHyInfo@AddonUnsupported
3835       \Hy@Warning{%
3836         This driver does not support additional\MessageBreak
3837         information entries, therefore\MessageBreak
3838         `\'kv@key' is ignored%
3839       }%
3840     \else
3841       \def\HyInfo@tmp###1{%
3842         \kv@define@key{pdfinfo}{##1}{%
3843           \HyXeTeX@CheckUnicode
3844           \HyPsd@PrerenderUnicode{###1}%
3845           \pdfstringdef\HyInfo@Value{###1}%
3846           \global\expandafter
3847           \let\csname HyInfo@Value@##1\endcsname
3848             \HyInfo@Value
3849         }%
3850       }%
3851       \expandafter\HyInfo@tmp\expandafter{\HyInfo@Key}%
3852       \global\expandafter
3853       \let\csname KV@pdfinfo@\HyInfo@Key\endcsname\expandafter\endcsname
3854       \csname KV@pdfinfo@\HyInfo@Key\endcsname
3855       \xdef\HyInfo@AddonList{%
3856         \HyInfo@AddonList
3857         \HyInfo@do{\HyInfo@Key}%
3858       }%
3859       \expandafter\kv@parse@normalized\expandafter{%
3860         \HyInfo@Key={#2}%
3861       }{%
3862         \kv@processor@default{pdfinfo}%
3863       }%
3864     \fi
3865   \else
3866     \expandafter\kv@parse@normalized\expandafter{%
3867       \HyInfo@Key={#2}%
3868     }{%

```



```

3869     \kv@processor@default{pdfinfo}%
3870   }%
3871   \fi
3872 \fi
3873 }
3874 \def\HyInfo@GenerateAddons{%
3875   \ifHyInfo@AddonUnsupported
3876     \def\HyInfo@Addons{}%
3877   \else
3878     \begingroup
3879     \toks@{}%
3880     \def\HyInfo@do##1{%
3881       \EdefEscapeName\HyInfo@Key{##1}%
3882       \edef\x{%
3883         \toks@{%
3884           \the\toks@
3885           /\HyInfo@Key(\csname HyInfo@Value@##1\endcsname)%
3886         }%
3887       }%
3888       \x
3889     }%
3890     \HyInfo@AddonList
3891     \edef\x{\endgroup
3892       \def\noexpand\HyInfo@Addons{\the\toks@}%
3893     }%
3894     \x
3895   \fi
3896 }
3897 \global\let\HyInfo@AddonList\@empty
3898 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \}
3899 \define@key{Hyp}{pdfinkmargin}{\setpdfinkmargin{#1}}
3900 \let\setpdfinkmargin\@gobble
3901 \def\calculate@pdfview#1 #2\{%
3902   \def\@pdfview{#1}%
3903   \ifx\#2\%
3904     \def\@pdfviewparams{ -32768}%
3905   \else
3906     \def\@pdfviewparams{ #2}%
3907   \fi
3908 }
3909 \def\Hy@number#1{%
3910   \the\numexpr#1\relax
3911 }%
3912 \define@key{Hyp}{pdfstartpage}{%
3913   \ifx\#1\%
3914     \let\@pdfstartpage\@empty
3915   \else
3916     \edef\@pdfstartpage{\Hy@number{#1}}%
3917   \fi
3918 }%
3919 \define@key{Hyp}{pdfstartview}{%
3920   \ifx\#1\%
3921     \let\@pdfstartview\@empty
3922   \else

```

```

3923 \def\@pdfstartview{/#1}%
3924 \fi
3925 }
3926 \def\HyPat@NonNegativeReal/{%
3927 \ *([0-9]+\.[0-9]*|[0-9]*\.[0-9]+) *%
3928 }
3929 \define@key{Hyp}{pdfremotestartview}{%
3930 \ifx\#1\%
3931 \def\@pdfremotestartview{/Fit}%
3932 \else
3933 \edef\@pdfremotestartview{#1}%
3934 \Hy@Match\@pdfremotestartview{%
3935 ^{XYZ(%
3936   ()| %
3937   (null|-\HyPat@NonNegativeReal/) %
3938   (null|-\HyPat@NonNegativeReal/) %
3939   (null|\HyPat@NonNegativeReal/) %
3940   )| % end of "XYZ"
3941   Fit(%
3942     ()| %
3943     B| %
3944     (H|V|BH|BV)(%
3945       ()| %
3946       (null|\HyPat@NonNegativeReal/) %
3947     )| %
3948     R %
3949     \HyPat@NonNegativeReal/ %
3950     \HyPat@NonNegativeReal/ %
3951     \HyPat@NonNegativeReal/ %
3952     \HyPat@NonNegativeReal/ %
3953   ) % end of "Fit"
3954   )$ %
3955 }%
3956 \Hy@Warning{%
3957   Invalid value \@pdfremotestartview'\MessageBreak
3958   of `pdfremotestartview'\MessageBreak
3959   is replaced by `Fit'%
3960 }%
3961 \let\@pdfremotestartview\@empty
3962 }%
3963 \ifx\@pdfremotestartview\@empty
3964 \def\@pdfremotestartview{/Fit}%
3965 \else
3966 \edef\@pdfremotestartview{/ \@pdfremotestartview}%
3967 \fi
3968 \fi
3969 }
3970 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
3971 \define@key{Hyp}{pdftoolbar}[true]{%
3972 \Hy@boolkey{pdftoolbar}{#1}%
3973 }
3974 \define@key{Hyp}{pdfmenubar}[true]{%
3975 \Hy@boolkey{pdfmenubar}{#1}%
3976 }

```

```

3977 \define@key{Hyp}{pdfwindowui}[true]{%
3978   \Hy@boolkey{pdfwindowui}{#1}%
3979 }
3980 \define@key{Hyp}{pdffitwindow}[true]{%
3981   \Hy@boolkey{pdffitwindow}{#1}%
3982 }
3983 \define@key{Hyp}{pdfcenterwindow}[true]{%
3984   \Hy@boolkey{pdfcenterwindow}{#1}%
3985 }
3986 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
3987   \Hy@boolkey{pdfdisplaydoctitle}{#1}%
3988 }
3989 \define@key{Hyp}{pdfa}[true]{%
3990   \Hy@boolkey{pdfa}{#1}%
3991 }
3992 \define@key{Hyp}{pdfnewwindow}[true]{%
3993   \def\Hy@temp{#1}%
3994   \ifx\Hy@temp\@empty
3995     \Hy@pdfnewwindowsetfalse
3996   \else
3997     \Hy@pdfnewwindowsettrue
3998     \Hy@boolkey{pdfnewwindow}{#1}%
3999   \fi
4000 }
4001 \def\Hy@SetNewWindow{%
4002   \ifHy@pdfnewwindowset
4003     /NewWindow %
4004     \ifHy@pdfnewwindow true\else false\fi
4005   \fi
4006 }
4007 \Hy@DefNameKey{pdfpagelayout}{%
4008   \do{SinglePage}{}%
4009   \do{OneColumn}{}%
4010   \do{TwoColumnLeft}{}%
4011   \do{TwoColumnRight}{}%
4012   \do{TwoPageLeft}{PDF 1.5}%
4013   \do{TwoPageRight}{PDF 1.5}%
4014 }
4015 \define@key{Hyp}{pdflang}{%
4016   \edef\@pdflang{#1}%
4017   \def\Hy@temp{\relax}%
4018   \ifx\@pdflang\Hy@temp
4019     \let\@pdflang\relax
4020   \fi
4021   \ifx\@pdflang\relax
4022   \else
4023     \ifx\@pdflang\@empty
4024     \else

```

Test according to ABNF of RFC 3066.

```

4025   \Hy@Match\@pdflang{icase}{%
4026     ~%
4027     [a-z]{1,8}%
4028     (-[a-z0-9]{1,8})*%

```

4029     \$%  
 4030     }%

Test according to ABNF of RFC 5646.

4031     \Hy@Match\@pdflang{icase}{%  
 4032         ~%  
 4033         (%  
 4034         % langtag  
 4035             (% language  
 4036                 [a-z]{2,3}%  
 4037                 ([a-z]{3}(-[a-z]{3}){0,2})?% extlang  
 4038                 |[a-z]{4}% reserved for future use  
 4039                 |[a-z]{5,8}% registered language subtag  
 4040             )%  
 4041             (-[a-z]{4})?% script  
 4042             (-([a-z]{2}|[0-9]{3}))?% region  
 4043             (-([a-z]{5,8}|[0-9][a-z0-9]{3}))% variant  
 4044             (-[0-9a-wyz](-[a-z0-9]{2,8})+)% extension  
 4045             (-x(-[a-z0-9]{1,8})+)?% privateuse  
 4046         % privateuse  
 4047             |x-([a-z0-9]{1,8})+%  
 4048         % grandfathered/irregular  
 4049             |en-GB-oed%  
 4050             |i-(ami|bnn|default|enochian|hak|klingson|lux|%  
 4051                 mingo|navajo|pwn|tao|tay|tsu)%  
 4052             |sgn-(BE-FR|BE-NL|CH-DE)%  
 4053         % grandfathered/regular  
 4054             |art-lojban%  
 4055             |cel-gaulish%  
 4056             |no-(bok|nyn)%  
 4057             |zh-(guoyu|hakka|min|min-nan|xiang)%  
 4058         )%  
 4059         \$%  
 4060     }%

Test for unique extensions.

4061     \Hy@Match{-\@pdflang}{icase}{-[a-wyz0-9]-}{%  
 4062     \Hy@Match\@pdflang{icase}{~x-}{%  
 4063         % remove privateuse  
 4064         \edef\Hy@temp{-\@pdflang}%  
 4065         \Hy@Match\Hy@temp{icase}{%  
 4066             ~%  
 4067             (%  
 4068                 (-[a-wyz0-9]|-[a-z0-9]{2,8})%  
 4069             )%  
 4070             -x-%  
 4071         }%  
 4072         \edef\Hy@temp{%  
 4073             \expandafter\strip@prefix\pdfastmatch1%  
 4074             }%  
 4075         }{%  
 4076         \Hy@Match\Hy@temp{icase}{%  
 4077             (-[a-wyz0-9]-).\*\@backslashchar1%  
 4078         }%  
 4079         \Hy@Warning{%

```

4080         Invalid language identifier `#1'\MessageBreak
4081         for option `pdflang', because it violates\MessageBreak
4082         well-formedness defined in RFC 4646\MessageBreak
4083         by duplicate singleton subtags%
4084     }%
4085     \let\@pdflang\relax
4086 }{}%
4087 }%
4088 }{}%

```

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

```

4089     \ifx\@pdflang\relax
4090     \else
4091     \Hy@Match\@pdflang{icase}{%
4092     ~%
4093     [a-zA-Z]{2}-%
4094     (%
4095     aa|AA|%
4096     [qQ][m-zA-Z]|%
4097     [xX][a-zA-Z]|%
4098     zz|ZZ%
4099     )%
4100     (-|$)%
4101 }{}%
4102 \Hy@Warning{%
4103     Invalid language identifier `#1'\MessageBreak
4104     for option `pdflang' because of invalid country code%
4105     \MessageBreak
4106     in second subtag (RFC 3066)%
4107 }%
4108     \let\@pdflang\relax
4109 }{}%
4110 \fi
4111 }{}%
4112 \Hy@Warning{%
4113     Invalid language identifier `#1'\MessageBreak
4114     for option `pdflang', because it violates\MessageBreak
4115     well-formedness defined in RFC 5646%
4116 }%
4117     \let\@pdflang\relax
4118 }%
4119 }{}%
4120 \Hy@Warning{%
4121     Invalid language identifier `#1'\MessageBreak
4122     for option `pdflang' (RFC 3066)%
4123 }%
4124     \let\@pdflang\relax
4125 }%
4126 \fi
4127 \fi
4128 }
4129 \define@key{Hyp}{pdfpagelabels}[true]{%
4130 \Hy@boolkey{pdfpagelabels}{#1}%
4131 }
4132 \define@key{Hyp}{pdfescapeform}[true]{%

```

```

4133 \Hy@boolkey{pdfescapeform}{#1}%
4134 }

```

Default values:

```

4135 \def\@linkbordercolor{1 0 0}
4136 \def\@urlbordercolor{0 1 1}
4137 \def\@menubordercolor{1 0 0}
4138 \def\@filebordercolor{0 .5 .5}
4139 \def\@runbordercolor{0 .7 .7}
4140 \def\@citebordercolor{0 1 0}
4141 \def\@pdfhighlight{/I}
4142 \let\@pdftitle\@empty
4143 \let\@pdfauthor\@empty
4144 \let\@pdfproducer\relax
4145 \def\@pdfcreator{LaTeX with hyperref}
4146 \let\@pdfcreationdate\@empty
4147 \let\@pdfmoddate\@empty
4148 \let\@pdfsubject\@empty
4149 \let\@pdfkeywords\@empty
4150 \let\@pdftrapped\@empty
4151 \let\@pdfpagescrop\@empty
4152 \def\@pdfstartview{/Fit}
4153 \def\@pdfremotestartview{/Fit}
4154 \def\@pdfstartpage{1}
4155 \let\@pdfprintpagerange\@empty
4156 \let\@pdflang\relax
4157 \let\PDF@SetupDoc\@empty
4158 \let\PDF@FinishDoc\@empty
4159 \let\phantomsection\@empty
4160 \let\special@paper\@empty
4161 \def\HyperDestNameFilter#1{#1}
4162 \Hy@AtBeginDocument{%
4163   \begingroup
4164     \edef\x{\ifdim\stockheight>z@ \stockheight\else\paperheight\fi}%
4165     \dimen@=\x\relax
4166     \ifdim\dimen@>z@
4167       \else
4168         \dimen@=11in\relax
4169         \Hy@WarningNoLine{%
4170           Height of page (\expandafter\string\x) %
4171           is invalid (\the\x),\MessageBreak
4172           using 11in%
4173         }%
4174       \fi
4175     \dimen@=0.99626401\dimen@
4176     \xdef\Hy@pageheight{\strip@pt\dimen@}%
4177   \endgroup
4178 }
4179 \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.

```

4180 \let\hyper@normalise\ExecuteOptions
4181 \let\ExecuteOptions\hypersetup

```

```

4182 \Hy@RestoreCatcodes
4183 \InputIfFileExists{hyperref.cfg}{-}{-}
4184 \Hy@SetCatcodes
4185 \let\ExecuteOptions\hyper@normalise
4186 \ifx\Hy@MaybeStopNow\relax
4187 \else
4188 \Hy@stoppedearlytrue
4189 \expandafter\Hy@MaybeStopNow
4190 \fi
4191 \Hy@stoppedearlyfalse

```

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

```

4192 \SetupKeyvalOptions{family=Hyp}
4193 \DeclareLocalOptions{%
4194 a4paper,a5paper,b5paper,letterpaper,legalpaper,executivepaper%
4195 }

```

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

```

4196 \@ifpackagewith{hyperref}{tex4ht}{-%
4197 }{-%
4198 \@ifpackageloaded{tex4ht}{-%
4199 \PassOptionsToPackage{tex4ht}{hyperref}%
4200 }{-%
4201 \@ifundefined{HCode}{-%
4202 }{-%
4203 \begingroup
4204 \def\Hy@pkg{tex4ht}%
4205 \def\Hy@temp@A#1\RequirePackage[#2]#3#4\Hy@NIL{%
4206 \def\Hy@param{#2#3}%
4207 \ifx\Hy@param\@empty
4208 \expandafter\@gobble
4209 \else
4210 \def\Hy@param{#3}%
4211 \ifx\Hy@param\Hy@pkg
4212 \PassOptionsToPackage{#2}{tex4ht}%
4213 \expandafter\expandafter\expandafter\@gobble
4214 \else
4215 \expandafter\expandafter\expandafter\@firstofone
4216 \fi
4217 \fi
4218 {\Hy@temp@A#4\Hy@NIL}%
4219 }%
4220 \expandafter
4221 \Hy@temp@A\@documentclasshook\RequirePackage[]{\Hy@NIL
4222 \endgroup
4223 \PassOptionsToPackage{tex4ht}{hyperref}%
4224 }%
4225 }%
4226 }

4227 \let\ReadBookmarks\relax
4228 \ProcessKeyvalOptions{Hyp}

```

After processing options.

## 15.1 Package xspace support

```
4229 \def\Hy@xspace@end{}
4230 \@ifundefined{xspaceaddexceptions}{%
4231 \Hy@AtBeginDocument{%
4232 \@ifundefined{xspaceaddexceptions}{%
4233 }{%
4234 \def\Hy@xspace@end{%
4235 \@gobble{end for xspace}%
4236 }%
4237 \xspaceaddexceptions{%
4238 \Hy@xspace@end,\hyper@linkend,\hyper@anchorend
4239 }%
4240 }%
4241 }%
4242 }{%
4243 \def\Hy@xspace@end{%
4244 \@gobble{end for xspace}%
4245 }%
4246 \xspaceaddexceptions{\Hy@xspace@end,\hyper@linkend,\hyper@anchorend}%
4247 }
```

## 15.2 Option draft

```
4248 \Hy@AtBeginDocument{%
4249 \ifHy@draft
4250 \let\hyper@@anchor\@gobble
4251 \gdef\hyper@link#1#2#3{#3\Hy@xspace@end}%
4252 \def\hyper@anchorstart#1#2{#2\Hy@xspace@end}%
4253 \def\hyper@anchorend{\Hy@xspace@end}%
4254 \let\hyper@linkstart\@gobbletwo
4255 \def\hyper@linkend{\Hy@xspace@end}%
4256 \def\hyper@linkurl#1#2{#1\Hy@xspace@end}%
4257 \def\hyper@linkfile#1#2#3{#1\Hy@xspace@end}%
4258 \def\hyper@link@[#1]#2#3#4{#4\Hy@xspace@end}%
4259 \def\Acrobatmenu#1#2{\leavevmode#2\Hy@xspace@end}%
4260 \let\PDF@SetupDoc\@empty
4261 \let\PDF@FinishDoc\@empty
4262 \let\ReadBookmarks\relax
4263 \let\WriteBookmarks\relax
4264 \Hy@WarningNoLine{Draft mode on}%
4265 \fi
4266 \Hy@DisableOption{draft}%
4267 \Hy@DisableOption{nolinks}%
4268 \Hy@DisableOption{final}%
4269 }
```

## 15.3 PDF/A

```
4270 \Hy@DisableOption{pdfa}
4271 \ifHy@pdfa
4272 \ifnum \Hy@pdf@majorminor@version < 104
4273 \kvsetkeys{Hyp}{pdfversion=1.4}%
4274 \fi
4275 \Hy@DisableOption{pdfversion}%
4276 \def\Hy@Acrobatmenu#1#2{%
```



```

4277 \leavevmode
4278 \begingroup
4279 \edef\x{#1}%
4280 \@onelevel@sanitize\x
4281 \ifx\x\Hy@NextPage
4282 \let\y=Y%
4283 \else
4284 \ifx\x\Hy@PrevPage
4285 \let\y=Y%
4286 \else
4287 \ifx\x\Hy@FirstPage
4288 \let\y=Y%
4289 \else
4290 \ifx\x\Hy@LastPage
4291 \let\y=Y%
4292 \else
4293 \let\y=N%
4294 \fi
4295 \fi
4296 \fi
4297 \fi
4298 \expandafter\endgroup
4299 \ifx\y Y%
4300 \else
4301 \Hy@Error{%
4302 PDF/A: Named action `#1' is not permitted%
4303 }\@ehc
4304 {#2}%
4305 \expandafter\@gobble
4306 \fi
4307 }%
4308 \def\Hy@temp#1{%
4309 \expandafter\def\csname Hy@#1\endcsname{#1}%
4310 \expandafter\@onelevel@sanitize\csname Hy@#1\endcsname
4311 }%
4312 \Hy@temp{NextPage}%
4313 \Hy@temp{PrevPage}%
4314 \Hy@temp{FirstPage}%
4315 \Hy@temp{LastPage}%
4316 \else
4317 \def\Hy@Acrobatmenu#1#2{\leavevmode}%
4318 \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.

```

4319 \def\Hy@wrapper@babel#1#2{%
4320 \begingroup
4321 \Hy@safe@activestruel
4322 \set@display@protect

```

```

4323 \edef\x{#2}%
4324 \@onelevel@sanitize\x
4325 \toks@{#1}%
4326 \edef\x{\endgroup\the\toks@\x}}%
4327 \x
4328 }
4329 \def\Hy@WrapperDef#1{%
4330 \begingroup
4331 \escapechar=\m@ne
4332 \xdef\Hy@gtemp{%
4333 \expandafter\noexpand\csname HyWrap@\string#1\endcsname
4334 }%
4335 \endgroup
4336 \edef#1{%
4337 \noexpand\Hy@wrapper@babel
4338 \expandafter\noexpand\Hy@gtemp
4339 }%
4340 \expandafter\def\Hy@gtemp
4341 }

4342 \ifHy@hyperfigures
4343 \Hy@Info{Hyper figures ON}%
4344 \else
4345 \Hy@Info{Hyper figures OFF}%
4346 \fi
4347 \ifHy@nesting
4348 \Hy@Info{Link nesting ON}%
4349 \else
4350 \Hy@Info{Link nesting OFF}%
4351 \fi
4352 \ifHy@hyperindex
4353 \Hy@Info{Hyper index ON}%
4354 \else
4355 \Hy@Info{Hyper index OFF}%
4356 \fi
4357 \ifHy@plainpages
4358 \Hy@Info{Plain pages ON}%
4359 \else
4360 \Hy@Info{Plain pages OFF}%
4361 \fi
4362 \ifHy@backref
4363 \Hy@Info{Backreferencing ON}%
4364 \else
4365 \Hy@Info{Backreferencing OFF}%
4366 \fi
4367 \ifHy@implicit
4368 \Hy@InfoNoLine{Implicit mode ON; LaTeX internals redefined}%
4369 \else
4370 \Hy@InfoNoLine{Implicit mode OFF; no redefinition of LaTeX internals}%
4371 \def\MaybeStopEarly{%
4372 \Hy@Message{Stopped early}}%
4373 \Hy@AtBeginDocument{%
4374 \PDF@FinishDoc
4375 \gdef\PDF@FinishDoc{}%
4376 }%

```

```

4377 \endinput
4378 }%
4379 \Hy@AtBeginDocument{%
4380 \let\autoref\ref
4381 \let\autopageref\pageref
4382 \ifx\@pdfpagemode\@empty
4383 \gdef\@pdfpagemode{UseNone}%
4384 \fi
4385 \global\Hy@backreffalse
4386 }%
4387 \Hy@AtEndOfPackage{%
4388 \global\let\ReadBookmarks\relax
4389 \global\let\WriteBookmarks\relax
4390 }%
4391 \fi
4392 \Hy@DisableOption{implicit}

```

#### 15.4.1 Driver loading

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

```

4393 \@ifundefined{stockwidth}{\newdimen\stockwidth}{}
4394 \@ifundefined{stockheight}{\newdimen\stockheight}{}
4395 \Hy@AtEndOfPackage{%
4396 \@ifpackageloaded{tex4ht}{%
4397 \def\Hy@driver{htex4ht}%
4398 \Hy@texhttrue
4399 }{}%

```

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.

```

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

```

```

4424     \let\Hy@driver\@empty
4425     \fi
4426   \fi
4427 \fi
4428 \ifHy@texht
4429 \else
4430   \ifx\Hy@driver\@empty
4431   \else
4432     \def\Hy@temp{hxtex}%
4433     \ifxetex
4434       \ifx\Hy@driver\Hy@temp
4435       \else
4436         \Hy@WarningNoLine{%
4437           Wrong driver `\'Hy@driver.def';\MessageBreak
4438           XeTeX is running.\MessageBreak
4439           Forcing driver `\'Hy@temp.def' for XeTeX%
4440         }%
4441       \let\Hy@driver\Hy@temp
4442     \fi
4443   \fi
4444 \fi
4445 \fi
4446 \ifx\Hy@driver\@empty
4447 \else
4448   \def\Hy@temp{hhitex}%
4449   \ifhint
4450     \ifx\Hy@driver\Hy@temp
4451     \else
4452       \Hy@WarningNoLine{%
4453         Wrong driver `\'Hy@driver.def';\MessageBreak
4454         hitex is running.\MessageBreak
4455         Forcing driver `\'Hy@temp.def'%
4456       }%
4457     \let\Hy@driver\Hy@temp
4458   \fi
4459 \fi
4460 \fi
4461 \ifx\Hy@driver\@empty
4462 \else
4463   \def\Hy@temp{hvtexhtm}%
4464   \ifnum\ifvtex\OpMode\else\m@ne\fi=10 %
4465     \ifx\Hy@driver\Hy@temp
4466     \else
4467       \Hy@WarningNoLine{%
4468         Wrong driver `\'Hy@driver.def';\MessageBreak
4469         VTeX is running in HTML mode.\MessageBreak
4470         Forcing driver `\'Hy@temp.def'%
4471       }%
4472     \let\Hy@driver\Hy@temp
4473   \fi
4474 \else
4475   \ifx\Hy@driver\Hy@temp
4476   \Hy@WarningNoLine{%
4477     Wrong driver `\'Hy@driver.def';\MessageBreak

```

```

4478     VTeX is not running in HTML mode.\MessageBreak
4479     Using default driver%
4480   }%
4481   \let\Hy@driver\@empty
4482 \fi
4483 \fi
4484 \fi

```

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

```

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

```

```

4531         \let\Hy@driver\Hy@defaultdriver
4532         \def\HyOpt@DriverType{ (default)}%
4533     \else
4534         \def\HyOpt@DriverType{ (fallback)}%
4535     \fi
4536 \fi
4537 \fi
4538 \fi
4539 \fi
4540 \fi
4541 \fi
4542 \fi
4543 \ifx\Hy@driver\Hy@defaultdriver
4544     \def\Hy@temp{hdvwind}%
4545     \ifx\Hy@temp\Hy@driver
4546         \kvsetkeys{Hyp}{colorlinks}%
4547         \PassOptionsToPackage{dviwindo}{color}%
4548     \fi
4549 \fi
4550 \fi
4551 \else
4552     \def\HyOpt@DriverType{ (custom)}%
4553     \let\Hy@driver\HyOpt@CustomDriver
4554 \fi
4555 \Hy@InfoNoLine{Driver\HyOpt@DriverType: \Hy@driver}%
4556 \chardef\Hy@VersionChecked=0 %
4557 \input{\Hy@driver.def}%
4558 \ifcase\Hy@VersionChecked
4559     \Hy@VersionCheck{\Hy@driver.def}%
4560 \fi
4561 \let\@unprocessedoptions\relax
4562 \Hy@RestoreCatcodes
4563 \Hy@DisableOption{tex4ht}%
4564 \Hy@DisableOption{pdftex}%
4565 \Hy@DisableOption{nativepdf}%
4566 \Hy@DisableOption{dvipdfm}%
4567 \Hy@DisableOption{dvipdfmx}%
4568 \Hy@DisableOption{dvipdfmx-outline-open}%
4569 \Hy@DisableOption{pdfmark}%
4570 \Hy@DisableOption{dvips}%
4571 \Hy@DisableOption{hypertex}%
4572 \Hy@DisableOption{vtex}%
4573 \Hy@DisableOption{vtexpdfmark}%
4574 \Hy@DisableOption{dviwindo}%
4575 \Hy@DisableOption{dvipsone}%
4576 \Hy@DisableOption{textures}%
4577 \Hy@DisableOption{latex2html}%
4578 \Hy@DisableOption{ps2pdf}%
4579 \Hy@DisableOption{xetex}%
4580 \Hy@DisableOption{driverfallback}%
4581 \Hy@DisableOption{customdriver}%
4582 \Hy@DisableOption{pdfversion}%
4583 }

```

Support for open outlines is enabled for XeTeX >= 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.

```

4584 \newif\ifHy@DvipdfmxOutlineOpen
4585 \ifxetex
4586 \ifdim\number\XeTeXversion\XeTeXrevision in<0.9995in %
4587 \else
4588 \chardef\SpecialDvipdfmxOutlineOpen\@ne
4589 \Hy@DvipdfmxOutlineOpenttrue
4590 \fi
4591 \fi
4592 \begingroup\expandafter\expandafter\expandafter\endgroup
4593 \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax
4594 \else
4595 \ifnum\SpecialDvipdfmxOutlineOpen>\z@
4596 \Hy@DvipdfmxOutlineOpenttrue
4597 \fi
4598 \fi

```

### 15.4.2 Bookmarks

```

4599 \def\WriteBookmarks{0}
4600 \def\@bookmarkopenstatus#1{%
4601 \ifHy@bookmarksopen

```

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

```

4602 \ifnum#1<\expandafter\@firstofone\expandafter
4603 {\number\@bookmarksopenlevel} % explicit space
4604 \else
4605 -%
4606 \fi
4607 \else
4608 -%
4609 \fi
4610 }
4611 \ifHy@bookmarks
4612 \Hy@Info{Bookmarks ON}%
4613 \ifx\@pdfpagemode\@empty
4614 \def\@pdfpagemode{UseOutlines}%
4615 \fi
4616 \else
4617 \let\@bookmarkopenstatus\@gobble
4618 \Hy@Info{Bookmarks OFF}%
4619 \Hy@AtEndOfPackage{%
4620 \global\let\ReadBookmarks\relax
4621 \global\let\WriteBookmarks\relax
4622 }%
4623 \ifx\@pdfpagemode\@empty
4624 \def\@pdfpagemode{UseNone}%
4625 \fi
4626 \fi
4627 \Hy@DisableOption{bookmarks}

```

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

```

4628 \def\Hy@CatcodeWrapper#1{%

```

```

4629 \let\Hy@EndWrap\@empty
4630 \def\TMP@EnsureCode###1##2{%
4631   \edef\Hy@EndWrap{%
4632     \Hy@EndWrap
4633     \catcode###1 \the\catcode###1\relax
4634   }%
4635   \catcode###1 ##2\relax
4636 }%
4637 \TMP@EnsureCode{10}{12}% ^^J
4638 \TMP@EnsureCode{33}{12}% !
4639 \TMP@EnsureCode{34}{12}% "
4640 \TMP@EnsureCode{36}{3}% $ (math)
4641 \TMP@EnsureCode{38}{4}% & (alignment)
4642 \TMP@EnsureCode{39}{12}% '
4643 \TMP@EnsureCode{40}{12}% (
4644 \TMP@EnsureCode{41}{12}% )
4645 \TMP@EnsureCode{42}{12}% *
4646 \TMP@EnsureCode{43}{12}% +
4647 \TMP@EnsureCode{44}{12}% ,
4648 \TMP@EnsureCode{45}{12}% -
4649 \TMP@EnsureCode{46}{12}% .
4650 \TMP@EnsureCode{47}{12}% /
4651 \TMP@EnsureCode{58}{12}% :
4652 \TMP@EnsureCode{59}{12}% ;
4653 \TMP@EnsureCode{60}{12}% <
4654 \TMP@EnsureCode{61}{12}% =
4655 \TMP@EnsureCode{62}{12}% >
4656 \TMP@EnsureCode{63}{12}% ?
4657 \TMP@EnsureCode{91}{12}% [
4658 \TMP@EnsureCode{93}{12}% ]
4659 \TMP@EnsureCode{94}{7}% ^ (superscript)
4660 \TMP@EnsureCode{95}{8}% _ (subscript)
4661 \TMP@EnsureCode{96}{12}% `
4662 \TMP@EnsureCode{124}{12}% |
4663 \TMP@EnsureCode{126}{13}% ~ (active)
4664 #1\relax
4665 \Hy@EndWrap
4666 }

```

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

```

4667 \Hy@AtBeginDocument{%
4668   \ifHy@ocgcolorlinks
4669     \kvsetkeys{Hyp}{colorlinks}%
4670     \ifHy@pdfa
4671       \Hy@Warning{%
4672         PDF/A: Optional Content Groups are prohibited,\MessageBreak
4673         using `colorlinks' instead of `ocgcolorlinks'%
4674       }%
4675       \Hy@ocgcolorlinksfalse
4676     \fi
4677   \fi
4678   \ifHy@ocgcolorlinks
4679     \else
4680     \Hy@DisableOption{ocgcolorlinks}%

```



```

4681 \fi
4682 \ifHy@colorlinks
4683 \def\@pdfborder{0 0 0}%
4684 \let\@pdfborderstyle\@empty
4685 \Hy@CatcodeWrapper{%
4686 \RequirePackage{color}%
4687 }%
4688 \def\Hy@colorlink#1{%
4689 \begingroup
4690 \HyColor@UseColor#1%
4691 }%
4692 \def\Hy@endcolorlink{\endgroup}%
4693 \Hy@Info{Link coloring ON}%
4694 \else
4695 \ifHy@frenchlinks
4696 \def\Hy@colorlink#1{\begingroup\fontshape{\scdefault}\selectfont}%
4697 \def\Hy@endcolorlink{\endgroup}%
4698 \Hy@Info{French linking ON}%
4699 \else

```

for grouping consistency:

```

4700 \def\Hy@colorlink#1{\begingroup}%
4701 \def\Hy@endcolorlink{\endgroup}%
4702 \Hy@Info{Link coloring OFF}%
4703 \fi
4704 \fi
4705 \Hy@DisableOption{colorlinks}%
4706 \Hy@DisableOption{frenchlinks}%
4707 \ifHy@texht
4708 \else

```

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

```

4709 \ifHy@implicit
4710 \let \T@Ref\HyRef@Ref
4711 \def\@refstar#1{%
4712 \NR@ref@showkeys{#1}%
4713 \HyRef@StarSetRef{#1}\@firstoffive
4714 }
4715 \def\@pagerefstar#1{%
4716 \NR@ref@showkeys{#1}%
4717 \HyRef@StarSetRef{#1}\@secondoffive
4718 }
4719 \def\@namerefstar#1{%
4720 \NR@ref@showkeys{#1}%
4721 \HyRef@StarSetRef{#1}\@thirdoffive
4722 }
4723 \def\@Refstar#1{%
4724 \NR@ref@showkeys{#1}%
4725 \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
4726 }%
4727 \else
4728 \fi
4729 \fi
4730 }

```

```

4731 \Hy@AtBeginDocument{%
4732   \ifx\ReadBookmarks\relax
4733   \else
4734     \Hy@CatcodeWrapper\ReadBookmarks
4735   \fi
4736 }

4737 \ifHy@backref
4738   \RequirePackage{backref}%
4739 \else
4740   \let\Hy@backout\@gobble
4741 \fi
4742 \Hy@DisableOption{backref}
4743 \Hy@DisableOption{pagebackref}
4744 \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`.

```

4745 \begingroup
4746   \endlinechar=-1 %
4747   \catcode`\^^A=14 %
4748   \catcode`\^^M\active
4749   \catcode`\%\active
4750   \catcode`\#\active
4751   \catcode`\_\active
4752   \catcode`\$\active
4753   \catcode`\&\active
4754   \gdef\hyper@normalise{^^A
4755     \begingroup
4756     \catcode`\^^M\active
4757     \def^^M{ }^^A
4758     \catcode`\%\active
4759     \let%\@percentchar
4760     \let%\@percentchar
4761     \catcode`\#\active
4762     \def#{\hyper@hash}^^A
4763     \def\#{\hyper@hash}^^A
4764     \@makeother\&^^A
4765     \edef&{\string&}^^A
4766     \edef\&{\string&}^^A
4767     \edef\textunderscore{\string_}^^A
4768     \let_\textunderscore
4769     \catcode`\_\active
4770     \let_\textunderscore
4771     \let~\hyper@tilde
4772     \let~\hyper@tilde
4773     \let\textasciitilde\hyper@tilde

```

```

4774 \let\\\@backslashchar
4775 \edef$\string$^^A
4776 \Hy@safe@activestrue
4777 \hyper@n@rmalise
4778 }^^A
4779 \catcode`\#=6 ^^A
4780 \gdef\Hy@ActiveCarriageReturn{^^M}^^A
4781 \gdef\hyper@n@rmalise#1#2{^^A
4782 \def\Hy@tempa{#2}^^A
4783 \ifx\Hy@tempa\Hy@ActiveCarriageReturn
4784 \Hy@ReturnAfterElseFi{^^A
4785 \hyper@@normalise{#1}^^A
4786 }^^A
4787 \else
4788 \Hy@ReturnAfterFi{^^A
4789 \hyper@@normalise{#1}{#2}^^A
4790 }^^A
4791 \fi
4792 }^^A
4793 \gdef\hyper@@normalise#1#2{^^A
4794 \edef\Hy@tempa{^^A
4795 \endgroup
4796 \noexpand#1{\Hy@RemovePercentCr#2%^^M\@nil}^^A
4797 }^^A
4798 \Hy@tempa
4799 }^^A
4800 \gdef\Hy@RemovePercentCr#1%^^M#2\@nil{^^A
4801 #1^^A
4802 \ifx\limits#2\limits
4803 \else
4804 \Hy@ReturnAfterFi{^^A
4805 \Hy@RemovePercentCr #2\@nil
4806 }^^A
4807 \fi
4808 }^^A
4809 \endgroup
4810 \providecommand*\hyper@chars{%
4811 \let#\hyper@hash
4812 \let%\@percentchar
4813 \Hy@safe@activestrue
4814 }

4815 \def\hyperlink#1#2{%
4816 \hyper@@link{}{#1}{#2}%
4817 }

4818 \def\Hy@VerboseLinkStart#1#2{%
4819 \ifHy@verbose
4820 \begingroup
4821 \Hy@safe@activestrue
4822 \xdef\Hy@VerboseGlobalTemp{(#1) `#2'}%
4823 \Hy@Info{Reference \Hy@VerboseGlobalTemp}%
4824 \xdef\Hy@VerboseGlobalTemp{%
4825 \Hy@VerboseGlobalTemp, %
4826 line \the\inputlineno

```

```

4827 }%
4828 \endgroup
4829 \let\Hy@VerboseLinkInfo\Hy@VerboseGlobalTemp
4830 \@onelevel@sanitize\Hy@VerboseLinkInfo
4831 \fi
4832 }

4833 \def\Hy@VerboseLinkInfo{<VerboseLinkInfo>}
4834 \def\Hy@VerboseLinkStop{%
4835 \ifHy@verbose
4836 \begingroup
4837 \edef\x{\endgroup
4838 \write\m@ne{%
4839 Package `hyperref' Info: %
4840 End of reference \Hy@VerboseLinkInfo.%
4841 }%
4842 }%
4843 \x
4844 \fi
4845 }

4846 \def\Hy@VerboseAnchor#1{%
4847 \ifHy@verbose
4848 \begingroup
4849 \Hy@safe@activestrue
4850 \Hy@Info{Anchor ``HyperDestNameFilter{#1}'}%
4851 \endgroup
4852 \fi
4853 }

4854 \def\Hy@AllowHyphens{%
4855 \relax
4856 \ifhmode
4857 \penalty\@M
4858 \hskip\z@skip
4859 \fi
4860 }

4861 \DeclareRobustCommand*\href}[1][]{%
4862 \begingroup
4863 \setkeys{href}{#1}%
4864 \@ifnextchar\bgroup\Hy@href{\hyper@normalise\href@}%
4865 }
4866 \def\Hy@href#1{%
4867 \hyper@normalise\href@
4868 }
4869 \begingroup
4870 \catcode`\$=6 %
4871 \catcode`\#=12 %
4872 \gdef\href@\$1{\expandafter\href@split$1##\}%
4873 \gdef\href@split$1##$2##$3\\$4{%
4874 \hyper@@link{$1}->{$2}->{$4}%
4875 \endgroup
4876 }%
4877 \endgroup

```

Option ‘page’.

```

4878 \define@key{href}{page}{%
4879   \def\Hy@href@page{#1}%
4880 }
4881 \let\Hy@href@page\@empty
4882 \newcount\c@Hy@tempcnt
4883 \def\theHy@tempcnt{\the\c@Hy@tempcnt}
4884 \def\Hy@MakeRemoteAction{%
4885   \ifx\Hy@href@page\@empty
4886     \def\Hy@href@page{0}%
4887   \else
4888     \setcounter{Hy@tempcnt}{\Hy@href@page}%
4889     \ifnum\c@Hy@tempcnt<\@ne
4890       \Hy@Warning{%
4891         Invalid page number (\theHy@tempcnt)\MessageBreak
4892         for remote PDF file.\MessageBreak
4893         Using page 1%
4894       }%
4895     \def\Hy@href@page{0}%
4896   \else
4897     \global\advance\c@Hy@tempcnt\m@ne
4898   \edef\Hy@href@page{\theHy@tempcnt}%
4899   \fi
4900 \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.

```

4901 \ifx\Hy@href@nextactionraw\@empty
4902 \else
4903   \Hy@pdfnewwindowsettrue
4904   \Hy@pdfnewwindowtrue
4905 \fi
4906 }

```

Option ‘pdfremotestartview’.

```

4907 \define@key{href}{pdfremotestartview}{%
4908   \setkeys{Hyp}{pdfremotestartview={#1}}%
4909 }

```

Option ‘pdfnewwindow’.

```

4910 \let\KV@href@pdfnewwindow\KV@Hyp@pdfnewwindow
4911 \let\KV@href@pdfnewwindow@default\KV@Hyp@pdfnewwindow@default

```

Option ‘ismap’.

```

4912 \newif\ifHy@href@ismap
4913 \define@key{href}{ismap}[true]{%
4914   \@ifundefined{Hy@href@ismap#1}{%
4915     \Hy@Error{%
4916       Invalid value (#1) for key `ismap'.\MessageBreak
4917       Permitted values are `true' or `false'.\MessageBreak
4918       Ignoring `ismap'%
4919     }\@ehc
4920   }{%
4921     \csname Hy@href@ismap#1\endcsname
4922   }%
4923 }

```

Option ‘nextactionraw’.

```
4924 \let\Hy@href@nextactionraw\@empty
4925 \define@key{href}{nextactionraw}{%
4926   \edef\Hy@href@nextactionraw{#1}%
4927   \ifx\Hy@href@nextactionraw\@empty
4928     \else
4929     \Hy@Match\Hy@href@nextactionraw{}%
4930     ~(\HyPat@ObjRef/|<<.*[/S| /].+>>|%
4931     \[( ?\HyPat@ObjRef/|<<.*[/S| /].+>>)+ ?)$%
4932     }{ }{%
4933     \Hy@Warning{Invalid value for `nextactionraw':\MessageBreak
4934     \Hy@href@nextactionraw\MessageBreak
4935     The action is discarded%
4936     }%
4937     }%
4938   \ifx\Hy@href@nextactionraw\@empty
4939     \else
4940     \edef\Hy@href@nextactionraw{/Next \Hy@href@nextactionraw}%
4941   \fi
4942 \fi
4943 }
4944 \def\HyPat@ObjRef/{.+}
```

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

```
4945 \RequirePackage{url}
4946 \let\HyOrg@url\url
4947 \def\Hurl{\begingroup \Url}
4948 \DeclareRobustCommand*\nolinkurl{\hyper@normalise\nolinkurl@}
4949 \def\nolinkurl@#1{\Hurl{#1}}
4950 \DeclareRobustCommand*\url{\hyper@normalise\url@}
4951 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}
4952 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
4953 \providecommand\hyper@image[2]{#2}
4954 \def\hypertarget#1#2{%
4955   \ifHy@nesting
4956     \hyper@@anchor{#1}{#2}%
4957   \else
4958     \hyper@@anchor{#1}{\relax}#2%
4959   \fi
4960 }
```

\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 L<sup>A</sup>T<sub>E</sub>X label which can be used in a short form of \hyperref later, to avoid remembering the name and category.

```
4961 \DeclareRobustCommand*\hyperref{ }{%
4962   \@ifnextchar{\Hy@babelnormalise\label@hyperref}\@hyperref
4963 }
4964 \def\Hy@babelnormalise#1[#2]{%
4965   \begingroup
```

```

4966 \Hy@safe@activestru
4967 \let\protect\@unexpandable@protect
4968 \edef\Hy@tempa{%
4969 \endgroup
4970 \noexpand#1[#{#2}]%
4971 }%
4972 \Hy@tempa
4973 }
4974 \def\@hyperref{\hyper@normalise\@hyperref}
4975 \def\@hyperref#1#2#3{%
4976 \edef\ref@one{\ifx\#2\else#2.\fi#3}%
4977 \expandafter\tryhyper@link\ref@one\{#1}%
4978 }
4979 \def\tryhyper@link#1\#2{%
4980 \hyper@@link{#2}{#1}%
4981 }

4982 \def\hyperdef{\@ifnextchar{\label@hyperdef}{\@hyperdef}}
4983 \def\@hyperdef#1#2#3{%, category, name, text
4984 \ifx\#1\%
4985 \def\Hy@AnchorName{#2}%
4986 \else
4987 \def\Hy@AnchorName{#1.#2}%
4988 \fi
4989 \ifHy@nesting
4990 \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#3}%
4991 \else
4992 \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#3%
4993 \fi
4994 }

```

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.

```

4995 \let\hyperrefundefinedlink\@firstofone
4996 \def\label@hyperref[#1]{%
4997 \expandafter\label@@hyperref\csname r@#1\endcsname{#1}%
4998 }%
4999 \def\label@@hyperref#1#2#3{%
5000 \ifx#1\relax
5001 \protect\G@refundefinedtrue
5002 \@latex@warning{%
5003 Hyper reference `#2' on page \thepage \space undefined%
5004 }%
5005 \begingroup
5006 \hyperrefundefinedlink{#3}%
5007 \endgroup
5008 \else
5009 \hyper@@link{\expandafter\@fifthoffive#1}%
5010 {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
5011 \fi
5012 }
5013 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
5014 % anchor text
5015 \@bsphack

```

```

5016 \ifx\#2\%
5017 \def\Hy@AnchorName{#3}%
5018 \else
5019 \def\Hy@AnchorName{#2.#3}%
5020 \fi
5021 \if@filesw
5022 \protected@write\@auxout{}{%
5023 \string\newlabel{#1}{-}{-}{\Hy@AnchorName}{-}}%
5024 }%
5025 \fi
5026 \@esphack
5027 \ifHy@nesting
5028 \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#4}%
5029 \else
5030 \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}{#4}%
5031 \fi
5032 }

```

`\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`

```

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

```



```

5062     }
5063   }
5064 }
5065 \cs_new:Npn \__hyp_get_currentanchor:n #1
5066 {
5067   \HyperDestNameFilter { \@currentHref }
5068 }
5069 \ExplSyntaxOff

```

## 16.1 Link box support for XeTeX

```

5070 \newdimen\XeTeXLinkMargin
5071 \setlength{\XeTeXLinkMargin}{2pt}
5072 \ifxetex
5073   \font\XeTeXLink@font=pzdr at 1sp\relax
5074   \newcommand*{\XeTeXLink@space}{%
5075     \begingroup
5076       \XeTeXLink@font
5077       \@xxxii
5078     \endgroup
5079   }%
5080   \newcommand{\XeTeXLinkBox}[1]{%
5081     \begingroup
5082       \leavevmode
5083       \sbox\z@{#1}%
5084       \begingroup
5085         \dimen@=\dp\z@
5086         \advance\dimen@\XeTeXLinkMargin
5087         \setbox\tw@=\llap{%
5088           \hb@xt@\XeTeXLinkMargin{%
5089             \lower\dimen@\hbox{\XeTeXLink@space}%
5090           \hss
5091         }%
5092       }%
5093       \dp\tw@=\dp\z@
5094       \ht\tw@=\ht\z@
5095       \copy\tw@
5096     \endgroup
5097     \copy\z@
5098     \dimen@=\ht\z@
5099     \advance\dimen@\XeTeXLinkMargin
5100     \setbox\tw@=\rlap{%
5101       \hb@xt@\XeTeXLinkMargin{%
5102         \hss
5103         \raise\dimen@\hbox{\XeTeXLink@space}%
5104       }%
5105     }%
5106     \dp\tw@=\dp\z@
5107     \ht\tw@=\ht\z@
5108     \copy\tw@
5109   \endgroup
5110 }%
5111 \else
5112 \newcommand*{\XeTeXLinkBox}[1]{%

```

```

5113 \begingroup
5114 \leavevmode
5115 \sbox\z@{#1}%
5116 \copy\z@
5117 \endgroup
5118 }%
5119 \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.

```

5120 \def\hyper@@link{\let\Hy@reserved@a\relax
5121 \ifnextchar[{\hyper@link@}{\hyper@link@[link]}%
5122 }
5123 % #1: type
5124 % #2: URL
5125 % #3: destination name
5126 % #4: text
5127 \def\hyper@link@[#1]#2#3#4{%
5128 \Hy@ifempty{#4}{% link text
5129 \Hy@Warning{Suppressing empty link}%
5130 }{%
5131 \begingroup
5132 \protected@edef\Hy@tempa{#2}%
5133 \edef\Hy@tempb{#3}%
5134 \ifx\Hy@tempa\@empty
5135 \ifx\Hy@tempb\@empty
5136 \Hy@Warning{Suppressing link with empty target}%
5137 \toks@{%
5138 \endgroup
5139 \@secondoftwo
5140 }%
5141 \else
5142 \toks@{%
5143 \endgroup
5144 \hyper@link{#1}%
5145 }%
5146 \fi
5147 \else
5148 \toks@{%
5149 \endgroup
5150 \expandafter\hyper@readexternallink#2\{\#1}%
5151 }%
5152 \fi
5153 \Hy@safe@activesfalse
5154 \toks@\expandafter{%
5155 \the\expandafter\toks@
5156 \expandafter{\Hy@tempb}{#4}%
5157 }%
5158 \the\toks@
5159 }%

```

```
5160 }
```

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.

```
5161 \def\hyper@readexternallink#1\|#2#3#4{%
5162   \begingroup
5163   \let\\\relax
5164   \expandafter\endgroup
5165   \expandafter\@hyper@\@readexternallink#1\#{#2}\#{#3}\#{#4}%
5166 }
5167 \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.

```
5168 \@hyper@readexternallink{#2}\#{#3}\#{#4}\#1::\#{#1}%
5169 }
```

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

```
5170 \def\@pdftempwordfile{file}%
5171 \def\@pdftempwordrun{run}%
5172 \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:`

```
5173   \ifx\|#6\|
5174     \@hyper@linkfile file:#7\#{#3}\#{#2}\#{#7}%
5175   \else
5176     \ifx\|#4\|
5177       \@hyper@linkfile file:#7\#{#3}\#{#2}\#{#7}%
5178     \else
```

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

```
5179     \def\@pdftempa{#4}%
5180     \ifx\@pdftempa\@pdftempwordfile
5181       \@hyper@linkfile#7\#{#3}\#{#2}\#{#7}%
5182     \else
```

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

```
5183 \ifx\@pdftempa\@pdftempwordrun
5184 \ifHy@pdfa
5185 \Hy@Error{%
5186 PDF/A: Launch action is prohibited%
5187 }\@ehc
5188 \begingroup
5189 \leavevmode
5190 #2%
5191 \endgroup
5192 \else
5193 \@hyper@launch#7\#{#3}{#2}%
5194 \fi
5195 \else
```

otherwise its a URL

```
5196 \hyper@linkurl{#3}{#7\ifx\#2\else\hyper@hash#2\fi}%
5197 \fi
5198 \fi
5199 \fi
5200 \fi
5201 }
```

By default, turn run: into file:

```
5202 \def\@hyper@launch run:#1\#2#3{% filename, anchor text, linkname
5203 \hyper@linkurl{#2}{%
5204 \Hy@linkfileprefix
5205 #1%
5206 \ifx\#3\%
5207 \else
5208 \hyper@hash
5209 #3%
5210 \fi
5211 }%
5212 }
```

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

```
5213 \def\@hyper@linkfile file:#1\#2#3#4{%
5214 %file url,link string, name, original uri
5215 \filename@parse{#1}%
5216 \ifx\filename@ext\relax
5217 \edef\filename@ext{\XR@ext}%
5218 \fi
5219 \def\use@file{\filename@area\filename@base.\filename@ext}%
5220 \Hy@ifStringEndsWith\filename@ext\XR@ext{%
5221 \hyper@linkfile{#2}{\use@file}{#3}%
5222 }{%
5223 \ifx\@baseurl\@empty
5224 \hyper@linkurl{#2}{%
5225 #4\ifx\#3\else\hyper@hash#3\fi
5226 }%
5227 \else
5228 \hyper@linkurl{#2}{\use@file\ifx\#3\else\hyper@hash#3\fi}%
5229 \fi
```

```

5230 }%
5231 }

5232 \def\Hy@ifStringEndsWith#1#2{%
5233 \begingroup
5234 \edef\x{#1}%
5235 \@onelevel@sanitize\x
5236 \edef\x{.x$}%
5237 \edef\y{#2}%
5238 \@onelevel@sanitize\y
5239 \edef\y{.y$}%
5240 \expandafter\def\expandafter\z\expandafter##\expandafter1\y##2\@nil{%
5241 \endgroup
5242 \ifx\relax##2\relax
5243 \expandafter\@secondoftwo
5244 \else
5245 \expandafter\@firstoftwo
5246 \fi
5247 }%
5248 \expandafter\expandafter\expandafter\z\expandafter\x\y\@nil
5249 }

5250 \def\Hy@StringLocalhost{localhost}
5251 \@onelevel@sanitize\Hy@StringLocalhost
5252 \def\Hy@CleanupFile#1{%
5253 \edef#1{#1}%
5254 \expandafter\Hy@@CleanupFile#1\hbox{//\hbox\@nil{#1}%
5255 }
5256 \def\Hy@@CleanupFile#1//#2/#3\hbox#4\@nil#5{%
5257 \begingroup
5258 \toks@{\endgroup}%
5259 \def\x{#1}%
5260 \ifx\x\@empty
5261 \def\x{#2}%
5262 \ifx\x\@empty
5263 \toks@{\endgroup\def#5{/#3}}%
5264 \else
5265 \@onelevel@sanitize\x
5266 \ifx\x\Hy@StringLocalhost
5267 \toks@{\endgroup\def#5{/#3}}%
5268 \fi
5269 \fi
5270 \fi
5271 \the\toks@
5272 }

```

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.

```

5273 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
5274 \long\def\@hyper@@anchor#1\relax#2#3\relax{%

```

```

5275 \ifx\#1\%
5276 #2\Hy@Warning{Ignoring empty anchor}%
5277 \else
5278 \def\anchor@spot{#2#3}%
5279 \let\put@me@back\@empty
5280 \ifx\relax#2\relax
5281 \else
5282 \ifHy@nesting
5283 \else
5284 \ifcat a\noexpand#2\relax
5285 \else
5286 \ifcat 0\noexpand#2 \relax
5287 \else
5288 % \typeout{Anchor start is not alphanumeric %
5289 % on input line\the\inputlineno%
5290 % }%
5291 \let\anchor@spot\@empty
5292 \def\put@me@back{#2#3}%
5293 \fi
5294 \fi
5295 \fi
5296 \fi
5297 \ifHy@activeanchor
5298 \anchor@spot
5299 \else
5300 \hyper@anchor{#1}%
5301 \fi
5302 \expandafter\put@me@back
5303 \fi
5304 \let\anchor@spot\@empty
5305 }
5306 \let\anchor@spot\@empty

```

## 18 Option ‘destlabel’

```

5307 \ifHy@destlabel

\hyper@newdestlabel

5308 \def\hyper@newdestlabel#1#2{%
5309 \begingroup
5310 \Hy@safe@activetrue
5311 \edef\x{\endgroup
5312 \noexpand\@newl@bel{HyDL}{#1}{#2}%
5313 }%
5314 \x
5315 }%

\hyper@destlabel@hook

5316 \providecommand*\hyper@destlabel@hook{}%

\Hy@DestRename

5317 \newcommand*\Hy@DestRename}[2]{%
5318 \@ifundefined{HyDL!#1}{%

```

```

5319 \begingroup
5320 \Hy@safe@activetrue
5321 \edef\dest@name{#1}%
5322 \edef\label@name{#2}%
5323 \hyper@destlabel@hook
5324 \Hy@IsNotEmpty{dest@name}{%
5325 \Hy@IsNotEmpty{label@name}{%
5326 \global\expandafter
5327 \let\csname HyDL!#1\endcsname\@empty
5328 \if@filesw
5329 \protected@write\@auxout{}{%
5330 \string\hyper@newdestlabel
5331 {#1}%
5332 {\label@name}%
5333 }%
5334 \fi
5335 }%
5336 }%
5337 \endgroup
5338 }{}%
5339 }%

```

#### \HyperDestRename

```

5340 \newcommand*{\HyperDestRename}[2]{%
5341 \AtBeginDocument{%
5342 \Hy@DestRename{#1}{#2}%
5343 }%
5344 }%
5345 \AtBeginDocument{%
5346 \let\HyperDestRename\Hy@DestRename
5347 }%

```

#### \Hy@IsNotEmpty

```

5348 \def\Hy@IsNotEmpty#1{%
5349 \@ifundefined{#1}\@gobble{%
5350 \expandafter\ifx\csname#1\endcsname\@empty
5351 \expandafter\@gobble
5352 \else
5353 \expandafter\@firstofone
5354 \fi
5355 }%
5356 }%

5357 \Hy@GlobalAppendToMacro\label@hook{%
5358 \HyperDestRename\@currentHref\label@name
5359 }%

```

#### \HyperDestLabelReplace

```

5360 \def\HyperDestLabelReplace#1{%
5361 \@ifundefined{HyDL@#1}{%
5362 #1%
5363 }{}%
5364 \csname HyDL@#1\endcsname
5365 }%
5366 }%

```

```

\HyperDestNameFilter
5367 \let\HyperDestNameFilter\HyperDestLabelReplace
5368 \else

\hyper@newdestlabel
5369 \let\hyper@newdestlabel\@gobbletwo

\HyperDestLabelReplace
5370 \let\HyperDestLabelReplace\@firstofone

\HyperDestRename
5371 \let\HyperDestRename\@gobbletwo

5372 \fi
5373 \Hy@DisableOption{destlabel}

Provide a dummy default definition of \hyper@newdestlabel inside the .aux
files.
5374 \AddToHook{include/before}
5375 {\immediate\write\@partaux{\string\providecommand\string\hyper@newdest-
label[2]{}}}
5376 \AddToHook{begindocument}
5377 {\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.

```
5378 \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
5379 \def\HyField@NewFlag#1#2{%
5380 \lowercase{\HyField@NewOption{#2}}%
5381 \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5382 }
```



`\HyField@NewFlagOnly`

```
5383 \def\HyField@NewFlagOnly#1#2{%
5384 \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5385 }
```

`\HyField@NewOption #1: option name`

```
5386 \def\HyField@NewOption#1{%
5387 \expandafter\newif\csname ifFld@#1\endcsname
5388 \define@key{Field}{#1}[true]{%
5389 \lowercase{\Field@boolkey{##1}}{#1}%
5390 }%
5391 }
```

`\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`

```
5392 \def\HyField@NewBitsetFlag#1#2#3#4{%
5393 \begingroup
5394 \count@=#4\relax
5395 \advance\count@\m@ne
5396 \def\x##1{%
5397 \endgroup
5398 \expandafter\def\csname HyField@#3@#1\endcsname{##1}%
5399 \expandafter\ifx\csname HyField@#3@##1\endcsname\relax
5400 \expandafter\edef\csname HyField@#3@##1\endcsname{%
5401 (\number#4) #2%
5402 }%
5403 \else
5404 \expandafter\edef\csname HyField@#3@##1\endcsname{%
5405 \csname HyField@#3@##1\endcsname
5406 /#2%
5407 }%
5408 \fi
5409 }%
5410 \expandafter\x\expandafter{\the\count@}%
5411 }
```

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

```
5412 \def\HyField@UseFlag#1#2{%
5413 \lowercase{\HyField@@UseFlag{#2}}{#1}%
5414 }
```

`\HyField@@UseFlag`

```
5415 \def\HyField@@UseFlag#1#2{%
5416 \bitsetSetValue{HyField@#2}{%
5417 \csname HyField@#2@#1\endcsname
5418 }{%
5419 \csname ifFld@#1\endcsname 1\else 0\fi
5420 }%
5421 }
```

```

\HyField@SetFlag The bit set is HyField@#1
5422 \def\HyField@SetFlag#1#2{%
5423 \lowercase{\HyField@@SetFlag{#2}}{#1}%
5424 }

```

```

\HyField@@SetFlag
5425 \def\HyField@@SetFlag#1#2{%
5426 \bitsetSetValue{HyField@#2}{%
5427 \csname HyField@#2@#1\endcsname
5428 }{1}%
5429 }

```

```

\HyField@PrintFlags
5430 \def\HyField@PrintFlags#1#2{%
5431 \ifHy@verbose
5432 \begingroup
5433 \let\Hy@temp\@empty
5434 \let\MessageBreak\relax
5435 \expandafter\@for\expandafter\x\expandafter:\expandafter=%
5436 \bitsetGetSetBitList{HyField@#1}\do{%
5437 \edef\Hy@temp{%
5438 \Hy@temp
5439 \csname HyField@#1@\x\endcsname\MessageBreak
5440 }%
5441 }%
5442 \edef\x{\endgroup
5443 \noexpand\Hy@Info{%
5444 Field flags: %
5445 \expandafter\ifx\@car#1\@nil S\else/\fi
5446 #1 %
5447 \bitsetGetDec{HyField@#1} %
5448 (0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
5449 \Hy@temp
5450 for #2%
5451 }%
5452 }\x
5453 \fi
5454 }

```

### 19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```

5455 \HyField@NewFlag{Ff}{ReadOnly}{1}
5456 \HyField@NewFlag{Ff}{Required}{2}
5457 \HyField@NewFlag{Ff}{NoExport}{3}

```

“Table 8.75 Field flags specific to button fields”

```

5458 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
5459 \HyField@NewFlag{Ff}{Radio}{16}
5460 \HyField@NewFlag{Ff}{Pushbutton}{17}
5461 \HyField@NewFlag{Ff}{RadiosInUnison}{26}

```

“Table 8.77 Field flags specific to text fields”

```

5462 \HyField@NewFlag{Ff}{Multiline}{13}

```

```

5463 \HyField@NewFlag{Ff}{Password}{14}
5464 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
5465 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5466 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4
5467 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4
5468 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5

```

“Table 8.79 field flags specific to choice fields”

```

5469 \HyField@NewFlag{Ff}{Combo}{18}
5470 \HyField@NewFlag{Ff}{Edit}{19}
5471 \HyField@NewFlag{Ff}{Sort}{20}
5472 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4
5473 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5474 \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.

```

5475 \newif\ifFld@popdown
5476 \define@key{Field}{popdown}{true}{%
5477   \lowercase{\Field@boolkey{#1}}{popdown}%
5478 }

```

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.

```

5479 \HyField@NewFlag{F}{Invisible}{1}
5480 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2
5481 \HyField@NewFlag{F}{Print}{3}% PDF 1.2
5482 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2
5483 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3
5484 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3
5485 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4
5486 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5
5487 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7
5488 \ifHy@pdfa
5489   \def\HyField@PDFAFFlagWarning#1#2{%
5490     \Hy@Warning{%
5491       PDF/A: Annotation flag `#1' must\MessageBreak
5492       be set to `#2'%
5493     }%
5494   }%
5495   \Fld@invisiblefalse
5496   \def\Fld@invisibletrue{%
5497     \HyField@PDFAFFlagWarning{invisible}{false}%
5498   }%
5499   \Fld@hiddenfalse
5500   \def\Fld@hiddentrue{%
5501     \HyField@PDFAFFlagWarning{hidden}{false}%
5502   }%
5503   \Fld@printtrue
5504   \def\Fld@printfalse{%

```

```

5505 \HyField@PDFAFIagWarning{print}{true}%
5506 }%
5507 \Fld@nozoomtrue
5508 \def\Fld@nozoomfalse{%
5509 \HyField@PDFAFIagWarning{nozoom}{true}%
5510 }%
5511 \Fld@norotatetrue
5512 \def\Fld@norotatefalse{%
5513 \HyField@PDFAFIagWarning{norotate}{true}%
5514 }%
5515 \Fld@noviewfalse
5516 \def\Fld@noviewtrue{%
5517 \HyField@PDFAFIagWarning{noview}{false}%
5518 }%
5519 \fi

```

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

```

5520 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
5521 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
5522 \HyField@NewFlag{Submit}{GetMethod}{4}
5523 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
5524 \HyField@NewFlagOnly{Submit}{XFDF}{6}
5525 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}
5526 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
5527 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}
5528 \HyField@NewFlag{Submit}{CanonicalFormat}{10}
5529 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
5530 \HyField@NewFlag{Submit}{ExclFKey}{12}
5531 \HyField@NewFlag{Submit}{EmbedForm}{14}

5532 \define@key{Field}{export}{%
5533 \lowercase{\def\Hy@temp{#1}}%
5534 \@ifundefined{Fld@export@\Hy@temp}{%
5535 \@onelevel@sanitize\Hy@temp
5536 \Hy@Error{%
5537 Unknown export format `'\Hy@temp'.\MessageBreak
5538 Known formats are `FDF', `HTML', `XFDF', and `PDF'%
5539 }\@ehc
5540 }%
5541 \let\Fld@export\Hy@temp
5542 }%
5543 }
5544 \def\Fld@export{fdf}
5545 \@namedef{Fld@export@fdf}{0}%
5546 \@namedef{Fld@export@html}{1}%
5547 \@namedef{Fld@export@xfdf}{2}%
5548 \@namedef{Fld@export@pdf}{3}%

```

### 19.1.2 Set submit flags

\HyField@FlagsSubmit

```

5549 \def\HyField@FlagsSubmit{%
5550 \bitsetReset{HyField@Submit}%
5551 \ifcase\@nameuse{Fld@export@\Fld@export} %

```

```

5552 % FDF
5553 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5554 \HyField@UseFlag{Submit}{SubmitCoordinates}%
5555 \HyField@UseFlag{Submit}{IncludeAppendSaves}%
5556 \HyField@UseFlag{Submit}{IncludeAnnotations}%
5557 \HyField@UseFlag{Submit}{CanonicalFormat}%
5558 \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
5559 \HyField@UseFlag{Submit}{ExclFKey}%
5560 \HyField@UseFlag{Submit}{EmbedForm}%
5561 \or % HTML
5562 \HyField@SetFlag{Submit}{ExportFormat}%
5563 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5564 \HyField@UseFlag{Submit}{GetMethod}%
5565 \HyField@UseFlag{Submit}{SubmitCoordinates}%
5566 \HyField@UseFlag{Submit}{CanonicalFormat}%
5567 \or % XFDF
5568 \HyField@SetFlag{Submit}{XFDF}%
5569 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5570 \HyField@UseFlag{Submit}{SubmitCoordinates}%
5571 \HyField@UseFlag{Submit}{CanonicalFormat}%
5572 \or % PDF
5573 \HyField@SetFlag{Submit}{SubmitPDF}%
5574 \HyField@UseFlag{Submit}{GetMethod}%
5575 \fi
5576 \HyField@PrintFlags{Submit}{submit button field}%
5577 \bitsetIsEmpty{HyField@Submit}{%
5578 \let\Fld@submitflags\@empty
5579 }{%
5580 \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}%
5581 }%
5582 }

```

### 19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

5583 \def\HyField@FlagsAnnot#1{%
5584 \bitsetReset{HyField@F}%
5585 \HyField@UseFlag{F}{Invisible}%
5586 \HyField@UseFlag{F}{Hidden}%
5587 \HyField@UseFlag{F}{Print}%
5588 \HyField@UseFlag{F}{NoZoom}%
5589 \HyField@UseFlag{F}{NoRotate}%
5590 \HyField@UseFlag{F}{NoView}%
5591 \HyField@UseFlag{F}{Locked}%
5592 \HyField@UseFlag{F}{ToggleNoView}%
5593 \HyField@UseFlag{F}{LockedContents}%
5594 \HyField@PrintFlags{F}{#1}%
5595 \bitsetIsEmpty{HyField@F}{%
5596 \let\Fld@annotflags\@empty
5597 }{%
5598 \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}%
5599 }%
5600 }

```

#### 19.1.4 Pushbutton field

`\HyField@FlagsPushButton`

```
5601 \def\HyField@FlagsPushButton{%
5602 \HyField@FlagsAnnot{push button field}%
5603 \bitsetReset{HyField@Ff}%
5604 \HyField@UseFlag{Ff}{ReadOnly}%
5605 \HyField@UseFlag{Ff}{Required}%
5606 \HyField@UseFlag{Ff}{NoExport}%
5607 \HyField@SetFlag{Ff}{PushButton}%
5608 \HyField@PrintFlags{Ff}{push button field}%
5609 \bitsetIsEmpty{HyField@Ff}{%
5610 \let\Fld@flags\@empty
5611 }{%
5612 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5613 }%
5614 }
```

#### 19.1.5 Check box field

`\HyField@FlagsCheckBox`

```
5615 \def\HyField@FlagsCheckBox{%
5616 \HyField@FlagsAnnot{check box field}%
5617 \bitsetReset{HyField@Ff}%
5618 \HyField@UseFlag{Ff}{ReadOnly}%
5619 \HyField@UseFlag{Ff}{Required}%
5620 \HyField@UseFlag{Ff}{NoExport}%
5621 \HyField@PrintFlags{Ff}{check box field}%
5622 \bitsetIsEmpty{HyField@Ff}{%
5623 \let\Fld@flags\@empty
5624 }{%
5625 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5626 }%
5627 }
```

#### 19.1.6 Radio button field

`\HyField@FlagsRadioButton`

```
5628 \def\HyField@FlagsRadioButton{%
5629 \HyField@FlagsAnnot{radio button field}%
5630 \bitsetReset{HyField@Ff}%
5631 \HyField@UseFlag{Ff}{ReadOnly}%
5632 \HyField@UseFlag{Ff}{Required}%
5633 \HyField@UseFlag{Ff}{NoExport}%
5634 \HyField@UseFlag{Ff}{NoToggleToOff}%
5635 \HyField@SetFlag{Ff}{Radio}%
5636 \HyField@UseFlag{Ff}{RadiosInUnison}%
5637 \HyField@PrintFlags{Ff}{radio button field}%
5638 \bitsetIsEmpty{HyField@Ff}{%
5639 \let\Fld@flags\@empty
5640 }{%
5641 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5642 }%
5643 }
```

### 19.1.7 Text fields

`\HyField@FlagsText`

```
5644 \def\HyField@FlagsText{%
5645   \HyField@FlagsAnnot{text field}%
5646   \bitsetReset{HyField@Ff}%
5647   \HyField@UseFlag{Ff}{ReadOnly}%
5648   \HyField@UseFlag{Ff}{Required}%
5649   \HyField@UseFlag{Ff}{NoExport}%
5650   \HyField@UseFlag{Ff}{Multiline}%
5651   \HyField@UseFlag{Ff}{Password}%
5652   \HyField@UseFlag{Ff}{FileSelect}%
5653   \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5654   \HyField@UseFlag{Ff}{DoNotScroll}%
5655   \ifFld@comb
5656     \ifcase0\ifFld@multiline
5657       \else\ifFld@password
5658       \else\ifFld@fileselect
5659       \else 1\fi\fi\fi\relax
5660     \Hy@Error{%
5661       Field option `comb' cannot be used together with\MessageBreak
5662       `multiline', `password', or `fileselect'%
5663     }@\ehc
5664   \else
5665     \HyField@UseFlag{Ff}{Comb}%
5666   \fi
5667 \fi
5668 \HyField@UseFlag{Ff}{RichText}%
5669 \HyField@PrintFlags{Ff}{text field}%
5670 \bitsetIsEmpty{HyField@Ff}{%
5671   \let\Fld@flags\@empty
5672 }{%
5673   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5674 }%
5675 }
```

### 19.1.8 Choice fields

`\HyField@FlagsChoice`

```
5676 \def\HyField@FlagsChoice{%
5677   \HyField@FlagsAnnot{choice field}%
5678   \bitsetReset{HyField@Ff}%
5679   \HyField@UseFlag{Ff}{ReadOnly}%
5680   \HyField@UseFlag{Ff}{Required}%
5681   \HyField@UseFlag{Ff}{NoExport}%
5682   \HyField@UseFlag{Ff}{Combo}%
5683   \ifFld@combo
5684     \HyField@UseFlag{Ff}{Edit}%
5685   \fi
5686   \HyField@UseFlag{Ff}{Sort}%
5687   \HyField@UseFlag{Ff}{MultiSelect}%
5688   \ifFld@combo
5689     \ifFld@edit
5690     \HyField@UseFlag{Ff}{DoNotSpellCheck}%

```

```

5691 \fi
5692 \fi
5693 \HyField@UseFlag{Ff}{CommitOnSelChange}%
5694 \HyField@PrintFlags{Ff}{choice field}%
5695 \bitsetIsEmpty{HyField@Ff}{%
5696 \let\Fld@flags\@empty
5697 }{%
5698 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5699 }%
5700 }

```

## 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`.

```

5701 \def\HyField@PDFChoices#1{%
5702 \begingroup
5703 \global\let\Fld@choices\@empty
5704 \let\HyTmp@optlist\@empty
5705 \let\HyTmp@optitem\relax
5706 \count@=0 %
5707 \kv@parse{#1}{%
5708 \Hy@pdfstringdef\kv@key\kv@key
5709 \ifx\kv@value\relax
5710 \ifnum\Hy@pdf@majorminor@version<103 % implementation note 122, PDF spec 1.7
5711 \xdef\Fld@choices{\Fld@choices(\kv@key)(\kv@key)}%
5712 \else
5713 \xdef\Fld@choices{\Fld@choices(\kv@key)}%
5714 \fi
5715 \else
5716 \Hy@pdfstringdef\kv@value\kv@value
5717 \xdef\Fld@choices{\Fld@choices(\kv@value)(\kv@key)}%
5718 \fi
5719 \edef\HyTmp@optlist{%
5720 \HyTmp@optlist
5721 \HyTmp@optitem{\the\count@}{\kv@key}0%
5722 }%
5723 \advance\count@ by 1 %
5724 \@gobbletwo
5725 }%
5726 \xdef\Fld@choices{/Opt[\Fld@choices]}%
5727 \ifFld@multiselect
5728 \HyField@@PDFChoices{DV}\Fld@default
5729 \HyField@@PDFChoices{V}\Fld@value
5730 \else
5731 \ifx\Fld@default\relax
5732 \else
5733 \pdfstringdef\Hy@gtmp\Fld@default
5734 \xdef\Fld@choices{\Fld@choices/DV(\Hy@gtmp)}%
5735 \fi
5736 \ifx\Fld@value\relax

```



```

5737 \else
5738 \pdfstringdef\Hy@temp\Fld@value
5739 \xdef\Fld@choices{\Fld@choices/V(\Hy@temp)}%
5740 \fi
5741 \fi
5742 \endgroup
5743 }

```

\HyField@@PDFChoices

```

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

```

```

5789 \xdef\Fld@choices{\Fld@choices/#1[\HyTmp@optlist]}%
5790 \ifx#1V%
5791 \def\HyTmp@optitem##1##2##3{%
5792 \ifnum##3=1 %
5793 \@firstofone{ ##1}%
5794 \fi
5795 }%
5796 \edef\HyTmp@optlist{\HyTmp@optlist}%
5797 \xdef\Fld@choices{%
5798 \Fld@choices
5799 /I\expandafter\@firstofone\HyTmp@optlist}%
5800 }%
5801 \fi
5802 \fi
5803 \fi
5804 }

```

### 19.3 Forms

\HyField@SetKeys

```

5805 \def\HyField@SetKeys{%
5806 \kvsetkeys{Field}%
5807 }

5808 \newif\ifFld@checked
5809 \newif\ifFld@disabled
5810 \Fld@checkedfalse
5811 \Fld@disabledfalse
5812 \newcount\Fld@menulength
5813 \newdimen\Fld@Width
5814 \newdimen\Fld@charsize
5815 \Fld@charsize=10\p@
5816 \def\Fld@maxlen{0}
5817 \def\Fld@align{0}
5818 \def\Fld@color{0 0 0 rg}
5819 \def\Fld@bcolor{1 1 1}
5820 \def\Fld@bordercolor{1 0 0}
5821 \def\Fld@bordersep{1\p@}
5822 \def\Fld@borderwidth{1}
5823 \def\Fld@borderstyle{S}
5824 \def\Fld@cbsymbol{4}
5825 \def\Fld@radiosymbol{H}
5826 \def\Fld@rotation{0}
5827 \def\Fld@Form{\@ifnextchar[{\@Form}{\@Form[]}}
5828 \def\endForm{\@endForm}
5829 \newif\ifForm@html
5830 \Form@htmlfalse
5831 \def\Fld@boolkey#1#2{%
5832 \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5833 }
5834 \define@key{Form}{action}{%
5835 \hyper@normalise\Hy@DefFormAction{#1}%
5836 }
5837 \def\Hy@DefFormAction{\def\Fld@action}

```

```

5838 \def\enc@html{html}
5839 \define@key{Form}{encoding}{%
5840   \def\Hy@tempa{#1}%
5841   \ifx\Hy@tempa\enc@html
5842     \Form@htmltrue
5843     \def\Fld@export{html}%
5844   \else
5845     \Hy@Warning{%
5846       Form `encoding' key with \MessageBreak
5847       unknown value `#1'%
5848     }%
5849     \Form@htmlfalse
5850   \fi
5851 }
5852 \define@key{Form}{method}{%
5853   \lowercase{\def\Hy@temp{#1}}%
5854   \@ifundefined{Form@method@\Hy@temp}{%
5855     \@onelevel@sanitize\Hy@temp
5856     \Hy@Error{%
5857       Unknown method `'\Hy@temp'.\MessageBreak
5858       Known values are `post' and `get'%
5859     } \@ehc
5860   }{%
5861     \let\Form@method\Hy@temp
5862     \ifcase\@nameuse{Form@method@\Hy@temp} %
5863       \Fld@getmethodfalse
5864     \else
5865       \Fld@getmethodtrue
5866     \fi
5867   }%
5868 }
5869 \def\Form@method{}
5870 \@namedef{Form@method@post}{0}
5871 \@namedef{Form@method@get}{1}
5872 \newif\ifHyField@NeedAppearances
5873 \def\HyField@NeedAppearancesfalse{%
5874   \global\let\ifHyField@NeedAppearances\iffalse
5875 }
5876 \def\HyField@NeedAppearancetrue{%
5877   \global\let\ifHyField@NeedAppearances\iftrue
5878 }
5879 \HyField@NeedAppearancetrue
5880 \define@key{Form}{NeedAppearances}[true]{%
5881   \edef\Hy@tempa{#1}%
5882   \ifx\Hy@tempa\Hy@true
5883     \HyField@NeedAppearancetrue
5884   \else
5885     \ifx\Hy@tempa\Hy@false
5886       \HyField@NeedAppearancesfalse
5887     \else
5888       \Hy@Error{%
5889         Unexpected value `'\Hy@tempa'\MessageBreak
5890         of option `NeedAppearances' instead of\MessageBreak
5891         `true' or `false'%

```

```

5892   }\@ehc
5893   \fi
5894   \fi
5895 }
5896 \def\Field@boolkey#1#2{%
5897   \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5898 }
5899 \ifHy@texht
5900   \newtoks\Field@toks
5901   \Field@toks={ }%
5902   \def\Field@addtoks#1#2{%
5903     \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}%
5904     \@processme
5905   }%
5906 \else
5907   \def\Hy@WarnHTMLFieldOption#1{%
5908     \Hy@Warning{%
5909       HTML field option `#1'\MessageBreak
5910       is ignored%
5911     }%
5912   }%
5913 \fi
5914 \def\Fld@checkequals#1=#2=#3\\\{%
5915   \def\@currDisplay{#1}%
5916   \ifx\\#2\\\%
5917     \def\@currValue{#1}%
5918   \else
5919     \def\@currValue{#2}%
5920   \fi
5921   \expandafter\Hy@pdfstringdef\expandafter\@currValue\expandafter{\@currValue}%
5922 }
5923 \define@key{Field}{loc}{%
5924   \def\Fld@loc{#1}%
5925 }
5926 \define@key{Field}{checked}[true]{%
5927   \lowercase{\Field@boolkey{#1}}{checked}%
5928 }
5929 \define@key{Field}{disabled}[true]{%
5930   \lowercase{\Field@boolkey{#1}}{disabled}%
5931 }
5932 \ifHy@texht
5933   \define@key{Field}{accesskey}{%
5934     \Field@addtoks{accesskey}{#1}%
5935   }%
5936   \define@key{Field}{tabkey}{%
5937     \Field@addtoks{tabkey}{#1}%
5938   }%
5939 \else
5940   \define@key{Field}{accesskey}{%
5941     \Hy@WarnHTMLFieldOption{accesskey}%
5942   }%
5943   \define@key{Field}{tabkey}{%
5944     \Hy@WarnHTMLFieldOption{tabkey}%
5945   }%

```

```

5946 \fi
5947 \define@key{Field}{name}{%
5948   \def\Fld@name{#1}%
5949 }
5950 \let\Fld@altname\relax
5951 \define@key{Field}{altname}{%
5952   \def\Fld@altname{#1}%
5953 }
5954 \let\Fld@mappingname\relax
5955 \define@key{Field}{mappingname}{%
5956   \def\Fld@mappingname{#1}%
5957 }
5958 \define@key{Field}{width}{%
5959   \def\Fld@width{#1}%
5960   \Field@Width#1\setbox0=\hbox{m}%
5961 }
5962 \define@key{Field}{maxlen}{%
5963   \def\Fld@maxlen{#1}%
5964 }
5965 \define@key{Field}{menulength}{%
5966   \Fld@menulength=#1\relax
5967 }
5968 \define@key{Field}{height}{%
5969   \def\Fld@height{#1}%
5970 }
5971 \define@key{Field}{charsize}{%
5972   \setlength{\Fld@charsize}{#1}%
5973 }
5974 \define@key{Field}{borderwidth}{%
5975   \Hy@defaultbp\Fld@borderwidth{#1}%
5976 }
5977 \def\Hy@defaultbp#1#2{%
5978   \begingroup
5979   \afterassignment\Hy@defaultbpAux
5980   \dimen@=#2bp\relax{#1}{#2}%
5981 }
5982 \def\Hy@defaultbpAux#1\relax#2#3{%
5983   \ifx!#1!%
5984     \endgroup
5985     \def#2{#3}%
5986   \else
5987     \edef\x{\endgroup
5988       \def\noexpand#2{%
5989         \strip@pt\dimexpr\dimen@*800/803\relax
5990       }}%
5991   }\x
5992 \fi
5993 }%
5994 \define@key{Field}{borderstyle}{%
5995   \let\Hy@temp\Fld@borderstyle
5996   \def\Fld@borderstyle{#1}%
5997   \Hy@Match\Fld@borderstyle}{%
5998     ~[SDBIU]$%
5999   }{ }%

```

```

6000 \Hy@Warning{%
6001   Invalid value `\

```

```

6054 }
6055 \define@key{Field}{rotation}{%
6056 \def\Fld@rotation{#1}%
6057 }
6058 \define@key{Field}{backgroundcolor}{%
6059 \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
6060 }
6061 \define@key{Field}{bordercolor}{%
6062 \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
6063 }
6064 \define@key{Field}{color}{%
6065 \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
6066 }
6067 \let\Fld@onclick@code\@empty
6068 \let\Fld@format@code\@empty
6069 \let\Fld@validate@code\@empty
6070 \let\Fld@calculate@code\@empty
6071 \let\Fld@keystroke@code\@empty
6072 \let\Fld@onfocus@code\@empty
6073 \let\Fld@onblur@code\@empty
6074 \let\Fld@onmousedown@code\@empty
6075 \let\Fld@onmouseup@code\@empty
6076 \let\Fld@onenter@code\@empty
6077 \let\Fld@onexit@code\@empty
6078 \def\Hy@temp#1{%
6079 \expandafter\Hy@@temp\csname Fld@#1@code\endcsname{#1}%
6080 }
6081 \def\Hy@@temp#1#2{%
6082 \ifHy@pdfa
6083 \define@key{Field}{#2}{%
6084 \Hy@Error{%
6085 PDF/A: Additional action `#2' is prohibited%
6086 } \@ehc
6087 }%
6088 \else
6089 \define@key{Field}{#2}{%
6090 \def#1{##1}%
6091 }%
6092 \fi
6093 }
6094 \Hy@temp{keystroke}
6095 \Hy@temp{format}
6096 \Hy@temp{validate}
6097 \Hy@temp{calculate}
6098 \Hy@temp{onfocus}
6099 \Hy@temp{onblur}
6100 \Hy@temp{onenter}
6101 \Hy@temp{onexit}
6102 \let\Fld@calculate@sortkey\@empty
6103 \define@key{Field}{calculatesortkey}[1]{%
6104 \def\Fld@calculate@sortkey{#1}%
6105 }

```

```

6106 \ifHy@texht
6107   \def\Hy@temp#1{%
6108     \define@key{Field}{#1}{%
6109       \Field@addtoks{#1}{##1}%
6110     }%
6111   }%
6112 \else
6113   \def\Hy@temp#1{%
6114     \define@key{Field}{#1}{%
6115       \Hy@WarnHTMLFieldOption{#1}%
6116     }%
6117   }%
6118 \fi
6119 \Hy@temp{ondblclick}
6120 \Hy@temp{onmousedown}
6121 \Hy@temp{onmouseup}
6122 \Hy@temp{onmouseover}
6123 \Hy@temp{onmousemove}
6124 \Hy@temp{onmouseout}
6125 \Hy@temp{onkeydown}
6126 \Hy@temp{onkeyup}
6127 \Hy@temp{onselect}
6128 \Hy@temp{onchange}
6129 \Hy@temp{onkeypress}
6130 \ifHy@texht
6131   \define@key{Field}{onclick}{%
6132     \Field@addtoks{onclick}{#1}%
6133   }%
6134 \else
6135   \ifHy@pdfa
6136     \define@key{Field}{onclick}{%
6137       \Hy@Error{%
6138         PDF/A: Action `onclick' is prohibited%
6139       } \@ehc
6140     }%
6141   \else
6142     \define@key{Field}{onclick}{%
6143       \def\Fld@onclick@code{#1}%
6144     }%
6145   \fi
6146 \fi

6147 \DeclareRobustCommand\TextField{%
6148   \@ifnextchar[{\@TextField}{\@TextField[]}%
6149 }
6150 \DeclareRobustCommand\ChoiceMenu{%
6151   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
6152 }
6153 \DeclareRobustCommand\CheckBox{%
6154   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
6155 }
6156 \DeclareRobustCommand\PushButton{%
6157   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
6158 }
6159 \DeclareRobustCommand\Gauge{%

```



```

6160 \@ifnextchar[{\@Gauge}{\@Gauge[]}%
6161 }
6162 \DeclareRobustCommand\Submit{%
6163 \@ifnextchar[{\@Submit}{\@Submit[]}%
6164 }
6165 \DeclareRobustCommand\Reset{%
6166 \@ifnextchar[{\@Reset}{\@Reset[]}%
6167 }
6168 \def\LayoutTextField#1#2{% label, field
6169 \def\Hy@temp{#1}%
6170 \ifx\Hy@temp\@empty
6171 #2%
6172 \else
6173 #1 #2%
6174 \fi
6175 }
6176 \def\LayoutChoiceField#1#2{% label, field
6177 \def\Hy@temp{#1}%
6178 \ifx\Hy@temp\@empty
6179 #2%
6180 \else
6181 #1 #2%
6182 \fi
6183 }
6184 \def\LayoutCheckField#1#2{% label, field
6185 \def\Hy@temp{#1}%
6186 \ifx\Hy@temp\@empty
6187 #2%
6188 \else
6189 #1 #2%
6190 \fi
6191 }
6192 \def\LayoutPushButtonField#1{% button
6193 #1%
6194 }
6195 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6196 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6197 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6198 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6199 \def\MakeButtonField#1{%
6200 \sbox0{%
6201 \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
6202 }%
6203 \@tempdima\ht0 %
6204 \advance\@tempdima by \Fld@borderwidth bp %
6205 \advance\@tempdima by \Fld@borderwidth bp %
6206 \ht0\@tempdima
6207 \@tempdima\dp0 %
6208 \advance\@tempdima by \Fld@borderwidth bp %
6209 \advance\@tempdima by \Fld@borderwidth bp %
6210 \dp0\@tempdima
6211 \box0\relax
6212 }
6213 \def\DefaultHeightofSubmit{14pt}

```

```

6214 \def\DefaultWidthofSubmit{2cm}
6215 \def\DefaultHeightofReset{14pt}
6216 \def\DefaultWidthofReset{2cm}
6217 \def\DefaultHeightofCheckBox{\normalbaselineskip}
6218 \def\DefaultWidthofCheckBox{\normalbaselineskip}
6219 \def\DefaultHeightofChoiceMenu{\normalbaselineskip}
6220 \def\DefaultWidthofChoiceMenu{\normalbaselineskip}
6221 \def\DefaultHeightofText{\normalbaselineskip}
6222 \def\DefaultHeightofTextMultiline{4\normalbaselineskip}
6223 \def\DefaultWidthofText{3cm}
6224 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
6225 \def\DefaultOptionsofReset{print,name=Reset,noexport}
6226 \def\DefaultOptionsofPushButton{print}
6227 \def\DefaultOptionsofCheckBox{print}
6228 \def\DefaultOptionsofText{print}

```

Default options for the types of `\ChoiceMenu`.

```

6229 \def\DefaultOptionsofListBox{print}
6230 \def\DefaultOptionsofComboBox{print,edit,sort}
6231 \def\DefaultOptionsofPopdownBox{print}
6232 \def\DefaultOptionsofRadio{print,notoggletooff}

```

## 20 Setup

```

6233 \ifHy@hyperfigures
6234 \Hy@Info{Hyper figures ON}%
6235 \else
6236 \Hy@Info{Hyper figures OFF}%
6237 \fi
6238 \ifHy@nesting
6239 \Hy@Info{Link nesting ON}%
6240 \else
6241 \Hy@Info{Link nesting OFF}%
6242 \fi
6243 \ifHy@hyperindex
6244 \Hy@Info{Hyper index ON}%
6245 \else
6246 \Hy@Info{Hyper index OFF}%
6247 \fi
6248 \ifHy@backref
6249 \Hy@Info{backreferencing ON}%
6250 \else
6251 \Hy@Info{backreferencing OFF}%
6252 \fi
6253 \ifHy@colorlinks
6254 \Hy@Info{Link coloring ON}%
6255 \else
6256 \Hy@Info{Link coloring OFF}%
6257 \fi
6258 \ifHy@ocgcolorlinks
6259 \Hy@Info{Link coloring with OCG ON}%
6260 \else
6261 \Hy@Info{Link coloring with OCG OFF}%

```

```

6262 \fi
6263 \ifHy@pdfa
6264 \Hy@Info{PDF/A mode ON}%
6265 \else
6266 \Hy@Info{PDF/A mode OFF}%
6267 \fi

```

## 21 Low-level utility macros

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

```

6268 \edef\hyper@hash{\string#}
6269 \edef\hyper@tilde{\string~}
6270 \edef\hyper@quote{\string"}

```

Support \label before \begin{document}.

```

6271 \def\@currentHref{Doc-Start}
6272 \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.

```

6273 \Hy@AtBeginDocument{%
6274 \Hy@pdfstringtrue
6275 \PDF@SetupDoc
6276 \let\PDF@SetupDoc\@empty
6277 \Hy@DisableOption{pdfpagescrop}%
6278 \Hy@DisableOption{pdfpagemode}%
6279 \Hy@DisableOption{pdfnonfullscreenpagemode}%
6280 \Hy@DisableOption{pdfdirection}%
6281 \Hy@DisableOption{pdfviewarea}%
6282 \Hy@DisableOption{pdfviewclip}%
6283 \Hy@DisableOption{pdfprintarea}%
6284 \Hy@DisableOption{pdfprintclip}%
6285 \Hy@DisableOption{pdfprintscaling}%
6286 \Hy@DisableOption{pdfduplex}%
6287 \Hy@DisableOption{pdfpicktraybypdfsize}%
6288 \Hy@DisableOption{pdfprintpagerange}%
6289 \Hy@DisableOption{pdfnumcopies}%
6290 \Hy@DisableOption{pdfstartview}%
6291 \Hy@DisableOption{pdfstartpage}%
6292 \Hy@DisableOption{pdftoolbar}%
6293 \Hy@DisableOption{pdfmenubar}%
6294 \Hy@DisableOption{pdfwindowui}%
6295 \Hy@DisableOption{pdfwindow}%
6296 \Hy@DisableOption{pdfcenterwindow}%
6297 \Hy@DisableOption{pdfdisplaydoctitle}%
6298 \Hy@DisableOption{pdfpagelayout}%
6299 \Hy@DisableOption{pdflang}%
6300 \Hy@DisableOption{baseurl}%
6301 \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
6302 \Hy@pdfstringfalse
6303 }

```

## 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.

```
6304 \def\NoHyper{%
6305   \def\hyper@link@[##1]##2##3##4{##4\Hy@xspace@end}%
6306   \def\hyper@@anchor##1##2{##2\Hy@xspace@end}%
6307   \global\let\hyper@livelink\hyper@link
6308   \gdef\hyper@link##1##2##3{##3\Hy@xspace@end}%
6309   \let\hyper@anchor\@gobble
6310   \let\hyper@anchorstart\@gobble
6311   \def\hyper@anchorend{\Hy@xspace@end}%
6312   \let\hyper@linkstart\@gobbletwo
6313   \def\hyper@linkend{\Hy@xspace@end}%
6314   \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%
6315   \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
6316   \let\Hy@backout\@gobble
6317 }
6318 \def\stop@hyper{%
6319   \def\hyper@link@[##1]##2##3##4{##4\Hy@xspace@end}%
6320   \let\Hy@backout\@gobble
6321   \let\hyper@@anchor\@gobble
6322   \def\hyper@link##1##2##3{##3\Hy@xspace@end}%
6323   \let\hyper@anchor\@gobble
6324   \let\hyper@anchorstart\@gobble
6325   \def\hyper@anchorend{\Hy@xspace@end}%
6326   \let\hyper@linkstart\@gobbletwo
6327   \def\hyper@linkend{\Hy@xspace@end}%
6328   \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%
6329   \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
6330 }
6331 \def\endNoHyper{%
6332   \global\let\hyper@link\hyper@livelink
6333 }
6334 \end{package}
```

## 23 Package nohyperref

This package is introduced by Sebastian Rahtz.

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

Some low-level commands:

```
6335 (*nohyperref)
6336 \let\hyper@@anchor\@gobble
6337 \def\hyper@link##1##2##3{##3}%
6338 \let\hyper@anchorstart\@gobble
6339 \let\hyper@anchorend\@empty
6340 \let\hyper@linkstart\@gobbletwo
```

```

6341 \let\hyper@linkend\@empty
6342 \def\hyper@linkurl#1#2{#1}%
6343 \def\hyper@linkfile#1#2#3{#1}%
6344 \def\hyper@link@[#1]#2#3{}%
6345 \let\PDF@SetupDoc\@empty
6346 \let\PDF@FinishDoc\@empty
6347 \def\nohyperpage#1{#1}

```

Some top-level commands:

```

6348 \def\Acrobatmenu#1#2{\leavevmode#2}
6349 \let\pdfstringdefDisableCommands@gobbletwo
6350 \let\texorpdfstring\@firstoftwo
6351 \let\pdfbookmark\@undefined
6352 \newcommand\pdfbookmark[3]{}
6353 \let\phantomsection\@empty
6354 \let\hypersetup@gobble
6355 \let\hyperbaseurl@gobble
6356 \newcommand*{\href}[3]{}
6357 \let\hyperdef@gobbletwo
6358 \let\hyperlink@gobble
6359 \let\hypertarget@gobble
6360 \protected\def\hyperref{%
6361   \@ifnextchar\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
6362 }
6363 \long\def\@gobbleopt[#1]{}
6364 \let\hyperpage\@empty
6365 </nohyperref>

```

## 24 The Mangling Of Aux and Toc Files

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

```

6366 (*package)
6367 \@if@t@r\fmtversion{2023-06-01}{}
6368 {
6369   \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.

```

6370   \if@filesw
6371     \immediate\write\@auxout{%
6372       \string\providecommand\string\HyperFirstAtBeginDocument{%
6373         \string\AtBeginDocument}^^J%
6374       \string\HyperFirstAtBeginDocument{%
6375         \string\ifx\string\hyper@anchor\string\@undefined^^J%
6376         \string\global\string\let\string\oldnewlabel\string\newlabel^^J%

```

```

6377     \string\gdef\string\newlabel\string#1\string#2{%
6378         \string\newlabelxx{\string#1}\string#2}^^J%
6379     \string\gdef\string\newlabelxx%
6380         \string#1\string#2\string#3\string#4\string#5\string#6{%
6381         \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.

```

6382     \string\AtEndDocument{%
6383         \string\ifx\string\hyper@anchor\string\@undefined^^J%
6384         \string\let\string\newlabel\string\oldnewlabel^^J%
6385         \string\fi%
6386     }^^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.

```

6387     \string\fi%
6388     }^^J%
6389     \string\global\string\let\string\hyper@last\relax^^J%
6390     \string\gdef\string\HyperFirstAtBeginDocument\string#1{\string#1}%
6391     }%
6392     \fi
6393     \let\HyperFirstAtBeginDocument\@firstofone

```

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

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

```

6394     \ifx\hyper@last\@undefined
6395         \def\newlabel#1#2{\@newlabel{#1}{#2}{}{}}%
6396     \fi
6397     }
6398 }

```

## 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.

```

6399 \ifHy@pdfusetitle
6400     \let\HyOrg@title\title
6401     \let\HyOrg@author\author
6402     \def\title{\@ifnextchar{\Hy@scanopttitle}{\Hy@scantitle}}%
6403     \def\Hy@scanopttitle[#1]{%
6404         \gdef\Hy@title{#1}%
6405         \HyOrg@title{#1}%
6406     }%
6407     \def\Hy@scantitle#1{%
6408         \gdef\Hy@title{#1}%
6409         \HyOrg@title{#1}%
6410     }%
6411     \def\author{\@ifnextchar{\Hy@scanoptauthor}{\Hy@scanauthor}}%
6412     \def\Hy@scanoptauthor[#1]{%
6413         \gdef\Hy@author{#1}%

```

```

6414 \HyOrg@author{#1}%
6415 }%
6416 \def\Hy@scanauthor#1{%
6417 \gdef\Hy@author{#1}%
6418 \HyOrg@author{#1}%
6419 }%

```

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.

```

6420 \begingroup
6421 \def\process@me#1\@nil#2{%
6422 \expandafter\let\expandafter\x\csname @#2\endcsname
6423 \edef\y{\expandafter\strip@prefix\meaning\x}%
6424 \def\c##1##2\@nil{%
6425 \ifx\\##1\\%
6426 \else
6427 \expandafter\gdef\csname Hy@#2\expandafter\endcsname
6428 \expandafter{\x}%
6429 \fi
6430 }%
6431 \expandafter\c\y\relax#1\@nil
6432 }%
6433 \expandafter\process@me\string\@latex@\@nil{title}%
6434 \expandafter\process@me\string\@latex@\@nil{author}%
6435 \endgroup
6436 \fi
6437 \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.

```

6438 \def\Hy@UseMaketitleString#1{%
6439 \@ifundefined{Hy@#1}{-}{%
6440 \begingroup
6441 \let\Hy@saved@hook\pdfstringdefPreHook
6442 \pdfstringdefDisableCommands{%
6443 \expandafter\let\expandafter\\\csname Hy@newline@#1\endcsname
6444 \let\newline\\%
6445 \def\and{; }%
6446 \let\thanks\@gobble%
6447 }%
6448 \expandafter\ifx\csname @pdf#1\endcsname\@empty
6449 \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
6450 \csname Hy@#1\endcsname\@empty
6451 }%
6452 \fi

```

```

6453 \global\let\pdfstringdefPreHook\Hy@saved@hook
6454 \endgroup
6455 }%
6456 }
6457 \def\Hy@newline@title#1{ #1}
6458 \def\Hy@newline@author#1{, #1}
6459 \def\Hy@UseMaketitleInfos{%
6460 \Hy@UseMaketitleString{title}%
6461 \Hy@UseMaketitleString{author}%
6462 }

```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.

## 27 Every page

```

6463 \RequirePackage{atbegshi}[2007/09/09]
6464 \let\Hy@EveryPageHook\@empty
6465 \let\Hy@EveryPageBoxHook\@empty
6466 \let\Hy@FirstPageHook\@empty
6467 \AtBeginShipout{%
6468 \Hy@EveryPageHook
6469 \ifx\Hy@EveryPageBoxHook\@empty
6470 \else
6471 \setbox\AtBeginShipoutBox=\vbox{%
6472 \offinterlineskip
6473 \Hy@EveryPageBoxHook
6474 \box\AtBeginShipoutBox
6475 }%
6476 \fi
6477 }
6478 \Hy@iffileloaded{hpdftex.def}{%
6479 \AtBeginShipout{%
6480 \Hy@FirstPageHook
6481 \global\let\Hy@FirstPageHook\@empty
6482 }%
6483 }{%
6484 \AtBeginShipoutFirst{%
6485 \Hy@FirstPageHook
6486 }%
6487 }
6488 \g@addto@macro\Hy@FirstPageHook{%
6489 \PDF@FinishDoc
6490 \global\let\PDF@FinishDoc\@empty
6491 }

```

### 27.1 PDF /PageLabels

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

```

6492 \ifHy@pdfpagelabels
6493 \begingroup\expandafter\expandafter\expandafter\endgroup

```



```

6494 \expandafter\ifx\csname thepage\endcsname\relax
6495 \Hy@pdfpagelabelsfalse
6496 \Hy@WarningNoLine{%
6497   Option `pdfpagelabels' is turned off\MessageBreak
6498   because \string\thepage\space is undefined%
6499 }%
6500 \csname fi\endcsname
6501 \csname iffalse\expandafter\endcsname
6502 \fi

```

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

```

6503 \def\thispdfpagelabel#1{%
6504   \gdef\HyPL@thisLabel{#1}%
6505 }%
6506 \global\let\HyPL@thisLabel\relax

```

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

```

6507 \let\HyPL@Labels\@empty

```

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

```

6508 \newcount\Hy@abspage
6509 \Hy@abspage=0 %

```

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

```

6510 \def\HyPL@LastType{init}%
6511 \def\HyPL@LastNumber{0}%
6512 \let\HyPL@LastPrefix\@empty

```

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

```

6513 \def\HyPL@arabic{D}%
6514 \def\HyPL@Roman{R}%
6515 \def\HyPL@roman{r}%
6516 \def\HyPL@Alph{A}%
6517 \def\HyPL@alph{a}%

6518 \let\HyPL@SlidesSetPage\@empty
6519 \@ifclassloaded{slides}{%
6520   \def\HyPL@SlidesSetPage{%
6521     \advance\c@page\@ne
6522     \ifnum\value{page}>\@ne
6523       \protected@edef\HyPL@SlidesOptionalPage{%
6524         \Hy@SlidesFormatOptionalPage{\thepage}%
6525       }%
6526     \else
6527       \let\HyPL@SlidesOptionalPage\@empty
6528     \fi
6529     \advance\c@page-\@ne
6530   \def\HyPL@page{%
6531     \csname the\Hy@SlidesPage\endcsname
6532     \HyPL@SlidesOptionalPage
6533   }%
6534 }%
6535 }-}%

```

`\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.

```

6536 \def\HyPL@EveryPage{%
6537 \begingroup
6538 \ifx\HyPL@thisLabel\relax
6539 \let\HyPL@page\thepage
6540 \HyPL@SlidesSetPage
6541 \else
6542 \let\HyPL@page\HyPL@thisLabel
6543 \global\let\HyPL@thisLabel\relax
6544 \fi
6545 \let\HyPL@Type\relax
6546 \ifnum\c@page>0 %
6547 \ifx\HyPL@SlidesSetPage@empty
6548 \expandafter\HyPL@CheckThePage\HyPL@page\@nil
6549 \fi
6550 \fi
6551 \let\Hy@temp Y%
6552 \ifx\HyPL@Type\HyPL@LastType
6553 \else
6554 \let\Hy@temp N%
6555 \fi
6556 \ifx\HyPL@Type\relax
6557 \pdfstringdef\HyPL@Prefix{\HyPL@page}%
6558 \else
6559 \pdfstringdef\HyPL@Prefix\HyPL@Prefix
6560 \fi
6561 \ifx\HyPL@Prefix\HyPL@LastPrefix
6562 \else
6563 \let\Hy@temp N%
6564 \fi
6565 \if Y\Hy@temp
6566 \advance\c@page by -1 %
6567 \ifnum\HyPL@LastNumber=\the\c@page\relax
6568 \else
6569 \let\Hy@temp N%
6570 \fi
6571 \Hy@StepCount\c@page
6572 \fi
6573 \if N\Hy@temp
6574 \ifx\HyPL@Type\relax
6575 \HyPL@StorePageLabel{/P(\HyPL@Prefix)}%
6576 \else
6577 \HyPL@StorePageLabel{%
6578 \ifx\HyPL@Prefix@empty
6579 \else
6580 /P(\HyPL@Prefix)%
6581 \fi
6582 /S/\cstype HyPL\HyPL@Type\endcstype
6583 \ifnum\the\c@page=1 %
6584 \else
6585 \space/St \the\c@page
6586 \fi
6587 }%

```

```

6588     \fi
6589     \fi
6590     \xdef\HyPL@LastNumber{\the\c@page}%
6591     \global\let\HyPL@LastType\HyPL@Type
6592     \global\let\HyPL@LastPrefix\HyPL@Prefix
6593     \endgroup
6594     \Hy@GlobalStepCount\Hy@abspage
6595 }%

```

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

```

6596 \def\HyPL@CheckThePage#1\@nil{%
6597   \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
6598 }%

```

`\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 implementation 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`.

```

6599 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
6600   \def\Hy@tempa{#4}%
6601   \def\Hy@tempb{\csname\endcsname\c@page}%
6602   \ifx\Hy@tempa\Hy@tempb
6603     \expandafter\ifx\csname HyPL#3\endcsname\relax
6604     \else
6605       \def\HyPL@Type{#3}%
6606       \def\HyPL@Prefix{#2}%
6607       \fi
6608     \else
6609       \begingroup
6610         \let\Hy@next\endgroup
6611         \let\HyPL@found\@undefined
6612         \def\arabic{\HyPL@Format{arabic}}%
6613         \def\Roman{\HyPL@Format{Roman}}%
6614         \def\roman{\HyPL@Format{roman}}%
6615         \def\Alph{\HyPL@Format{Alph}}%
6616         \def\alph{\HyPL@Format{alph}}%
6617         \protected@edef\Hy@temp{#1}%
6618         \ifx\HyPL@found\relax
6619           \toks@\expandafter{\Hy@temp}%
6620           \edef\Hy@next{\endgroup
6621             \noexpand\HyPL@@@CheckThePage\the\toks@
6622             \noexpand\HyPL@found\relax\noexpand\@nil
6623           }%
6624         \fi
6625       \Hy@next
6626     \fi
6627 }%

```

`\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`.

```

6628 \def\HyPL@Format#1#2{%
6629   \ifx\HyPL@found\@undefined

```

```

6630 \expandafter\ifx\csname c@#2\endcsname\c@page
6631 \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
6632 \else
6633 \expandafter\noexpand\csname#1\endcsname{#2}%
6634 \fi
6635 \else
6636 \expandafter\noexpand\csname#1\endcsname{#2}%
6637 \fi
6638 }%

```

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

```

6639 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
6640 \def\Hy@tempa{#3}%
6641 \def\Hy@tempb{\HyPL@found\relax}%
6642 \ifx\Hy@tempa\Hy@tempb
6643 \def\HyPL@Type{#2}%
6644 \def\HyPL@Prefix{#1}%
6645 \fi
6646 }%

```

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

```

6647 \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`.

```

6648 \def\HyPL@Useless{0<</S/D>>}%
6649 \@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.

```

6650 \def\HyPL@SetPageLabels{%
6651 \@onelevel@sanitize\HyPL@Labels
6652 \ifx\HyPL@Labels\@empty
6653 \else
6654 \ifx\HyPL@Labels\HyPL@Useless
6655 \else
6656 \Hy@PutCatalog{/PageLabels<</Nums{\HyPL@Labels}>>}%
6657 \fi
6658 \fi
6659 }%

```

```

6660 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
6661 \fi

```

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

```

6662 \Hy@DisableOption{pdfpagelabels}
6663 </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`

```
6664 (*pdftex)
6665 \pdf@ifdraftmode{%
6666   \let\Hy@PutCatalog\@gobble
6667 }{%
6668   \let\Hy@PutCatalog\pdfcatalog
6669 }
6670 (</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.

```
6671 (*vtex)
6672 \providecommand*\XR@ext}{pdf}
6673 \edef\Hy@VTeXversion{%
6674   \ifx\VTeXversion\@undefined
6675     \z@
6676   \else
6677     \ifx\VTeXversion\relax
6678       \z@
6679     \else
6680       \VTeXversion
6681     \fi
6682   \fi
6683 }
6684 \begingroup
6685   \ifnum\Hy@VTeXversion<660 %
6686     \gdef\Hy@PutCatalog#1{%
6687       \Hy@WarningNoLine{%
6688         VTeX 6.59g or above required for pdfpagelabels%
6689       }%
6690     }%
6691   \else
6692     \gdef\Hy@PutCatalog#1{%
6693       \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
6694     }%
6695     \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
6696       \ifx\#2\%
6697         \else
6698           \immediate\special{!pdfpagelabels #2}%
6699         \fi
6700     }%
6701   \fi
6702 \endgroup
6703 (</vtex)

6704 (*pdftex | vtex)
```

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

```
6705 \ifHy@pdfpagelabels
6706   \def\HyPL@StorePageLabel#1{%
6707     \toks@\expandafter{\HyPL@Labels}%
6708     \xdef\HyPL@Labels{%
6709       \the\toks@
6710       \the\Hy@abspage<<#1>>%
6711     }%
6712   }%
```

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.

```
6713 \RequirePackage{atveryend}[2009/12/07]%
6714 \AtVeryEndDocument{%
6715   \HyPL@SetPageLabels
6716 }%

6717 \fi
6718 </pdfTeX | vTeX>
```

### 27.1.2 xetex

```
6719 <*xetex>
6720 \HyPsd@LoadUnicode
6721 \Hy@unicodetrue
6722 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
6723 \else
6724   \let\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
6725 \fi
6726 \HyPsd@LoadStringEncoding
6727 \define@key{Hyp}{unicode}[true]{%
6728   \Hy@boolkey{unicode}{#1}%
6729   \ifHy@unicode
6730     \else
6731       \Hy@Warning{%
6732         XeTeX driver only supports `unicode=true'. Ignoring\MessageBreak
6733         option setting `unicode=false'%
6734       }%
6735     \Hy@unicodetrue
6736   \fi
6737 }
6738 \define@key{Hyp}{pdfencoding}{%
6739   \edef\HyPsd@temp{#1}%
6740   \ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
6741     \let\HyPsd@pdfencoding\HyPsd@temp
6742   \else
6743     \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
6744       \let\HyPsd@pdfencoding\HyPsd@temp
6745     \else
6746       \Hy@Warning{%
6747         XeTeX driver only supports\MessageBreak
6748         `pdfencoding=unicode|auto'. Ignoring option\MessageBreak
6749         setting `pdfencoding=\HyPsd@temp'%
```

```

6750 }%
6751 \fi
6752 \fi
6753 }
6754 \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:

```

6755 \def\setpdfinkmargin#1{%
6756 \begingroup
6757 \setlength{\dimen@}{#1}%
6758 \special{dvipdfmx:config g \strip@pt\dimen@}%
6759 \endgroup}
6760 </xetex>

```

set the pdf version

```

6761 <*dvipdfm | xetex>
6762 \special{pdf:majorversion \Hy@pdf@majorversion}
6763 \special{pdf:minorversion \Hy@pdf@minorversion}
6764 </dvipdfm | xetex>

```

### 27.1.3 pdfmarkbase, dvipdfm, xetex

```

6765 <*pdfmarkbase>
6766 \begingroup
6767 \@ifundefined{headerps@out}{-}{%
6768 \toks@\expandafter{\Hy@FirstPageHook}%
6769 \xdef\Hy@FirstPageHook{%
6770 \noexpand\headerps@out{%
6771 systemdict /pdfmark known%
6772 {%
6773 userdict /?pdfmark systemdict /exec get put%
6774 }{%
6775 userdict /?pdfmark systemdict /pop get put %
6776 userdict /pdfmark systemdict /cleartomark get put%
6777 }%
6778 ifelse%
6779 }%
6780 \the\toks@
6781 }%
6782 }%
6783 \endgroup
6784 </pdfmarkbase>

```

\Hy@PutCatalog

```

6785 <dvipdfm | xetex>\def\Hy@PutCatalog#1{\@pdfm@mark{docview <<#1>>}}
6786 <*pdfmarkbase>
6787 \def\Hy@PutCatalog#1{%
6788 \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} <<#1>>}}%
6789 }
6790 </pdfmarkbase>

6791 <*pdfmarkbase | dvipdfm | xetex>
6792 \ifHy@pdfpagelabels

```

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

```

6793 \def\HyPL@StorePageLabel#1{%
6794   \if@filesw
6795     \begingroup
6796     \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
6797     \immediate\write\@mainaux{%
6798       \string\HyPL@Entry{\Hy@tempa}%
6799     }%
6800   \endgroup
6801 \fi
6802 }%

```

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.

```

6803 \Hy@AtBeginDocument{%
6804   \if@filesw
6805     \immediate\write\@mainaux{%
6806       \string\providecommand\string*\string\HyPL@Entry[1]{}%
6807     }%
6808   \fi
6809   \ifx\HyPL@Labels\@empty
6810     \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
6811   \else
6812     \HyPL@SetPageLabels
6813   \fi
6814   \let\HyPL@Entry\@gobble
6815 }%

```

`\HyPL@Entry`

```

6816 \def\HyPL@Entry#1{%
6817   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
6818     \HyPL@Labels
6819     #1%
6820   }%
6821 }%

6822 \fi
6823 </pdfmarkbase | dvipdfm | xetex>
6824 <*\packageEnd>

6825 \ifx\MaybeStopEarly\relax
6826 \else
6827   \Hy@stoppedearlytrue
6828   \expandafter\MaybeStopEarly
6829 \fi
6830 \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

```

6831 \def\Hy@CounterExists#1{%
6832   \begingroup\expandafter\expandafter\expandafter\endgroup
6833   \expandafter\ifx\csname c@#1\endcsname\relax
6834     \expandafter\@gobble
6835   \else
6836     \begingroup\expandafter\expandafter\expandafter\endgroup
6837     \expandafter\ifx\csname the#1\endcsname\relax
6838       \expandafter\expandafter\expandafter\@gobble
6839     \else
6840       \expandafter\expandafter\expandafter\@firstofone
6841     \fi
6842   \fi
6843 }
6844 \Hy@CounterExists{section}{%
6845   \providecommand\theHequation{\theHsection.\arabic{equation}}}%
6846 }
6847 \providecommand\theHequation{\arabic{equation}}}%
6848 \Hy@CounterExists{part}{%
6849   \providecommand\theHpart{\arabic{part}}}%
6850 }
6851 \@ifundefined{thechapter}{%
6852   \providecommand\theHsection   {\arabic{section}}}%
6853   \providecommand\theHfigure    {\arabic{figure}}}%
6854   \providecommand\theHtable     {\arabic{table}}}%
6855 }{%
6856   \providecommand\theHchapter   {\arabic{chapter}}}%
6857   \providecommand\theHfigure    {\theHchapter.\arabic{figure}}}%
6858   \providecommand\theHtable     {\theHchapter.\arabic{table}}}%
6859   \providecommand\theHsection   {\theHchapter.\arabic{section}}}%
6860 }
6861 \providecommand\theHsubsection  {\theHsection.\arabic{subsection}}
6862 \providecommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
6863 \providecommand\theHparagraph   {\theHsubsubsection.\arabic{paragraph}}
6864 \providecommand\theHsubparagraph{\theHparagraph.\arabic{subparagraph}}
6865 \providecommand\theHtheorem    {\theHsection.\arabic{theorem}}
6866 \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.

```

6867 \let\H@item\item
6868 \newcounter{Item}
6869 \def\theHItem{\arabic{Item}}
6870 \def\item{%
6871   \@hyper@itemfalse
6872   \if@nmbriest\@hyper@itemtrue\fi
6873   \H@item
6874 }

6875 \providecommand\theHenumi   {\theHItem}
6876 \providecommand\theHenumii  {\theHItem}
6877 \providecommand\theHenumiii {\theHItem}
6878 \providecommand\theHenumiv  {\theHItem}
6879 \providecommand\theHHfootnote {\arabic{Hfootnote}}
6880 \providecommand\theHmpfootnote{\arabic{mpfootnote}}
6881 \@ifundefined{theHHmpfootnote}{%
6882   \let\theHHmpfootnote\theHHfootnote
6883 }{}

```

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.

```

6884 \let\H@refstepcounter\refstepcounter
6885 \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`

```

6886 \newif\if@hyper@item
6887 \newif\if@skiphyperref
6888 \@hyper@itemfalse
6889 \@skiphyperreffalse
6890 \ExplSyntaxOn
6891 \def\refstepcounter#1{%
6892   \legacy_if:nF {Hy@pdfstring}
6893   {
6894     \H@refstepcounter{#1}%
6895     \bool_lazy_and:nnT
6896       { \!__hyp_target_create_bool }
6897       { ! \legacy_if_p:n{@skiphyperref} }
6898     {
6899       \legacy_if:nTF {@hyper@item}
6900         {
6901           \stepcounter{Item}%
6902           \hyper@refstepcounter{Item}%
6903           \@hyper@itemfalse
6904         }
6905         {
6906           \hyper@refstepcounter{#1}%
6907         }
6908       }

```

```

6909 }
6910 }
6911 \ExplSyntaxOff
6912 \let\Hy@saved@refstepcounter\refstepcounter

```

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

```

6913 \newif\ifmeasuring@\measuring@false
6914 \newcommand\Hy@ifnotmeasuring[1]{#1}
6915 \AddToHook{package/amsmath/after}
6916 {
6917   \renewcommand\Hy@ifnotmeasuring[1]
6918     {\ifmeasuring@ \else #1\fi}
6919 }

```

`\hyper@refstepcounter`

```

6920 \def\hyper@refstepcounter#1{%
6921   \HyCnt@ProvideTheHCounter{#1}%
6922   \hyper@makecurrent{#1}%
6923   \Hy@ifnotmeasuring
6924     {\Hy@raisedlink{%
6925       \hyper@anchorstart{\@currentHref}\hyper@anchorend
6926     }}%
6927 }

```

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

```

6928 \def\HyCnt@ProvideTheHCounter#1{%
6929   \ifundefined{theH#1}{%
6930     \expandafter\def\csname theH#1\endcsname{}%
6931     \def\Hy@temp{\@elt{#1}}%
6932     \@onelevel@sanitize\Hy@temp
6933     \let\HyOrg@elt\@elt
6934     \edef\@elt{%
6935       \noexpand\HyCnt@LookForParentCounter
6936       \expandafter\noexpand\csname theH#1\endcsname
6937     }%
6938     \cl@ckpt
6939     \let\@elt\HyOrg@elt
6940     \expandafter
6941     \Hy@LocalAppendToMacro\csname theH#1\endcsname\expandafter\endcsname
6942     \expandafter{%
6943       \expandafter\@arabic\csname c@#1\endcsname
6944     }%
6945   }{}%
6946 }

```

\Hy@LookForParentCounter

```
6947 \def\HyCnt@LookForParentCounter#1#2{%
6948 \expandafter\let\expandafter\Hy@temp@A\csname cl@#2\endcsname
6949 \@ifundefined{cl@#2}{%
6950 }{%
6951 \@onelevel@sanitize\Hy@temp@A
6952 \edef\Hy@temp@A{%
6953 \noexpand\in@{\Hy@temp}{\Hy@temp@A}%
6954 }\Hy@temp@A
6955 \ifin@
6956 \@ifundefined{theH#2}{%
6957 \expandafter\Hy@LocalAppendToMacro\expandafter#1%
6958 \expandafter{%
6959 \expandafter\@arabic\csname c@#2\endcsname.%
6960 }%
6961 }{%
6962 \expandafter\Hy@LocalAppendToMacro\expandafter#1%
6963 \expandafter{%
6964 \csname theH#2\endcsname.%
6965 }%
6966 }%
6967 \fi
6968 }%
6969 }
```

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`.

```
6970 \begingroup\expandafter\expandafter\expandafter\endgroup
6971 \expandafter\ifx\csname chapter\endcsname\relax
6972 \def\Hy@chapterstring{section}%
6973 \else
6974 \def\Hy@chapterstring{chapter}%
6975 \fi
6976 \def\Hy@appendixstring{appendix}
6977 \def\Hy@chapapp{\Hy@chapterstring}
6978 \@ifundefined{appendix}{%
6979 }{%
6980 \let\HyOrg@appendix\appendix
6981 \def\Hy@AlphNoErr#1{%
6982 \ifnum\value{#1}>26 %
6983 Alph\number\value{#1}%
6984 \else
6985 \ifnum\value{#1}<1 %
6986 Alph\number\value{#1}%
6987 \else
6988 \Alph{#1}%
6989 \fi
6990 \fi
6991 }%
```

```

6992 \def\appendix{%
6993   \@ifundefined{chapter}{%
6994     \gdef\theHsection{\Hy@AlphNoErr{section}}%
6995   }{%
6996     \gdef\theHchapter{\Hy@AlphNoErr{chapter}}%
6997   }%
6998   \xdef\Hy@chapapp{\Hy@appendixstring}%
6999   \HyOrg@appendix
7000 }%
7001 }

```

\Hy@Test@alph

```

7002 \def\Hy@Test@alph#1{%
7003   \ifcase#1\or
7004     a\or b\or c\or d\or e\or f\or g\or h\or i\or j\or
7005     k\or l\or m\or n\or o\or p\or q\or r\or s\or t\or
7006     u\or v\or w\or x\or y\or z%
7007   \else
7008     \@ctrerr
7009   \fi
7010 }

```

\Hy@Test@Alph

```

7011 \def\Hy@Test@Alph#1{%
7012   \ifcase#1\or
7013     A\or B\or C\or D\or E\or F\or G\or H\or I\or J\or
7014     K\or L\or M\or N\or O\or P\or Q\or R\or S\or T\or
7015     U\or V\or W\or X\or Y\or Z%
7016   \else
7017     \@ctrerr
7018   \fi
7019 }

```

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

```

7020 \NewHook{__hyp/target/setname }
7021 \define@key{Hyp}{next-anchor}{%
7022   \AddToHookNext{__hyp/target/setname}%
7023   {\Hy@MakeCurrentHref{#1}}%
7024 }

```

\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.

```

7025 \def\hyper@makecurrent#1{%
7026   \begingroup
7027   \Hy@safe@activestruer
7028   \edef\Hy@param{#1}%
7029   \ifx\Hy@param\Hy@chapterstring
7030     \let\Hy@param\Hy@chapapp
7031   \fi
7032   \ifHy@hypertextnames
7033     \let\@number\@firstofone
7034   \def\@fnsymbol##1{fnsymbol\number##1}%

```

```

7035 \def\@arabic##1{\number##1}%
7036 \ifx\@alph\Hy@Test@alph
7037 \else
7038 \def\@alph{alph\number}%
7039 \fi
7040 \ifx\@Alph\Hy@Test@Alph
7041 \else
7042 \def\@Alph{Alph\number}%
7043 \fi
7044 \ifHy@naturalnames
7045 \let\textlatin\@firstofone
7046 \xdef\HyperGlobalCurrentHref{\csname the#1\endcsname}%
7047 \else
7048 \xdef\HyperGlobalCurrentHref{%
7049 \csname
7050 the%
7051 \expandafter\ifx\csname theH#1\endcsname\relax\else H\fi
7052 #1%
7053 \endcsname
7054 }%
7055 \fi
7056 \xdef\HyperGlobalCurrentHref{%
7057 \Hy@param.\expandafter\strip@prefix\meaning\HyperGlobalCurrentHref
7058 }%
7059 \else
7060 \Hy@GlobalStepCount\Hy@linkcounter
7061 \xdef\HyperGlobalCurrentHref{\Hy@param.\the\Hy@linkcounter}%
7062 \fi
7063 \endgroup
7064 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
7065 \ifHy@localanchorname
7066 \let\@currentHref\HyperLocalCurrentHref
7067 \else
7068 \global\let\@currentHref\HyperGlobalCurrentHref
7069 \fi
7070 \UseHook{__hyp/target/setname}%
7071 }

```

\Hy@MakeCurrentHref

```

7072 \def\Hy@MakeCurrentHref#1{%
7073 \edef\HyperLocalCurrentHref{#1}%
7074 \@onelevel@sanitize\HyperLocalCurrentHref
7075 \global\let\HyperGlobalCurrentHref\HyperLocalCurrentHref
7076 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
7077 \ifHy@localanchorname
7078 \let\@currentHref\HyperLocalCurrentHref
7079 \else
7080 \global\let\@currentHref\HyperGlobalCurrentHref
7081 \fi
7082 }

```

\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.

```

7083 \def\Hy@MakeCurrentHrefAuto#1{%
7084 \Hy@GlobalStepCount\Hy@linkcounter
7085 \Hy@MakeCurrentHref{#1.\the\Hy@linkcounter}%
7086 \UseHook{__hyp/target/setname}}

```

\@currentHlabel \@currrentHlabel is only defined for compatibility with package ‘hydvips’.

```

7087 \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.

```

7088 \def\hypergetref#1{\getrefbykeydefault{#1}{}}{??}}
7089 \def\hypergetpageref#1{\getrefbykeydefault{#1}{page}{0}}

```

## 30 Package varwidth support

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

```

7090 \@if@t@r\fmtversion{2023-11-01}
7091 {
7092 \AddToHook{package/varwidth/after}
7093 {
7094 \NewSocketPlug{hyp/raisedlink}{varwidth}{\@vwid@wrap{#1}}
7095 \appto\@vwid@setup{\AssignSocketPlug{hyp/raisedlink}{varwidth}}
7096 }
7097 }{}

```

## 31 Package titlesec and titletoc support

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

Package titlesec support:

```

7098 \@ifpackageloaded{titlesec}{%
7099 \def\ttl@Hy@steplink#1{%
7100 \Hy@MakeCurrentHrefAuto{#1*}%
7101 \edef\ttl@Hy@saveanchor{%
7102 \noexpand\Hy@raisedlink{%
7103 \noexpand\hyper@anchorstart{\@currentHref}%
7104 \noexpand\hyper@anchorend
7105 \def\noexpand\ttl@Hy@SavedCurrentHref{\@currentHref}%
7106 \noexpand\ttl@Hy@PatchSaveWrite
7107 }%
7108 }%
7109 }%
7110 \def\ttl@Hy@PatchSaveWrite{%
7111 \begingroup
7112 \toks@\expandafter{\ttl@savewrite}%
7113 \edef\x{\endgroup
7114 \def\noexpand\ttl@savewrite{%

```

```

7115     \let\noexpand\@currentHref
7116         \noexpand\ttl@Hy@SavedCurrentHref
7117     \the\toks@
7118 }%
7119 }%
7120 \x
7121 }%
7122 \def\ttl@Hy@refstepcounter#1{%
7123     \let\ttl@b\Hy@raisedlink
7124     \def\Hy@raisedlink##1{%
7125         \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
7126     }%
7127     \refstepcounter{#1}%
7128     \let\Hy@raisedlink\ttl@b
7129 }%
7130 }-}

```

## 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

```

7131 \@ifpackageloaded{longtable}{%
7132 \@ifundefined{hyper@nopatch@longtable}{%
7133     \begingroup
7134     \def\y{\LT@array}%
7135     \@ifundefined{scr@LT@array}{%
7136         \@ifundefined{adl@LT@array}{\def\y{\adl@LT@array}}%
7137     }{\def\y{\scr@LT@array}}%
7138     \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
7139         \expandafter\endgroup
7140         \expandafter\def\y[##1]##2{%
7141             \H@refstepcounter{#1}%
7142             \hyper@makecurrent{table}%
7143             \let\Hy@LT@currentHref\@currentHref
7144             #2\@sharp###4%
7145         }%
7146     }%
7147     \expandafter\expandafter\expandafter\x\y[##1][##2]\@nil

```

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

```

7148 \begingroup
7149 \def\x#1\ifvoid\LT@foot#2\fi#3\@nil{%
7150     \endgroup
7151     \def\LT@start{%
7152         #1%
7153         \ifvoid\LT@foot#2\fi
7154         \let\@currentHref\Hy@LT@currentHref
7155         \Hy@raisedlink{%
7156             \hyper@anchorstart{\@currentHref}\hyper@anchorend
7157         }%

```



```

7158     #3%
7159   }%
7160 }%
7161 \expandafter\x\LT@start\@nil
7162 }{}
7163 }{}

```

### 33 Equations

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

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

```

7164 \let\new@refstepcounter\refstepcounter
7165 \let\H@equation\equation
7166 \let\H@endequation\endequation
7167 \@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.

```

7168 \@ifpackageloaded{amsmath}{}{%
7169   \def\equation{%
7170     \let\refstepcounter\H@refstepcounter
7171     \H@equation
7172     \hyper@makecurrent{equation}}%

```

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

```

7173   \mathopen{%
7174     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
7175   }%
7176   \let\refstepcounter\new@refstepcounter
7177 }%
7178 \def\endequation{%
7179   \ifx\Hy@raisedlink\@empty
7180     \hyper@anchorend
7181   \else
7182     \mathclose{\Hy@raisedlink{\hyper@anchorend}}%
7183   \fi
7184   \H@endequation
7185 }%
7186 }
7187 }{}

```

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.

```

7188 \newif\if@eqnstar
7189 \@eqnstarfalse
7190 \let\H@eqnarray\eqnarray
7191 \let\H@endeqnarray\endeqnarray
7192 \@ifundefined{hyper@nopatch@mathenv}{%
7193   \def\eqnarray{%
7194     \let\Hy@reserved@a\relax
7195     \def\@currentHref{}%
7196     \H@eqnarray
7197     \if@eqnstar
7198     \else
7199       \ifx\\\@currentHref\%
7200       \else
7201         \hyper@makecurrent{equation}%
7202         \mathopen{%
7203           \Hy@raisedlink{%
7204             \hyper@anchorstart{\@currentHref}\hyper@anchorend
7205           }%
7206         }%
7207       \fi
7208     \fi
7209   }
7210 \def\endeqnarray{%
7211   \H@endeqnarray
7212 }
7213 }-{}

```

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.

```

7214 \@namedef{eqnarray*}{%
7215   \protected\def\@eqnrcr{\nonumber\@seqnrcr}\@eqnstartrue\eqnarray
7216 }
7217 \@namedef{endeqnarray*}{%
7218   \nonumber\endeqnarray\@eqnstarfalse
7219 }

```

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

```

7220 \@ifundefined{subeqnarray}{-}{%
7221   \let\H@subeqnarray\subeqnarray
7222   \let\H@endsubeqnarray\endsubeqnarray
7223   \def\subeqnarray{%
7224     \let\Hy@reserved@a\relax
7225     \H@subeqnarray
7226     \hyper@makecurrent{equation}%
7227     \hyper@anchorstart{\@currentHref}{-}\hyper@anchorend
7228   }%
7229   \def\endsubeqnarray{%
7230     \H@endsubeqnarray
7231   }%
7232   \providecommand\theHsubequation{\theHequation\alph{subequation}}%
7233 }

```

The aim of this macro is to produce a sanitized version of its argument, to make

it a safe label.

```

7234 \def\make@stripped@name#1{%
7235   \begingroup
7236   \escapechar\m@ne
7237   \global\let\newname\@empty
7238   \protected@edef\Hy@tempa{#1}%
7239   \edef\@tempb{%
7240     \noexpand\@tfor\noexpand\Hy@tempa:=%
7241     \expandafter\strip@prefix\meaning\Hy@tempa
7242   }%
7243   \@tempb\do{%
7244     \if\Hy@tempa\else
7245     \if\Hy@tempa\else
7246     \xdef\newname{\newname\Hy@tempa}%
7247     \fi
7248     \fi
7249   }%
7250 \endgroup
7251 }

```

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.

```

7252 \AddToHook{cmd/subequations/before}
7253 {%
7254   \stepcounter{equation}%
7255   \protected@edef\theHparentequation{\theHequation}%
7256   \addtocounter{equation}{-1}%
7257 }
7258
7259 \AddToHook{cmd/subequations/after}
7260 {%
7261   \def\theHequation{\theHparentequation\alph{equation}}%
7262   \ignorespaces
7263 }

```

## 34 Support for theorems

Hyperlink support in theorems has to resolve typically three problems:

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

- The target should be placed (in horizontal mode) before the theorem label to avoid side effects on spacing. For this a suitable place must be found depending on the actual theorem definition.

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

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

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

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

```

7264 \newcommand\Hy@theorem@refstepcounter[1]
7265  {%
7266   \H@refstepcounter{#1}%
7267   \hyper@makecurrent{#1}%
7268   \global\let\Hy@dth@currentHref\@currentHref
7269   \Hy@theorem@makelinktarget{\Hy@dth@currentHref}%
7270  }
7271 \newcommand\Hy@theorem@makelinktarget[1]
7272  {
7273   \AddToHookNext{cmd/item/before}
7274   {\AddToHookNext{para/begin}
7275    {\let\Hy@tempa\@currentHref
7276     \MakeLinkTarget*{#1}% \Hy@dth@currentHref
7277     \global\let\@currentHref\Hy@tempa
7278    }%
7279   }%
7280  }

```

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

```

7281 \AddToHook{begindocument}
7282  {%
7283   \ifundefined{deferred@thm@head}{%
7284    {%
7285     \let\Hy@deferred@thm@head\deferred@thm@head
7286     \def\deferred@thm@head#1{\Hy@deferred@thm@head{#1}}%
7287     \renewcommand\Hy@theorem@makelinktarget[1]
7288     {%
7289      \AddToHookNext{cmd/deferred@thm@head/before}
7290      {\AddToHookNext{para/begin}

```

```

7291     {\let\Hy@tempa\@currentHref
7292      \MakeLinkTarget*{#1}%
7293      \global\let\@currentHref\Hy@tempa
7294      }%
7295     }%
7296    }%
7297   }%
7298  }
7299 \@ifundefined{hyper@nopatch@thm}{%
7300 \AtBeginDocument{%
7301  \@ifpackageloaded{cleveref}
7302  {\AddToHook{cmd/@thm/before}{\ifhmode\unskip\fi}}
7303  {%
7304   \ifpatchable\@thm{\refstepcounter}
7305   {\patchcmd\@thm{\refstepcounter}{\Hy@theorem@refstepcounter}{}{}}
7306   }%
7307  }}}{}

```

## 35 Footnotes

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

```

7308 \@ifundefined{hyper@nopatch@footnote}{%
7309 \ifHy@hyperfootnotes
7310  \newcounter{Hfootnote}%
7311  \let\H@@@footnotetext\@footnotetext
7312  \let\H@@@footnotemark\@footnotemark
7313  \def\@xfootnotenext[#1]{%
7314   \begingroup
7315    \csname c@\@mpfn\endcsname #1\relax
7316    \unrestored@protected@xdef\@thefnmark{\thempfn}%
7317   \endgroup
7318   \ifx\@footnotetext\@mpfootnotetext
7319    \expandafter\H@@@mpfootnotetext
7320   \else
7321    \expandafter\H@@@footnotetext
7322   \fi
7323  }%
7324  \def\@xfootnotemark[#1]{%
7325   \begingroup
7326    \c@footnote #1\relax
7327    \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7328   \endgroup
7329   \H@@@footnotemark
7330  }%
7331  \let\H@@@mpfootnotetext\@mpfootnotetext
7332  \long\def\@mpfootnotetext#1{%
7333   \H@@@mpfootnotetext{%

```

```

7334 \ifHy@nesting
7335 \expandafter\@firstoftwo
7336 \else
7337 \expandafter\@secondoftwo
7338 \fi
7339 {%
7340 \expandafter\hyper@@anchor\expandafter{%
7341 \Hy@footnote@currentHref
7342 }\ignorespaces #1}%
7343 }{%
7344 \Hy@raisedlink{%
7345 \expandafter\hyper@@anchor\expandafter{%
7346 \Hy@footnote@currentHref
7347 }\relax}%
7348 }\ignorespaces #1%
7349 }%
7350 }%
7351 }%
7352 \long\def\@footnotetext#1{%
7353 \H@@@footnotetext{%
7354 \ifHy@nesting
7355 \expandafter\@firstoftwo
7356 \else
7357 \expandafter\@secondoftwo
7358 \fi
7359 {%
7360 \expandafter\hyper@@anchor\expandafter{%
7361 \Hy@footnote@currentHref
7362 }\ignorespaces #1}%
7363 }{%
7364 \Hy@raisedlink{%
7365 \expandafter\hyper@@anchor\expandafter{%
7366 \Hy@footnote@currentHref
7367 }\relax}%
7368 }%
7369 \let\@currentHref\Hy@footnote@currentHref
7370 \let\@currentlabelname\@empty
7371 \ignorespaces #1%
7372 }%
7373 }%
7374 }%

```

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.

```

7375 \def\@footnotemark{%
7376 \leavevmode
7377 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7378 \stepcounter{Hfootnote}%
7379 \global\let\Hy@saved@currentHref\@currentHref
7380 \hyper@makecurrent{Hfootnote}%
7381 \global\let\Hy@footnote@currentHref\@currentHref

```

```

7382 \global\let\@currentHref\Hy@saved@currentHref
7383 \hyper@linkstart{link}{\Hy@footnote@currentHref}%
7384 \@makefnmark
7385 \hyper@linkend
7386 \ifhmode\spacefactor\@x@sf\fi
7387 \relax
7388 }%

```

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

```

7389 \@ifpackageloaded{tabularx}{%
7390 \let\HyOrg@TX@endtabularx\TX@endtabularx
7391 \def\Hy@tabularx@hook{%
7392 \let\@footnotetext\H@@footnotetext
7393 \let\@footnotemark\H@@footnotemark
7394 \let\@mpfootnotetext\H@@mpfootnotetext
7395 }%
7396 \begingroup
7397 \toks@\expandafter{\TX@endtabularx}%
7398 \xdef\Hy@gtemp{%
7399 \noexpand\Hy@tabularx@hook
7400 \the\toks@
7401 }%
7402 \endgroup
7403 \let\TX@endtabularx\Hy@gtemp
7404 }{}%

```

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

```

7405 \@ifpackageloaded{longtable}{%
7406 \CheckCommand{\LT@p@ftntext}[1]{%
7407 \edef\@tempa{%
7408 \the\LT@p@ftn
7409 \noexpand\footnotetext[\the\c@footnote]%
7410 }%
7411 \global\LT@p@ftn\expandafter{\@tempa{#1}}%
7412 }%
7413 \long\def\LT@p@ftntext#1{%
7414 \edef\@tempa{%
7415 \the\LT@p@ftn
7416 \begingroup
7417 \noexpand\c@footnote=\the\c@footnote\relax
7418 \noexpand\protected@xdef\noexpand\@thefnmark{%
7419 \noexpand\thempfn
7420 }%
7421 \noexpand\Hy@LT@footnotetext{%
7422 \Hy@footnote@currentHref
7423 }%
7424 }%
7425 \global\LT@p@ftn\expandafter{%
7426 \@tempa{#1}%
7427 \endgroup
7428 }%

```

```

7429 }%
7430 \long\def\Hy@LT@footnotetext#1#2{%
7431 \H@@footnotetext{%
7432 \ifHy@nesting
7433 \hyper@@anchor{#1}{#2}%
7434 \else
7435 \Hy@raisedlink{%
7436 \hyper@@anchor{#1}{\relax}%
7437 }%
7438 \def\@currentHref{#1}%
7439 \let\@currentlabelname\@empty
7440 #2%
7441 \fi
7442 }%
7443 }%
7444 }-}%

```

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

```

7445 \ifpackageloaded{fancyvrb}{%
7446 \def\V@@footnotetext{%
7447 \insert\footins\bgroup
7448 \csname reset@font\endcsname
7449 \footnotesize
7450 \interlinepenalty\interfootnotelinepenalty
7451 \splittopskip\footnotesep
7452 \splitmaxdepth\dp\strutbox
7453 \floatingpenalty \@MM
7454 \hsize\columnwidth
7455 \@parboxrestore
7456 \def\@currentcounter{footnote}%
7457 \protected@edef\@currentlabel{\csname p@footnote\endcsname\@thefn-
mark}%
7458 \@makefn-text}%
7459 \rule{\z@}{\footnotesep}%
7460 \bgroup
7461 \aftergroup\V@@@footnotetext
7462 \Hy@raisedlink{%
7463 \expandafter\hyper@@anchor\expandafter{%
7464 \Hy@footnote@currentHref
7465 }{\relax}%
7466 }%
7467 \let\@currentHref\Hy@footnote@currentHref
7468 \let\@currentlabelname\@empty
7469 \ignorespaces
7470 }%
7471 }-}%

```

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

```

7472 \def\Hy@temp#1{%
7473 \begingroup
7474 \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7475 \endgroup
7476 \@footnotemark
7477 }%

```



```

7478 \ifx\Hy@temp\footref
7479 \def\footref#1{%
7480 \begingroup
7481 \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7482 \endgroup
7483 \H@@footnotemark
7484 }%
7485 \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.

```

7486 \let\HyOrg@maketitle\maketitle
7487 \def\maketitle{%
7488 \let\Hy@saved@footnotemark\@footnotemark
7489 \let\Hy@saved@footnotetext\@footnotetext
7490 \let\@footnotemark\H@@footnotemark
7491 \let\@footnotetext\H@@footnotetext
7492 \@ifnextchar\Hy@maketitle@optarg{%
7493 \HyOrg@maketitle
7494 \Hy@maketitle@end
7495 }%
7496 }%
7497 \def\Hy@maketitle@optarg[#1]{%
7498 \HyOrg@maketitle[#{#1}]%
7499 \Hy@maketitle@end
7500 }%
7501 \def\Hy@maketitle@end{%
7502 \ifx\@footnotemark\H@@footnotemark
7503 \let\@footnotemark\Hy@saved@footnotemark
7504 \fi
7505 \ifx\@footnotetext\H@@footnotetext
7506 \let\@footnotetext\Hy@saved@footnotetext
7507 \fi
7508 }%

```

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

```

7509 \def\realfootnote{%
7510 \@ifnextchar[\@xfootnote%]
7511 {\stepcounter{\@mpfn}}%
7512 \protected@xdef\@thefnmark{\thempfn}%
7513 \H@@@footnotemark\H@@@footnotetext
7514 }%
7515 }%
7516 \fi
7517 }{}
7518 \Hy@DisableOption{hyperfootnotes}
7519 \</packageEnd>
7520 \*check)
7521 \checklatex
7522 \checkcommand\def\@xfootnotenext[#1]{%
7523 \begingroup
7524 \csname c@\@mpfn\endcsname #1\relax

```

```

7525 \unrestored@protected@xdef\@thefnmark{\thempfn}%
7526 \endgroup
7527 \@footnotetext
7528 }
7529 \checkcommand\def\@xfootnotemark[#1]{%
7530 \begingroup
7531 \c@footnote #1\relax
7532 \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7533 \endgroup
7534 \@footnotemark
7535 }
7536 \checkcommand\def\@footnotemark{%
7537 \leavevmode
7538 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7539 \@makefnmark
7540 \ifhmode\spacefactor\@x@sf\fi
7541 \relax
7542 }
7543 </check>
7544 <*packageEnd>

```

## 36 Float captions

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

```

7545 \@ifundefined{hyper@nopatch@caption}{%
7546 \def\caption{%
7547 \ifx\@capttype\@undefined
7548 \latex@error{noexpand\caption outside float}\@ehd
7549 \expandafter\@gobble
7550 \else
7551 \H@refstepcounter\@capttype
7552 \let\Hy@tempa\@caption
7553 \@ifundefined{float@caption}{%
7554 }{%
7555 \expandafter\ifx\csname @float@c@\@capttype\endcsname
7556 \float@caption
7557 \let\Hy@tempa\Hy@float@caption
7558 \fi
7559 }%
7560 \expandafter\@firstofone
7561 \fi
7562 {\@dblarg{\Hy@tempa\@capttype}}}%
7563 }
7564 \long\def\@caption#1[#2]#3{%
7565 \expandafter\ifx\csname if@capstart\expandafter\endcsname
7566 \csname iftrue\endcsname
7567 \global\let\@currentHref\hc@currentHref
7568 \else
7569 \hyper@makecurrent{\@capttype}%
7570 \fi
7571 \@ifundefined{NR@gettitle}{%
7572 \def\@currentlabelname{#2}%

```

```

7573 }{%
7574 \NR@gettitle{#2}%
7575 }%
7576 \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
7577 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7578 }%
7579 \begingroup
7580 \@parboxrestore
7581 \if@minipage
7582 \@setminipage
7583 \fi
7584 \normalsize
7585 \expandafter\ifx\csname if@capstart\expandafter\endcsname
7586 \csname iftrue\endcsname
7587 \global\@capstartfalse
7588 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
7589 \else
7590 \@makecaption{\csname fnum@#1\endcsname}{%
7591 \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

7592 \ifHy@nesting
7593 \expandafter\hyper@@anchor\expandafter{\@currentHref}{#3}%
7594 \else
7595 \Hy@raisedlink{%
7596 \expandafter\hyper@@anchor\expandafter{%
7597 \@currentHref
7598 }\relax}%
7599 }%
7600 #3%
7601 \fi
7602 }%
7603 \fi
7604 \par
7605 \endgroup
7606 }}{}}%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’.

```

7607 \let\Hy@float@caption\@caption
7608 \newcommand{\HyNew@float@makebox}[1]{%
7609 \HyOrg@float@makebox{%
7610 #1\relax
7611 \ifx\Hy@float@currentHref\@undefined
7612 \else
7613 \expandafter\hyper@@anchor\expandafter{%
7614 \Hy@float@currentHref
7615 }\relax}%
7616 \global\let\Hy@float@currentHref\@undefined
7617 \fi
7618 }%
7619 }%

```

```

7620 \ifpackageloaded{float}{%
7621   \def\Hy@float@caption{%
7622     \ifx\Hy@float@currentHref\@undefined
7623       \hyper@makecurrent{\@capttype}%
7624       \global\let\Hy@float@currentHref\@currentHref
7625     \else
7626       \let\@currentHref\Hy@float@currentHref
7627     \fi
7628     \float@caption
7629   }%
7630   \let\HyOrg@float@makebox\float@makebox
7631   \let\float@makebox\HyNew@float@makebox
7632 }{}

7633 \</packageEnd>
7634 \*check>
7635 \checklatex[1999/06/01 - 2000/06/01]
7636 \checkcommand\def\caption{%
7637   \ifx\@capttype\@undefined
7638     \@latex@error{\noexpand\caption outside float}\@ehd
7639     \expandafter\@gobble
7640   \else
7641     \refstepcounter\@capttype
7642     \expandafter\@firstofone
7643   \fi
7644   {\@dblarg{\@caption\@capttype}}%
7645 }
7646 \checkcommand\long\def\@caption#1[#2]#3{%
7647   \par
7648   \addcontentsline{\csname ext@#1\endcsname}{#1}{%
7649     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7650   }%
7651   \begingroup
7652     \@parboxrestore
7653     \if@minipage
7654       \@setminipage
7655     \fi
7656     \normalsize
7657     \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
7658   \endgroup
7659 }
7660 \</check>
7661 \*packageEnd>

```

## 37 Bibliographic references

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

However, 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.

```

7662 \def\hyper@natlinkstart#1{%
7663   \Hy@backout{#1}%
7664   \hyper@linkstart{cite}{cite.#1}%
7665   \def\hyper@nat@current{#1}%
7666 }
7667 \def\hyper@natlinkend{%
7668   \hyper@linkend
7669 }
7670 \def\hyper@natlinkbreak#1#2{%
7671   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
7672 }
7673 \def\hyper@natanchorstart#1{%
7674   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
7675 }
7676 \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.

```

7677 \@ifundefined{hyper@nopatch@bib}
7678 {%
7679   \@ifundefined{NAT@parse}{%
7680     \providecommand*\@extra@binfo{}%
7681     \providecommand*\@extra@b@citeb{}%
7682     \def\bibcite#1#2{%
7683       \@newl@bel{b}{#1\@extra@binfo}{%
7684         \hyper@@link{cite}{cite.#1\@extra@b@citeb}{#2}%
7685       }%
7686     }%
7687     \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.”.

```

7688   \let\Hy@bibcite\bibcite
7689   \begingroup
7690     \@ifundefined{bbl@cite@choice}{}{%
7691       \g@addto@macro\bbl@cite@choice{%
7692         \let\bibcite\Hy@bibcite
7693       }%
7694     }%
7695   \endgroup

```

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

```

7696   \providecommand*\@BIBLABEL{\@biblabel}%
7697   \def\@lbibitem[#1]#2{%
7698     \@skiphyperreftrue
7699     \H@item[%
7700       \ifx\Hy@raisedlink\@empty
7701         \hyper@anchorstart{cite.#2\@extra@b@citeb}%
7702         \@BIBLABEL{#1}%
7703       \hyper@anchorend
7704     \else
7705       \Hy@raisedlink{%

```

```

7706     \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
7707     }%
7708     \@BIBLABEL{#1}%
7709     \fi
7710     \hfill
7711     ]%
7712     \@skiphyperreffalse
7713     \if@filesw
7714     \begingroup
7715     \let\protect\noexpand
7716     \immediate\write\@auxout{%
7717     \string\bibcite{#2}{#1}%
7718     }%
7719     \endgroup
7720     \fi
7721     \ignorespaces
7722     }%

```

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

```

7723     \def\@bibitem#1{%
7724     \@skiphyperrefftrue\H@item\@skiphyperreffalse
7725     \Hy@raisedlink{%
7726     \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
7727     }%
7728     \if@filesw
7729     \begingroup
7730     \let\protect\noexpand
7731     \immediate\write\@auxout{%
7732     \string\bibcite{#1}{\the\value{\@listctr}}}%
7733     }%
7734     \endgroup
7735     \fi
7736     \ignorespaces
7737     }%
7738     }{}%
7739     }{}

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

```

```

7757 \if@filesw
7758   \immediate\write\@auxout{%
7759     \string\bibcite{#1}{\the\value{\@listctr}}%
7760   }%
7761 \fi
7762 \ignorespaces
7763 }
7764 </check>
7765 <*packageEnd>

```

### 37.1 Package harvard

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

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

```

7766 \@ifpackageloaded{harvard}{%
7767   \Hy@AtBeginDocument{%
7768     \Hy@Info{*** compatibility with harvard **** }%
7769     \Hy@raiselinksfalse
7770     \def\harvardcite#1#2#3#4{%
7771       \global\@namedef{HAR@fn@#1}{\hyper@@link[cite]{}{cite.#1}{#2}}%
7772       \global\@namedef{HAR@an@#1}{\hyper@@link[cite]{}{cite.#1}{#3}}%
7773       \global\@namedef{HAR@yr@#1}{\hyper@@link[cite]{}{cite.#1}{#4}}%
7774       \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
7775     }%
7776     \def\HAR@citetoaux#1{%
7777       \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
7778       \ifHy@backref
7779         \ifx\@empty\@currentlabel
7780           \else
7781             \@bsphack
7782             \if@filesw
7783               \protected@write\@auxout{}{%
7784                 \string\@writefile{brf}{%
7785                   \string\backcite{#1}{%
7786                     {\thepage}{\@currentlabel}{\@currentHref}}%
7787                 }%
7788               }%
7789             }%
7790           \fi
7791         \@esphack
7792       \fi
7793     }%
7794   }%
7795   \def\harvarditem{%
7796     \ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
7797   }%
7798   \def\@harvarditem[#1]#2#3#4#5\par{%
7799     \item[]%

```

```

7800 \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
7801 \if@filesw
7802 \begingroup
7803 \def\protect##1{\string ##1\space}%
7804 \ifthenelse{equal{#1}{\null}}%
7805 {\def\next{{#4}{#2}{#2}{#3}}}%
7806 {\def\next{{#4}{#2}{#1}{#3}}}%
7807 \immediate\write\@auxout{\string\harvardcite\codeof\next}%
7808 \endgroup
7809 \fi
7810 \protect\hspace*{-\labelwidth}%
7811 \protect\hspace*{-\labelsep}%
7812 \ignorespaces
7813 #5%
7814 \ifHy@backref
7815 \newblock
7816 \backref{\csname br@#4\endcsname}%
7817 \fi
7818 \par
7819 }%

```

\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:

```

7820 \long\def\HAR@checkcitations#1#2#3#4{%
7821 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%
7822 \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
7823 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#3}}%
7824 \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
7825 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#4}}%
7826 \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
7827 \else
7828 \@tempwatruel
7829 \fi
7830 \else
7831 \@tempwatruel
7832 \fi
7833 \else
7834 \@tempwatruel
7835 \fi
7836 }%
7837 }%

7838 }{}

```

## 37.2 Package chicago

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

```

7839 \@ifpackageloaded{chicago}{%

\citeN
7840 \def\citeN{%
7841 \def\@citeseppen{-1000}%

```



```

7842 \def\@cite##1##2{##1}%
7843 \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
7844 \@citedata@opt
7845 }%

```

\shortciteN

```

7846 \def\shortciteN{%
7847 \def\@citesep{-1000}%
7848 \def\@cite##1##2{##1}%
7849 \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
7850 \@citedata@opt
7851 }%

```

\@citedata@opt

```

7852 \def\@citedata@opt{%
7853 \let\@cite@opt\@empty
7854 \@ifnextchar [{%
7855 \@tempswatru
7856 \@citedatax@opt
7857 }{%
7858 \@tempswafalse
7859 \@citedatax[]%
7860 }%
7861 }%

```

\@citedatax@opt

```

7862 \def\@citedatax@opt[#1]{%
7863 \def\@cite@opt{, #1}%
7864 \@citedatax[{#1}]%
7865 }%

7866 }{}

```

## 38 Page numbers

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

This where we supply a destination for each page.

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

```

7867 \def\@currentHpage{Doc-Start}

7868 \@ifclassloaded{slides}{%
7869 \def\Hy@SlidesFormatOptionalPage#1{(#1)}%
7870 \def\Hy@PageAnchorSlidesPlain{%
7871 \advance\c@page\@ne
7872 \xdef\@currentHpage{page.\the\c@slide.\the\c@overlay.\the\c@note%
7873 \ifnum\c@page=\@ne
7874 \else

```

Experimental!

```

7875     .\the\c@page
7876     \fi}%
7877 \edef\Hy@TempPageAnchor{%
7878 \noexpand\hyper@@anchor{%
7879 \currentHpage
7880 }%
7881 }%
7882 \advance\c@page-\@ne
7883 }%
7884 \def\Hy@PageAnchorSlide{%
7885 \advance\c@page\@ne
7886 \ifnum\c@page>\@ne
7887 \@ifundefined{theHpage}{%
7888 \protected@edef\Hy@TheSlideOptionalPage{%
7889 \Hy@SlidesFormatOptionalPage{theHpage}%
7890 }%
7891 }{%
7892 \protected@edef\Hy@TheSlideOptionalPage{%
7893 \Hy@SlidesFormatOptionalPage{theHpage}%
7894 }%
7895 }%
7896 \else
7897 \def\Hy@TheSlideOptionalPage{}%
7898 \fi
7899 \advance\c@page-\@ne
7900 \pdfstringdef\@the@H@page{%
7901 \csname
7902 the%
7903 \@ifundefined{theH\Hy@SlidesPage}{H}%
7904 \Hy@SlidesPage
7905 \endcsname
7906 \Hy@TheSlideOptionalPage
7907 }%
7908 \@gobblethree
7909 }%
7910 \def\Hy@SlidesPage{slide}%
7911 \g@addto@macro\slide{%
7912 \def\Hy@SlidesPage{slide}%
7913 }%
7914 \g@addto@macro\overlay{%
7915 \def\Hy@SlidesPage{overlay}%
7916 }%
7917 \g@addto@macro\note{%
7918 \def\Hy@SlidesPage{note}%
7919 }%
7920 }%
7921 \def\Hy@PageAnchorSlidesPlain{}%
7922 \def\Hy@PageAnchorSlide{}%
7923 }
7924 \def\Hy@EveryPageAnchor{%
7925 \Hy@DistillerDestFix
7926 \ifHy@pageanchor
7927 \ifHy@hypertextnames
7928 \ifHy@plainpages

```

```

7929 \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
7930 \xdef\@currentHpage{page.\the\c@page}%
7931 \Hy@PageAnchorSlidesPlain
7932 \else
7933 \begingroup
7934 \let\@number\@firstofone
7935 \Hy@unicodedefalse
7936 \Hy@PageAnchorSlide
7937 \pdfstringdef\@the@H@page{\thepage}%
7938 \endgroup
7939 \EdefUnescapeString\@the@H@page{\@the@H@page}%
7940 \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
7941 \xdef\@currentHpage{page.\@the@H@page}%
7942 \fi
7943 \else
7944 \Hy@GlobalStepCount\Hy@pagecounter
7945 \def\Hy@TempPageAnchor{%
7946 \hyper@@anchor{page.\the\Hy@pagecounter}}%
7947 }%
7948 \xdef\@currentHpage{page.\the\Hy@pagecounter}%
7949 \fi
7950 \vbox to 0pt{%
7951 \kern\voffset
7952 \kern\topmargin
7953 \kern-1bp\relax
7954 \hbox to 0pt{%
7955 \kern\hoffset
7956 \kern\ifodd\value{page}%
7957 \oddsidemargin
7958 \else
7959 \evensidemargin
7960 \fi
7961 \kern-1bp\relax
7962 \Hy@TempPageAnchor\relax
7963 \hss
7964 }%
7965 \vss
7966 }%
7967 \fi
7968 }
7969 \g@addto@macro\Hy@EveryPageBoxHook{%
7970 \Hy@EveryPageAnchor
7971 }

```

## 39 Table of contents

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

```

7972 \providecommand\protected@file@percent{}

```

```

7973 \@ifundefined{hyper@nopatch@toc}{%
7974 \def\addcontentsline#1#2#3{% toc extension, type, tag
7975 \begingroup
7976 \let\label@gobble
7977 \ifx\@currentHref\@empty
7978 \Hy@Warning{%
7979 No destination for bookmark of \string\addcontentsline,%
7980 \MessageBreak destination is added%
7981 }%
7982 \phantomsection
7983 \fi
7984 \expandafter\ifx\csname toplevel@#2\endcsname\relax
7985 \begingroup
7986 \def\Hy@tempa{#1}%
7987 \ifx\Hy@tempa\Hy@bookmarkstype
7988 \Hy@WarningNoLine{%
7989 bookmark level for unknown #2 defaults to 0%
7990 }%
7991 \else
7992 \Hy@Info{bookmark level for unknown #2 defaults to 0}%
7993 \fi
7994 \endgroup
7995 \expandafter\gdef\csname toplevel@#2\endcsname{0}%
7996 \fi
7997 \edef\Hy@toclevel{\csname toplevel@#2\endcsname}%
7998 \Hy@writebookmark{\csname the#2\endcsname}%
7999 {#3}%
8000 {\@currentHref}%
8001 {\Hy@toclevel}%
8002 {#1}%
8003 \ifHy@verbose
8004 \begingroup
8005 \def\Hy@tempa{#3}%
8006 \@onelevel@sanitize\Hy@tempa
8007 \let\temp@online\on@line
8008 \let\on@line\@empty
8009 \Hy@Info{%
8010 bookmark\temp@online:\MessageBreak
8011 thecounter {\csname the#2\endcsname}\MessageBreak
8012 text {\Hy@tempa}\MessageBreak
8013 reference {\@currentHref}\MessageBreak
8014 toplevel {\Hy@toclevel}\MessageBreak
8015 type {#1}%
8016 }%
8017 \endgroup
8018 \fi
8019 \addtocontents{#1}{%
8020 \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}\protected@file@per-
cent
8021 }%
8022 \endgroup
8023 }
8024 }{}

```

`\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:

```
8025 \protected\def\Hy@toclinkstart{\hyper@linkstart{link}{\Hy@tocdestname}}
8026 \protected\def\Hy@toclinkend{\hyper@linkend}
8027
8028 \@ifundefined{hyper@nopatch@toc}{%
8029   \def\contentsline#1#2#3#4{%
8030     \begingroup
8031       \Hy@safe@activestrue
8032     \edef\x{\endgroup
8033       \def\noexpand\Hy@tocdestname{#4}%
8034     }\x
8035     \ifx\Hy@tocdestname\@empty
8036       \csname l@#1\endcsname{#2}{#3}%
8037     \else
8038       \ifcase\Hy@linktoc % none
8039         \csname l@#1\endcsname{#2}{#3}%
8040       \or % section
8041         \csname l@#1\endcsname{%
8042           \Hy@toclinkstart{#2}\Hy@toclinkend
8043         }{#3}%
8044       \or % page
8045         \def\Hy@temp{#3}%
8046         \ifx\Hy@temp\@empty
8047           \csname l@#1\endcsname{#2}{#3}%
8048         \else
8049           \csname l@#1\endcsname{#{#2}}{%
8050             \Hy@toclinkstart{#3}\Hy@toclinkend
8051           }%
8052         \fi
8053       \else % all
8054         \def\Hy@temp{#3}%
8055         \ifx\Hy@temp\@empty
8056           \csname l@#1\endcsname{%
8057             \Hy@toclinkstart{#2}\Hy@toclinkend
8058           }{#3}%
8059         \else
8060           \csname l@#1\endcsname{%
8061             \Hy@toclinkstart{#2}\Hy@toclinkend
8062           }{#3}%
8063           \Hy@toclinkstart{#3}\Hy@toclinkend
8064         }%
8065         \fi
8066       \fi
8067     \fi
8068   }
8069 }{}
```

```
8070 \endpackage
8071 \check
8072 \checklatex
8073 \checkcommand\def\addcontentsline#1#2#3{%
```

```

8074 \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
8075 }
8076 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
8077 \</check>
8078 \*packageEnd)

```

## 40 New counters

The whole theorem business makes up new counters on the fly; we are going to intercept this. Sigh. Do it at the level where new counters are defined.

```

8079 \@ifundefined{hyper@nopatch@counter}
8080 {
8081   \let\H@definecounter\@definecounter
8082   \def\@definecounter#1{%
8083     \H@definecounter{#1}%
8084     \expandafter\gdef\csname theH#1\endcsname{\arabic{#1}}%
8085   }
8086 }{}

```

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.

```

8087 \@ifundefined{hyper@nopatch@counter}
8088 {
8089   \let\H@newctr\@newctr
8090   \def\@newctr#1[#2]{%
8091     \H@newctr#1[{#2}]%
8092     \expandafter\gdef\csname theH#1\endcsname{%
8093       \csname the\@ifundefined{theH#2}{H}#2\endcsname.\arabic{#1}%
8094     }%
8095   }
8096 }{}

```

## 41 AMS $\LaTeX$ compatibility

Oh, no, they don't use anything as simple as `\refstepcounter` in the AMS! We need to intercept some low-level operations of theirs. Damned if we are going to try and work out what they get up to. Just stick a label of 'AMS' on the front, and use the label *they* worked out. If that produces something invalid, I give up. They'll change all the code again anyway, I expect (SR).

Version 6.77p uses a patch by Ross Moore.

If `\hyper@nopatch@amsmath@tag` is defined we don't patch but assume that kernel code adds anchors to equations. change 2023-06-14: use a hook to make it independent of loading order.

```

8097 \@ifundefined{hyper@nopatch@amsmath@tag}
8098   {%
8099   \AddToHook{package/amsmath/after}{%
8100     \def\Hy@make@anchor{%
8101       \Hy@MakeCurrentHrefAuto{AMS}%
8102       \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
8103     }%
8104     \def\Hy@make@df@tag@#1{%

```

```

8105 \gdef\df@tag{%
8106 \maketag@@@{\Hy@make@anchor#1}%
8107 \def\@currentlabel{#1}%
8108 }%
8109 }%
8110 \def\Hy@make@df@tag@@@#1{%
8111 \gdef\df@tag{%
8112 \tagform@{\Hy@make@anchor#1}%
8113 \toks@\@xp{\p@equation{#1}}%
8114 \edef\@currentlabel{\the\toks@}%
8115 }%
8116 }%
8117 \let\HyOrg@make@df@tag@@\make@df@tag@@
8118 \let\HyOrg@make@df@tag@@@@make@df@tag@@@
8119 \let\make@df@tag@@\Hy@make@df@tag@@
8120 \let\make@df@tag@@@@Hy@make@df@tag@@@
8121 }{}
8122 }{}

```

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

```

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

```

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

\@addtoreset puts a counter to the reset list of another counter. After a reset the counter starts again with perhaps already used values. Therefore the hyperref version of the counter print command \theHcounter is redefined in order to add the parent counter.

```

8123 \@ifundefined{hyper@nopatch@counter}
8124 {
8125 \let\HyOrg@addtoreset\@addtoreset
8126 \def\@addtoreset#1#2{%
8127 \HyOrg@addtoreset{#1}{#2}%
8128 \expandafter\xdef\csname theH#1\endcsname{%
8129 \expandafter\noexpand
8130 \csname the\@ifundefined{theH#2}{H#2\endcsname
8131 .\noexpand\the\noexpand\value{#1}}%
8132 }%
8133 }
8134 }{}

```

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

```

8135 </packageEnd>
8136 <*check>
8137 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
8138 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%

```

```

8139 \@ifundefined{c@#2}{\@nocounterr{#2}}{%
8140   \@ifundefined{c@#3}{\@nocnterr{#3}}{%
8141     \@addtoreset{#2}{#3}%
8142     \@xp\xdef\csname the#2\endcsname{%
8143       \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8144     }%
8145   }%
8146 }%
8147 }%
8148 </check>

```

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

```

8149 <*packageEnd>
8150 \@ifundefined{hyper@nopatch@counter}
8151 {
8152   \AddToHook{package/amsmath/after}{%
8153     \renewcommand*\numberwithin{3}[\arabic]{%
8154       \@ifundefined{c@#2}{\@nocounterr{#2}}{%
8155         \@ifundefined{c@#3}{\@nocnterr{#3}}{%
8156           \HyOrg@addtoreset{#2}{#3}%
8157           \@xp\xdef\csname the#2\endcsname{%
8158             \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8159           }%
8160           \@xp\xdef\csname theH#2\endcsname{%
8161             \@xp\@nx
8162             \csname the\@ifundefined{theH#3}{}H#3\endcsname
8163             .\@nx#1{#2}%
8164           }%
8165         }%
8166       }%
8167     }%
8168   }{}
8169 }{}

```

## 42 Included figures

Simply intercept the low level graphics package macro.

```

8170 \ifHy@hyperfigures
8171   \let\Hy@Gin@setfile\Gin@setfile
8172   \def\Gin@setfile#1#2#3{%
8173     \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
8174   }%
8175 \fi
8176 \Hy@DisableOption{hyperfigures}

```

## 43 hyperindex entries

Internal command names are prefixed with `\HyInd@`.

Hyper-indexing works crudely, by forcing code onto the end of the index entry with the `|` feature; this puts a hyperlink around the printed page numbers. It will not proceed if the author has already used the `|` specifier for something like boldening entries. That would make `Makeindex` fail (cannot have two `|`



specifiers). The solution is for the author to use generic coding, and put in the requisite `\hyperpage` in his/her own macros along with the boldness.

This section is poor stuff; it's open to all sorts of abuse. Sensible large projects will design their own indexing macros any bypass this.

```

8177 \ifHy@hyperindex
8178 \def\HyInd@ParenLeft{()%
8179 \def\HyInd@ParenRight{)%
8180 \def\hyperindexformat#1#2{%
8181 \let\HyOrg@hyperpage\hyperpage
8182 \let\hyperpage\@firstofone
8183 #1{\HyOrg@hyperpage{#2}}%
8184 \let\hyperpage\HyOrg@hyperpage
8185 }%
8186 \Hy@nextfalse
8187 \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
8188 \@ifpackageloaded{index}{\Hy@nexttrue}{}%
8189 \@ifpackageloaded{amsmidx}{\Hy@nexttrue}{}%
8190 \begingroup
8191 \lccode`|= \expandafter` \HyInd@EncapChar\relax
8192 \lccode`\/= `\\ \relax
8193 \lowercase{\endgroup
8194 \ifHy@next
8195 \let\HyInd@org@wrindex\@wrindex
8196 \def\@wrindex#1#2{\HyInd@wrindex{#1}#2| | \}%
8197 \def\HyInd@@wrindex#1#2|#3|#4\{\%
8198 \ifx\|#3\%
8199 \HyInd@org@wrindex{#1}{#2|hyperpage}%
8200 \else
8201 \HyInd@@@wrindex{#1}{#2}#3\%
8202 \fi
8203 }%
8204 \def\HyInd@@@wrindex#1#2#3#4\{\%
8205 \def\Hy@temp@A{#3}%
8206 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8207 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8208 \relax
8209 \HyInd@org@wrindex{#1}{%
8210 #2|hyperindexformat{/#3#4}%
8211 }%
8212 \else
8213 \ifx\|#4\%
8214 \ifx\Hy@temp@A\HyInd@ParenRight
8215 \HyInd@org@wrindex{#1}{#2|#3}%
8216 \else
8217 \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
8218 \fi
8219 \else
8220 \HyInd@org@wrindex{#1}{%
8221 #2|#3hyperindexformat{/#4}%
8222 }%
8223 \fi
8224 \fi
8225 }%
8226 \else

```

```

8227 \def\@wrindex#1{\@wrindex#1|\|}%
8228 \def\@wrindex#1|#2|#3\|{%
8229 \if@filesw
8230 \ifx\|#2\|
8231 \protected@write\@indexfile{}{%
8232 \string\indexentry{#1|hyperpage}{\thepage}%
8233 }%
8234 \else
8235 \HyInd@@@wrindex{#1}#2\|
8236 \fi
8237 \fi
8238 \endgroup
8239 \@esphack
8240 }%
8241 \def\HyInd@@@wrindex#1#2#3\|{%
8242 \def\Hy@temp@A{#2}%
8243 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8244 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8245 \relax
8246 \protected@write\@indexfile{}{%
8247 \string\indexentry{%
8248 #1|hyperindexformat{/#2#3}%
8249 }{\thepage}%
8250 }%
8251 \else
8252 \ifx\|#3\|
8253 \ifx\Hy@temp@A\HyInd@ParenRight
8254 \HyInd@DefKey{#1}%
8255 \@ifundefined{HyInd@(\HyInd@key)}{%
8256 \let\Hy@temp\@empty
8257 }{%
8258 \expandafter\let\expandafter\Hy@temp
8259 \csname HyInd@(\HyInd@key)\endcsname
8260 }%
8261 \protected@write\@indexfile{}{%
8262 \string\indexentry{#1|#2\Hy@temp}{\thepage}%
8263 }%
8264 \else
8265 \protected@write\@indexfile{}{%
8266 \string\indexentry{#1|#2hyperpage}{\thepage}%
8267 }%
8268 \HyInd@DefKey{#1}%
8269 \expandafter
8270 \gdef\csname HyInd@(\HyInd@key)\endcsname{%
8271 hyperpage%
8272 }%
8273 \fi
8274 \else
8275 \protected@write\@indexfile{}{%
8276 \string\indexentry{%
8277 #1|#2hyperindexformat{/#3}%
8278 }{\thepage}%
8279 }%
8280 \ifx\Hy@temp@A\HyInd@ParenLeft

```

```

8281     \HyInd@DefKey{#1}%
8282     \expandafter
8283     \gdef\csname HyInd@(\HyInd@key)\endcsname{%
8284         hyperindexformat{/#3}%
8285     }%
8286     \fi
8287     \fi
8288     \fi
8289 }%
8290 \def\HyInd@DefKey#1{%
8291     \begingroup
8292     \let\protect\@unexpandable@protect
8293     \edef\Hy@temp{#1}%
8294     \@onelevel@sanitize\Hy@temp
8295     \global\let\HyInd@key\Hy@temp
8296     \endgroup
8297 }%
8298 \fi
8299 }%
8300 \fi
8301 \Hy@DisableOption{hyperindex}
8302 \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.

```

8303 \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.

```

8304 \def\hyperpage#1{%
8305     \HyInd@hyperpage#1\nohyperpage{}\@nil
8306 }
8307 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{%
8308     \HyInd@@hyperpage{#1}%
8309     #2%
8310     \def\Hy@temp{#3}%
8311     \ifx\Hy@temp\@empty
8312     \else
8313         \Hy@ReturnAfterFi{%
8314             \HyInd@hyperpage#3\@nil
8315         }%
8316     \fi
8317 }
8318 \def\HyInd@@hyperpage#1{\@hyperpage#1----\}
8319 \def\@hyperpage#1--#2--#3\{\%
8320     \ifx\#2\%
8321         \@commahyperpage{#1}%
8322     \else
8323         \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
8324     \fi
8325 }
8326 \def\@commahyperpage#1{\@commahyperpage#1, \}
8327 \def\@commahyperpage#1, #2,#3\{\%
8328     \ifx\#2\%

```

```

8329 \HyInd@pagelink{#1}%
8330 \else
8331 \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
8332 \fi
8333 }

```

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

```

8334 \def\HyInd@pagelink#1{%
8335 \begingroup
8336 \toks@={}%
8337 \HyInd@removespaces#1 \@nil
8338 \endgroup
8339 }
8340 \def\HyInd@removespaces#1 #2\@nil{%
8341 \toks@=\expandafter{\the\toks@#1}%
8342 \ifx\#2\%
8343 \edef\x{\the\toks@}%
8344 \ifx\x\@empty
8345 \else
8346 \hyperlink{page.\the\toks@}{\the\toks@}%
8347 \fi
8348 \else
8349 \Hy@ReturnAfterFi{%
8350 \HyInd@removespaces#2\@nil
8351 }%
8352 \fi
8353 }

```

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.

```

8354 \ifHy@texht
8355 \expandafter\endinput
8356 \fi
8357 \let\real@setref\@setref
8358 \def\@setref#1#2#3{% csname, extract group, refname
8359 \ifx#1\relax
8360 \protect\G@refundefinedtrue
8361 \nfss@text{\reset@font\bfseries ??}%
8362 \@latex@warning{%
8363 Reference `#3' on page \thepage \space undefined%
8364 }%
8365 \else
8366 \expandafter\Hy@setref@link#1\@empty\@empty\@empty\@nil{#2}%
8367 \fi
8368 }

```

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

```

8369 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
8370 \begingroup
8371 \toks0={\hyper@link{#5}{#4}}%
8372 \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%

```

```

8373 \edef\x{\endgroup
8374 \the\toks0 {\the\toks1 }%
8375 }%
8376 \x
8377 }
8378 \def\@pagesetref#1#2#3{% csname, extract macro, ref
8379 \ifx#1\relax
8380 \protect\G@refundefinedtrue
8381 \nfss@text{\reset@font\bfseries ??}%
8382 \@latex@warning{%
8383 Reference `#3' on page \thepage \space undefined%
8384 }%
8385 \else
8386 \protect\hyper@@@link
8387 {\expandafter\@fifthoffive#1}%
8388 {page.\expandafter\@secondoffive#1}%
8389 {\expandafter\@secondoffive#1}%
8390 \fi
8391 }

8392 </packageEnd>
8393 <*check>
8394 \checklatex
8395 \checkcommand\def\@setref#1#2#3{%
8396 \ifx#1\relax
8397 \protect\G@refundefinedtrue
8398 \nfss@text{\reset@font\bfseries ??}%
8399 \@latex@warning{%
8400 Reference `#3' on page \thepage \space undefined%
8401 }%
8402 \else
8403 \expandafter#2#1\null
8404 \fi
8405 }
8406 </check>
8407 <*packageEnd>

```

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

```

8408 \def\HyRef@StarSetRef#1{%
8409 \begingroup
8410 \Hy@safe@activestru
8411 \let\protect\@unexpandable@protect
8412 \edef\x{#1}%
8413 \@onelevel@sanitize\x
8414 \edef\x{\endgroup
8415 \noexpand\HyRef@@StarSetRef
8416 \expandafter\noexpand\csname r@\x\endcsname{\x}%
8417 }%
8418 \x
8419 }
8420 \def\HyRef@@StarSetRef#1#2#3{%
8421 \ifx#1\@undefined
8422 \let#1\relax
8423 \fi

```

```

8424 \real@setref#1#3{#2}%
8425 }
8426 \def\@refstar#1{%
8427 \HyRef@StarSetRef{#1}\@firstoffive
8428 }
8429 \def\@pagerefstar#1{%
8430 \HyRef@StarSetRef{#1}\@secondoffive
8431 }
8432 \def\@namerefstar#1{%
8433 \HyRef@StarSetRef{#1}\@thirdoffive
8434 }
8435 \def\@Refstar#1{%
8436 \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
8437 }%
8438 \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
8439 \MakeUppercase#1%
8440 }%
8441 \def\HyRef@Ref#1{%
8442 \hyperref[{#1}]{\Ref*{#1}}%
8443 }%
8444 \Hy@AtBeginDocument{%
8445 \@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.

```

8446 \@ifundefined{hyper@nopatch@varioref}
8447 {
8448 \renewcommand\Vref@star[2][]{%
8449 \begingroup
8450 \let\T@pageref\@pagerefstar
8451 \Ref*{#2}
8452 \vpageref[#1]{#2}%
8453 \endgroup
8454 }%
8455 \renewcommand\Vr@f[2][]{%
8456 \begingroup
8457 \let\T@pageref\@pagerefstar
8458 \hyperref[{#2}]{%
8459 \Ref*{#2}
8460 \vpageref[#1]{#2}%
8461 }%
8462 \endgroup
8463 }%
8464 \renewcommand\vr@f[2][]{%
8465 \begingroup
8466 \let\T@pageref\@pagerefstar
8467 \hyperref[{#2}]{%
8468 \ref*{#2}
8469 \vpageref[#1]{#2}%
8470 }%
8471 \endgroup
8472 }%
8473 \renewcommand\Vref@star[2][]{%

```

```

8474 \begingroup
8475 \let\T@pageref\@pagerefstar
8476 \ref*{#2}
8477 \vpageref[#1]{#2}%
8478 \endgroup
8479 }%
8480 }{}%
8481 }{}%
8482 }

8483 \DeclareRobustCommand*\autopageref}{%
8484 \@ifstar{%
8485 \HyRef@autopagerefname\pageref*%
8486 }\HyRef@autopageref
8487 }
8488 \def\HyRef@autopageref#1{%
8489 \hyperref[{#1}]{\HyRef@autopagerefname\pageref*{#1}}%
8490 }
8491 \def\HyRef@autopagerefname{%
8492 \@ifundefined{pageautorefname}{%
8493 \@ifundefined{pagename}{%
8494 \Hy@Warning{No autoref name for `page'}%
8495 }{}%
8496 \pagename\nobreakspace
8497 }%
8498 }{}%
8499 \pageautorefname\nobreakspace
8500 }%
8501 }

```

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

```

8502 \NewDocumentCommand\autoref{s}
8503 {\leavevmode
8504 \IfBooleanTF{#1}{\HyRef@autoref@gobbletwo}{\HyRef@autoref\hyper@@link}}
8505 \def\HyRef@autoref#1#2{%
8506 \begingroup
8507 \Hy@safe@activetrue
8508 \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
8509 \endgroup
8510 }
8511 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
8512 \HyRef@ShowKeysRef{#2}%
8513 \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
8514 \edef\HyRef@thisref{%
8515 \expandafter\@fourthoffive#1\@empty\@empty\@empty
8516 }%
8517 \expandafter\HyRef@testreftype\HyRef@thisref.\.%
8518 \Hy@safe@activesfalse
8519 #3{%
8520 \expandafter\@fifthoffive#1\@empty\@empty\@empty
8521 }{}%
8522 \expandafter\@fourthoffive#1\@empty\@empty\@empty
8523 }{}%
8524 \HyRef@currentHtag

```

```

8525     \expandafter\@firstoffive#1\@empty\@empty\@empty
8526     \null
8527   }%
8528 \else
8529   \protect\G@refundefinedtrue
8530   \nfss@text{\reset@font\bfseries ??}%
8531   \@latex@warning{%
8532     Reference `#2' on page \thepage\space undefined%
8533   }%
8534 \fi
8535 }
8536 \def\HyRef@testreftype#1.#2\{\%
8537   \@ifundefined{#1autorefname}\{%
8538     \@ifundefined{#1name}\{%
8539       \HyRef@StripStar#1\*\@nil{#1}%
8540       \@ifundefined{\HyRef@name autorefname}\{%
8541         \@ifundefined{\HyRef@name name}\{%
8542           \def\HyRef@currentHtag{\%
8543             \Hy@Warning{No autoref name for `#1'}%
8544           }\%
8545           \edef\HyRef@currentHtag{\%
8546             \expandafter\noexpand\csname\HyRef@name name\endcsname
8547             \noexpand~%
8548           }\%
8549         }\%
8550       }\%
8551       \edef\HyRef@currentHtag{\%
8552         \expandafter\noexpand
8553         \csname\HyRef@name autorefname\endcsname
8554         \noexpand~%
8555       }\%
8556     }\%
8557   }\%
8558   \edef\HyRef@currentHtag{\%
8559     \expandafter\noexpand\csname#1name\endcsname
8560     \noexpand~%
8561   }\%
8562 }\%
8563 }\%
8564 \edef\HyRef@currentHtag{\%
8565   \expandafter\noexpand\csname#1autorefname\endcsname
8566   \noexpand~%
8567 }\%
8568 }\%
8569 }
8570 \def\HyRef@StripStar#1*\@nil#3{\%
8571   \def\HyRef@name{#2}%
8572   \ifx\HyRef@name\HyRef@CaseStar
8573     \def\HyRef@name{#1}%
8574   \else
8575     \def\HyRef@name{#3}%
8576   \fi
8577 }
8578 \def\HyRef@CaseStar{*\\}

```



```
8579 \def\HyRef@currentHtag{}
      Support for package showkeys.
```

`\HyRef@ShowKeysRef`

```
8580 \let\HyRef@ShowKeysRef@gobble
8581 \def\HyRef@ShowKeysInit{%
8582   \@ifundefined{SK@@label}{-}
8583   {%
8584     \ifx\SK@ref\@empty
8585     \else
8586       \def\HyRef@ShowKeysRef{%
8587         \SK@\SK@@ref
8588       }%
8589     \fi
8590   }%
8591 }
8592 \AddToHook{package/showkeys/after}{\HyRef@ShowKeysInit}
```

Defaults for the names that `\autoref` uses.

```
8593 \providecommand*\AMSautorefname{\equationautorefname}
8594 \providecommand*\Hfootnoteautorefname{\footnoteautorefname}
8595 \providecommand*\Itemautorefname{\itemautorefname}
8596 \providecommand*\itemautorefname{item}
8597 \providecommand*\equationautorefname{Equation}
8598 \providecommand*\footnoteautorefname{footnote}
8599 \providecommand*\itemautorefname{item}
8600 \providecommand*\figureautorefname{Figure}
8601 \providecommand*\tableautorefname{Table}
8602 \providecommand*\partautorefname{Part}
8603 \providecommand*\appendixautorefname{Appendix}
8604 \providecommand*\chapterautorefname{chapter}
8605 \providecommand*\sectionautorefname{section}
8606 \providecommand*\subsectionautorefname{subsection}
8607 \providecommand*\subsubsectionautorefname{subsubsection}
8608 \providecommand*\paragraphautorefname{paragraph}
8609 \providecommand*\subparagraphautorefname{subparagraph}
8610 \providecommand*\FancyVerbLineautorefname{line}
8611 \providecommand*\theoremautorefname{Theorem}
8612 \providecommand*\pageautorefname{page}
8613 </packageEnd>
```

## 44 Configuration files

### 44.1 PS/PDF strings

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

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

```

8614 (*pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo)
8615 \begingroup\expandafter\expandafter\expandafter\endgroup
8616 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
8617 \begingroup
8618 \catcode`\|=0 %
8619 \@makeother\|%
8620 |@firstofone{|endgroup
8621 |def\Hy@pstringdef#1#2{%
8622 |begingroup
8623 |edef~{\string~}%
8624 |xdef\Hy@gtemp{#2}%
8625 |endgroup
8626 |let#1|\Hy@gtemp
8627 |@onelevel@sanitize#1%
8628 |edef#1{|expandafter\Hy@ExchangeBackslash#1\|@nil}%
8629 |edef#1{|expandafter\Hy@ExchangeLeftParenthesis#1(|@nil}%
8630 |edef#1{|expandafter\Hy@ExchangeRightParenthesis#1)|@nil}%
8631 }%
8632 |def\Hy@ExchangeBackslash#1\#2|@nil{%
8633 #1%
8634 |ifx\#2|\%
8635 |else
8636 \|%
8637 |Hy@ReturnAfterFi{%
8638 |Hy@ExchangeBackslash#2|@nil
8639 }%
8640 |fi
8641 }%
8642 }%
8643 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
8644 #1%
8645 \ifx\#2\%
8646 \else
8647 \@backslashchar(%
8648 \Hy@ReturnAfterFi{%
8649 \Hy@ExchangeLeftParenthesis#2\@nil
8650 }%
8651 \fi
8652 }%
8653 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
8654 #1%
8655 \ifx\#2\%
8656 \else
8657 \@backslashchar)%
8658 \Hy@ReturnAfterFi{%
8659 \Hy@ExchangeRightParenthesis#2\@nil
8660 }%
8661 \fi
8662 }%
8663 \else
8664 \def\Hy@pstringdef#1#2{%
8665 \begingroup
8666 \edef~{\string~}%
8667 \xdef\Hy@gtemp{\pdf@escapestring{#2}}%

```

```

8668 \endgroup
8669 \let#1\Hy@gttemp
8670 }%
8671 \fi
8672 </pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>

```

## 44.2 pdftex

```

8673 (*pdfTeX)
8674 \providecommand*\XR@ext}{pdf}
8675 \Hy@setbreaklinks{true}
8676 \def\HyPat@ObjRef{%
8677 [0-9]*[1-9][0-9]* 0 R%
8678 }

```

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

```

8679 \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
8680 \def\Hy@pdfminorversion{\pdfminorversion}%
8681 \ifHy@ocgcolorlinks
8682 \ifnum\Hy@pdfmajorminor@version<105 %
8683 \kvsetkeys{Hyp}{pdfversion=1.5}%
8684 \fi
8685 \fi
8686 \ifHy@setpdfversion
8687 \ifnum\Hy@pdf@majorminor@version<105 %
8688 \@ifundefined{pdfobjcompresslevel}{%
8689 }{%
8690 \ifHy@verbose
8691 \Hy@InfoNoLine{%
8692 PDF object streams are disabled, because they are%
8693 \MessageBreak
8694 not supported in requested PDF version %
8695 \Hy@pdf@majorversion.\Hy@pdf@minorversion
8696 }%
8697 \fi
8698 \pdfobjcompresslevel=\z@
8699 }%
8700 \fi
8701 \ifnum\Hy@pdfmajorminor@version=\Hy@pdf@majorminor@version\relax
8702 \else
8703 \let\Hy@temp\@empty
8704 \def\Hy@temp@A#1#2{%
8705 \ifnum#1>\z@
8706 \edef\Hy@temp{%
8707 \Hy@temp
8708 \space\space
8709 \the#1\space #2%
8710 \ifnum#1=\@ne\else s\fi

```

```

8711     \MessageBreak
8712     }%
8713     \fi
8714 }%
8715 \Hy@temp@A\pdflastobj{PDF object}%
8716 \Hy@temp@A\pdflastxform{formXObject}%
8717 \Hy@temp@A\pdflastximage{imageXObject}%
8718 \Hy@temp@A\pdflastannot{annotation}%
8719 \@ifundefined{pdflastlink}{%
8720 }{%
8721     \Hy@temp@A\pdflastlink{link}%
8722 }%
8723 \ifx\Hy@temp@A\@empty
8724 \Hy@pdfmajorversion=\Hy@pdf@majorversion\relax
8725 \Hy@pdfminorversion=\Hy@pdf@minorversion\relax
8726 \else
8727 \let\Hy@temp@A\@empty
8728 \ifnum\Hy@pdf@majorminor@version=104 %
8729 \IfFileExists{pdf14.sty}{%
8730     \def\Hy@temp@A{%
8731         \MessageBreak
8732         Or \string\RequirePackage{pdf14} can be used%
8733         \MessageBreak
8734         before \string\documentclass\space as shortcut%
8735     }%
8736 }{%
8737 \fi
8738 \Hy@WarningNoLine{%
8739     The PDF version number could not be set,\MessageBreak
8740     because some PDF objects are already written:%
8741     \MessageBreak
8742     \Hy@temp
8743     The version should be set as early as possible:%
8744     \MessageBreak
8745     \space\space
8746     \expandafter\string\Hy@pdfmajorversion=\Hy@pdf@majorversion, %
8747     \expandafter\string\Hy@pdfminorversion=\Hy@pdf@minorversion
8748     \string\relax
8749     \ifnum\Hy@pdf@majorminor@version<105 %
8750     \@ifundefined{pdfobjcompresslevel}{%
8751     }{%
8752         \MessageBreak
8753         \space\space
8754         \string\pdfobjcompresslevel=0\string\relax
8755     }%
8756     \fi
8757     \Hy@temp@A
8758     }%
8759 \fi
8760 \fi
8761 \PackageInfo{hyperref}{%
8762     \expandafter\string\Hy@pdfmajorversion.%
8763     \expandafter\string\Hy@pdfminorversion
8764     :=\number\Hy@pdf@majorversion.\number\Hy@pdf@minorversion\space

```

```

8765 }%
8766 \fi
8767 \edef\Hy@pdf@majorversion{\number\Hy@pdfmajorversion}%
8768 \edef\Hy@pdf@minorversion{\number\Hy@pdfminorversion}%
8769 \Hy@DisableOption{pdfversion}%

8770 \ifHy@ocgcolorlinks
8771 \pdf@ifdraftmode{}{%
8772 \immediate\pdfobj{%
8773 <<%
8774 /Type/OCG%
8775 /Name(View)%
8776 /Usage<<%
8777 /Print<<%
8778 /PrintState/OFF%
8779 >>%
8780 /View<<%
8781 /ViewState/ON%
8782 >>%
8783 >>%
8784 >>%
8785 }%
8786 \edef\OBJ@OCG@view{\the\pdfastobj\space 0 R}%
8787 \immediate\pdfobj{%
8788 <<%
8789 /Type/OCG%
8790 /Name(Print)%
8791 /Usage<<%
8792 /Print<<%
8793 /PrintState/ON%
8794 >>%
8795 /View<<%
8796 /ViewState/OFF%
8797 >>%
8798 >>%
8799 >>%
8800 }%
8801 \edef\OBJ@OCG@print{\the\pdfastobj\space 0 R}%
8802 \immediate\pdfobj{%
8803 [%
8804 \OBJ@OCG@view\space\OBJ@OCG@print
8805 ]%
8806 }%
8807 \edef\OBJ@OCGs{\the\pdfastobj\space 0 R}%
8808 \pdfcatalog{%
8809 /OCProperties<<%
8810 /OCGs \OBJ@OCGs
8811 /D<<%
8812 /OFF[\OBJ@OCG@print]%
8813 /AS[%
8814 <<%
8815 /Event/View%
8816 /OCGs \OBJ@OCGs
8817 /Category[/View]%
8818 >>%

```

```

8819     <<%
8820         /Event/Print%
8821         /OCGs \OBJ@OCGs
8822         /Category[/Print]%
8823     >>%
8824     <<%
8825         /Event/Export%
8826         /OCGs \OBJ@OCGs
8827         /Category[/Print]%
8828     >>%
8829     ]%
8830     >>%
8831     >>%
8832     }%
8833     \begingroup
8834     \edef\x{\endgroup
8835     \pdfpageresources{%
8836     \the\pdfpageresources
8837     /Properties<<%
8838     /OCView \OBJ@OCG@view
8839     /OCPrint \OBJ@OCG@print
8840     >>%
8841     }%
8842     }%
8843     \x
8844     }%
8845     \Hy@AtBeginDocument{%
8846     \def\Hy@colorlink#1{%
8847     \begingroup
8848     \ifHy@ocgcolorlinks
8849     \def\Hy@ocgcolor{#1}%
8850     \setbox0=\hbox\bgroup\color@begingroup
8851     \else
8852     \HyColor@UseColor#1%
8853     \fi
8854     }%
8855     \def\Hy@endcolorlink{%
8856     \ifHy@ocgcolorlinks
8857     \color@endgroup\egroup
8858     \mbox{%
8859     \pdfliteral page{/OC/OCPrint BDC}%
8860     \rlap{\copy0}%
8861     \pdfliteral page{EMC/OC/OCView BDC}%
8862     \begingroup
8863     \expandafter\HyColor@UseColor\Hy@ocgcolor
8864     \box0 %
8865     \endgroup
8866     \pdfliteral page{EMC}%
8867     }%
8868     \fi
8869     \endgroup
8870     }%
8871     }%
8872     \else

```

```
8873 \Hy@DisableOption{ocgcolorlinks}%
8874 \fi
```

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

```
8875 \def\setpdfinkmargin#1{%
8876   \begingroup
8877   \setlength{\dimen@}{#1}%
8878   \expandafter\endgroup
8879   \expandafter\pdfinkmargin\the\dimen@\relax
8880 }
8881 \pdfinkmargin1pt %
```

First set up the default linking

```
8882 \providecommand*\@pdfview{XYZ}
```

First define the anchors:

```
8883 \Hy@WrapperDef\new@pdfink#1{%
8884   \ifhmode
8885     \@savsf\spacefactor
8886   \fi
8887   \Hy@SaveLastskip
8888   \Hy@VerboseAnchor{#1}%
8889   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
8890   \Hy@DestName\Hy@pstringDest\@pdfview
8891   \Hy@RestoreLastskip
8892   \ifhmode
8893     \spacefactor\@savsf
8894   \fi
8895 }
8896 \let\pdf@endanchor\@empty
```

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

```
8897 \def\Hy@DestName#1#2{%
8898   \pdfdest name{#1}#2\relax
8899 }
```

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.

```
8900 \providecommand*\@pdfborder{0 0 1}
8901 \providecommand*\@pdfborderstyle{}
8902 \def\Hy@undefinedname{UNDEFINED}
8903 \def\find@pdfink#1#2{%
8904   \leavevmode
8905   \protected@edef\Hy@testname{#2}%
8906   \ifx\Hy@testname\@empty
8907     \Hy@Warning{%
8908       Empty destination name,\MessageBreak
8909       using `\'Hy@undefinedname'%
8910     }%
8911     \let\Hy@testname\Hy@undefinedname
8912   \else
8913     \Hy@pstringdef\Hy@testname{%
```

```

8914     \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
8915   }%
8916 \fi
8917 \Hy@StartlinkName{%
8918   \ifHy@pdfa /F 4\fi
8919   \Hy@setpdfborder
8920   \Hy@setpdfhighlight
8921   \ifx\CurrentBorderColor\relax
8922     \else
8923       /C[\CurrentBorderColor]%
8924     \fi
8925   }\Hy@testname
8926 \expandafter\Hy@colorlink\csname @#1color\endcsname
8927 }
8928 \def\Hy@StartlinkName#1#2{%
8929   \pdfstartlink attr{#1}goto name{#2}\relax
8930 }
8931 \def\close@pdfink{%
8932   \Hy@endcolorlink
8933   \Hy@VerboseLinkStop
8934   \pdfendlink
8935 }
8936 \def\hyper@anchor#1{%
8937   \new@pdfink{#1}\anchor@spot\pdf@endanchor
8938 }
8939 \def\hyper@anchorstart#1{%
8940   \new@pdfink{#1}%
8941   \Hy@activeanchortrue
8942 }
8943 \def\hyper@anchorend{%
8944   \pdf@endanchor
8945   \Hy@activeanchorfalse
8946 }
8947 \def\hyper@linkstart#1#2{%
8948   \Hy@VerboseLinkStart{#1}{#2}%
8949   \@ifundefined{@#1bordercolor}{%
8950     \let\CurrentBorderColor\relax
8951   }{%
8952     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8953   }%
8954   \find@pdfink{#1}{#2}%
8955 }
8956 \def\hyper@linkend{\close@pdfink}
8957 \def\hyper@link#1#2#3{%
8958   \Hy@VerboseLinkStart{#1}{#2}%
8959   \@ifundefined{@#1bordercolor}{%
8960     \let\CurrentBorderColor\relax
8961   }{%
8962     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8963   }%
8964   \find@pdfink{#1}{#2}#3\Hy@xspace@end
8965   \close@pdfink
8966 }
8967 \let\CurrentBorderColor\@linkbordercolor

```



```

8968 \def\hyper@linkurl#1#2{%
8969 \begingroup
8970 \Hy@pstringdef\Hy@pstringURI{#2}%
8971 \hyper@chars
8972 \leavevmode
8973 \pdfstartlink
8974 attr{%
8975 \Hy@setpdfborder
8976 \Hy@setpdfhighlight
8977 \ifx\@urlbordercolor\relax
8978 \else
8979 /C[\@urlbordercolor]%
8980 \fi
8981 }%
8982 user{%
8983 /Subtype/Link%
8984 \ifHy@pdfa /F 4\fi
8985 /A<<%
8986 /Type/Action%
8987 /S/URI%
8988 /URI(\Hy@pstringURI)%
8989 \ifHy@href@ismap
8990 /IsMap true%
8991 \fi
8992 \Hy@href@nextactionraw
8993 >>%
8994 }%
8995 \relax
8996 \Hy@colorlink\@urlcolor#1\Hy@xspace@end
8997 \close@pdfink
8998 \endgroup
8999 }
9000 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
9001 \begingroup
9002 \def\Hy@pstringF{#2}%
9003 \Hy@CleanupFile\Hy@pstringF
9004 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
9005 \Hy@pstringdef\Hy@pstringD{#3}%
9006 \Hy@MakeRemoteAction
9007 \leavevmode
9008 \pdfstartlink
9009 attr{%
9010 \Hy@setpdfborder
9011 \Hy@setpdfhighlight
9012 \ifx\@filebordercolor\relax
9013 \else
9014 /C[\@filebordercolor]%
9015 \fi
9016 }%
9017 user {%
9018 /Subtype/Link%
9019 \ifHy@pdfa /F 4\fi
9020 /A<<%
9021 /F(\Hy@pstringF)%

```

```

9022      /S/GoToR%
9023      \Hy@SetNewWindow
If #3 is empty, page 0; if its a number, Page number, otherwise a named destina-
tion.
\afterassignment\xxx\count@=0\foo!%

\def\xxx#1!{%
\if\xxx#1\xxx
  foo was an integer
\else
  it wasnt
\fi}

9024      \ifx\#3\%
9025      /D[\Hy@href@page\@pdfremotestartview]%
9026      \else
9027      /D(\Hy@pstringD)%
9028      \fi
9029      \Hy@href@nextactionraw
9030      >>%
9031      }%
9032      \relax
9033      \Hy@colorlink\@filecolor#1\Hy@xspace@end
9034      \close@pdfink
9035      \endgroup
9036 }
9037 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
9038 \begingroup
9039 \Hy@pstringdef\Hy@pstringF{#1}%
9040 \Hy@pstringdef\Hy@pstringP{#3}%
9041 \leavevmode
9042 \pdfstartlink
9043 attr{%
9044 \Hy@setpdfborder
9045 \Hy@setpdfhighlight
9046 \ifx\@runbordercolor\relax
9047 \else
9048 /C[\@runbordercolor]%
9049 \fi
9050 }%
9051 user {%
9052 /Subtype/Link%
9053 \ifHy@pdfa /F 4\fi
9054 /A<<%
9055 /F(\Hy@pstringF)%
9056 /S/Launch%
9057 \Hy@SetNewWindow
9058 \ifx\#3\%
9059 \else
9060 /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
9061 \fi
9062 \Hy@href@nextactionraw
9063 >>%

```

```

9064 }%
9065 \relax
9066 \Hy@colorlink\@runcolor#2\Hy@xspace@end
9067 \close@pdfink
9068 \endgroup
9069 }

```

\PDF@SetupDox

```

9070 \def\PDF@SetupDoc{%
9071 \ifx\@pdfpagescrop\@empty
9072 \else
9073 \edef\process@me{%
9074 \pdfpagesattr={%
9075 /CropBox[\@pdfpagescrop]%
9076 \expandafter\ifx\expandafter\\\the\pdfpagesattr\\%
9077 \else
9078 ^^J\the\pdfpagesattr
9079 \fi
9080 }%
9081 }%
9082 \process@me
9083 \fi
9084 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9085 \pdfcatalog{%
9086 /PageMode/\@pdfpagemode
9087 \ifx\@baseurl\@empty
9088 \else
9089 /URI<</Base(\Hy@pstringB)>>%
9090 \fi
9091 }%
9092 \ifx\@pdfstartpage\@empty
9093 \else
9094 \ifx\@pdfstartview\@empty
9095 \else
9096 openaction goto page\@pdfstartpage{\@pdfstartview}%
9097 \fi
9098 \fi
9099 \edef\Hy@temp{%
9100 \ifHy@pdftoolbar\else /HideToolbar true\fi
9101 \ifHy@pdfmenubar\else /HideMenubar true\fi
9102 \ifHy@pdfwindowui\else /HideWindowUI true\fi
9103 \ifHy@pdffitwindow /FitWindow true\fi
9104 \ifHy@pdfcenterwindow /CenterWindow true\fi
9105 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9106 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9107 \Hy@UseNameKey{Direction}\@pdfdirection
9108 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9109 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9110 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9111 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9112 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9113 \Hy@UseNameKey{Duplex}\@pdfduplex
9114 \ifx\@pdfpicktraybypdfsize\@empty
9115 \else

```

```

9116     /PickTrayByPDFSize \@pdfpicktraybypdfsize
9117     \fi
9118     \ifx\@pdfprintpagerange\@empty
9119     \else
9120     /PrintPageRange[\@pdfprintpagerange]%
9121     \fi
9122     \ifx\@pdfnumcopies\@empty
9123     \else
9124     /NumCopies \@pdfnumcopies
9125     \fi
9126 }%
9127 \pdfcatalog{%
9128     \ifx\Hy@temp\@empty
9129     \else
9130     /ViewerPreferences<<\Hy@temp>>%
9131     \fi
9132     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9133     \ifx\@pdflang\relax
9134     \else
9135     /Lang(\@pdflang)%
9136     \fi
9137 }%
9138 }

```

\PDF@FinishDoc

```

9139 \def\PDF@FinishDoc{%
9140     \pdf@ifdraftmode-{}-%
9141     \Hy@UseMaketitleInfos
9142     \HyInfo@GenerateAddons
9143     \pdfinfo{%
9144         /Author(\@pdfauthor)%
9145         /Title(\@pdftitle)%
9146         /Subject(\@pdfsubject)%
9147         /Creator(\@pdfcreator)%
9148         \ifx\@pdfcreationdate\@empty
9149         \else
9150         /CreationDate(\@pdfcreationdate)%
9151         \fi
9152         \ifx\@pdfmoddate\@empty
9153         \else
9154         /ModDate(\@pdfmoddate)%
9155         \fi
9156         \ifx\@pdfproducer\relax
9157         \else
9158         /Producer(\@pdfproducer)%
9159         \fi
9160         /Keywords(\@pdfkeywords)%
9161         \ifx\@pdftrapped\@empty
9162         \else
9163         /Trapped/\@pdftrapped
9164         \fi
9165     \HyInfo@Addons
9166 }%
9167 }%

```

```

9168 \Hy@DisableOption{pdfauthor}%
9169 \Hy@DisableOption{pdftitle}%
9170 \Hy@DisableOption{pdfsubject}%
9171 \Hy@DisableOption{pdfcreator}%
9172 \Hy@DisableOption{addtopdfcreator}%
9173 \Hy@DisableOption{pdfcreationdate}%
9174 \Hy@DisableOption{pdfmoddate}%
9175 \Hy@DisableOption{pdfproducer}%
9176 \Hy@DisableOption{pdfkeywords}%
9177 \Hy@DisableOption{pdftrapped}%
9178 \Hy@DisableOption{pdfinfo}%
9179 }

```

`\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`.

```

9180 \def\hyper@pagetransition{%
9181   \ifx\@pdfpagetransition\relax
9182   \else
9183     \expandafter\Hy@RemoveTransPageAttr
9184     \the\pdfpageattr^^J/Trans{}}>>\END
9185   \ifx\@pdfpagetransition\@empty
9186   \else
9187     \edef\@processme{%
9188       \global\pdfpageattr{%
9189         \the\pdfpageattr
9190         ^^J/Trans << /S /\@pdfpagetransition\space >>%
9191       }%
9192     }%
9193     \@processme
9194   \fi
9195 \fi
9196 }

```

`\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.

```

9197 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
9198   \ifx\#2\%
9199     \global\pdfpageattr{#1}%
9200   \else
9201     \Hy@RemoveTransPageAttr#1#4\END
9202   \fi
9203 }

```

`\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`.

```

9204 \def\hyper@pageduration{%
9205   \ifx\@pdfpageduration\relax
9206   \else

```

```

9207 \expandafter
9208 \Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
9209 \ifx\@pdfpageduration\@empty
9210 \else
9211 \edef\@processme{%
9212 \global\pdfpageattr{%
9213 \the\pdfpageattr
9214 ^^J/Dur \@pdfpageduration\space
9215 }%
9216 }%
9217 \@processme
9218 \fi
9219 \fi
9220 }

```

`\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.

```

9221 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
9222 \ifx\#2\%
9223 \global\pdfpageattr{#1}%
9224 \else
9225 \Hy@RemoveDurPageAttr#1#4\END
9226 \fi
9227 }

9228 \pdf@ifdraftmode{}{%
9229 \g@addto@macro\Hy@EveryPageHook{%
9230 \hyper@pagetransition
9231 \hyper@pageduration
9232 }%
9233 }

```

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

```

9234 </pdfTeX>
9235 <{*pdfTeX | xetex}>
9236 \Hy@AtBeginDocument{%
9237 \ifHy@setpagesize
9238 \expandafter\@firstofone
9239 \else
9240 \expandafter\@gobble
9241 \fi
9242 {%
9243 \@ifclassloaded{seminar}{%
9244 <{*pdfTeX}>
9245 \setlength{\pdfhorigin}{1truein}%
9246 \setlength{\pdfvorigin}{1truein}%
9247 </pdfTeX>
9248 \ifportrait
9249 \ifdim\paperwidth=\z@
9250 \else
9251 \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%

```

```

9252     \fi
9253     \ifdim\paperheight=\z@
9254     \else
9255         \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
9256     \fi
9257 \else
9258     \ifdim\paperheight=\z@
9259     \else
9260         \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
9261     \fi
9262     \ifdim\paperwidth=\z@
9263     \else
9264         \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
9265     \fi
9266 \fi
9267 }{%
9268     \ifnum\mag=\@m
9269     \ifdim\stockwidth>\z@
9270     \ifdim\stockheight>\z@
9271         \setlength{\pdfpagewidth}{\stockwidth}%
9272         \setlength{\pdfpageheight}{\stockheight}%
9273     \else
9274         \ifdim\paperwidth>\z@
9275         \ifdim\paperheight>\z@
9276             \setlength{\pdfpagewidth}{\paperwidth}%
9277             \setlength{\pdfpageheight}{\paperheight}%
9278         \fi
9279     \fi
9280 \fi
9281 \else
9282     \ifdim\stockwidth=\z@
9283     \ifdim\paperwidth>\z@
9284     \ifdim\paperheight>\z@
9285         \setlength{\pdfpagewidth}{\paperwidth}%
9286         \setlength{\pdfpageheight}{\paperheight}%
9287     \fi
9288 \fi
9289 \fi
9290 \fi
9291 \fi
9292 }%
9293 }%
9294 \Hy@DisableOption{setpagesize}%
9295 }
9296 </pdfTeX | xetex>
9297 <*pdfTeX>
9298 \def\Acrobatmenu#1#2{%
9299 \Hy@Acrobatmenu{#1}{#2}{%
9300 \leavevmode
9301 \EdefEscapeName\Hy@temp@menu{#1}%
9302 \pdfstartlink
9303 attr{%
9304 \Hy@setpdfborder
9305 \Hy@setpdfhighlight

```

```

9306     \ifx\@menubordercolor\relax
9307     \else
9308       /C[\@menubordercolor]%
9309     \fi
9310   }%
9311   user{%
9312     /Subtype/Link%
9313     \ifHy@pdfa /F 4\fi
9314     /A<<%
9315     /S/Named%
9316     /N/\Hy@temp@menu
9317     \Hy@href@nextactionraw
9318     >>%
9319   }%
9320   \relax
9321   \Hy@colorlink\@menucolor#2%
9322   \close@pdfink
9323 }%
9324 }

```

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

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

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

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

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

```
9325 </pdfTeX>
```

### 44.3 hypertex

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

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

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

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

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

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

The *href*, *name* and *end* commands are used to do the basic hypertext operations of establishing links between sections of documents. The *image* command is intended (as with current html viewers) to place an image of arbitrary graphical



format on the page in the current location. The `base_name` command is 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.

```

9326 (*hypertext)
9327 \providecommand*\XR@ext}{dvi}
9328 \let\PDF@FinishDoc\@empty
9329 \def\PDF@SetupDoc{%
9330   \ifx\@baseurl\@empty
9331     \else
9332       \special{html:<base href="\@baseurl">}%
9333   \fi
9334 }
9335 \Hy@WrapperDef\hyper@anchor#1{%
9336   \Hy@SaveLastskip
9337   \Hy@VerboseAnchor{#1}%
9338   \begingroup
9339     \let\protect=\string
9340     \hyper@chars
9341     \special{html:<a name=%
9342       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9343   \endgroup
9344   \Hy@activeanchortrue
9345   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9346   \special{html:</a>}%
9347   \Hy@activeanchorfalse
9348   \Hy@RestoreLastskip
9349 }
9350 \Hy@WrapperDef\hyper@anchorstart#1{%
9351   \Hy@SaveLastskip
9352   \Hy@VerboseAnchor{#1}%
9353   \begingroup
9354     \hyper@chars
9355     \special{html:<a name=%
9356       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9357   \endgroup
9358   \Hy@activeanchortrue
9359 }
9360 \def\hyper@anchorend{%
9361   \special{html:</a>}%
9362   \Hy@activeanchorfalse

```

```

9363 \Hy@RestoreLastskip
9364 }
9365 \def\@urltype{url}
9366 \def\hyper@linkstart#1#2{%
9367 \Hy@VerboseLinkStart{#1}{#2}%
9368 \expandafter\Hy@colorlink\csname @#1color\endcsname
9369 \def\Hy@tempa{#1}%
9370 \ifx\Hy@tempa\@urltype
9371 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9372 \else
9373 \begingroup
9374 \hyper@chars
9375 \special{html:<a href=%
9376 \hyper@quote\#\Hy@HyperDestNameFilter{#2}\hyper@quote>}%
9377 \endgroup
9378 \fi
9379 }
9380 \def\hyper@linkend{%
9381 \special{html:</a>}%
9382 \Hy@endcolorlink
9383 }
9384 \def\hyper@linkfile#1#2#3{%
9385 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\#3\fi}%
9386 }
9387 \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.

```

9388 \leavevmode
9389 \ifHy@raiselinks
9390 \Hy@SaveSpaceFactor
9391 \Hy@SaveSavedSpaceFactor
9392 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9393 \Hy@RestoreSavedSpaceFactor
9394 \@linkdim\dp\@tempboxa
9395 \lower\@linkdim\hbox{%
9396 \hyper@chars
9397 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9398 }%
9399 \Hy@colorlink\@urlcolor
9400 \Hy@RestoreSpaceFactor
9401 #1%
9402 \Hy@SaveSpaceFactor
9403 \@linkdim\ht\@tempboxa

```

Because of the interaction with the dvihps 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).

```

9404 \advance\@linkdim by -6.5\p@
9405 \raise\@linkdim\hbox{\special{html:</a>}%
9406 \Hy@endcolorlink
9407 \Hy@RestoreSpaceFactor
9408 \else

```

```

9409 \begingroup
9410 \hyper@chars
9411 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9412 \Hy@colorlink\@urlcolor#1\Hy@xspace@end
9413 \special{html:</a>}%
9414 \Hy@endcolorlink
9415 \endgroup
9416 \fi
9417 }

```

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

```

9418 \def\hyper@link#1#2#3{%
9419 \Hy@VerboseLinkStart{#1}{#2}%
9420 \hyper@linkurl{#3}{\# \HyperDestNameFilter{#2}}%
9421 }

9422 \def\hyper@image#1#2{%
9423 \begingroup
9424 \hyper@chars
9425 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
9426 \endgroup
9427 }
9428 </hypertex>
9429 <*dviwindo>

```

#### 44.4 dviwindo

[This was developed by David Carlisle]. Within a file `dviwindo` hyperlinking is used, for external URL's a call to `\wwwbrowser` is made. (You can define this command before or after loading the `hyperref` package if the default `c:/netscape/netscape` is not suitable) `Dviwindo` could in fact handle external links to dvi files on the same machine without calling a web browser, but that would mean parsing the URL to recognise such, and this is currently not done.

This was more or less blindly copied from the `hypertex` `cfg`. For `dviwindo`,  $\LaTeX$  must specify the size of the active area for links. For some hooks this information is available but for some, the start and end of the link are specified separately in which case a fixed size area of 10000000sp wide by `\baselineskip` high is used.

```

9430 \providecommand*\XR@ext}{dvi}
9431 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
9432 \Hy@WrapperDef\hyper@anchor#1{%
9433 \Hy@SaveLastskip
9434 \Hy@VerboseAnchor{#1}%
9435 \begingroup
9436 \let\protect=\string
9437 \special{mark: #1}%
9438 \endgroup
9439 \Hy@activeanchortrue
9440 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9441 \Hy@activeanchorfalse
9442 \Hy@RestoreLastskip
9443 }
9444 \Hy@WrapperDef\hyper@anchorstart#1{%
9445 \Hy@SaveLastskip

```

```

9446 \Hy@VerboseAnchor{#1}%
9447 \special{mark: #1}%
9448 \Hy@activeanchortrue
9449 }
9450 \def\hyper@anchorend{%
9451 \Hy@activeanchorfalse
9452 \Hy@RestoreLastskip
9453 }
9454 \def\hyper@linkstart#1#2{%
9455 \Hy@VerboseLinkStart{#1}{#2}%
9456 \expandafter\Hy@colorlink\csname @#1color\endcsname
9457 \special{button: %
9458 10000000 %
9459 \number\baselineskip\space
9460 #2%
9461 }%
9462 }
9463 \def\hyper@linkend{%
9464 \Hy@endcolorlink
9465 }
9466 \def\hyper@link#1#2#3{%
9467 \Hy@VerboseLinkStart{#1}{#2}%
9468 \leavevmode
9469 \ifHy@raiselinks
9470 \Hy@SaveSpaceFactor
9471 \Hy@SaveSavedSpaceFactor
9472 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#3}%
9473 \Hy@RestoreSavedSpaceFactor
9474 \@linkdim\dp\@tempboxa
9475 \lower\@linkdim\hbox{%
9476 \special{button: %
9477 \number\wd\@tempboxa\space
9478 \number\ht\@tempboxa\space
9479 #2%
9480 }%
9481 \expandafter\Hy@colorlink\csname @#1color\endcsname
9482 \Hy@RestoreSpaceFactor
9483 #3\Hy@xspace@end
9484 \Hy@SaveSpaceFactor
9485 \Hy@endcolorlink
9486 }%
9487 \@linkdim\ht\@tempboxa
9488 \advance\@linkdim by -6.5\p@
9489 \raise\@linkdim\hbox{}}%
9490 \Hy@RestoreSpaceFactor
9491 \else
9492 \special{button: %
9493 \number\wd\@tempboxa\space
9494 \number\ht\@tempboxa\space
9495 #2%
9496 }%
9497 \expandafter\Hy@colorlink\csname @#1color\endcsname
9498 #3\Hy@xspace@end
9499 \Hy@endcolorlink

```

```

9500 \fi
9501 }
9502 \def\hyper@linkurl#1#2{%
9503 \begingroup
9504 \hyper@chars
9505 \leavevmode
9506 \ifHy@raiselinks
9507 \Hy@SaveSpaceFactor
9508 \Hy@SaveSavedSpaceFactor
9509 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9510 \Hy@RestoreSavedSpaceFactor
9511 \@linkdim\dp\@tempboxa
9512 \lower\@linkdim\hbox{%
9513 \special{button: %
9514 \number\wd\@tempboxa\space
9515 \number\ht\@tempboxa\space
9516 launch: \wwwbrowser\space
9517 #2%
9518 }%
9519 \Hy@colorlink\@urlcolor
9520 \Hy@RestoreSpaceFactor
9521 #1\Hy@xspace@end
9522 \Hy@SaveSpaceFactor
9523 \Hy@endcolorlink
9524 }%
9525 \@linkdim\ht\@tempboxa
9526 \advance\@linkdim by -6.5\p@
9527 \raise\@linkdim\hbox{}}%
9528 \Hy@RestoreSpaceFactor
9529 \else
9530 \special{button: %
9531 \number\wd\@tempboxa\space
9532 \number\ht\@tempboxa\space
9533 launch: \wwwbrowser\space
9534 #2%
9535 }%
9536 \Hy@colorlink\@urlcolor
9537 #1\Hy@xspace@end
9538 \Hy@endcolorlink
9539 \fi
9540 \endgroup
9541 }
9542 \def\hyper@linkfile#1#2#3{%
9543 \begingroup
9544 \hyper@chars
9545 \leavevmode
9546 \ifHy@raiselinks
9547 \Hy@SaveSpaceFactor
9548 \Hy@SaveSavedSpaceFactor
9549 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9550 \Hy@RestoreSavedSpaceFactor
9551 \@linkdim\dp\@tempboxa
9552 \lower\@linkdim\hbox{%
9553 \special{button: %

```

```

9554     \number\wd\@tempboxa\space
9555     \number\ht\@tempboxa\space
9556     #3,%
9557     file: #2%
9558 }%
9559 \Hy@colorlink\@filecolor
9560 \Hy@RestoreSpaceFactor
9561 #1\Hy@xspace@end
9562 \Hy@SaveSpaceFactor
9563 \Hy@endcolorlink
9564 }%
9565 \@linkdim\ht\@tempboxa
9566 \advance\@linkdim by -6.5\p@
9567 \raise\@linkdim\hbox{}%
9568 \Hy@RestoreSpaceFactor
9569 \else
9570 \special{button: %
9571     \number\wd\@tempboxa\space
9572     \number\ht\@tempboxa\space
9573     #3,%
9574     file: #2%
9575 }%
9576 \Hy@colorlink\@filecolor
9577 #1\Hy@xspace@end
9578 \Hy@endcolorlink
9579 \fi
9580 \endgroup
9581 }
9582 \HyInfo@AddonUnsupportedtrue
9583 \def\PDF@FinishDoc{%
9584 \Hy@UseMaketitleInfos
9585 \HyInfo@TrappedUnsupported
9586 \special{PDF: Keywords \@pdfkeywords}%
9587 \special{PDF: Title \@pdftitle}%
9588 \special{PDF: Creator \@pdfcreator}%
9589 \ifx\@pdfcreationdate\@empty
9590 \else
9591 \special{PDF: CreationDate \@pdfcreationdate}%
9592 \fi
9593 \ifx\@pdfmoddate\@empty
9594 \else
9595 \special{PDF: ModDate \@pdfmoddate}%
9596 \fi
9597 \special{PDF: Author \@pdfauthor}%
9598 \ifx\@pdfproducer\relax
9599 \else
9600 \special{PDF: Producer \@pdfproducer}%
9601 \fi
9602 \special{PDF: Subject \@pdfsubject}%
9603 \Hy@DisableOption{pdfauthor}%
9604 \Hy@DisableOption{pdftitle}%
9605 \Hy@DisableOption{pdfsubject}%
9606 \Hy@DisableOption{pdfcreator}%
9607 \Hy@DisableOption{addtopdfcreator}%

```

```

9608 \Hy@DisableOption{pdfcreationdate}%
9609 \Hy@DisableOption{pdfcreationdate}%
9610 \Hy@DisableOption{pdfmoddate}%
9611 \Hy@DisableOption{pdfproducer}%
9612 \Hy@DisableOption{pdfkeywords}%
9613 \Hy@DisableOption{pdftrapped}%
9614 \Hy@DisableOption{pdfinfo}%
9615 }
9616 \def\PDF@SetupDoc{%
9617 \ifx\@baseurl\@empty
9618 \else
9619 \special{PDF: Base \@baseurl}%
9620 \fi
9621 \ifx\@pdfpagescrop\@empty\else
9622 \special{PDF: BBox \@pdfpagescrop}%
9623 \fi
9624 \def\Hy@temp{}%
9625 \ifx\@pdfstartpage\@empty
9626 \else
9627 \ifx\@pdfstartview\@empty
9628 \else
9629 \edef\Hy@temp{%
9630 ,Page=\@pdfstartpage
9631 ,View=\@pdfstartview
9632 }%
9633 \fi
9634 \fi
9635 \edef\Hy@temp{%
9636 \noexpand\pdfmark{%
9637 pdfmark=/DOCVIEW,%
9638 PageMode=/\@pdfpagemode
9639 \Hy@temp
9640 }%
9641 }%
9642 \Hy@temp
9643 \ifx\@pdfpagescrop\@empty
9644 \else
9645 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9646 \fi
9647 \edef\Hy@temp{%
9648 \ifHy@pdftoolbar\else /HideToolbar true\fi
9649 \ifHy@pdfmenubar\else /HideMenubar true\fi
9650 \ifHy@pdfwindowui\else /HideWindowUI true\fi
9651 \ifHy@pdffitwindow /FitWindow true\fi
9652 \ifHy@pdfcenterwindow /CenterWindow true\fi
9653 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9654 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9655 \Hy@UseNameKey{Direction}\@pdfdirection
9656 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9657 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9658 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9659 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9660 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9661 \Hy@UseNameKey{Duplex}\@pdfduplex

```

```

9662 \ifx\@pdfpicktraybypdfsize\@empty
9663 \else
9664 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9665 \fi
9666 \ifx\@pdfprintpagerange\@empty
9667 \else
9668 /PrintPageRange[\@pdfprintpagerange]%
9669 \fi
9670 \ifx\@pdfnumcopies\@empty
9671 \else
9672 /NumCopies \@pdfnumcopies
9673 \fi
9674 }%
9675 \pdfmark{pdfmark=/PUT,%
9676 Raw={%
9677 \string{Catalog\string}<<%
9678 \ifx\Hy@temp\@empty
9679 \else
9680 /ViewerPreferences<<\Hy@temp>>%
9681 \fi
9682 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9683 \ifx\@pdflang\relax
9684 \else
9685 /Lang(\@pdflang)%
9686 \fi
9687 >>%
9688 }%
9689 }%
9690 }
9691 (/dviwindo)
9692 (*dvipdfm | xetex)

```

## 44.5 dvipdfm/xetex dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

(x)dvipdfmx replaces destination names by numbers. This makes it impossible to link from an external document with xr-hyper, so from version 7.00j on this is suppressed with a config special.

```

9693 \special{dvipdfmx:config C 0x0010}
9694 \providecommand*\XR@ext}{pdf}
9695 \Hy@setbreaklinks{true}
9696 \def\HyPat@ObjRef{%
9697 @[\^ ]+}%
9698 }
9699 \newsavebox{\pdfm@box}
9700 \def\@pdfm@mark#1{\special{pdf:#1}}
9701 \Hy@WrapperDef\@pdfm@dest#1{%
9702 \Hy@SaveLastskip
9703 \Hy@VerboseAnchor{#1}%
9704 \begingroup
9705 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9706 \def\x{XYZ}%
9707 \ifx\x\pdfview

```



```

9708   \def\x{XYZ @xpos @ypos null}%
9709   \else
9710   \def\x{FitH}%
9711   \ifx\x\@pdfview
9712     \def\x{FitH @ypos}%
9713   \else
9714     \def\x{FitBH}%
9715     \ifx\x\@pdfview
9716       \def\x{FitBH @ypos}%
9717     \else
9718       \def\x{FitV}%
9719       \ifx\x\@pdfview
9720         \def\x{FitV @xpos}%
9721       \else
9722         \def\x{FitBV}%
9723         \ifx\x\@pdfview
9724           \def\x{FitBV @xpos}%
9725         \else
9726           \def\x{Fit}%
9727           \ifx\x\@pdfview
9728             \let\x\@pdfview
9729           \else
9730             \def\x{FitB}%
9731             \ifx\x\@pdfview
9732               \let\x\@pdfview
9733             \else
9734               \def\x{FitR}%
9735               \ifx\x\@pdfview
9736                 \Hy@Warning{\`pdfview=FitR' is not supported}%
9737                 \def\x{XYZ @xpos @ypos null}%
9738               \else
9739                 \@onelevel@sanitize\@pdfview
9740                 \Hy@Warning{%
9741                   Unknown value `\'@pdfview' for pdfview%
9742                 }%
9743                 \def\x{XYZ @xpos @ypos null}%
9744               \fi
9745             \fi
9746           \fi
9747         \fi
9748       \fi
9749     \fi
9750   \fi
9751   \fi
9752   \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
9753 \endgroup
9754 \Hy@RestoreLastskip
9755 }
9756 \providecommand*\@pdfview{XYZ}
9757 \providecommand*\@pdfborder{0 0 1}
9758 \providecommand*\@pdfborderstyle{}
9759 \def\hyper@anchor#1{%
9760   \@pdfm@dest{#1}%
9761 }

```

```

9762 \def\hyper@anchorstart#1{%
9763 \Hy@activeanchortrue
9764 \@pdfm@dest{#1}%
9765 }
9766 \def\hyper@anchorend{%
9767 \Hy@activeanchorfalse
9768 }

9769 \newcounter{Hy@AnnotLevel}

9770 \ifHy@ocgcolorlinks
9771 \def\OBJ@OCG@view{@OCG@view}%
9772 \@pdfm@mark{%
9773 obj \OBJ@OCG@view <<%
9774 /Type/OCG%
9775 /Name(View)%
9776 /Usage<<%
9777 /Print<<%
9778 /PrintState/OFF%
9779 >>%
9780 /View<<%
9781 /ViewState/ON%
9782 >>%
9783 >>%
9784 >>%
9785 }%
9786 \@pdfm@mark{close \OBJ@OCG@view}%
9787 \def\OBJ@OCG@print{@OCG@print}%
9788 \@pdfm@mark{%
9789 obj \OBJ@OCG@print <<%
9790 /Type/OCG%
9791 /Name(Print)%
9792 /Usage<<%
9793 /Print<<%
9794 /PrintState/ON%
9795 >>%
9796 /View<<%
9797 /ViewState/OFF%
9798 >>%
9799 >>%
9800 >>%
9801 }%
9802 \@pdfm@mark{close \OBJ@OCG@print}%
9803 \def\OBJ@OCGs{@OCGs}%
9804 \@pdfm@mark{%
9805 obj \OBJ@OCGs [%
9806 \OBJ@OCG@view\space\OBJ@OCG@print
9807 ]%
9808 }%
9809 \@pdfm@mark{close \OBJ@OCGs}%
9810 \@pdfm@mark{%
9811 put @catalog <<%
9812 /OCProperties<<%
9813 /OCGs \OBJ@OCGs
9814 /D<<%

```

```

9815 /OFF[\OBJ@OCG@print]%
9816 /AS[%
9817 <<%
9818 /Event/View%
9819 /OCGs \OBJ@OCGs
9820 /Category[/View]%
9821 >>%
9822 <<%
9823 /Event/Print%
9824 /OCGs \OBJ@OCGs
9825 /Category[/Print]%
9826 >>%
9827 <<%
9828 /Event/Export%
9829 /OCGs \OBJ@OCGs
9830 /Category[/Print]%
9831 >>%
9832 ]%
9833 >>%
9834 >>%
9835 >>%
9836 }%
9837 \AtBeginShipout{%
9838 \setbox\AtBeginShipoutBox=\hbox{%
9839 \copy\AtBeginShipoutBox
9840 \@pdfm@mark{%
9841 put @resources <<%
9842 /Properties<<%
9843 /OCView \OBJ@OCG@view
9844 /OCPrint \OBJ@OCG@print
9845 >>%
9846 >>%
9847 }%
9848 }%
9849 }%
9850 \Hy@AtBeginDocument{%
9851 \def\Hy@colorlink#1{%
9852 \begingroup
9853 \ifHy@ocgcolorlinks
9854 \def\Hy@ocgcolor{#1}%
9855 \setbox0=\hbox\bgroup\color@begingroup
9856 \else
9857 \HyColor@UseColor#1%
9858 \fi
9859 }%
9860 \def\Hy@endcolorlink{%
9861 \ifHy@ocgcolorlinks
9862 \color@endgroup\egroup
9863 \mbox{%
9864 \@pdfm@mark{content /OC/OCPrint BDC}%
9865 \rlap{\copy0}%
9866 \@pdfm@mark{content EMC/OC/OCView BDC}%
9867 \begingroup
9868 \expandafter\HyColor@UseColor\Hy@ocgcolor

```

```

9869     \box0 %
9870     \endgroup
9871     \@pdfm@mark{content EMC}%
9872   }%
9873   \fi
9874   \endgroup
9875 }%
9876 }%
9877 \else
9878 \Hy@DisableOption{ocgcolorlinks}%
9879 \fi

```

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

```

9880 \def\Hy@BeginAnnot#1{%
9881   \global\advance\c@Hy@AnnotLevel\@ne
9882   \ifnum\c@Hy@AnnotLevel=\@ne
9883     #1%
9884   \fi
9885 }
9886 \def\Hy@endAnnot{%
9887   \ifnum\value{Hy@AnnotLevel}=\@ne
9888     \Hy@endcolorlink
9889     \@pdfm@mark{eann}%
9890   \fi
9891   \global\advance\c@Hy@AnnotLevel\m@ne
9892 }
9893 \def\Hy@undefinedname{UNDEFINED}
9894 \def\hyper@linkstart#1#2{%
9895   \Hy@VerboseLinkStart{#1}{#2}%
9896   \leavevmode
9897   \Hy@BeginAnnot{%
9898     \protected@edef\Hy@testname{#2}%
9899     \ifx\Hy@testname\@empty
9900       \Hy@Warning{%
9901         Empty destination name,\MessageBreak
9902         using `\'Hy@undefinedname'%
9903       }%
9904     \let\Hy@testname\Hy@undefinedname
9905   \else
9906     \Hy@pstringdef\Hy@testname{%
9907       \expandafter\HyperDestNameFilter\expandafter{%
9908         \Hy@testname
9909       }%
9910     }%
9911   \fi
9912   \@pdfm@mark{%
9913     bann<<%
9914     /Type/Annot%
9915     /Subtype/Link%
9916     \ifHy@pdfa /F 4\fi
9917     \Hy@setpdfborder
9918     \Hy@setpdfhighlight
9919     \expandafter\ifx\csname @#1bordercolor\endcsname\relax

```

```

9920     \else
9921         /C[\csname @#1bordercolor\endcsname]%
9922     \fi
9923     /A<<%
9924         /S/GoTo%
9925         /D(\Hy@testname)%
9926         \Hy@href@nextactionraw
9927     >>%
9928     >>%
9929 }%
9930 \expandafter\Hy@colorlink\csname @#1color\endcsname
9931 }%
9932 }
9933 \def\hyper@linkend{\Hy@EndAnnot}%
9934 \def\hyper@link#1#2#3{%
9935     \hyper@linkstart{#1}{#2}#3\Hy@xspace@end\hyper@linkend
9936 }
9937 \def\hyper@linkfile#1#2#3{%
9938     \leavevmode
9939     \Hy@BeginAnnot{%
9940         \def\Hy@pstringF{#2}%
9941         \Hy@CleanupFile\Hy@pstringF
9942         \Hy@pstringdef\Hy@pstringF\Hy@pstringF
9943         \Hy@pstringdef\Hy@pstringD{#3}%
9944         \Hy@MakeRemoteAction
9945         \@pdfm@mark{%
9946             bann<<%
9947                 /Type/Annot%
9948                 /Subtype/Link%
9949                 \ifHy@pdfa /F 4\fi
9950                 \Hy@setpdfborder
9951                 \Hy@setpdfhighlight
9952                 \ifx\@filebordercolor\relax
9953                     \else
9954                         /C[\@filebordercolor]%
9955                     \fi
9956                 /A<<%
9957                 /S/GoToR%
9958                 /F(\Hy@pstringF)%
9959                 /D%
9960                 \ifx\#3\%
9961                     [\Hy@href@page\@pdfremotestartview]%
9962                 \else
9963                     (\Hy@pstringD)%
9964                 \fi
9965                 \Hy@SetNewWindow
9966                 \Hy@href@nextactionraw
9967             >>%
9968             >>%
9969         }%
9970     \Hy@colorlink\@filecolor
9971 }%
9972 #1\Hy@xspace@end
9973 \Hy@EndAnnot

```

```

9974 }
9975 \def\@hyper@launch run:#1\|#2#3{% filename, anchor text linkname
9976 \leavevmode
9977 \Hy@BeginAnnot{%
9978 \Hy@pstringdef\Hy@pstringF{#1}%
9979 \Hy@pstringdef\Hy@pstringP{#3}%
9980 \@pdfm@mark{%
9981 bann<<%
9982 /Type/Annot%
9983 /Subtype/Link%
9984 \ifHy@pdfa /F 4\fi
9985 \Hy@setpdfborder
9986 \Hy@setpdfhighlight
9987 \ifx\@runbordercolor\relax
9988 \else
9989 /C[\@runbordercolor]%
9990 \fi
9991 /A<<%
9992 /F(\Hy@pstringF)%
9993 /S/Launch%
9994 \Hy@SetNewWindow
9995 \ifx\|#3\|%
9996 \else
9997 /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
9998 \fi
9999 \Hy@href@nextactionraw
10000 >>%
10001 >>%
10002 }%
10003 \Hy@colorlink\@runcolor
10004 }%
10005 #2\Hy@xspace@end
10006 \Hy@endAnnot
10007 }
10008 \def\hyper@linkurl#1#2{%
10009 \leavevmode
10010 \Hy@BeginAnnot{%
10011 \Hy@pstringdef\Hy@pstringURI{#2}%
10012 \@pdfm@mark{%
10013 bann<<%
10014 /Type/Annot%
10015 /Subtype/Link%
10016 \ifHy@pdfa /F 4\fi
10017 \Hy@setpdfborder
10018 \Hy@setpdfhighlight
10019 \ifx\@urlbordercolor\relax
10020 \else
10021 /C[\@urlbordercolor]%
10022 \fi
10023 /A<<%
10024 /S/URI%
10025 /URI(\Hy@pstringURI)%
10026 \ifHy@href@ismap
10027 /IsMap true%

```

```

10028     \fi
10029     \Hy@href@nextactionraw
10030     >>%
10031     >>%
10032     }%
10033     \Hy@colorlink\@urlcolor
10034     }%
10035     #1\Hy@xspace@end
10036     \Hy@EndAnnot
10037 }
10038 \def\Acrobatmenu#1#2{%
10039 \Hy@Acrobatmenu{#1}{#2}{%
10040 \Hy@BeginAnnot{%
10041 \EdefEscapeName\Hy@temp@menu{#1}%
10042 \@pdfm@mark{%
10043     bann<<%
10044     /Type/Annot%
10045     /Subtype/Link%
10046     \ifHy@pdfa /F 4\fi
10047     \Hy@setpdfborder
10048     \Hy@setpdfhighlight
10049     \ifx\@menubordercolor\relax
10050     \else
10051     /C[\@menubordercolor]%
10052     \fi
10053     /A<<%
10054     /S/Named%
10055     /N/\Hy@temp@menu
10056     \Hy@href@nextactionraw
10057     >>%
10058     >>%
10059     }%
10060     \Hy@colorlink\@menucolor
10061     }%
10062     #2\Hy@xspace@end
10063     \Hy@EndAnnot
10064     }%
10065 }
10066
10067 \def\PDF@FinishDoc{%
10068 \Hy@UseMaketitleInfos
10069 \HyInfo@GenerateAddons
10070 \@pdfm@mark{%
10071     docinfo<<%
10072     /Title(\@pdftitle)%
10073     /Subject(\@pdfsubject)%
10074     /Creator(\@pdfcreator)%
10075     \ifx\@pdfcreationdate\@empty
10076     \else
10077     /CreationDate(\@pdfcreationdate)%
10078     \fi
10079     \ifx\@pdfmoddate\@empty
10080     \else
10081     /ModDate(\@pdfmoddate)%

```

```

10082 \fi
10083 /Author(\@pdfauthor)%
10084 \ifx\@pdfproducer\relax
10085 \else
10086 /Producer(\@pdfproducer)%
10087 \fi
10088 /Keywords(\@pdfkeywords)%
10089 \ifx\@pdftrapped\@empty
10090 \else
10091 /Trapped/\@pdftrapped
10092 \fi
10093 \HyInfo@Addons
10094 >>%
10095 }%
10096 \Hy@DisableOption{pdfauthor}%
10097 \Hy@DisableOption{pdftitle}%
10098 \Hy@DisableOption{pdfsubject}%
10099 \Hy@DisableOption{pdfcreator}%
10100 \Hy@DisableOption{addtopdfcreator}%
10101 \Hy@DisableOption{pdfcreationdate}%
10102 \Hy@DisableOption{pdfcreationdate}%
10103 \Hy@DisableOption{pdfmoddate}%
10104 \Hy@DisableOption{pdfproducer}%
10105 \Hy@DisableOption{pdfkeywords}%
10106 \Hy@DisableOption{pdftrapped}%
10107 \Hy@DisableOption{pdfinfo}%
10108 }

10109 \def\PDF@SetupDoc{%
10110 \edef\Hy@temp{%
10111 \ifHy@pdftoolbar\else /HideToolbar true\fi
10112 \ifHy@pdfmenubar\else /HideMenubar true\fi
10113 \ifHy@pdfwindowui\else /HideWindowUI true\fi
10114 \ifHy@pdfwindow /FitWindow true\fi
10115 \ifHy@pdfcenterwindow /CenterWindow true\fi
10116 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10117 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10118 \Hy@UseNameKey{Direction}\@pdfdirection
10119 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10120 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10121 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10122 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10123 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10124 \Hy@UseNameKey{Duplex}\@pdfduplex
10125 \ifx\@pdfpicktraybypdfsize\@empty
10126 \else
10127 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10128 \fi
10129 \ifx\@pdfprintpagerange\@empty
10130 \else
10131 /PrintPageRange[\@pdfprintpagerange]%
10132 \fi
10133 \ifx\@pdfnumcopies\@empty
10134 \else
10135 /NumCopies \@pdfnumcopies

```



```

10136 \fi
10137 }%
10138 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10139 \@pdfm@mark{%
10140 docview<<%
10141 \ifx\@pdfstartpage\@empty
10142 \else
10143 \ifx\@pdfstartview\@empty
10144 \else
10145 /OpenAction[@page\@pdfstartpage\@pdfstartview]%
10146 \fi
10147 \fi
10148 \ifx\@baseurl\@empty
10149 \else
10150 /URI<</Base(\Hy@pstringB)>>%
10151 \fi
10152 /PageMode/\@pdfpagemode
10153 \ifx\Hy@temp\@empty
10154 \else
10155 /ViewerPreferences<<\Hy@temp>>%
10156 \fi
10157 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10158 \ifx\@pdflang\relax
10159 \else
10160 /Lang(\@pdflang)%
10161 \fi
10162 >>%
10163 }%
10164 \ifx\@pdfpagescrop\@empty
10165 \else
10166 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}%
10167 \fi
10168 }
10169 </dvi-pdfm | xetex>
10170 < *dvi-pdfm | xetex>

```

\hyper@pagetransition

```

10171 \def\hyper@pagetransition{%
10172 \ifx\@pdfpagetransition\relax
10173 \else
10174 \ifx\@pdfpagetransition\@empty
10175 \else
10176 \special{pdf:put @thispage %
10177 <</Trans<</S/\@pdfpagetransition>>>>%
10178 }%
10179 \fi
10180 \fi
10181 }

```

\hyper@pageduration

```

10182 \def\hyper@pageduration{%
10183 \ifx\@pdfpageduration\relax
10184 \else
10185 \ifx\@pdfpageduration\@empty

```

```

10186 \else
10187 \special{pdf:put @thispage %
10188 <</Dur \@pdfpageduration>>%
10189 }%
10190 \fi
10191 \fi
10192 }

10193 \g@addto@macro\Hy@EveryPageBoxHook{%
10194 \hyper@pagetransition
10195 \hyper@pageduration
10196 }

10197 </dvipdfm | xetex>

```

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

```

10198 (*dvipdfm)
10199 \AtBeginShipoutFirst{%
10200 \ifHy@setpagesize
10201 \begingroup
10202 \ifnum\mag=\@m
10203 \ifdim\stockwidth>\z@
10204 \ifdim\stockheight>\z@
10205 \special{papersize=\the\stockwidth,\the\stockheight}%
10206 \else
10207 \ifdim\paperwidth>\z@
10208 \ifdim\paperheight>\z@
10209 \special{papersize=\the\paperwidth,\the\paperheight}%
10210 \fi
10211 \fi
10212 \fi
10213 \else
10214 \ifdim\stockwidth=\z@
10215 \ifdim\paperwidth>\z@
10216 \ifdim\paperheight>\z@
10217 \special{papersize=\the\paperwidth,\the\paperheight}%
10218 \fi
10219 \fi
10220 \fi
10221 \fi
10222 \fi
10223 \endgroup
10224 \fi
10225 \Hy@DisableOption{setpagesize}%
10226 }
10227 </dvipdfm>

```

## 44.6 VTeX typesetting system

Provided by MicroPress, May 1998. They require VTeX version 6.02 or newer; see <http://www.micropress-inc.com/> for details.

```

10228 (*vtexhtml)
10229 \providecommand*\XR@ext}{htm}
10230 \RequirePackage{vtexhtml}

```

```

10231 \newif\if@Localurl
10232 \let\PDF@FinishDoc\@empty
10233 \def\PDF@SetupDoc{%
10234   \ifx\@baseurl\@empty
10235   \else
10236     \special{!direct <base href="\@baseurl">}%
10237   \fi
10238 }
10239 \def\@urltype{url}
10240 \def\hyper@link#1#2#3{%
10241   \Hy@VerboseLinkStart{#1}{#2}%
10242   \leavevmode
10243   \special{!direct <a href=%
10244     \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
10245   #3\Hy@xspace@end
10246   \special{!direct </a>}%
10247 }
10248 \def\hyper@linkurl#1#2{%
10249   \begingroup
10250     \hyper@chars
10251     \leavevmode
10252     \MathBSuppress=1\relax
10253     \special{!direct <a href=%
10254       \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}%
10255     #1\Hy@xspace@end
10256     \MathBSuppress=0\relax
10257     \special{!direct </a>}%
10258   \endgroup
10259 }
10260 \def\hyper@linkfile#1#2#3{%
10261   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
10262 }
10263 \def\hyper@linkstart#1#2{%
10264   \Hy@VerboseLinkStart{#1}{#2}%
10265   \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
10266     \@Localurltrue
10267     \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
10268   \else
10269     \@Localurlfalse
10270   \begingroup
10271     \hyper@chars
10272     \special{!aref \HyperDestNameFilter{#2}}%
10273   \endgroup
10274   \fi
10275 }
10276 \def\hyper@linkend{%
10277   \if@Localurl
10278     \special{!endaref}%
10279   \else
10280     \special{!direct </a>}%
10281   \fi
10282 }
10283 \Hy@WrapperDef\hyper@anchorstart#1{%
10284   \Hy@SaveLastskip

```

```

10285 \Hy@VerboseAnchor{#1}%
10286 \begingroup
10287 \hyper@chars
10288 \special{!aname #1}%
10289 \special{!direct <a name=%
10290 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10291 \endgroup
10292 \Hy@activeanchortrue
10293 }
10294 \def\hyper@anchorend{%
10295 \special{!direct </a>}%
10296 \Hy@activeanchorfalse
10297 \Hy@RestoreLastskip
10298 }
10299 \Hy@WrapperDef\hyper@anchor#1{%
10300 \Hy@SaveLastskip
10301 \Hy@VerboseAnchor{#1}%
10302 \begingroup
10303 \let\protect=\string
10304 \hyper@chars
10305 \leavevmode
10306 \special{!aname #1}%
10307 \special{!direct <a name=%
10308 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10309 \endgroup
10310 \Hy@activeanchortrue
10311 \bgroup\anchor@spot\egroup
10312 \special{!direct </a>}%
10313 \Hy@activeanchorfalse
10314 \Hy@RestoreLastskip
10315 }
10316 \def\@Form[#1]{%
10317 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10318 }
10319 \let\@endForm\@empty
10320 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10321 \Hy@Message{Sorry, TeXpider does not yet support FORM gauges}%
10322 }
10323 \def\@TextField[#1]#2{% parameters, label
10324 \Hy@Message{Sorry, TeXpider does not yet support FORM text fields}%
10325 }
10326 \def\@CheckBox[#1]#2{% parameters, label
10327 \Hy@Message{Sorry, TeXpider does not yet support FORM checkboxes}%
10328 }
10329 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10330 \Hy@Message{Sorry, TeXpider does not yet support FORM choice menus}%
10331 }
10332 \def\@PushButton[#1]#2{% parameters, label
10333 \Hy@Message{Sorry, TeXpider does not yet support FORM pushbuttons}%
10334 }
10335 \def\@Reset[#1]#2{%
10336 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10337 }
10338 \def\@Submit[#1]#2{%

```

```

10339 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10340 }
10341 </vtexhtml>
10342 <*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.

```

10343 \ifcsname mediaheight\endcsname
10344 \ifHy@setpagesize
10345   \providecommand*\VTeXInitMediaSize{%
10346     \ifnum\mag=\@m
10347       \ifdim\stockwidth>\z@
10348         \ifdim\stockheight>\z@
10349           \setlength\mediaheight\stockheight
10350           \setlength\mediawidth\stockwidth
10351         \else
10352           \ifdim\paperwidth>\z@
10353             \ifdim\paperheight>\z@
10354               \setlength\mediaheight\paperheight
10355               \setlength\mediawidth\paperwidth
10356             \fi
10357           \fi
10358         \fi
10359       \else
10360         \ifdim\stockwidth=\z@
10361           \ifdim\paperwidth>\z@
10362             \ifdim\paperheight>\z@
10363               \setlength\mediaheight\paperheight
10364               \setlength\mediawidth\paperwidth
10365             \fi
10366           \fi
10367         \fi
10368       \fi
10369     }%
10370   }%
10371 \Hy@AtBeginDocument{\VTeXInitMediaSize}%
10372 \fi
10373 \Hy@DisableOption{setpagesize}%
10374 \fi

```

Older versions of VTeX require `xyz` in lower case.

```

10375 \providecommand*\@pdfview{xyz}
10376 \providecommand*\@pdfborder{0 0 1}
10377 \providecommand*\@pdfborderstyle{}
10378 \let\CurrentBorderColor\@linkbordercolor
10379 \Hy@WrapperDef\hyper@anchor#1{%
10380   \Hy@SaveLastskip
10381   \Hy@VerboseAnchor{#1}%
10382   \begingroup
10383     \let\protect=\string
10384     \hyper@chars
10385     \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10386   \endgroup

```

```

10387 \Hy@activeanchortrue
10388 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
10389 \Hy@activeanchorfalse
10390 \Hy@RestoreLastskip
10391 }
10392 \Hy@WrapperDef\hyper@anchorstart#1{%
10393 \Hy@SaveLastskip
10394 \Hy@VerboseAnchor{#1}%
10395 \begingroup
10396 \hyper@chars
10397 \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10398 \endgroup
10399 \Hy@activeanchortrue
10400 }
10401 \def\hyper@anchorend{%
10402 \Hy@activeanchorfalse
10403 \Hy@RestoreLastskip
10404 }
10405 \def\@urltype{url}
10406 \def\Hy@undefinedname{UNDEFINED}
10407 \def\hyper@linkstart#1#2{%
10408 \Hy@VerboseLinkStart{#1}{#2}%
10409 \Hy@pstringdef\Hy@pstringURI{#2}%
10410 \expandafter\Hy@colorlink\csname @#1color\endcsname
10411 \@ifundefined{#@#1bordercolor}{%
10412 \let\CurrentBorderColor\relax
10413 }{%
10414 \edef\CurrentBorderColor{%
10415 \csname @#1bordercolor\endcsname
10416 }%
10417 }%
10418 \def\Hy@tempa{#1}%
10419 \ifx\Hy@tempa\@urltype
10420 \special{!%
10421 aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10422 \ifHy@href@ismap
10423 /IsMap true%
10424 \fi
10425 \Hy@href@nextactionraw
10426 >,%
10427 a=<%
10428 \ifHy@pdfa /F 4\fi
10429 \Hy@setpdfborder
10430 \ifx\CurrentBorderColor\relax
10431 \else
10432 /C [\CurrentBorderColor]%
10433 \fi
10434 >%
10435 }%
10436 \else
10437 \protected@edef\Hy@testname{#2}%
10438 \ifx\Hy@testname\@empty
10439 \Hy@Warning{%
10440 Empty destination name,\MessageBreak

```

```

10441     using ` \Hy@undefinedname'%
10442   }%
10443   \let \Hy@testname \Hy@undefinedname
10444 \fi
10445 \special{!%
10446   aref \expandafter \HyperDestNameFilter
10447     \expandafter { \Hy@testname };%
10448   a=<%
10449     \ifHy@pdfa /F 4 \fi
10450     \Hy@setpdfborder
10451     \ifx \CurrentBorderColor \relax
10452     \else
10453     /C [ \CurrentBorderColor ]%
10454     \fi
10455   >%
10456 }%
10457 \fi
10458 }
10459 \def \hyper@linkend{%
10460 \special{!endaref}%
10461 \Hy@endcolorlink
10462 }
10463 \def \hyper@linkfile#1#2#3{%
10464 \leavevmode
10465 \def \Hy@pstringF{#2}%
10466 \Hy@CleanupFile \Hy@pstringF
10467 \special{!%
10468   aref <%
10469     \ifnum \Hy@VTeXversion > 753 \ifHy@pdfnewwindow n \fi \fi
10470     f= \Hy@pstringF > #3;%
10471     a=<%
10472       \ifHy@pdfa /F 4 \fi
10473       \Hy@setpdfborder
10474       \ifx \@filebordercolor \relax
10475       \else
10476       /C [ \@filebordercolor ]%
10477       \fi
10478     >%
10479   }%
10480 \Hy@colorlink \@filecolor
10481   #1 \Hy@xspace@end
10482 \Hy@endcolorlink
10483 \special{!endaref}%
10484 }
10485 \def \hyper@linkurl#1#2{%
10486 \begingroup
10487 \Hy@pstringdef \Hy@pstringURI{#2}%
10488 \hyper@chars
10489 \leavevmode
10490 \special{!%
10491   aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10492     \ifHy@href@ismap
10493     /IsMap true%
10494     \fi

```

```

10495     \Hy@href@nextactionraw
10496     >,%
10497     a=<%
10498     \ifHy@pdfa /F 4\fi
10499     \Hy@setpdfborder
10500     \ifx \@urlbordercolor\relax
10501     \else
10502     /C [\@urlbordercolor]%
10503     \fi
10504     >%
10505     }%
10506     \Hy@colorlink \@urlcolor
10507     #1\Hy@xspace@end
10508     \Hy@endcolorlink
10509     \special{!endaref}%
10510 \endgroup
10511 }
10512 \def\hyper@link#1#2#3{%
10513 \Hy@VerboseLinkStart{#1}{#2}%
10514 \@ifundefined{@#1bordercolor}{%
10515 \let\CurrentBorderColor\relax
10516 }{%
10517 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
10518 }%
10519 \leavevmode
10520 \protected@edef\Hy@testname{#2}%
10521 \ifx\Hy@testname\@empty
10522 \Hy@Warning{%
10523 Empty destination name,\MessageBreak
10524 using ` \Hy@undefinedname'%
10525 }%
10526 \let\Hy@testname\Hy@undefinedname
10527 \fi
10528 \special{!%
10529 aref \expandafter\HyperDestNameFilter
10530 \expandafter{\Hy@testname};%
10531 a=<%
10532 \ifHy@pdfa /F 4\fi
10533 \Hy@setpdfborder
10534 \ifx\CurrentBorderColor\relax
10535 \else
10536 /C [\CurrentBorderColor]%
10537 \fi
10538 >%
10539 }%
10540 \expandafter
10541 \Hy@colorlink\csname @#1color\endcsname
10542 #3\Hy@xspace@end
10543 \Hy@endcolorlink
10544 \special{!endaref}%
10545 }
10546 \def\hyper@image#1#2{%
10547 \hyper@linkurl{#2}{#1}%
10548 }

```



```

10549 \def\@hyper@launch run:#1\|#2#3{%
10550 \Hy@pstringdef\Hy@pstringF{#1}%
10551 \Hy@pstringdef\Hy@pstringP{#3}%
10552 \leavevmode
10553 \special{!aref %
10554 <u=%
10555 /Type/Action%
10556 /S/Launch%
10557 /F(\Hy@pstringF)%
10558 \Hy@SetNewWindow
10559 \ifx\|#3\|%
10560 \else
10561 /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>%
10562 \fi
10563 \Hy@href@nextactionraw
10564 >:%
10565 a=<%
10566 \ifHy@pdfa /F 4\fi
10567 \Hy@setpdfborder
10568 \ifx\@runbordercolor\relax
10569 \else
10570 /C[\@runbordercolor]%
10571 \fi
10572 >%
10573 }%
10574 \Hy@colorlink\@runcolor
10575 #2\Hy@xspace@end
10576 \Hy@endcolorlink
10577 \special{!endaref}%
10578 }
10579 \def\Acrobatmenu#1#2{%
10580 \EdefEscapeName\Hy@temp@menu{#1}%
10581 \Hy@Acrobatmenu{#1}{#2}{%
10582 \special{!%
10583 aref <u=/S /Named /N /\Hy@temp@menu>:%
10584 a=<%
10585 \ifHy@pdfa /F 4\fi
10586 \Hy@setpdfborder
10587 \ifx\@menubordercolor\relax
10588 \else
10589 /C[\@menubordercolor]%
10590 \fi
10591 >%
10592 }%
10593 \Hy@colorlink\@menucolor
10594 #2\Hy@xspace@end
10595 \Hy@endcolorlink
10596 \special{!endaref}%
10597 }%
10598 }

```

The following code (transition effects) is made by Alex Kostin.  
The code below makes sense for V<sub>T</sub>E<sub>X</sub> 7.02 or later.  
Please never use `\@ifundefined{VTeXversion}{..}{..}` *globally*.

```

10599 \ifnum\Hy@VTeXversion<702 %
10600 \else
10601 \def\hyper@pagetransition{%
10602 \ifx\@pdfpagetransition\relax
10603 \else
10604 \ifx\@pdfpagetransition\@empty

```

Standard incantation.

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

```

10605 \else
10606 \hvtex@parse@trans\@pdfpagetransition
10607 \fi
10608 \fi
10609 }%

```

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:

```

10610 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
10611 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
10612 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
10613 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
10614 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
10615 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
10616 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%

```

Optional parameters:

```

10617 \def\hvtex@par@dimension{/Dm}%
10618 \def\hvtex@par@direction{/Di}%
10619 \def\hvtex@par@duration{/D}%
10620 \def\hvtex@par@motion{/M}%

```

Tokenizer:

```

10621 \def\hvtex@gettoken{%
10622 \expandafter\hvtex@gettoken@\hvtex@buffer\@nil
10623 }%

```

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

```

10624 \def\hvtex@gettoken@#1 #2\@nil{%
10625 \edef\hvtex@token{#1}%
10626 \edef\hvtex@buffer{#2}%
10627 }%
10628 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

10629 \let\hvtex@trans@code\@empty
10630 \let\hvtex@param@dimension\@empty
10631 \let\hvtex@param@direction\@empty
10632 \let\hvtex@param@duration\@empty
10633 \let\hvtex@param@motion\@empty
10634 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

10635 \hvtex@gettoken
10636 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

10637 \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

10638 \else
10639 \hvtex@gettoken
10640 \fi
10641 \fi
10642 \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```

10643 \hvtex@trans@params
10644 }%

```

Reentrant macro to parse optional parameters.

```

10645 \def\hvtex@trans@params{%
10646 \ifx\hvtex@buffer\@empty
10647 \else
10648 \hvtex@gettoken
10649 \let\hvtex@trans@par\hvtex@token
10650 \ifx\hvtex@buffer\@empty
10651 \else
10652 \hvtex@gettoken
10653 \ifx\hvtex@trans@par\hvtex@par@duration

```

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

```

10654 \let\hvtex@param@duration\hvtex@token
10655 \else \ifx\hvtex@trans@par\hvtex@par@motion

```

/M can be either /I or /O

```

10656 \expandafter\edef\expandafter\hvtex@param@motion
10657 \expandafter{\expandafter\@gobble\hvtex@token}%
10658 \else \ifx\hvtex@trans@par\hvtex@par@dimension

```

/Dm can be either /H or /V

```

10659 \expandafter\edef\expandafter\hvtex@param@dimension
10660 \expandafter{\expandafter\@gobble\hvtex@token}%
10661 \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).

```

10662     \let\hvtex@param@direction\hvtex@token
10663     \fi\fi\fi\fi
10664     \fi
10665     \fi
10666     \ifx\hvtex@buffer\@empty
10667     \let\next\hvtex@produce@trans
10668     \else
10669     \let\next\hvtex@trans@params
10670     \fi
10671     \next
10672 }%
```

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

```

10673 \def\hvtex@produce@trans{%
10674 \let\vtex@trans@special\@empty
10675 \if S\hvtex@trans@code
10676 \edef\vtex@trans@special{\hvtex@trans@code
10677 \hvtex@param@dimension\hvtex@param@motion}%
10678 \else\if B\hvtex@trans@code
10679 \edef\vtex@trans@special{%
10680 \hvtex@trans@code\hvtex@param@dimension
10681 }%
10682 \else\if X\hvtex@trans@code
10683 \edef\vtex@trans@special{%
10684 \hvtex@trans@code\hvtex@param@motion
10685 }%
10686 \else\if W\hvtex@trans@code
10687 \edef\vtex@trans@special{%
10688 \hvtex@trans@code\hvtex@param@direction
10689 }%
10690 \else\if D\hvtex@trans@code
10691 \let\vtex@trans@special\hvtex@trans@code
10692 \else\if R\hvtex@trans@code
10693 \let\vtex@trans@special\hvtex@trans@code
10694 \else\if G\hvtex@trans@code
10695 \edef\vtex@trans@special{%
10696 \hvtex@trans@code\hvtex@param@direction
10697 }%
10698 \fi\fi\fi\fi\fi\fi
10699 \ifx\vtex@trans@special\@empty
10700 \else
10701 \ifx\hvtex@param@duration\@empty
10702 \else
10703 \setlength{\dimen@}{\hvtex@param@duration\p@}%
```

I'm not guilty of possible overflow.

```

10704 \multiply\dimen@\@m
10705 \edef\vtex@trans@special{%
10706 \vtex@trans@special,\strip@pt\dimen@
10707 }%
10708 \fi
```

And all the mess is just for this.

```

10709 \special{!trans \vtex@trans@special}%
10710 \fi
10711 }%
10712 \def\hyper@pageduration{%
10713 \ifx\@pdfpageduration\relax
10714 \else
10715 \ifx\@pdfpageduration\@empty
10716 \special{!duration-}%
10717 \else
10718 \special{!duration \@pdfpageduration}%
10719 \fi
10720 \fi
10721 }%
10722 \g@addto@macro\Hy@EveryPageBoxHook{%
10723 \hyper@pagetransition
10724 \hyper@pageduration
10725 }%
10726 \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

```

10727 \ifx\@pdfproducer\relax
10728 \def\@pdfproducer{VTeX}%
10729 \ifnum\Hy@VTeXversion>\z@
10730 \count@\VTeXversion
10731 \divide\count@ 100 %
10732 \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
10733 \multiply\count@ -100 %
10734 \advance\count@\VTeXversion
10735 \edef\@pdfproducer{%
10736 \@pdfproducer
10737 .\ifnum\count@<10 0\fi\the\count@
10738 \ifx\VTeXOS\@undefined\else
10739 \ifnum\VTeXOS>0 %
10740 \ifnum\VTeXOS<6 %
10741 \space(%
10742 \ifcase\VTeXOS
10743 \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
10744 \fi
10745 )%
10746 \fi
10747 \fi
10748 \fi
10749 ,\space

```

```

10750 \ifnum\OpMode=\@ne PDF\else PS\fi
10751 \space backend%
10752 \ifx\gexmode\@undefined\else
10753 \ifnum\gexmode>\z@\space with GeX\fi
10754 \fi
10755 }%
10756 \fi
10757 \fi

```

Current `!pdfinfo` key syntax:

Key	Field	Type
a	<b>A</b> uthor	String
b	<b>C</b> rop <b>B</b> ox	String
c	<b>C</b> reator	String
k	<b>K</b> eywords	String
l	<b>P</b> age <b>L</b> ayout	PS
p	<b>P</b> age <b>M</b> ode	PS
r	<b>P</b> roducer	String
s	<b>S</b> ubject	String
t	<b>T</b> itle	String
u	<b>U</b> RI	PS
v	<b>V</b> iew <b>P</b> references	PS

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

```

10758 \def\PDF@SetupDoc{%
10759 \ifx\@pdfpagescrop\@empty
10760 \else
10761 \special{!pdfinfo b=<\@pdfpagescrop>}%
10762 \fi
10763 \ifx\@pdfstartpage\@empty
10764 \else
10765 \ifx\@pdfstartview\@empty
10766 \else
10767 \special{!onopen Page\@pdfstartpage}%
10768 \fi
10769 \fi
10770 \special{!pdfinfo p=</\@pdfpagemode>}%
10771 \ifx\@baseurl\@empty
10772 \else
10773 \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
10774 \fi
10775 \special{!pdfinfo v=<<<%
10776 \ifHy@pdftoolbar\else /HideToolbar true\fi
10777 \ifHy@pdfmenubar\else /HideMenubar true\fi
10778 \ifHy@pdfwindowui\else /HideWindowUI true\fi
10779 \ifHy@pdfitwindow /FitWindow true\fi
10780 \ifHy@pdfcenterwindow /CenterWindow true\fi
10781 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10782 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10783 \Hy@UseNameKey{Direction}\@pdfdirection
10784 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10785 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10786 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10787 \Hy@UseNameKey{PrintClip}\@pdfprintclip

```

```

10788 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10789 \Hy@UseNameKey{Duplex}\@pdfduplex
10790 \ifx\@pdfpicktraybypdfsize\@empty
10791 \else
10792 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10793 \fi
10794 \ifx\@pdfprintpagerange\@empty
10795 \else
10796 /PrintPageRange[\@pdfprintpagerange]%
10797 \fi
10798 \ifx\@pdfnumcopies\@empty
10799 \else
10800 /NumCopies \@pdfnumcopies
10801 \fi
10802 >>>}%
10803 \ifx\@pdfpagelayout\@empty
10804 \else
10805 \special{!pdfinfo l=</\@pdfpagelayout\space>}%
10806 \fi
10807 }%
10808 \HyInfo@AddonUnsupportedtrue
10809 \define@key{Hyp}{pdfcreationdate}{%
10810 \Hy@Warning{%
10811 VTeX does not support pdfcreationdate.\MessageBreak
10812 Therefore its setting is ignored%
10813 }%
10814 }
10815 \define@key{Hyp}{pdfmoddate}{%
10816 \Hy@Warning{%
10817 VTeX does not support pdfmoddate.\MessageBreak
10818 Therefore its setting is ignored%
10819 }%
10820 }
10821 \def\PDF@FinishDoc{%
10822 \Hy@UseMaketitleInfos
10823 \HyInfo@TrappedUnsupported
10824 \special{!pdfinfo a=<\@pdfauthor>}%
10825 \special{!pdfinfo t=<\@pdftitle>}%
10826 \special{!pdfinfo s=<\@pdfsubject>}%
10827 \special{!pdfinfo c=<\@pdfcreator>}%
10828 \ifx\@pdfproducer\relax
10829 \else
10830 \special{!pdfinfo r=<\@pdfproducer>}%
10831 \fi
10832 \special{!pdfinfo k=<\@pdfkeywords>}%
10833 \Hy@DisableOption{pdfauthor}%
10834 \Hy@DisableOption{pdftitle}%
10835 \Hy@DisableOption{pdfsubject}%
10836 \Hy@DisableOption{pdfcreator}%
10837 \Hy@DisableOption{addtopdfcreator}%
10838 \Hy@DisableOption{pdfcreationdate}%
10839 \Hy@DisableOption{pdfcreationdate}%
10840 \Hy@DisableOption{pdfmoddate}%
10841 \Hy@DisableOption{pdfproducer}%

```

```

10842 \Hy@DisableOption{pdfkeywords}%
10843 \Hy@DisableOption{pdftrapped}%
10844 \Hy@DisableOption{pdfinfo}%
10845 }
10846 </vtx>

```

## 44.7 Fix for Adobe bug number 466320

If a destination occurs at the very begin of a page, the destination is moved to the previous page by Adobe Distiller 5. As workaround Adobe suggests:

```

/showpage {
  //showpage
  clippath stroke erasepage
} bind def

```

But unfortunately this fix generates an empty page at the end of the document. Therefore another fix is used by writing some clipped text.

```

10847 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
10848 <packageEnd>\providecommand*\Hy@DistillerDestFix{}%
10849 <*pdfmark | dviwindo>
10850 \def\Hy@DistillerDestFix{%
10851   \begingroup
10852   \let\x\literalps@out

```

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

```

10853   \ifnum \@ifundefined{OpMode}{0}{%
10854     \@ifundefined{gexmode}{0}{%
10855       \ifnum\gexmode>0 \OpMode\else 0\fi
10856     }>1 %
10857   \def\x##1{%
10858     \immediate\special{!##1}%
10859   }%
10860   \fi
10861   \x{%
10862     /product where{%
10863       pop %
10864       product(Distiller)search{%
10865         pop pop pop %
10866         version(.)search{%
10867           exch pop exch pop%
10868           (3011)eq{%
10869             gsave %
10870             newpath 0 0 moveto closepath clip%
10871             /Courier findfont 10 scalefont setfont %
10872             72 72 moveto(.)show %
10873             grestore%
10874           }if%
10875           }{pop}ifelse%
10876           }{pop}ifelse%
10877         }if%
10878       }%
10879     \endgroup

```



```

10880 }
10881 </pdfmark | dviwindo>

```

## 44.8 Direct pdfmark support

Drivers that load pdfmark.def have to provide the correct macro definitions of

```

\@pdfproducer   for document information
\literalps@out  PostScript output
\headerps@out   PostScript output that goes in the header area

```

and the correct definitions of the following PostScript procedures:

```

H.S           start of anchor, link or rect
#1 H.A       end of anchor, argument=baselineskip in pt
#1 H.L       end of link, argument=baselineskip in pt
H.R           end of rect
H.B           raw rect code

```

```

10882 <*pdfmark>
10883 \Hy@breaklinks@unsupported
10884 \def\HyPat@ObjRef{%
10885   \{[-{}]+\}%
10886 }
10887 \Hy@WrapperDef\hyper@anchor#1{%
10888   \Hy@SaveLastskip
10889   \Hy@VerboseAnchor{#1}%
10890   \begingroup
10891   \pdfmark[\anchor@spot]{%
10892     pdfmark=/DEST,%
10893     linktype=anchor,%
10894     View=/\@pdfview \@pdfviewparams,%
10895     DestAnchor={#1}%
10896   }%
10897   \endgroup
10898   \Hy@RestoreLastskip
10899 }
10900 \@ifundefined{hyper@anchorstart}{\endinput}
10901 \Hy@WrapperDef\hyper@anchorstart#1{%
10902   \Hy@SaveLastskip
10903   \Hy@VerboseAnchor{#1}%
10904   \literalps@out{H.S}%
10905   \Hy@AllowHyphens
10906   \xdef\hyper@currentanchor{#1}%
10907   \Hy@activeanchortrue
10908 }
10909 \def\hyper@anchorend{%
10910   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
10911   \pdfmark{%
10912     pdfmark=/DEST,%
10913     linktype=anchor,%
10914     View=/\@pdfview \@pdfviewparams,%
10915     DestAnchor=\hyper@currentanchor,%
10916   }%
10917   \Hy@activeanchorfalse

```

```

10918 \Hy@RestoreLastskip
10919 }
10920 \def\hyper@linkstart#1#2{%
10921 \Hy@VerboseLinkStart{#1}{#2}%
10922 \ifHy@breaklinks
10923 \else
10924 \leavevmode
10925 \ifmmode
10926 \def\Hy@LinkMath{${}%
10927 \else
10928 \let\Hy@LinkMath\@empty
10929 \fi
10930 \Hy@SaveSpaceFactor
10931 \hbox\bgroup
10932 \Hy@RestoreSpaceFactor
10933 \Hy@LinkMath
10934 \fi
10935 \expandafter\Hy@colorlink\csname @#1color\endcsname
10936 \literalps@out{H.S}%
10937 \Hy@AllowHyphens
10938 \xdef\hyper@currentanchor{#2}%
10939 \gdef\hyper@currentlinktype{#1}%
10940 }
10941 \def\hyper@linkend{%
10942 \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
10943 \@ifundefined{@\hyper@currentlinktype bordercolor}{%
10944 \let\Hy@tempcolor\relax
10945 }{%
10946 \edef\Hy@tempcolor{%
10947 \csname @\hyper@currentlinktype bordercolor\endcsname
10948 }%
10949 }%
10950 \pdfmark{%
10951 pdfmark=/ANN,%
10952 linktype=link,%
10953 Subtype=/Link,%
10954 PDFAFlags=4,%
10955 Dest=\hyper@currentanchor,%
10956 AcroHighlight=\@pdfhighlight,%
10957 Border=\@pdfborder,%
10958 BorderStyle=\@pdfborderstyle,%
10959 Color=\Hy@tempcolor,%
10960 Raw=H.B%
10961 }%
10962 \Hy@endcolorlink
10963 \ifHy@breaklinks
10964 \else
10965 \Hy@LinkMath
10966 \Hy@SaveSpaceFactor
10967 \egroup
10968 \Hy@RestoreSpaceFactor
10969 \fi
10970 }

```

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.

```

10971 \begingroup
10972 \catcode`P=12 %
10973 \catcode`T=12 %
10974 \lowercase{\endgroup
10975 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
10976 }
10977 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

\hyper@pagetransition

```

10978 \def\hyper@pagetransition{%
10979 \ifx\@pdfpagetransition\relax
10980 \else
10981 \ifx\@pdfpagetransition\@empty
10982 % 1. Does an old entry have to be deleted?
10983 % 2. If 1=yes, how to delete?
10984 \else
10985 \pdfmark{%
10986 pdfmark=/PUT,%
10987 Raw={%
10988 \string{ThisPage\string}%
10989 <</Trans << /S /\@pdfpagetransition\space >> >>%
10990 }%
10991 }%
10992 \fi
10993 \fi
10994 }

```

\hyper@pageduration

```

10995 \def\hyper@pageduration{%
10996 \ifx\@pdfpageduration\relax
10997 \else
10998 \ifx\@pdfpageduration\@empty
10999 % 1. Does an old entry have to be deleted?
11000 % 2. If 1=yes, how to delete?
11001 \else
11002 \pdfmark{%
11003 pdfmark=/PUT,%
11004 Raw={%
11005 \string{ThisPage\string}%
11006 <</Dur \@pdfpageduration>>%
11007 }%
11008 }%
11009 \fi
11010 \fi
11011 }

11012 \g@addto@macro\Hy@EveryPageBoxHook{%
11013 \hyper@pagetransition
11014 \hyper@pageduration
11015 }

11016 \def\hyper@image#1#2{%

```

```

11017 \hyper@linkurl{#2}{#1}%
11018 }
11019 \def\Hy@undefinedname{UNDEFINED}
11020 \def\hyper@link#1#2#3{%
11021 \Hy@VerboseLinkStart{#1}{#2}%
11022 \@ifundefined{#1bordercolor}{%
11023 \let\Hy@tempcolor\relax
11024 }{%
11025 \edef\Hy@tempcolor{\csname #1bordercolor\endcsname}%
11026 }%
11027 \begingroup
11028 \protected@edef\Hy@testname{#2}%
11029 \ifx\Hy@testname\@empty
11030 \Hy@Warning{%
11031 Empty destination name,\MessageBreak
11032 using ` \Hy@undefinedname'%
11033 }%
11034 \let\Hy@testname\Hy@undefinedname
11035 \fi
11036 \pdfmark[#{#3}]{%
11037 Color=\Hy@tempcolor,%
11038 linktype={#1},%
11039 AcroHighlight=\@pdfhighlight,%
11040 Border=\@pdfborder,%
11041 BorderStyle=\@pdfborderstyle,%
11042 pdfmark=/ANN,%
11043 Subtype=/Link,%
11044 PDFAMFlags=4,%
11045 Dest=\Hy@testname
11046 }%
11047 \endgroup
11048 }
11049 \newtoks\pdf@docset
11050 \def\PDF@FinishDoc{%
11051 \Hy@UseMaketitleInfos
11052 \Hy@Info@GenerateAddons
11053 \let\Hy@temp\@empty
11054 \ifx\@pdfcreationdate\@empty
11055 \else
11056 \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
11057 \fi
11058 \ifx\@pdfmoddate\@empty
11059 \else
11060 \expandafter\def\expandafter\Hy@temp\expandafter{%
11061 \Hy@temp
11062 ModDate=\@pdfmoddate,%
11063 }%
11064 \fi
11065 \ifx\@pdfproducer\relax
11066 \else
11067 \expandafter\def\expandafter\Hy@temp\expandafter{%
11068 \Hy@temp
11069 Producer=\@pdfproducer,%
11070 }%

```

```

11071 \fi
11072 \expandafter
11073 \pdfmark\expandafter{%
11074   \Hy@temp
11075   pdfmark=/DOCINFO,%
11076   Title=\@pdftitle,%
11077   Subject=\@pdfsubject,%
11078   Creator=\@pdfcreator,%
11079   Author=\@pdfauthor,%
11080   Keywords=\@pdfkeywords,%
11081   Trapped=\@pdftrapped
11082 }%
11083 \ifx\HyInfo@Addons\@empty
11084 \else
11085   \pdfmark{%
11086     pdfmark=/DOCINFO,%
11087     Raw={\HyInfo@Addons}%
11088   }%
11089 \fi
11090 \Hy@DisableOption{pdfauthor}%
11091 \Hy@DisableOption{pdftitle}%
11092 \Hy@DisableOption{pdfsubject}%
11093 \Hy@DisableOption{pdfcreator}%
11094 \Hy@DisableOption{addtopdfcreator}%
11095 \Hy@DisableOption{pdfcreationdate}%
11096 \Hy@DisableOption{pdfcreationdate}%
11097 \Hy@DisableOption{pdfmoddate}%
11098 \Hy@DisableOption{pdfproducer}%
11099 \Hy@DisableOption{pdfkeywords}%
11100 \Hy@DisableOption{pdftrapped}%
11101 \Hy@DisableOption{pdfinfo}%
11102 }
11103 \def\PDF@SetupDoc{%
11104   \def\Hy@temp{}%
11105   \ifx\@pdfstartpage\@empty
11106   \else
11107     \ifx\@pdfstartview\@empty
11108     \else
11109       \edef\Hy@temp{%
11110         ,Page=\@pdfstartpage
11111         ,View=\@pdfstartview
11112       }%
11113     \fi
11114   \fi
11115   \edef\Hy@temp{%
11116     \noexpand\pdfmark{%
11117       pdfmark=/DOCVIEW,%
11118       PageMode=/\@pdfpagemode
11119     }%
11120   }%
11121 }%
11122 \Hy@temp
11123 \ifx\@pdfpagescrop\@empty
11124 \else

```

```

11125 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
11126 \fi
11127 \edef\Hy@temp{%
11128 \ifHy@pdftoolbar\else /HideToolbar true\fi
11129 \ifHy@pdfmenubar\else /HideMenubar true\fi
11130 \ifHy@pdfwindowui\else /HideWindowUI true\fi
11131 \ifHy@pdfwindow /FitWindow true\fi
11132 \ifHy@pdfcenterwindow /CenterWindow true\fi
11133 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
11134 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
11135 \Hy@UseNameKey{Direction}\@pdfdirection
11136 \Hy@UseNameKey{ViewArea}\@pdfviewarea
11137 \Hy@UseNameKey{ViewClip}\@pdfviewclip
11138 \Hy@UseNameKey{PrintArea}\@pdfprintarea
11139 \Hy@UseNameKey{PrintClip}\@pdfprintclip
11140 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
11141 \Hy@UseNameKey{Duplex}\@pdfduplex
11142 \ifx\@pdfpicktraybypdfsize\@empty
11143 \else
11144 /PickTrayByPDFSize \@pdfpicktraybypdfsize
11145 \fi
11146 \ifx\@pdfprintpagerange\@empty
11147 \else
11148 /PrintPageRange[\@pdfprintpagerange]%
11149 \fi
11150 \ifx\@pdfnumcopies\@empty
11151 \else
11152 /NumCopies \@pdfnumcopies
11153 \fi
11154 }%
11155 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
11156 \pdfmark{%
11157 pdfmark=/PUT,%
11158 Raw={%
11159 \string{Catalog\string}<<%
11160 \ifx\Hy@temp\@empty
11161 \else
11162 /ViewerPreferences<<\Hy@temp>>%
11163 \fi
11164 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
11165 \ifx\@pdflang\relax
11166 \else
11167 /Lang(\@pdflang)%
11168 \fi
11169 \ifx\@baseurl\@empty
11170 \else
11171 /URI<</Base(\Hy@pstringB)>>%
11172 \fi
11173 >>%
11174 }%
11175 }%
11176 }
11177 </pdfmark>
11178 <*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.

```

11179 \newif\ifHy@pdfmarkerror
11180 \def\pdfmark{\@ifnextchar{\pdfmark@}{\pdfmark@[]}}
11181 \def\pdfmark@[#1]#2{%
11182   \Hy@pdfmarkerrorfalse
11183   \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
11184   \@processme
11185   \let\pdf@type\relax
11186   \let\pdf@objdef\@empty
11187   \kvsetkeys{PDF}{#2}%
11188   \ifHy@pdfmarkerror
11189   \else
11190     \ifx\pdf@type\relax
11191       \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
11192       \ifx\#1\%
11193         \else
11194           \pdf@rect{#1}%
11195         \fi
11196       \else
11197         \ifx\#1\%
11198           \literalps@out{%
11199             [%
11200             \ifx\pdf@objdef\@empty
11201             \else
11202               /_objdef\string{\pdf@objdef\string}%
11203             \fi
11204             \the\pdf@toks\space\pdf@type\space pdfmark%
11205           ]%
11206         \else
11207           \@ifundefined{@\pdf@linktype color}{%
11208             \Hy@colorlink\@linkcolor
11209           }{%
11210             \expandafter\Hy@colorlink
11211               \csname @\pdf@linktype color\endcsname
11212           }%
11213           \pdf@rect{#1}%
11214           \literalps@out{%
11215             [%
11216             \ifx\pdf@objdef\@empty
11217             \else
11218               /_objdef\string{\pdf@objdef\string}%
11219             \fi
11220             \the\pdf@toks\space\pdf@type\space pdfmark%
11221           ]%
11222           \Hy@endcolorlink
11223         \fi
11224       \fi
11225     \fi

```

11226 }

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

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}
```

```
11227 \newsavebox{\pdf@box}
11228 \providecommand*{\Hy@setouterhbox}{\sbox}
11229 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
11230 \def\Hy@DEST{/DEST}
11231 \def\pdf@rect#1{%
11232   \begingroup
11233   \chardef\x=1 %
11234   \def\Hy@temp{#1}%
11235   \ifx\Hy@temp\@empty
11236     \chardef\x=0 %
11237   \else
11238     \def\y{\anchor@spot}%
11239     \ifx\Hy@temp\y
11240       \def\y{\relax}%
11241       \ifx\anchor@spot\y
11242         \chardef\x=0 %
11243       \fi
11244     \fi
11245   \fi
11246   \expandafter\endgroup
11247   \ifcase\x
11248     \literalps@out{H.S}%
11249     \literalps@out{H.R}%
11250   \else
11251     \leavevmode
11252     \Hy@SaveSpaceFactor
11253     \ifmmode
11254       \def\Hy@LinkMath{${}}%
11255     \else
11256       \let\Hy@LinkMath\@empty
11257     \fi
11258     \ifHy@breaklinks
11259       \Hy@setouterhbox\pdf@box{%
11260         \Hy@RestoreSpaceFactor
11261         \Hy@LinkMath
11262         \Hy@AllowHyphens#1\Hy@xspace@end
11263         \Hy@LinkMath
11264         \Hy@SaveSpaceFactor
11265       }%
```



```

11266 \else
11267 \sbox\pdf@box{%
11268 \Hy@RestoreSpaceFactor
11269 \Hy@LinkMath
11270 #1\Hy@xspace@end
11271 \Hy@LinkMath
11272 \Hy@SaveSpaceFactor
11273 }%
11274 \fi
11275 \dimen@ht\pdf@box
11276 \ifdim\dp\pdf@box=\z@
11277 \literalps@out{H.S}%
11278 \else
11279 \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
11280 \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...).

```

11281 \ifHy@breaklinks
11282 \ifhmode
11283 \Hy@breaklinksunhbox\pdf@box
11284 \else
11285 \box\pdf@box
11286 \fi
11287 \else
11288 \expandafter\box\pdf@box
11289 \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

11290 \ifdim\dimen@=\z@
11291 \literalps@out{H.R}%
11292 \else
11293 \raise\dimen@\hbox{\literalps@out{H.R}}%
11294 \fi
11295 \Hy@RestoreSpaceFactor
11296 \fi
11297 \ifx\pdf@type\Hy@DEST
11298 \else
11299 \pdf@addtoksx{H.B}%
11300 \fi
11301 }

```

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.

```

11302 \newtoks\pdf@toks
11303 \newtoks\pdf@defaulttoks
11304 \pdf@defaulttoks={}%
11305 \def\pdf@addtoks#1#2{%
11306 \edef\@processme{\pdf@toks{\the\pdf@toks/#2 #1}}%

```

```

11307 \@processme
11308 }
11309 \def\pdf@addtoksx#1{%
11310 \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
11311 \@processme
11312 }
11313 \def\PDFdefaults#1{%
11314 \pdf@defaulttoks={#1}%
11315 }

```

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

```

11316 % what is the type of pdfmark?
11317 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
11318 % what is the link type?
11319 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
11320 \def\pdf@linktype{link}
11321 % named object?
11322 \define@key{PDF}{objdef}{\edef\pdf@objdef{#1}}
11323 \let\pdf@objdef\@empty
11324 % parameter is a stream of PDF
11325 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
11326 % parameter is a name
11327 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
11328 % parameter is a array
11329 \define@key{PDF}{Border}{%
11330 \edef\Hy@temp{#1}%
11331 \ifx\Hy@temp\@empty
11332 \else
11333 \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
11334 \fi
11335 }
11336 \let\Hy@BorderArrayPatch\@empty
11337 % parameter is a dictionary
11338 \define@key{PDF}{BorderStyle}{%
11339 \edef\Hy@temp{#1}%
11340 \ifx\Hy@temp\@empty
11341 \else
11342 \pdf@addtoks{<<#1>>}{BS}%
11343 \fi
11344 }
11345 % parameter is a array
11346 \define@key{PDF}{Color}{%
11347 \ifx\relax#1\relax
11348 \else
11349 \pdf@addtoks{[#1]}{Color}% hash-ok
11350 \fi
11351 }
11352 % parameter is a string
11353 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
11354 % parameter is a integer
11355 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
11356 % parameter is a array
11357 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
11358 % parameter is a string
11359 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}

```

```

11360 % parameter is a string or file
11361 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
11362 % parameter is a destination
11363 \define@key{PDF}{Dest}{%
11364   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11365   \ifx\Hy@pstringDest\@empty
11366     \Hy@pdfmarkerrortrue
11367     \Hy@Warning{Destination with empty name ignored}%
11368   \else
11369     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11370   \fi
11371 }
11372 \define@key{PDF}{DestAnchor}{%
11373   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11374   \ifx\Hy@pstringDest\@empty
11375     \Hy@pdfmarkerrortrue
11376     \Hy@Warning{Destination with empty name ignored}%
11377   \else
11378     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11379   \fi
11380 }
11381 % parameter is a string
11382 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
11383 % parameter is a string
11384 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
11385 % parameter is a int
11386 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
11387 \define@key{PDF}{PDFAFlags}{%
11388   \ifHy@pdfa
11389     \pdf@addtoks{#1}{F}%
11390   \fi
11391 }
11392 % parameter is a name
11393 \define@key{PDF}{AcroHighlight}{%
11394   \begingroup
11395   \edef\x{#1}%
11396   \expandafter\endgroup\ifx\x\@empty
11397   \else
11398     \pdf@addtoks{#1}{H}%
11399   \fi
11400 }
11401 % parameter is a string
11402 \define@key{PDF}{ID}{\pdf@addtoks{(#1)}{ID}}% hash-ok
11403 % parameter is a string
11404 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
11405 % parameter is a string
11406 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11407 % parameter is a string
11408 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
11409 % parameter is a Boolean
11410 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
11411 % parameter is a integer or name
11412 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
11413 % parameter is a name

```

```

11414 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
11415 % parameter is a string
11416 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
11417 % parameter is a array
11418 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
11419 % parameter is a integer
11420 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
11421 % parameter is a name
11422 \define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
11423 % parameter is a string
11424 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
11425 % parameter is a string
11426 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
11427 % parameter is a string
11428 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
11429 % parameter is an array
11430 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
11431 % parameter is a string
11432 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}
These are the keys used in the DOCINFO section.
11433 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
11434 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
11435 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
11436 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11437 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
11438 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
11439 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
11440 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11441 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
11442 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}
11443 \define@key{PDF}{Trapped}{%
11444 \edef\Hy@temp{#1}%
11445 \ifx\Hy@temp\@empty
11446 \else
11447 \pdf@addtoks{/#1}{Trapped}%
11448 \fi
11449 }
11450
11451 </pdfmarkbase>
11452 <*pdfmark>
11453 \def\Acrobatmenu#1#2{%
11454 \EdefEscapeName\Hy@temp@menu{#1}%
11455 \Hy@Acrobatmenu{#1}{#2}{%
11456 \pdfmark[#{#2}]{%
11457 linktype=menu,%
11458 pdfmark=/ANN,%
11459 AcroHighlight=\@pdfhighlight,%
11460 Border=\@pdfborder,%
11461 BorderStyle=\@pdfborderstyle,%
11462 Color=\@menubordercolor,%
11463 Action={<</Subtype/Named/N/\Hy@temp@menu>>},%
11464 Subtype=/Link,%
11465 PDFAFlags=4%
11466 }%

```

```
11467 }%
11468 }
```

And now for some useful examples:

```
11469 \def\PDFNextPage{\@ifnextchar{\PDFNextPage@}{\PDFNextPage@[]}}
11470 \def\PDFNextPage@[#1]#2{%
11471   \pdfmark[#{#2}]{%
11472     #1,%
11473     Border=\@pdfborder,%
11474     BorderStyle=\@pdfborderstyle,%
11475     Color=.2 .1 .5,%
11476     pdfmark=/ANN,%
11477     Subtype=/Link,%
11478     PDFAFlags=4,%
11479     Page=/Next%
11480   }%
11481 }
11482 \def\PDFPreviousPage{%
11483   \@ifnextchar{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
11484 }
11485 \def\PDFPreviousPage@[#1]#2{%
11486   \pdfmark[#{#2}]{%
11487     #1,%
11488     Border=\@pdfborder,%
11489     BorderStyle=\@pdfborderstyle,%
11490     Color=.4 .4 .1,%
11491     pdfmark=/ANN,%
11492     Subtype=/Link,%
11493     PDFAFlags=4,%
11494     Page=/Prev%
11495   }%
11496 }
11497 \def\PDFOpen#1{%
11498   \pdfmark{#1,pdfmark=/DOCVIEW}%
11499 }
```

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

```
11500 \def\hyper@linkurl#1#2{%
11501   \begingroup
11502   \Hy@pstringdef\Hy@pstringURI{#2}%
11503   \hyper@chars
11504   \leavevmode
11505   \pdfmark[#{#1}]{%
11506     pdfmark=/ANN,%
11507     linktype=url,%
11508     AcroHighlight=\@pdfhighlight,%
11509     Border=\@pdfborder,%
11510     BorderStyle=\@pdfborderstyle,%
11511     Color=\@urlbordercolor,%
11512     Action={<<%
11513       /Subtype/URI%
11514       /URI(\Hy@pstringURI)%
11515       \ifHy@href@ismap
11516         /IsMap true%
11517     }%
11518   }
```

```

11518     >>},%
11519     Subtype=/Link,%
11520     PDFAFlags=4%
11521     }%
11522 \endgroup
11523 }
11524 \def\hyper@linkfile#1#2#3{%
11525 \begingroup
11526 \def\Hy@pstringF{#2}%
11527 \Hy@CleanupFile\Hy@pstringF
11528 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
11529 \Hy@pstringdef\Hy@pstringD{#3}%
11530 \Hy@MakeRemoteAction
11531 \leavevmode
11532 \pdfmark[#{#1}]{%
11533 pdfmark=/ANN,%
11534 Subtype=/Link,%
11535 PDFAFlags=4,%
11536 AcroHighlight=\@pdfhighlight,%
11537 Border=\@pdfborder,%
11538 BorderStyle=\@pdfborderstyle,%
11539 linktype=file,%
11540 Color=\@filebordercolor,%
11541 Action={%
11542 <<%
11543 /S/GoToR%
11544 \Hy@SetNewWindow
11545 /F(\Hy@pstringF)%
11546 /D%
11547 \ifx\#3\%
11548 [\Hy@href@page\@pdfremotestartview]%
11549 \else
11550 (\Hy@pstringD)cvn%
11551 \fi
11552 \Hy@href@nextactionraw
11553 >>%
11554 }%
11555 }%
11556 \endgroup
11557 }
11558 \def\@hyper@launch run:#1\#2#3{%
11559 \begingroup
11560 \Hy@pstringdef\Hy@pstringF{#1}%
11561 \Hy@pstringdef\Hy@pstringP{#3}%
11562 \leavevmode
11563 \pdfmark[#{#2}]{%
11564 pdfmark=/ANN,%
11565 Subtype=/Link,%
11566 PDFAFlags=4,%
11567 AcroHighlight=\@pdfhighlight,%
11568 Border=\@pdfborder,%
11569 BorderStyle=\@pdfborderstyle,%
11570 linktype=run,%
11571 Color=\@runbordercolor,%

```

```

11572 Action={%
11573 <<%
11574 /S/Launch%
11575 \Hy@SetNewWindow
11576 /F(\Hy@pstringF)%
11577 \ifx\#3\%
11578 \else
11579 /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
11580 \fi
11581 \Hy@href@nextactionraw
11582 >>%
11583 }%
11584 }%
11585 \endgroup
11586 }
11587 </pdfmark>

```

Unfortunately, some parts of the `pdfmark` PostScript code depend on vagaries of the dvi driver. We isolate here all the problems.

## 44.9 Rokicki's dvips

dvips thinks in 10ths of a big point, its coordinate space is resolution dependent, and its *y* axis starts at the top of the page. Other drivers can and will be different!

The work is done in `SDict`, because we add in some header definitions in a moment.

```

11588 (*dvips)
11589 \providecommand*\XR@ext}{pdf}
11590 \let\Hy@raisedlink\@empty
11591 \def\literals@out#1{\special{ps:SDict begin #1 end}}%
11592 \def\headerps@out#1{\special{! #1}}%
11593 \input{pdfmark.def}%
11594 \ifx\@pdfproducer\relax
11595 \def\@pdfproducer{dvips + Distiller}%
11596 \fi
11597 \providecommand*\@pdfborder{0 0 1}
11598 \providecommand*\@pdfborderstyle{}
11599 \providecommand*\@pdfview{XYZ}
11600 \providecommand*\@pdfviewparams{ H.V}
11601 \def\Hy@BorderArrayPatch{BorderArrayPatch}
11602 \g@addto@macro\Hy@FirstPageHook{%
11603 \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.

```
11604 /DvipsToPDF{72.27 mul Resolution div} def%
11605 /PDFToDvips{72.27 div Resolution mul} def%
11606 /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.

```
11607 product (Ghostscript) search {pop pop pop revision 927 gt}%
11608 {pop false} ifelse%
11609 {%
11610 /BorderArrayPatch{} def%
11611 }%
11612 {%
11613 /BorderArrayPatch{%
11614 [exch{%
11615 dup dup type/integertype eq exch type/realtype eq or%
11616 {BPToDvips}if%
11617 }forall]%
11618 }def%
11619 } 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.

```
11620 /HyperBorder {1 PDFToDvips} def%
11621 /H.V {pdf@hoff pdf@voff null} def%
11622 /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

```
11623 /H.S {%
11624 currentpoint %
11625 HyperBorder add /pdf@lly exch def %
11626 dup DvipsToPDF 72 add /pdf@hoff exch def %
11627 HyperBorder sub /pdf@llx exch def%
11628 } def%
```

The calculation of upper left  $y$  is done without raising the point in  $\text{\TeX}$ , by simply adding on the current  $\backslash$ 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

```
11629 /H.L {%
11630 2 sub dup%
11631 /HyperBasePt exch def %
11632 PDFToDvips /HyperBaseDvips exch def %
11633 currentpoint %
```



```

11634   HyperBaseDvips sub /pdf@ury exch def%
11635   /pdf@urx exch def%
11636   } def%
11637   /H.A {%
11638     H.L %
11639 % | /pdf@voff| = the distance from the top of the page to a point
11640 % |\baselineskip| above the current point in PDF coordinates
11641   currentpoint exch pop %
11642   vsize 72 sub exch DvipsToPDF %
11643   HyperBasePt sub % baseline skip
11644   sub /pdf@voff exch def%
11645   } def%
11646   /H.R {%
11647     currentpoint %
11648     HyperBorder sub /pdf@ury exch def %
11649     HyperBorder add /pdf@urx exch def %
11650 % | /pdf@voff| = the distance from the top of the page to the current point, in
11651 % PDF coordinates
11652     currentpoint exch pop vsize 72 sub %
11653     exch DvipsToPDF sub /pdf@voff exch def%
11654   } def%
11655 }%
11656 }
11657 \AtBeginShipoutFirst{%
11658   \ifHy@setpagesize
11659     \begingroup
11660     \ifnum\mag=\@m
11661       \ifdim\stockwidth>\z@
11662         \ifdim\stockheight>\z@
11663           \special{papersize=\the\stockwidth,\the\stockheight}%
11664         \else
11665           \ifdim\paperwidth>\z@
11666             \ifdim\paperheight>\z@
11667               \special{papersize=\the\paperwidth,\the\paperheight}%
11668             \fi
11669           \fi
11670         \fi
11671       \else
11672         \ifdim\stockwidth=\z@
11673           \ifdim\paperwidth>\z@
11674             \ifdim\paperheight>\z@
11675               \special{papersize=\the\paperwidth,\the\paperheight}%
11676             \fi
11677           \fi
11678         \fi
11679       \fi
11680     \fi
11681   \endgroup
11682 \fi
11683 \Hy@DisableOption{setpagesize}%
11684 }

11685 \def\setpdfinkmargin#1{%
11686   \begingroup
11687   \setlength{\dimen@}{#1}%

```

```

11688 \literalps@out{%
11689 /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
11690 }%
11691 \endgroup
11692 }
11693 </dvips>

```

## 44.10 VTeX's vtexpdfmark driver

This part is derived from the dvips (many names reflect this).

The origin seems to be the same as TeX's origin, 1 in from the left and 1 in downwards from the top. The direction of the  $y$  axis is downwards, the opposite of the dvips case. Units seems to be pt or bp.

```

11694 (*vtexpdfmark)
11695 \providecommand*\XR@ext}{pdf}
11696 \let\Hy@raisedlink\@empty
11697 \def\literalps@out#1{\special{pS:#1}}%
11698 \def\headerps@out#1{\immediate\special{pS:#1}}%
11699 \input{pdfmark.def}%
11700 \ifx\@pdfproducer\relax
11701 \ifnum\OpMode=\@ne
11702 \def\@pdfproducer{VTeX}%
11703 \else
11704 \def\@pdfproducer{VTeX + Distiller}%
11705 \fi
11706 \fi
11707 \providecommand*\@pdfborder{0 0 1}
11708 \providecommand*\@pdfborderstyle{}
11709 \providecommand*\@pdfview{XYZ}
11710 \providecommand*\@pdfviewparams{ H.V}

11711 \g@addto@macro\Hy@FirstPageHook{%
11712 \headerps@out{%
11713 /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.

```

11714 /HyperBorder {1} def%
11715 /H.V {pdf@hoff pdf@voff null} def%
11716 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def%

```

H.S (start of anchor, link, or rect) stores the  $x$  and  $y$  coordinates of the current point, in PDF coordinates:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

11717 /H.S {%
11718 currentpoint %
11719 HyperBorder sub%
11720 /pdf@lly exch def %
11721 dup 72 add /pdf@hoff exch def %
11722 HyperBorder sub%
11723 /pdf@llx exch def%
11724 } def%

```

The  $x$  and  $y$  coordinates of the current point, minus the `\baselineskip`: `pdf@ury = Yc + HyperBasePt + HyperBorder`, `pdf@urx = Xc + HyperBorder`

```

11725 /H.L {%
11726 2 sub%
11727 /HyperBasePt exch def %
11728 currentpoint %
11729 HyperBasePt add HyperBorder add%
11730 /pdf@ury exch def %
11731 HyperBorder add%
11732 /pdf@urx exch def%
11733 } def%
11734 /H.A {%
11735 H.L %
11736 currentpoint exch pop %
11737 vsize 72 sub exch %
11738 HyperBasePt add add%
11739 /pdf@voff exch def%
11740 } def%
pdf@ury = Yc + HyperBorder, pdf@urx = Xc + HyperBorder
11741 /H.R {%
11742 currentpoint %
11743 HyperBorder add%
11744 /pdf@ury exch def %
11745 HyperBorder add%
11746 /pdf@urx exch def %
11747 currentpoint exch pop vsize 72 sub add%
11748 /pdf@voff exch def%
11749 } def%
11750 }%
11751 }

11752 \def\setpdfinkmargin#1{%
11753 \begingroup
11754 \setlength{\dimen@}{#1}%
11755 \literalps@out{%
11756 /HyperBorder{\strip@pt\dimen@}def%
11757 }%
11758 \endgroup
11759 }

11760 </vtxpdfmark>

```

## 44.11 Textures

```

11761 (*textures)
11762 \providecommand*\XR@ext}{pdf}

```

At the suggestion of Jacques Distler ([distler@golem.ph.utexas.edu](mailto: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](mailto: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.

```
11763 \begingroup
11764 \obeylines %
11765 \gdef\Hy@ps@CR{\noexpand
11766 }%
11767 \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`.

```
11768 \def\literalps@out#1{%
11769 \special{postscript 0 0 transform}%
11770 \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
11771 }%
11772 %
```

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.

```
11773 \def\headerps@out#1{%
11774 \special{%
11775 prepostscript TeXdict begin\Hy@ps@CR
11776 #1\Hy@ps@CR
11777 end%
11778 }%
11779 }%
11780 %
```

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.

```
11781 \g@addto@macro\Hy@FirstPageHook{%
11782 \headerps@out{%
11783 /betterpdfmark {%
11784 systemdict begin %
11785 dup /BP eq%
11786 {cleartomark gsave nulldevice []}%
11787 {dup /EP eq%
11788 {cleartomark cleartomark grestore}%
11789 {cleartomark}%
11790 ifelse%
11791 }ifelse %
11792 end%
11793 }def\Hy@ps@CR
11794 ___pdfmark___ not{/pdfmark /betterpdfmark load def}if%
11795 }% end of \headerps@out
```

```

11796 }% end of \AtBeginShipoutFirst
11797 %
11798 \input{pdfmark.def}%
11799 %
11800 \ifx\@pdfproducer\relax
11801 \def\@pdfproducer{Textures + Distiller}%
11802 \fi
11803 \providecommand*\@pdfborder{0 0 1}
11804 \providecommand*\@pdfborderstyle{}
11805 \providecommand*\@pdfview{XYZ}
11806 \providecommand*\@pdfviewparams{ H.V}
11807 %

```

These are called at the start and end of unboxed links; their job is to leave available PS variables called `pdf@llx pdf@lly pdf@urx pdf@ury`, which are the coordinates of the bounding rectangle of the link, and `pdf@hoff pdf@voff` which are the PDF page offsets. The Rect pair are called at the LL and UR corners of a box known to  $\TeX$ .

```

11808 \Hy@AtBeginDocument{%
11809 \headerps@out{%

```

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

```

11810 /vsize {\Hy@pageheight} def%
11811 /DvipsToPDF {} def%
11812 /PDFToDvips {} def%
11813 /BPToDvips {} def%
11814 /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
11815 /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
11816 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
11817 /H.S {%
11818 currentpoint %
11819 HyperBorder add /pdf@lly exch def %
11820 dup DvipsToPDF 72 add /pdf@hoff exch def %
11821 HyperBorder sub /pdf@llx exch def%
11822 } def\Hy@ps@CR
11823 /H.L {%
11824 2 sub %
11825 PDFToDvips /HyperBase exch def %
11826 currentpoint %
11827 HyperBase sub /pdf@ury exch def%
11828 /pdf@urx exch def%
11829 } def\Hy@ps@CR
11830 /H.A {%
11831 H.L %
11832 currentpoint exch pop %
11833 vsize 72 sub exch DvipsToPDF %
11834 HyperBase sub % baseline skip
11835 sub /pdf@voff exch def%
11836 } def\Hy@ps@CR
11837 /H.R {%
11838 currentpoint %
11839 HyperBorder sub /pdf@ury exch def %
11840 HyperBorder add /pdf@urx exch def %

```

```

11841   currentpoint exch pop vsize 72 sub %
11842   exch DvipsToPDF sub /pdf@voff exch def%
11843   } def\Hy@ps@CR
11844 }%
11845 }

11846 \def\setpdfinkmargin#1{%
11847   \begingroup
11848   \setlength{\dimen@}{#1}%
11849   \literalps@out{%
11850     /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
11851   }%
11852   \endgroup
11853 }

11854 \Hy@AtBeginDocument{%
11855   \ifHy@colorlinks
11856     \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
11857   \fi
11858 }

```

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.

```

11859 \expandafter\let\expandafter\keepPDF@SetupDoc
11860   \csname PDF@SetupDoc\endcsname
11861 \def\PDF@SetupDoc{%
11862   \ifx\@baseurl\@empty
11863   \else
11864     \special{html:<base href="\@baseurl">}%
11865   \fi
11866   \keepPDF@SetupDoc
11867 }

11868 \Hy@WrapperDef\hyper@anchor#1{%
11869   \Hy@SaveLastskip
11870   \Hy@VerboseAnchor{#1}%
11871   \begingroup
11872   \let\protect=\string
11873   \special{html:<a name=%
11874     \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11875   \endgroup
11876   \Hy@activeanchortrue
11877   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
11878   \special{html:</a>}%
11879   \Hy@activeanchorfalse
11880   \Hy@RestoreLastskip
11881 }

11882 \Hy@WrapperDef\hyper@anchorstart#1{%
11883   \Hy@SaveLastskip
11884   \Hy@VerboseAnchor{#1}%
11885   \begingroup
11886   \hyper@chars
11887   \special{html:<a name=%
11888     \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11889   \endgroup

```

```

11890 \Hy@activeanchortrue
11891 }
11892 \def\hyper@anchorend{%
11893 \special{html:</a>}%
11894 \Hy@activeanchorfalse
11895 \Hy@RestoreLastskip
11896 }
11897 \def\@urltype{url}
11898 \def\hyper@linkstart#1#2{%
11899 \Hy@VerboseLinkStart{#1}{#2}%
11900 \expandafter\Hy@colorlink\csname @#1color\endcsname
11901 \def\Hy@tempa{#1}%
11902 \ifx\Hy@tempa\@urltype
11903 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11904 \else
11905 \begingroup
11906 \hyper@chars
11907 \special{%
11908 html:<a href=%
11909 \hyper@quote#\Hy@HyperDestNameFilter{#2}\hyper@quote>%
11910 }%
11911 \endgroup
11912 \fi
11913 }
11914 \def\hyper@linkend{%
11915 \special{html:</a>}%
11916 \Hy@endcolorlink
11917 }
11918 \def\hyper@linkfile#1#2#3{%
11919 \hyper@linkurl{#1}{%
11920 \Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi
11921 }%
11922 }
11923 \def\hyper@linkurl#1#2{%
11924 \leavevmode
11925 \ifHy@raiselinks
11926 \Hy@SaveSpaceFactor
11927 \Hy@SaveSavedSpaceFactor
11928 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
11929 \Hy@RestoreSavedSpaceFactor
11930 \@linkdim\dp\@tempboxa
11931 \lower\@linkdim\hbox{%
11932 \hyper@chars
11933 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11934 }%
11935 \Hy@colorlink\@urlcolor
11936 \Hy@RestoreSpaceFactor
11937 #1\Hy@xspace@end
11938 \Hy@SaveSpaceFactor
11939 \@linkdim\ht\@tempboxa
11940 \advance\@linkdim by -6.5\p@
11941 \raise\@linkdim\hbox{\special{html:</a>}}%
11942 \Hy@endcolorlink
11943 \Hy@RestoreSpaceFactor

```

```

11944 \else
11945 \begingroup
11946 \hyper@chars
11947 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11948 \Hy@colorlink\@urlcolor#1\Hy@xspace@end
11949 \special{html:</a>}%
11950 \Hy@endcolorlink
11951 \endgroup
11952 \fi
11953 }

```

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

```

11954 \def\hyper@link#1#2#3{%
11955 \Hy@VerboseLinkStart{#1}{#2}%
11956 \hyper@linkurl{#3}{\#HyperDestNameFilter{#2}}%
11957 }
11958 \def\hyper@image#1#2{%
11959 \begingroup
11960 \hyper@chars
11961 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
11962 \endgroup
11963 }
11964 </textures>

```

## 44.12 dvipsone

```

11965 % \subsection{dvipsone driver}
11966 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
11967 % |\special| commands.
11968 (*dvipsone)
11969 \providecommand*\XR@ext}{pdf}
11970 \let\Hy@raisedlink\@empty
11971 \providecommand*\@pdfborder{0 0 1}
11972 \providecommand*\@pdfborderstyle{}
11973 \def\literalps@out#1{\special{ps:#1}}%
11974 \def\headerps@out#1{\special{headertext=#1}}%
11975 \input{pdfmark.def}%
11976 \HyInfo@AddonUnsupportedtrue
11977 \def\PDF@FinishDoc{%
11978 \Hy@UseMaketitleInfos
11979 \HyInfo@TrappedUnsupported
11980 \special{PDF: Keywords \@pdfkeywords}%
11981 \special{PDF: Title \@pdftitle}%
11982 \special{PDF: Creator \@pdfcreator}%
11983 \ifx\@pdfcreationdate\@empty
11984 \else
11985 \special{PDF: CreationDate \@pdfcreationdate}%
11986 \fi
11987 \ifx\@pdfmoddate\@empty
11988 \else
11989 \special{PDF: ModDate \@pdfmoddate}%
11990 \fi
11991 \special{PDF: Author \@pdfauthor}%
11992 \ifx\@pdfproducer\relax

```



```

11993 \else
11994 \special{PDF: Producer \@pdfproducer}%
11995 \fi
11996 \special{PDF: Subject \@pdfsubject}%
11997 \Hy@DisableOption{pdfauthor}%
11998 \Hy@DisableOption{pdftitle}%
11999 \Hy@DisableOption{pdfsubject}%
12000 \Hy@DisableOption{pdfcreator}%
12001 \Hy@DisableOption{addtopdfcreator}%
12002 \Hy@DisableOption{pdfcreationdate}%
12003 \Hy@DisableOption{pdfcreationdate}%
12004 \Hy@DisableOption{pdfmoddate}%
12005 \Hy@DisableOption{pdfproducer}%
12006 \Hy@DisableOption{pdfkeywords}%
12007 \Hy@DisableOption{pdftrapped}%
12008 \Hy@DisableOption{pdfinfo}%
12009 }
12010 \def\PDF@SetupDoc{%
12011 \def\Hy@temp{}%
12012 \ifx\@pdfstartpage\@empty
12013 \else
12014 \ifx\@pdfstartview\@empty
12015 \else
12016 \edef\Hy@temp{%
12017 ,Page=\@pdfstartpage
12018 ,View=\@pdfstartview
12019 }%
12020 \fi
12021 \fi
12022 \edef\Hy@temp{%
12023 \noexpand\pdfmark{%
12024 pdfmark=/DOCVIEW,%
12025 PageMode=/\@pdfpagemode
12026 \Hy@temp
12027 }%
12028 }%
12029 \Hy@temp
12030 \ifx\@pdfpagescrop\@empty
12031 \else
12032 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
12033 \fi
12034 \edef\Hy@temp{%
12035 \ifHy@pdftoolbar\else /HideToolbar true\fi
12036 \ifHy@pdfmenubar\else /HideMenubar true\fi
12037 \ifHy@pdfwindowui\else /HideWindowUI true\fi
12038 \ifHy@pdffitwindow /FitWindow true\fi
12039 \ifHy@pdfcenterwindow /CenterWindow true\fi
12040 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
12041 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
12042 \Hy@UseNameKey{Direction}\@pdfdirection
12043 \Hy@UseNameKey{ViewArea}\@pdfviewarea
12044 \Hy@UseNameKey{ViewClip}\@pdfviewclip
12045 \Hy@UseNameKey{PrintArea}\@pdfprintarea
12046 \Hy@UseNameKey{PrintClip}\@pdfprintclip

```

```

12047 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
12048 \Hy@UseNameKey{Duplex}\@pdfduplex
12049 \ifx\@pdfpicktraybypdfsize\@empty
12050 \else
12051 /PickTrayByPDFSize \@pdfpicktraybypdfsize
12052 \fi
12053 \ifx\@pdfprintpagerange\@empty
12054 \else
12055 /PrintPageRange[\@pdfprintpagerange]%
12056 \fi
12057 \ifx\@pdfnumcopies\@empty
12058 \else
12059 /NumCopies \@pdfnumcopies
12060 \fi
12061 }%
12062 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
12063 \pdfmark{%
12064 pdfmark=/PUT,%
12065 Raw={%
12066 \string{Catalog\string}<<%
12067 \ifx\Hy@temp\@empty
12068 \else
12069 /ViewerPreferences<<\Hy@temp>>%
12070 \fi
12071 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
12072 \ifx\@pdflang\relax
12073 \else
12074 /Lang(\@pdflang)%
12075 \fi
12076 \ifx\@baseurl\@empty
12077 \else
12078 /URI<</Base(\Hy@pstringB)>>%
12079 \fi
12080 >>%
12081 }%
12082 }%
12083 }
12084 \providecommand*\@pdfview{XYZ}
12085 \providecommand*\@pdfviewparams{ %
12086 gsave revscl currentpoint grestore %
12087 72 add exch pop null exch null%
12088 }
12089 \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.
12090 \g@addto@macro\Hy@FirstPageHook{%
12091 \headerps@out{%

dvipsone lives in scaled points; does this mean 65536 or 65781?
12092 /DvipsToPDF { 65781 div } def%
12093 /PDFToDvips { 65781 mul } def%

```

```

12094 /BPToDvips{65781 mul}def%
12095 /HyperBorder { 1 PDFToDvips } def%
12096 /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.
12097 /BorderArrayPatch{%
12098   [exch{%
12099     dup dup type/integertype eq exch type/realttype eq or%
12100     {BPToDvips}if%
12101   }forall]%
12102 }def%
12103 /H.S {%
12104   currentpoint %
12105   HyperBorder add /pdf@lly exch def %
12106   dup DvipsToPDF 72 add /pdf@hoff exch def %
12107   HyperBorder sub /pdf@llx exch def%
12108 } def%
12109 /H.L {%
12110   2 sub %
12111   PDFToDvips /HyperBase exch def %
12112   currentpoint %
12113   HyperBase sub /pdf@ury exch def%
12114   /pdf@urx exch def%
12115 } def%
12116 /H.A {%
12117   H.L %
12118   currentpoint exch pop %
12119   HyperBase sub % baseline skip
12120   DvipsToPDF /pdf@voff exch def%
12121 } def%
12122 /H.R {%
12123   currentpoint %
12124   HyperBorder sub /pdf@ury exch def %
12125   HyperBorder add /pdf@urx exch def %
12126   currentpoint exch pop DvipsToPDF /pdf@voff exch def%
12127 } def%
12128 }%
12129 }

12130 \def\setpdfinkmargin#1{%
12131   \begingroup
12132   \setlength{\dimen@}{#1}%
12133   \literalps@out{%
12134     /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
12135   }%
12136   \endgroup
12137 }

12138 </dvipsone>

```

### 44.13 TeX4ht

```

12139 (*tex4ht)
12140 \providecommand*\XR@ext}{html}

```

```

12141 \let\Hy@raisedlink\@empty
12142 \@ifpackageloaded{tex4ht}{%
12143 \Hy@InfoNoLine{tex4ht is already loaded}%
12144 }{%
12145 \RequirePackage[htex4ht]{tex4ht}%
12146 }
12147 \hyperlinkfileprefix{}
12148 \let\PDF@FinishDoc\@empty
12149 \def\PDF@SetupDoc{%
12150 \ifx\@baseurl\@empty
12151 \else
12152 \special{t4ht=<base href="\@baseurl">}%
12153 \fi
12154 }
12155 \Hy@WrapperDef\hyper@anchor#1{%
12156 \Hy@SaveLastskip
12157 \Hy@VerboseAnchor{#1}%
12158 \begingroup
12159 \let\protect=\string
12160 \special{t4ht=<a name=%
12161 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12162 \endgroup
12163 \Hy@activeanchortrue
12164 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
12165 \special{t4ht=</a>}%
12166 \Hy@activeanchorfalse
12167 \Hy@RestoreLastskip
12168 }
12169 \Hy@WrapperDef\hyper@anchorstart#1{%
12170 \Hy@SaveLastskip
12171 \Hy@VerboseAnchor{#1}%
12172 \begingroup
12173 \hyper@chars\special{t4ht=<a name=%
12174 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12175 \endgroup
12176 \Hy@activeanchortrue
12177 }
12178 \def\hyper@anchorend{%
12179 \special{t4ht=</a>}%
12180 \Hy@activeanchorfalse
12181 \Hy@RestoreLastskip
12182 }
12183 \def\@urltype{url}
12184 \def\hyper@linkstart#1#2{%
12185 \Hy@VerboseLinkStart{#1}{#2}%
12186 \expandafter\Hy@colorlink\csname @#1color\endcsname
12187 \def\Hy@tempa{#1}%
12188 \ifx\Hy@tempa\@urltype
12189 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12190 \else
12191 \begingroup
12192 \hyper@chars
12193 \special{t4ht=<a href=%
12194 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%

```

```

12195 \endgroup
12196 \fi
12197 }
12198 \def\hyper@linkend{%
12199 \special{t4ht=</a>}%
12200 \Hy@endcolorlink
12201 }
12202 \def\hyper@linkfile#1#2#3{%
12203 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
12204 }
12205 \def\hyper@linkurl#1#2{%
12206 \leavevmode
12207 \ifHy@raiselinks
12208 \Hy@SaveSpaceFactor
12209 \Hy@SaveSavedSpaceFactor
12210 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
12211 \Hy@RestoreSavedSpaceFactor
12212 \@linkdim\dp\@tempboxa
12213 \lower\@linkdim\hbox{%
12214 \begingroup
12215 \hyper@chars
12216 \special{%
12217 t4ht=<a href=\hyper@quote#2\hyper@quote>%
12218 }%
12219 \endgroup
12220 }%
12221 \Hy@colorlink\@urlcolor
12222 \Hy@RestoreSpaceFactor
12223 #1\Hy@xspace@end
12224 \Hy@SaveSpaceFactor
12225 \Hy@endcolorlink
12226 \@linkdim\ht\@tempboxa
12227 \advance\@linkdim by -6.5\p@
12228 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
12229 \Hy@RestoreSpaceFactor
12230 \else
12231 \begingroup
12232 \hyper@chars
12233 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12234 \Hy@colorlink\@urlcolor
12235 #1\Hy@xspace@end
12236 \Hy@endcolorlink
12237 \special{t4ht=</a>}%
12238 \endgroup
12239 \fi
12240 }

Poor implementation of \hyper@link without considering #1.
12241 \def\hyper@link#1#2#3{%
12242 \Hy@VerboseLinkStart{#1}{#2}%
12243 \hyper@linkurl{#3}{\# \Hy@HyperDestNameFilter{#2}}%
12244 }
12245 \def\hyper@image#1#2{%
12246 \begingroup
12247 \hyper@chars

```

```

12248 \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
12249 \endgroup
12250 }
12251 \let\autoref\ref
12252 \ifx \rEfLiNK \UnDef
12253 \def\rEfLiNK #1#2{#2}%
12254 \fi
12255 \let\backref\@gobble

Fix for tex4ht.
12256 \AtBeginDocument{%
12257 \expandafter
12258 \let\expandafter\Hy@OrgMakeLabel\csname Make:Label\endcsname
12259 \expandafter\def\csname Make:Label\endcsname#1#2{%
12260 \ifhmode
12261 \Hy@SaveSpaceFactor
12262 \else
12263 \global\Hy@SavedSpaceFactor=1000 %
12264 \fi
12265 \Hy@OrgMakeLabel{#1}{%
12266 \Hy@RestoreSpaceFactor
12267 #2\Hy@xspace@end%
12268 \Hy@SaveSpaceFactor
12269 }%
12270 \Hy@RestoreSpaceFactor
12271 }%
12272 }
12273 </tex4ht>
12274 (*tex4htcfg)
12275 \IfFileExists{\jobname.cfg}{\endinput}{-}
12276 \Preamble{html}
12277 \begin{document}%
12278 \EndPreamble
12279 \def\TeX{TeX}
12280 \def\OMEGA{Omega}
12281 \def\LaTeX{LaTeX}
12282 \def\LaTeXe{LaTeX2e}
12283 \def\eTeX{e-TeX}
12284 \def\MF{Metafont}
12285 \def\MP{MetaPost}
12286 </tex4htcfg)

```

## 45 Driver-specific form support

### 45.1 pdfmarks

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

```

12287 (*pdfmark)
12288 \long\def\@Form[#1]{%
12289 \g@addto@macro\Hy@FirstPageHook{%
12290 \headerps@out{%
12291 [%
12292 /_objdef{pdfDocEncoding}%
12293 /type/dict%
12294 /OBJ pdfmark%

```

12295 [%  
12296 {pdfDocEncoding}%  
12297 <<%  
12298 /Type/Encoding%  
12299 /Differences[%  
12300 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%  
12301 /tilde %  
12302 39/quotesingle %  
12303 96/grave %  
12304 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%  
12305 /fraction/guilsinglleft/guilsinglright/minus/perthousand%  
12306 /quotedblbase/quotedblleft/quotedblright/quoteleft%  
12307 /quoteright/quotesinglbase/trademark/ffi/ffl/Lslash/OE/Scaron%  
12308 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %  
12309 160/Euro %  
12310 164/currency %  
12311 166/brokenbar %  
12312 168/dieresis/copyright/ordfeminine %  
12313 172/logicalnot/.notdef/registered/macron/degree/plusminus%  
12314 /twosuperior/threesuperior/acute/mu %  
12315 183/periodcentered/cedilla/onesuperior/ordmasculine %  
12316 188/onequarter/onehalf/threequarters %  
12317 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%  
12318 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%  
12319 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%  
12320 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%  
12321 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%  
12322 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%  
12323 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%  
12324 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%  
12325 /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%  
12326 /ucircumflex/udieresis/yacute/thorn/ydieresis%  
12327 ]%  
12328 >>%  
12329 /PUT pdfmark%  
12330 [%  
12331 /\_objdef{ZaDb}%  
12332 /type/dict%  
12333 /OBJ pdfmark%  
12334 [%  
12335 {ZaDb}%  
12336 <<%  
12337 /Type/Font%  
12338 /Subtype/Type1%  
12339 /Name/ZaDb%  
12340 /BaseFont/ZapfDingbats%  
12341 >>%  
12342 /PUT pdfmark%  
12343 [%  
12344 /\_objdef{Helv}%  
12345 /type/dict%  
12346 /OBJ pdfmark%  
12347 [%  
12348 {Helv}%

```

12349 <<%
12350 /Type/Font%
12351 /Subtype/Type1%
12352 /Name/Helv%
12353 /BaseFont/Helvetica%
12354 /Encoding{pdfDocEncoding}%
12355 >>%
12356 /PUT pdfmark%
12357 [%
12358 /_objdef{aform}%
12359 /type/dict%
12360 /OBJ pdfmark%
12361 [%
12362 /_objdef{afields}%
12363 /type/array%
12364 /OBJ pdfmark%
12365 [%
12366 /_objdef{corder}%
12367 /type/array%
12368 /OBJ pdfmark%
12369 {%
12370 [%
12371 /BBox[0 0 100 100]%
12372 /_objdef{Check}%
12373 /BP pdfmark %
12374 1 0 0 setrgbcolor%
12375 /ZapfDingbats 80 selectfont %
12376 20 20 moveto%
12377 (4)show%
12378 [/EP pdfmark%
12379 [%
12380 /BBox[0 0 100 100]%
12381 /_objdef{Cross}%
12382 /BP pdfmark %
12383 1 0 0 setrgbcolor%
12384 /ZapfDingbats 80 selectfont %
12385 20 20 moveto%
12386 (8)show%
12387 [/EP pdfmark%
12388 [%
12389 /BBox[0 0 250 100]%
12390 /_objdef{Submit}%
12391 /BP pdfmark %
12392 0.6 setgray %
12393 0 0 250 100 rectfill %
12394 1 setgray %
12395 2 2 moveto %
12396 2 98 lineto %
12397 248 98 lineto %
12398 246 96 lineto %
12399 4 96 lineto %
12400 4 4 lineto %
12401 fill %
12402 0.34 setgray %

```



```

12403 248 98 moveto %
12404 248 2 lineto %
12405 2 2 lineto %
12406 4 4 lineto %
12407 246 4 lineto %
12408 246 96 lineto %
12409 fill%
12410 /Helvetica 76 selectfont %
12411 0 setgray %
12412 8 22.5 moveto%
12413 (Submit)show%
12414 [/EP pdfmark%
12415 [%
12416 /BBox[0 0 250 100]%
12417 /_objdef{SubmitP}%
12418 /BP pdfmark %
12419 0.6 setgray %
12420 0 0 250 100 rectfill %
12421 0.34 setgray %
12422 2 2 moveto %
12423 2 98 lineto %
12424 248 98 lineto %
12425 246 96 lineto %
12426 4 96 lineto %
12427 4 4 lineto %
12428 fill %
12429 1 setgray %
12430 248 98 moveto %
12431 248 2 lineto %
12432 2 2 lineto %
12433 4 4 lineto %
12434 246 4 lineto %
12435 246 96 lineto %
12436 fill%
12437 /Helvetica 76 selectfont %
12438 0 setgray %
12439 10 20.5 moveto%
12440 (Submit)show%
12441 [/EP pdfmark%
12442 } ?pdfmark%
12443 [%
12444 {aform}%
12445 <<%
12446 /Fields{afields}%
12447 /DR<<%
12448 /Font<<%
12449 /ZaDb{ZaDb}%
12450 /Helv{Helv}%
12451 >>%
12452 >>%
12453 /DA(/Helv 10 Tf 0 g)%
12454 /CO{corder}%
12455 \ifHy@pdfa
12456 \else

```

```

12457 \ifHyField@NeedAppearances
12458 /NeedAppearances true%
12459 \fi
12460 \fi
12461 >>%
12462 /PUT pdfmark%
12463 [%
12464 {Catalog}%
12465 <<%
12466 /AcroForm{aform}%
12467 >>%
12468 /PUT pdfmark%
12469 }}%
12470 \kvsetkeys{Form}{#1}%
12471 }
12472 \let\@endForm\@empty
12473 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12474 \Hy@Message{Sorry, pdfmark drivers do not support FORM gauges}%
12475 }

12476 \newcount\HyField@AnnotCount
12477 \HyField@AnnotCount=\z@
12478 \def\HyField@AdvanceAnnotCount{%
12479 \global\advance\HyField@AnnotCount\@ne
12480 }
12481 \def\HyField@TheAnnotCount{%
12482 \the\HyField@AnnotCount
12483 }

12484 \edef\Fld@pageobjref{/P\string{ThisPage\string}}
12485 \def\HyField@AddToFields#1{%
12486 \pdfmark{%
12487 pdfmark=/APPEND,%
12488 Raw={%
12489 \string{afields\string}%
12490 \string{#1\HyField@TheAnnotCount\string}%
12491 }%
12492 }%
12493 \ifx\Fld@calculate@code\@empty
12494 \else
12495 \pdfmark{%
12496 pdfmark=/APPEND,%
12497 Raw={%
12498 \string{corder\string}%
12499 \string{#1\HyField@TheAnnotCount\string}%
12500 }%
12501 }%
12502 \fi
12503 }

12504 \def\@TextField[#1]#2{% parameters, label
12505 \def\Fld@name{#2}%
12506 \let\Fld@default\@empty
12507 \let\Fld@value\@empty
12508 \def\Fld@width{\DefaultWidthofText}%
12509 \def\Fld@height{%

```

```

12510 \ifFld@multiline
12511 \DefaultHeightofTextMultiline
12512 \else
12513 \DefaultHeightofText
12514 \fi
12515 }%
12516 \beginngroup
12517 \expandafter\HyField@SetKeys\expandafter{%
12518 \DefaultOptionsofText,#1%
12519 }%
12520 \HyField@FlagsText
12521 \ifFld@hidden\def\Fld@width{1sp}\fi
12522 \ifx\Fld@value\empty\def\Fld@value{\Fld@default}\fi
12523 \HyField@AdvanceAnnotCount
12524 \LayoutTextField{#2}{%
12525 \leavevmode
12526 \Hy@escapeform\PDFForm@Text
12527 \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
12528 pdfmark=/ANN,%
12529 objdef=text\HyField@TheAnnotCount,%
12530 Raw={\PDFForm@Text}%
12531 }%
12532 }%
12533 \HyField@AddToFields{text}%
12534 \endgroup
12535 }
12536 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12537 \def\Fld@name{#2}%
12538 \let\Fld@default\relax
12539 \let\Fld@value\relax
12540 \def\Fld@width{\DefaultWidthofChoiceMenu}%
12541 \def\Fld@height{\DefaultHeightofChoiceMenu}%
12542 \beginngroup
12543 \Fld@menulength=0 %
12544 \@tempdima\z@
12545 \@for\@curropt:=#3\do{%
12546 \expandafter\Fld@checkequals\@curropt==\%
12547 \Hy@StepCount\Fld@menulength
12548 \settowidth{\@tempdimb}{\@currDisplay}%
12549 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12550 }%
12551 \advance\@tempdima by 15\p@
12552 \beginngroup
12553 \HyField@SetKeys{#1}%
12554 \edef\x{\endgroup
12555 \noexpand\expandafter
12556 \noexpand\HyField@SetKeys
12557 \noexpand\expandafter{%
12558 \expandafter\noexpand\curname DefaultOptionsof%
12559 \ifFld@radio
12560 Radio%
12561 \else
12562 \ifFld@combo
12563 \ifFld@popdown

```

```

12564         PopdownBox%
12565         \else
12566         ComboBox%
12567         \fi
12568         \else
12569         ListBox%
12570         \fi
12571         \fi
12572     \endcsname
12573 }%
12574 }\x
12575 \HyField@SetKeys{#1}%
12576 \ifFld@hidden\def\Fld@width{1sp}\fi
12577 \ifx\Fld@value\relax
12578     \let\Fld@value\Fld@default
12579 \fi
12580 \LayoutChoiceField{#2}{%
12581     \ifFld@radio
12582     \HyField@FlagsRadioButton
12583     \@@Radio{#3}%
12584     \else
12585     \begingroup
12586     \HyField@FlagsChoice
12587     \ifdim\Fld@width<\@tempdima
12588     \ifdim\@tempdima<1cm\@tempdima1cm\fi
12589     \edef\Fld@width{\the\@tempdima}%
12590     \fi
12591     \ifFld@combo
12592     \else
12593     \@tempdima=\the\Fld@menulength\Fld@charsize
12594     \advance\@tempdima by \Fld@borderwidth bp %
12595     \advance\@tempdima by \Fld@borderwidth bp %
12596     \edef\Fld@height{\the\@tempdima}%
12597     \fi
12598     \@@ListBox{#3}%
12599     \endgroup
12600     \fi
12601 }%
12602 \endgroup
12603 }
12604 \def\@@Radio#1{%
12605     \Fld@listcount=0 %
12606     \EdefEscapeName\Fld@default{\Fld@default}%
12607     \@for\@curropt:=#1\do{%
12608         \expandafter\Fld@checkequals\@curropt==\%
12609         \EdefEscapeName\@currValue{\@currValue}%
12610         \Hy@StepCount\Fld@listcount
12611         \@currDisplay\space
12612         \Hy@escapeform\PDFForm@Radio
12613         \ifnum\Fld@listcount=1 %
12614             \HyField@AdvanceAnnotCount
12615         \fi
12616         \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
12617             pdfmark=/ANN,%

```

```

12618 objdef=\ifnum\Fld@listcount=1 radio\HyField@TheAnnotCount\fi,%
12619 Raw={%
12620 \PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>%
12621 }%
12622 } % deliberate space between radio buttons
12623 \ifnum\Fld@listcount=1 %
12624 \HyField@AddToFields{radio}%
12625 \fi
12626 }%
12627 }
12628 \newcount\Fld@listcount
12629 \def\@@ListBox#1{%
12630 \HyField@PDFChoices{#1}%
12631 \Hy@escapeform\PDFForm@List
12632 \HyField@AdvanceAnnotCount
12633 \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
12634 pdfmark=/ANN,%
12635 objdef=list\HyField@TheAnnotCount,%
12636 Raw={\PDFForm@List}%
12637 }%
12638 \HyField@AddToFields{list}%
12639 }
12640 \def\@PushButton[#1]#2{% parameters, label
12641 \def\Fld@name{#2}%
12642 \begingroup
12643 \expandafter\HyField@SetKeys\expandafter{%
12644 \DefaultOptionsofPushButton,#1%
12645 }%
12646 \ifHy@pdfa
12647 \Hy@Error{%
12648 PDF/A: Push button with JavaScript is prohibited%
12649 } \@ehc
12650 \LayoutPushButtonField{%
12651 \leavevmode
12652 \MakeButtonField{#2}%
12653 }%
12654 \else
12655 \HyField@FlagsPushButton
12656 \ifFld@hidden\def\Fld@width{1sp}\fi
12657 \HyField@AdvanceAnnotCount
12658 \LayoutPushButtonField{%
12659 \leavevmode
12660 \Hy@escapeform\PDFForm@Push
12661 \pdfmark[\MakeButtonField{#2}]{%
12662 pdfmark=/ANN,%
12663 objdef=push\HyField@TheAnnotCount,%
12664 Raw={\PDFForm@Push}%
12665 }%
12666 }%
12667 \HyField@AddToFields{push}%
12668 \fi
12669 \endgroup
12670 }
12671 \def\@Submit[#1]#2{%

```

```

12672 \def\Fld@width{\DefaultWidthofSubmit}%
12673 \def\Fld@height{\DefaultHeightofSubmit}%
12674 \begingroup
12675 \expandafter\HyField@SetKeys\expandafter{%
12676   \DefaultOptionsofSubmit,#1%
12677 }%
12678 \HyField@FlagsPushButton
12679 \HyField@FlagsSubmit
12680 \ifFld@hidden\def\Fld@width{1sp}\fi
12681 \Hy@escapeform\PDFForm@Submit
12682 \HyField@AdvanceAnnotCount
12683 \pdfmark[\MakeButtonField{#2}]{%
12684   pdfmark=/ANN,%
12685   objdef=submit\HyField@TheAnnotCount,%
12686   Raw={\PDFForm@Submit /AP<</N{Submit}/D{SubmitP}>>}}%
12687 }%
12688 \HyField@AddToFields{submit}%
12689 \endgroup
12690 }
12691 \def\@Reset[#1]#2{%
12692   \def\Fld@width{\DefaultWidthofReset}%
12693   \def\Fld@height{\DefaultHeightofReset}%
12694   \begingroup
12695     \expandafter\HyField@SetKeys\expandafter{%
12696       \DefaultOptionsofReset,#1%
12697     }%
12698     \leavevmode
12699     \ifHy@pdfa
12700       \Hy@Error{%
12701         PDF/A: Reset action is prohibited%
12702       }\@ehc
12703       \MakeButtonField{#2}%
12704     \else
12705       \HyField@FlagsPushButton
12706       \ifFld@hidden\def\Fld@width{1sp}\fi
12707       \Hy@escapeform\PDFForm@Reset
12708       \HyField@AdvanceAnnotCount
12709       \pdfmark[\MakeButtonField{#2}]{%
12710         pdfmark=/ANN,%
12711         objdef=reset\HyField@TheAnnotCount,%
12712         Raw={\PDFForm@Reset}}%
12713       }%
12714       \HyField@AddToFields{reset}%
12715     \fi
12716   \endgroup
12717 }%
12718 \def\@CheckBox[#1]#2{% parameters, label
12719   \def\Fld@name{#2}%
12720   \def\Fld@default{0}%
12721   \begingroup
12722     \def\Fld@width{\DefaultWidthofCheckBox}%
12723     \def\Fld@height{\DefaultHeightofCheckBox}%
12724     \expandafter\HyField@SetKeys\expandafter{%
12725       \DefaultOptionsofCheckBox,#1%

```

```

12726 }%
12727 \HyField@FlagsCheckBox
12728 \ifFld@hidden\def\Fld@width{1sp}\fi
12729 \HyField@AdvanceAnnotCount
12730 \LayoutCheckField{#2}{%
12731 \leavevmode
12732 \Hy@escapeform\PDFForm@Check
12733 \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
12734 pdfmark=/ANN,%
12735 objdef=check\HyField@TheAnnotCount,%
12736 Raw={\PDFForm@Check}%
12737 }%
12738 }%
12739 \HyField@AddToFields{check}%
12740 \endgroup
12741 }
12742 </pdfmark>

```

## 45.2 HyperTeX

```

12743 (*hypertex)
12744 \def\@Form[#1]{%
12745 \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12746 }
12747 \let\@endForm\@empty
12748 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12749 \Hy@Message{Sorry, HyperTeX does not support FORM gauges}%
12750 }
12751 \def\@TextField[#1]#2{% parameters, label
12752 \Hy@Message{Sorry, HyperTeX does not support FORM text fields}%
12753 }
12754 \def\@CheckBox[#1]#2{% parameters, label
12755 \Hy@Message{Sorry, HyperTeX does not support FORM checkboxes}%
12756 }
12757 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12758 \Hy@Message{Sorry, HyperTeX does not support FORM choice menus}%
12759 }
12760 \def\@PushButton[#1]#2{% parameters, label
12761 \Hy@Message{Sorry, HyperTeX does not support FORM pushbuttons}%
12762 }
12763 \def\@Reset[#1]#2{%
12764 \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12765 }
12766 \def\@Submit[#1]#2{%
12767 \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12768 }
12769 </hypertex>

```

## 45.3 TeX4ht

```

12770 (*tex4ht)
12771 \def\@Form[#1]{%
12772 \kvsetkeys{Form}{#1}%
12773 \HCode{<form action="\Form@action" method="\Form@method">}%
12774 }

```

```

12775 \def\@endForm{\HCode{</form>}}
12776 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12777   \Hy@Message{Sorry, TeX4ht does not support gauges}%
12778 }
12779 \def\@TextField[#1]#2{% parameters, label
12780   \let\Hy@reserved@a\@empty
12781   \def\Fld@name{#2}%
12782   \let\Fld@default\@empty
12783   \bgroup
12784     \Field@toks={ }%
12785     \kvsetkeys{Field}{#1}%
12786     \HCode{<label for="\Fld@name">#2</label>}%
12787     \ifFld@password
12788       \@@PasswordField
12789     \else
12790       \@@TextField
12791     \fi
12792   \egroup
12793 }
12794 \def\@@PasswordField{%
12795   \HCode{%
12796     <input type="password" %
12797     id="\Fld@name" %
12798     name="\Fld@name" %
12799     \ifFld@hidden type="hidden" \fi
12800     value="\Fld@default" %
12801     \the\Field@toks
12802     >%
12803   }%
12804 }
12805 \def\@@TextField{%
12806   \ifFld@multiline
12807     \HCode{<textarea %
12808       \ifFld@readonly readonly \fi
12809       id="\Fld@name" %
12810       name="\Fld@name" %
12811       \ifFld@hidden type="hidden" \fi
12812       \the\Field@toks>%
12813     }%
12814     \Fld@default
12815     \HCode{</textarea>}%
12816   \else
12817     \HCode{<input type="textbox" %
12818       \ifFld@readonly readonly \fi
12819       id="\Fld@name" %
12820       name="\Fld@name" %
12821       \ifFld@hidden type="hidden" \fi
12822       value="\Fld@default" %
12823       \the\Field@toks>%
12824     }%
12825   \fi
12826 }
12827 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12828   \def\Fld@name{#2}%

```



```

12829 \let\Fld@default\@empty
12830 \let\Hy@reserved@a\relax
12831 \begingroup
12832 \expandafter\Fld@findlength#3\%
12833 \Field@toks={ }%
12834 \kvsetkeys{Field}{#1}%
12835 #2%
12836 \ifFld@radio
12837 \expandafter\@@Radio#3\%
12838 \else
12839 \expandafter\@@Menu#3\%
12840 \fi
12841 \endgroup
12842 }
12843 \def\Fld@findlength#1\%
12844 \Fld@menulength=0 %
12845 \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
12846 }
12847 \def\@@Menu#1\%
12848 \HCode{<select size="\the\Fld@menulength" %
12849 name="\Fld@name" %
12850 \the\Field@toks>%
12851 }%
12852 \@for\@curropt:=#1\do{%
12853 \expandafter\Fld@checkequals\@curropt==\%
12854 \HCode{<option %
12855 \ifx\@curropt\Fld@default selected \fi
12856 value="\@currValue">\@currDisplay</option>%
12857 }%
12858 }%
12859 \HCode{</select>}%
12860 }
12861 \def\@@Radio#1\%
12862 \@for\@curropt:=#1\do{%
12863 \expandafter\Fld@checkequals\@curropt==\%
12864 \HCode{<input type="radio" %
12865 \ifx\@curropt\Fld@default checked \fi
12866 name="\Fld@name" %
12867 value="\@currValue" %
12868 \the\Field@toks>%
12869 }%
12870 \@currDisplay
12871 }%
12872 }
12873 \def\@PushButton[#1]#2{% parameters, label
12874 \def\Fld@name{#2}%
12875 \bgroup
12876 \Field@toks={ }%
12877 \kvsetkeys{Field}{#1}%
12878 \HCode{<input type="button" %
12879 name="\Fld@name" %
12880 value="#2" %
12881 \the\Field@toks>%
12882 }%

```

```

12883   \HCode{</button>}%
12884   \egroup
12885 }
12886 \def\@Submit[#1]#2{%
12887   \HCode{<button type="submit">#2</button>}%
12888 }
12889 \def\@Reset[#1]#2{%
12890   \HCode{<button type="reset">#2</button>}%
12891 }
12892 \def\@CheckBox[#1]#2{% parameters, label
12893   \let\Hy@reserved@a\@empty
12894   \def\Fld@name{#2}%
12895   \def\Fld@default{0}%
12896   \bgroup
12897     \Field@toks={ }%
12898     \kvsetkeys{Field}{#1}%
12899     \HCode{<input type="checkbox" %
12900       \ifFld@checked checked \fi
12901       \ifFld@disabled disabled \fi
12902       \ifFld@readonly readonly \fi
12903       name="\Fld@name" %
12904       \ifFld@hidden type="hidden" \fi
12905       value="\Fld@default" %
12906       \the\Field@toks>%
12907     #2%
12908   }%
12909   \egroup
12910 }
12911 </tex4ht>

```

## 45.4 pdfTeX

```

12912 (*pdfTeX)
12913 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12914   \Hy@Message{Sorry, pdfTeX does not support FORM gauges}%
12915 }
12916 \def\MakeFieldObject#1#2{\sbox0{#1}%
12917   \immediate\pdfxform0 %
12918   \expandafter\edef\csname #2Object\endcsname{%
12919     \the\pdfastxform\space 0 R%
12920   }%
12921 % \hbox to Opt{\hskip-\maxdimen{\pdfrefxform \the\pdfastxform}}%
12922 }%
12923 \let\HyField@afields\@empty
12924 \let\HyField@cofields\@empty
12925 \@ifundefined{pdfastlink}
12926 {%
12927   \let\HyField@AddToFields\relax
12928   \PackageInfo{hyperref}{%
12929     You need pdfTeX 1.40.0 for setting the /Fields entry.%
12930     \MessageBreak
12931     Adobe Reader/Acrobat accepts an empty /Field array,%
12932     \MessageBreak
12933     but other PDF viewers might complain%
12934   }}%

```

```

12935 {%
12936 \let\HyField@AuxAddToFields@gobble
12937 \let\HyField@AuxAddToCoFields@gobbletwo
12938 \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.
12939 \def\HyField@ABD@AuxAddToCoFields#1#2{%
12940 \begingroup
12941 \Hy@safe@activestrue
12942 \let\@secondoftwo\relax
12943 \ifx\HyField@cofields\@empty
12944 \xdef\HyField@cofields{%
12945 \@secondoftwo{#1}{ #2 0 R}%
12946 }%
12947 \else
12948 \let\@secondoftwo\relax
12949 \def\HyField@AddCoField##1##2##3{%
12950 \ifx##1\@empty
12951 \@secondoftwo{#1}{ #2 0 R}%
12952 \expandafter\@gobble
12953 \else
12954 \ifnum\pdfstrcmp{##2}{#1}>\z@
12955 \@secondoftwo{#1}{ #2 0 R}%
12956 \@secondoftwo{##2}{##3}%
12957 \expandafter\expandafter\expandafter\@gobble
12958 \else
12959 \@secondoftwo{##2}{##3}%
12960 \fi
12961 \fi
12962 \HyField@AddCoField
12963 }%
12964 \xdef\HyField@cofields{%
12965 \expandafter\HyField@AddCoField
12966 \HyField@cofields\@empty\@empty\@empty
12967 }%
12968 \fi
12969 \endgroup
12970 }%
12971 \Hy@AtBeginDocument{%
12972 \if@filesw
12973 \immediate\write\@mainaux{%
12974 \string\providecommand\string\HyField@AuxAddToFields[1]{}%
12975 }%
12976 \immediate\write\@mainaux{%
12977 \string\providecommand\string\HyField@AuxAddToCoFields[2]{}%
12978 }%
12979 \fi
12980 \let\HyField@AfterAuxOpen\@firstofone
12981 \def\HyField@AuxAddToFields#1{%
12982 \xdef\HyField@afields{%
12983 \ifx\HyField@afields\@empty
12984 \else
12985 \HyField@afields
12986 \space

```

```

12987     \fi
12988     #1 0 R%
12989   }%
12990 }%
12991 \let\HyField@AuxAddToCoFields\HyField@ABD@AuxAddToCoFields
12992 }%
12993 \def\HyField@AddToFields{%
12994   \expandafter\HyField@@AddToFields\expandafter{%
12995     \the\pdfastlink
12996   }%
12997   \ifx\Fld@calculate@code\@empty
12998   \else
12999     \begingroup
13000     \Hy@safe@activestrue
13001     \edef\Hy@temp{%
13002       \endgroup
13003       \if@filesw
13004         \write\@mainaux{%
13005           \string\HyField@AuxAddToCoFields{%
13006             \Fld@calculate@sortkey
13007           }{%
13008             \the\pdfastlink
13009           }%
13010         }%
13011       \fi
13012     }%
13013     \Hy@temp
13014   \fi
13015 }%
13016 \def\HyField@@AddToFields#1{%
13017   \HyField@AfterAuxOpen{%
13018     \if@filesw
13019       \write\@mainaux{%
13020         \string\HyField@AuxAddToCoFields{#1}%
13021       }%
13022     \fi
13023   }%
13024 }%
13025 }
13026 \def\@Form[#1]{%
13027   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13028   \kvsetkeys{Form}{#1}%
13029   \pdf@ifdraftmode{}{%
13030     \Hy@FormObjects
13031     \ifnum\pdftexversion>13 %
13032       \pdfrefobj\OBJ@pdfdocencoding
13033       \pdfrefobj\OBJ@ZaDb
13034       \pdfrefobj\OBJ@Helv
13035     \fi
13036     \AtVeryEndDocument{%
13037       \immediate\pdfobj{%
13038         <<%
13039         /Fields[\HyField@afields]%
13040         \ifx\HyField@cofields\@empty

```

```

13041     \else
13042         /CO[\romannumeral-`\Q\HyField@cofields]%
13043     \fi
13044     /DR<<%
13045     /Font<<%
13046         /ZaDb \OBJ@ZaDb\space 0 R%
13047         /Helv \OBJ@Helv\space 0 R%
13048     >>%
13049 >>%
13050 /DA(/Helv 10 Tf 0 g)%
13051 \ifHy@pdfa
13052 \else
13053     \ifHyField@NeedAppearances
13054         /NeedAppearances true%
13055     \fi
13056 \fi
13057 >>%
13058 }%
13059 \edef\OBJ@acroform{\the\pdfastobj}%
13060 \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
13061 }%
13062 }%
13063 \MakeFieldObject{%
Same as \ding{123} of package pifont.
13064 \begingroup
13065     \fontfamily{pzd}%
13066     \fontencoding{U}%
13067     \fontseries{m}%
13068     \fontshape{n}%
13069     \selectfont
13070     \char123 %
13071 \endgroup
13072 }{Ding}%
13073 \MakeFieldObject{%
13074     \fbox{\textcolor{yellow}{\textsf{Submit}}}%
13075 }{Submit}%
13076 \MakeFieldObject{%
13077     \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
13078 }{SubmitP}%
13079 }
13080 \let\@endForm\@empty
13081 \let\HyAnn@AbsPageLabel\@empty
13082 \let\Fld@pageobjref\@empty
13083 \@ifundefined{pdfpageref}{%
13084 }{%
13085 \@ifpackageloaded{zref-abspage}{%
13086     \newcount\HyAnn@Count
13087     \HyAnn@Count=\z@
13088     \def\HyAnn@AbsPageLabel{%
13089         \global\advance\HyAnn@Count by\@ne
13090         \zref@labelbyprops{HyAnn@\the\HyAnn@Count}{abspage}%
13091         \zref@refused{HyAnn@\the\HyAnn@Count}%
13092     }%
13093     \def\Fld@pageobjref{%

```

```

13094 \zref@ifrefundefined{HyAnn@the\HyAnn@Count}{%
13095 }{%
13096 \zref@ifrefcontainsprop{HyAnn@the\HyAnn@Count}{abspage}{%
13097 /P \pdfpageref
13098 \zref@extractdefault{HyAnn@the\HyAnn@Count}{abspage}{1} %
13099 \space 0 R%
13100 }{%
13101 }%
13102 }%
13103 }%
13104 }{%
13105 }%
13106 }

13107 \def\@TextField[#1]#2{% parameters, label
13108 \def\Fld@name{#2}%
13109 \let\Fld@default\@empty
13110 \let\Fld@value\@empty
13111 \def\Fld@width{\DefaultWidthofText}%
13112 \def\Fld@height{%
13113 \ifFld@multiline
13114 \DefaultHeightofTextMultiline
13115 \else
13116 \DefaultHeightofText
13117 \fi
13118 }%
13119 \begingroup
13120 \expandafter\HyField@SetKeys\expandafter{%
13121 \DefaultOptionsofText,#1%
13122 }%
13123 \PDFForm@Name
13124 \HyField@FlagsText
13125 \ifFld@hidden\def\Fld@width{1sp}\fi
13126 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13127 \LayoutTextField{#2}{%
13128 \leavevmode
13129 \HyAnn@AbsPageLabel
13130 \Hy@escapeform\PDFForm@Text
13131 \pdfstartlink user {\PDFForm@Text}\relax
13132 \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
13133 \HyField@AddToFields
13134 }%
13135 \endgroup
13136 }

13137 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13138 \def\Fld@name{#2}%
13139 \let\Fld@default\relax
13140 \let\Fld@value\relax
13141 \def\Fld@width{\DefaultWidthofChoiceMenu}%
13142 \def\Fld@height{\DefaultHeightofChoiceMenu}%
13143 \begingroup
13144 \Fld@menulength=0 %
13145 \@tempdima\z@
13146 \@for\@curropt:=#3\do{%
13147 \expandafter\Fld@checkequals\@curropt==\%

```

```

13148 \Hy@StepCount\Fld@menulength
13149 \settowidth{\@tempdimb}{\@currDisplay}%
13150 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13151 }%
13152 \advance\@tempdima by 15\p@
13153 \begingroup
13154 \HyField@SetKeys{#1}%
13155 \edef\x{\endgroup
13156 \noexpand\expandafter
13157 \noexpand\HyField@SetKeys
13158 \noexpand\expandafter{%
13159 \expandafter\noexpand\csname DefaultOptionsof%
13160 \ifFld@radio
13161 Radio%
13162 \else
13163 \ifFld@combo
13164 \ifFld@popdown
13165 PopdownBox%
13166 \else
13167 ComboBox%
13168 \fi
13169 \else
13170 ListBox%
13171 \fi
13172 \fi
13173 \endcsname
13174 }%
13175 }\x
13176 \HyField@SetKeys{#1}%
13177 \PDFForm@Name
13178 \ifFld@hidden\def\Fld@width{1sp}\fi
13179 \ifx\Fld@value\relax
13180 \let\Fld@value\Fld@default
13181 \fi
13182 \LayoutChoiceField{#2}{%
13183 \ifFld@radio
13184 \HyField@FlagsRadioButton
13185 \@@Radio{#3}%
13186 \else
13187 \begingroup
13188 \HyField@FlagsChoice
13189 \ifdim\Fld@width<\@tempdima
13190 \ifdim\@tempdima<1cm\@tempdima1cm\fi
13191 \edef\Fld@width{\the\@tempdima}%
13192 \fi
13193 \ifFld@combo
13194 \else
13195 \@tempdima=\the\Fld@menulength\Fld@charsize
13196 \advance\@tempdima by \Fld@borderwidth bp %
13197 \advance\@tempdima by \Fld@borderwidth bp %
13198 \edef\Fld@height{\the\@tempdima}%
13199 \fi
13200 \@@ListBox{#3}%
13201 \endgroup

```

```

13202   \fi
13203   }%
13204 \endgroup
13205 }
13206 \def\@@Radio#1{%
13207   \Fld@listcount=0 %
13208   \EdefEscapeName\Fld@default{\Fld@default}%
13209   \@for\@curropt:=#1\do{%
13210     \expandafter\Fld@chekequals\@curropt==\%
13211     \EdefEscapeName\@currValue{\@currValue}%
13212     \Hy@StepCount\Fld@listcount
13213     \@currDisplay\space
13214     \leavevmode
13215     \HyAnn@AbsPageLabel
13216     \Hy@escapeform\PDFForm@Radio
13217     \pdfstartlink user {%
13218       \PDFForm@Radio
13219       /AP<<%
13220       /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.

```

13221     /\@currValue\space \DingObject
13222     >>%
13223     >>%
13224   }%
13225   \relax
13226   \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
13227   \ifnum\Fld@listcount=1 %
13228     \HyField@AddToFields
13229   \fi
13230   \space % deliberate space between radio buttons
13231 }%
13232 }
13233 \newcount\Fld@listcount
13234 \def\@@ListBox#1{%
13235   \HyField@PDFChoices{#1}%
13236   \leavevmode
13237   \HyAnn@AbsPageLabel
13238   \Hy@escapeform\PDFForm@List
13239   \pdfstartlink user {\PDFForm@List}\relax
13240   \MakeChoiceField{\Fld@width}{\Fld@height}%
13241   \pdfendlink
13242   \HyField@AddToFields
13243 }
13244 \def\@PushButton[#1]#2{% parameters, label
13245   \def\Fld@name{#2}%
13246   \begingroup
13247     \expandafter\HyField@SetKeys\expandafter{%
13248       \DefaultOptionsofPushButton,#1%
13249     }%
13250   \PDFForm@Name
13251   \ifHy@pdfa

```



```

13252 \Hy@Error{%
13253   PDF/A: Push button with JavaScript is prohibited%
13254 } \@ehc
13255 \LayoutPushButtonField{%
13256   \leavevmode
13257   \MakeButtonField{#2}%
13258 }%
13259 \else
13260 \HyField@FlagsPushButton
13261 \ifFld@hidden\def\Fld@width{1sp}\fi
13262 \LayoutPushButtonField{%
13263   \leavevmode
13264   \HyAnn@AbsPageLabel
13265   \Hy@escapeform\PDFForm@Push
13266   \pdfstartlink user {\PDFForm@Push}\relax
13267   \MakeButtonField{#2}%
13268   \pdfendlink
13269   \HyField@AddToFields
13270 }%
13271 \fi
13272 \endgroup
13273 }
13274 \def\@Submit[#1]#2{%
13275   \def\Fld@width{\DefaultWidthofSubmit}%
13276   \def\Fld@height{\DefaultHeightofSubmit}%
13277   \begingroup
13278     \expandafter\HyField@SetKeys\expandafter{%
13279       \DefaultOptionsofSubmit,#1%
13280     }%
13281     \HyField@FlagsPushButton
13282     \HyField@FlagsSubmit
13283     \ifFld@hidden\def\Fld@width{1sp}\fi
13284     \leavevmode
13285     \HyAnn@AbsPageLabel
13286     \Hy@escapeform\PDFForm@Submit
13287     \pdfstartlink user {%
13288       \PDFForm@Submit
13289       /AP<</N \SubmitObject/D \SubmitPObject>>%
13290     }%
13291     \relax
13292     \MakeButtonField{#2}%
13293     \pdfendlink
13294     \HyField@AddToFields
13295   \endgroup
13296 }
13297 \def\@Reset[#1]#2{%
13298   \def\Fld@width{\DefaultWidthofReset}%
13299   \def\Fld@height{\DefaultHeightofReset}%
13300   \begingroup
13301     \expandafter\HyField@SetKeys\expandafter{%
13302       \DefaultOptionsofReset,#1%
13303     }%
13304     \leavevmode
13305     \ifHy@pdfa

```

```

13306 \Hy@Error{%
13307     PDF/A: Reset action is prohibited%
13308 } \@ehc
13309 \MakeButtonField{#2}%
13310 \else
13311 \HyField@FlagsPushButton
13312 \ifFld@hidden\def\Fld@width{1sp}\fi
13313 \HyAnn@AbsPageLabel
13314 \Hy@escapeform\PDFForm@Reset
13315 \pdfstartlink user {\PDFForm@Reset}\relax
13316 \MakeButtonField{#2}%
13317 \pdfendlink
13318 \HyField@AddToFields
13319 \fi
13320 \endgroup
13321 }
13322 \def\@CheckBox[#1]#2{% parameters, label
13323 \def\Fld@name{#2}%
13324 \def\Fld@default{0}%
13325 \begingroup
13326 \def\Fld@width{\DefaultWidthofCheckBox}%
13327 \def\Fld@height{\DefaultHeightofCheckBox}%
13328 \expandafter\HyField@SetKeys\expandafter{%
13329 \DefaultOptionsofCheckBox,#1%
13330 }%
13331 \PDFForm@Name
13332 \HyField@FlagsCheckBox
13333 \ifFld@hidden\def\Fld@width{1sp}\fi
13334 \LayoutCheckField{#2}{%
13335 \leavevmode
13336 \HyAnn@AbsPageLabel
13337 \Hy@escapeform\PDFForm@Check
13338 \pdfstartlink user {\PDFForm@Check}\relax
13339 \MakeCheckField{\Fld@width}{\Fld@height}%
13340 \pdfendlink
13341 \HyField@AddToFields
13342 }%
13343 \endgroup
13344 }
13345 \def\Hy@FormObjects{%
13346 \pdfobj {%
13347 <<%
13348 /Type/Encoding%
13349 /Differences%
13350 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
13351 /ring/tilde %
13352 39/quotesingle %
13353 96/grave %
13354 128/bullet/dagger/daggerdbl/ellipsis/emdash/enddash/florin%
13355 /fraction/guilsingleft/guilsingright/minus/perthousand%
13356 /quotedblbase/quotedblleft/quotedblright/quoteleft%
13357 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
13358 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13359 160/Euro %

```

```

13360 164/currency %
13361 166/brokenbar %
13362 168/dieresis/copyright/ordfeminine %
13363 172/logicalnot/.notdef/registered/macron/degree/plusminus%
13364 /twosuperior/threesuperior/acute/mu %
13365 183/periodcentered/cedilla/onesuperior/ordmasculine %
13366 188/onequarter/onehalf/threequarters %
13367 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13368 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
13369 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
13370 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
13371 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
13372 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
13373 /cedilla/egrave/eacute/ecircumflex/edieresis/igrave%
13374 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
13375 /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
13376 /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
13377 ]%
13378 >>%
13379 }%
13380 \xdef\OBJ@pdfdocencoding{\the\pdfastobj}%
13381 \pdfobj{%
13382 <<%
13383 /Type/Font%
13384 /Subtype/Type1%
13385 /Name/ZaDb%
13386 /BaseFont/ZapfDingbats%
13387 >>%
13388 }%
13389 \xdef\OBJ@ZaDb{\the\pdfastobj}%
13390 \pdfobj{%
13391 <<%
13392 /Type/Font%
13393 /Subtype/Type1%
13394 /Name/Helv%
13395 /BaseFont/Helvetica%
13396 /Encoding \OBJ@pdfdocencoding\space 0 R%
13397 >>%
13398 }%
13399 \xdef\OBJ@Helv{\the\pdfastobj}%
13400 \global\let\Hy@FormObjects\relax
13401 }
13402 </pdfTeX>

```

## 45.5 dvipdfm, xetex

D. P. Story adapted the pdf<sub>T</sub>E<sub>X</sub> forms part for dvipdfm, of which version 0.12.7b or higher is required because of a bug.

```
13403 (*dvipdfm | xetex)
```

```
\@Gauge
```

```

13404 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
13405 \Hy@Message{Sorry, dvipdfm/XeTeX does not support FORM gauges}%
13406 }

```

\@Form

```
13407 \def\@Form[#1]{%
13408 \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13409 \kvsetkeys{Form}{#1}%
13410 \Hy@FormObjects
13411 \@pdfm@mark{obj @afields []}%
13412 \@pdfm@mark{obj @corder []}%
13413 \@pdfm@mark{%
13414   obj @aform <<%
13415   /Fields @afields%
13416   /DR<<%
13417   /Font<<%
13418   /ZaDb @OBJZaDb%
13419   /Helv @OBJHelv%
13420   >>%
13421   >>%
13422   /DA(/Helv 10 Tf 0 g)%
13423   /CO @corder%
13424   \ifHy@pdfa
13425   \else
13426     \ifHyField@NeedAppearances
13427       /NeedAppearances true%
13428     \fi
13429   \fi
13430   >>%
13431 }%
13432 \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
13433 }
```

\@endForm

```
13434 \let\@endForm\@empty
```

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

```
13435 \def\dvipdfm@setdim{%
13436   height \the\ht\pdfm@box\space
13437   width \the\wd\pdfm@box\space
13438   depth \the\dp\pdfm@box\space
13439 }
```

\HyField@AnnotCount

```
13440 \newcount\HyField@AnnotCount
13441 \HyField@AnnotCount=\z@
```

\HyField@AdvanceAnnotCount

```
13442 \def\HyField@AdvanceAnnotCount{%
13443   \global\advance\HyField@AnnotCount\@ne
13444 }
```

\HyField@TheAnnotCount

```
13445 \def\HyField@TheAnnotCount{%
13446   \the\HyField@AnnotCount
13447 }
```

\Fld@pageobjref

13448 \def\Fld@pageobjref{/P @thispage}%

\HyField@AddToFields

```
13449 \def\HyField@AddToFields#1{%
13450 \@pdfm@mark{put @afields @#1\HyField@TheAnnotCount}%
13451 \ifx\Fld@calculate@code\@empty
13452 \else
13453 \@pdfm@mark{put @corder @#1\HyField@TheAnnotCount}%
13454 \fi
13455 }
```

\@TextField

```
13456 \def\@TextField[#1]#2{% parameters, label
13457 \def\Fld@name{#2}%
13458 \let\Fld@default\@empty
13459 \let\Fld@value\@empty
13460 \def\Fld@width{\DefaultWidthofText}%
13461 \def\Fld@height{%
13462 \ifFld@multiline
13463 \DefaultHeightofTextMultiline
13464 \else
13465 \DefaultHeightofText
13466 \fi
13467 }%
13468 \begingroup
13469 \expandafter\HyField@SetKeys\expandafter{%
13470 \DefaultOptionsofText,#1%
13471 }%
13472 \PDFForm@Name
13473 \HyField@FlagsText
13474 \ifFld@hidden\def\Fld@width{1sp}\fi
13475 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13476 \setbox\pdfm@box=\hbox{%
13477 \MakeTextField{\Fld@width}{\Fld@height}%
13478 }%
13479 \HyField@AdvanceAnnotCount
13480 \LayoutTextField{#2}{%
13481 \leavevmode
13482 \Hy@escapeform\PDFForm@Text
13483 \@pdfm@mark{%
13484 ann @text\HyField@TheAnnotCount\space
13485 \dviPDFm@setdim << \PDFForm@Text >>%
13486 }%
13487 }%
13488 \unhbox\pdfm@box
13489 \HyField@AddToFields{text}%
13490 % record in @afields array
13491 \endgroup
13492 }
```

\@ChoiceMenu

```
13493 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13494 \def\Fld@name{#2}%
```

```

13495 \let\Fld@default\relax
13496 \let\Fld@value\relax
13497 \def\Fld@width{\DefaultWidthofChoiceMenu}%
13498 \def\Fld@height{\DefaultHeightofChoiceMenu}%
13499 \begingroup
13500 \Fld@menulength=0 %
13501 \@tempdima\z@
13502 \@for\@curropt:=#3\do{%
13503 \expandafter\Fld@checkequals\@curropt==\%
13504 \Hy@StepCount\Fld@menulength
13505 \settowidth{\@tempdimb}{\@currDisplay}%
13506 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13507 }%
13508 \advance\@tempdima by 15\p@
13509 \begingroup
13510 \HyField@SetKeys{#1}%
13511 \edef\x{\endgroup
13512 \noexpand\expandafter
13513 \noexpand\HyField@SetKeys
13514 \noexpand\expandafter{%
13515 \expandafter\noexpand\cname DefaultOptionsof%
13516 \ifFld@radio
13517 Radio%
13518 \else
13519 \ifFld@combo
13520 \ifFld@popdown
13521 PopdownBox%
13522 \else
13523 ComboBox%
13524 \fi
13525 \else
13526 ListBox%
13527 \fi
13528 \fi
13529 \endcname
13530 }%
13531 }\x
13532 \HyField@SetKeys{#1}%
13533 \PDFForm@Name
13534 \ifFld@hidden\def\Fld@width{1sp}\fi
13535 \ifx\Fld@value\relax
13536 \let\Fld@value\Fld@default
13537 \fi
13538 \LayoutChoiceField{#2}{%
13539 \ifFld@radio
13540 \HyField@FlagsRadioButton
13541 \@@Radio{#3}%
13542 \else
13543 \begingroup
13544 \HyField@FlagsChoice
13545 \ifdim\Fld@width<\@tempdima
13546 \ifdim\@tempdima<1cm\@tempdima1cm\fi
13547 \edef\Fld@width{\the\@tempdima}%
13548 \fi

```

```

13549     \ifFld@combo
13550     \else
13551         \@tempdima=\the\Fld@menulength\Fld@charsize
13552         \advance\@tempdima by \Fld@borderwidth bp %
13553         \advance\@tempdima by \Fld@borderwidth bp %
13554         \edef\Fld@height{\the\@tempdima}%
13555     \fi
13556     \@@ListBox{#3}%
13557 \endgroup
13558 \fi
13559 }%
13560 \endgroup
13561 }

```

\@@Radio

```

13562 \def\@@Radio#1{%
13563   \Fld@listcount=0 %
13564   \EdefEscapeName\Fld@default{\Fld@default}%
13565   \setbox\pdfm@box=\hbox{%
13566     \MakeRadioField{\Fld@width}{\Fld@height}%
13567   }%
13568   \for\@curropt:=#1\do{%
13569     \expandafter\Fld@checkequals\@curropt==\%
13570     \EdefEscapeName\@currValue{\@currValue}%
13571     \Hy@StepCount\Fld@listcount
13572     \@currDisplay\space
13573     \leavevmode
13574     \Hy@escapeform\PDFForm@Radio
13575     \ifnum\Fld@listcount=1 %
13576       \HyField@AdvanceAnnotCount
13577     \fi
13578     \@pdfm@mark{%
13579       ann %
13580       \ifnum\Fld@listcount=1 %
13581         @radio\HyField@TheAnnotCount%
13582       \space
13583     \fi
13584     \dvi pdfm@setdim
13585     <<%
13586     \PDFForm@Radio
13587     /AP<</N<</\@currValue /null>>>>%
13588     >>%
13589   }%
13590   \unhcopy\pdfm@box\space% deliberate space between radio buttons
13591   \ifnum\Fld@listcount=1 %
13592     \HyField@AddToFields{radio}%
13593   \fi
13594 }%
13595 }

```

\Fld@listcount

```

13596 \newcount\Fld@listcount

```

\@@ListBox

```

13597 \def\@@ListBox#1{%
13598   \HyField@PDFChoices{#1}%
13599   \setbox\pdfm@box=\hbox{%
13600     \MakeChoiceField{\Fld@width}{\Fld@height}%
13601   }%
13602   \leavevmode
13603   \Hy@escapeform\PDFForm@List
13604   \HyField@AdvanceAnnotCount
13605   \@pdfm@mark{%
13606     ann @list\HyField@TheAnnotCount\space
13607     \dvipdfm@setdim
13608     <<\PDFForm@List>>%
13609   }%
13610   \unhbox\pdfm@box
13611   \HyField@AddToFields{list}%
13612 }

```

#### \@PushButton

```

13613 \def\@PushButton[#1]#2{% parameters, label
13614   \def\Fld@name{#2}%
13615   \begingroup
13616     \expandafter\HyField@SetKeys\expandafter{%
13617       \DefaultOptionsofPushButton,#1%
13618     }%
13619     \PDFForm@Name
13620     \ifHy@pdfa
13621       \Hy@Error{%
13622         PDF/A: Push button with JavaScript is prohibited%
13623       }\@ehc
13624       \LayoutPushButtonField{%
13625         \leavevmode
13626         \MakeButtonField{#2}%
13627       }%
13628     \else
13629       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13630       \HyField@FlagsPushButton
13631       \ifFld@hidden\def\Fld@width{1sp}\fi
13632       \HyField@AdvanceAnnotCount
13633       \LayoutPushButtonField{%
13634         \leavevmode
13635         \Hy@escapeform\PDFForm@Push
13636         \@pdfm@mark{%
13637           ann @push\HyField@TheAnnotCount\space
13638           \dvipdfm@setdim
13639           <<\PDFForm@Push>>%
13640         }%
13641       }%
13642       \unhbox\pdfm@box
13643       \HyField@AddToFields{push}%
13644     \fi
13645   \endgroup
13646 }

```

#### \@Submit



```

13647 \def\@Submit[#1]#2{%
13648   \def\Fld@width{\DefaultWidthofSubmit}%
13649   \def\Fld@height{\DefaultHeightofSubmit}%
13650   \begingroup
13651     \expandafter\HyField@SetKeys\expandafter{%
13652       \DefaultOptionsofSubmit,#1%
13653     }%
13654     \HyField@FlagsPushButton
13655     \HyField@FlagsSubmit
13656     \ifFld@hidden\def\Fld@width{1sp}\fi
13657     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13658     \leavevmode
13659     \Hy@escapeform\PDFForm@Submit
13660     \HyField@AdvanceAnnotCount
13661     \@pdfm@mark{%
13662       ann @submit\HyField@TheAnnotCount\space
13663       \dvi pdfm@setdim
13664       <<\PDFForm@Submit>>%
13665     }%
13666     \unhbox\pdfm@box%
13667     \HyField@AddToFields{submit}%
13668   \endgroup
13669 }

```

#### \@Reset

```

13670 \def\@Reset[#1]#2{%
13671   \def\Fld@width{\DefaultWidthofReset}%
13672   \def\Fld@height{\DefaultHeightofReset}%
13673   \begingroup
13674     \expandafter\HyField@SetKeys\expandafter{%
13675       \DefaultOptionsofReset,#1%
13676     }%
13677     \leavevmode
13678     \ifHy@pdfa
13679       \Hy@Error{%
13680         PDF/A: Reset action is prohibited%
13681       } \@ehc
13682       \MakeButtonField{#2}%
13683     \else
13684       \HyField@FlagsPushButton
13685       \ifFld@hidden\def\Fld@width{1sp}\fi
13686       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13687       \Hy@escapeform\PDFForm@Reset
13688       \HyField@AdvanceAnnotCount
13689       \@pdfm@mark{%
13690         ann @reset\HyField@TheAnnotCount\space
13691         \dvi pdfm@setdim
13692         <<\PDFForm@Reset>>%
13693       }%
13694       \unhbox\pdfm@box
13695       \HyField@AddToFields{reset}%
13696     \fi
13697   \endgroup
13698 }

```

\@CheckBox

```
13699 \def\@CheckBox[#1]#2{% parameters, label
13700 \def\Fld@name{#2}%
13701 \def\Fld@default{0}%
13702 \begingroup
13703 \def\Fld@width{\DefaultWidthofCheckBox}%
13704 \def\Fld@height{\DefaultHeightofCheckBox}%
13705 \expandafter\HyField@SetKeys\expandafter{%
13706 \DefaultOptionsofCheckBox,#1%
13707 }%
13708 \PDFForm@Name
13709 \HyField@FlagsCheckBox
13710 \ifFld@hidden\def\Fld@width{1sp}\fi
13711 \setbox\pdfm@box=\hbox{%
13712 \MakeCheckField{\Fld@width}{\Fld@height}%
13713 }%
13714 \HyField@AdvanceAnnotCount
13715 \LayoutCheckField{#2}{%
13716 \leavevmode
13717 \Hy@escapeform\PDFForm@Check
13718 \@pdfm@mark{%
13719 ann @check\HyField@TheAnnotCount\space
13720 \dvi pdfm@setdim
13721 <<\PDFForm@Check>>%
13722 }%
13723 \unhbox\pdfm@box
13724 \HyField@AddToFields{check}%
13725 }%
13726 \endgroup
13727 }

13728 \def\Hy@FormObjects{%
13729 \@pdfm@mark{obj @OBJpdfdocencoding%
13730 <<%
13731 /Type/Encoding%
13732 /Differences[%
13733 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
13734 39/quotesingle %
13735 96/grave %
13736 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13737 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
13738 /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
13739 /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
13740 /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13741 160/Euro %
13742 164/currency %
13743 166/brokenbar %
13744 168/dieresis/copyright/ordfeminine %
13745 172/logicalnot/.notdef/registered/macron/degree/plusminus%
13746 /twosuperior/threesuperior/acute/mu %
13747 183/periodcentered/cedilla/onesuperior/ordmasculine %
13748 188/onequarter/onehalf/threequarters %
13749 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13750 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
```

```

13751 /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
13752 /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
13753 /Udieresis/Yacute/Thorn/germandbls/agrave/acute/acircumflex%
13754 /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
13755 /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
13756 /eth/ntilde/ograde/oacute/ocircumflex/otilde/odieresis%
13757 /divide/oshlash/ugrave/uacute/ucircumflex/udieresis/yacute%
13758 /thorn/ydieresis%
13759 ]%
13760 >>%
13761 }%
13762 \@pdfm@mark{obj @OBJZaDb%
13763 <<%
13764 /Type/Font%
13765 /Subtype/Type1%
13766 /Name/ZaDb%
13767 /BaseFont/ZapfDingbats%
13768 >>%
13769 }%
13770 \@pdfm@mark{obj @OBJHelv%
13771 <<%
13772 /Type/Font%
13773 /Subtype/Type1%
13774 /Name/Helv%
13775 /BaseFont/Helvetica%
13776 /Encoding @OBJpdfdocencoding%
13777 >>%
13778 }%
13779 \global\let\Hy@FormObjects\relax
13780 }
13781 </dvi-pdfm | xetex>

```

## 45.6 Common forms part

```
13782 (*pdfform)
```

```
\Fld@pageobjref
```

```
13783 \providecommand*\Fld@pageobjref{}
```

```
\Hy@escapestring
```

```

13784 \@ifundefined{pdf@escapestring}
13785 {%
13786 \let\Hy@escapestring\@firstofone
13787 \def\Hy@escapeform#1{%
13788 \ifHy@pdfescapeform
13789 \def\Hy@escapestring##1{%
13790 \noexpand\Hy@escapestring{\noexpand##1}%
13791 }%
13792 \edef\Hy@temp{#1}%
13793 \expandafter\Hy@@escapeform\Hy@temp\Hy@escapestring{}\@nil
13794 \def\Hy@escapestring##1{%
13795 \@ifundefined{Hy@esc@\string##1}{%
13796 ##1%
13797 \ThisShouldNotHappen

```

```

13798     }{%
13799         \csname Hy@esc@\string##1\endcsname
13800     }%
13801 }%
13802 \else
13803     \let\Hy@escapestring\@firstofone
13804 \fi
13805 }%
13806 \def\Hy@@@escapeform#1\Hy@escapestring#2#3\@nil{%
13807     \ifx\#3\%
13808     \else
13809         \expandafter
13810         \Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
13811         \Hy@ReturnAfterFi{%
13812             \Hy@@@escapeform#3\@nil
13813         }%
13814     \fi
13815 }%
13816 }{%
13817 \def\Hy@escapeform#1{%
13818     \ifHy@pdfescapeform
13819         \let\Hy@escapestring\pdfescapestring
13820     \else
13821         \let\Hy@escapestring\@firstofone
13822     \fi
13823 }%
13824 \Hy@escapeform{}%
13825 }

```

#### \PDFForm@Name

```

13826 \def\PDFForm@Name{%
13827     \PDFForm@@Name\Fld@name
13828     \ifx\Fld@altname\relax
13829     \else
13830         \PDFForm@@Name\Fld@altname
13831     \fi
13832     \ifx\Fld@mappingname\relax
13833     \else
13834         \PDFForm@@Name\Fld@mappingname
13835     \fi
13836 }

```

#### \PDFForm@@Name

```

13837 \def\PDFForm@@Name#1{%
13838     \begingroup
13839     \ifnum\Hy@pdf@major@minor@version<105 % implementation note 117, PDF spec 1.7
13840         \ifHy@unicode
13841             \Hy@unicodedefalse
13842         \fi
13843     \fi
13844     \pdfstringdef\Hy@gtemp#1%
13845 \endgroup
13846 \let#1\Hy@gtemp
13847 }

```

`\Fld@additionalactions`

```
13848 \def\Fld@@additionalactions{%
K input (keystroke) format
13849 \ifx\Fld@keystroke@code\@empty
13850 \else
13851 /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
13852 \fi

F display format
13853 \ifx\Fld@format@code\@empty
13854 \else
13855 /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
13856 \fi

V validation
13857 \ifx\Fld@validate@code\@empty
13858 \else
13859 /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
13860 \fi

C calculation
13861 \ifx\Fld@calculate@code\@empty
13862 \else
13863 /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
13864 \fi

Fo receiving the input focus
13865 \ifx\Fld@onfocus@code\@empty
13866 \else
13867 /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
13868 \fi

Bl loosing the input focus (blurred)
13869 \ifx\Fld@onblur@code\@empty
13870 \else
13871 /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
13872 \fi

D pressing the mouse button (down)
13873 \ifx\Fld@onmousedown@code\@empty
13874 \else
13875 /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
13876 \fi

U releasing the mouse button (up)
13877 \ifx\Fld@onmouseup@code\@empty
13878 \else
13879 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
13880 \fi

E cursor enters the annotation's active area.
13881 \ifx\Fld@onenter@code\@empty
13882 \else
13883 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
13884 \fi
```

X cursor exits the annotation's active area.

```
13885 \ifx\Fld@onexit@code\@empty
13886 \else
13887 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
13888 \fi
13889 }
13890 \def\Fld@additionalactions{%
13891 \if-\Fld@@additionalactions-%
13892 \else
13893 \ifHy@pdfa
13894 \else
13895 /AA<<\Fld@@additionalactions>>%
13896 \fi
13897 \fi
13898 }
```

\Fld@annotnames

```
13899 \def\Fld@annotnames{%
13900 /T(\Fld@name)%
13901 \ifx\Fld@altname\relax
13902 \else
13903 /TU(\Fld@altname)%
13904 \fi
13905 \ifx\Fld@mappingname\relax
13906 \else
13907 /TM(\Fld@mappingname)%
13908 \fi
13909 }
```

\PDFForm@Check

```
13910 \def\PDFForm@Check{%
13911 /Subtype/Widget%
13912 \Fld@annotflags
13913 \Fld@pageobjref
13914 \Fld@annotnames
13915 /FT/Btn%
13916 \Fld@flags
13917 /Q \Fld@align
13918 /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
13919 /AP<< /N <</Yes<<>>>> >> %new string /Yes is from below
13920 /MK<<%
13921 \ifnum\Fld@rotation=\z@
13922 \else
13923 /R \Fld@rotation
13924 \fi
13925 \ifx\Fld@bordercolor\relax
13926 \else
13927 /BC[\Fld@bordercolor]%
13928 \fi
13929 \ifx\Fld@bcolor\relax
13930 \else
13931 /BG[\Fld@bcolor]%
13932 \fi
13933 /CA(\Hy@escapestring{\Fld@cbsymbol})%
```

```

13934 >>%
13935 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13936 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13937 /H/P%
13938 \ifFld@checked /V/Yes/AS/Yes\else /V/Off/AS/Off\fi
13939 \Fld@additionalactions
13940 }

```

#### \PDFForm@Push

```

13941 \ifHy@pdfa
13942 \else
13943 \def\PDFForm@Push{%
13944 /Subtype/Widget%
13945 \Fld@annotflags
13946 \Fld@pageobjref
13947 \Fld@annotnames
13948 /FT/Btn%
13949 \Fld@flags
13950 /H/P%
13951 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13952 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13953 \ifx\Fld@bordercolor\relax\else 1\fi
13954 \space
13955 \else
13956 /MK<<%
13957 \ifnum\Fld@rotation=\z@
13958 \else
13959 /R \Fld@rotation
13960 \fi
13961 \ifx\Fld@bordercolor\relax
13962 \else
13963 /BC[\Fld@bordercolor]%
13964 \fi
13965 >>%
13966 \fi
13967 /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick@code})>>%
13968 \Fld@additionalactions
13969 }%
13970 \fi

```

#### \PDFForm@List

```

13971 \def\PDFForm@List{%
13972 /Subtype/Widget%
13973 \Fld@annotflags
13974 \Fld@pageobjref
13975 \Fld@annotnames
13976 /FT/Ch%
13977 \Fld@flags
13978 /Q \Fld@align
13979 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13980 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13981 \ifx\Fld@bordercolor\relax\else 1\fi
13982 \ifx\Fld@bcolor\relax \else 1\fi
13983 \space

```

```

13984 \else
13985 /MK<<%
13986 \ifnum\Fld@rotation=\z@
13987 \else
13988 /R \Fld@rotation
13989 \fi
13990 \ifx\Fld@bordercolor\relax
13991 \else
13992 /BC[\Fld@bordercolor]%
13993 \fi
13994 \ifx\Fld@bcolor\relax
13995 \else
13996 /BG[\Fld@bcolor]%
13997 \fi
13998 >>%
13999 \fi
14000 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
14001 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14002 \Fld@choices
14003 \Fld@additionalactions
14004 }

```

#### \PDFForm@Radio

```

14005 \def\PDFForm@Radio{%
14006 /Subtype/Widget%
14007 \Fld@annotflags
14008 \Fld@pageobjref
14009 \Fld@annotnames
14010 /FT/Btn%
14011 \Fld@flags
14012 /H/P%
14013 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14014 /MK<<%
14015 \ifnum\Fld@rotation=\z@
14016 \else
14017 /R \Fld@rotation
14018 \fi
14019 \ifx\Fld@bordercolor\relax
14020 \else
14021 /BC[\Fld@bordercolor]%
14022 \fi
14023 \ifx\Fld@bcolor\relax
14024 \else
14025 /BG[\Fld@bcolor]%
14026 \fi
14027 /CA(\Hy@escapestring{\Fld@radiosymbol})%
14028 >>%
14029 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
14030 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%

```

New code, the default value is used for all buttons

```

14031 \ifx\Fld@default\@empty
14032 /V/Off%
14033 /DV/Off%

```



```

14034 \else
14035 /V/\Fld@default
14036 /DV/\Fld@default
14037 \fi
14038 \Fld@additionalactions
14039 }

```

#### \PDFForm@Text

```

14040 \def\PDFForm@Text{%
14041 /Subtype/Widget%
14042 \Fld@annotflags
14043 \Fld@pageobjref
14044 \Fld@annotnames
14045 /FT/Tx%
14046 \Fld@flags
14047 /Q \Fld@align
14048 /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
14049 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14050     \ifx\Fld@bordercolor\relax\else 1\fi
14051     \ifx\Fld@bcolor\relax \else 1\fi
14052     \space
14053 \else
14054 /MK<<%
14055     \ifnum\Fld@rotation=\z@
14056     \else
14057     /R \Fld@rotation
14058     \fi
14059     \ifx\Fld@bordercolor\relax
14060     \else
14061     /BC[\Fld@bordercolor]%
14062     \fi
14063     \ifx\Fld@bcolor\relax
14064     \else
14065     /BG[\Fld@bcolor]%
14066     \fi
14067     >>%
14068 \fi
14069 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
14070     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14071 /DV(\Hy@escapestring{\Fld@default})%
14072 /V(\Hy@escapestring{\Fld@value})%
14073 \Fld@additionalactions
14074 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
14075 }

```

#### \PDFForm@Submit

```

14076 \def\PDFForm@Submit{%
14077 /Subtype/Widget%
14078 \Fld@annotflags
14079 \Fld@pageobjref
14080 \Fld@annotnames
14081 /FT/Btn%
14082 \Fld@flags
14083 /H/P%

```

```

14084 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14085 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14086     \ifx\Fld@bordercolor\relax\else 1\fi
14087     \space
14088 \else
14089 /MK<<%
14090     \ifnum\Fld@rotation=\z@
14091     \else
14092     /R \Fld@rotation
14093     \fi
14094     \ifx\Fld@bordercolor\relax
14095     \else
14096     /BC[\Fld@bordercolor]%
14097     \fi
14098 >>%
14099 \fi
14100 /A<<%
14101 /S/SubmitForm%
14102 /F<<%
14103 /FS/URL%
14104 /F(\Hy@escapestring{\Form@action})%
14105 >>%
14106 \Fld@submitflags
14107 >>%
14108 \Fld@additionalactions
14109 }

```

\PDFForm@Reset

```

14110 \ifHy@pdfa
14111 \else
14112 \def\PDFForm@Reset{%
14113 /Subtype/Widget%
14114 \Fld@annotflags
14115 \Fld@pageobjref
14116 \Fld@annotnames
14117 /FT/Btn%
14118 \Fld@flags
14119 /H/P%
14120 /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
14121 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14122     \ifx\Fld@bordercolor\relax\else 1\fi
14123     \space
14124 \else
14125 /MK<<%
14126     \ifnum\Fld@rotation=\z@
14127     \else
14128     /R \Fld@rotation
14129     \fi
14130     \ifx\Fld@bordercolor\relax
14131     \else
14132     /BC[\Fld@bordercolor]%
14133     \fi
14134 % /CA (Clear)
14135 % /AC (Done)

```

```

14136    >>%
14137    \fi
14138    /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14139    /A<</S/ResetForm>>%
14140    \Fld@additionalactions
14141    }%
14142    \fi

14143 </pdfform>
14144 <*packageEnd>

```

## 46 Bookmarks in the PDF file

This was originally developed by Yannis Haralambous (it was the separate `reperestyle.sty`); it needed the `reperestyle` or `makebook.pl` post-processor to work properly. Now redundant, as it is done entirely in  $\LaTeX$  macros.

To write out the current section title, and its rationalized number, we have to intercept the `\@sect` command, which is rather dangerous. But how else to see the information we need? We do the *same* for `\@ssect`, giving anchors to unnumbered sections. This allows things like bibliographies to get bookmarks when used with a manual `\addcontentsline`

```

14145 \def\phantomsection{%
14146   \Hy@MakeCurrentHrefAuto{section*}%
14147   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
14148 }
14149 </packageEnd>

```

### 46.1 Bookmarks

```
14150 <*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.

```

14151 \def\Hy@writebookmark#1#2#3#4#5{%
14152   % section number, text, label, level, file
14153   \ifx\WriteBookmarks\relax%
14154   \else

```

```

14155 \ifnum#4>\Hy@bookmarksdepth\relax
14156 \else
14157 \@@writetorep{#1}{#2}{#3}{#4}{#5}%
14158 \fi
14159 \fi
14160 }
14161 \def\Hy@currentbookmarklevel{0}
14162 \def\Hy@numberline#1{#1 }
14163 \def\@@writetorep#1#2#3#4#5{%
14164 \begingroup
14165 \edef\Hy@tempa{#5}%
14166 \ifx\Hy@tempa\Hy@bookmarkstype
14167 \edef\Hy@level{#4}%
14168 \ifx\Hy@levelcheck Y%
14169 \@@tempcnta\Hy@level\relax
14170 \advance\@@tempcnta by -1 %
14171 \ifnum\Hy@currentbookmarklevel<\@@tempcnta
14172 \advance\@@tempcnta by -\Hy@currentbookmarklevel\relax
14173 \advance\@@tempcnta by 1 %
14174 \Hy@Warning{%
14175 Difference (\the\@@tempcnta) between bookmark levels is %
14176 greater \MessageBreak than one, level fixed%
14177 }%
14178 \@@tempcnta\Hy@currentbookmarklevel
14179 \advance\@@tempcnta by 1 %
14180 \edef\Hy@level{\the\@@tempcnta}%
14181 \fi
14182 \else
14183 \global\let\Hy@levelcheck Y%
14184 \fi
14185 \global\let\Hy@currentbookmarklevel\Hy@level
14186 \@@tempcnta\Hy@level\relax
14187 \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
14188 \advance\@@tempcnta by -1 %
14189 \edef\Hy@tempa{#3}%
14190 \edef\Hy@tempb{\csname Parent\the\@@tempcnta\endcsname}%
14191 \ifx\Hy@tempa\Hy@tempb
14192 \Hy@Warning{%
14193 The anchor of a bookmark and its parent's must not%
14194 \MessageBreak be the same. Added a new anchor%
14195 }%
14196 \phantomsection
14197 \fi
14198 \ifHy@bookmarksnumbered
14199 \let\numberline\Hy@numberline
14200 \let\booknumberline\Hy@numberline
14201 \let\partnumberline\Hy@numberline
14202 \let\chapternumberline\Hy@numberline
14203 \else
14204 \let\numberline\@gobble
14205 \let\booknumberline\@gobble
14206 \let\partnumberline\@gobble
14207 \let\chapternumberline\@gobble
14208 \fi

```

```

14209 \pdfstringdef\Hy@tempa{#2}%
14210 \HyPsd@SanitizeForOutFile\Hy@tempa
14211 \if@filesw
14212 \stepcounter{bookmark@seq@number}%
14213 \@ifundefined{@outlinefile}{%
14214 }{%
14215 \protected@write\@outlinefile{ }{%
14216 \protect\BOOKMARK
14217 [\Hy@level][\@bookmarkopenstatus{\Hy@level}]{#3}%
14218 {\Hy@tempa}{\Hy@tempb}%
14219 \@percentchar\space\thebookmark@seq@number
14220 }%
14221 }%
14222 \fi
14223 \fi
14224 \endgroup
14225 }
14226 \newcounter{bookmark@seq@number}

14227 \begingroup
14228 \lccode` (= ` { %
14229 \lccode` ) = ` } %
14230 \lccode` 1 = \z@
14231 \lccode` 2 = \z@
14232 \lccode` 3 = \z@
14233 \lccode` 5 = \z@
14234 \lccode` 7 = \z@
14235 \lccode` \# = \z@
14236 \lccode` \ ` = \z@
14237 \lccode` \ { = \z@
14238 \lccode` \ } = \z@
14239 \lowercase{%
14240 \endgroup
14241 \def\HyPsd@SanitizeForOutFile#1{%
14242 \@onelevel@sanitize\Hy@tempa
14243 \escapechar` \ %
14244 \edef\Hy@tempa{%
14245 \expandafter\HyPsd@SanitizeOut@BraceLeft\Hy@tempa\@nil
14246 }%
14247 \edef\Hy@tempa{%
14248 \expandafter\HyPsd@SanitizeOut@BraceRight\Hy@tempa\@nil
14249 }%
14250 }%
14251 \def\HyPsd@SanitizeOut@BraceLeft#1(#2\@nil{%
14252 #1%
14253 \ifx\#2\ %
14254 \expandafter\@gobble
14255 \else
14256 \expandafter\@firstofone
14257 \fi
14258 {%
14259 \string\173%
14260 \HyPsd@SanitizeOut@BraceLeft#2\@nil
14261 }%
14262 }%

```

```

14263 \def\HyPsd@SanitizeOut@BraceRight#1)#2\@nil{%
14264   #1%
14265   \ifx\#2\%
14266     \expandafter\@gobble
14267   \else
14268     \expandafter\@firstofone
14269   \fi
14270   {%
14271     \string\175%
14272     \HyPsd@SanitizeOut@BraceRight#2\@nil
14273   }%
14274 }%
14275 }

```

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

```

14276 \newcommand{\currentpdfbookmark}{%
14277   \pdfbookmark[\Hy@currentbookmarklevel]%
14278 }
14279 \newcommand{\subpdfbookmark}{%
14280   \@tempcnta\Hy@currentbookmarklevel
14281   \Hy@StepCount\@tempcnta
14282   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
14283 }
14284 \newcommand{\belowpdfbookmark}[2]{%
14285   \@tempcnta\Hy@currentbookmarklevel
14286   \Hy@StepCount\@tempcnta
14287   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
14288   \advance\@tempcnta by -1 %
14289   \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
14290 }

```

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.

```

14291 \renewcommand\pdfbookmark[3][0]{%
14292   \Hy@writebookmark}{#2}{#3.#1}{#1}{toc}%
14293   \hyper@anchorstart{#3.#1}\hyper@anchorend
14294 }
14295 \def\BOOKMARK{%
14296   \@ifnextchar[{\@BOOKMARK}{\@@BOOKMARK[1][-]}%
14297 }
14298 \def\@BOOKMARK[#1]{%
14299   \@ifnextchar[{\@@BOOKMARK[#1]}{\@@BOOKMARK[#1][-]}%
14300 }

```

The macros for calculating structure of outlines are derived from those by Petr Olsak used in the `texinfopdf` macros.

#### 46.1.1 Rerun warning

`\Hy@OutlineRerunCheck`

```

14301 \RequirePackage{rerunfilecheck}[2009/12/10]
14302 \def\Hy@OutlineRerunCheck{%
14303   \RerunFileCheck{\jobname.out}{%

```

```

14304 \immediate\closeout\@outlinefile
14305 }{%
14306 Rerun to get outlines right\MessageBreak
14307 or use package `bookmark'%
14308 }%
14309 }

```

### 46.1.2 Driver stuff

The VTEX section was written originally by VTEX, but then amended by Denis Girou ([denis.girou@idris.fr](mailto:denis.girou@idris.fr)), then by 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.

```

14310 (*vtex)
14311 \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.

```

14312 \begingroup
14313 \catcode\`=12 %
14314 \ifnum\Hy@VTeXversion<650 %
14315 \catcode\`=12 %
14316 \gdef\hv@pdf@char#1#2#3{%
14317 \char
14318 \ifcase'#1#2#3 %
14319 "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
14320 \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
14321 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
14322 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
14323 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
14324 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
14325 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
14326 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
14327 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
14328 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
14329 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
14330 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
14331 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
14332 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
14333 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
14334 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
14335 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
14336 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
14337 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
14338 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
14339 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
14340 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
14341 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
14342 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
14343 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
14344 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
14345 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%

```

```

14346 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
14347 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
14348 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
14349 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
14350 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
14351 \fi
14352 }%
14353 \else
14354 \gdef\hv@pdf@char{\char'}%
14355 \fi
14356 \endgroup

```

#### \@@BOOKMARK

```

14357 \def\@@BOOKMARK[#1][#2]#3#4#5{%
14358 \expandafter\edef\csname @count@#3\endcsname{%
14359 \the\@serial@counter
14360 }%
14361 \edef\@mycount{\the\@serial@counter}%
14362 \Hy@StepCount\@serial@counter
14363 \edef\@parcount{%
14364 \expandafter\ifx\csname @count@#5\endcsname\relax
14365 0%
14366 \else
14367 \csname @count@#5\endcsname
14368 \fi
14369 }%
14370 \immediate\special{%
14371 !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
14372 s=\ifx#2-c\else o\fi,t=#4%
14373 }%
14374 }%

```

#### \ReadBookmarks

```

14375 \def\ReadBookmarks{%
14376 \begingroup
14377 \def\0{\hv@pdf@char 0}%
14378 \def\1{\hv@pdf@char 1}%
14379 \def\2{\hv@pdf@char 2}%
14380 \def\3{\hv@pdf@char 3}%
14381 \def\({}%
14382 \def\)}%
14383 \def\do##1{%
14384 \ifnum\catcode`##1=\active
14385 \@makeother##1%
14386 \else
14387 \ifnum\catcode`##1=6 %
14388 \@makeother##1%
14389 \fi
14390 \fi
14391 }%
14392 \dospecials
14393 \Hy@safe@activestrue
14394 \InputIfFileExists{\jobname.out}{\fi}%
14395 \endgroup

```



```

14396 \ifx\WriteBookmarks\relax
14397 \else
14398 \if@filesw
14399 \newwrite\@outlinefile
14400 \Hy@OutlineRerunCheck
14401 \immediate\openout\@outlinefile=\jobname.out\relax
14402 \fi
14403 \fi
14404 }

14405 </vtex>
14406 <!*vtex>
14407 \def\ReadBookmarks{%
14408 \pdf@ifdraftmode{}{%
14409 \begingroup
14410 \def\do##1{%
14411 \ifnum\catcode`##1=\active
14412 \@makeother##1%
14413 \else
14414 \ifnum\catcode`##1=6 %
14415 \@makeother##1%
14416 \fi
14417 \fi
14418 }%
14419 \dospecials
14420 \Hy@safe@activestru
14421 \escapechar=`\%
14422 \def\@@BOOKMARK[##1][##2]##3##4##5{%
14423 \calc@bm@number{##5}%
14424 }%
14425 \InputIfFileExists{\jobname.out}{-}{-}%
14426 \ifx\WriteBookmarks\relax
14427 \global\let\WriteBookmarks\relax
14428 \fi
14429 \def\@@BOOKMARK[##1][##2]##3##4##5{%
14430 \def\Hy@temp{##4}%
14431 <*pdfTeX>
14432 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14433 \Hy@OutlineName{}\Hy@pstringName{%
14434 ##2\check@bm@number{##3}%
14435 }{%
14436 \expandafter\strip@prefix\meaning\Hy@temp
14437 }%
14438 </pdfTeX>
14439 <*pdfmark>
14440 \pdfmark{%
14441 pdfmark=/OUT,%
14442 Count={##2\check@bm@number{##3}},%
14443 Dest={##3},%
14444 Title=\expandafter\strip@prefix\meaning\Hy@temp
14445 }%
14446 </pdfmark>
14447 <*dvipdfm|xetex>
14448 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%

```

```

14449 \pdfmark{%
14450   outline \ifHy@DvipdfmxOutlineOpen
14451   [%
14452     \ifnum##21>\z@
14453     \else
14454     -%
14455     \fi
14456     ] %
14457     \fi
14458     ##1<<%
14459     /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
14460     /A<<%
14461     /S/GoTo%
14462     /D(\Hy@pstringName)%
14463     >>%
14464     >>%
14465     }%
14466 </dvi/pdfm | xetex>
14467 }%
14468 \begingroup
14469 \def\WriteBookmarks{0}%
14470 \InputIfFileExists{\jobname.out}{-}{-}%
14471 \endgroup
14472 %{\escapechar\m@ne\InputIfFileExists{\jobname.out}{-}{-}}%
14473 \endgroup
14474 }%
14475 \ifx\WriteBookmarks\relax
14476 \else
14477 \if@filesw
14478 \newwrite\@outlinefile
14479 \Hy@OutlineRerunCheck
14480 \immediate\openout\@outlinefile=\jobname.out\relax
14481 \fi
14482 \fi
14483 }
14484 (*pdfTeX)
14485 \def\Hy@OutlineName#1#2#3#4{%
14486 \pdfoutline goto name{#2}count#3{#4}%
14487 }
14488 </pdfTeX>
14489 \def\check@bm@number#1{%
14490 \expandafter\ifx\csname B_#1\endcsname\relax
14491 0%
14492 \else
14493 \csname B_#1\endcsname
14494 \fi
14495 }
14496 \def\calc@bm@number#1{%
14497 \@tempcnta=\check@bm@number{#1}\relax
14498 \advance\@tempcnta by 1 %
14499 \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
14500 }
14501 </!vtex>
14502 \ifHy@implicit

```

```

14503 \else
14504 \expandafter\endinput
14505 \fi

14506 \</outlines>
14507 \<*outlines | hypertex>

14508 \newlength\Hy@SectionHShift
14509 \def\Hy@SectionAnchorHref#1{%
14510 \ifx\protect\@typeset@protect
14511 \Hy@@SectionAnchor{#1}%
14512 \fi
14513 }
14514 \DeclareRobustCommand*\Hy@@SectionAnchor}[1]{%
14515 \leavevmode
14516 \hbox to Opt{%
14517 \kern-\Hy@SectionHShift
14518 \Hy@raisedlink{%
14519 \hyper@anchorstart{#1}\hyper@anchorend
14520 }%
14521 \hss
14522 }%
14523 }
14524 \AddToNoCaseChangeList{\Hy@@SectionAnchor}
14525 \@ifundefined{hyper@nopatch@sectioning}
14526 {
14527 \let\H@old@ssect\@ssect
14528 \def\@ssect#1#2#3#4#5{%
14529 \Hy@MakeCurrentHrefAuto{section*}%
14530 \setlength{\Hy@SectionHShift}{#1}%
14531 \begingroup
14532 \toks@{\H@old@ssect{#1}{#2}{#3}{#4}}%
14533 \toks\tw@\expandafter{%
14534 \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14535 #5%
14536 }%
14537 \edef\x{\endgroup
14538 \the\toks@\the\toks\tw@}%
14539 }\x
14540 }
14541 \let\H@old@schapter\@schapter
14542 \def\@schapter#1{%
14543 \begingroup
14544 \let\@mkboth\@gobbletwo
14545 \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14546 \Hy@raisedlink{%
14547 \hyper@anchorstart{\@currentHref}\hyper@anchorend
14548 }%
14549 \endgroup
14550 \H@old@schapter{#1}%
14551 }

```

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:

```

14552 \@ifundefined{chapter}{-}{%
14553 \let\Hy@org@chapter\@chapter
14554 \def\@chapter{%
14555 \def\Hy@next{%
14556 \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14557 \Hy@raisedlink{%
14558 \hyper@anchorstart{\@currentHref}\hyper@anchorend
14559 }%
14560 }%
14561 \ifnum\c@secnumdepth>\m@ne
14562 \@ifundefined{if@mainmatter}%
14563 \iftrue{\csname if@mainmatter\endcsname}%
14564 \let\Hy@next\relax
14565 \fi
14566 \fi
14567 \Hy@next
14568 \Hy@org@chapter
14569 }%
14570 }

14571 \let\H@old@part\@part
14572 \@ifundefined{chapter}
14573 {\let\Hy@secnum@part\z@}
14574 {\let\Hy@secnum@part\m@ne}
14575 \def\@part{%
14576 \ifnum\Hy@secnum@part>\c@secnumdepth
14577 \phantomsection
14578 \fi
14579 \H@old@part
14580 }

14581 \let\H@old@spart\@spart
14582 \def\@spart#1{%
14583 \Hy@MakeCurrentHrefAuto{part*}%
14584 \Hy@raisedlink{%
14585 \hyper@anchorstart{\@currentHref}\hyper@anchorend
14586 }%
14587 \H@old@spart{#1}%
14588 }

14589 \let\H@old@sect\@sect
14590 \def\@sect#1#2#3#4#5#6[#7]#8{%
14591 \ifnum #2>\c@secnumdepth
14592 \expandafter\@firstoftwo
14593 \else
14594 \expandafter\@secondoftwo
14595 \fi
14596 {%
14597 \Hy@MakeCurrentHrefAuto{section*}%
14598 \setlength{\Hy@SectionHShift}{#3}%
14599 \begingroup
14600 \toks@{\H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}}%
14601 \toks\tw\@expandafter{%
14602 \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14603 #8%
14604 }%

```

```

14605 \edef\x{\endgroup
14606 \the\toks@\the\toks\tw@}%
14607 }\x
14608 }{%
14609 \H@old@ssect{#1}{#2}{#3}{#4}{#5}{#6}{#7}{#8}%
14610 }%
14611 }
14612 }{}

14613 </outlines | hypertex>
14614 <*outlines>

14615 \expandafter\def\csname Parent-4\endcsname{}
14616 \expandafter\def\csname Parent-3\endcsname{}
14617 \expandafter\def\csname Parent-2\endcsname{}
14618 \expandafter\def\csname Parent-1\endcsname{}
14619 \expandafter\def\csname Parent0\endcsname{}
14620 \expandafter\def\csname Parent1\endcsname{}
14621 \expandafter\def\csname Parent2\endcsname{}
14622 \expandafter\def\csname Parent3\endcsname{}
14623 \expandafter\def\csname Parent4\endcsname{}

14624 </outlines>

```

## 47 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek.

### 47.1 PD1 encoding

```

14625 <*pd1enc>
14626 \DeclareFontEncoding{PD1}{}{}

Accents
14627 \DeclareTextAccent{\`}{PD1}{\textasciigrave}
14628 \DeclareTextAccent{\'}{PD1}{\textacute}
14629 \DeclareTextAccent{\^}{PD1}{\textasciicircum}
14630 \DeclareTextAccent{\~}{PD1}{\texttilde}
14631 \DeclareTextAccent{"}{PD1}{\textasciidieresis}
14632 \DeclareTextAccent{\r}{PD1}{\textring}
14633 \DeclareTextAccent{\v}{PD1}{\textasciicaron}
14634 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
14635 \DeclareTextAccent{\c}{PD1}{\textcedilla}
14636 \DeclareTextAccent{=} {PD1}{\textasciimacron}
14637 \DeclareTextAccent{\b}{PD1}{\textmacronbelow}
14638 \DeclareTextAccent{\d}{PD1}{\textdotbelow}
14639 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textasciigrave}
14640 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
14641 \DeclareTextCompositeCommand{\^}{PD1}{\@empty}{\textasciicircum}
14642 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
14643 \DeclareTextCompositeCommand{"}{PD1}{\@empty}{\textasciidieresis}
14644 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
14645 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textasciicaron}
14646 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}

```

```

14647 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
14648 \DeclareTextCompositeCommand{\=} {PD1}{\@empty}{\textasciimacron}
14649 \DeclareTextCompositeCommand{\b}{PD1}{\@empty}{\textmacronbelow}
14650 \DeclareTextCompositeCommand{\d}{PD1}{\@empty}{\textdotbelow}
14651 \DeclareTextCompositeCommand{\`}{PD1}{\ }{\textasciigrave}
14652 \DeclareTextCompositeCommand{\' }{PD1}{\ }{\textacute}
14653 \DeclareTextCompositeCommand{\^}{PD1}{\ }{\textasciicircum}
14654 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\texttilde}
14655 \DeclareTextCompositeCommand{\"}{PD1}{\ }{\textasciidieresis}
14656 \DeclareTextCompositeCommand{\r}{PD1}{\ }{\textring}
14657 \DeclareTextCompositeCommand{\v}{PD1}{\ }{\textasciicaron}
14658 \DeclareTextCompositeCommand{\.}{PD1}{\ }{\textdotaccent}
14659 \DeclareTextCompositeCommand{\c}{PD1}{\ }{\textcedilla}
14660 \DeclareTextCompositeCommand{\=} {PD1}{\ }{\textasciimacron}
14661 \DeclareTextCompositeCommand{\b}{PD1}{\ }{\textmacronbelow}
14662 \DeclareTextCompositeCommand{\d}{PD1}{\ }{\textdotbelow}
14663 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}
14664 \DeclareTextCommand{\t}{PD1}[1]{\TextSymbolUnavailable{\t{#1}}#1}
14665 \DeclareTextCommand{\newtie}{PD1}[1]{%
14666 \TextSymbolUnavailable{\newtie{#1}}#1%
14667 }

```

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

```

14668 % U+0009 (CHARACTER TABULATION)
14669 \DeclareTextCommand{\textHT}{PD1}{\011}% U+0009
14670 % U+000A (LINE FEED)
14671 \DeclareTextCommand{\textLF}{PD1}{\012}% U+000A
14672 % U+000D (CARRIAGE RETURN)
14673 \DeclareTextCommand{\textCR}{PD1}{\015}% U+000D

```

Accent glyph names

```

14674 % U+02D8 BREVE; breve
14675 \DeclareTextCommand{\textasciibreve}{PD1}{\030}% U+02D8
14676 % U+02C7 CARON; caron
14677 \DeclareTextCommand{\textasciicaron}{PD1}{\031}% U+02C7
14678 % U+02C6 MODIFIER LETTER CIRCUMFLEX ACCENT; circumflex
14679 \DeclareTextCommand{\textcircumflex}{PD1}{\032}% U+02C6
14680 % U+02D9 DOT ABOVE; dotaccent
14681 \DeclareTextCommand{\textdotaccent}{PD1}{\033}% U+02D9
14682 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut
14683 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034}% U+02DD
14684 % U+02DB OGONEK; ogonek
14685 \DeclareTextCommand{\textogonek}{PD1}{\035}% U+02DB
14686 % U+02DA RING ABOVE; ring
14687 \DeclareTextCommand{\textring}{PD1}{\036}% U+02DA
14688 % U+02DC SMALL TILDE; ilde, *tilde
14689 \DeclareTextCommand{\texttilde}{PD1}{\037}% U+02DC

```

\040: U+0020 SPACE; \*space, spacehackarabic

\041: U+0021 EXCLAMATION MARK; exclam

14690 % U+0022 QUOTATION MARK; quotedbl

14691 \DeclareTextCommand{\textquotedbl}{PD1}{"}% \042 U+0022

14692 % U+0023 NUMBER SIGN; numbersign

14693 \DeclareTextCommand{\textnumbersign}{PD1}{\043}% U+0023

14694 % U+0024 DOLLAR SIGN; dollar

14695 \DeclareTextCommand{\textdollar}{PD1}{\044}% U+0024  
14696 % U+0025 PERCENT SIGN; percent  
14697 \DeclareTextCommand{\textpercent}{PD1}{\045}% U+0025  
14698 % U+0026 AMPERSAND; ampersand  
14699 \DeclareTextCommand{\textampersand}{PD1}{\046}% U+0026  
\047: U+0027 APOSTROPHE; quotesingle  
  
14700 % U+0028 LEFT PARENTHESIS; parenleft  
14701 \DeclareTextCommand{\textparenleft}{PD1}{\string\{}% \050 U+0028  
14702 % U+0029 RIGHT PARENTHESIS; parenright  
14703 \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  
14704 % U+002E FULL STOP; period  
14705 \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  
14706 % U+003C LESS-THAN SIGN; less  
14707 \DeclareTextCommand{\textless}{PD1}{<}% \074 U+003C  
\075: U+003D EQUALS SIGN; equal  
14708 % U+003E GREATER-THAN SIGN; greater  
14709 \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  
14710 % U+005C REVERSE SOLIDUS; backslash  
14711 \DeclareTextCommand{\textbackslash}{PD1}{\134}% U+005C  
14712 % "U+2216 SET MINUS" simulated by "U+005C REVERSE SOLIDUS"  
14713 \DeclareTextCommand{\textsetminus}{PD1}{\textbackslash}  
\135: U+005D RIGHT SQUARE BRACKET; bracketright  
14714 % U+005E CIRCUMFLEX ACCENT; asciicircum  
14715 \DeclareTextCommand{\textasciicircum}{PD1}{\136}% U+005E  
14716 % U+005F LOW LINE; underscore  
14717 \DeclareTextCommand{\textunderscore}{PD1}{\137}% U+005F  
14718 \DeclareTextCommand{\textmacronbelow}{PD1}{\137}% U+005F  
14719 % U+0060 GRAVE ACCENT; grave  
14720 \DeclareTextCommand{\textasciigrave}{PD1}{\140}% U+0060  
\141: U+0061 LATIN SMALL LETTER A; a  
...  
\150: U+0068 LATIN SMALL LETTER H; h

14721 % U+0069 LATIN SMALL LETTER I; i  
14722 \DeclareTextCompositeCommand{\.}{PD1}{i}{i}% \151 U+0069  
\152: U+006A LATIN SMALL LETTER J; j  
...  
\172: U+007A LATIN SMALL LETTER Z; z  
14723 % U+007B LEFT CURLY BRACKET; braceleft  
14724 \DeclareTextCommand{\textbraceleft}{PD1}{\173}% U+007B  
14725 % U+007C VERTICAL LINE; \*bar, verticalbar  
14726 \DeclareTextCommand{\textbar}{PD1}{|}% U+007C  
14727 % U+007D RIGHT CURLY BRACKET; braceright  
14728 \DeclareTextCommand{\textbraceright}{PD1}{\175}% U+007D  
14729 % U+007E TILDE; asciitilde  
14730 \DeclareTextCommand{\textasciitilde}{PD1}{\176}% U+007E  
Slot \177 (0x7F) is undefined in PDFDocEncoding.  
14731 % U+2022 BULLET; bullet  
14732 \DeclareTextCommand{\textbullet}{PD1}{\200}% U+2022  
14733 % U+2020 DAGGER; dagger  
14734 \DeclareTextCommand{\textdagger}{PD1}{\201}% U+2020  
14735 % U+2021 DOUBLE DAGGER; daggerdbl; \ddagger (LaTeX)  
14736 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202}% U+2021  
14737 \DeclareTextCommand{\textddagger}{PD1}{\textdaggerdbl}  
14738 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
14739 \DeclareTextCommand{\textellipsis}{PD1}{\203}% U+2026  
14740 % U+2014 EM DASH; emdash  
14741 \DeclareTextCommand{\textemdash}{PD1}{\204}% U+2014  
14742 % U+2013 EN DASH; endash  
14743 \DeclareTextCommand{\textendash}{PD1}{\205}% U+2013  
14744 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
14745 \DeclareTextCommand{\textflorin}{PD1}{\206}% U+0192  
14746 % U+2044 FRACTION SLASH; fraction  
14747 \DeclareTextCommand{\textfractionsolidus}{PD1}{\207}% U+2044  
14748 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
ingleft  
14749 \DeclareTextCommand{\guilsingleft}{PD1}{\210}% U+2039  
14750 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
ingright  
14751 \DeclareTextCommand{\guilsingright}{PD1}{\211}% U+203A  
14752 % U+2212 MINUS SIGN; minus  
14753 \DeclareTextCommand{\textminus}{PD1}{\212}% U+2212  
14754 % U+2030 PER MILLE SIGN; perthousand  
14755 \DeclareTextCommand{\textperthousand}{PD1}{\213}% U+2030  
14756 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
14757 \DeclareTextCommand{\quotedblbase}{PD1}{\214}% U+201E  
14758 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
14759 \DeclareTextCommand{\textquotedblleft}{PD1}{\215}% U+201C  
14760 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
14761 \DeclareTextCommand{\textquotedblright}{PD1}{\216}% U+201D  
14762 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
14763 \DeclareTextCommand{\textquoteleft}{PD1}{\217}% U+2018  
14764 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
14765 \DeclareTextCommand{\textquoteright}{PD1}{\220}% U+2019  
14766 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
14767 \DeclareTextCommand{\quotesinglbase}{PD1}{\221}% U+201A



14768 % U+2122 TRADE MARK SIGN; trademark  
 14769 \DeclareTextCommand{\texttrademark}{PD1}{\222}% U+2122  
 14770 % U+FB01 LATIN SMALL LIGATURE FI; fi  
 14771 \DeclareTextCommand{\textfi}{PD1}{\223}% U+FB01  
 14772 % U+FB02 LATIN SMALL LIGATURE FL; fl  
 14773 \DeclareTextCommand{\textfl}{PD1}{\224}% U+FB02  
 14774 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
 14775 \DeclareTextCommand{\L}{PD1}{\225}% U+0141  
 14776 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
 14777 \DeclareTextCommand{\OE}{PD1}{\226}% U+0152  
 14778 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
 14779 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227}% U+0160  
 14780 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
 14781 \DeclareTextCompositeCommand{\Y}{PD1}{Y}{\230}% U+0178  
 14782 \DeclareTextCommand{\IJ}{PD1}{IJ}% ligature U+0049 U+004A  
 14783 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
 14784 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231}% U+017D  
 14785 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
 14786 \DeclareTextCommand{\i}{PD1}{\232}% U+0131  
 14787 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
 14788 \DeclareTextCommand{\l}{PD1}{\233}% U+0142  
 14789 % U+0153 LATIN SMALL LIGATURE OE; oe  
 14790 \DeclareTextCommand{\oe}{PD1}{\234}% U+0153  
 14791 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
 14792 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235}% U+0161  
 14793 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
 14794 \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.

14795 % U+20AC EURO SIGN; \*Euro, euro  
 14796 \DeclareTextCommand{\texteuro}{PD1}{\240}% U+20AC  
 14797 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
 14798 \DeclareTextCommand{\textexclamdown}{PD1}{\241}% U+00A1  
 14799 % U+00A2 CENT SIGN; cent  
 14800 \DeclareTextCommand{\textcent}{PD1}{\242}% U+00A2  
 14801 % U+00A3 POUND SIGN; sterling  
 14802 \DeclareTextCommand{\textsterling}{PD1}{\243}% U+00A3  
 14803 % U+00A4 CURRENCY SIGN; currency  
 14804 \DeclareTextCommand{\textcurrency}{PD1}{\244}% U+00A4  
 14805 % U+00A5 YEN SIGN; yen  
 14806 \DeclareTextCommand{\textyen}{PD1}{\245}% U+00A5  
 14807 % U+00A6 BROKEN BAR; brokenbar  
 14808 \DeclareTextCommand{\textbrokenbar}{PD1}{\246}% U+00A6  
 14809 % U+00A7 SECTION SIGN; section  
 14810 \DeclareTextCommand{\textsection}{PD1}{\247}% U+00A7  
 14811 % U+00A8 DIAERESIS; dieresis  
 14812 \DeclareTextCommand{\textasciidieresis}{PD1}{\250}% U+00A8  
 14813 % U+00A9 COPYRIGHT SIGN; copyright  
 14814 \DeclareTextCommand{\textcopyright}{PD1}{\251}% U+00A9  
 14815 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
 14816 \DeclareTextCommand{\textordfeminine}{PD1}{\252}% U+00AA  
 14817 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetleft  
 14818 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB  
 14819 \DeclareTextCommand{\guillemetleft}{PD1}{\253}% U+00AB

14820 % U+00AC NOT SIGN; logicalnot  
14821 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC  
14822 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not  
No glyph \255 in PDFDocEncoding.  
14823 % U+00AE REGISTERED SIGN; registered  
14824 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE  
14825 % U+00AF MACRON; \*macron, overscore  
14826 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF  
14827 % U+00B0 DEGREE SIGN; degree  
14828 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0  
14829 % U+00B1 PLUS-MINUS SIGN; plusminus  
14830 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1  
14831 % U+00B2 SUPERSCRIPT TWO; twosuperior  
14832 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}%\* U+00B2  
14833 % U+00B3 SUPERSCRIPT THREE; threesuperior  
14834 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}%\* U+00B3  
14835 % U+00B4 ACUTE ACCENT; acute  
14836 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4  
14837 % U+00B5 MICRO SIGN; mu, mu1  
14838 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5  
14839 % U+00B6 PILCROW SIGN; paragraph  
14840 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6  
14841 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
14842 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7  
14843 % U+00B8 CEDILLA; cedilla  
14844 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8  
14845 % U+00B9 SUPERSCRIPT ONE; onesuperior  
14846 \DeclareTextCommand{\textonesuperior}{PD1}{\271}%\* U+00B9  
14847 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
14848 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA  
14849 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetright  
14850 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB  
14851 \DeclareTextCommand{\guillemetright}{PD1}{\273}% U+00BB  
14852 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
14853 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC  
14854 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
14855 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD  
14856 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
14857 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE  
14858 % U+00BF INVERTED QUESTION MARK; questiondown  
14859 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF  
14860 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
14861 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0  
14862 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
14863 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1  
14864 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
14865 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2  
14866 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
14867 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3  
14868 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
14869 \DeclareTextCompositeCommand{\\"}{PD1}{A}{\304}% U+00C4  
14870 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
14871 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5  
14872 % U+00C6 LATIN CAPITAL LETTER AE; AE

14873 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6  
14874 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
14875 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7  
14876 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
14877 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310}% U+00C8  
14878 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
14879 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311}% U+00C9  
14880 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
14881 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312}% U+00CA  
14882 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
14883 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313}% U+00CB  
14884 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
14885 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314}% U+00CC  
14886 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
14887 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315}% U+00CD  
14888 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
14889 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316}% U+00CE  
14890 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
14891 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317}% U+00CF  
14892 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
14893 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0  
14894 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0  
14895 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
14896 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321}% U+00D1  
14897 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
14898 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322}% U+00D2  
14899 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
14900 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323}% U+00D3  
14901 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
14902 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324}% U+00D4  
14903 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
14904 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325}% U+00D5  
14905 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
14906 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326}% U+00D6  
14907 % U+00D7 MULTIPLICATION SIGN; multiply  
14908 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7  
14909 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
14910 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8  
14911 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
14912 \DeclareTextCompositeCommand{\`}{PD1}{U}{\331}% U+00D9  
14913 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
14914 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332}% U+00DA  
14915 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
14916 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333}% U+00DB  
14917 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
14918 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334}% U+00DC  
14919 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
14920 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335}% U+00DD  
14921 % U+00DE LATIN CAPITAL LETTER THORN; Thorn; \TH, \Thorn (wasysym)  
14922 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE  
14923 \DeclareTextCommand{\textThorn}{PD1}{\336}%\* U+00DE  
14924 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
14925 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF  
14926 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave

14927 \DeclareTextCompositeCommand{\`}{PD1}{a}{\340}% U+00E0  
14928 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
14929 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341}% U+00E1  
14930 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
14931 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342}% U+00E2  
14932 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
14933 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343}% U+00E3  
14934 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
14935 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344}% U+00E4  
14936 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
14937 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345}% U+00E5  
14938 % U+00E6 LATIN SMALL LETTER AE; ae  
14939 \DeclareTextCommand{\ae}{PD1}{\346}% U+00E6  
14940 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
14941 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347}% U+00E7  
14942 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
14943 \DeclareTextCompositeCommand{\`}{PD1}{e}{\350}% U+00E8  
14944 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
14945 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351}% U+00E9  
14946 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
14947 \DeclareTextCompositeCommand{\^}{PD1}{e}{\352}% U+00EA  
14948 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
14949 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353}% U+00EB  
14950 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
14951 \DeclareTextCompositeCommand{\`}{PD1}{i}{\354}% U+00EC  
14952 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354}% U+00EC  
14953 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
14954 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
14955 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
14956 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
14957 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
14958 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
14959 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
14960 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
14961 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
14962 % U+00F0 LATIN SMALL LETTER ETH; eth  
14963 \DeclareTextCommand{\dh}{PD1}{\360}% U+00F0  
14964 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
14965 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361}% U+00F1  
14966 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
14967 \DeclareTextCompositeCommand{\`}{PD1}{o}{\362}% U+00F2  
14968 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
14969 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363}% U+00F3  
14970 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
14971 \DeclareTextCompositeCommand{\^}{PD1}{o}{\364}% U+00F4  
14972 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
14973 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365}% U+00F5  
14974 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
14975 \DeclareTextCompositeCommand{\"}{PD1}{o}{\366}% U+00F6  
14976 % U+00F7 DIVISION SIGN; divide  
14977 \DeclareTextCommand{\textdivide}{PD1}{\367}% U+00F7  
14978 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
14979 \DeclareTextCommand{\o}{PD1}{\370}% U+00F8  
14980 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave

```

14981 \DeclareTextCompositeCommand{\'}{PD1}{u}{\371}% U+00F9
14982 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute
14983 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372}% U+00FA
14984 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex
14985 \DeclareTextCompositeCommand{\^}{PD1}{u}{\373}% U+00FB
14986 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis
14987 \DeclareTextCompositeCommand{\"}{PD1}{u}{\374}% U+00FC
14988 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute
14989 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375}% U+00FD
14990 % U+00FE LATIN SMALL LETTER THORN; thorn; \th, \thorn (wasysym)
14991 \DeclareTextCommand{\th}{PD1}{\376}% U+00FE
14992 \DeclareTextCommand{\textthorn}{PD1}{\376}%* U+00FE
14993 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis
14994 \DeclareTextCompositeCommand{\'}{PD1}{y}{\377}% U+00FF
14995 \DeclareTextCommand{\ij}{PD1}{ij}% ligature U+0069 U+006A

```

Glyphs that consist of several characters.

```

14996 \DeclareTextCommand{\SS}{PD1}{SS}%
14997 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}%

```

Aliases (german.sty)

```

14998 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}%
14999 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}%
15000 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}%
15001 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}%
15002 \DeclareTextCommand{\textflqq}{PD1}{\guillemetleft}%
15003 \DeclareTextCommand{\textfrqq}{PD1}{\guillemetright}%
15004 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}%
15005 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}%

```

Aliases (math names)

```

15006 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}%
15007 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}%
15008 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}%
15009 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}%
15010 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}%
15011 \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).

```

15012 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek
15013 \DeclareTextCompositeCommand{\'}{PD1}{c}{c}% cacute
15014 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek
15015 \DeclareTextCompositeCommand{\'}{PD1}{n}{n}% nacute
15016 \DeclareTextCompositeCommand{\'}{PD1}{s}{s}% sacute
15017 \DeclareTextCompositeCommand{\'}{PD1}{z}{z}% zacute
15018 \DeclareTextCompositeCommand{\.}{PD1}{z}{z}% zdot
15019 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek
15020 \DeclareTextCompositeCommand{\'}{PD1}{C}{C}% Cacute
15021 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek
15022 \DeclareTextCompositeCommand{\'}{PD1}{N}{N}% Nacute
15023 \DeclareTextCompositeCommand{\'}{PD1}{S}{S}% Sacute
15024 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z}% Zacute
15025 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z}% Zdot
15026 </pd1enc>

```

## 47.2 PU encoding

```
15027 (*puenc)
15028 \DeclareFontEncoding{PU}{-}{-}
```

### 47.2.1 NFSS2 accents

```
15029 % U+0300 COMBINING GRAVE ACCENT; gravecmb, *gravecmb
15030 \DeclareTextCommand{\`}{PU}[1]{#1\83\000}% U+0300
15031 % U+0301 COMBINING ACUTE ACCENT; acutecmb, *acutecomb
15032 \DeclareTextCommand{\'}{PU}[1]{#1\83\001}% U+0301
15033 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb
15034 \DeclareTextCommand{\^}{PU}[1]{#1\83\002}% U+0302
15035 % U+0303 COMBINING TILDE; tildecmb, *tildecmb
15036 \DeclareTextCommand{\~}{PU}[1]{#1\83\003}% U+0303
15037 % U+0304 COMBINING MACRON; macroncmb
15038 \DeclareTextCommand{\=}{PU}[1]{#1\83\004}% U+0304
15039 % U+0306 COMBINING BREVE; brevecmb
15040 \DeclareTextCommand{\u}{PU}[1]{#1\83\006}% U+0306
15041 \ifx\CYRDZE\@undefined \else
15042 \DeclareTextCommand{\U}{PU}[1]{#1\83\006}% U+0306
15043 \fi
15044 % U+0307 COMBINING DOT ABOVE; dotaccentcmb
15045 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307
15046 % U+0308 COMBINING DIAERESIS; dieresiscmb
15047 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308
15048 % U+030A COMBINING RING ABOVE; ringcmb
15049 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A
15050 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb
15051 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B
15052 % U+030C COMBINING CARON; caroncmb
15053 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C
15054 (/puenc)
15055 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb
15056 (puextra)\DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F
15057 (*puenc)
15058 \ifx\CYRDZE\@undefined \else
15059 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F
15060 \fi
15061 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb
15062 \DeclareTextCommand{\textinvbreve}{PU}[1]{#1\83\021}% U+0311
15063 \DeclareTextCommand{\newtie}{PU}[1]{#1\83\021}% U+0311
15064 % U+0323 COMBINING DOT BELOW; dotbelowcmb, *dotbelowcmb
15065 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323
15066 % U+0324 COMBINING DIAERESIS BELOW; dieresisbelowcmb; \textsubum-
    laut (tipa)
15067 \DeclareTextCommand{\textsubumlaut}{PU}[1]{#1\83\044}% U+0324
15068 % U+0325 COMBINING RING BELOW; ringbelowcmb; \textsubring (tipa)
15069 \DeclareTextCommand{\textsubring}{PU}[1]{#1\83\045}% U+0325
15070 % U+0327 COMBINING CEDILLA; cedillacmb
15071 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327
15072 % U+0328 COMBINING OGONEK; ogonekcmb
15073 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328
15074 % U+032D COMBINING CIRCUMFLEX ACCENT BELOW;
15075 % \textsubcircum (tipa)
```

15076 \DeclareTextCommand{\textsubcircum}{PU}[1]{#1\83\055}% U+032D  
15077 % U+032E COMBINING BREVE BELOW; brevebelowcmb  
15078 \DeclareTextCommand{\textsubbreve}{PU}[1]{#1\83\056}% U+032E  
15079 % U+0330 COMBINING TILDE BELOW; tildebelowcmb; \textsubtilde (tipa)  
15080 \DeclareTextCommand{\textsubtilde}{PU}[1]{#1\83\060}% U+0330  
15081 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
15082 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331  
15083 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb  
15084 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361  
15085 % U+20DD COMBINING ENCLOSING CIRCLE  
15086 \DeclareTextCommand{\textcircled}{PU}[1]{#1\9040\335}% U+20DD

Double accents.

15087 \DeclareTextCommand{\textacutemacron}{PU}[1]{#1\83\001\83\004}% U+0301 U+0304  
15088 \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.

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

```

15124 \DeclareTextCompositeCommand{\v}{PU}{\ }{\textasciicaron}%
15125 \DeclareTextCompositeCommand{\.}{PU}{\ }{\textdotaccent}%
15126 \DeclareTextCompositeCommand{\c}{PU}{\ }{\textcedilla}%
15127 \DeclareTextCompositeCommand{\u}{PU}{\ }{\textasciibreve}%
15128 \puenc)
15129 \puextra)\DeclareTextCompositeCommand{\G}{PU}{\ }{\textdoublegrave}%
15130 \*puenc)
15131 \DeclareTextCompositeCommand{=} {PU}{\ }{\textasciimacron}%
15132 \DeclareTextCompositeCommand{\H}{PU}{\ }{\texthungarumlaut}%
15133 \DeclareTextCompositeCommand{\k}{PU}{\ }{\textogonek}%
15134 \DeclareTextCompositeCommand{\textinvbreve}{PU}{\ }{\ \83\021}}% U+0311
15135 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{\ }{\ \83\044}}% U+0324
15136 \DeclareTextCompositeCommand{\textsubring}{PU}{\ }{\textringlow}%
15137 \DeclareTextCompositeCommand{\textsubcircum}{PU}{\ }{\textcircumlow}%
15138 \DeclareTextCompositeCommand{\textsubbreve}{PU}{\ }{\ \83\056}}% U+032E
15139 \DeclareTextCompositeCommand{\textsubtilde}{PU}{\ }{\texttildebelow}%
15140 \DeclareTextCompositeCommand{\b}{PU}{\ }{\textmacronbelow}%
15141 \DeclareTextCompositeCommand{\d}{PU}{\ }{\textdotbelow}%
15142 \DeclareTextCompositeCommand{\t}{PU}{\ }{\texttie}%
15143 \DeclareTextCompositeCommand{\newtie}{PU}{\ }{\textnewtie}%
15144 \DeclareTextCompositeCommand{\textcircled}{PU}{\ }{\textbigcircle}%
15145 \DeclareTextCompositeCommand{\textacutemacron}{PU}{\ }{\ \83\001\83\004}}% U+0301 U+0304
15146 \DeclareTextCompositeCommand{\textgravemacron}{PU}{\ }{\ \83\000\83\004}}% U+0300 U+0304

```

Accents for capitals (see encoding TS1)

```

15147 \DeclareTextCommand{\capitalcedilla}{PU}[1]{\c{#1}}%
15148 \DeclareTextCommand{\capitalogonek}{PU}[1]{\k{#1}}%
15149 \DeclareTextCommand{\capitalgrave}{PU}[1]{\`{#1}}%
15150 \DeclareTextCommand{\capitalacute}{PU}[1]{\^{#1}}%
15151 \DeclareTextCommand{\capitalcircumflex}{PU}[1]{\~{#1}}%
15152 \DeclareTextCommand{\capitaltilde}{PU}[1]{\~{#1}}%
15153 \DeclareTextCommand{\capitaldieresis}{PU}[1]{\~{#1}}%
15154 \DeclareTextCommand{\capitalhungarumlaut}{PU}[1]{\H{#1}}%
15155 \DeclareTextCommand{\capitalring}{PU}[1]{\r{#1}}%
15156 \DeclareTextCommand{\capitalcaron}{PU}[1]{\v{#1}}%
15157 \DeclareTextCommand{\capitalbreve}{PU}[1]{\u{#1}}%
15158 \DeclareTextCommand{\capitalmacron}{PU}[1]{\={#1}}%
15159 \DeclareTextCommand{\capitaldotaccent}{PU}[1]{\.{#1}}%
15160 \DeclareTextCommand{\capitaltie}{PU}[1]{\t{#1}}%
15161 \DeclareTextCommand{\capitalnewtie}{PU}[1]{\newtie{#1}}%

```

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

Special white space escape characters.

```

15162 % U+0009 (CHARACTER TABULATION)
15163 \DeclareTextCommand{\textHT}{PU}{\80\011}% U+0009
15164 % U+000A (LINE FEED)
15165 \DeclareTextCommand{\textLF}{PU}{\80\012}% U+000A
15166 % U+000D (CARRIAGE RETURN)
15167 \DeclareTextCommand{\textCR}{PU}{\80\015}% U+000D
\80\040: U+0020 SPACE; space, spacehackarabic
\80\041: U+0021 EXCLAMATION MARK; exclam
15168 % U+0022 QUOTATION MARK; quotedbl
15169 \DeclareTextCommand{\textquotedbl}{PU}{"}% \80\042 U+0022
15170 % U+0023 NUMBER SIGN; numbersign

```



15171 `\DeclareTextCommand{\textnumbersign}{PU}{\80\043}% U+0023`  
15172 `% U+0024 DOLLAR SIGN; dollar`  
15173 `\DeclareTextCommand{\textdollar}{PU}{\80\044}% U+0024`  
15174 `%* \textdollar -> \mathdollar`  
15175 `%* \textdollar -> \EyesDollar (marvosym)`  
15176 `% U+0025 PERCENT SIGN; percent`  
15177 `\DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025`  
15178 `% U+0026 AMPERSAND; ampersand`  
15179 `\DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026`  
15180 `%* \textampersand -> \binampersand (stmaryrd)`  
15181 `%* \textampersand -> \with (cml)`  
15182 `% U+0027 APOSTROPHE; quotesingle`  
15183 `\DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027`  
15184 `% U+0028 LEFT PARENTHESIS; parenleft`  
15185 `\DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028`  
15186 `% U+0029 RIGHT PARENTHESIS; parenright`  
15187 `\DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029`  
15188 `% U+002A ASTERISK; asterisk; (?)`  
15189 `\DeclareTextCommand{\textasteriskcentered}{PU}{\80\052}% U+002A`  
15190 `% U+002B PLUS SIGN; plus; \MVPlus (marvosym)`  
15191 `\DeclareTextCommand{\textMVPlus}{PU}{\80\053}%* U+002B`  
15192 `% U+002C COMMA; comma; \MVComma (marvosym)`  
15193 `\DeclareTextCommand{\textMVComma}{PU}{\80\054}%* U+002C`  
15194 `% U+002D HYPHEN-MINUS; hyphen; \MVMinus (marvosym)`  
15195 `\DeclareTextCommand{\textMVMinus}{PU}{\80\055}%* U+002D`  
15196 `% U+002E FULL STOP; period; \MVPeriod (marvosym)`  
15197 `\DeclareTextCommand{\textMVPeriod}{PU}{\80\056}%* U+002E`  
15198 `% U+002F SOLIDUS; slash; \MVDivision (marvosym)`  
15199 `\DeclareTextCommand{\textMVDivision}{PU}{\80\057}%* U+002F`  
15200 `% U+0030 DIGIT ZERO; zero; \MVZero (marvosym)`  
15201 `\DeclareTextCommand{\textMVZero}{PU}{\80\060}%* U+0030`  
15202 `% U+0031 DIGIT ONE; one; \MVOne (marvosym)`  
15203 `\DeclareTextCommand{\textMVOne}{PU}{\80\061}%* U+0031`  
15204 `% U+0032 DIGIT TWO; two; \MVTwo (marvosym)`  
15205 `\DeclareTextCommand{\textMVTwo}{PU}{\80\062}%* U+0032`  
15206 `% U+0033 DIGIT THREE; three; \MVThree (marvosym)`  
15207 `\DeclareTextCommand{\textMVThree}{PU}{\80\063}%* U+0033`  
15208 `% U+0034 DIGIT FOUR; four; \MVFour (marvosym)`  
15209 `\DeclareTextCommand{\textMVFour}{PU}{\80\064}%* U+0034`  
15210 `% U+0035 DIGIT FIVE; five; \MVFive (marvosym)`  
15211 `\DeclareTextCommand{\textMVFive}{PU}{\80\065}%* U+0035`  
15212 `% U+0036 DIGIT SIX; six; \MVSix (marvosym)`  
15213 `\DeclareTextCommand{\textMVSix}{PU}{\80\066}%* U+0036`  
15214 `% U+0037 DIGIT SEVEN; seven; \MVSeven (marvosym)`  
15215 `\DeclareTextCommand{\textMVSeven}{PU}{\80\067}%* U+0037`  
15216 `% U+0038 DIGIT EIGHT; eight; \MVEight (marvosym)`  
15217 `\DeclareTextCommand{\textMVEight}{PU}{\80\070}%* U+0038`  
15218 `% U+0039 DIGIT NINE; nine; \MVNine (marvosym)`  
15219 `\DeclareTextCommand{\textMVNine}{PU}{\80\071}%* U+0039`  
`\80\072: U+003A COLON; colon`  
`\80\073: U+003B SEMICOLON; semicolon`  
15220 `% U+003C LESS-THAN SIGN; less`  
15221 `\DeclareTextCommand{\textless}{PU}{<}% \80\074 U+003C`

$\backslash 80\backslash 075$ : U+003D EQUALS SIGN; equal  
 15222 % U+003E GREATER-THAN SIGN; greater  
 15223  $\backslash \text{DeclareTextCommand}\{\backslash \text{textgreater}\}\{\text{PU}\}\{>\}$ %  $\backslash 80\backslash 076$  U+003E  
 $\backslash 80\backslash 077$ : U+003F QUESTION MARK; question  
 15224 % U+0040 COMMERCIAL AT; at;  $\backslash \text{MVAt}$  (marvosym)  
 15225  $\backslash \text{DeclareTextCommand}\{\backslash \text{textMVAt}\}\{\text{PU}\}\{\backslash 80\backslash 100\}$ %\* U+0040  
 $\backslash 80\backslash 101$ : U+0041 LATIN CAPITAL LETTER A; A  
 ...  
 $\backslash 80\backslash 132$ : U+005A LATIN CAPITAL LETTER Z; Z  
 $\backslash 80\backslash 133$ : U+005B LEFT SQUARE BRACKET; bracketleft  
 15226 % U+005C REVERSE SOLIDUS; backslash  
 15227  $\backslash \text{DeclareTextCommand}\{\backslash \text{textbackslash}\}\{\text{PU}\}\{\backslash 80\backslash 134\}$ % U+005C  
 $\backslash 80\backslash 135$ : U+005D RIGHT SQUARE BRACKET; bracketright  
 15228 % U+005E CIRCUMFLEX ACCENT; asciicircum  
 15229  $\backslash \text{DeclareTextCommand}\{\backslash \text{textasciicircum}\}\{\text{PU}\}\{\backslash 80\backslash 136\}$ % U+005E  
 15230 % U+005F LOW LINE; underscore  
 15231  $\backslash \text{DeclareTextCommand}\{\backslash \text{textunderscore}\}\{\text{PU}\}\{\backslash 80\backslash 137\}$ % U+005F  
 15232 %\*  $\backslash \text{textunderscore}$  ->  $\backslash \text{mathunderscore}$  (LaTeX)  
 15233 % U+0060 GRAVE ACCENT; grave  
 15234  $\backslash \text{DeclareTextCommand}\{\backslash \text{textasciigrave}\}\{\text{PU}\}\{\backslash 80\backslash 140\}$ % U+0060  
 $\backslash 80\backslash 141$ : U+0061 LATIN SMALL LETTER A; a  
 ...  
 $\backslash 80\backslash 150$ : U+0068 LATIN SMALL LETTER H; h  
 15235 % U+0069 LATIN SMALL LETTER I; i  
 15236  $\backslash \text{DeclareTextCompositeCommand}\{\backslash \cdot\}\{\text{PU}\}\{\text{i}\}\{\text{i}\}$ %  $\backslash 80\backslash 151$  U+0069  
 15237  $\backslash \text{DeclareTextCompositeCommand}\{\backslash \cdot\}\{\text{PU}\}\{\text{i}\}\{\text{i}\}$ %  $\backslash 80\backslash 151$  U+0069  
 $\backslash 80\backslash 152$ : U+006A LATIN SMALL LETTER J; j  
 ...  
 $\backslash 80\backslash 172$ : U+007A LATIN SMALL LETTER Z; z  
 15238 % U+007B LEFT CURLY BRACKET; braceleft  
 15239  $\backslash \text{DeclareTextCommand}\{\backslash \text{textbraceleft}\}\{\text{PU}\}\{\backslash 80\backslash 173\}$ % U+007B  
 15240 % U+007C VERTICAL LINE; \*bar, verticalbar  
 15241  $\backslash \text{DeclareTextCommand}\{\backslash \text{textbar}\}\{\text{PU}\}\{\text{|}\}$ %  $\backslash 80\backslash 174$  U+007C  
 15242 %\*  $\backslash \text{textbar}$  ->  $\backslash \text{textvtrline}$  (tipa)  
 15243 % U+007D RIGHT CURLY BRACKET; braceright  
 15244  $\backslash \text{DeclareTextCommand}\{\backslash \text{textbraceright}\}\{\text{PU}\}\{\backslash 80\backslash 175\}$ % U+007D  
 15245 % U+007E TILDE; asciitilde  
 15246  $\backslash \text{DeclareTextCommand}\{\backslash \text{textasciitilde}\}\{\text{PU}\}\{\backslash 80\backslash 176\}$ % U+007E

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

$\backslash 80\backslash 240$ : U+00A0 NO-BREAK SPACE; nbspace, nonbreakingspace  
 15247 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
 15248  $\backslash \text{DeclareTextCommand}\{\backslash \text{textexclamdown}\}\{\text{PU}\}\{\backslash 80\backslash 241\}$ % U+00A1  
 15249 % U+00A2 CENT SIGN; cent  
 15250  $\backslash \text{DeclareTextCommand}\{\backslash \text{textcent}\}\{\text{PU}\}\{\backslash 80\backslash 242\}$ % U+00A2  
 15251 % U+00A3 POUND SIGN; sterling  
 15252  $\backslash \text{DeclareTextCommand}\{\backslash \text{textsterling}\}\{\text{PU}\}\{\backslash 80\backslash 243\}$ % U+00A3  
 15253 %\*  $\backslash \text{textsterling}$  ->  $\backslash \text{mathsterling}$  (LaTeX)  
 15254 %\*  $\backslash \text{textsterling}$  ->  $\backslash \text{pounds}$  (LaTeX)

15255 % U+00A4 CURRENCY SIGN; currency  
15256 \DeclareTextCommand{\textcurrency}{PU}{\80\244}% U+00A4  
15257 % U+00A5 YEN SIGN; yen  
15258 \DeclareTextCommand{\textyen}{PU}{\80\245}% U+00A5  
15259 % U+00A6 BROKEN BAR; brokenbar  
15260 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246}% U+00A6  
15261 %\* \textbrokenbar -> \brokenvert (wasysym)  
15262 % U+00A7 SECTION SIGN; section  
15263 \DeclareTextCommand{\textsection}{PU}{\80\247}% U+00A7  
15264 %\* \textsection -> \mathsection (LaTeX)  
15265 %\* \textsection -> \S (LaTeX)  
15266 % U+00A8 DIAERESIS; diaeresis  
15267 \DeclareTextCommand{\textasciidieresis}{PU}{\80\250}% U+00A8  
15268 % U+00A9 COPYRIGHT SIGN; copyright  
15269 \DeclareTextCommand{\textcopyright}{PU}{\80\251}%\* U+00A9  
15270 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
15271 \DeclareTextCommand{\textordfeminine}{PU}{\80\252}% U+00AA  
15272 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetleft  
15273 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB  
15274 \DeclareTextCommand{\guillemetleft}{PU}{\80\253}% U+00AB  
15275 % U+00AC NOT SIGN; logicalnot  
15276 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254}% U+00AC  
15277 \DeclareTextCommand{\textlnot}{PU}{\80\254}% U+00AC  
\80\255: U+00AD SOFT HYPHEN; sfthyphen, softthyphen  
15278 % U+00AE REGISTERED SIGN; registered  
15279 \DeclareTextCommand{\textregistered}{PU}{\80\256}% U+00AE  
15280 % U+00AF MACRON; \*macron, overscore  
15281 \DeclareTextCommand{\textasciimacron}{PU}{\80\257}% U+00AF  
15282 % U+00B0 DEGREE SIGN; degree  
15283 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0  
15284 % U+00B1 PLUS-MINUS SIGN; plusminus  
15285 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1  
15286 % U+00B2 SUPERSCRIPT TWO; twosuperior  
15287 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}%\* U+00B2  
15288 % U+00B3 SUPERSCRIPT THREE; threesuperior  
15289 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}%\* U+00B3  
15290 % U+00B4 ACUTE ACCENT; acute  
15291 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4  
15292 \DeclareTextCommand{\textasciiacute}{PU}{\80\264}% U+00B4  
15293 % U+00B5 MICRO SIGN; mu, mu1  
15294 \DeclareTextCommand{\textmu}{PU}{\80\265}% U+00B5  
15295 % U+00B6 PILCROW SIGN; paragraph  
15296 \DeclareTextCommand{\textparagraph}{PU}{\80\266}% U+00B6  
15297 %\* \textparagraph -> \mathparagraph (LaTeX)  
15298 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
15299 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267}% U+00B7  
15300 %\* \textperiodcentered -> \MultiplicationDot (marvosym)  
15301 %\* \textperiodcentered -> \Squaredot (marvosym)  
15302 % U+00B8 CEDILLA; cedilla  
15303 \DeclareTextCommand{\textcedilla}{PU}{\80\270}% U+00B8  
15304 % U+00B9 SUPERSCRIPT ONE; onesuperior  
15305 \DeclareTextCommand{\textonesuperior}{PU}{\80\271}%\* U+00B9  
15306 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
15307 \DeclareTextCommand{\textordmasculine}{PU}{\80\272}% U+00BA

15308 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetright  
15309 \DeclareTextCommand{\guillemotright}{PU}{\80\273}% U+00BB  
15310 \DeclareTextCommand{\guillemetright}{PU}{\80\273}% U+00BB  
15311 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
15312 \DeclareTextCommand{\textonequarter}{PU}{\80\274}% U+00BC  
15313 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
15314 \DeclareTextCommand{\textonehalf}{PU}{\80\275}% U+00BD  
15315 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
15316 \DeclareTextCommand{\textthreequarters}{PU}{\80\276}% U+00BE  
15317 % U+00BF INVERTED QUESTION MARK; questiondown  
15318 \DeclareTextCommand{\textquestiondown}{PU}{\80\277}% U+00BF  
15319 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
15320 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
15321 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Acute  
15322 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
15323 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
15324 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302}% U+00C2  
15325 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
15326 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
15327 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
15328 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304}% U+00C4  
15329 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
15330 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305}% U+00C5  
15331 % U+00C6 LATIN CAPITAL LETTER AE; AE  
15332 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6  
15333 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
15334 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7  
15335 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
15336 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
15337 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
15338 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
15339 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
15340 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312}% U+00CA  
15341 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
15342 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313}% U+00CB  
15343 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
15344 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
15345 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
15346 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
15347 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
15348 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316}% U+00CE  
15349 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
15350 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317}% U+00CF  
15351 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
15352 \DeclareTextCommand{\DH}{PU}{\80\320}% U+00D0  
15353 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
15354 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321}% U+00D1  
15355 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
15356 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
15357 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
15358 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
15359 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
15360 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324}% U+00D4  
15361 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde

15362 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
15363 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
15364 \DeclareTextCompositeCommand{"}{PU}{O}{\80\326}% U+00D6  
15365 % U+00D7 MULTIPLICATION SIGN; multiply  
15366 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7  
15367 %\* \textmultiply -> \vartimes (stmaryrd)  
15368 %\* \textmultiply -> \MVMultiplication (marvosym)  
15369 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
15370 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8  
15371 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
15372 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9  
15373 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
15374 \DeclareTextCompositeCommand{'}{PU}{U}{\80\332}% U+00DA  
15375 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
15376 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333}% U+00DB  
15377 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
15378 \DeclareTextCompositeCommand{"}{PU}{U}{\80\334}% U+00DC  
15379 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
15380 \DeclareTextCompositeCommand{'}{PU}{Y}{\80\335}% U+00DD  
15381 % U+00DE LATIN CAPITAL LETTER THORN; Thorn; \TH, \Thorn (wasysym)  
15382 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE  
15383 \DeclareTextCommand{\textThorn}{PU}{\80\336}%\* U+00DE  
15384 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
15385 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF  
15386 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
15387 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0  
15388 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
15389 \DeclareTextCompositeCommand{'}{PU}{a}{\80\341}% U+00E1  
15390 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
15391 \DeclareTextCompositeCommand{\^}{PU}{a}{\80\342}% U+00E2  
15392 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
15393 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
15394 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
15395 \DeclareTextCompositeCommand{"}{PU}{a}{\80\344}% U+00E4  
15396 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
15397 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5  
15398 % U+00E6 LATIN SMALL LETTER AE; ae  
15399 \DeclareTextCommand{\ae}{PU}{\80\346}% U+00E6  
15400 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
15401 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7  
15402 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
15403 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8  
15404 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
15405 \DeclareTextCompositeCommand{'}{PU}{e}{\80\351}% U+00E9  
15406 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
15407 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA  
15408 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
15409 \DeclareTextCompositeCommand{"}{PU}{e}{\80\353}% U+00EB  
15410 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
15411 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
15412 \DeclareTextCompositeCommand{'}{PU}{i}{\80\354}% U+00EC  
15413 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
15414 \DeclareTextCompositeCommand{'}{PU}{i}{\80\355}% U+00ED  
15415 \DeclareTextCompositeCommand{'}{PU}{i}{\80\355}% U+00ED

15416 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
15417 \DeclareTextCompositeCommand{\~}{PU}{i}{\80\356}% U+00EE  
15418 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
15419 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
15420 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
15421 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\357}% U+00EF  
15422 % U+00F0 LATIN SMALL LETTER ETH; eth  
15423 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0  
15424 %\* \dh -> \eth (wsuipa, phonetic)  
15425 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
15426 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361}% U+00F1  
15427 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
15428 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
15429 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
15430 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
15431 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
15432 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364}% U+00F4  
15433 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
15434 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
15435 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
15436 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366}% U+00F6  
15437 % U+00F7 DIVISION SIGN; divide  
15438 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7  
15439 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
15440 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8  
15441 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
15442 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
15443 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
15444 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
15445 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
15446 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373}% U+00FB  
15447 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
15448 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374}% U+00FC  
15449 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
15450 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
15451 % U+00FE LATIN SMALL LETTER THORN; thorn;  
15452 % \th, \thorn (wasysym), \textthorn (tipa)  
15453 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE  
15454 \DeclareTextCommand{\textthorn}{PU}{\80\376}%\* U+00FE  
15455 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
15456 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377}% U+00FF

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

15457 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron  
15458 \DeclareTextCompositeCommand{\=} {PU}{A}{\81\000}% U+0100  
15459 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron  
15460 \DeclareTextCompositeCommand{\=} {PU}{a}{\81\001}% U+0101  
15461 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve  
15462 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% U+0102  
15463 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve  
15464 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% U+0103  
15465 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek  
15466 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% U+0104

15467 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek  
15468 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% U+0105  
15469 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacute  
15470 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% U+0106  
15471 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacute  
15472 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% U+0107  
15473 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex  
15474 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% U+0108  
15475 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex  
15476 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% U+0109  
15477 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotaccent  
15478 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% U+010A  
15479 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent  
15480 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% U+010B  
15481 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron  
15482 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% U+010C  
15483 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron  
15484 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% U+010D  
15485 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron  
15486 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% U+010E  
15487 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron  
15488 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% U+010F  
15489 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash  
15490 \DeclareTextCommand{\DJ}{PU}{\81\020}% U+0110  
15491 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron;  
15492 % \textcrd (tipa)  
15493 \DeclareTextCommand{\dj}{PU}{\81\021}% U+0111  
15494 \DeclareTextCommand{\textcrd}{PU}{\81\021}% U+0111  
15495 %\* \textcrd -> \crossd (wsuipa)  
15496 % An alternate glyph with the stroke through the bowl:  
15497 %\* \textcrd -> \textbard (tipa)  
15498 %\* \textcrd -> \bard (wsuipa)  
15499 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron  
15500 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% U+0112  
15501 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron  
15502 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% U+0113  
15503 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve  
15504 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% U+0114  
15505 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve  
15506 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% U+0115  
15507 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent  
15508 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% U+0116  
15509 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent  
15510 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% U+0117  
15511 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek  
15512 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% U+0118  
15513 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek  
15514 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% U+0119  
15515 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron  
15516 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% U+011A  
15517 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron  
15518 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% U+011B  
15519 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex

15520 \DeclareTextCompositeCommand{\~}{PU}{G}{\81\034}% U+011C  
15521 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex  
15522 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% U+011D  
15523 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve  
15524 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% U+011E  
15525 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve  
15526 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% U+011F  
15527 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotac-  
cent  
15528 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% U+0120  
15529 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent  
15530 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% U+0121  
15531 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcomma-  
maaccent  
15532 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% U+0122  
15533 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent  
15534 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% U+0123  
15535 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex  
15536 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% U+0124  
15537 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex  
15538 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% U+0125  
15539 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar  
15540 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126  
15541 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar; \hbar (AmS)  
15542 \DeclareTextCommand{\texthbar}{PU}{\81\047}%\* U+0127  
15543 %\* \texthbar -> \textcrh (tipa)  
15544 %\* \texthbar -> \crossh (wsuipa)  
15545 %\* \texthbar -> \planck (phonetic)  
15546 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; Itilde  
15547 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128  
15548 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde  
15549 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
15550 \DeclareTextCompositeCommand{\~}{PU}{\i}{\81\051}% U+0129  
15551 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron  
15552 \DeclareTextCompositeCommand{\=} {PU}{I}{\81\052}% U+012A  
15553 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron  
15554 \DeclareTextCompositeCommand{\=} {PU}{i}{\81\053}% U+012B  
15555 \DeclareTextCompositeCommand{\=} {PU}{\i}{\81\053}% U+012B  
15556 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibreve  
15557 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C  
15558 % U+012D LATIN SMALL LETTER I WITH BREVE; ibreve  
15559 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
15560 \DeclareTextCompositeCommand{\u}{PU}{\i}{\81\055}% U+012D  
15561 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek  
15562 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E  
15563 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek  
15564 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
15565 \DeclareTextCompositeCommand{\k}{PU}{\i}{\81\057}% U+012F  
15566 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent  
15567 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% U+0130  
15568 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
15569 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131  
15570 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ  
15571 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132



15572 % U+0133 LATIN SMALL LIGATURE IJ; ij  
15573 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133  
15574 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex  
15575 \DeclareTextCompositeCommand{\~}{PU}{J}{\81\064}% U+0134  
15576 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex  
15577 \DeclareTextCompositeCommand{\~}{PU}{j}{\81\065}% U+0135  
15578 \DeclareTextCompositeCommand{\~}{PU}{\j}{\81\065}% U+0135  
15579 % U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaaccent  
15580 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136  
15581 % U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent  
15582 \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`.

15583 % U+0138 LATIN SMALL LETTER KRA; kgreenlandic  
15584 \DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138  
15585 % U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute  
15586 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071}% U+0139  
15587 % U+013A LATIN SMALL LETTER L WITH ACUTE; lacute  
15588 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072}% U+013A  
15589 % U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaaccent  
15590 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B  
15591 % U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent  
15592 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C  
15593 % U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron  
15594 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D  
15595 % U+013E LATIN SMALL LETTER L WITH CARON; lcaron  
15596 \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`.

15597 % U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotaccent  
15598 \DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F  
15599 % U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent  
15600 \DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140  
15601 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
15602 \DeclareTextCommand{\L}{PU}{\81\101}% U+0141  
15603 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
15604 \DeclareTextCommand{\l}{PU}{\81\102}% U+0142  
15605 % U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute  
15606 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103}% U+0143  
15607 % U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute  
15608 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104}% U+0144  
15609 % U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaaccent  
15610 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105}% U+0145  
15611 % U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent  
15612 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106}% U+0146  
15613 % U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron  
15614 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107}% U+0147

15615 % U+0148 LATIN SMALL LETTER N WITH CARON; ncaron  
15616 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110}% U+0148  
15617 % U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napostrophe, quoterightn  
15618 \DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149  
15619 % U+014A LATIN CAPITAL LETTER ENG; Eng  
15620 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A  
15621 % U+014B LATIN SMALL LETTER ENG; eng  
15622 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B  
15623 %\* \ng -> \eng (wsuipa)  
15624 %\* \ng -> \engma (phonetic)  
15625 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron  
15626 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114}% U+014C  
15627 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron  
15628 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115}% U+014D  
15629 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve  
15630 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116}% U+014E  
15631 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve  
15632 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117}% U+014F  
15633 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odblacute, Ohungarumlaut  
15634 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120}% U+0150  
15635 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odblacute, ohungarumlaut  
15636 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121}% U+0151  
15637 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
15638 \DeclareTextCommand{\OE}{PU}{\81\122}% U+0152  
15639 % U+0153 LATIN SMALL LIGATURE OE; oe  
15640 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153  
15641 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute  
15642 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124}% U+0154  
15643 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute  
15644 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125}% U+0155  
15645 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcommaaccent  
15646 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126}% U+0156  
15647 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcommaaccent  
15648 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127}% U+0157  
15649 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron  
15650 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130}% U+0158  
15651 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron  
15652 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131}% U+0159  
15653 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute  
15654 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132}% U+015A  
15655 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute  
15656 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133}% U+015B  
15657 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex  
15658 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134}% U+015C  
15659 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex  
15660 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135}% U+015D  
15661 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla  
15662 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136}% U+015E  
15663 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla  
15664 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137}% U+015F

15665 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
15666 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140}% U+0160  
15667 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
15668 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141}% U+0161  
15669 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcommaaccent  
15670 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162  
15671 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcommaaccent  
15672 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163  
15673 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron  
15674 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164  
15675 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron  
15676 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165  
15677 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar  
15678 \DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166  
15679 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar  
15680 \DeclareTextCommand{\texttslash}{PU}{\81\147}% U+0167  
15681 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde  
15682 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168  
15683 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde  
15684 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
15685 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron  
15686 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152}% U+016A  
15687 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron  
15688 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153}% U+016B  
15689 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve  
15690 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154}% U+016C  
15691 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve  
15692 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155}% U+016D  
15693 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring  
15694 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156}% U+016E  
15695 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring  
15696 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157}% U+016F  
15697 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Udblacute, Uhungarumlaut  
15698 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160}% U+0170  
15699 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; udblacute, uhungarumlaut  
15700 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161}% U+0171  
15701 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek  
15702 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162}% U+0172  
15703 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek  
15704 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163}% U+0173  
15705 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex  
15706 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164}% U+0174  
15707 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex  
15708 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165}% U+0175  
15709 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex  
15710 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166}% U+0176  
15711 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex  
15712 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167}% U+0177  
15713 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
15714 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170}% U+0178  
15715 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute

15716 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171}% U+0179  
15717 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute  
15718 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172}% U+017A  
15719 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent  
15720 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173}% U+017B  
15721 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent  
15722 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174}% U+017C  
15723 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
15724 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175}% U+017D  
15725 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
15726 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176}% U+017E  
15727 % U+017F LATIN SMALL LETTER LONG S; longs, slong  
15728 \DeclareTextCommand{\textlongS}{PU}{\81\177}% U+017F

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

15729 % U+0180 LATIN SMALL LETTER B WITH STROKE; bstroke; \textcrb (tipa)  
15730 \DeclareTextCommand{\textcrb}{PU}{\81\200}% U+0180  
15731 %\* \textcrb -> \crossb (wsuipa)  
15732 % An alternate glyph with the stroke through the bowl:  
15733 %\* \textcrb -> \textbarb (tipa)  
15734 %\* \textcrb -> \barb (wsuipa)  
15735 % U+0181 LATIN CAPITAL LETTER B WITH HOOK; Bhook; \hausab (pho-  
netic)  
15736 \DeclareTextCommand{\texthausab}{PU}{\81\201}%\* U+0181  
15737 % U+0188 LATIN SMALL LETTER C WITH HOOK; chook; \texthtc (tipa)  
15738 \DeclareTextCommand{\texthtc}{PU}{\81\210}% U+0188  
15739 % U+018A LATIN CAPITAL LETTER D WITH HOOK; Dhook; \hausad (pho-  
netic)  
15740 \DeclareTextCommand{\texthausad}{PU}{\81\212}%\* U+018A  
15741 % U+018E LATIN CAPITAL LETTER REVERSED E; Ereversed  
15742 \DeclareTextCommand{\textEreversed}{PU}{\81\216}% U+018E  
15743 \DeclareTextCommand{\textrevE}{PU}{\81\216}% U+018E  
15744 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
15745 \DeclareTextCommand{\textflorin}{PU}{\81\222}% U+0192  
15746 %\* \textflorin -> \Florin (marvosym)  
15747 % U+0195 LATIN SMALL LETTER HV; hv; \texthvlig (tipa)  
15748 \DeclareTextCommand{\texthvlig}{PU}{\81\225}% U+0195  
15749 %\* \texthvlig -> \hv (wsuipa)  
15750 % U+0198 LATIN CAPITAL LETTER K WITH HOOK; Khook; \hausak (pho-  
netic)  
15751 \DeclareTextCommand{\texthausak}{PU}{\81\230}%\* U+0198  
15752 % U+0199 LATIN SMALL LETTER K WITH HOOK; khook; \texthtk (tipa)  
15753 \DeclareTextCommand{\texthtk}{PU}{\81\231}% U+0199  
15754 %\* \texthtk -> \hausak (phonetic)  
15755 % U+019A LATIN SMALL LETTER L WITH BAR; lbar;  
15756 % \textbarl (tipa), \barl (wsuipa)  
15757 \DeclareTextCommand{\textbarl}{PU}{\81\232}%\* U+019A  
15758 % U+019B LATIN SMALL LETTER LAMBDA WITH STROKE/  
15759 % LATIN SMALL LETTER BARRED LAMBDA; lambdastroke;  
15760 % \textclambda (tipa)  
15761 \DeclareTextCommand{\textclambda}{PU}{\81\233}% U+019B  
15762 %\* \textclambda -> \crossnilambda (wsuipa)  
15763 %\* \textclambda -> \barlambd (phonetic)  
15764 %\* \textclambda -> \lambdabar (txfonts/pxfonts)

15765 %\* \textcrlambda -> \lambdash (txfonts/pxfonts)  
15766 % U+019E LATIN SMALL LETTER N WITH LONG RIGHT LEG; nlegright-  
long;  
15767 % \textnrleg (tipx)  
15768 \DeclareTextCommand{\textPUnrleg}{PU}{\81\236}% U+019E  
15769 %\* \textPUnrleg -> \textnrleg (tipx)  
15770 % U+01A5 LATIN SMALL LETTER P WITH HOOK; phook; \texthtp (tipa)  
15771 \DeclareTextCommand{\texthtp}{PU}{\81\245}% U+01A5  
15772 % U+01AB LATIN SMALL LETTER T WITH PALATAL HOOK; tpalatalhook;  
15773 % \textlhookt (tipa)  
15774 \DeclareTextCommand{\textlhookt}{PU}{\81\253}% U+01AB  
15775 % U+01AD LATIN SMALL LETTER T WITH HOOK; thook; \texthtt (tipa)  
15776 \DeclareTextCommand{\texthtt}{PU}{\81\255}% U+01AD  
15777 % U+01B9 LATIN SMALL LETTER EZH REVERSED/  
15778 % LATIN SMALL LETTER REVERSED YOGH; \textrevyogh (tipa)  
15779 \DeclareTextCommand{\textrevyogh}{PU}{\81\271}% U+01B9  
15780 % U+01BB LATIN LETTER TWO WITH STROKE; twostroke; \textcrtwo (tipa)  
15781 \DeclareTextCommand{\textcrtwo}{PU}{\81\273}% U+01BB  
15782 % U+01BE LATIN LETTER INVERTED GLOTTAL STOP WITH STROKE;  
15783 % glottalinvertedstroke; \textcrinvglotstop (tipa)  
15784 \DeclareTextCommand{\textcrinvglotstop}{PU}{\81\276}% U+01BE  
15785 % U+01BF LATIN LETTER WYNN; wynn; \textwynn (tipa)  
15786 \DeclareTextCommand{\textwynn}{PU}{\81\277}% U+01BF  
15787 % U+01C0 LATIN LETTER DENTAL CLICK/LATIN LETTER PIPE; clickden-  
tal;  
15788 % \textpipe (tipa)  
15789 \DeclareTextCommand{\textpipe}{PU}{\81\300}% U+01C0  
15790 %\* \textpipe -> \textpipevar (tipx)  
15791 % U+01C1 LATIN LETTER LATERAL CLICK/LATIN LETTER  
15792 % DOUBLE PIPE; clicklateral; \textdoublepipe (tipa)  
15793 \DeclareTextCommand{\textdoublepipe}{PU}{\81\301}% U+01C1  
15794 %\* \textdoublepipe -> \textdoublepipevar (tipx)  
15795 % U+01C2 LATIN LETTER ALVEOLAR CLICK/LATIN LETTER PIPE DOU-  
BLE BAR;  
15796 % clickalveolar; \textdoublebarpipe (tipa)  
15797 \DeclareTextCommand{\textdoublebarpipe}{PU}{\81\302}% U+01C2  
15798 %\* \textdoublebarpipe -> \textdoublebarpipevar (tipx)  
15799 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron  
15800 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315}% U+01CD  
15801 % U+01CE LATIN SMALL LETTER A WITH CARON; acaron  
15802 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316}% U+01CE  
15803 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icaron  
15804 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317}% U+01CF  
15805 % U+01D0 LATIN SMALL LETTER I WITH CARON; icaron  
15806 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
15807 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
15808 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocaron  
15809 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1  
15810 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocaron  
15811 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2  
15812 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucaron  
15813 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3  
15814 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucaron  
15815 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4

15816 % U+01DD LATIN SMALL LETTER TURNED E; eturned; \inve (wasysym)  
15817 \DeclareTextCommand{\textinve}{PU}{\81\335}%\* U+01DD  
15818 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke  
15819 \DeclareTextCommand{\textgslash}{PU}{\81\344}% U+01E4  
15820 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke  
15821 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5  
15822 %\* \textgslash -> \textcrg (tipa)  
15823 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcaron  
15824 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6  
15825 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcaron  
15826 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7  
15827 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcaron  
15828 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8  
15829 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcaron  
15830 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9  
15831 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek  
15832 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA  
15833 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek  
15834 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB  
15835 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcaron  
15836 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
15837 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
15838 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute  
15839 \DeclareTextCompositeCommand{\'}{PU}{G}{\81\364}% U+01F4  
15840 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute  
15841 \DeclareTextCompositeCommand{\'}{PU}{g}{\81\365}% U+01F5  
15842 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE  
15843 \DeclareTextCompositeCommand{\`}{PU}{N}{\81\370}% U+01F8  
15844 % U+01F9 LATIN SMALL LETTER N WITH GRAVE  
15845 \DeclareTextCompositeCommand{\`}{PU}{n}{\81\371}% U+01F9  
15846 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute  
15847 \DeclareTextCompositeCommand{\'}{PU}{\AE}{\81\374}% U+01FC  
15848 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute  
15849 \DeclareTextCompositeCommand{\'}{PU}{\ae}{\81\375}% U+01FD  
15850 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE;  
15851 % \*Oslashacute, Ostrokeacute  
15852 \DeclareTextCompositeCommand{\'}{PU}{\O}{\81\376}% U+01FE  
15853 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE;  
15854 % \*oslashacute, ostrokeacute  
15855 \DeclareTextCompositeCommand{\'}{PU}{\o}{\81\377}% U+01FF  
15856 (/puenc)  
15857 (\*puextra)  
15858 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave  
15859 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200  
15860 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave  
15861 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201  
15862 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave  
15863 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204  
15864 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave  
15865 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205  
15866 (/puextra)  
15867 (\*puenc)  
15868 % U+0206 LATIN CAPITAL LETTER E WITH INVERTED BREVE; Einvert-  
edbreve

15869 \DeclareTextCompositeCommand{\textinvbreve}{PU}{E}{\82\006}% U+0206  
15870 % U+0207 LATIN SMALL LETTER E WITH INVERTED BREVE; einverted-  
breve  
15871 \DeclareTextCompositeCommand{\textinvbreve}{PU}{e}{\82\007}% U+0207  
15872 </puenc>  
15873 (\*puextra)  
15874 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; Idblgrave  
15875 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208  
15876 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave  
15877 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
15878 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
15879 </puextra>  
15880 (\*puenc)  
15881 % U+020A LATIN CAPITAL LETTER I WITH INVERTED BREVE; inverted-  
breve  
15882 \DeclareTextCompositeCommand{\textinvbreve}{PU}{I}{\82\012}% U+020A  
15883 % U+020B LATIN SMALL LETTER I WITH INVERTED BREVE; iinverted-  
breve  
15884 \DeclareTextCompositeCommand{\textinvbreve}{PU}{i}{\82\013}% U+020B  
15885 \DeclareTextCompositeCommand{\textinvbreve}{PU}{i}{\82\013}% U+020B  
15886 </puenc>  
15887 (\*puextra)  
15888 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave  
15889 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C  
15890 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave  
15891 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D  
15892 </puextra>  
15893 (\*puenc)  
15894 % U+020E LATIN CAPITAL LETTER O WITH INVERTED BREVE; Oinvert-  
edbreve  
15895 \DeclareTextCompositeCommand{\textinvbreve}{PU}{O}{\82\016}% U+020E  
15896 % U+020F LATIN SMALL LETTER O WITH INVERTED BREVE; oinverted-  
breve  
15897 \DeclareTextCompositeCommand{\textinvbreve}{PU}{o}{\82\017}% U+020F  
15898 </puenc>  
15899 (\*puextra)  
15900 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave  
15901 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210  
15902 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave  
15903 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211  
15904 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave  
15905 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214  
15906 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave  
15907 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215  
15908 </puextra>  
15909 (\*puenc)  
15910 % U+0216 LATIN CAPITAL LETTER U WITH INVERTED BREVE; Uinvert-  
edbreve  
15911 \DeclareTextCompositeCommand{\textinvbreve}{PU}{U}{\82\026}% U+0216  
15912 % U+0217 LATIN SMALL LETTER U WITH INVERTED BREVE; uinverted-  
breve  
15913 \DeclareTextCompositeCommand{\textinvbreve}{PU}{u}{\82\027}% U+0217  
15914 % U+021E LATIN CAPITAL LETTER H WITH CARON  
15915 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E

15916 % U+021F LATIN SMALL LETTER H WITH CARON  
15917 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F  
15918 % U+0221 LATIN SMALL LETTER D WITH CURL; \textctd (tipa)  
15919 \DeclareTextCommand{\textctd}{PU}{\82\041}% U+0221  
15920 % U+0225 LATIN SMALL LETTER Z WITH HOOK; \textcommatailz (tipa)  
15921 \DeclareTextCommand{\textcommatailz}{PU}{\82\045}% U+0225  
15922 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE  
15923 \DeclareTextCompositeCommand{\.}{PU}{A}{\82\046}% U+0226  
15924 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE  
15925 \DeclareTextCompositeCommand{\.}{PU}{a}{\82\047}% U+0227  
15926 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA  
15927 \DeclareTextCompositeCommand{\c}{PU}{E}{\82\050}% U+0228  
15928 % U+0229 LATIN SMALL LETTER E WITH CEDILLA  
15929 \DeclareTextCompositeCommand{\c}{PU}{e}{\82\051}% U+0229  
15930 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE  
15931 \DeclareTextCompositeCommand{\.}{PU}{O}{\82\056}% U+022E  
15932 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE  
15933 \DeclareTextCompositeCommand{\.}{PU}{o}{\82\057}% U+022F  
15934 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON  
15935 \DeclareTextCompositeCommand{\=} {PU}{Y}{\82\062}% U+0232  
15936 % U+0233 LATIN SMALL LETTER Y WITH MACRON  
15937 \DeclareTextCompositeCommand{\=} {PU}{y}{\82\063}% U+0233  
15938 % U+0235 LATIN SMALL LETTER N WITH CURL; \textctn (tipa)  
15939 \DeclareTextCommand{\textctn}{PU}{\82\065}% U+0235  
15940 % U+0236 LATIN SMALL LETTER T WITH CURL; \textctt (tipa)  
15941 \DeclareTextCommand{\textctt}{PU}{\82\066}% U+0236  
15942 % U+0237 LATIN SMALL LETTER DOTLESS J  
15943 \DeclareTextCommand{\j}{PU}{\82\067}% U+0237  
15944 % U+0238 LATIN SMALL LETTER DB DIGRAPH; \textdblig (tipx)  
15945 \DeclareTextCommand{\textPUdblig}{PU}{\82\070}% U+0238  
15946 %\* \textPUdblig -> \textdblig (tipx)  
15947 % U+0239 LATIN SMALL LETTER QP DIGRAPH; \textqplig (tipx)  
15948 \DeclareTextCommand{\textPUqplig}{PU}{\82\071}% U+0239  
15949 %\* \textPUqplig -> \textqplig (tipx)  
15950 % U+023C LATIN SMALL LETTER C WITH STROKE; \slashc (wsuipa)  
15951 \DeclareTextCommand{\textslashc}{PU}{\82\074}%\* U+023C  
15952 %\* \textslashc -> \textcentoldstyle (textcomp)  
15953 % With bar instead of stroke:  
15954 %\* \textslashc -> \textbarc (tipa)

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

15955 % U+0250 LATIN SMALL LETTER TURNED A; aturned; \textturna (tipa)  
15956 \DeclareTextCommand{\textturna}{PU}{\82\120}% U+0250  
15957 %\* \textturna -> \inva (wasysym)  
15958 % U+0251 LATIN SMALL LETTER ALPHA/LATIN SMALL LETTER  
15959 % SCRIPT A; ascript; \textscripta (tipa), \scripta (wsuipa)  
15960 \DeclareTextCommand{\textscripta}{PU}{\82\121}%\* U+0251  
15961 %\* \textscripta -> \vara (phonetic)  
15962 % U+0252 LATIN SMALL LETTER TURNED ALPHA; ascriptturned;  
15963 % \textturnscripta (tipa)  
15964 \DeclareTextCommand{\textturnscripta}{PU}{\82\122}% U+0252  
15965 %\* \textturnscripta -> \invscripta (wsuipa)  
15966 %\* \textturnscripta -> \rotvara (phonetic)  
15967 % U+0253 LATIN CAPITAL LETTER B WITH HOOK; bhook; \texthtb (tipa)



15968 \DeclareTextCommand{\texthtb}{PU}{\82\123}% U+0253  
15969 %\* \texthtb -> \hookb (wsuipa)  
15970 %\* \texthtb -> \hausab (phonetic)  
15971 % U+0254 LATIN SMALL LETTER OPEN O; oopen;  
15972 % \textopeno (tipa), \openo (wasysym)  
15973 \DeclareTextCommand{\textopeno}{PU}{\82\124}%\* U+0254  
15974 %\* \textopeno -> \varopeno (phonetic)  
15975 % U+0255 LATIN SMALL LETTER C WITH CURL; ccurl; \textctc (tipa)  
15976 \DeclareTextCommand{\textctc}{PU}{\82\125}% U+0255  
15977 %\* \textctc -> \curlyc (wsuipa)  
15978 % U+0256 LATIN SMALL LETTER D WITH TAIL; dtail; \textrtaid (tipa)  
15979 \DeclareTextCommand{\textrtaid}{PU}{\82\126}%\* U+0256  
15980 %\* \textrtaid -> \taid (wsuipa)  
15981 % U+0257 LATIN SMALL LETTER D WITH HOOK; dhook; \texthtd (tipa)  
15982 \DeclareTextCommand{\texthtd}{PU}{\82\127}% U+0257  
15983 %\* \texthtd -> \hookd (wsuipa)  
15984 %\* \texthtd -> \hausad (phonetic)  
15985 % U+0258 LATIN SMALL LETTER REVERSED E; ereversed;  
15986 % \textreve (tipa), \reve (wsuipa)  
15987 \DeclareTextCommand{\textreve}{PU}{\82\130}%\* U+0258  
15988 % U+0259 LATIN SMALL LETTER SCHWA; schwa;  
15989 % \textschwa (tipa), \schwa (wsuipa, phonetic)  
15990 \DeclareTextCommand{\textschwa}{PU}{\82\131}%\* U+0259  
15991 % U+025A LATIN SMALL LETTER SCHWA WITH HOOK; schwahook;  
15992 % \textrhookschwa (tipa)  
15993 \DeclareTextCommand{\textrhookschwa}{PU}{\82\132}% U+025A  
15994 %\* \textrhookschwa -> \er (wsuipa)  
15995 % U+025B LATIN SMALL LETTER OPEN E/LATIN SMALL LETTER EP-  
SILON; eopen;  
15996 % \niepsilon (wsuipa)  
15997 \DeclareTextCommand{\textniepsilon}{PU}{\82\133}%\* U+025B  
15998 %\* \textniepsilon -> \epsi (phonetic)  
15999 % U+025C LATIN SMALL LETTER REVERSED OPEN E; eopenreversed;  
16000 % \textrepepsilon (tipa), \revepsilon (wsuipa)  
16001 \DeclareTextCommand{\textrepepsilon}{PU}{\82\134}%\* U+025C  
16002 % U+025D LATIN SMALL LETTER REVERSED OPEN E WITH HOOK; eopen-  
reversedhook;  
16003 % \textrhookrepepsilon (tipa)  
16004 \DeclareTextCommand{\textrhookrepepsilon}{PU}{\82\135}%\* U+025D  
16005 %\* \textrhookrepepsilon -> \hookrepepsilon (wsuipa)  
16006 % U+025E LATIN SMALL LETTER CLOSED REVERSED OPEN E; eopenre-  
versedclosed;  
16007 % \textcloserepepsilon (tipa)  
16008 \DeclareTextCommand{\textcloserepepsilon}{PU}{\82\136}% U+025E  
16009 %\* \textcloserepepsilon -> \closedrepepsilon (wsuipa)  
16010 % U+025F LATIN SMALL LETTER DOTLESS J WITH STROKE; jdot-  
lessstroke;  
16011 % \textbardotlessj (tipa)  
16012 \DeclareTextCommand{\textbardotlessj}{PU}{\82\137}% U+025F  
16013 %\* \textbardotlessj -> \barj (phonetic)  
16014 % U+0260 LATIN SMALL LETTER G WITH HOOK; ghook; \texthtg (tipa)  
16015 \DeclareTextCommand{\texthtg}{PU}{\82\140}% U+0260  
16016 %\* \texthtg -> \hookg (wsuipa)  
16017 % U+0261 LATIN SMALL LETTER SCRIPT G; gscript;

16018 % \textscriptg (tipa), \scriptg (wsuipa)  
16019 \DeclareTextCommand{\textscriptg}{PU}{\82\141}%\* U+0261  
16020 %\* \textscriptg -> \varg (phonetic)  
16021 % U+0262 LATIN LETTER SMALL CAPITAL G; \textscg (tipa), \scg (wsuipa)  
16022 \DeclareTextCommand{\textscg}{PU}{\82\142}%\* U+0262  
16023 % U+0263 LATIN SMALL LETTER GAMMA; gammalatinssmall;  
16024 % \ipagamma (wsuipa), \vod (phonetic)  
16025 \DeclareTextCommand{\textipagamma}{PU}{\82\143}%\* U+0263  
16026 %\* \textipagamma -> \vod (phonetic)  
16027 % U+0264 LATIN SMALL LETTER RAMS HORN; ramshorn;  
16028 % \babygamma (wsuipa)  
16029 \DeclareTextCommand{\textbabygamma}{PU}{\82\144}%\* U+0264  
16030 % U+0265 LATIN SMALL LETTER TURNED H; hturned; \textturnh (tipa)  
16031 \DeclareTextCommand{\textturnh}{PU}{\82\145}% U+0265  
16032 %\* \textturnh -> \invh (wsuipa)  
16033 %\* \textturnh -> \udesc (phonetic)  
16034 % U+0266 LATIN SMALL LETTER H WITH HOOK; hhook; \texthth (tipa)  
16035 \DeclareTextCommand{\texthth}{PU}{\82\146}% U+0266  
16036 %\* \texthth -> \hookh (wsuipa)  
16037 %\* \texthth -> \voicedh (phonetic)  
16038 % U+0267 LATIN SMALL LETTER HENG WITH HOOK; henghook; \tex-  
ththeng (tipa)  
16039 \DeclareTextCommand{\texththeng}{PU}{\82\147}% U+0267  
16040 %\* \texththeng -> \hookheng (wsuipa)  
16041 % U+0268 LATIN SMALL LETTER I WITH STROKE;  
16042 % \textbari (tipa), \bari (wsuipa)  
16043 \DeclareTextCommand{\textbari}{PU}{\82\150}%\* U+0268  
16044 %\* \textbari -> \ibar (phonetic)  
16045 % U+0269 LATIN SMALL LETTER IOTA; iotalatin; \nniota (wsuipa)  
16046 \DeclareTextCommand{\textnniota}{PU}{\82\151}%\* U+0269  
16047 %\* \textnniota -> \vari (phonetic)  
16048 % U+026A LATIN LETTER SMALL CAPITAL I; \textsci (tipa), \sci (wsuipa)  
16049 \DeclareTextCommand{\textsci}{PU}{\82\152}%\* U+026A  
16050 % U+026B LATIN SMALL LETTER L WITH MIDDLE TILDE; lmiddletilde;  
16051 % \textltilde (tipa)  
16052 \DeclareTextCommand{\textltilde}{PU}{\82\153}% U+026B  
16053 %\* \textltilde -> \tildel (wsuipa)  
16054 % U+026C LATIN SMALL LETTER L WITH BELT; lbelt; \textbeltl (tipa)  
16055 \DeclareTextCommand{\textbeltl}{PU}{\82\154}% U+026C  
16056 %\* \textbeltl -> \latfric (wsuipa)  
16057 % U+026D LATIN SMALL LETTER L WITH RETROFLEX HOOK;  
16058 % lhookretroflex; \textrtaill (tipa)  
16059 \DeclareTextCommand{\textrtaill}{PU}{\82\155}% U+026D  
16060 %\* \textrtaill -> \taill (wsuipa)  
16061 % U+026E LATIN SMALL LETTER LEZH; lezh; \textlyoghlig (tipa)  
16062 \DeclareTextCommand{\textlyoghlig}{PU}{\82\156}% U+026E  
16063 %\* \textlyoghlig -> \lz (wsuipa)  
16064 % U+026F LATIN SMALL LETTER TURNED M; mturned; \textturnm (tipa)  
16065 \DeclareTextCommand{\textturnm}{PU}{\82\157}% U+026F  
16066 %\* \textturnm -> \invm (wsuipa)  
16067 %\* \textturnm -> \rotm (phonetic)  
16068 % U+0270 LATIN SMALL LETTER TURNED M WITH LONG LEG; mlongleg-  
turned;  
16069 % \textturnmrleg (tipa)

16070 \DeclareTextCommand{\textturnmrlleg}{PU}{\82\160}% U+0270  
16071 %\* \textturnmrlleg -> \legm (wsuipa)  
16072 % U+0271 LATIN SMALL LETTER M WITH HOOK; mhook; \textltailm (tipa)  
16073 \DeclareTextCommand{\textltailm}{PU}{\82\161}% U+0271  
16074 %\* \textltailm -> \labdentalnas (wsuipa)  
16075 %\* \textltailm -> \emgma (phonetic)  
16076 % U+0272 LATIN SMALL LETTER N WITH LEFT HOOK; nhookleft; \textltailn (tipa)  
16077 \DeclareTextCommand{\textltailn}{PU}{\82\162}% U+0272  
16078 %\* \textltailn -> \nj (wsuipa)  
16079 %\* \textltailn -> \enya (phonetic)  
16080 % U+0273 LATIN SMALL LETTER N WITH RETROFLEX HOOK;  
16081 % nhookretroflex; \textrtailn (tipa)  
16082 \DeclareTextCommand{\textrtailn}{PU}{\82\163}% U+0273  
16083 %\* \textrtailn -> \tailn (wsuipa)  
16084 % U+0274 LATIN LETTER SMALL CAPITAL N; \textscn (tipa), \scn (wsuipa)  
16085 \DeclareTextCommand{\textscn}{PU}{\82\164}%\* U+0274  
16086 % U+0275 LATIN CAPITAL LETTER O WITH MIDDLE TILDE/  
16087 % LATIN CAPITAL LETTER BARRED O; obarred;  
16088 % \textbaro (tipa), \baro (wsuipa)  
16089 % But \baro from stmaryrd is different!  
16090 \DeclareTextCommand{\textbaro}{PU}{\82\165}% U+0275  
16091 % U+0276 LATIN LETTER SMALL CAPITAL OE; \textscoe (tipa)  
16092 \DeclareTextCommand{\textscoe}{PU}{\82\166}% U+0276  
16093 % U+0277 LATIN SMALL LETTER CLOSED OMEGA; omegalatinclosed;  
16094 % \textcloseomega (tipa)  
16095 \DeclareTextCommand{\textcloseomega}{PU}{\82\167}% U+0277  
16096 %\* \textcloseomega -> \closedniomega (wsuipa)  
16097 %\* \textcloseomega -> \varomega (phonetic)  
16098 % U+0278 LATIN SMALL LETTER PHI; philatin; \nipher (wsuipa)  
16099 \DeclareTextCommand{\textnipher}{PU}{\82\170}%\* U+0278  
16100 % U+0279 LATIN SMALL LETTER TURNED R; rturned; \textturnr (tipa)  
16101 \DeclareTextCommand{\textturnr}{PU}{\82\171}% U+0279  
16102 %\* \textturnr -> \invr (wsuipa)  
16103 %\* \textturnr -> \rotr (phonetic)  
16104 % U+027A LATIN SMALL LETTER TURNED R WITH LONG LEG;  
16105 % rlonglegturned; \textturnlonglegr (tipa)  
16106 \DeclareTextCommand{\textturnlonglegr}{PU}{\82\172}% U+027A  
16107 %\* \textturnlonglegr -> \invlegr (wsuipa)  
16108 % U+027B LATIN SMALL LETTER TURNED R WITH HOOK; rhookturned;  
16109 % \textturnrrtail (tipa)  
16110 \DeclareTextCommand{\textturnrrtail}{PU}{\82\173}% U+027B  
16111 %\* \textturnrrtail -> \tailinvr (wsuipa)  
16112 % U+027C LATIN SMALL LETTER R WITH LONG LEG; rlongleg; \textlonglegr (tipa)  
16113 \DeclareTextCommand{\textlonglegr}{PU}{\82\174}%\* U+027C  
16114 %\* \textlonglegr -> \legr (wsuipa)  
16115 % U+027D LATIN SMALL LETTER R WITH TAIL; rhook; \textrtailr (tipa)  
16116 \DeclareTextCommand{\textrtailr}{PU}{\82\175}% U+027D  
16117 %\* \textrtailr -> \tailr (wsuipa)  
16118 % U+027E LATIN SMALL LETTER R WITH FISHHOOK; rfishhook;  
16119 % \textfishhookr (tipa)  
16120 \DeclareTextCommand{\textfishhookr}{PU}{\82\176}% U+027E  
16121 %\* \textfishhookr -> \flapr (wsuipa)

16122 %\* \textfishhookr -> \flap (phonetic)  
16123 % U+027F LATIN SMALL LETTER REVERSED R WITH FISHHOOK; rfishhookreversed;  
16124 % \textlhtlongi (tipa)  
16125 \DeclareTextCommand{\textlhtlongi}{PU}{\82\177}% U+027F  
16126 % U+0280 LATIN LETTER SMALL CAPITAL R; \textscr (tipa), \scr (wsuipa)  
16127 \DeclareTextCommand{\textscr}{PU}{\82\200}%\* U+0280  
16128 % U+0281 LATIN LETTER SMALL CAPITAL INVERTED R; Rsmallinverted;  
16129 % \textinvscr (tipa), \invscr (wsuipa)  
16130 \DeclareTextCommand{\textinvscr}{PU}{\82\201}%\* U+0281  
16131 % U+0282 LATIN SMALL LETTER S WITH HOOK; shook; \textrtails (tipa)  
16132 \DeclareTextCommand{\textrtails}{PU}{\82\202}% U+0282  
16133 %\* \textrtails -> \tails (wsuipa)  
16134 % U+0283 LATIN SMALL LETTER ESH; esh; \textesh (tipa), \esh (wsuipa)  
16135 \DeclareTextCommand{\textesh}{PU}{\82\203}%\* U+0283  
16136 % U+0284 LATIN SMALL LETTER DOTLESS J WITH STROKE AND HOOK;  
16137 % dotlessjstrokehook; \texthtbardotlessj (tipa)  
16138 \DeclareTextCommand{\texthtbardotlessj}{PU}{\82\204}% U+0284  
16139 % U+0285 LATIN SMALL LETTER SQUAT REVERSED ESH; eshsquatreversed;  
16140 % \textvibyi (tipa)  
16141 \DeclareTextCommand{\textvibyi}{PU}{\82\205}% U+0285  
16142 % U+0286 LATIN SMALL LETTER ESH WITH CURL; eshcurl; \textctesh (tipa)  
16143 \DeclareTextCommand{\textctesh}{PU}{\82\206}% U+0286  
16144 %\* \textctesh -> \curlyesh (wsuipa)  
16145 % U+0287 LATIN SMALL LETTER TURNED T; tturned; \textturnt (tipa)  
16146 \DeclareTextCommand{\textturnt}{PU}{\82\207}% U+0287  
16147 %\* \textturnt -> \clickt (wsuipa)  
16148 % U+0288 LATIN SMALL LETTER T WITH RETROFLEX HOOK; retroflexhook;  
16149 % \textrtailt (tipa)  
16150 \DeclareTextCommand{\textrtailt}{PU}{\82\210}% U+0288  
16151 %\* \textrtailt -> \tailt (wsuipa)  
16152 % U+0289 LATIN SMALL LETTER U BAR; ubar;  
16153 % \textbaru (tipa), \baru (wsuipa)  
16154 \DeclareTextCommand{\textbaru}{PU}{\82\211}%\* U+0289  
16155 %\* \textbaru -> \ubar (phonetic)  
16156 % U+028A LATIN SMALL LETTER UPSILON; \niupsilon (wsuipa)  
16157 \DeclareTextCommand{\textniupsilon}{PU}{\82\212}%\* U+028A  
16158 %\* \textniupsilon -> \rotOmega (phonetic)  
16159 % U+028B LATIN SMALL LETTER V WITH HOOK/LATIN SMALL LETTER SCRIPT V;  
16160 % vhook; \textscriptv (tipa), \scriptv (wsuipa)  
16161 \DeclareTextCommand{\textscriptv}{PU}{\82\213}%\* U+028B  
16162 % U+028C LATIN SMALL LETTER TURNED V; vturned; \textturnv (tipa)  
16163 \DeclareTextCommand{\textturnv}{PU}{\82\214}%\* U+028C  
16164 %\* \textturnv -> \invv (wsuipa)  
16165 %\* \textturnv -> \pwedge (phonetic)  
16166 % U+028D LATIN SMALL LETTER TURNED W; wturned; \textturnw (tipa)  
16167 \DeclareTextCommand{\textturnw}{PU}{\82\215}%\* U+028D  
16168 %\* \textturnw -> \invw (wsuipa)  
16169 %\* \textturnw -> \rotw (phonetic)  
16170 % U+028E LATIN SMALL LETTER TURNED Y; yturned; \textturny (tipa)  
16171 \DeclareTextCommand{\textturny}{PU}{\82\216}%\* U+028E

16172 %\* \textturny -> \invy (wsuipa)  
16173 %\* \textturny -> \roty (phonetic)  
16174 % U+028F LATIN LETTER SMALL CAPITAL Y; \textscy (tipa), \scy (wsuipa)  
16175 \DeclareTextCommand{\textscy}{PU}{\82\217}%\* U+028F  
16176 % U+0290 LATIN SMALL LETTER Z WITH RETROFLEX HOOK; zretroflex-hook;  
16177 % \textrtailz (tipa)  
16178 \DeclareTextCommand{\textrtailz}{PU}{\82\220}% U+0290  
16179 %\* \textrtailz -> \tailz (wsuipa)  
16180 % U+0291 LATIN SMALL LETTER Z WITH CURL; zcurl; \textctz (tipa)  
16181 \DeclareTextCommand{\textctz}{PU}{\82\221}% U+0291  
16182 %\* \textctz -> \curlyz (wsuipa)  
16183 % U+0292 LATIN SMALL LETTER EZH/LATIN SMALL LETTER YOGH; ezh;  
16184 % \textyogh (tipa), \yogh (wsuipa)  
16185 \DeclareTextCommand{\textyogh}{PU}{\82\222}%\* U+0292  
16186 % U+0293 LATIN SMALL LETTER EZH WITH CURL/LATIN SMALL LETTER YOGH CURL;  
16187 % ezhcurl; \textctyogh (tipa)  
16188 \DeclareTextCommand{\textctyogh}{PU}{\82\223}% U+0293  
16189 %\* \textctyogh -> \curlyyogh (wsuipa)  
16190 % U+0294 LATIN LETTER GLOTTAL STOP; glottalstop;  
16191 % \textglotstop (tipa), \glotstop (wsuipa)  
16192 \DeclareTextCommand{\textglotstop}{PU}{\82\224}%\* U+0294  
16193 %\* \textglotstop -> \ejective (wsuipa)  
16194 %\* \textglotstop -> \glottal (phonetic)  
16195 % U+0295 LATIN LETTER PHARYNGEAL VOICED FRICATIVE/  
16196 % LATIN LETTER REVERSED GLOTTAL STOP; glottalstopreversed;  
16197 % \textrevglotstop (tipa), \revglotstop (wsuipa)  
16198 \DeclareTextCommand{\textrevglotstop}{PU}{\82\225}%\* U+0295  
16199 %\* \textrevglotstop -> \reveject (wsuipa)  
16200 % U+0296 LATIN LETTER INVERTED GLOTTAL STOP; glottalstopinverted;  
16201 % \textinvglotstop (tipa), \invglotstop (wsuipa)  
16202 \DeclareTextCommand{\textinvglotstop}{PU}{\82\226}%\* U+0296  
16203 % U+0297 LATIN LETTER STRETCHED C; cstretched; \textstretchc (tipa)  
16204 \DeclareTextCommand{\textstretchc}{PU}{\82\227}% U+0297  
16205 %\* \textstretchc -> \clickc (wsuipa)  
16206 %\* \textstretchc -> \textstretchcvar (tipx)  
16207 % U+0298 LATIN LETTER BILABIAL CLICK; bilabialclick;  
16208 % \textbullseye (tipa)  
16209 \DeclareTextCommand{\textbullseye}{PU}{\82\230}% U+0298  
16210 %\* \textbullseye -> \clickb (wsuipa)  
16211 %\* \textbullseye -> \textObullseye (tipx)  
16212 % U+0299 LATIN LETTER SMALL CAPITAL B; \textscb (tipa)  
16213 \DeclareTextCommand{\textscb}{PU}{\82\231}% U+0299  
16214 % U+029A LATIN SMALL LETTER CLOSED OPEN E; eopenclosed;  
16215 % \textcloseepsilon (tipa)  
16216 \DeclareTextCommand{\textcloseepsilon}{PU}{\82\232}% U+029A  
16217 % U+029B LATIN LETTER SMALL CAPITAL G WITH HOOK; Gsmallhook;  
16218 % \texthtscg (tipa)  
16219 \DeclareTextCommand{\texthtscg}{PU}{\82\233}% U+029B  
16220 % U+029C LATIN LETTER SMALL CAPITAL H; \textsch (tipa)  
16221 \DeclareTextCommand{\textsch}{PU}{\82\234}% U+029C  
16222 % U+029D LATIN SMALL LETTER J WITH CROSSED-TAIL; jcrossed-tail; \textcdj (tipa)

16223 \DeclareTextCommand{\textctj}{PU}{\82\235}% U+029D  
16224 %\* \textctj -> \textctjvar (tipx)  
16225 % U+029E LATIN SMALL LETTER TURNED K; ktturned; \textturnk (tipa)  
16226 \DeclareTextCommand{\textturnk}{PU}{\82\236}% U+029E  
16227 %\* \textturnk -> \textturnsck (tipx)  
16228 % U+029F LATIN LETTER SMALL CAPITAL L; \textscL (tipa)  
16229 \DeclareTextCommand{\textscL}{PU}{\82\237}% U+029F  
16230 % U+02A0 LATIN SMALL LETTER Q WITH HOOK; qhook; \texthtq (tipa)  
16231 \DeclareTextCommand{\texthtq}{PU}{\82\240}% U+02A0  
16232 % U+02A1 LATIN LETTER GLOTTAL STOP WITH STROKE; glottalstop-  
stroke;  
16233 % \textbarglotstop (tipa)  
16234 \DeclareTextCommand{\textbarglotstop}{PU}{\82\241}% U+02A1  
16235 % U+02A2 LATIN LETTER REVERSED GLOTTAL STOP WITH STROKE/  
16236 % LATIN LETTER REVERSED GLOTTAL STOP BAR; glottalstopstrokere-  
versed;  
16237 % \textbarrevglotstop (tipa)  
16238 \DeclareTextCommand{\textbarrevglotstop}{PU}{\82\242}% U+02A2  
16239 % U+02A3 LATIN SMALL LETTER DZ DIGRAPH; dzaltone; \textdzlig (tipa)  
16240 \DeclareTextCommand{\textdzlig}{PU}{\82\243}% U+02A3  
16241 %\* \textdzlig -> \dz (wsupipa)  
16242 % U+02A4 LATIN SMALL LETTER DEZH DIGRAPH; dezH; \textdyogh-  
lig (tipa)  
16243 \DeclareTextCommand{\textdyoghlig}{PU}{\82\244}% U+02A4  
16244 % U+02A5 LATIN SMALL LETTER DZ DIGRAPH WITH CURL; dzcurl;  
16245 % \textdctzlig (tipa)  
16246 \DeclareTextCommand{\textdctzlig}{PU}{\82\245}% U+02A5  
16247 % U+02A6 LATIN SMALL LETTER TS DIGRAPH; ts; \texttslig (tipa)  
16248 \DeclareTextCommand{\texttslig}{PU}{\82\246}% U+02A6  
16249 % U+02A7 LATIN SMALL LETTER TESH DIGRAPH; tesh; \textteshlig (tipa)  
16250 \DeclareTextCommand{\textteshlig}{PU}{\82\247}% U+02A7  
16251 %\* \textteshlig -> \tesh (wsuipa)  
16252 % U+02A8 LATIN SMALL LETTER TC DIGRAPH WITH CURL; tccurl;  
16253 % \texttctclig (tipa)  
16254 \DeclareTextCommand{\texttctclig}{PU}{\82\250}% U+02A8  
16255 % U+02AE LATIN SMALL LETTER TURNED H WITH FISHHOOK;  
16256 % \textlhtlongy (tipa)  
16257 \DeclareTextCommand{\textlhtlongy}{PU}{\82\256}% U+02AE  
16258 % U+02AF LATIN SMALL LETTER TURNED H WITH FISHHOOK AND TAIL;  
16259 % \textvibyy (tipa)  
16260 \DeclareTextCommand{\textvibyy}{PU}{\82\257}% U+02AF

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

16261 % U+02BD MODIFIER LETTER REVERSED COMMA;  
16262 % commareversedmod, afi64937; \textrevapostrophe (tipa)  
16263 \DeclareTextCommand{\textrevapostrophe}{PU}{\82\275}% U+02BD  
16264 % U+02C0 MODIFIER LETTER GLOTTAL STOP; glottalstopmod;  
16265 % \textraiseglotstop (tipa)  
16266 \DeclareTextCommand{\textraiseglotstop}{PU}{\82\300}% U+02C0  
16267 % U+02C2 MODIFIER LETTER LEFT ARROWHEAD; arrowheadleftmod;  
16268 % \textlptr (tipa)  
16269 \DeclareTextCommand{\textlptr}{PU}{\82\302}% U+02C2  
16270 % U+02C3 MODIFIER LETTER RIGHT ARROWHEAD; arrowheadrightmod;  
16271 % \textrptr (tipa)

16272 \DeclareTextCommand{\texttrptr}{PU}{\82\303}% U+02C3  
16273 % U+02C7 CARON; caron  
16274 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7  
16275 % U+02C8 MODIFIER LETTER VERTICAL LINE; verticallinemod;  
16276 % \textprimstress (tipa)  
16277 \DeclareTextCommand{\textprimstress}{PU}{\82\310}% U+02C8  
16278 % U+02CC MODIFIER LETTER LOW VERTICAL LINE; verticallinelowmod;  
16279 % \textsecstress (tipa)  
16280 \DeclareTextCommand{\textsecstress}{PU}{\82\314}% U+02CC  
16281 % U+02D0 MODIFIER LETTER TRIANGULAR COLON; colontriangularmod;  
16282 % \textlengthmark (tipa)  
16283 \DeclareTextCommand{\textlengthmark}{PU}{\82\320}% U+02D0  
16284 % U+02D1 MODIFIER LETTER HALF TRIANGULAR COLON; colontriangularhalfmod;  
16285 % \texthalflength (tipa)  
16286 \DeclareTextCommand{\texthalflength}{PU}{\82\321}% U+02D1  
16287 % U+02D8 BREVE; breve  
16288 \DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8  
16289 % U+02D9 DOT ABOVE; dotaccent  
16290 \DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9  
16291 % U+02DA RING ABOVE; ring  
16292 \DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA  
16293 % U+02DB OGONEK; ogonek  
16294 \DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB  
16295 % U+02DC SMALL TILDE; ilde, \*tilde  
16296 \DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC  
16297 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
16298 \DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD  
16299 \DeclareTextCommand{\textacutedbl}{PU}{\82\335}% U+02DD  
16300 % U+02F3 MODIFIER LETTER LOW RING  
16301 \DeclareTextCommand{\textringlow}{PU}{\82\363}% U+02F3  
16302 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT  
16303 \DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5  
16304 % U+02F7 MODIFIER LETTER LOW TILDE  
16305 \DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7  
16306 % U+02F9 MODIFIER LETTER BEGIN HIGH TONE; \textopencorner (tipa)  
16307 \DeclareTextCommand{\textopencorner}{PU}{\82\371}% U+02F9  
16308 % U+02FA MODIFIER LETTER END HIGH TONE; \textcorner (tipa)  
16309 \DeclareTextCommand{\textcorner}{PU}{\82\372}% U+02FA

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

16310 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb  
16311 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017}% U+030F  
16312 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
16313 \DeclareTextCommand{\textnewtie}{PU}{\83\021}% U+0311  
16314 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcomb  
16315 \DeclareTextCommand{\textdotbelow}{PU}{\83\043}% U+0323  
16316 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
16317 \DeclareTextCommand{\textmacronbelow}{PU}{\83\061}% U+0331  
16318 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb  
16319 \DeclareTextCommand{\texttie}{PU}{\83\141}% U+0361

### 47.2.9 Greek and Coptic: U+0370 to U+03FF

Greek is only loaded if `\textBeta` is defined.

```
16320 \ifx\textBeta\@undefined \else
16321 \input{puenc-greek.def}
16322 \fi
16323 \end{puenc}
```

### 47.2.10 Cyrillic: U+0400 to U+04FF

Thanks to Vladimir Volovich ([vvv@vvv.vsu.ru](mailto:vvv@vvv.vsu.ru)) for the help with the Cyrillic glyph names. Cyrillic only loaded if `\CYRDZE` is defined.

```
16324 (*puenc)
16325 \ifx\CYRDZE\@undefined \else
16326 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE
16327 \DeclareTextCompositeCommand{\`}{PU}{\CYRE}{\84\000}% U+0400
16328 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrillic, *afii10023
16329 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401
16330 \DeclareTextCompositeCommand{\"}{PU}{\CYRE}{\84\001}% U+0401
16331 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, *afii10051
16332 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402
16333 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, *afii10052
16334 \DeclareTextCompositeCommand{\'}{PU}{\CYRG}{\84\003}% U+0403
16335 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrillic, *afii10053
16336 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404
16337 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzecyrillic, *afii10054
16338 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405
16339 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I;
16340 % Icyrillic, *afii10055
16341 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406
16342 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrillic, *afii10056
16343 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407
16344 \DeclareTextCompositeCommand{\"}{PU}{\CYRII}{\84\007}% U+0407
16345 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, *afii10057
16346 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408
16347 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, *afii10058
16348 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409
16349 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, *afii10059
16350 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A
16351 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, *afii10060
16352 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B
16353 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, *afii10061
16354 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% U+040C
16355 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE
16356 \DeclareTextCompositeCommand{\`}{PU}{\CYRI}{\84\015}% U+040D
16357 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrillic, *afii10062
16358 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E
16359 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\016}% U+040E
16360 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, *afii10145
16361 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F
16362 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, *afii10017
16363 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410
16364 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrillic, *afii10018
16365 \DeclareTextCommand{\CYRB}{PU}{\84\021}% U+0411
```



16366 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, \*afii10019  
16367 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412  
16368 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, \*afii10020  
16369 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413  
16370 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, \*afii10021  
16371 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414  
16372 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, \*afii10022  
16373 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415  
16374 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, \*afii10024  
16375 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416  
16376 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, \*afii10025  
16377 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417  
16378 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrillic, \*afii10026  
16379 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418  
16380 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; lishortcyrillic, \*afii10027  
16381 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419  
16382 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}% U+0419  
16383 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, \*afii10028  
16384 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A  
16385 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, \*afii10029  
16386 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B  
16387 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, \*afii10030  
16388 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C  
16389 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, \*afii10031  
16390 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D  
16391 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, \*afii10032  
16392 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E  
16393 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, \*afii10033  
16394 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F  
16395 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, \*afii10034  
16396 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420  
16397 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, \*afii10035  
16398 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421  
16399 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, \*afii10036  
16400 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422  
16401 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, \*afii10037  
16402 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423  
16403 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, \*afii10038  
16404 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424  
16405 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, \*afii10039  
16406 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425  
16407 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, \*afii10040  
16408 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426  
16409 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, \*afii10041  
16410 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427  
16411 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, \*afii10042  
16412 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428  
16413 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, \*afii10043  
16414 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429  
16415 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN;  
16416 % Hardsigncyrillic, \*afii10044  
16417 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A  
16418 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, \*afii10045  
16419 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B

16420 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN;  
16421 % Softsigncyrillic, \*afii10046  
16422 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C  
16423 % U+042D CYRILLIC CAPITAL LETTER E; Ereversedcyrillic, \*afii10047  
16424 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D  
16425 % U+042E CYRILLIC CAPITAL LETTER YU; IUcyrillic, \*afii10048  
16426 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E  
16427 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, \*afii10049  
16428 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F  
16429 % U+0430 CYRILLIC SMALL LETTER A; acyrillic, \*afii10065  
16430 \DeclareTextCommand{\cyra}{PU}{\84\060}% U+0430  
16431 % U+0431 CYRILLIC SMALL LETTER BE; \*afii10066, becyrillic  
16432 \DeclareTextCommand{\cyrb}{PU}{\84\061}% U+0431  
16433 % U+0432 CYRILLIC SMALL LETTER VE; \*afii10067, vecyrillic  
16434 \DeclareTextCommand{\cyrv}{PU}{\84\062}% U+0432  
16435 % U+0433 CYRILLIC SMALL LETTER GHE; \*afii10068, gecyrillic  
16436 \DeclareTextCommand{\cyrg}{PU}{\84\063}% U+0433  
16437 % U+0434 CYRILLIC SMALL LETTER DE; \*afii10069, decyrillic  
16438 \DeclareTextCommand{\cyrd}{PU}{\84\064}% U+0434  
16439 % U+0435 CYRILLIC SMALL LETTER IE; \*afii10070, iecyrillic  
16440 \DeclareTextCommand{\cyre}{PU}{\84\065}% U+0435  
16441 % U+0436 CYRILLIC SMALL LETTER ZHE; \*afii10072, zhecyrillic  
16442 \DeclareTextCommand{\cyrzh}{PU}{\84\066}% U+0436  
16443 % U+0437 CYRILLIC SMALL LETTER ZE; \*afii10073, zecyrillic  
16444 \DeclareTextCommand{\cyrz}{PU}{\84\067}% U+0437  
16445 % U+0438 CYRILLIC SMALL LETTER I; \*afii10074, iicyrillic  
16446 \DeclareTextCommand{\cyri}{PU}{\84\070}% U+0438  
16447 % U+0439 CYRILLIC SMALL LETTER SHORT I; \*afii10075, iishortcyrillic  
16448 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% U+0439  
16449 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}% U+0439  
16450 % U+043A CYRILLIC SMALL LETTER KA; \*afii10076, kacyrillic  
16451 \DeclareTextCommand{\cyrk}{PU}{\84\072}% U+043A  
16452 % U+043B CYRILLIC SMALL LETTER EL; \*afii10077, elcyrillic  
16453 \DeclareTextCommand{\cyrl}{PU}{\84\073}% U+043B  
16454 % U+043C CYRILLIC SMALL LETTER EM; \*afii10078, emcyrillic  
16455 \DeclareTextCommand{\cyrm}{PU}{\84\074}% U+043C  
16456 % U+043D CYRILLIC SMALL LETTER EN; \*afii10079, encyrillic  
16457 \DeclareTextCommand{\cyrn}{PU}{\84\075}% U+043D  
16458 % U+043E CYRILLIC SMALL LETTER O; \*afii10080, ocyrillic  
16459 \DeclareTextCommand{\cyro}{PU}{\84\076}% U+043E  
16460 % U+043F CYRILLIC SMALL LETTER PE; \*afii10081, pecyrillic  
16461 \DeclareTextCommand{\cyrp}{PU}{\84\077}% U+043F  
16462 % U+0440 CYRILLIC SMALL LETTER ER; \*afii10082, ercyrillic  
16463 \DeclareTextCommand{\cyrr}{PU}{\84\100}% U+0440  
16464 % U+0441 CYRILLIC SMALL LETTER ES; \*afii10083, escyrillic  
16465 \DeclareTextCommand{\cyrs}{PU}{\84\101}% U+0441  
16466 % U+0442 CYRILLIC SMALL LETTER TE; \*afii10084, tecyrillic  
16467 \DeclareTextCommand{\cyrt}{PU}{\84\102}% U+0442  
16468 % U+0443 CYRILLIC SMALL LETTER U; \*afii10085, ucyrillic  
16469 \DeclareTextCommand{\cyru}{PU}{\84\103}% U+0443  
16470 % U+0444 CYRILLIC SMALL LETTER EF; \*afii10086, efcyrillic  
16471 \DeclareTextCommand{\cyrf}{PU}{\84\104}% U+0444  
16472 % U+0445 CYRILLIC SMALL LETTER HA; \*afii10087, khacyrillic  
16473 \DeclareTextCommand{\cyrh}{PU}{\84\105}% U+0445

16474 % U+0446 CYRILLIC SMALL LETTER TSE; \*afii10088, tsecyrillic  
16475 \DeclareTextCommand{\cyrc}{PU}{\84\106}% U+0446  
16476 % U+0447 CYRILLIC SMALL LETTER CHE; \*afii10089, checyrillic  
16477 \DeclareTextCommand{\cyrch}{PU}{\84\107}% U+0447  
16478 % U+0448 CYRILLIC SMALL LETTER SHA; \*afii10090, shacyrillic  
16479 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% U+0448  
16480 % U+0449 CYRILLIC SMALL LETTER SHCHA; \*afii10091, shchacyrillic  
16481 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% U+0449  
16482 % U+044A CYRILLIC SMALL LETTER HARD SIGN; \*afii10092, hardsigncyril-  
lic  
16483 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% U+044A  
16484 %\* \cyrhrdsn -> \hardsign (tipa)  
16485 % U+044B CYRILLIC SMALL LETTER YERU; \*afii10093, yericyrillic  
16486 \DeclareTextCommand{\cyrery}{PU}{\84\113}% U+044B  
16487 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; \*afii10094, softsigncyrillic  
16488 \DeclareTextCommand{\cyrsoftsn}{PU}{\84\114}% U+044C  
16489 %\* \cyrsoftsn -> \softsign (tipa)  
16490 % U+044D CYRILLIC SMALL LETTER E; \*afii10095, ereversedcyrillic  
16491 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% U+044D  
16492 % U+044E CYRILLIC SMALL LETTER YU; \*afii10096, iucyrillic  
16493 \DeclareTextCommand{\cyrju}{PU}{\84\116}% U+044E  
16494 % U+044F CYRILLIC SMALL LETTER YA; \*afii10097, iacyrillic  
16495 \DeclareTextCommand{\cyrja}{PU}{\84\117}% U+044F  
16496 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE  
16497 \DeclareTextCompositeCommand{\`}{PU}{\cyre}{\84\120}% U+0450  
16498 % U+0451 CYRILLIC SMALL LETTER IO; \*afii10071, iocyrillic  
16499 \DeclareTextCommand{\cyrjo}{PU}{\84\121}% U+0451  
16500 \DeclareTextCompositeCommand{\"}{PU}{\cyre}{\84\121}% U+0451  
16501 % U+0452 CYRILLIC SMALL LETTER DJE; \*afii10099, djecyrillic  
16502 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% U+0452  
16503 % U+0453 CYRILLIC SMALL LETTER GJE; \*afii10100, gjecyrillic  
16504 \DeclareTextCompositeCommand{\'}{PU}{\cyrg}{\84\123}% U+0453  
16505 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; \*afii10101, ecyrillic  
16506 \DeclareTextCommand{\cyrie}{PU}{\84\124}% U+0454  
16507 % U+0455 CYRILLIC SMALL LETTER DZE; \*afii10102, dzecyrillic  
16508 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% U+0455  
16509 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I;  
16510 % \*afii10103, icyrillic  
16511 \DeclareTextCommand{\cyrii}{PU}{\84\126}% U+0456  
16512 % U+0457 CYRILLIC SMALL LETTER YI; \*afii10104, yicyrillic  
16513 \DeclareTextCommand{\cyrji}{PU}{\84\127}% U+0457  
16514 \DeclareTextCompositeCommand{\"}{PU}{\cyrii}{\84\127}% U+0457  
16515 % U+0458 CYRILLIC SMALL LETTER JE; \*afii10105, jecyrillic  
16516 \DeclareTextCommand{\cyrje}{PU}{\84\130}% U+0458  
16517 % U+0459 CYRILLIC SMALL LETTER LJE; \*afii10106, ljecyrillic  
16518 \DeclareTextCommand{\cyrlje}{PU}{\84\131}% U+0459  
16519 % U+045A CYRILLIC SMALL LETTER NJE; \*afii10107, njecyrillic  
16520 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% U+045A  
16521 % U+045B CYRILLIC SMALL LETTER TSHE; \*afii10108, tshecyrillic  
16522 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% U+045B  
16523 % U+045C CYRILLIC SMALL LETTER KJE; \*afii10109, kjecyrillic  
16524 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% U+045C  
16525 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE  
16526 \DeclareTextCompositeCommand{\`}{PU}{\cyri}{\84\135}% U+045D

16527 % U+045E CYRILLIC SMALL LETTER SHORT U; \*afii10110, ushortcyrillic  
16528 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E  
16529 \DeclareTextCompositeCommand{U}{PU}{\84\136}% U+045E  
16530 % U+045F CYRILLIC SMALL LETTER DZHE; \*afii10193, dzhecyrillic  
16531 \DeclareTextCommand{\cyrzhe}{PU}{\84\137}% U+045F  
16532 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic  
16533 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460  
16534 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrillic  
16535 \DeclareTextCommand{\cyromega}{PU}{\84\141}% U+0461  
16536 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, \*afii10146  
16537 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462  
16538 % U+0463 CYRILLIC SMALL LETTER YAT; \*afii10194, yatcyrillic  
16539 \DeclareTextCommand{\cyr yat}{PU}{\84\143}% U+0463  
16540 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic  
16541 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464  
16542 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrillic  
16543 \DeclareTextCommand{\cyriote}{PU}{\84\145}% U+0465  
16544 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslittleyrillic  
16545 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466  
16546 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslittleyrillic  
16547 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467  
16548 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslitlei-  
otifiedcyrillic  
16549 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468  
16550 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslitlei-  
otifiedcyrillic  
16551 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469  
16552 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbigcyrillic  
16553 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A  
16554 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbigcyrillic  
16555 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B  
16556 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbigiotified-  
cyrillic  
16557 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C  
16558 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbigiotified-  
cyrillic  
16559 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D  
16560 % U+046E CYRILLIC CAPITAL LETTER KSI; Ksicyrillic  
16561 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% U+046E  
16562 % U+046F CYRILLIC SMALL LETTER KSI; ksicyrillic  
16563 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F  
16564 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psicyrillic  
16565 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470  
16566 % U+0471 CYRILLIC SMALL LETTER PSI; psicyrillic  
16567 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471  
16568 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, \*afii10147  
16569 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472  
16570 % U+0473 CYRILLIC SMALL LETTER FITA; \*afii10195, fitacyrillic  
16571 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473  
16572 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, \*afii10148  
16573 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474  
16574 % U+0475 CYRILLIC SMALL LETTER IZHITSA; \*afii10196, izhitsacyrillic  
16575 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475  
16576 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE

16577 % GRAVE ACCENT; Izhitsadblgravecyrillic  
16578 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% U+0476  
16579 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE  
16580 % GRAVE ACCENT; izhitsadblgravecyrillic  
16581 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477  
16582 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic  
16583 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478  
16584 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic  
16585 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479  
16586 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyrillic  
16587 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A  
16588 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic  
16589 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B  
16590 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatitlocyrillic  
16591 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C  
16592 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlocyrillic  
16593 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D  
16594 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic  
16595 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E  
16596 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic  
16597 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F  
16598 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic  
16599 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480  
16600 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic  
16601 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481  
16602 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic  
16603 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% U+0482  
\84\203: U+0483 COMBINING CYRILLIC TITLO; titlocyrilliccmb  
\84\204: U+0484 COMBINING CYRILLIC PALATALIZATION; palatalizationcyrilliccmb  
\84\205: U+0485 COMBINING CYRILLIC DASIA PNEUMATA; dasiapneumatacyrilliccmb  
\84\206: U+0486 COMBINING CYRILLIC PSILI PNEUMATA; psilipneumatacyrilliccmb  
\84\207: U+0487 COMBINING CYRILLIC POKRYTIE  
\84\210: U+0488 COMBINING CYRILLIC HUNDRED THOUSANDS SIGN  
\84\211: U+0489 COMBINING CYRILLIC MILLIONS SIGN  
16604 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL  
16605 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A  
16606 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL  
16607 \DeclareTextCommand{\cyrishrtdsc}{PU}{\84\213}% U+048B  
16608 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN  
16609 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C  
16610 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN  
16611 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D  
16612 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK  
16613 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E  
16614 % U+048F CYRILLIC SMALL LETTER ER WITH TICK  
16615 \DeclareTextCommand{\cyrrtick}{PU}{\84\217}% U+048F  
16616 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturn-

cyrillic, \*afii10050  
 16617 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490  
 16618 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; \*afii10098, ghe-  
 upturncyrillic  
 16619 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491  
 16620 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestroke-  
 cyrillic  
 16621 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492  
 16622 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic  
 16623 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% U+0493  
 16624 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK;  
 16625 % Ghemiddlehookcyrillic  
 16626 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494  
 16627 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK;  
 16628 % ghemiddlehookcyrillic  
 16629 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495  
 16630 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER;  
 16631 % Zhedescendercyrillic  
 16632 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496  
 16633 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER;  
 16634 % zhedescendercyrillic  
 16635 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% U+0497  
 16636 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescen-  
 dercyrillic  
 16637 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498  
 16638 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498  
 16639 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescender-  
 cyrillic  
 16640 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% U+0499  
 16641 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499  
 16642 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescen-  
 dercyrillic  
 16643 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A  
 16644 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kadescen-  
 dercyrillic  
 16645 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% U+049B  
 16646 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE;  
 16647 % Kavertikalstrokecyrillic  
 16648 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C  
 16649 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE;  
 16650 % kavertikalstrokecyrillic  
 16651 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D  
 16652 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic  
 16653 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E  
 16654 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic  
 16655 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% U+049F  
 16656 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic  
 16657 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0  
 16658 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic  
 16659 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1  
 16660 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescen-  
 dercyrillic  
 16661 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2  
 16662 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endescender-

cyrillic

16663 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3

16664 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic

16665 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4

16666 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic

16667 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5

16668 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemiddlehookcyrillic

16669 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6

16670 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddlehookcyrillic

16671 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7

16672 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyrillic

16673 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8

16674 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic

16675 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% U+04A9

16676 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescendercyrillic

16677 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA

16678 \DeclareTextCompositeCommand{\k}{PU}{\CYRS}{\84\252}% U+04AA

16679 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescendercyrillic

16680 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% U+04AB

16681 \DeclareTextCompositeCommand{\k}{PU}{\cyr}{\84\253}% U+04AB

16682 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescendercyrillic

16683 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC

16684 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescendercyrillic

16685 \DeclareTextCommand{\cyrtdsc}{PU}{\84\255}% U+04AD

16686 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic

16687 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE

16688 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; ustraightcyrillic

16689 \DeclareTextCommand{\cyr}{PU}{\84\257}% U+04AF

16690 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Ustraightstrokecyrillic

16691 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0

16692 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; usstraightstrokecyrillic

16693 \DeclareTextCommand{\cyryhcrs}{PU}{\84\261}% U+04B1

16694 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hadescendercyrillic

16695 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% U+04B2

16696 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadescendercyrillic

16697 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% U+04B3

16698 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetscyrillic

16699 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4

16700 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetscyrillic

16701 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% U+04B5

16702 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER;

16703 % Chedescendercyrillic

16704 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6

16705 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescendercyrillic  
16706 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% U+04B7  
16707 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE;  
16708 % Cheverticalstrokecyrillic  
16709 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8  
16710 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE;  
16711 % cheverticalstrokecyrillic  
16712 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9  
16713 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic  
16714 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA  
16715 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic  
16716 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB  
16717 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasiancyrillic  
16718 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC  
16719 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyrillic  
16720 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% U+04BD  
16721 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCENDER; Chedescenderabkhasiancyrillic  
16722 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE  
16723 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE  
16724 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCENDER; chedescenderabkhasiancyrillic  
16725 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% U+04BF  
16726 \DeclareTextCompositeCommand{\k}{PU}{\cyrabhch}{\84\277}% U+04BF  
16727 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic  
16728 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0  
16729 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic  
16730 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1  
16731 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic  
16732 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% U+04C2  
16733 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic  
16734 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3  
16735 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic  
16736 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% U+04C4  
16737 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL  
16738 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5  
16739 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL  
16740 \DeclareTextCommand{\cyrldsc}{PU}{\84\306}% U+04C6  
16741 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic  
16742 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7  
16743 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic  
16744 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% U+04C8  
16745 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakassiancyrillic  
16746 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB  
16747 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassiancyrillic  
16748 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% U+04CC  
16749 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL  
16750 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD  
16751 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL



16752 \DeclareTextCommand{\cyrmjsc}{PU}{\84\316}% U+04CE  
\84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA

16753 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevocyrrilic  
16754 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0  
16755 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevocyrrilic  
16756 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% U+04D1  
16757 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyrrilic

16758 \DeclareTextCompositeCommand{\"}{PU}{\CYRA}{\84\322}% U+04D2  
16759 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresiscyrrilic  
16760 \DeclareTextCompositeCommand{\"}{PU}{\cyra}{\84\323}% U+04D3  
16761 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aiecyrrilic  
16762 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4  
16763 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aiecyrrilic  
16764 \DeclareTextCommand{\cyrae}{PU}{\84\325}% U+04D5  
16765 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrevocyrrilic  
16766 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6  
16767 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrevocyrrilic  
16768 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% U+04D7  
16769 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwacyrrilic  
16770 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8  
16771 % U+04D9 CYRILLIC SMALL LETTER SCHWA; \*afii10846, schwacyrrilic  
16772 \DeclareTextCommand{\cyrswa}{PU}{\84\331}% U+04D9  
16773 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS;  
16774 % Schwadieresiscyrrilic  
16775 \DeclareTextCompositeCommand{\"}{PU}{\CYRSCHWA}{\84\332}% U+04DA  
16776 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS;  
16777 % schwadieresiscyrrilic  
16778 \DeclareTextCompositeCommand{\"}{PU}{\cyrswa}{\84\333}% U+04DB  
16779 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhedieresiscyrrilic

16780 \DeclareTextCompositeCommand{\"}{PU}{\CYRZH}{\84\334}% U+04DC  
16781 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedieresiscyrrilic  
16782 \DeclareTextCompositeCommand{\"}{PU}{\cyrzh}{\84\335}% U+04DD  
16783 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedieresiscyrrilic  
16784 \DeclareTextCompositeCommand{\"}{PU}{\CYRZ}{\84\336}% U+04DE  
16785 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedieresiscyrrilic  
16786 \DeclareTextCompositeCommand{\"}{PU}{\cyrz}{\84\337}% U+04DF  
16787 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasiancyrrilic  
16788 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0  
16789 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasiancyrrilic  
16790 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% U+04E1  
16791 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Imacroncyrrilic  
16792 \DeclareTextCompositeCommand{\=} {PU}{\CYRI}{\84\342}% U+04E2  
16793 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacroncyrrilic  
16794 \DeclareTextCompositeCommand{\=} {PU}{\cyri}{\84\343}% U+04E3  
16795 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresiscyrrilic  
16796 \DeclareTextCompositeCommand{\"}{PU}{\CYRI}{\84\344}% U+04E4  
16797 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresiscyrrilic

16798 \DeclareTextCompositeCommand{\}{PU}{\cyri}{\84\345}% U+04E5  
16799 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresiscyril-  
lic  
16800 \DeclareTextCompositeCommand{\}{PU}{\CYRO}{\84\346}% U+04E6  
16801 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresiscyrillic  
16802 \DeclareTextCompositeCommand{\}{PU}{\cyro}{\84\347}% U+04E7  
16803 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarredcyrillic  
16804 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8  
16805 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarredcyrillic  
16806 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9  
16807 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERESIS;  
16808 % Obarreddieresiscyrillic  
16809 \DeclareTextCompositeCommand{\}{PU}{\CYROTLD}{\84\352}% U+04EA  
16810 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS;  
16811 % obarreddieresiscyrillic  
16812 \DeclareTextCompositeCommand{\}{PU}{\cyrotld}{\84\353}% U+04EB  
16813 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS  
16814 \DeclareTextCompositeCommand{\}{PU}{\CYREREV}{\84\354}% U+04EC  
16815 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS  
16816 \DeclareTextCompositeCommand{\}{PU}{\cyrerev}{\84\355}% U+04ED  
16817 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacroncyrillic  
16818 \DeclareTextCompositeCommand{\=}{PU}{\CYRU}{\84\356}% U+04EE  
16819 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacroncyrillic  
16820 \DeclareTextCompositeCommand{\=}{PU}{\cyru}{\84\357}% U+04EF  
16821 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udieresiscyril-  
lic  
16822 \DeclareTextCompositeCommand{\}{PU}{\CYRU}{\84\360}% U+04F0  
16823 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udieresiscyrillic  
16824 \DeclareTextCompositeCommand{\}{PU}{\cyru}{\84\361}% U+04F1  
16825 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhun-  
garumlautcyrillic  
16826 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U+04F2  
16827 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhun-  
garumlautcyrillic  
16828 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% U+04F3  
16829 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chediere-  
siscyrillic  
16830 \DeclareTextCompositeCommand{\}{PU}{\CYRCH}{\84\364}% U+04F4  
16831 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieresis-  
cyrillic  
16832 \DeclareTextCompositeCommand{\}{PU}{\cyrch}{\84\365}% U+04F5  
16833 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER  
16834 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6  
16835 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER  
16836 \DeclareTextCommand{\cyrgdsc}{PU}{\84\367}% U+04F7  
16837 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudiere-  
siscyrillic  
16838 \DeclareTextCompositeCommand{\}{PU}{\CYRERY}{\84\370}% U+04F8  
16839 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudiere-  
siscyrillic  
16840 \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

```
16841 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK
16842 \DeclareTextCommand{\CYRHhk}{PU}{\84\374}% U+04FC
16843 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK
16844 \DeclareTextCommand{\cyrhk}{PU}{\84\375}% U+04FD
16845 \fi

\84\376: U+04FE CYRILLIC CAPITAL LETTER HA WITH STROKE
\84\377: U+04FF CYRILLIC SMALL LETTER HA WITH STROKE
```

### 47.2.11 Hebrew: U+0590 to U+05FF

Macro names are taken from `he8enc.def`. `hebrew` is only loaded if `\hebdalet` is defined

```
16846 \ifx\hebdalet\@undefined\else
16847 % U+05C3 HEBREW PUNCTUATION SOF PASUQ
16848 \DeclareTextCommand{\sofpasuq}{PU}{\85\303}% U+05C3
16849 % U+05D0 HEBREW LETTER ALEF
16850 \DeclareTextCommand{\hebalef}{PU}{\85\320}% U+05D0
16851 % U+05D1 HEBREW LETTER BET
16852 \DeclareTextCommand{\hebbet}{PU}{\85\321}% U+05D1
16853 % U+05D2 HEBREW LETTER GIMEL
16854 \DeclareTextCommand{\hebgimel}{PU}{\85\322}% U+05D2
16855 % U+05D3 HEBREW LETTER DALET
16856 \DeclareTextCommand{\hebdalet}{PU}{\85\323}% U+05D3
16857 % U+05D4 HEBREW LETTER HE
16858 \DeclareTextCommand{\hebhe}{PU}{\85\324}% U+05D4
16859 % U+05D5 HEBREW LETTER VAV
16860 \DeclareTextCommand{\hebvav}{PU}{\85\325}% U+05D5
16861 % U+05D6 HEBREW LETTER ZAYIN
16862 \DeclareTextCommand{\hebzayin}{PU}{\85\326}% U+05D6
16863 % U+05D7 HEBREW LETTER HET
16864 \DeclareTextCommand{\hebhet}{PU}{\85\327}% U+05D7
16865 % U+05D8 HEBREW LETTER TET
16866 \DeclareTextCommand{\hebtet}{PU}{\85\330}% U+05D8
16867 % U+05D9 HEBREW LETTER YOD
16868 \DeclareTextCommand{\hebyod}{PU}{\85\331}% U+05D9
16869 % U+05DA HEBREW LETTER FINAL KAF
16870 \DeclareTextCommand{\hebfinalkaf}{PU}{\85\332}% U+05DA
16871 % U+05DB HEBREW LETTER KAF
16872 \DeclareTextCommand{\hebkaf}{PU}{\85\333}% U+05DB
16873 % U+05DC HEBREW LETTER LAMED
16874 \DeclareTextCommand{\heblamed}{PU}{\85\334}% U+05DC
16875 % U+05DD HEBREW LETTER FINAL MEM
16876 \DeclareTextCommand{\hebfinalmem}{PU}{\85\335}% U+05DD
16877 % U+05DE HEBREW LETTER MEM
16878 \DeclareTextCommand{\hebmem}{PU}{\85\336}% U+05DE
16879 % U+05DF HEBREW LETTER FINAL NUN
16880 \DeclareTextCommand{\hebfinalnun}{PU}{\85\337}% U+05DF
16881 % U+05E0 HEBREW LETTER NUN
16882 \DeclareTextCommand{\hebnun}{PU}{\85\340}% U+05E0
16883 % U+05E1 HEBREW LETTER SAMEKH
16884 \DeclareTextCommand{\hebsamekh}{PU}{\85\341}% U+05E1
16885 % U+05E2 HEBREW LETTER AYIN
```

16886 \DeclareTextCommand{\hebayin}{PU}{\85\342}% U+05E2  
 16887 % U+05E3 HEBREW LETTER FINAL PE  
 16888 \DeclareTextCommand{\hebfinalpe}{PU}{\85\343}% U+05E3  
 16889 % U+05E4 HEBREW LETTER PE  
 16890 \DeclareTextCommand{\hebpe}{PU}{\85\344}% U+05E4  
 16891 % U+05E5 HEBREW LETTER FINAL TSADI  
 16892 \DeclareTextCommand{\hebfinaltsadi}{PU}{\85\345}% U+05E5  
 16893 % U+05E6 HEBREW LETTER TSADI  
 16894 \DeclareTextCommand{\hebtsadi}{PU}{\85\346}% U+05E6  
 16895 % U+05E7 HEBREW LETTER QOF  
 16896 \DeclareTextCommand{\hebqof}{PU}{\85\347}% U+05E7  
 16897 % U+05E8 HEBREW LETTER RESH  
 16898 \DeclareTextCommand{\hebresh}{PU}{\85\350}% U+05E8  
 16899 % U+05E9 HEBREW LETTER SHIN  
 16900 \DeclareTextCommand{\hebshin}{PU}{\85\351}% U+05E9  
 16901 %\* \hebshin -> \hebsin (he8)  
 16902 % U+05EA HEBREW LETTER TAV  
 16903 \DeclareTextCommand{\hebtav}{PU}{\85\352}% U+05EA  
 16904 % U+05F0 HEBREW LIGATURE YIDDISH DOUBLE VAV  
 16905 \DeclareTextCommand{\doublevav}{PU}{\85\360}% U+05F0  
 16906 % U+05F1 HEBREW LIGATURE YIDDISH VAV YOD  
 16907 \DeclareTextCommand{\vavyod}{PU}{\85\361}% U+05F1  
 16908 % U+05F2 HEBREW LIGATURE YIDDISH DOUBLE YOD  
 16909 \DeclareTextCommand{\doubleyod}{PU}{\85\362}% U+05F2  
 16910 \fi

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

16911 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai  
 16912 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

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

16913 % U+1D00 LATIN LETTER SMALL CAPITAL A; \textscA (tipa)  
 16914 \DeclareTextCommand{\textscA}{PU}{\9035\000}% U+1D00  
 16915 % U+1D05 LATIN LETTER SMALL CAPITAL D; \scD (wsuipa)  
 16916 \DeclareTextCommand{\textscD}{PU}{\9035\005}%\* U+1D05  
 16917 % U+1D07 LATIN LETTER SMALL CAPITAL E; \textscE (tipa)  
 16918 \DeclareTextCommand{\textscE}{PU}{\9035\007}% U+1D07  
 16919 % U+1D0A LATIN LETTER SMALL CAPITAL J; \textscJ (tipa)  
 16920 \DeclareTextCommand{\textscJ}{PU}{\9035\012}% U+1D0A  
 16921 % U+1D0B LATIN LETTER SMALL CAPITAL K; \textscK (tipx)  
 16922 \DeclareTextCommand{\textscK}{PU}{\9035\013}% U+1D0B  
 16923 %\* \textscK -> \textscK (tipx)  
 16924 % U+1D0D LATIN LETTER SMALL CAPITAL M; \textscM (tipx)  
 16925 \DeclareTextCommand{\textscM}{PU}{\9035\015}% U+1D0D  
 16926 %\* \textscM -> \textscM (tipx)  
 16927 % U+1D18 LATIN LETTER SMALL CAPITAL P; \textscP (tipx)  
 16928 \DeclareTextCommand{\textscP}{PU}{\9035\030}% U+1D18  
 16929 %\* \textscP -> \textscP (tipx)  
 16930 % U+1D19 LATIN LETTER SMALL CAPITAL REVERSED R; \textscR (tipx)  
 16931 \DeclareTextCommand{\textscR}{PU}{\9035\031}% U+1D19  
 16932 %\* \textscR -> \textscR (tipx)  
 16933 % U+1D1C LATIN LETTER SMALL CAPITAL U; \textscU (tipa), \scU (wsuipa)  
 16934 \DeclareTextCommand{\textscU}{PU}{\9035\034}%\* U+1D1C

16935 % U+1D62 LATIN SUBSCRIPT SMALL LETTER I  
 16936 \DeclareTextCommand{\textiinferior}{PU}{\9035\142}%\* U+1D62  
 16937 % U+1D63 LATIN SUBSCRIPT SMALL LETTER R  
 16938 \DeclareTextCommand{\textrinferior}{PU}{\9035\143}%\* U+1D63  
 16939 % U+1D64 LATIN SUBSCRIPT SMALL LETTER U  
 16940 \DeclareTextCommand{\textuinferior}{PU}{\9035\144}%\* U+1D64  
 16941 % U+1D65 LATIN SUBSCRIPT SMALL LETTER V  
 16942 \DeclareTextCommand{\textvinferior}{PU}{\9035\145}%\* U+1D65  
 16943 % U+1D66 GREEK SUBSCRIPT SMALL LETTER BETA  
 16944 \DeclareTextCommand{\textbetainferior}{PU}{\9035\146}%\* U+1D66  
 16945 % U+1D67 GREEK SUBSCRIPT SMALL LETTER GAMMA  
 16946 \DeclareTextCommand{\textgammainferior}{PU}{\9035\147}%\* U+1D67  
 16947 % U+1D68 GREEK SUBSCRIPT SMALL LETTER RHO  
 16948 \DeclareTextCommand{\textrhoinferior}{PU}{\9035\150}%\* U+1D68  
 16949 % U+1D69 GREEK SUBSCRIPT SMALL LETTER PHI  
 16950 \DeclareTextCommand{\textphiinferior}{PU}{\9035\151}%\* U+1D69  
 16951 % U+1D6A GREEK SUBSCRIPT SMALL LETTER CHI  
 16952 \DeclareTextCommand{\textchiinferior}{PU}{\9035\152}%\* U+1D6A  
 16953 % U+1D7B LATIN SMALL CAPITAL LETTER I WITH STROKE;  
 16954 % \barsci (wsuipa)  
 16955 \DeclareTextCommand{\textbarsci}{PU}{\9035\173}%\* U+1D7B  
 16956 % U+1D7D LATIN SMALL LETTER P WITH STROKE; \barp (wsuipa)  
 16957 \DeclareTextCommand{\textbarp}{PU}{\9035\175}%\* U+1D7D  
 16958 % U+1D7E LATIN SMALL CAPITAL LETTER U WITH STROKE;  
 16959 % \barscu (wsuipa)  
 16960 \DeclareTextCommand{\textbarscu}{PU}{\9035\176}%\* U+1D7E

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

16961 % U+1D8F LATIN SMALL LETTER A WITH RETROFLEX HOOK; \tex-  
 trhooka (tipx)  
 16962 \DeclareTextCommand{\textPurhooka}{PU}{\9035\217}% U+1D8F  
 16963 %\* \textPurhooka -> \textrhooka (tipx)  
 16964 % U+1D91 LATIN SMALL LETTER D WITH HOOK AND TAIL; \texthtr-  
 taild (tipa)  
 16965 \DeclareTextCommand{\texthtrtaild}{PU}{\9035\221}%\* U+1D91  
 16966 % U+1D92 LATIN SMALL LETTER E WITH RETROFLEX HOOK; \tex-  
 trhooke (tipx)  
 16967 \DeclareTextCommand{\textPurhooke}{PU}{\9035\222}% U+1D92  
 16968 %\* \textPurhooke -> \textrhooke (tipx)  
 16969 % U+1D93 LATIN SMALL LETTER OPEN E WITH RETROFLEX HOOK;  
 16970 % \textrhookepsilon (tipx)  
 16971 \DeclareTextCommand{\textPurhookepsilon}{PU}{\9035\223}% U+1D93  
 16972 %\* \textPurhookepsilon -> \textrhookepsilon (tipx)  
 16973 % U+1D97 LATIN SMALL LETTER OPEN O WITH RETROFLEX HOOK;  
 16974 % \textrhookopeno (tipx)  
 16975 \DeclareTextCommand{\textPurhookopeno}{PU}{\9035\227}% U+1D97  
 16976 %\* \textPurhookopeno -> \textrhookopeno (tipx)

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

16977 % U+1E00 LATIN CAPITAL LETTER A WITH RING BELOW; Aringbelow  
 16978 \DeclareTextCompositeCommand{\textsubring}{PU}{A}{\9036\000}% U+1E00  
 16979 % U+1E01 LATIN SMALL LETTER A WITH RING BELOW; aringbelow  
 16980 \DeclareTextCompositeCommand{\textsubring}{PU}{a}{\9036\001}% U+1E01  
 16981 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent

16982 \DeclareTextCompositeCommand{\.}{PU}{B}{\9036\002}% U+1E02  
16983 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent  
16984 \DeclareTextCompositeCommand{\.}{PU}{b}{\9036\003}% U+1E03  
16985 % U+1E04 LATIN CAPITAL LETTER B WITH DOT BELOW; Bdotbelow  
16986 \DeclareTextCompositeCommand{\d}{PU}{B}{\9036\004}% U+1E04  
16987 % U+1E05 LATIN SMALL LETTER B WITH DOT BELOW; bdotbelow  
16988 \DeclareTextCompositeCommand{\d}{PU}{b}{\9036\005}% U+1E05  
16989 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow  
16990 \DeclareTextCompositeCommand{\b}{PU}{B}{\9036\006}% U+1E06  
16991 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow  
16992 \DeclareTextCompositeCommand{\b}{PU}{b}{\9036\007}% U+1E07  
16993 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent  
16994 \DeclareTextCompositeCommand{\.}{PU}{D}{\9036\012}% U+1E0A  
16995 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent  
16996 \DeclareTextCompositeCommand{\.}{PU}{d}{\9036\013}% U+1E0B  
16997 % U+1E0C LATIN CAPITAL LETTER D WITH DOT BELOW; Ddotbelow  
16998 \DeclareTextCompositeCommand{\d}{PU}{D}{\9036\014}% U+1E0C  
16999 % U+1E0D LATIN SMALL LETTER D WITH DOT BELOW; ddotbelow  
17000 \DeclareTextCompositeCommand{\d}{PU}{d}{\9036\015}% U+1E0D  
17001 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow  
17002 \DeclareTextCompositeCommand{\b}{PU}{D}{\9036\016}% U+1E0E  
17003 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow  
17004 \DeclareTextCompositeCommand{\b}{PU}{d}{\9036\017}% U+1E0F  
17005 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla  
17006 \DeclareTextCompositeCommand{\c}{PU}{D}{\9036\020}% U+1E10  
17007 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla  
17008 \DeclareTextCompositeCommand{\c}{PU}{d}{\9036\021}% U+1E11  
17009 % U+1E12 LATIN CAPITAL LETTER D WITH CIRCUMFLEX BELOW; Dcir-  
cumflexbelow  
17010 \DeclareTextCompositeCommand{\textsubcircum}{PU}{D}{\9036\022}% U+1E12  
17011 % U+1E13 LATIN SMALL LETTER D WITH CIRCUMFLEX BELOW; dcir-  
cumflexbelow  
17012 \DeclareTextCompositeCommand{\textsubcircum}{PU}{d}{\9036\023}% U+1E13  
17013 % U+1E14 LATIN CAPITAL LETTER E WITH MACRON AND GRAVE;  
17014 % E macrongrave  
17015 \DeclareTextCompositeCommand{\textgravemacron}{PU}{E}{\9036\024}% U+1E14  
17016 % U+1E15 LATIN SMALL LETTER E WITH MACRON AND GRAVE;  
17017 % e macrongrave  
17018 \DeclareTextCompositeCommand{\textgravemacron}{PU}{e}{\9036\025}% U+1E15  
17019 % U+1E16 LATIN CAPITAL LETTER E WITH MACRON AND ACUTE;  
17020 % E macronacute  
17021 \DeclareTextCompositeCommand{\textacutemacron}{PU}{E}{\9036\026}% U+1E16  
17022 % U+1E17 LATIN SMALL LETTER E WITH MACRON AND ACUTE;  
17023 % e macronacute  
17024 \DeclareTextCompositeCommand{\textacutemacron}{PU}{e}{\9036\027}% U+1E17  
17025 % U+1E18 LATIN CAPITAL LETTER E WITH CIRCUMFLEX BELOW; Ecir-  
cumflexbelow  
17026 \DeclareTextCompositeCommand{\textsubcircum}{PU}{E}{\9036\030}% U+1E18  
17027 % U+1E19 LATIN SMALL LETTER E WITH CIRCUMFLEX BELOW; ecir-  
cumflexbelow  
17028 \DeclareTextCompositeCommand{\textsubcircum}{PU}{e}{\9036\031}% U+1E19  
17029 % U+1E1A LATIN CAPITAL LETTER E WITH TILDE BELOW; Etildebelow  
17030 \DeclareTextCompositeCommand{\textsubtilde}{PU}{E}{\9036\032}% U+1E1A  
17031 % U+1E1B LATIN SMALL LETTER E WITH TILDE BELOW; etildebelow

17032 \DeclareTextCompositeCommand{\textsubtilde}{PU}{e}{\9036\033}% U+1E1B  
17033 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent  
17034 \DeclareTextCompositeCommand{\.}{PU}{F}{\9036\036}% U+1E1E  
17035 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent  
17036 \DeclareTextCompositeCommand{\.}{PU}{f}{\9036\037}% U+1E1F  
17037 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron  
17038 \DeclareTextCompositeCommand{=} {PU}{G}{\9036\040}% U+1E20  
17039 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron  
17040 \DeclareTextCompositeCommand{=} {PU}{g}{\9036\041}% U+1E21  
17041 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent  
17042 \DeclareTextCompositeCommand{\.}{PU}{H}{\9036\042}% U+1E22  
17043 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent  
17044 \DeclareTextCompositeCommand{\.}{PU}{h}{\9036\043}% U+1E23  
17045 % U+1E24 LATIN CAPITAL LETTER H WITH DOT BELOW; Hdotbelow  
17046 \DeclareTextCompositeCommand{\d}{PU}{H}{\9036\044}% U+1E24  
17047 % U+1E25 LATIN SMALL LETTER H WITH DOT BELOW; hdotbelow  
17048 \DeclareTextCompositeCommand{\d}{PU}{h}{\9036\045}% U+1E25  
17049 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis  
17050 \DeclareTextCompositeCommand{"}{PU}{H}{\9036\046}% U+1E26  
17051 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis  
17052 \DeclareTextCompositeCommand{"}{PU}{h}{\9036\047}% U+1E27  
17053 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla  
17054 \DeclareTextCompositeCommand{\c}{PU}{H}{\9036\050}% U+1E28  
17055 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla  
17056 \DeclareTextCompositeCommand{\c}{PU}{h}{\9036\051}% U+1E29  
17057 % U+1E2A LATIN CAPITAL LETTER H WITH BREVE BELOW; Hbrevebelow  
17058 \DeclareTextCompositeCommand{\textsubbreve}{PU}{H}{\9036\052}% U+1E2A  
17059 % U+1E2B LATIN SMALL LETTER H WITH BREVE BELOW; hbrevebelow  
17060 \DeclareTextCompositeCommand{\textsubbreve}{PU}{h}{\9036\053}% U+1E2B  
17061 % U+1E2C LATIN CAPITAL LETTER I WITH TILDE BELOW; Itildebelow  
17062 \DeclareTextCompositeCommand{\textsubtilde}{PU}{I}{\9036\054}% U+1E2C  
17063 % U+1E2D LATIN SMALL LETTER I WITH TILDE BELOW; itildebelow  
17064 \DeclareTextCompositeCommand{\textsubtilde}{PU}{i}{\9036\055}% U+1E2D  
17065 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute  
17066 \DeclareTextCompositeCommand{\'}{PU}{K}{\9036\060}% U+1E30  
17067 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute  
17068 \DeclareTextCompositeCommand{\'}{PU}{k}{\9036\061}% U+1E31  
17069 % U+1E32 LATIN CAPITAL LETTER K WITH DOT BELOW; Kdotbelow  
17070 \DeclareTextCompositeCommand{\d}{PU}{K}{\9036\062}% U+1E32  
17071 % U+1E33 LATIN SMALL LETTER K WITH DOT BELOW; kdotbelow  
17072 \DeclareTextCompositeCommand{\d}{PU}{k}{\9036\063}% U+1E33  
17073 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow  
17074 \DeclareTextCompositeCommand{\b}{PU}{K}{\9036\064}% U+1E34  
17075 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow  
17076 \DeclareTextCompositeCommand{\b}{PU}{k}{\9036\065}% U+1E35  
17077 % U+1E36 LATIN CAPITAL LETTER L WITH DOT BELOW; Ldotbelow  
17078 \DeclareTextCompositeCommand{\d}{PU}{L}{\9036\066}% U+1E36  
17079 % U+1E37 LATIN SMALL LETTER L WITH DOT BELOW; ldotbelow  
17080 \DeclareTextCompositeCommand{\d}{PU}{l}{\9036\067}% U+1E37  
17081 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow  
17082 \DeclareTextCompositeCommand{\b}{PU}{L}{\9036\072}% U+1E3A  
17083 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow  
17084 \DeclareTextCompositeCommand{\b}{PU}{l}{\9036\073}% U+1E3B  
17085 % U+1E3C LATIN CAPITAL LETTER L WITH CIRCUMFLEX BELOW; Lcir-

cumflexbelow  
 17086 \DeclareTextCompositeCommand{\textsubcircum}{PU}{L}{\9036\074}% U+1E3C  
 17087 % U+1E3D LATIN SMALL LETTER L WITH CIRCUMFLEX BELOW; lcir-  
 cumflexbelow  
 17088 \DeclareTextCompositeCommand{\textsubcircum}{PU}{l}{\9036\075}% U+1E3D  
 17089 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute  
 17090 \DeclareTextCompositeCommand{\'}{PU}{M}{\9036\076}% U+1E3E  
 17091 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute  
 17092 \DeclareTextCompositeCommand{\'}{PU}{m}{\9036\077}% U+1E3F  
 17093 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent  
 17094 \DeclareTextCompositeCommand{\.}{PU}{M}{\9036\100}% U+1E40  
 17095 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent  
 17096 \DeclareTextCompositeCommand{\.}{PU}{m}{\9036\101}% U+1E41  
 17097 % U+1E42 LATIN CAPITAL LETTER M WITH DOT BELOW; Mdotbelow  
 17098 \DeclareTextCompositeCommand{\d}{PU}{M}{\9036\102}% U+1E42  
 17099 % U+1E43 LATIN SMALL LETTER M WITH DOT BELOW; mdotbelow  
 17100 \DeclareTextCompositeCommand{\d}{PU}{m}{\9036\103}% U+1E43  
 17101 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent  
 17102 \DeclareTextCompositeCommand{\.}{PU}{N}{\9036\104}% U+1E44  
 17103 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent  
 17104 \DeclareTextCompositeCommand{\.}{PU}{n}{\9036\105}% U+1E45  
 17105 % U+1E46 LATIN CAPITAL LETTER N WITH DOT BELOW; Ndotbelow  
 17106 \DeclareTextCompositeCommand{\d}{PU}{N}{\9036\106}% U+1E46  
 17107 % U+1E47 LATIN SMALL LETTER N WITH DOT BELOW; ndotbelow  
 17108 \DeclareTextCompositeCommand{\d}{PU}{n}{\9036\107}% U+1E47  
 17109 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow  
 17110 \DeclareTextCompositeCommand{\b}{PU}{N}{\9036\110}% U+1E48  
 17111 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow  
 17112 \DeclareTextCompositeCommand{\b}{PU}{n}{\9036\111}% U+1E49  
 17113 % U+1E4A LATIN CAPITAL LETTER N WITH CIRCUMFLEX BELOW; Ncir-  
 cumflexbelow  
 17114 \DeclareTextCompositeCommand{\textsubcircum}{PU}{N}{\9036\112}% U+1E4A  
 17115 % U+1E4B LATIN SMALL LETTER N WITH CIRCUMFLEX BELOW; ncir-  
 cumflexbelow  
 17116 \DeclareTextCompositeCommand{\textsubcircum}{PU}{n}{\9036\113}% U+1E4B  
 17117 % U+1E50 LATIN CAPITAL LETTER O WITH MACRON AND GRAVE;  
 17118 % Omacrongrave  
 17119 \DeclareTextCompositeCommand{\textgravemacron}{PU}{O}{\9036\120}% U+1E50  
 17120 % U+1E51 LATIN SMALL LETTER O WITH MACRON AND GRAVE;  
 17121 % omacrongrave  
 17122 \DeclareTextCompositeCommand{\textgravemacron}{PU}{o}{\9036\121}% U+1E51  
 17123 % U+1E52 LATIN CAPITAL LETTER O WITH MACRON AND ACUTE;  
 17124 % Omacronacute  
 17125 \DeclareTextCompositeCommand{\textacutemacron}{PU}{O}{\9036\122}% U+1E52  
 17126 % U+1E53 LATIN SMALL LETTER O WITH MACRON AND ACUTE;  
 17127 % omacronacute  
 17128 \DeclareTextCompositeCommand{\textacutemacron}{PU}{o}{\9036\123}% U+1E53  
 17129 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute  
 17130 \DeclareTextCompositeCommand{\'}{PU}{P}{\9036\124}% U+1E54  
 17131 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute  
 17132 \DeclareTextCompositeCommand{\'}{PU}{p}{\9036\125}% U+1E55  
 17133 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent  
 17134 \DeclareTextCompositeCommand{\.}{PU}{P}{\9036\126}% U+1E56  
 17135 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent



17136 \DeclareTextCompositeCommand{\.}{PU}{p}{\9036\127}% U+1E57  
17137 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent  
17138 \DeclareTextCompositeCommand{\.}{PU}{R}{\9036\130}% U+1E58  
17139 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent  
17140 \DeclareTextCompositeCommand{\.}{PU}{r}{\9036\131}% U+1E59  
17141 % U+1E5A LATIN CAPITAL LETTER R WITH DOT BELOW; Rdotbelow  
17142 \DeclareTextCompositeCommand{\d}{PU}{R}{\9036\132}% U+1E5A  
17143 % U+1E5B LATIN SMALL LETTER R WITH DOT BELOW; rdotbelow  
17144 \DeclareTextCompositeCommand{\d}{PU}{r}{\9036\133}% U+1E5B  
17145 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow  
17146 \DeclareTextCompositeCommand{\b}{PU}{R}{\9036\136}% U+1E5E  
17147 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow  
17148 \DeclareTextCompositeCommand{\b}{PU}{r}{\9036\137}% U+1E5F  
17149 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent  
17150 \DeclareTextCompositeCommand{\.}{PU}{S}{\9036\140}% U+1E60  
17151 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent  
17152 \DeclareTextCompositeCommand{\.}{PU}{s}{\9036\141}% U+1E61  
17153 % U+1E62 LATIN CAPITAL LETTER S WITH DOT BELOW; Sdotbelow  
17154 \DeclareTextCompositeCommand{\d}{PU}{S}{\9036\142}% U+1E62  
17155 % U+1E63 LATIN SMALL LETTER S WITH DOT BELOW; sdotbelow  
17156 \DeclareTextCompositeCommand{\d}{PU}{s}{\9036\143}% U+1E63  
17157 % U+1E6A LATIN CAPITAL LETTER T WITH DOT ABOVE; Tdotaccent  
17158 \DeclareTextCompositeCommand{\.}{PU}{T}{\9036\152}% U+1E6A  
17159 % U+1E6B LATIN SMALL LETTER T WITH DOT ABOVE; tdotaccent  
17160 \DeclareTextCompositeCommand{\.}{PU}{t}{\9036\153}% U+1E6B  
17161 % U+1E6C LATIN CAPITAL LETTER T WITH DOT BELOW; Tdotbelow  
17162 \DeclareTextCompositeCommand{\d}{PU}{T}{\9036\154}% U+1E6C  
17163 % U+1E6D LATIN SMALL LETTER T WITH DOT BELOW; tdotbelow  
17164 \DeclareTextCompositeCommand{\d}{PU}{t}{\9036\155}% U+1E6D  
17165 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow  
17166 \DeclareTextCompositeCommand{\b}{PU}{T}{\9036\156}% U+1E6E  
17167 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow  
17168 \DeclareTextCompositeCommand{\b}{PU}{t}{\9036\157}% U+1E6F  
17169 % U+1E70 LATIN CAPITAL LETTER T WITH CIRCUMFLEX BELOW; Tcircumflexbelow  
17170 \DeclareTextCompositeCommand{\textsubcircum}{PU}{T}{\9036\160}% U+1E70  
17171 % U+1E71 LATIN SMALL LETTER T WITH CIRCUMFLEX BELOW; tcircumflexbelow  
17172 \DeclareTextCompositeCommand{\textsubcircum}{PU}{t}{\9036\161}% U+1E71  
17173 % U+1E72 LATIN CAPITAL LETTER U WITH DIAERESIS BELOW; Udiere-  
sisbelow  
17174 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{U}{\9036\162}% U+1E72  
17175 % U+1E73 LATIN SMALL LETTER U WITH DIAERESIS BELOW; udiere-  
sisbelow  
17176 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{u}{\9036\163}% U+1E73  
17177 % U+1E74 LATIN CAPITAL LETTER U WITH TILDE BELOW; Utildebelow  
17178 \DeclareTextCompositeCommand{\textsubtilde}{PU}{U}{\9036\164}% U+1E74  
17179 % U+1E75 LATIN SMALL LETTER U WITH TILDE BELOW; utildebelow  
17180 \DeclareTextCompositeCommand{\textsubtilde}{PU}{u}{\9036\165}% U+1E75  
17181 % U+1E76 LATIN CAPITAL LETTER U WITH CIRCUMFLEX BELOW; Ucircumflexbelow  
17182 \DeclareTextCompositeCommand{\textsubcircum}{PU}{U}{\9036\166}% U+1E76  
17183 % U+1E77 LATIN SMALL LETTER U WITH CIRCUMFLEX BELOW; ucircumflexbelow

17184 \DeclareTextCompositeCommand{\textsubcircum}{PU}{u}{\9036\167}% U+1E77  
17185 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde  
17186 \DeclareTextCompositeCommand{\~}{PU}{V}{\9036\174}% U+1E7C  
17187 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde  
17188 \DeclareTextCompositeCommand{\~}{PU}{v}{\9036\175}% U+1E7D  
17189 % U+1E7E LATIN CAPITAL LETTER V WITH DOT BELOW; Vdotbelow  
17190 \DeclareTextCompositeCommand{\d}{PU}{V}{\9036\176}% U+1E7E  
17191 % U+1E7F LATIN SMALL LETTER V WITH DOT BELOW; vdotbelow  
17192 \DeclareTextCompositeCommand{\d}{PU}{v}{\9036\177}% U+1E7F  
17193 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave  
17194 \DeclareTextCompositeCommand{\`}{PU}{W}{\9036\200}% U+1E80  
17195 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave  
17196 \DeclareTextCompositeCommand{\`}{PU}{w}{\9036\201}% U+1E81  
17197 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute  
17198 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\202}% U+1E82  
17199 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute  
17200 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\203}% U+1E83  
17201 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis  
17202 \DeclareTextCompositeCommand{\"}{PU}{W}{\9036\204}% U+1E84  
17203 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis  
17204 \DeclareTextCompositeCommand{\"}{PU}{w}{\9036\205}% U+1E85  
17205 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent  
17206 \DeclareTextCompositeCommand{\.}{PU}{W}{\9036\206}% U+1E86  
17207 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent  
17208 \DeclareTextCompositeCommand{\.}{PU}{w}{\9036\207}% U+1E87  
17209 % U+1E88 LATIN CAPITAL LETTER W WITH DOT BELOW; wdotbelow  
17210 \DeclareTextCompositeCommand{\d}{PU}{W}{\9036\210}% U+1E88  
17211 % U+1E89 LATIN SMALL LETTER W WITH DOT BELOW; wdotbelow  
17212 \DeclareTextCompositeCommand{\d}{PU}{w}{\9036\211}% U+1E89  
17213 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent  
17214 \DeclareTextCompositeCommand{\.}{PU}{X}{\9036\212}% U+1E8A  
17215 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent  
17216 \DeclareTextCompositeCommand{\.}{PU}{x}{\9036\213}% U+1E8B  
17217 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis  
17218 \DeclareTextCompositeCommand{\"}{PU}{X}{\9036\214}% U+1E8C  
17219 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis  
17220 \DeclareTextCompositeCommand{\"}{PU}{x}{\9036\215}% U+1E8D  
17221 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent  
17222 \DeclareTextCompositeCommand{\.}{PU}{Y}{\9036\216}% U+1E8E  
17223 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent  
17224 \DeclareTextCompositeCommand{\.}{PU}{y}{\9036\217}% U+1E8F  
17225 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex  
17226 \DeclareTextCompositeCommand{\^}{PU}{Z}{\9036\220}% U+1E90  
17227 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex  
17228 \DeclareTextCompositeCommand{\^}{PU}{z}{\9036\221}% U+1E91  
17229 % U+1E92 LATIN CAPITAL LETTER Z WITH DOT BELOW; Zdotbelow  
17230 \DeclareTextCompositeCommand{\d}{PU}{Z}{\9036\222}% U+1E92  
17231 % U+1E93 LATIN SMALL LETTER Z WITH DOT BELOW; zdotbelow  
17232 \DeclareTextCompositeCommand{\d}{PU}{z}{\9036\223}% U+1E93  
17233 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow  
17234 \DeclareTextCompositeCommand{\b}{PU}{Z}{\9036\224}% U+1E94  
17235 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow  
17236 \DeclareTextCompositeCommand{\b}{PU}{z}{\9036\225}% U+1E95  
17237 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow

17238 \DeclareTextCompositeCommand{\b}{PU}{h}{\9036\226}% U+1E96  
17239 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis  
17240 \DeclareTextCompositeCommand{\t}{PU}{t}{\9036\227}% U+1E97  
17241 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring  
17242 \DeclareTextCompositeCommand{\r}{PU}{w}{\9036\230}% U+1E98  
17243 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring  
17244 \DeclareTextCompositeCommand{\r}{PU}{y}{\9036\231}% U+1E99  
17245 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdotaccent  
17246 \DeclareTextCompositeCommand{\.}{PU}{\textlongs}{\9036\233}% U+1E9B  
17247 % U+1EA0 LATIN CAPITAL LETTER A WITH DOT BELOW; Adotbelow  
17248 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}% U+1EA0  
17249 % U+1EA1 LATIN SMALL LETTER A WITH DOT BELOW; adotbelow  
17250 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}% U+1EA1  
17251 % U+1EB8 LATIN CAPITAL LETTER E WITH DOT BELOW; Edotbelow  
17252 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}% U+1EB8  
17253 % U+1EB9 LATIN SMALL LETTER E WITH DOT BELOW; edotbelow  
17254 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}% U+1EB9  
17255 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde  
17256 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
17257 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde  
17258 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
17259 % U+1ECA LATIN CAPITAL LETTER I WITH DOT BELOW; Idotbelow  
17260 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}% U+1ECA  
17261 % U+1ECB LATIN SMALL LETTER I WITH DOT BELOW; idotbelow  
17262 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}% U+1ECB  
17263 % U+1ECC LATIN CAPITAL LETTER O WITH DOT BELOW; Odotbelow  
17264 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}% U+1ECC  
17265 % U+1ECD LATIN SMALL LETTER O WITH DOT BELOW; odotbelow  
17266 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}% U+1ECD  
17267 % U+1EE4 LATIN CAPITAL LETTER U WITH DOT BELOW; Udotbelow  
17268 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4  
17269 % U+1EE5 LATIN SMALL LETTER U WITH DOT BELOW; udotbelow  
17270 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}% U+1EE5  
17271 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave  
17272 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2  
17273 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave  
17274 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3  
17275 % U+1EF4 LATIN CAPITAL LETTER Y WITH DOT BELOW; Ydotbelow  
17276 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4  
17277 % U+1EF5 LATIN SMALL LETTER Y WITH DOT BELOW; ydotbelow  
17278 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}% U+1EF5  
17279 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde  
17280 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8  
17281 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde  
17282 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9

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

17283 % U+200C ZERO WIDTH NON-JOINER; \*afii61664, zerowidthnonjoiner  
17284 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C  
17285 % U+2013 EN DASH; endash  
17286 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013  
17287 % U+2014 EM DASH; emdash  
17288 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014

17289 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar  
17290 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016  
17291 %\* \textbardbl -> \textdoublevertline (tipa)  
17292 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
17293 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018  
17294 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
17295 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019  
17296 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
17297 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A  
17298 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
17299 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034}% U+201C  
17300 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
17301 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035}% U+201D  
17302 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
17303 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E  
17304 % U+2020 DAGGER; dagger  
17305 \DeclareTextCommand{\textdagger}{PU}{\9040\040}%\* U+2020  
17306 %\* \textdagger -> \dag (LaTeX)  
17307 % U+2021 DOUBLE DAGGER; daggerdbl; \ddagger (LaTeX)  
17308 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021  
17309 %\* \textdaggerdbl -> \ddagger (LaTeX)  
17310 %\* \textdaggerdbl -> \ddag (LaTeX)  
17311 % U+2022 BULLET; bullet  
17312 \DeclareTextCommand{\textbullet}{PU}{\9040\042}%\* U+2022  
17313 % U+2025 TWO DOT LEADER; \hdotfor (MnSymbol)  
17314 \DeclareTextCommand{\texthdotfor}{PU}{\9040\045}%\* U+2025  
17315 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
17316 \DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026  
17317 %\* \textellipsis -> \mathellipsis  
17318 % U+2030 PER MILLE SIGN; perthousand  
17319 \DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030  
17320 % U+2031 PER TEN THOUSAND SIGN  
17321 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031  
17322 % U+2032 PRIME; minute; \prime (MnSymbol)  
17323 \DeclareTextCommand{\textprime}{PU}{\9040\062}%\* U+2032  
17324 % U+2033 DOUBLE PRIME; \second (mathabx)  
17325 \DeclareTextCommand{\textsecond}{PU}{\9040\063}%\* U+2033  
17326 % U+2034 TRIPLE PRIME; \third (mathabx)  
17327 \DeclareTextCommand{\textthird}{PU}{\9040\064}%\* U+2034  
17328 % U+2035 REVERSED PRIME; \backprime (AmS)  
17329 \DeclareTextCommand{\textbackprime}{PU}{\9040\065}%\* U+2035  
17330 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
inglleft  
17331 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071}% U+2039  
17332 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
inglright  
17333 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072}% U+203A  
17334 % U+203B REFERENCE MARK; referencemark  
17335 \DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B  
17336 % U+203D INTERROBANG  
17337 \DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D  
17338 % U+2044 FRACTION SLASH; fraction  
17339 \DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044  
17340 % U+2045 LEFT SQUARE BRACKET WITH QUILL

17341 `\DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045`  
 17342 `% U+2046 RIGHT SQUARE BRACKET WITH QUILL`  
 17343 `\DeclareTextCommand{\textrquill}{PU}{\9040\106}% U+2046`  
 17344 `% U+2052 COMMERCIAL MINUS SIGN`  
 17345 `\DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052`  
 17346 `% U+2056 THREE DOT PUNCTUATION; \lefttherefore (MnSymbol)`  
 17347 `\DeclareTextCommand{\textlefttherefore}{PU}{\9040\126}%* U+2056`  
 17348 `% U+2057 QUADRUPLE PRIME; \fourth (mathabx)`  
 17349 `\DeclareTextCommand{\textfourth}{PU}{\9040\127}%* U+2057`  
 17350 `% U+2058 FOUR DOT PUNCTUATION; \diamonddots (MnSymbol)`  
 17351 `\DeclareTextCommand{\textdiamonddots}{PU}{\9040\130}%* U+2058`

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

17352 `% U+2070 SUPERSCRIPT ZERO; zerosuperior`  
 17353 `\DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}%* U+2070`  
 17354 `% U+2071 SUPERSCRIPT LATIN SMALL LETTER I`  
 17355 `\DeclareTextCommand{\textisuperior}{PU}{\9040\161}%* U+2071`  
 17356 `% U+2074 SUPERSCRIPT FOUR; foursuperior`  
 17357 `\DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}%* U+2074`  
 17358 `% U+2075 SUPERSCRIPT FIVE; fivesuperior`  
 17359 `\DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}%* U+2075`  
 17360 `% U+2076 SUPERSCRIPT SIX; sixsuperior`  
 17361 `\DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}%* U+2076`  
 17362 `% U+2077 SUPERSCRIPT SEVEN; sevensuperior`  
 17363 `\DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}%* U+2077`  
 17364 `% U+2078 SUPERSCRIPT EIGHT; eightsuperior`  
 17365 `\DeclareTextCommand{\texteightsuperior}{PU}{\9040\170}%* U+2078`  
 17366 `% U+2079 SUPERSCRIPT NINE; ninesuperior`  
 17367 `\DeclareTextCommand{\textninesuperior}{PU}{\9040\171}%* U+2079`  
 17368 `% U+207A SUPERSCRIPT PLUS SIGN; plussuperior`  
 17369 `\DeclareTextCommand{\textplussuperior}{PU}{\9040\172}%* U+207A`  
 17370 `% U+207B SUPERSCRIPT MINUS`  
 17371 `\DeclareTextCommand{\textminussuperior}{PU}{\9040\173}%* U+207B`  
 17372 `% U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior`  
 17373 `\DeclareTextCommand{\textequalsuperior}{PU}{\9040\174}%* U+207C`  
 17374 `% U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftsuperior`  
 17375 `\DeclareTextCommand{\textparenleftsuperior}{PU}{\9040\175}%* U+207D`  
 17376 `% U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightsuperior`  
 17377 `\DeclareTextCommand{\textparenrightsuperior}{PU}{\9040\176}%* U+207E`  
 17378 `% U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior`  
 17379 `\DeclareTextCommand{\textnsuperior}{PU}{\9040\177}%* U+207F`  
 17380 `% U+2080 SUBSCRIPT ZERO; zeroinferior`  
 17381 `\DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}%* U+2080`  
 17382 `% U+2081 SUBSCRIPT ONE; oneinferior`  
 17383 `\DeclareTextCommand{\textoneinferior}{PU}{\9040\201}%* U+2081`  
 17384 `% U+2082 SUBSCRIPT TWO; twoinferior`  
 17385 `\DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}%* U+2082`  
 17386 `% U+2083 SUBSCRIPT THREE; threeminferior`  
 17387 `\DeclareTextCommand{\textthreeminferior}{PU}{\9040\203}%* U+2083`  
 17388 `% U+2084 SUBSCRIPT FOUR; fourinferior`  
 17389 `\DeclareTextCommand{\textfourinferior}{PU}{\9040\204}%* U+2084`  
 17390 `% U+2085 SUBSCRIPT FIVE; fiveinferior`  
 17391 `\DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}%* U+2085`  
 17392 `% U+2086 SUBSCRIPT SIX; sixinferior`

17393 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}%\* U+2086  
17394 % U+2087 SUBSCRIPT SEVEN; seveninferior  
17395 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}%\* U+2087  
17396 % U+2088 SUBSCRIPT EIGHT; eightinferior  
17397 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}%\* U+2088  
17398 % U+2089 SUBSCRIPT NINE; nineinferior  
17399 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}%\* U+2089  
17400 % U+208A SUBSCRIPT PLUS SIGN  
17401 \DeclareTextCommand{\textplusinferior}{PU}{\9040\212}%\* U+208A  
17402 % U+208B SUBSCRIPT MINUS  
17403 \DeclareTextCommand{\textminusinferior}{PU}{\9040\213}%\* U+208B  
17404 % U+208C SUBSCRIPT EQUALS SIGN  
17405 \DeclareTextCommand{\textequalsinferior}{PU}{\9040\214}%\* U+208C  
17406 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior  
17407 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}%\* U+208D  
17408 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior  
17409 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}%\* U+208E  
17410 % U+2090 LATIN SUBSCRIPT SMALL LETTER A  
17411 \DeclareTextCommand{\textainferior}{PU}{\9040\220}%\* U+2090  
17412 % U+2091 LATIN SUBSCRIPT SMALL LETTER E  
17413 \DeclareTextCommand{\texteinferior}{PU}{\9040\221}%\* U+2091  
17414 % U+2092 LATIN SUBSCRIPT SMALL LETTER O  
17415 \DeclareTextCommand{\textoinferior}{PU}{\9040\222}%\* U+2092  
17416 % U+2093 LATIN SUBSCRIPT SMALL LETTER X  
17417 \DeclareTextCommand{\textxinferior}{PU}{\9040\223}%\* U+2093  
17418 % U+2094 LATIN SUBSCRIPT SMALL LETTER SCHWA  
17419 \DeclareTextCommand{\textschwainferior}{PU}{\9040\224}%\* U+2094  
17420 % U+2095 LATIN SUBSCRIPT SMALL LETTER H  
17421 \DeclareTextCommand{\texthinferior}{PU}{\9040\225}%\* U+2095  
17422 % U+2096 LATIN SUBSCRIPT SMALL LETTER K  
17423 \DeclareTextCommand{\textkinferior}{PU}{\9040\226}%\* U+2096  
17424 % U+2097 LATIN SUBSCRIPT SMALL LETTER L  
17425 \DeclareTextCommand{\textlinferior}{PU}{\9040\227}%\* U+2097  
17426 % U+2098 LATIN SUBSCRIPT SMALL LETTER M  
17427 \DeclareTextCommand{\textminferior}{PU}{\9040\230}%\* U+2098  
17428 % U+2099 LATIN SUBSCRIPT SMALL LETTER N  
17429 \DeclareTextCommand{\textninferior}{PU}{\9040\231}%\* U+2099  
17430 % U+209A LATIN SUBSCRIPT SMALL LETTER P  
17431 \DeclareTextCommand{\textpinferior}{PU}{\9040\232}%\* U+209A  
17432 % U+209B LATIN SUBSCRIPT SMALL LETTER S  
17433 \DeclareTextCommand{\textsinferior}{PU}{\9040\233}%\* U+209B  
17434 % U+209C LATIN SUBSCRIPT SMALL LETTER T  
17435 \DeclareTextCommand{\texttinferior}{PU}{\9040\234}%\* U+209C

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

17436 % U+20A1 COLON SIGN; \*colonmonetary, colonsign  
17437 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1  
17438 % U+20A4 LIRA SIGN; afi08941, \*lira  
17439 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4  
17440 % U+20A6 NAIRA SIGN  
17441 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6  
17442 % U+20A7 PESETA SIGN; peseta  
17443 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7  
17444 % U+20A9 WON SIGN; won

17445 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9  
17446 % U+20AB DONG SIGN; dong  
17447 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB  
17448 % U+20AC EURO SIGN; \*Euro, euro  
17449 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC  
17450 %\* \texteuro -> \EurDig (marvosym)  
17451 %\* \texteuro -> \EURdig (marvosym)  
17452 %\* \texteuro -> \EurHv (marvosym)  
17453 %\* \texteuro -> \EURhv (marvosym)  
17454 %\* \texteuro -> \EurCr (marvosym)  
17455 %\* \texteuro -> \EURcr (marvosym)  
17456 %\* \texteuro -> \EurTm (marvosym)  
17457 %\* \texteuro -> \EURtm (marvosym)  
17458 %\* \texteuro -> \Eur (marvosym)  
17459 % U+20B0 GERMAN PENNY SIGN; \Deleatur (marvosym)  
17460 \DeclareTextCommand{\textDeleatur}{PU}{\9040\260}%\* U+20B0  
17461 %\* \textDeleatur -> \Denarius (marvosym)  
17462 % U+20B1 PESO SIGN  
17463 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1  
17464 % U+20B2 GUARANI SIGN  
17465 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

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

17466 % U+2103 DEGREE CELSIUS; centigrade  
17467 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103  
17468 % U+210F PLANCK CONSTANT OVER TWO PI; \hslash (AmS)  
17469 \DeclareTextCommand{\texthslash}{PU}{\9041\017}%\* U+210F  
17470 % U+2111 BLACK-LETTER CAPITAL I (=imaginary part); Ifraktur; \Im (LaTeX)  
17471 \DeclareTextCommand{\textIm}{PU}{\9041\021}%\* U+2111  
17472 % U+2113 SCRIPT SMALL L (=ell, liter); afii61289, lsquare; \ell (LaTeX)  
17473 \DeclareTextCommand{\textell}{PU}{\9041\023}%\* U+2113  
17474 % U+2116 NUMERO SIGN; \*afii61352, numero  
17475 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116  
17476 % U+2117 SOUND RECORDING COPYRIGHT  
17477 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117  
17478 % U+2118 SCRIPT CAPITAL P (=Weierstrass elliptic function);  
17479 % weierstrass; \wp (LaTeX)  
17480 \DeclareTextCommand{\textwpp}{PU}{\9041\030}%\* U+2118  
17481 % U+211C BLACK-LETTER CAPITAL R (=real part); Rfraktur; \Re (LaTeX)  
17482 \DeclareTextCommand{\textRe}{PU}{\9041\034}%\* U+211C  
17483 % U+211E PRESCRIPTION TAKE; prescription  
17484 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E  
17485 % U+2120 SERVICE MARK  
17486 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120  
17487 % U+2122 TRADE MARK SIGN; trademark  
17488 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122  
17489 % U+2126 OHM SIGN; Ohm, Omega  
17490 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126  
17491 % U+2127 INVERTED OHM SIGN  
17492 \DeclareTextCommand{\textmho}{PU}{\9041\047}%\* U+2127  
17493 %\* \textmho -> \agemO (wasysym)  
17494 % U+2129 TURNED GREEK SMALL LETTER IOTA; \riota (phonetic)  
17495 \DeclareTextCommand{\textriota}{PU}{\9041\051}%\* U+2129

17496 % U+212B ANGSTROM SIGN; angstrom  
 17497 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B  
 17498 % U+212E ESTIMATED SYMBOL; estimated  
 17499 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E  
 17500 %\* \textestimated -> \EstimatedSign (marvosym)  
 17501 %\* \textestimated -> \Ecommerce (marvosym)  
 17502 % U+2132 TURNED CAPITAL F; \Finv (AmS)  
 17503 \DeclareTextCommand{\textFinv}{PU}{\9041\062}%\* U+2132  
 17504 % U+2135 ALEF SYMBOL; aleph; \aleph (LaTeX)  
 17505 \DeclareTextCommand{\textaleph}{PU}{\9041\065}%\* U+2135  
 17506 % U+2136 BET SYMBOL; \beth (AmS, MnSymbol)  
 17507 \DeclareTextCommand{\textbeth}{PU}{\9041\066}%\* U+2136  
 17508 % U+2137 GIMEL SYMBOL; \gimel (AmS, MnSymbol)  
 17509 \DeclareTextCommand{\textgimel}{PU}{\9041\067}%\* U+2137  
 17510 % U+2138 DALET SYMBOL; \daleth (AmS, MnSymbol)  
 17511 \DeclareTextCommand{\textdaleth}{PU}{\9041\070}%\* U+2138  
 17512 % U+213B FACSIMILE SIGN; \fax (marvosym)  
 17513 \DeclareTextCommand{\textfax}{PU}{\9041\073}%\* U+213B  
 17514 % U+2141 TURNED SANS-SERIF CAPITAL G (=game); \Game  
 17515 \DeclareTextCommand{\textGame}{PU}{\9041\101}%\* U+2141  
 17516 % U+214B TURNED AMPERSAND; \invamp (txfonts/pxfonts)  
 17517 \DeclareTextCommand{\textinvamp}{PU}{\9041\113}% U+214B  
 17518 %\* \textinvamp -> \bindnasrepma (stmaryrd)  
 17519 %\* \textinvamp -> \parr (cml)

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

17520 % U+2150 VULGAR FRACTION ONE SEVENTH  
 17521 \DeclareTextCommand{\textoneseventh}{PU}{\9041\120}% U+2150  
 17522 % U+2151 VULGAR FRACTION ONE NINTH  
 17523 \DeclareTextCommand{\textoneninth}{PU}{\9041\121}% U+2151  
 17524 % U+2152 VULGAR FRACTION ONE TENTH  
 17525 \DeclareTextCommand{\textonetenth}{PU}{\9041\122}% U+2152  
 17526 % U+2153 VULGAR FRACTION ONE THIRD; onethird  
 17527 \DeclareTextCommand{\textonethird}{PU}{\9041\123}% U+2153  
 17528 % U+2154 VULGAR FRACTION TWO THIRDS; twothirds  
 17529 \DeclareTextCommand{\texttwothirds}{PU}{\9041\124}% U+2154  
 17530 % U+2155 VULGAR FRACTION ONE FIFTH  
 17531 \DeclareTextCommand{\textonefifth}{PU}{\9041\125}% U+2155  
 17532 % U+2156 VULGAR FRACTION TWO FIFTHS  
 17533 \DeclareTextCommand{\texttwofifths}{PU}{\9041\126}% U+2156  
 17534 % U+2157 VULGAR FRACTION THREE FIFTHS  
 17535 \DeclareTextCommand{\textthreefifths}{PU}{\9041\127}% U+2157  
 17536 % U+2158 VULGAR FRACTION FOUR FIFTHS  
 17537 \DeclareTextCommand{\textfourfifths}{PU}{\9041\130}% U+2158  
 17538 % U+2159 VULGAR FRACTION ONE SIXTH  
 17539 \DeclareTextCommand{\textonesixth}{PU}{\9041\131}% U+2159  
 17540 % U+215A VULGAR FRACTION FIVE SIXTHS  
 17541 \DeclareTextCommand{\textfivesixths}{PU}{\9041\132}% U+215A  
 17542 % U+215B VULGAR FRACTION ONE EIGHTH; oneeighth  
 17543 \DeclareTextCommand{\textoneeighth}{PU}{\9041\133}% U+215B  
 17544 % U+215C VULGAR FRACTION THREE EIGHTHS; threeeighths  
 17545 \DeclareTextCommand{\textthreeeighths}{PU}{\9041\134}% U+215C  
 17546 % U+215D VULGAR FRACTION FIVE EIGHTHS; fiveeighths  
 17547 \DeclareTextCommand{\textfiveeighths}{PU}{\9041\135}% U+215D



17548 % U+215E VULGAR FRACTION SEVEN EIGHTHS; seveneighths  
17549 \DeclareTextCommand{\textseveneighths}{PU}{\9041\136}% U+215E  
17550 % U+2184 LATIN SMALL LETTER REVERSED C  
17551 \DeclareTextCommand{\textrevc}{PU}{\9041\204}% U+2184  
17552 % U+2189 VULGAR FRACTION ZERO THIRDS  
17553 \DeclareTextCommand{\textzer thirds}{PU}{\9041\211}% U+2189

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

17554 % U+2190 LEFTWARDS ARROW; arrowleft  
17555 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}%\* U+2190  
17556 % U+2191 UPWARDS ARROW; arrowup  
17557 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}%\* U+2191  
17558 % U+2192 RIGHTWARDS ARROW; arrowright  
17559 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}%\* U+2192  
17560 %\* \textrightarrow -> \MVRightArrow (marvosym)  
17561 %\* \textrightarrow -> \MVRightarrow (marvosym)  
17562 % U+2193 DOWNWARDS ARROW; arrowdown  
17563 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}%\* U+2193  
17564 %\* \textdownarrow -> \MVAArrowDown (marvosym)  
17565 %\* \textdownarrow -> \Force (marvosym)  
17566 % U+2194 LEFT RIGHT ARROW; arrowboth; \leftrightharrow (LaTeX)  
17567 \DeclareTextCommand{\textleftrightharrow}{PU}{\9041\224}%\* U+2194  
17568 % U+2195 UP DOWN ARROW; arrowupdn; \updownarrow (LaTeX)  
17569 \DeclareTextCommand{\textupdownarrow}{PU}{\9041\225}%\* U+2195  
17570 % U+2196 NORTH WEST ARROW; arrowupleft; \nwarrow (LaTeX)  
17571 \DeclareTextCommand{\textnwarrow}{PU}{\9041\226}%\* U+2196  
17572 % U+2197 NORTH EAST ARROW; arrowupright; \nearrow (LaTeX)  
17573 \DeclareTextCommand{\textnearrow}{PU}{\9041\227}%\* U+2197  
17574 %\* \textnearrow -> \textglobrise (tipa)  
17575 % U+2198 SOUTH EAST ARROW; arrowdownright; \searrow (LaTeX)  
17576 \DeclareTextCommand{\textsearrow}{PU}{\9041\230}%\* U+2198  
17577 %\* \textsearrow -> \textglobfall (tipa)  
17578 % U+2199 SOUTH WEST ARROW; arrowdownleft; \swarrow (LaTeX)  
17579 \DeclareTextCommand{\textswarrow}{PU}{\9041\231}%\* U+2199  
17580 % U+219A LEFTWARDS ARROW WITH STROKE; \leftarrow (AmS)  
17581 \DeclareTextCommand{\textnleftarrow}{PU}{\9041\232}%\* U+219A  
17582 % U+219B RIGHTWARDS ARROW WITH STROKE; \rightarrow (AmS)  
17583 \DeclareTextCommand{\textnrightarrow}{PU}{\9041\233}%\* U+219B  
17584 % U+219E LEFTWARDS TWO HEADED ARROW; \twoheadleftarrow (AmS)  
17585 \DeclareTextCommand{\texttwoheadleftarrow}{PU}{\9041\236}%\* U+219E  
17586 % \twoheadleftarrow (txfonts/pxfonts)  
17587 \DeclareTextCommand{\textntwoheadleftarrow}{PU}{\9041\236\83\070}%\* U+219E U+0338  
17588 % U+219F UPWARDS TWO HEADED ARROW; \twoheaduparrow (MnSymbol)  
17589 \DeclareTextCommand{\texttwoheaduparrow}{PU}{\9041\237}%\* U+219F  
17590 % U+21A0 RIGHTWARDS TWO HEADED ARROW;  
17591 % \twoheadrightarrow (AmS)  
17592 \DeclareTextCommand{\texttwoheadrightarrow}{PU}{\9041\240}%\* U+21A0  
17593 % \twoheadrightarrow (txfonts/pxfonts)  
17594 \DeclareTextCommand{\textntwoheadrightarrow}{PU}{\9041\240\83\070}%\* U+21A0 U+0338  
17595 % U+21A1 DOWNWARDS TWO HEADED ARROW; \twoheaddownarrow (Mn-  
Symbol)  
17596 \DeclareTextCommand{\texttwoheaddownarrow}{PU}{\9041\241}%\* U+21A1  
17597 % U+21A2 LEFTWARDS ARROW WITH TAIL; \leftarrowtail (AmS)  
17598 \DeclareTextCommand{\textleftarrowtail}{PU}{\9041\242}%\* U+21A2

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17599 % U+21A3 RIGHTWARDS ARROW WITH TAIL; \rightarrowtail (AmS)
17600 \DeclareTextCommand{\textrightarrowtail}{PU}{\9041\243}%* U+21A3
17601 % U+21A6 RIGHTWARDS ARROW FROM BAR; \mapsto (LaTeX)
17602 \DeclareTextCommand{\textmapsto}{PU}{\9041\246}%* U+21A6
17603 % U+21A9 LEFTWARDS ARROW WITH HOOK; \hookleftarrow (LaTeX)
17604 \DeclareTextCommand{\texthookleftarrow}{PU}{\9041\251}%* U+21A9
17605 % U+21AA RIGHTWARDS ARROW WITH HOOK; \hookrightarrow (LaTeX)
17606 \DeclareTextCommand{\texthookrightarrow}{PU}{\9041\252}%* U+21AA
17607 % U+21AB LEFTWARDS ARROW WITH LOOP; \looparrowleft (AmS)
17608 \DeclareTextCommand{\textlooparrowleft}{PU}{\9041\253}%* U+21AB
17609 % U+21AC RIGHTWARDS ARROW WITH LOOP; \looparrowright (AmS)
17610 \DeclareTextCommand{\textlooparrowright}{PU}{\9041\254}%* U+21AC
17611 % U+21AE LEFT RIGHT ARROW WITH STROKE; \leftrightarrow (AmS)
17612 \DeclareTextCommand{\textnleftrightarrow}{PU}{\9041\256}%* U+21AE
17613 % U+21AF DOWNWARDS ZIGZAG ARROW; \lightning (stmaryrd)
17614 \DeclareTextCommand{\textlightning}{PU}{\9041\257}%* U+21AF
17615 %* \textlightning -> \Lightning (marvosym)
17616 % U+21B5 DOWNWARDS ARROW WITH CORNER LEFTWARDS;
17617 % \dls (mathabx)
17618 \DeclareTextCommand{\textdls}{PU}{\9041\265}%* U+21B5
17619 % U+21B6 ANTICLOCKWISE TOP SEMICIRCLE ARROW;
17620 % \curvearrowleft (AmS)
17621 \DeclareTextCommand{\textcurvearrowleft}{PU}{\9041\266}%* U+21B6
17622 % U+21B7 CLOCKWISE TOP SEMICIRCLE ARROW; \curvearrowright (AmS)
17623 \DeclareTextCommand{\textcurvearrowright}{PU}{\9041\267}%* U+21B7
17624 % U+21BC LEFTWARDS HARPOON WITH BARB UPWARDS; harpoonleft-
barbup;
17625 % \leftharpoonup (LaTeX)
17626 \DeclareTextCommand{\textleftharpoonup}{PU}{\9041\274}%* U+21BC
17627 % U+21BD LEFTWARDS HARPOON WITH BARB DOWNWARDS;
17628 % \leftharpoondown (LaTeX)
17629 \DeclareTextCommand{\textleftharpoondown}{PU}{\9041\275}%* U+21BD
17630 % U+21BE UPWARDS HARPOON WITH BARB RIGHTWARDS;
17631 % \upharpoonright (AmS)
17632 \DeclareTextCommand{\textupharpoonright}{PU}{\9041\276}%* U+21BE
17633 % U+21BF UPWARDS HARPOON WITH BARB LEFTWARDS;
17634 % \upharpoonleft (AmS)
17635 \DeclareTextCommand{\textupharpoonleft}{PU}{\9041\277}%* U+21BF
17636 % U+21C0 RIGHTWARDS HARPOON WITH BARB UPWARDS; harpoonright-
barbup
17637 % \rightharpoonup (LaTeX)
17638 \DeclareTextCommand{\textrightharpoonup}{PU}{\9041\300}%* U+21C0
17639 % U+21C1 RIGHTWARDS HARPOON WITH BARB DOWNWARDS;
17640 % \rightharpoondown (LaTeX)
17641 \DeclareTextCommand{\textrightharpoondown}{PU}{\9041\301}%* U+21C1
17642 % U+21C2 DOWNWARDS HARPOON WITH BARB RIGHTWARDS;
17643 % \downharpoonright (AmS)
17644 \DeclareTextCommand{\textdownharpoonright}{PU}{\9041\302}%* U+21C2
17645 % U+21C3 DOWNWARDS HARPOON WITH BARB LEFTWARDS;
17646 % \downharpoonleft (AmS)
17647 \DeclareTextCommand{\textdownharpoonleft}{PU}{\9041\303}%* U+21C3
17648 % U+21C4 RIGHTWARDS ARROW OVER LEFTWARDS ARROW;
17649 % \rightarrowoverleftarrow; \rightleftarrows (MnSymbol)
17650 \DeclareTextCommand{\textrightleftarrows}{PU}{\9041\304}%* U+21C4

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17651 % U+21C5 UPWARDS ARROW LEFTWARDS OF DOWNWARDS ARROW; arrowupleftofdown;  
17652 % \updownarrows (MnSymbol)  
17653 \DeclareTextCommand{\textupdownarrows}{PU}{\9041\305}%\* U+21C5  
17654 % U+21C6 LEFTWARDS ARROW OVER RIGHTWARDS ARROW; arrowleftoverright;  
17655 % \leftrightarrows (AmS)  
17656 \DeclareTextCommand{\textleftrightarrows}{PU}{\9041\306}%\* U+21C6  
17657 % U+21C7 LEFTWARDS PAIRED ARROWS; \leftleftarrows (AmS)  
17658 \DeclareTextCommand{\textleftleftarrows}{PU}{\9041\307}%\* U+21C7  
17659 % U+21C8 UPWARDS PAIRED ARROWS; \upuparrows (AmS)  
17660 \DeclareTextCommand{\textupuparrows}{PU}{\9041\310}%\* U+21C8  
17661 % U+21C9 RIGHTWARDS PAIRED ARROWS; \rightrightarrows (AmS)  
17662 \DeclareTextCommand{\texttrightrightarrows}{PU}{\9041\311}%\* U+21C9  
17663 % U+21CA DOWNWARDS PAIRED ARROWS; \downdownarrows (AmS)  
17664 \DeclareTextCommand{\textdowndownarrows}{PU}{\9041\312}%\* U+21CA  
17665 % U+21CB LEFTWARDS HARPOON OVER RIGHTWARDS HARPOON;  
17666 % \leftrightharpoons (AmS);  
17667 \DeclareTextCommand{\textleftrightharpoons}{PU}{\9041\313}%\* U+21CB  
17668 % U+21CC RIGHTWARDS HARPOON OVER LEFTWARDS HARPOON;  
17669 % \rightleftharpoons (LaTeX, AmS)  
17670 \DeclareTextCommand{\textrightleftharpoons}{PU}{\9041\314}%\* U+21CC  
17671 % U+21CD LEFTWARDS DOUBLE ARROW WITH STROKE; arrowleftdblstroke;  
17672 % \nLeftarrow (AmS)  
17673 \DeclareTextCommand{\textnLeftarrow}{PU}{\9041\315}%\* U+21CD  
17674 % U+21CE LEFT RIGHT DOUBLE ARROW WITH STROKE; \nLeftrightarrow (AmS)  
17675 \DeclareTextCommand{\textnLeftrightarrow}{PU}{\9041\316}%\* U+21CE  
17676 % U+21CF RIGHTWARDS DOUBLE ARROW WITH STROKE; arrowrightdblstroke;  
17677 % \nrightarrow (AmS)  
17678 \DeclareTextCommand{\textnrightarrow}{PU}{\9041\317}%\* U+21CF  
17679 % U+21D0 LEFTWARDS DOUBLE ARROW; arrowdblleft, arrowleftdbl;  
17680 % \Leftarrow (LaTeX)  
17681 \DeclareTextCommand{\textLeftarrow}{PU}{\9041\320}%\* U+21D0  
17682 % U+21D1 UPWARDS DOUBLE ARROW; arrowdblup; \Uparrow (LaTeX)  
17683 \DeclareTextCommand{\textUparrow}{PU}{\9041\321}%\* U+21D1  
17684 % U+21D2 RIGHTWARDS DOUBLE ARROW; arrowdblright, dblarrowright;  
17685 % \Rightarrow (LaTeX)  
17686 \DeclareTextCommand{\textRightarrow}{PU}{\9041\322}%\* U+21D2  
17687 %\* \textRightarrow -> \Conclusion (marvosym)  
17688 % U+21D3 DOWNWARDS DOUBLE ARROW; arrowdbl down; \Downarrow (LaTeX)  
17689 \DeclareTextCommand{\textDownarrow}{PU}{\9041\323}%\* U+21D3  
17690 % U+21D4 LEFT RIGHT DOUBLE ARROW; arrowdblboth;  
17691 % \Leftrightarrow (LaTeX)  
17692 \DeclareTextCommand{\textLeftrightarrow}{PU}{\9041\324}%\* U+21D4  
17693 %\* \textLeftrightarrow -> \Equivalence (marvosym)  
17694 % U+21D5 UP DOWN DOUBLE ARROW; \Updownarrow (LaTeX)  
17695 \DeclareTextCommand{\textUpdownarrow}{PU}{\9041\325}%\* U+21D5  
17696 % U+21D6 NORTH WEST DOUBLE ARROW; \Nwarrow (MnSymbol)  
17697 \DeclareTextCommand{\textNwarrow}{PU}{\9041\326}%\* U+21D6  
17698 % U+21D7 NORTH EAST DOUBLE ARROW; \Nearrow (MnSymbol)

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17699 \DeclareTextCommand{\textNearrow}{PU}{\9041\327}%* U+21D7
17700 % U+21D8 SOUTH EAST DOUBLE ARROW; \Searrow (MnSymbol)
17701 \DeclareTextCommand{\textSearrow}{PU}{\9041\330}%* U+21D8
17702 % U+21D9 SOUTH WEST DOUBLE ARROW; \Swarrow (MnSymbol)
17703 \DeclareTextCommand{\textSwarrow}{PU}{\9041\331}%* U+21D9
17704 % U+21DA LEFTWARDS TRIPLE ARROW; \Lleftarrow (AmS)
17705 \DeclareTextCommand{\textLleftarrow}{PU}{\9041\332}%* U+21DA
17706 % U+21DB RIGHTWARDS TRIPLE ARROW; \Rrightarrow (MnSymbol)
17707 \DeclareTextCommand{\textRrightarrow}{PU}{\9041\333}%* U+21DB
17708 % U+21DC LEFTWARDS SQUIGGLE ARROW; \leftsquigarrow (mathabx)
17709 \DeclareTextCommand{\textleftsquigarrow}{PU}{\9041\334}%* U+21DC
17710 % U+21DD RIGHTWARDS SQUIGGLE ARROW; \rightsquigarrow (mathabx)
17711 \DeclareTextCommand{\textright squigarrow}{PU}{\9041\335}%* U+21DD
17712 % U+21E0 LEFTWARDS DASHED ARROW; arrowdashleft;
17713 % \dashleftarrow (AmS)
17714 \DeclareTextCommand{\textdashleftarrow}{PU}{\9041\340}%* U+21E0
17715 %* \textdashleftarrow -> \dashedleftarrow (MnSymbol)
17716 % U+21E1 UPWARDS DASHED ARROW; arrowdashup; \dasheduparrow (Mn-
Symbol)
17717 \DeclareTextCommand{\textdasheduparrow}{PU}{\9041\341}%* U+21E1
17718 % U+21E2 RIGHTWARDS DASHED ARROW; arrowdashright; \dashrightarrow
(MnSymbol)
17719 \DeclareTextCommand{\textdashrightarrow}{PU}{\9041\342}%* U+21E2
17720 %* \textdashrightarrow -> \dashedrightarrow (MnSymbol)
17721 % U+21E3 DOWNWARDS DASHED ARROW; arrowdashdown; \dasheddownar-
row (MnSymbol)
17722 \DeclareTextCommand{\textdasheddownarrow}{PU}{\9041\343}%* U+21E3
17723 % U+21E8 RIGHTWARDS WHITE ARROW; \pointer (wasysym)
17724 \DeclareTextCommand{\textpointer}{PU}{\9041\350}%* U+21E8
17725 % U+21F5 DOWNWARDS ARROW LEFTWARDS OF UPWARDS ARROW;
17726 % \downuparrows (MnSymbol)
17727 \DeclareTextCommand{\textdownuparrows}{PU}{\9041\365}%* U+21F5
17728 % U+21FD LEFTWARDS OPEN-HEADED ARROW; \leftarrowtriangle (stmaryrd)
17729 \DeclareTextCommand{\textleftarrowtriangle}{PU}{\9041\375}%* U+21FD
17730 % U+21FE RIGHTWARDS OPEN-HEADED ARROW; \rightarrowtriangle (stmaryrd)
17731 \DeclareTextCommand{\textrightarrowtriangle}{PU}{\9041\376}%* U+21FE
17732 % U+21FF LEFT RIGHT OPEN-HEADED ARROW; \leftrightarrowtriangle
(stmaryrd)
17733 \DeclareTextCommand{\textleftrightarrowtriangle}{PU}{\9041\377}%* U+21FF

```

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

```

17734 % U+2200 FOR ALL; forall; \forall (LaTeX)
17735 \DeclareTextCommand{\textforall}{PU}{\9042\000}%* U+2200
17736 % U+2201 COMPLEMENT; \complement (AmS)
17737 \DeclareTextCommand{\textcomplement}{PU}{\9042\001}%* U+2201
17738 % U+2202 PARTIAL DIFFERENTIAL; partialdiff; \partial (LaTeX)
17739 \DeclareTextCommand{\textpartial}{PU}{\9042\002}%* U+2202
17740 % U+2203 THERE EXISTS; existential; \exists (LaTeX)
17741 \DeclareTextCommand{\textexists}{PU}{\9042\003}%* U+2203
17742 % U+2204 THERE DOES NOT EXIST; \nexists (AmS)
17743 \DeclareTextCommand{\textnexists}{PU}{\9042\004}%* U+2204
17744 % U+2205 EMPTY SET; emptyset; \emptyset (LaTeX), \varnothing (AmS)
17745 \DeclareTextCommand{\textemptyset}{PU}{\9042\005}%* U+2205
17746 %* \textemptyset -> \varnothing (AmS)

```

17747 % U+2206 INCREMENT; increment, Deta;  $\triangle$  (LaTeX)  
17748 \DeclareTextCommand{\texttriangle}{PU}{\9042\006}%\* U+2206  
17749 % U+2207 NABLA; nabla, gradient;  $\nabla$  (LaTeX)  
17750 \DeclareTextCommand{\textnabla}{PU}{\9042\007}%\* U+2207  
17751 % U+2208 ELEMENT OF; element;  $\in$  (LaTeX)  
17752 \DeclareTextCommand{\textin}{PU}{\9042\010}%\* U+2208  
17753 % U+2209 NOT AN ELEMENT OF; notelement, notelementof;  $\notin$  (LaTeX)  
17754 \DeclareTextCommand{\textnotin}{PU}{\9042\011}%\* U+2209  
17755 % U+220A SMALL ELEMENT OF;  $\smallin$  (mathdesign)  
17756 \DeclareTextCommand{\textsmallin}{PU}{\9042\012}%\* U+220A  
17757 % U+220B CONTAINS AS MEMBER; suchthat;  $\ni$  (LaTeX)  
17758 \DeclareTextCommand{\textni}{PU}{\9042\013}%\* U+220B  
17759 %\* \textni -> \owns (mathabx)  
17760 % U+220C DOES NOT CONTAIN AS MEMBER;  $\notown$  (mathabx)  
17761 \DeclareTextCommand{\textnotowner}{PU}{\9042\014}%\* U+220C  
17762 %\* \textnotowner -> \notni (txfonts/pxfonts)  
17763 % U+220D SMALL CONTAINS AS MEMBER;  $\smallowns$  (mathdesign)  
17764 \DeclareTextCommand{\textsmallowns}{PU}{\9042\015}%\* U+220D  
17765 % U+220F N-ARY PRODUCT;  $\prod$  (LaTeX)  
17766 \DeclareTextCommand{\textprod}{PU}{\9042\017}%\* U+220F  
17767 % U+2210 N-ARY COPRODUCT;  $\amalg$  (LaTeX)  
17768 \DeclareTextCommand{\textamalg}{PU}{\9042\020}%\* U+2210  
17769 % U+2211 N-ARY SUMMATION; summation;  $\sum$  (LaTeX)  
17770 \DeclareTextCommand{\textsum}{PU}{\9042\021}%\* U+2211  
17771 % U+2212 MINUS SIGN; minus  
17772 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212  
17773 % U+2213 MINUS-OR-PLUS SIGN; minusplus;  $\mp$  (LaTeX)  
17774 \DeclareTextCommand{\textmp}{PU}{\9042\023}%\* U+2213  
17775 % U+2214 DOT PLUS;  $\dotplus$  (AmS)  
17776 \DeclareTextCommand{\textdotplus}{PU}{\9042\024}%\* U+2214  
17777 % U+2215 DIVISION SLASH; divisionslash;  $\Divides$  (marvosym)  
17778 \DeclareTextCommand{\textDivides}{PU}{\9042\025}%\* U+2215  
17779 % \DividesNot (marvosym)  
17780 \DeclareTextCommand{\textDividesNot}{PU}{\9042\025\9040\322}%\* U+2215 U+20D2  
17781 % U+2216 SET MINUS;  $\setminus$  (LaTeX)  
17782 \DeclareTextCommand{\textsetminus}{PU}{\9042\026}%\* U+2216  
17783 % U+2217 ASTERISK OPERATOR; asteriskmath;  $\ast$  (LaTeX)  
17784 \DeclareTextCommand{\textast}{PU}{\9042\027}%\* U+2217  
17785 % U+2218 RING OPERATOR;  $\circ$  (LaTeX)  
17786 \DeclareTextCommand{\textcirc}{PU}{\9042\030}%\* U+2218  
17787 % U+2219 BULLET OPERATOR; bulletoperator;  $\bullet$  (LaTeX)  
17788 \DeclareTextCommand{\textbulletoperator}{PU}{\9042\031}% U+2219  
17789 % U+221A SQUARE ROOT; radical  
17790 \DeclareTextCommand{\textsqrt}{PU}{\9042\032}%\* U+221A  
17791 % U+221D PROPORTIONAL TO; proportional;  $\propto$  (LaTeX)  
17792 \DeclareTextCommand{\textpropto}{PU}{\9042\035}%\* U+221D  
17793 %\* \textpropto -> \varprop (wasysym)  
17794 % U+221E INFINITY; infinity;  $\infty$  (LaTeX)  
17795 \DeclareTextCommand{\textinfty}{PU}{\9042\036}%\* U+221E  
17796 % U+2220 ANGLE; angle;  $\angle$  (LaTeX)  
17797 \DeclareTextCommand{\textangle}{PU}{\9042\040}%\* U+2220  
17798 % U+2221 MEASURED ANGLE;  $\measuredangle$  (mathabx, MnSymbol)  
17799 \DeclareTextCommand{\textmeasuredangle}{PU}{\9042\041}%\* U+2221  
18000 % U+2222 SPHERICAL ANGLE;  $\sphericalangle$  (AmS)

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17801 \DeclareTextCommand{\textsphericalangle}{PU}{\9042\042}%* U+2222
17802 %* \textsphericalangle -> \varangle (wasysym)
17803 %* \textsphericalangle -> \Anglesign (marvosym)
17804 %* \textsphericalangle -> \AngleSign (marvosym)
17805 % U+2223 DIVIDES; divides; \mid (LaTeX)
17806 \DeclareTextCommand{\textmid}{PU}{\9042\043}%* U+2223
17807 % U+2224 DOES NOT DIVIDE; \nmid (AmS)
17808 \DeclareTextCommand{\textnmid}{PU}{\9042\044}%* U+2224
17809 %* \textnmid -> \notdivides (mathabx)
17810 % U+2225 PARALLEL TO; parallel; \parallel (LaTeX)
17811 \DeclareTextCommand{\textparallel}{PU}{\9042\045}%* U+2225
17812 % U+2226 NOT PARALLEL TO; notparallel; \nparallel (AmS)
17813 \DeclareTextCommand{\textnparallel}{PU}{\9042\046}%* U+2226
17814 %* \textnparallel -> nUpdownline (MnSymbol)
17815 % U+2227 LOGICAL AND; logicaland; \wedge (LaTeX)
17816 \DeclareTextCommand{\textwedge}{PU}{\9042\047}%* U+2227
17817 % \owedge (stmaryrd)
17818 \DeclareTextCommand{\textowedge}{PU}{\9042\047\9040\335}%* U+2227 U+20DD
17819 %* \textowedge -> \varowedge (stmaryrd)
17820 % U+2228 LOGICAL OR; logicalor; \vee (LaTeX)
17821 \DeclareTextCommand{\textvee}{PU}{\9042\050}%* U+2228
17822 % \ovee (stmaryrd)
17823 \DeclareTextCommand{\textovee}{PU}{\9042\050\9040\335}%* U+2228 U+20DD
17824 %* \textovee -> \varovee (stmaryrd)
17825 % U+2229 INTERSECTION; intersection; \cap (LaTeX)
17826 \DeclareTextCommand{\textcap}{PU}{\9042\051}%* U+2229
17827 % U+222A UNION; union; \cup (LaTeX)
17828 \DeclareTextCommand{\textcup}{PU}{\9042\052}%* U+222A
17829 % U+222B INTEGRAL; integral; \int (LaTeX)
17830 \DeclareTextCommand{\textint}{PU}{\9042\053}%* U+222B
17831 %* \textint -> \varint (wasysym)
17832 % U+222C DOUBLE INTEGRAL; dblintegral; \iint (AmS)
17833 \DeclareTextCommand{\textiint}{PU}{\9042\054}%* U+222C
17834 % U+222D TRIPLE INTEGRAL; \iiint (AmS)
17835 \DeclareTextCommand{\textiiiint}{PU}{\9042\055}%* U+222D
17836 % U+222E CONTOUR INTEGRAL; contourintegral; \oint (LaTeX)
17837 \DeclareTextCommand{\textoint}{PU}{\9042\056}%* U+222E
17838 %* \textoint -> \varoint (wasysym)
17839 % U+222F SURFACE INTEGRAL; \oiint (wasysym)
17840 \DeclareTextCommand{\textoiint}{PU}{\9042\057}%* U+222F
17841 % U+2232 CLOCKWISE CONTOUR INTEGRAL;
17842 % \ointclockwise (txfonts/pxfonts)
17843 \DeclareTextCommand{\textointclockwise}{PU}{\9042\062}%* U+2232
17844 % U+2233 ANTICLOCKWISE CONTOUR INTEGRAL; \ointctrackwise (tx-
font/pxfonts)
17845 \DeclareTextCommand{\textointctrackwise}{PU}{\9042\063}%* U+2233
17846 % U+2234 THEREFORE; therefore; \therefore (AmS)
17847 \DeclareTextCommand{\texttherefore}{PU}{\9042\064}%* U+2234
17848 %* \texttherefore -> uptherefore (MnSymbol)
17849 % U+2235 BECAUSE; because; \because (AmS)
17850 \DeclareTextCommand{\textbecause}{PU}{\9042\065}%* U+2235
17851 %* \textbecause -> \downtherefore (MnSymbol)
17852 % U+2236 RATIO; \vdotdot (MnSymbol)
17853 \DeclareTextCommand{\textvdotdot}{PU}{\9042\066}%* U+2236

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17854 % U+2237 PROPORTION; \squaredots (MnSymbol)  
17855 \DeclareTextCommand{\textsquaredots}{PU}{\9042\067}%\* U+2237  
17856 % U+2238 DOT MINUS; \dotminus (MnSymbol)  
17857 \DeclareTextCommand{\textdotminus}{PU}{\9042\070}%\* U+2238  
17858 %\* \textdotminus -> \textdotdiv (mathabx)  
17859 % U+2239 EXCESS; \eqcolon (txfonts/pxfonts)  
17860 \DeclareTextCommand{\texteqcolon}{PU}{\9042\071}%\* U+2239  
17861 % U+223C TILDE OPERATOR; similar; \sim (LaTeX)  
17862 \DeclareTextCommand{\textsim}{PU}{\9042\074}%\* U+223C  
17863 %\* \textsim -> \AC (wasysym)  
17864 % U+223D REVERSED TILDE; reversedtilde; \backsim (AmS)  
17865 \DeclareTextCommand{\textbacksim}{PU}{\9042\075}%\* U+223D  
17866 % \nbacksim (txfonts/pxfonts)  
17867 \DeclareTextCommand{\textnbacksim}{PU}{\9042\075\83\070}%\* U+223D U+0338  
17868 % U+2240 WREATH PRODUCT; \wr (LaTeX)  
17869 \DeclareTextCommand{\textwr}{PU}{\9042\100}%\* U+2240  
17870 %\* \textwr -> \wreath (MnSymbol)  
17871 % U+2241 NOT TILDE; \nsim (AmS)  
17872 \DeclareTextCommand{\textnsim}{PU}{\9042\101}%\* U+2241  
17873 % U+2242 MINUS TILDE; \eqsim (MnSymbol)  
17874 \DeclareTextCommand{\texteqsim}{PU}{\9042\102}%\* U+2242  
17875 % \neqsim (MnSymbol)  
17876 \DeclareTextCommand{\textneqsim}{PU}{\9042\102\83\070}%\* U+2242 U+0338  
17877 % U+2243 ASYMPTOTICALLY EQUAL TO; asymptoticallyequal; \simeq (LaTeX)  
17878 \DeclareTextCommand{\textsimeq}{PU}{\9042\103}%\* U+2243  
17879 % U+2244 NOT ASYMPTOTICALLY EQUAL TO; \nsimeq (txfonts/pxfonts)  
17880 \DeclareTextCommand{\textnsimeq}{PU}{\9042\104}%\* U+2244  
17881 % U+2245 APPROXIMATELY EQUAL TO; approximatelyequal; \cong (LaTeX)  
17882 \DeclareTextCommand{\textcong}{PU}{\9042\105}%\* U+2245  
17883 % U+2247 NEITHER APPROXIMATELY NOR ACTUALLY EQUAL TO;  
17884 % \ncong (AmS)  
17885 \DeclareTextCommand{\textncong}{PU}{\9042\107}%\* U+2247  
17886 % U+2248 ALMOST EQUAL TO; approxequal; \approx (LaTeX)  
17887 \DeclareTextCommand{\textapprox}{PU}{\9042\110}%\* U+2248  
17888 % U+2249 NOT ALMOST EQUAL TO; \napprox (txfonts/pxfonts)  
17889 \DeclareTextCommand{\textnapprox}{PU}{\9042\111}%\* U+2249  
17890 %\* \textnapprox -> \nthickapprox (txfonts/pxfonts)  
17891 % U+224A ALMOST EQUAL OR EQUAL TO; \approxeq (AmS)  
17892 \DeclareTextCommand{\textapproxeq}{PU}{\9042\112}%\* U+224A  
17893 % \napproxeq (txfonts/pxfonts)  
17894 \DeclareTextCommand{\textnapproxeq}{PU}{\9042\112\83\070}%\* U+224A U+0338  
17895 % U+224B TRIPLE TILDE; \triple sim (MnSymbol)  
17896 \DeclareTextCommand{\texttriple sim}{PU}{\9042\113}%\* U+224B  
17897 %\* \texttriple sim -> \VHF (wasysym)  
17898 % \ntriple sim (MnSymbol)  
17899 \DeclareTextCommand{\textntriple sim}{PU}{\9042\113\83\070}%\* U+224B U+0338  
17900 % U+224C ALL EQUAL TO; allequal; \backcong (MnSymbol)  
17901 \DeclareTextCommand{\textbackcong}{PU}{\9042\114}%\* U+224C  
17902 % \nbackcong (MnSymbol)  
17903 \DeclareTextCommand{\textnbackcong}{PU}{\9042\114\83\070}%\* U+224C U+0338  
17904 % U+224D EQUIVALENT TO; \asymp (LaTeX)  
17905 \DeclareTextCommand{\textasymp}{PU}{\9042\115}%\* U+224D  
17906 % \nasymp (txfonts/pxfonts)

17907 \DeclareTextCommand{\textnasymp}{PU}{\9042\115\83\070}%\* U+224D U+0338  
17908 %\* \textnasymp -> \notasymp (mathabx)  
17909 % U+224E GEOMETRICALLY EQUIVALENT TO; \Bumpeq (AmS)  
17910 \DeclareTextCommand{\textBumpeq}{PU}{\9042\116}%\* U+224E  
17911 % \nBumpeq (txfonts/pxfonts)  
17912 \DeclareTextCommand{\textnBumpeq}{PU}{\9042\116\83\070}%\* U+224E U+0338  
17913 % U+224F DIFFERENCE BETWEEN; \bumpeq (AmS)  
17914 \DeclareTextCommand{\textbumpeq}{PU}{\9042\117}%\* U+224F  
17915 % \nbumpeq (txfonts/pxfonts)  
17916 \DeclareTextCommand{\textnbumpeq}{PU}{\9042\117\83\070}%\* U+224F U+0338  
17917 % U+2250 APPROACHES THE LIMIT; approaches; \doteq (LaTeX)  
17918 \DeclareTextCommand{\textdoteq}{PU}{\9042\120}%\* U+2250  
17919 % \ndoteq (MnSymbol)  
17920 \DeclareTextCommand{\textndoteq}{PU}{\9042\120\83\070}%\* U+2250 U+0338  
17921 % U+2251 GEOMETRICALLY EQUAL TO; geometricallyequal;  
17922 % \doteqdot (AmS)  
17923 \DeclareTextCommand{\textdoteqdot}{PU}{\9042\121}%\* U+2251  
17924 %\* \textdoteqdot -> \Doteq (MnSymbol)  
17925 % \nDoteq (MnSymbol)  
17926 \DeclareTextCommand{\textnDoteq}{PU}{\9042\121\83\070}%\* U+2251 U+0338  
17927 % U+2252 APPROXIMATELY EQUAL TO OR THE IMAGE OF; approx-  
qualorimage;  
17928 % \fallingdotseq (AmS)  
17929 \DeclareTextCommand{\textfallingdotseq}{PU}{\9042\122}%\* U+2252  
17930 % \nfallingdotseq (MnSymbol)  
17931 \DeclareTextCommand{\textnfallingdotseq}{PU}{\9042\122\83\070}%\* U+2252 U+0338  
17932 % U+2253 IMAGE OF OR APPROXIMATELY EQUAL TO; imageorapprox-  
imatelyequal;  
17933 % \risingdotseq (AmS)  
17934 \DeclareTextCommand{\textrisingdotseq}{PU}{\9042\123}%\* U+2253  
17935 % \nrisingdotseq (MnSymbol)  
17936 \DeclareTextCommand{\textnrisingdotseq}{PU}{\9042\123\83\070}%\* U+2253 U+0338  
17937 % U+2254 COLON EQUALS; \colonequals (colonequals)  
17938 \DeclareTextCommand{\textcolonequals}{PU}{\9042\124}%\* U+2254  
17939 % U+2255 EQUALS COLON; \equalscolon (colonequals)  
17940 \DeclareTextCommand{\textequalscolon}{PU}{\9042\125}%\* U+2255  
17941 % U+2256 RING IN EQUAL TO; \eqcirc (AmS)  
17942 \DeclareTextCommand{\texteqcirc}{PU}{\9042\126}%\* U+2256  
17943 % \neqcirc (MnSymbol)  
17944 \DeclareTextCommand{\textneqcirc}{PU}{\9042\126\83\070}%\* U+2256 U+0338  
17945 % U+2257 RING EQUAL TO; \circeq (AmS)  
17946 \DeclareTextCommand{\textcirceq}{PU}{\9042\127}%\* U+2257  
17947 % \ncirceq (MnSymbol)  
17948 \DeclareTextCommand{\textncirceq}{PU}{\9042\127\83\070}%\* U+2257 U+0338  
17949 % U+2259 ESTIMATES; \hateq (MnSymbol)  
17950 \DeclareTextCommand{\texthateq}{PU}{\9042\131}%\* U+2259  
17951 %\* \texthateq -> \corresponds (mathabx)  
17952 %\* \texthateq -> \Corresponds (marvosym)  
17953 % \nhateq (MnSymbol)  
17954 \DeclareTextCommand{\textnhateq}{PU}{\9042\131\83\070}%\* U+2259 U+0338  
17955 % U+225C DELTA EQUAL TO; \triangleeq (AmS)  
17956 \DeclareTextCommand{\texttriangleeq}{PU}{\9042\134}%\* U+225C  
17957 % U+2260 NOT EQUAL TO; notequal; \ne (LaTeX), \neq (LaTeX)  
17958 \DeclareTextCommand{\textneq}{PU}{\9042\140}%\* U+2260



17959 \DeclareTextCommand{\textne}{PU}{\9042\140}%\* U+2260  
17960 %\* \textneq -> \nequal (MnSymbol)  
17961 % U+2261 IDENTICAL TO; equivalence; \equiv (LaTeX)  
17962 \DeclareTextCommand{\textequiv}{PU}{\9042\141}%\* U+2261  
17963 %\* \textequiv -> \Congruent (marvosym)  
17964 % U+2262 NOT IDENTICAL TO; notidentical; \notequiv (txfonts/pxfonts)  
17965 \DeclareTextCommand{\textnequiv}{PU}{\9042\142}%\* U+2262  
17966 %\* \textnequiv -> \NotCongruent (marvosym)  
17967 %\* \textnequiv -> \notequiv (mathabx)  
17968 % U+2264 LESS-THAN OR EQUAL TO; lessequal; \le (LaTeX), \leq (LaTeX)  
17969 \DeclareTextCommand{\textleq}{PU}{\9042\144}%\* U+2264  
17970 \DeclareTextCommand{\textle}{PU}{\9042\144}%\* U+2264  
17971 %\* \textleq -> \LessOrEqual (marvosym)  
17972 % U+2265 GREATER-THAN OR EQUAL TO; greaterequal;  
17973 % \ge (LaTeX), \geq (LaTeX)  
17974 \DeclareTextCommand{\textgeq}{PU}{\9042\145}%\* U+2265  
17975 \DeclareTextCommand{\textge}{PU}{\9042\145}%\* U+2265  
17976 %\* \textgeq -> \LargerOrEqual (marvosym)  
17977 % U+2266 LESS-THAN OVER EQUAL TO; lessorequal; \leqq (AmS)  
17978 \DeclareTextCommand{\textleqq}{PU}{\9042\146}%\* U+2266  
17979 % \nleqq (txfonts/pxfonts)  
17980 \DeclareTextCommand{\textnleqq}{PU}{\9042\146\83\070}%\* U+2266 U+0338  
17981 % U+2267 GREATER-THAN OVER EQUAL TO; greaterorequal; \geqq (AmS)  
17982 \DeclareTextCommand{\textgeqq}{PU}{\9042\147}%\* U+2267  
17983 % \ngeqq (txfonts/pxfonts)  
17984 \DeclareTextCommand{\textngeqq}{PU}{\9042\147\83\070}%\* U+2267 U+0338  
17985 % U+2268 LESS-THAN BUT NOT EQUAL TO; \lneqq (AmS)  
17986 \DeclareTextCommand{\textlneqq}{PU}{\9042\150}%\* U+2268  
17987 % U+2269 GREATER-THAN BUT NOT EQUAL TO; \gneqq (AmS)  
17988 \DeclareTextCommand{\textgneqq}{PU}{\9042\151}%\* U+2269  
17989 % U+226A MUCH LESS-THAN; muchless; \ll (LaTeX)  
17990 \DeclareTextCommand{\textll}{PU}{\9042\152}%\* U+226A  
17991 % \nll (txfonts/pxfonts)  
17992 \DeclareTextCommand{\textnll}{PU}{\9042\152\83\070}%\* U+226A U+0338  
17993 % U+226B MUCH GREATER-THAN; muchgreater; \gg (LaTeX)  
17994 \DeclareTextCommand{\textgg}{PU}{\9042\153}%\* U+226B  
17995 % \ngg (txfonts/pxfonts)  
17996 \DeclareTextCommand{\textngg}{PU}{\9042\153\83\070}%\* U+226B U+0338  
17997 % U+226C BETWEEN; \between (AmS)  
17998 \DeclareTextCommand{\textbetween}{PU}{\9042\154}%\* U+226C  
17999 % U+226E NOT LESS-THAN; notless; \nless (AmS)  
18000 \DeclareTextCommand{\textnless}{PU}{\9042\156}%\* U+226E  
18001 % U+226F NOT GREATER-THAN; notgreater; \ngtr (AmS)  
18002 \DeclareTextCommand{\textngtr}{PU}{\9042\157}%\* U+226F  
18003 % U+2270 NEITHER LESS-THAN NOR EQUAL TO; notlessnorequal;  
18004 % \nleq (AmS)  
18005 \DeclareTextCommand{\textnleq}{PU}{\9042\160}%\* U+2270  
18006 % U+2271 NEITHER GREATER-THAN NOR EQUAL TO; notgreaternorequal;  
18007 \DeclareTextCommand{\textngeq}{PU}{\9042\161}%\* U+2271  
18008 % U+2272 LESS-THAN OR EQUIVALENT TO; lessorequivalent; \lesssim (AmS)  
18009 \DeclareTextCommand{\textlessim}{PU}{\9042\162}%\* U+2272  
18010 %\* \textlessim -> \apprle (wasysym)  
18011 % U+2273 GREATER-THAN OR EQUIVALENT TO; greaterorequivalent; \gtr-

sim (AmS)

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18012 \DeclareTextCommand{\textgtrsim}{PU}{\9042\163}%* U+2273
18013 %* \textgtrsim -> \apprge (wasysym)
18014 % U+2274 NEITHER LESS-THAN NOR EQUIVALENT TO; \nlessim (tx-
    fonts/pxfonts)
18015 \DeclareTextCommand{\textnlessim}{PU}{\9042\164}%* U+2274
18016 % U+2275 NEITHER GREATER-THAN NOR EQUIVALENT TO; \ngtrsim (tx-
    fonts/pxfonts)
18017 \DeclareTextCommand{\textngtrsim}{PU}{\9042\165}%* U+2275
18018 % U+2276 LESS-THAN OR GREATER-THAN; lessorgreater; \lessgtr (AmS)
18019 \DeclareTextCommand{\textlessgtr}{PU}{\9042\166}%* U+2276
18020 % U+2277 GREATER-THAN OR LESS-THAN; greaterorless; \gtrless (AmS)
18021 \DeclareTextCommand{\textgtrless}{PU}{\9042\167}%* U+2277
18022 % U+2278 NEITHER LESS-THAN NOR GREATER-THAN; \ngtrless (tx-
    fonts/pxfonts)
18023 \DeclareTextCommand{\textngtrless}{PU}{\9042\170}%* U+2278
18024 % U+2279 NEITHER GREATER-THAN NOR LESS-THAN; \nlessgtr (tx-
    fonts/pxfonts)
18025 \DeclareTextCommand{\textnlessgtr}{PU}{\9042\171}%* U+2279
18026 % U+227A PRECEDES; precedes; \prec (LaTeX)
18027 \DeclareTextCommand{\textprec}{PU}{\9042\172}%* U+227A
18028 % U+227B SUCCEEDS; succeeds; \succ (LaTeX)
18029 \DeclareTextCommand{\textsucc}{PU}{\9042\173}%* U+227B
18030 % U+227C PRECEDES OR EQUAL TO; \preccurlyeq (AmS)
18031 \DeclareTextCommand{\textpreccurlyeq}{PU}{\9042\174}%* U+227C
18032 % U+227D SUCCEEDS OR EQUAL TO; \succcurlyeq (AmS)
18033 \DeclareTextCommand{\textsuccurlyeq}{PU}{\9042\175}%* U+227D
18034 % U+227E PRECEDES OR EQUIVALENT TO; \precsim (AmS)
18035 \DeclareTextCommand{\textprecsim}{PU}{\9042\176}%* U+227E
18036 % \nprecsim (txfonts/pxfonts)
18037 \DeclareTextCommand{\textnprecsim}{PU}{\9042\176\83\070}%* U+227E U+0338
18038 % U+227F SUCCEEDS OR EQUIVALENT TO; \succsim (AmS)
18039 \DeclareTextCommand{\textsuccsim}{PU}{\9042\177}%* U+227F
18040 % \nsuccsim (txfonts/pxfonts)
18041 \DeclareTextCommand{\textnsuccsim}{PU}{\9042\177\83\070}%* U+227F U+0338
18042 % U+2280 DOES NOT PRECEDE; notprecedes; \nprec (AmS)
18043 \DeclareTextCommand{\textnprec}{PU}{\9042\200}%* U+2280
18044 % U+2281 DOES NOT SUCCEED; notsuccceeds; \nsucc (AmS)
18045 \DeclareTextCommand{\textnsucc}{PU}{\9042\201}%* U+2281
18046 % U+2282 SUBSET OF; propersubset; \subset (LaTeX)
18047 \DeclareTextCommand{\textsubset}{PU}{\9042\202}%* U+2282
18048 % U+2283 SUPERSET OF; propersuperset; \supset (LaTeX)
18049 \DeclareTextCommand{\textsupset}{PU}{\9042\203}%* U+2283
18050 % U+2284 NOT A SUBSET OF; notsubset; \nsubset (mathabx)
18051 \DeclareTextCommand{\textnsubset}{PU}{\9042\204}%* U+2284
18052 % U+2285 NOT A SUPERSET OF; notsuperset; \nsupset (mathabx)
18053 \DeclareTextCommand{\textnsupset}{PU}{\9042\205}%* U+2285
18054 % U+2286 SUBSET OF OR EQUAL TO; reflexsubset; \subseteq (LaTeX)
18055 \DeclareTextCommand{\textsubseteq}{PU}{\9042\206}%* U+2286
18056 % U+2287 SUPERSET OF OR EQUAL TO; reflexsuperset; \supseteq (LaTeX)
18057 \DeclareTextCommand{\textsupseteq}{PU}{\9042\207}%* U+2287
18058 % U+2288 NEITHER A SUBSET OF NOR EQUAL TO; \nsubseteq (AmS)
18059 \DeclareTextCommand{\textnsubseteq}{PU}{\9042\210}%* U+2288
18060 % U+2289 NEITHER A SUPERSET OF NOR EQUAL TO; \nsupseteq (AmS)

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18061 \DeclareTextCommand{\textnsupseteq}{PU}{\9042\211}%* U+2289
18062 % U+228A SUBSET OF WITH NOT EQUAL TO; subsetnotequal; \subset-
      neq (AmS)
18063 \DeclareTextCommand{\textsubsetneq}{PU}{\9042\212}%* U+228A
18064 % U+228B SUPERSET OF WITH NOT EQUAL TO; supersetnotequal; \supset-
      neq (AmS)
18065 \DeclareTextCommand{\textsupsetneq}{PU}{\9042\213}%* U+228B
18066 % U+228D MULTISSET MULTIPLICATION; \cupdot (MnSymbol)
18067 \DeclareTextCommand{\textcupdot}{PU}{\9042\215}%* U+228D
18068 % U+228E MULTISSET UNION; \cupplus (MnSymbol)
18069 \DeclareTextCommand{\textcupplus}{PU}{\9042\216}%* U+228E
18070 % U+228F SQUARE IMAGE OF; \sqsubset (latexsym, ...)
18071 \DeclareTextCommand{\textsqsubset}{PU}{\9042\217}%* U+228F
18072 % \nsqsubset (txfonts/pxfonts)
18073 \DeclareTextCommand{\textnsqsubset}{PU}{\9042\217\83\070}%* U+228F U+0338
18074 % U+2290 SQUARE ORIGINAL OF; \sqsupset (latexsym, ...)
18075 \DeclareTextCommand{\textsqsupset}{PU}{\9042\220}%* U+2290
18076 % \nsqsupset (txfonts/pxfonts)
18077 \DeclareTextCommand{\textnsqsupset}{PU}{\9042\220\83\070}%* U+2290 U+0338
18078 % U+2291 SQUARE IMAGE OF OR EQUAL TO; \sqsubseteq (LaTeX)
18079 \DeclareTextCommand{\textsqsubseteq}{PU}{\9042\221}%* U+2291
18080 % \nsqsubseteq (txfonts/pxfonts)
18081 \DeclareTextCommand{\textnsqsubseteq}{PU}{\9042\221\83\070}%* U+2291 U+0338
18082 % U+2292 SQUARE ORIGINAL OF OR EQUAL TO; \sqsupseteq (LaTeX)
18083 \DeclareTextCommand{\textsqsupseteq}{PU}{\9042\222}%* U+2292
18084 % \nsqsupseteq (txfonts/pxfonts)
18085 \DeclareTextCommand{\textnsqsupseteq}{PU}{\9042\222\83\070}%* U+2292 U+0338
18086 % U+2293 SQUARE CAP; \sqcap (LaTeX)
18087 \DeclareTextCommand{\textsqcap}{PU}{\9042\223}%* U+2293
18088 % U+2294 SQUARE CUP; \sqcup (LaTeX)
18089 \DeclareTextCommand{\textsqcup}{PU}{\9042\224}%* U+2294
18090 % U+2295 CIRCLED PLUS; circleplus; \oplus (LaTeX)
18091 \DeclareTextCommand{\textoplus}{PU}{\9042\225}%* U+2295
18092 %* \textoplus -> \varoplus (stmaryrd)
18093 % U+2296 CIRCLED MINUS; minuscircle; \ominus (LaTeX)
18094 \DeclareTextCommand{\textominus}{PU}{\9042\226}%* U+2296
18095 %* \textominus -> \varominus (stmaryrd)
18096 % U+2297 CIRCLED TIMES; circlemultiply; \otimes (LaTeX)
18097 \DeclareTextCommand{\textotimes}{PU}{\9042\227}%* U+2297
18098 %* \textotimes -> \varotimes (stmaryrd)
18099 % U+2298 CIRCLED DIVISION SLASH; \oslash (LaTeX)
18100 \DeclareTextCommand{\textoslash}{PU}{\9042\230}%* U+2298
18101 %* \textoslash -> \varoslash (stmaryrd)
18102 % U+2299 CIRCLED DOT OPERATOR; circle(d?)ot; \odot (LaTeX)
18103 \DeclareTextCommand{\textodot}{PU}{\9042\231}%* U+2299
18104 %* \textodot -> \varodot (stmaryrd)
18105 % U+229A CIRCLED RING OPERATOR; \circledcirc (AmS)
18106 \DeclareTextCommand{\textcircledcirc}{PU}{\9042\232}%* U+229A
18107 %* \textcircledcirc -> \ocirc (mathabx)
18108 %* \textcircledcirc -> \varocircle (stmaryrd)
18109 % U+229B CIRCLED ASTERISK OPERATOR; \circledast (AmS)
18110 \DeclareTextCommand{\textcircledast}{PU}{\9042\233}%* U+229B
18111 %* \textcircledast -> \varoast (stmaryrd)
18112 %* \textcircledast -> \oasterisk (mathabx)

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18113 % U+229D CIRCLED DASH; \circleddash (AmS)
18114 \DeclareTextCommand{\textcircleddash}{PU}{\9042\235}%* U+229D
18115 % U+229E SQUARED PLUS; \boxplus (AmS)
18116 \DeclareTextCommand{\textboxplus}{PU}{\9042\236}%* U+229E
18117 % U+229F SQUARED MINUS; \boxminus (AmS)
18118 \DeclareTextCommand{\textboxminus}{PU}{\9042\237}%* U+229F
18119 % U+22A0 SQUARED TIMES; \boxtimes (AmS)
18120 \DeclareTextCommand{\textboxtimes}{PU}{\9042\240}%* U+22A0
18121 % U+22A1 SQUARED DOT OPERATOR; \boxdot (AmS)
18122 \DeclareTextCommand{\textboxdot}{PU}{\9042\241}%* U+22A1
18123 % U+22A2 RIGHT TACK; \vdash (LaTeX)
18124 \DeclareTextCommand{\textvdash}{PU}{\9042\242}%* U+22A2
18125 %* \textvdash -> \rightvdash (MnSymbol)
18126 % U+22A3 LEFT TACK; tackleft; \dashv (LaTeX)
18127 \DeclareTextCommand{\textdashv}{PU}{\9042\243}%* U+22A3
18128 %* \textdashv -> \leftvdash (MnSymbol)
18129 % \ndashv (mathabx)
18130 \DeclareTextCommand{\textndashv}{PU}{\9042\243\83\070}%* U+22A3 U+0338
18131 %* \textndashv -> \leftvdash (MnSymbol)
18132 % U+22A4 DOWN TACK (=top); tackdown; \top (LaTeX)
18133 \DeclareTextCommand{\texttop}{PU}{\9042\244}%* U+22A4
18134 %* \texttop -> \downvdash (MnSymbol)
18135 % \ndownvdash (MnSymbol)
18136 \DeclareTextCommand{\textndownvdash}{PU}{\9042\244\83\070}%* U+22A4 U+0338
18137 % U+22A5 UP TACK (=base, bottom); \bot (LaTeX)
18138 \DeclareTextCommand{\textbot}{PU}{\9042\245}%* U+22A5
18139 %* \textbot -> \upvdash (MnSymbol)
18140 % \nupvdash (MnSymbol)
18141 \DeclareTextCommand{\textnupvdash}{PU}{\9042\245\83\070}%* U+22A5 U+0338
18142 %* \textnupvdash -> \nperp (MnSymbol)
18143 % U+22A8 TRUE; \vDash (AmS)
18144 \DeclareTextCommand{\textvDash}{PU}{\9042\250}%* U+22A8
18145 %* \textvDash -> \models (LaTeX)
18146 %* \textvDash -> \rightmodels (MnSymbol)
18147 % U+22A9 FORCES; \Vdash (AmS)
18148 \DeclareTextCommand{\textVdash}{PU}{\9042\251}%* U+22A9
18149 %* \textVdash -> \rightVdash (MnSymbol)
18150 % U+22AA TRIPLE VERTICAL BAR RIGHT TURNSTILE; \Vvdash (AmS)
18151 \DeclareTextCommand{\textVvdash}{PU}{\9042\252}%* U+22AA
18152 % \nVvdash (mathabx)
18153 \DeclareTextCommand{\textnVvdash}{PU}{\9042\252\83\070}%* U+22AA U+0338
18154 % U+22AB DOUBLE VERTICAL BAR DOUBLE RIGHT TURNSTILE;
18155 % \VDash (mathabx)
18156 \DeclareTextCommand{\textVDash}{PU}{\9042\253}%* U+22AB
18157 %* \textVDash -> \rightModels (MnSymbol)
18158 % U+22AC DOES NOT PROVE; \nvdash (AmS)
18159 \DeclareTextCommand{\textnvdash}{PU}{\9042\254}%* U+22AC
18160 %* \textnvdash -> \rightvdash (MnSymbol)
18161 % U+22AD NOT TRUE; \nvDash (AmS)
18162 \DeclareTextCommand{\textnvDash}{PU}{\9042\255}%* U+22AD
18163 %* \textnvDash -> \rightmodels (MnSymbol)
18164 %* \textnvDash -> \nmodels (MnSymbol)
18165 % U+22AE DOES NOT FORCE; \nVdash (txfonts/pxfonts)
18166 \DeclareTextCommand{\textnVdash}{PU}{\9042\256}%* U+22AE

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18167 %\* \textnVdash -> \nrightVdash (MnSymbol)  
18168 % U+22AF NEGATED DOUBLE VERTICAL BAR DOUBLE RIGHT TURN-  
STILE; \nVDash (AmS)  
18169 \DeclareTextCommand{\textnVDash}{PU}{\9042\257}%\* U+22AF  
18170 %\* \textnVDash -> \nrightModels (MnSymbol)  
18171 % U+22B2 NORMAL SUBGROUP OF; \lhd (latexsym, ...)  
18172 \DeclareTextCommand{\textlhd}{PU}{\9042\262}%\* U+22B2  
18173 %\* \textlhd -> \lessclosed (MnSymbol)  
18174 % U+22B3 CONTAINS AS NORMAL SUBGROUP; \rhd (latexsym, ...)  
18175 \DeclareTextCommand{\textrhd}{PU}{\9042\263}%\* U+22B3  
18176 %\* \textrhd -> \gtrclosed (MnSymbol)  
18177 % U+22B4 NORMAL SUBGROUP OF OR EQUAL TO; \unlhd (latexsym, ...)  
18178 \DeclareTextCommand{\textunlhd}{PU}{\9042\264}%\* U+22B4  
18179 %\* \textunlhd -> \leqclosed (MnSymbol)  
18180 %\* \textunlhd -> \trianglelefteq (MnSymbol)  
18181 % U+22B5 CONTAINS AS NORMAL SUBGROUP OR EQUAL TO; \unrhd (la-  
texsym, ...)  
18182 \DeclareTextCommand{\textunrhd}{PU}{\9042\265}%\* U+22B5  
18183 %\* \textunrhd -> \geqclosed (MnSymbol)  
18184 %\* \textunrhd -> \trianglerighteq (MnSymbol)  
18185 % U+22B6 ORIGINAL OF; \multimapdotbothA (txfonts/pxfonts)  
18186 \DeclareTextCommand{\textmultimapdotbothA}{PU}{\9042\266}%\* U+22B6  
18187 % U+22B7 IMAGE OF; \multimapdotbothB (txfonts/pxfonts)  
18188 \DeclareTextCommand{\textmultimapdotbothB}{PU}{\9042\267}%\* U+22B7  
18189 % U+22B8 MULTIMAP; \multimap (AmS, txfonts/pxfonts)  
18190 \DeclareTextCommand{\textmultimap}{PU}{\9042\270}%\* U+22B8  
18191 % U+22BB XOR; \veebar (AmS)  
18192 \DeclareTextCommand{\textveebar}{PU}{\9042\273}%\* U+22BB  
18193 % U+22BC NAND; \barwedge (mathabx)  
18194 \DeclareTextCommand{\textbarwedge}{PU}{\9042\274}%\* U+22BC  
18195 % U+22C6 STAR OPERATOR; \star (LaTeX)  
18196 \DeclareTextCommand{\textstar}{PU}{\9042\306}%\* U+22C6  
18197 % U+22C7 DIVISION TIMES; \divideontimes (AmS)  
18198 \DeclareTextCommand{\textdivideontimes}{PU}{\9042\307}%\* U+22C7  
18199 % U+22C8 BOWTIE; \bowtie (LaTeX)  
18200 \DeclareTextCommand{\textbowtie}{PU}{\9042\310}%\* U+22C8  
18201 %\* \textbowtie -> \Bowtie (wasysym)  
18202 % U+22C9 LEFT NORMAL FACTOR SEMIDIRECT PRODUCT; \ltimes (AmS)  
18203 \DeclareTextCommand{\textltimes}{PU}{\9042\311}%\* U+22C9  
18204 % U+22CA RIGHT NORMAL FACTOR SEMIDIRECT PRODUCT;  
18205 % \rtimes (AmS)  
18206 \DeclareTextCommand{\textrtimes}{PU}{\9042\312}%\* U+22CA  
18207 % U+22CB LEFT SEMIDIRECT PRODUCT; \leftthreetimes (AmS)  
18208 \DeclareTextCommand{\textleftthreetimes}{PU}{\9042\313}%\* U+22CB  
18209 % U+22CC RIGHT SEMIDIRECT PRODUCT; \rightthreetimes (AmS)  
18210 \DeclareTextCommand{\textrightthreetimes}{PU}{\9042\314}%\* U+22CC  
18211 % U+22CD REVERSED TILDE EQUALS; \backsimeq (AmS)  
18212 \DeclareTextCommand{\textbacksimeq}{PU}{\9042\315}%\* U+22CD  
18213 % \nbacksimeq (txfonts/pxfonts)  
18214 \DeclareTextCommand{\textnbacksimeq}{PU}{\9042\315\83\070}%\* U+22CD U+0338  
18215 % U+22CE CURLY LOGICAL OR; curlyor; \curlyvee (AmS)  
18216 \DeclareTextCommand{\textcurlyvee}{PU}{\9042\316}%\* U+22CE  
18217 %\* \textcurlyvee -> \varcurlyvee (stmaryrd)  
18218 % U+22CF CURLY LOGICAL AND; curlyand; \curlywedge (AmS)

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18219 \DeclareTextCommand{\textcurlywedge}{PU}{\9042\317}%* U+22CF
18220 %* \textcurlywedge -> \varcurlywedge (stmaryrd)
18221 % U+22D0 DOUBLE SUBSET; \Subset (AmS)
18222 \DeclareTextCommand{\textSubset}{PU}{\9042\320}%* U+22D0
18223 % \nSubset (txfonts/pxfonts)
18224 \DeclareTextCommand{\textnSubset}{PU}{\9042\320\83\070}%* U+22D0 U+0338
18225 % U+22D1 DOUBLE SUPERSET; \Supset (AmS)
18226 \DeclareTextCommand{\textSupset}{PU}{\9042\321}%* U+22D1
18227 % \nSupset (txfonts/pxfonts)
18228 \DeclareTextCommand{\textnSupset}{PU}{\9042\321\83\070}%* U+22D1 U+0338
18229 % U+22D2 DOUBLE INTERSECTION; \Cap (AmS)
18230 \DeclareTextCommand{\textCap}{PU}{\9042\322}%* U+22D2
18231 %* \textCap -> \doublecap (mathabx)
18232 % U+22D3 DOUBLE UNION; \Cup (AmS)
18233 \DeclareTextCommand{\textCup}{PU}{\9042\323}%* U+22D3
18234 %* \textCup -> \doublecup (mathabx)
18235 % U+22D4 PITCHFORK; \pitchfork (mathabx)
18236 \DeclareTextCommand{\textpitchfork}{PU}{\9042\324}%* U+22D4
18237 % U+22D6 LESS-THAN WITH DOT; \lessdot (AmS)
18238 \DeclareTextCommand{\textlessdot}{PU}{\9042\326}%* U+22D6
18239 % U+22D7 GREATER-THAN WITH DOT; \gtrdot (AmS)
18240 \DeclareTextCommand{\textgtrdot}{PU}{\9042\327}%* U+22D7
18241 % U+22D8 VERY MUCH LESS-THAN; \lll (AmS)
18242 \DeclareTextCommand{\textlll}{PU}{\9042\330}%* U+22D8
18243 % U+22D9 VERY MUCH GREATER-THAN; \ggg (AmS)
18244 \DeclareTextCommand{\textggg}{PU}{\9042\331}%* U+22D9
18245 % U+22DA LESS-THAN EQUAL TO OR GREATER-THAN; lesseqqualorgreater;
18246 % \lesseqgtr (AmS)
18247 \DeclareTextCommand{\textlesseqgtr}{PU}{\9042\332}%* U+22DA
18248 % U+22DB GREATER-THAN EQUAL TO OR LESS-THAN; greaterequalorless;
18249 % \gtreqless (AmS)
18250 \DeclareTextCommand{\textgtreqless}{PU}{\9042\333}%* U+22DB
18251 % U+22DE EQUAL TO OR PRECEDES; \curlyeqprec (MnSymbol)
18252 \DeclareTextCommand{\textcurlyeqprec}{PU}{\9042\336}%* U+22DE
18253 % \ncurlyeqprec (mathabx)
18254 \DeclareTextCommand{\textncurlyeqprec}{PU}{\9042\336\83\070}%* U+22DE U+0338
18255 % U+22DF EQUAL TO OR SUCCEEDS; \curlyeqsucc (MnSymbol)
18256 \DeclareTextCommand{\textcurlyeqsucc}{PU}{\9042\337}%* U+22DF
18257 % \ncurlyeqsucc (mathabx)
18258 \DeclareTextCommand{\textncurlyeqsucc}{PU}{\9042\337\83\070}%* U+22DF U+0338
18259 % U+22E0 DOES NOT PRECEDE OR EQUAL; \npreccurlyeq (txfonts/pxfonts)
18260 \DeclareTextCommand{\textnpreccurlyeq}{PU}{\9042\340}%* U+22E0
18261 % U+22E1 DOES NOT SUCCEED OR EQUAL; \nsucccurlyeq (txfonts/pxfonts)
18262 \DeclareTextCommand{\textnsucccurlyeq}{PU}{\9042\341}%* U+22E1
18263 % U+22E2 NOT SQUARE IMAGE OF OR EQUAL TO; \nsqsubseteq (tx-
    fonts/pxfonts)
18264 \DeclareTextCommand{\textnqsubseteq}{PU}{\9042\342}%* U+22E2
18265 % U+22E3 NOT SQUARE ORIGINAL OF OR EQUAL TO; \nsqsupseteq (tx-
    fonts/pxfonts)
18266 \DeclareTextCommand{\textnqsupseteq}{PU}{\9042\343}%* U+22E3
18267 % U+22E4 SQUARE IMAGE OF OR NOT EQUAL TO; \sqsubsetneq (mathabx)
18268 \DeclareTextCommand{\textsqsubsetneq}{PU}{\9042\344}%* U+22E4
18269 %* \textsqsubsetneq -> \varsqsubsetneq (mathabx)
18270 % U+22E5 SQUARE ORIGINAL OF OR NOT EQUAL TO; \sqsupsetneq (math-

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abx)

18271 \DeclareTextCommand{\textsqsupsetneq}{PU}{\9042\345}%\* U+22E5  
18272 %\* \textsqsupsetneq -> \varsqsupsetneq (mathabx)  
18273 % U+22E6 LESS-THAN BUT NOT EQUIVALENT TO; \lnsim (AmS)  
18274 \DeclareTextCommand{\textlnsim}{PU}{\9042\346}%\* U+22E6  
18275 % U+22E7 GREATER-THAN BUT NOT EQUIVALENT TO; \gnsim (AmS)  
18276 \DeclareTextCommand{\textgnsim}{PU}{\9042\347}%\* U+22E7  
18277 % U+22E8 PRECEDES BUT NOT EQUIVALENT TO; \precsim (AmS)  
18278 \DeclareTextCommand{\textprecsim}{PU}{\9042\350}%\* U+22E8  
18279 % U+22E9 SUCCEEDS BUT NOT EQUIVALENT TO; \succsim (AmS)  
18280 \DeclareTextCommand{\textsuccsim}{PU}{\9042\351}%\* U+22E9  
18281 % U+22EA NOT NORMAL SUBGROUP OF; \ntriangleleft (AmS)  
18282 \DeclareTextCommand{\textntriangleleft}{PU}{\9042\352}%\* U+22EA  
18283 %\* \textntriangleleft -> \nlessclosed (MnSymbol)  
18284 % U+22EB DOES NOT CONTAIN AS NORMAL SUBGROUP; \ntriangleright (AmS)  
18285 \DeclareTextCommand{\textntriangleright}{PU}{\9042\353}%\* U+22EB  
18286 %\* \textntriangleright -> \ngtrclosed (MnSymbol)  
18287 % U+22EC NOT NORMAL SUBGROUP OF OR EQUAL TO;  
18288 % \ntrianglelefteq (AmS)  
18289 \DeclareTextCommand{\textntrianglelefteq}{PU}{\9042\354}%\* U+22EC  
18290 % U+22ED DOES NOT CONTAIN AS NORMAL SUBGROUP OR EQUAL;  
18291 % \ntrianglerighteq (AmS)  
18292 \DeclareTextCommand{\textntrianglerighteq}{PU}{\9042\355}%\* U+22ED  
18293 %\* \textntrianglerighteq -> textngeqclosed  
18294 % U+22EE VERTICAL ELLIPSIS; ellipsisvertical; \vdots (LaTeX)  
18295 \DeclareTextCommand{\textvdots}{PU}{\9042\356}%\* U+22EE  
18296 % U+22EF MIDLINE HORIZONTAL ELLIPSIS; \cdots (LaTeX)  
18297 \DeclareTextCommand{\textcdots}{PU}{\9042\357}%\* U+22EF  
18298 % U+22F0 UP RIGHT DIAGONAL ELLIPSIS; \udots (MnSymbol)  
18299 \DeclareTextCommand{\textudots}{PU}{\9042\360}%\* U+22F0  
18300 % U+22F1 DOWN RIGHT DIAGONAL ELLIPSIS; \ddots (LaTeX)  
18301 \DeclareTextCommand{\textddots}{PU}{\9042\361}%\* U+22F1  
18302 % U+22F6 ELEMENT OF WITH OVERBAR; \barin (mathabx)  
18303 \DeclareTextCommand{\textbarin}{PU}{\9042\366}%\* U+22F6

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

18304 % U+2300 DIAMETER SIGN; \diameter (mathabx,wasysym)  
18305 \DeclareTextCommand{\textdiameter}{PU}{\9043\000}%\* U+2300  
18306 % U+2310 REVERSED NOT SIGN; \backneg (MnSymbol)  
18307 \DeclareTextCommand{\textbackneg}{PU}{\9043\020}%\* U+2310  
18308 % U+2311 SQUARE LOZENGE; \wasylozenge (wasysym)  
18309 \DeclareTextCommand{\textwasylozenge}{PU}{\9043\021}%\* U+2311  
18310 % U+2319 TURNED NOT SIGN; \invbackneg (MnSymbol)  
18311 \DeclareTextCommand{\textinvbackneg}{PU}{\9043\031}%\* U+2319  
18312 % U+231A WATCH; \clock (wasysym)  
18313 \DeclareTextCommand{\textclock}{PU}{\9043\032}%\* U+231A  
18314 %\* \textclock -> \Clocklogo (marvosym)  
18315 %\* \textclock -> \ClockLogo (marvosym)  
18316 % U+231C TOP LEFT CORNER; \ulcorner (AmS)  
18317 \DeclareTextCommand{\textulcorner}{PU}{\9043\034}%\* U+231C  
18318 % U+231D TOP RIGHT CORNER; \urcorner (AmS)  
18319 \DeclareTextCommand{\texturcorner}{PU}{\9043\035}%\* U+231D  
18320 % U+231E BOTTOM LEFT CORNER; \llcorner (AmS)

18321 \DeclareTextCommand{\textllcorner}{PU}{\9043\036}%\* U+231E  
18322 % U+231F BOTTOM RIGHT CORNER; \lrcorner (AmS)  
18323 \DeclareTextCommand{\textlrcorner}{PU}{\9043\037}%\* U+231F  
18324 % U+2322 FROWN; \frown (LaTeX)  
18325 \DeclareTextCommand{\textfrown}{PU}{\9043\042}%\* U+2322  
18326 % U+2323 SMILE; \smile (LaTeX)  
18327 \DeclareTextCommand{\textsmile}{PU}{\9043\043}%\* U+2323  
18328 % U+2328 KEYBOARD; \Keyboard (marvosym)  
18329 \DeclareTextCommand{\textKeyboard}{PU}{\9043\050}%\* U+2328  
18330 % U+2329 LEFT-POINTING ANGLE BRACKET; \angleleft; \langle (LaTeX)  
18331 \DeclareTextCommand{\textlangle}{PU}{\9043\051}%\* U+2329  
18332 % U+232A RIGHT-POINTING ANGLE BRACKET; \angleright; \rangle (LaTeX)  
18333 \DeclareTextCommand{\textrightangle}{PU}{\9043\052}%\* U+232A  
18334 % U+2339 APL FUNCTIONAL SYMBOL QUAD DIVIDE; \APLin (wasysym)  
18335 \DeclareTextCommand{\textAPLin}{PU}{\9043\071}%\* U+2339  
18336 % U+233C APL FUNCTIONAL SYMBOL QUAD CIRCLE; \Tumbler (marvosym)  
18337 \DeclareTextCommand{\textTumbler}{PU}{\9043\074}%\* U+233C  
18338 % U+233D APL FUNCTIONAL SYMBOL CIRCLE STILE; \baro (stmaryrd)  
18339 \DeclareTextCommand{\textstmaryrdbaro}{PU}{\9043\075}% U+233D  
18340 %\* \textstmaryrdbaro -> \baro (stmaryrd)  
18341 % U+233F APL FUNCTIONAL SYMBOL SLASH BAR; \notslash (wasysym)  
18342 \DeclareTextCommand{\textnotslash}{PU}{\9043\077}%\* U+233F  
18343 % U+2340 APL FUNCTIONAL SYMBOL BACKSLASH BAR;  
18344 % \notbackslash (wasysym)  
18345 \DeclareTextCommand{\textnotbackslash}{PU}{\9043\100}%\* U+2340  
18346 % U+2342 APL FUNCTIONAL SYMBOL QUAD BACKSLASH; \boxbackslash (mathabx)  
18347 \DeclareTextCommand{\textboxbackslash}{PU}{\9043\102}%\* U+2342  
18348 % U+2347 APL FUNCTIONAL SYMBOL QUAD LEFTWARDS ARROW;  
18349 % \APLleftarrowbox (wasysym)  
18350 \DeclareTextCommand{\textAPLleftarrowbox}{PU}{\9043\107}%\* U+2347  
18351 % U+2348 APL FUNCTIONAL SYMBOL QUAD RIGHTWARDS ARROW;  
18352 % \APLrightarrowbox (wasysym)  
18353 \DeclareTextCommand{\textAPLrightarrowbox}{PU}{\9043\110}%\* U+2348  
18354 % U+2350 APL FUNCTIONAL SYMBOL QUAD UPWARDS ARROW; \APLuparrowbox (wasysym)  
18355 \DeclareTextCommand{\textAPLuparrowbox}{PU}{\9043\120}%\* U+2350  
18356 % U+2357 APL FUNCTIONAL SYMBOL QUAD DOWNWARDS ARROW;  
18357 % \APLdownarrowbox (wasysym)  
18358 \DeclareTextCommand{\textAPLdownarrowbox}{PU}{\9043\127}%\* U+2357  
18359 % U+235E APL FUNCTIONAL SYMBOL QUOTE QUAD;  
18360 % \APLin (wasysym)  
18361 \DeclareTextCommand{\textAPLin}{PU}{\9043\136}%\* U+235E  
18362 % U+2370 APL FUNCTIONAL SYMBOL QUAD QUESTION; \Request (china2e)  
18363 \DeclareTextCommand{\textRequest}{PU}{\9043\160}%\* U+2370  
18364 % U+2393 DIRECT CURRENT SYMBOL FORM TWO; \Beam (marvosym)  
18365 \DeclareTextCommand{\textBeam}{PU}{\9043\223}%\* U+2393  
18366 % U+2394 SOFTWARE-FUNCTION SYMBOL; \hexagon (wasysym)  
18367 \DeclareTextCommand{\texthexagon}{PU}{\9043\224}%\* U+2394  
18368 % U+2395 APL FUNCTIONAL SYMBOL QUAD; \APLbox (wasysym)  
18369 \DeclareTextCommand{\textAPLbox}{PU}{\9043\225}%\* U+2395  
18370 % U+23ED BLACK RIGHT-POINTING DOUBLE TRIANGLE WITH VERTICAL BAR;



18371 % \ForwardToIndex (marvosym)  
18372 \DeclareTextCommand{\textForwardToIndex}{PU}{\9043\355}%\* U+23ED  
18373 % U+23EE BLACK LEFT-POINTING DOUBLE TRIANGLE WITH VERTICAL BAR;  
18374 % \RewindToIndex (marvosym)  
18375 \DeclareTextCommand{\textRewindToIndex}{PU}{\9043\356}%\* U+23EE

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

18376 % U+2422 BLANK SYMBOL  
18377 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422  
18378 % U+2423 OPEN BOX; blank  
18379 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

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

18380 % U+244A OCR DOUBLE BACKSLASH; \bbslash (stmaryrd)  
18381 \DeclareTextCommand{\textbbslash}{PU}{\9044\112}%\* U+244A  
18382 %\* \textbbslash -> \varparallelinv (txfonts/pxfonts)

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

18383 % U+2460 CIRCLED DIGIT ONE; onecircle  
18384 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460  
18385 % U+2461 CIRCLED DIGIT TWO; twocircle  
18386 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461  
18387 % U+2462 CIRCLED DIGIT THREE; threecircle  
18388 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462  
18389 % U+2463 CIRCLED DIGIT FOUR; fourcircle  
18390 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463  
18391 % U+2464 CIRCLED DIGIT FIVE; fivecircle  
18392 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464  
18393 % U+2465 CIRCLED DIGIT SIX; sixcircle  
18394 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465  
18395 % U+2466 CIRCLED DIGIT SEVEN; sevenscircle  
18396 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466  
18397 % U+2467 CIRCLED DIGIT EIGHT; eightcircle  
18398 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467  
18399 % U+2468 CIRCLED DIGIT NINE; ninecircle  
18400 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468  
18401 % U+2469 CIRCLED NUMBER TEN; tencircle  
18402 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469  
18403 % U+246A CIRCLED NUMBER ELEVEN; elevencircle  
18404 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A  
18405 % U+246B CIRCLED NUMBER TWELVE; twelvecircle  
18406 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B  
18407 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle  
18408 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C  
18409 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle  
18410 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D  
18411 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle  
18412 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E  
18413 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle  
18414 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F  
18415 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle  
18416 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470  
18417 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle

18418 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471  
18419 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle  
18420 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472  
18421 % U+2473 CIRCLED NUMBER TWENTY; twentycircle  
18422 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473  
18423 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle  
18424 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6  
18425 % \CircledA (marvosym)  
18426 \DeclareTextCommand{\textCircledA}{PU}{\9044\266}%\* U+24B6  
18427 %\* \textCircledA -> \CleaningA  
18428 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle  
18429 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7  
18430 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle  
18431 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8  
18432 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle  
18433 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9  
18434 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle  
18435 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA  
18436 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle  
18437 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB  
18438 % \CleaningF (marvosym)  
18439 \DeclareTextCommand{\textCleaningF}{PU}{\9044\273}%\* U+24BB  
18440 % \CleaningFF (marvosym)  
18441 \DeclareTextCommand{\textCleaningFF}{PU}{\9044\273\83\062}%\* U+24BB U+0332  
18442 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle  
18443 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC  
18444 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle  
18445 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD  
18446 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle  
18447 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE  
18448 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle  
18449 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF  
18450 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle  
18451 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0  
18452 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle  
18453 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1  
18454 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle  
18455 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2  
18456 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle  
18457 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3  
18458 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle  
18459 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4  
18460 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle  
18461 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5  
18462 % \CleaningP (marvosym)  
18463 \DeclareTextCommand{\textCleaningP}{PU}{\9044\305}%\* U+24C5  
18464 % \CleaningPP (marvosym)  
18465 \DeclareTextCommand{\textCleaningPP}{PU}{\9044\305\83\062}%\* U+24C5 U+0332  
18466 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle  
18467 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6  
18468 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle  
18469 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7  
18470 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle  
18471 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8

18472 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle  
18473 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9  
18474 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle  
18475 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA  
18476 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle  
18477 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB  
18478 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle  
18479 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC  
18480 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle  
18481 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD  
18482 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle  
18483 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE  
18484 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle  
18485 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF  
18486 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle  
18487 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0  
18488 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle  
18489 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1  
18490 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle  
18491 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2  
18492 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle  
18493 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3  
18494 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle  
18495 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4  
18496 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle  
18497 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5  
18498 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle  
18499 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6  
18500 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle  
18501 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7  
18502 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle  
18503 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8  
18504 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcircle  
18505 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9  
18506 % U+24DA CIRCLED LATIN SMALL LETTER K; kcircle  
18507 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA  
18508 % U+24DB CIRCLED LATIN SMALL LETTER L; lcircle  
18509 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB  
18510 % U+24DC CIRCLED LATIN SMALL LETTER M; mcircle  
18511 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC  
18512 % U+24DD CIRCLED LATIN SMALL LETTER N; ncircle  
18513 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD  
18514 % U+24DE CIRCLED LATIN SMALL LETTER O; ocircle  
18515 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE  
18516 % U+24DF CIRCLED LATIN SMALL LETTER P; pcircle  
18517 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF  
18518 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcircle  
18519 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0  
18520 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcircle  
18521 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1  
18522 % U+24E2 CIRCLED LATIN SMALL LETTER S; scircle  
18523 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2  
18524 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcircle  
18525 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3

18526 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucircle  
18527 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4  
18528 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcircle  
18529 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5  
18530 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcircle  
18531 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6  
18532 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcircle  
18533 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7  
18534 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycircle  
18535 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8  
18536 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcircle  
18537 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9  
18538 % U+24EA CIRCLED DIGIT ZERO  
18539 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

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

18540 % U+2504 BOX DRAWINGS LIGHT TRIPLE DASH HORIZONTAL; \Cutting-  
Line (marvosym)  
18541 \DeclareTextCommand{\textCuttingLine}{PU}{\9045\004}%\* U+2504  
18542 %\* \textCuttingLine -> \Kutline (marvosym)  
18543 %\* \textCuttingLine -> \CutLine (marvosym)  
18544 %\* \textCuttingLine -> \Cutline (marvosym)

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

18545 % U+25B2 BLACK UP-POINTING TRIANGLE; \UParrow (wasysym)  
18546 \DeclareTextCommand{\textUParrow}{PU}{\9045\262}%\* U+25B2  
18547 %\* \textUParrow -> \MoveUp (marvosym)  
18548 % U+25B3 WHITE UP-POINTING TRIANGLE; whiteuppointingtriangle;  
18549 % \bigtriangleup (LaTeX)  
18550 \DeclareTextCommand{\textbigtriangleup}{PU}{\9045\263}%\* U+25B3  
18551 %\* \textbigtriangleup -> \APLup (wasysym)  
18552 %\* \textbigtriangleup -> \Bleech (marvosym)  
18553 % U+25B6 BLACK RIGHT-POINTING TRIANGLE; \Forward (marvosym)  
18554 \DeclareTextCommand{\textForward}{PU}{\9045\266}%\* U+25B6  
18555 % U+25B7 WHITE RIGHT-POINTING TRIANGLE (= z notation range restric-  
tion);  
18556 % whiterightpointingtriangle; \triangleright (LaTeX)  
18557 \DeclareTextCommand{\texttriangleright}{PU}{\9045\267}%\* U+25B7  
18558 % U+25BA BLACK RIGHT-POINTING POINTER; \RHD (wasysym)  
18559 \DeclareTextCommand{\textRHD}{PU}{\9045\272}%\* U+25BA  
18560 % U+25BC BLACK DOWN-POINTING TRIANGLE; \DOWNarrow (wasysym)  
18561 \DeclareTextCommand{\textDOWNarrow}{PU}{\9045\274}%\* U+25BC  
18562 %\* \textDOWNarrow -> \MoveDown (marvosym)  
18563 % U+25BD WHITE DOWN-POINTING TRIANGLE; whitedownpointingtri-  
angle;  
18564 % \bigtriangledown (LaTeX)  
18565 \DeclareTextCommand{\textbigtriangledown}{PU}{\9045\275}%\* U+25BD  
18566 %\* \textbigtriangledown -> \APLdown (wasysym)  
18567 % U+25C0 BLACK LEFT-POINTING TRIANGLE; \Rewind (marvosym)  
18568 \DeclareTextCommand{\textRewind}{PU}{\9045\300}%\* U+25C0  
18569 % U+25C1 WHITE RIGHT-POINTING TRIANGLE (= z notation domain re-  
striction);  
18570 % whiteleftpointingtriangle; \triangleleft (LaTeX)  
18571 \DeclareTextCommand{\texttriangleleft}{PU}{\9045\301}%\* U+25C1

18572 % U+25C4 BLACK LEFT-POINTING POINTER; \LHD (wasysym)  
 18573 \DeclareTextCommand{\textLHD}{PU}{\9045\304}%\* U+25C4  
 18574 % U+25C7 WHITE DIAMOND; whitediamond; \diamond (LaTeX)  
 18575 \DeclareTextCommand{\textdiamond}{PU}{\9045\307}%\* U+25C7  
 18576 %\* \textdiamond -> \Diamond (wasysym)  
 18577 % U+25CA LOZENGE; lozenge; \lozenge (AmS)  
 18578 \DeclareTextCommand{\textlozenge}{PU}{\9045\312}%\* U+25CA  
 18579 % U+25D6 LEFT HALF BLACK CIRCLE; \LEFTCIRCLE (wasysym)  
 18580 \DeclareTextCommand{\textLEFTCIRCLE}{PU}{\9045\326}%\* U+25D6  
 18581 % U+25D7 RIGHT HALF BLACK CIRCLE; \RIGHTCIRCLE (wasysym)  
 18582 \DeclareTextCommand{\textRIGHTCIRCLE}{PU}{\9045\327}%\* U+25D7  
 18583 % U+25E6 WHITE BULLET; \*openbullet, whitebullet  
 18584 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}%\* U+25E6  
 18585 % U+25EB WHITE SQUARE WITH VERTICAL BISECTING LINE;  
 18586 % \boxbar (stmaryrd)  
 18587 \DeclareTextCommand{\textboxbar}{PU}{\9045\353}%\* U+25EB  
 18588 % U+25EF LARGE CIRCLE; largecircle  
 18589 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}%\* U+25EF  
 18590 %\* \textbigcircle -> \varbigcirc (stmaryrd)  
 18591 %

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

18592 % U+2601 CLOUD; \Cloud (ifsym)  
 18593 \DeclareTextCommand{\textCloud}{PU}{\9046\001}%\* U+2601  
 18594 % U+2605 BLACK STAR; \FiveStar (bbding)  
 18595 \DeclareTextCommand{\textFiveStar}{PU}{\9046\005}%\* U+2605  
 18596 % U+2606 WHITE STAR; \FiveStarOpen (bbding)  
 18597 \DeclareTextCommand{\textFiveStarOpen}{PU}{\9046\006}%\* U+2606  
 18598 % U+260E BLACK TELEPHONE; telephoneblack; \Phone (bbding)  
 18599 \DeclareTextCommand{\textPhone}{PU}{\9046\016}%\* U+260E  
 18600 %\* \textPhone -> \Telefon (marvosym)  
 18601 % U+2610 BALLOT BOX; \boxempty (stmaryrd)  
 18602 \DeclareTextCommand{\textboxempty}{PU}{\9046\020}%\* U+2610  
 18603 %\* \textboxempty -> \Box (wasysym)  
 18604 % U+2611 BALLOT BOX WITH CHECK; \Checkedbox (marvosym)  
 18605 \DeclareTextCommand{\textCheckedbox}{PU}{\9046\021}%\* U+2611  
 18606 %\* \textCheckedbox -> \CheckedBox (marvosym)  
 18607 % U+2612 BALLOT BOX WITH X; \Crossedbox (marvosym)  
 18608 \DeclareTextCommand{\textCrossedbox}{PU}{\9046\022}%\* U+2612  
 18609 %\* \textCrossedbox -> \XBox (wasysym)  
 18610 %\* \textCrossedbox -> \CrossedBox (marvosym)  
 18611 % U+2615 HOT BEVERAGE; \Coffeecup (marvosym)  
 18612 \DeclareTextCommand{\textCoffeecup}{PU}{\9046\025}%\* U+2615  
 18613 % U+261A BLACK LEFT POINTING INDEX; \HandCuffLeft (bbding)  
 18614 \DeclareTextCommand{\textHandCuffLeft}{PU}{\9046\032}%\* U+261A  
 18615 % U+261B BLACK RIGHT POINTING INDEX; \HandCuffRight (bbding)  
 18616 \DeclareTextCommand{\textHandCuffRight}{PU}{\9046\033}%\* U+261B  
 18617 % U+261C WHITE LEFT POINTING INDEX; \HandLeft (bbding)  
 18618 \DeclareTextCommand{\textHandLeft}{PU}{\9046\034}%\* U+261C  
 18619 %\* \textHandLeft -> \rightpointleft (fourier)  
 18620 % U+261E WHITE RIGHT POINTING INDEX; \HandRight (bbding)  
 18621 \DeclareTextCommand{\textHandRight}{PU}{\9046\036}%\* U+261E  
 18622 %\* \textHandRight -> \leftpointright (fourier)  
 18623 %\* \textHandRight -> \PointingHand (marvosym)

18624 %\* \textHandRight -> \Pointinghand (marvosym)  
18625 % U+2622 RADIOACTIVE SIGN; \Radioactivity (marvosym)  
18626 \DeclareTextCommand{\textRadioactivity}{PU}{\9046\042}%\* U+2622  
18627 %\* \textRadioactivity -> \Radiation (ifsym)  
18628 % U+2623 BIOHAZARD SIGN; \Biohazard (marvosym)  
18629 \DeclareTextCommand{\textBiohazard}{PU}{\9046\043}%\* U+2623  
18630 % U+2625 ANKH; \Ankh (marvosym)  
18631 \DeclareTextCommand{\textAnkh}{PU}{\9046\045}%\* U+2625  
18632 % U+262F YIN YANG; \YinYang (marvosym)  
18633 \DeclareTextCommand{\textYinYang}{PU}{\9046\057}%\* U+262F  
18634 %\* \textYinYang -> \Yinyang (marvosym)  
18635 %\* \textYinYang -> \YingYang (marvosym)  
18636 %\* \textYinYang -> \Yingyang (marvosym)  
18637 % U+2639 WHITE FROWNING FACE; \frownie (wasysym)  
18638 \DeclareTextCommand{\textfrownie}{PU}{\9046\071}%\* U+2639  
18639 %\* \textfrownie -> \Frowny (marvosym)  
18640 % U+263A WHITE SMILING FACE; \smiley (wasysym)  
18641 \DeclareTextCommand{\textsmiley}{PU}{\9046\072}%\* U+263A  
18642 %\* \textsmiley -> \Smiley (marvosym)  
18643 % U+263B BLACK SMILING FACE; \blacksmiley (wasysym)  
18644 \DeclareTextCommand{\textblacksmiley}{PU}{\9046\073}%\* U+263B  
18645 % U+263C WHITE SUN WITH RAYS; \sun (wasysym)  
18646 \DeclareTextCommand{\textsun}{PU}{\9046\074}%\* U+263C  
18647 %\* \textsun -> \Sun (marvosym)  
18648 % U+263D FIRST QUARTER MOON; \leftmoon (wasysym, mathabx)  
18649 \DeclareTextCommand{\textleftmoon}{PU}{\9046\075}%\* U+263D  
18650 % U+263E LAST QUARTER MOON; \rightmoon (wasysym, mathabx)  
18651 \DeclareTextCommand{\textrightmoon}{PU}{\9046\076}%\* U+263E  
18652 % U+263F MERCURY; \mercury (wasysym)  
18653 \DeclareTextCommand{\textmercury}{PU}{\9046\077}%\* U+263F  
18654 %\* \textmercury -> \Mercury (marvosym)  
18655 % U+2640 FEMALE SIGN; female; \female (wasysym)  
18656 \DeclareTextCommand{\textPUfemale}{PU}{\9046\100}% U+2640  
18657 %\* \textPUfemale -> \textfemale (tipx)  
18658 %\* \textPUfemale -> \female (wasysym)  
18659 %\* \textPUfemale -> \venus (wasysym)  
18660 %\* \textPUfemale -> \Venus (marvosym)  
18661 %\* \textPUfemale -> \Female (marvosym)  
18662 % U+2641 EARTH; \earth (wasysym)  
18663 \DeclareTextCommand{\textearth}{PU}{\9046\101}%\* U+2641  
18664 %\* \textearth -> \Earth (marvosym)  
18665 % U+2642 MALE SIGN; male, mars; \male (wasysym)  
18666 \DeclareTextCommand{\textmale}{PU}{\9046\102}%\* U+2642  
18667 %\* \textmale -> \mars (wasysym)  
18668 %\* \textmale -> \Mars (marvosym)  
18669 %\* \textmale -> \Male (marvosym)  
18670 % U+2643 JUPITER; \jupiter (wasysym)  
18671 \DeclareTextCommand{\textjupiter}{PU}{\9046\103}%\* U+2643  
18672 %\* \textjupiter -> \Jupiter (marvosym)  
18673 % U+2644 SATURN; \saturn (wasysym)  
18674 \DeclareTextCommand{\textsaturn}{PU}{\9046\104}%\* U+2644  
18675 %\* \textsaturn -> \Saturn (marvosym)  
18676 % U+2645 URANUS; \uranus (wasysym)  
18677 \DeclareTextCommand{\texturanus}{PU}{\9046\105}%\* U+2645

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18678 %* \texturanus -> \Uranus (marvosym)
18679 % U+2646 NEPTUNE; \neptune (wasysym)
18680 \DeclareTextCommand{\textneptune}{PU}{\9046\106}%* U+2646
18681 %* \textneptune -> \Neptune (marvosym)
18682 % U+2647 PLUTO; \pluto (wasysym)
18683 \DeclareTextCommand{\textpluto}{PU}{\9046\107}%* U+2647
18684 %* \textpluto -> \Pluto (marvosym)
18685 % U+2648 ARIES; \aries (wasysym)
18686 \DeclareTextCommand{\textaries}{PU}{\9046\110}%* U+2648
18687 %* \textaries -> \Aries (marvosym)
18688 % U+2649 TAURUS; \taurus (wasysym)
18689 \DeclareTextCommand{\texttaurus}{PU}{\9046\111}%* U+2649
18690 %* \texttaurus -> \Taurus (marvosym)
18691 % U+264A GEMINI; \gemini (wasysym)
18692 \DeclareTextCommand{\textgemini}{PU}{\9046\112}%* U+264A
18693 %* \textgemini -> \Gemini (marvosym)
18694 % U+264B CANCER; \cancer (wasysym)
18695 \DeclareTextCommand{\textcancer}{PU}{\9046\113}%* U+264B
18696 %* \textcancer -> \Cancer (marvosym)
18697 % U+264C LEO; \leo (wasysym)
18698 \DeclareTextCommand{\textleo}{PU}{\9046\114}%* U+264C
18699 %* \textleo -> \Leo (marvosym)
18700 % U+264D VIRGO; \virgo (wasysym)
18701 \DeclareTextCommand{\textvirgo}{PU}{\9046\115}%* U+264D
18702 %* \textvirgo -> \Virgo (marvosym)
18703 % U+264E LIBRA; \libra (wasysym)
18704 \DeclareTextCommand{\textlibra}{PU}{\9046\116}%* U+264E
18705 %* \textlibra -> \Libra (marvosym)
18706 % U+264F SCORPIO; \scorpio (wasysym)
18707 \DeclareTextCommand{\textscorpio}{PU}{\9046\117}%* U+264F
18708 %* \textscorpio -> \Scorpio (marvosym)
18709 % U+2650 SAGITTARIUS; \sagittarius (wasysym)
18710 \DeclareTextCommand{\textsagittarius}{PU}{\9046\120}%* U+2650
18711 %* \textsagittarius -> \Sagittarius (marvosym)
18712 % U+2651 CAPRICORN; \capricornus (wasysym)
18713 \DeclareTextCommand{\textcapricornus}{PU}{\9046\121}%* U+2651
18714 %* \textcapricornus -> \Capricorn (marvosym)
18715 % U+2652 AQUARIUS; \aquarius (wasysym)
18716 \DeclareTextCommand{\textaquarius}{PU}{\9046\122}%* U+2652
18717 %* \textaquarius -> \Aquarius (marvosym)
18718 % U+2653 PISCES; \pisces (wasysym)
18719 \DeclareTextCommand{\textpisces}{PU}{\9046\123}%* U+2653
18720 %* \textpisces -> \Pisces (marvosym)
18721 % U+2660 BLACK SPADE SUIT; spade, spadesuitblack; \spadesuit (LaTeX)
18722 \DeclareTextCommand{\textspadesuitblack}{PU}{\9046\140}% U+2660
18723 %* \textspadesuitblack -> \spadesuit (MnSymbol)
18724 % U+2661 WHITE HEART SUIT; heartsuitwhite; \heartsuit (LaTeX)
18725 \DeclareTextCommand{\textheartsuitwhite}{PU}{\9046\141}% U+2661
18726 %* \textheartsuitwhite -> \Heart (marvosym)
18727 %* \textheartsuitwhite -> \heartsuit (MnSymbol)
18728 % U+2662 WHITE DIAMOND SUIT; diamondsuitwhite; \diamondsuit (LaTeX)
18729 \DeclareTextCommand{\textdiamondsuitwhite}{PU}{\9046\142}% U+2662
18730 %* \textdiamondsuitwhite -> \diamondsuit (MnSymbol)
18731 % U+2663 BLACK CLUB SUIT; club, clubsuitblack; \clubsuit (LaTeX)

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18732 \DeclareTextCommand{\textclubsuitblack}{PU}{\9046\143}% U+2663  
18733 %\* \textclubsuitblack -> \clubsuit (MnSymbol)  
18734 % U+2664 WHITE SPADE SUIT; spadesuitwhite  
18735 \DeclareTextCommand{\textspadesuitwhite}{PU}{\9046\144}% U+2664  
18736 % U+2665 BLACK HEART SUIT; heartsuitblack, heart  
18737 \DeclareTextCommand{\textheartsuitblack}{PU}{\9046\145}% U+2665  
18738 % U+2666 BLACK DIAMOND SUIT; diamond  
18739 \DeclareTextCommand{\textdiamondsuitblack}{PU}{\9046\146}% U+2666  
18740 % U+2667 WHITE CLUB SUIT; clubsuitwhite  
18741 \DeclareTextCommand{\textclubsuitwhite}{PU}{\9046\147}% U+2667  
18742 % U+2669 QUARTER NOTE; quarternote; \quarternote (wasysym, arev)  
18743 \DeclareTextCommand{\textquarternote}{PU}{\9046\151}%\* U+2669  
18744 % U+266A EIGHTH NOTE; musicalnote; \textmusicalnote (textcomp)  
18745 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}% U+266A  
18746 %\* \textmusicalnote -> \eighthnote (wasysym, arev)  
18747 % U+266B BEAMED EIGHTH NOTES; eighthnotebeamed; \twonotes (wasysym)  
18748 \DeclareTextCommand{\texttwonotes}{PU}{\9046\153}%\* U+266B  
18749 % U+266C BEAMED SIXTEENTH NOTES; beamedsixteenthnotes; \sixteenth-  
note (arev)  
18750 \DeclareTextCommand{\textsixteenthnote}{PU}{\9046\154}%\* U+266C  
18751 % U+266D MUSIC FLAT SIGN; musicflatsign; \flat (LaTeX)  
18752 \DeclareTextCommand{\textflat}{PU}{\9046\155}%\* U+266D  
18753 % U+266E MUSIC NATURAL SIGN; \natural (LaTeX)  
18754 \DeclareTextCommand{\textnatural}{PU}{\9046\156}%\* U+266E  
18755 % U+266F MUSIC SHARP SIGN; musicsharpsign; \sharp (LaTeX)  
18756 \DeclareTextCommand{\textsharp}{PU}{\9046\157}%\* U+266F  
18757 % U+2672 UNIVERSAL RECYCLING SYMBOL; \recycle (recycle)  
18758 \DeclareTextCommand{\textrecycle}{PU}{\9046\162}%\* U+2672  
18759 %\* \textrecycle -> \Recycling (marvosym)  
18760 % U+267F WHEELCHAIR SYMBOL; \Wheelchair (marvosym)  
18761 \DeclareTextCommand{\textWheelchair}{PU}{\9046\177}%\* U+267F  
18762 % U+2691 BLACK FLAG; \Flag (ifsym)  
18763 \DeclareTextCommand{\textFlag}{PU}{\9046\221}%\* U+2691  
18764 %\* \textFlag -> \VarFlag (ifsym)  
18765 % U+2692 HAMMER AND PICK; \MineSign (marvosym)  
18766 \DeclareTextCommand{\textMineSign}{PU}{\9046\222}%\* U+2692  
18767 % U+2694 CROSSED SWORDS; \dsmilitary (dictsym)  
18768 \DeclareTextCommand{\textdsmilitary}{PU}{\9046\224}%\* U+2694  
18769 %\* \textdsmilitary -> \textxswup (fourier)  
18770 % U+2695 STAFF OF AESCULAPIUS; \dsmedical (dictsym)  
18771 \DeclareTextCommand{\textdsmedical}{PU}{\9046\225}%\* U+2695  
18772 % U+2696 SCALES; \dsjuridical (dictsym)  
18773 \DeclareTextCommand{\textdsjuridical}{PU}{\9046\226}%\* U+2696  
18774 % U+2697 ALEMBIC; \dschemical (dictsym)  
18775 \DeclareTextCommand{\textdschemical}{PU}{\9046\227}%\* U+2697  
18776 % U+2698 FLOWER; \dsbiological (dictsym)  
18777 \DeclareTextCommand{\textdsbiological}{PU}{\9046\230}%\* U+2698  
18778 % U+269A STAFF OF HERMES; \dscommercial (dictsym)  
18779 \DeclareTextCommand{\textdscommercial}{PU}{\9046\232}%\* U+269A  
18780 % U+269D OUTLINED WHITE STAR; \manstar (manfnt)  
18781 \DeclareTextCommand{\textmanstar}{PU}{\9046\235}%\* U+269D  
18782 % U+26A0 WARNING SIGN; \danger (fourier)  
18783 \DeclareTextCommand{\textdanger}{PU}{\9046\240}%\* U+26A0  
18784 % U+26A2 DOUBLED FEMALE SIGN; \FemaleFemale (marvosym)



18785 \DeclareTextCommand{\textFemaleFemale}{PU}{\9046\242}%\* U+26A2  
18786 % U+26A3 DOUBLED MALE SIGN; \MaleMale (marvosym)  
18787 \DeclareTextCommand{\textMaleMale}{PU}{\9046\243}%\* U+26A3  
18788 % U+26A4 INTERLOCKED FEMALE AND MALE SIGN; \FemaleMale (marvosym)  
18789 \DeclareTextCommand{\textFemaleMale}{PU}{\9046\244}%\* U+26A4  
18790 % U+26A5 MALE AND FEMALE SIGN; \Hermaphrodite (marvosym)  
18791 \DeclareTextCommand{\textHermaphrodite}{PU}{\9046\245}%\* U+26A5  
18792 % U+26AA MEDIUM WHITE CIRCLE; \Neural (marvosym)  
18793 \DeclareTextCommand{\textNeutral}{PU}{\9046\252}%\* U+26AA  
18794 % U+26AD MARRIAGE SYMBOL  
18795 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD  
18796 % U+26AE DIVORCE SYMBOL  
18797 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE  
18798 % U+26B2 NEUTER; \textuncrfemale (tipx)  
18799 \DeclareTextCommand{\textPUuncrfemale}{PU}{\9046\262}% U+26B2  
18800 %\* \textPUuncrfemale -> \textuncrfemale (tipx)  
18801 % U+26B9 SEXTILE; \hexstar (wasysym)  
18802 \DeclareTextCommand{\texthexstar}{PU}{\9046\271}%\* U+26B9  
18803 % U+26BD SOCCER BALL; \Football (marvosym)  
18804 \DeclareTextCommand{\textSoccerBall}{PU}{\9046\275}% U+26BD  
18805 %\* \textSoccerBall -> \Football (marvosym)  
18806 % U+26C5 SUN BEHIND CLOUD; \SunCloud (ifsym)  
18807 \DeclareTextCommand{\textSunCloud}{PU}{\9046\305}%\* U+26C5  
18808 % U+26C6 RAIN; \Rain (ifsym)  
18809 \DeclareTextCommand{\textRain}{PU}{\9046\306}%\* U+26C6  
18810 % U+26D4 NO ENTRY; \noway (fourier)  
18811 \DeclareTextCommand{\textnoway}{PU}{\9046\324}%\* U+26D4  
18812 % U+26F0 MOUNTAIN; \Mountain (ifsym)  
18813 \DeclareTextCommand{\textMountain}{PU}{\9046\360}%\* U+26F0  
18814 % U+26FA TENT; \Tent (ifsym)  
18815 \DeclareTextCommand{\textTent}{PU}{\9046\372}%\* U+26FA

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

18816 % U+2701 UPPER BLADE SCISSORS; \ScissorRightBrokenBottom (bding)  
18817 \DeclareTextCommand{\textScissorRightBrokenBottom}{PU}{\9047\001}% U+2701  
18818 %\* \textScissorRightBrokenBottom -> \CutLeft (marvosym)  
18819 %\* \textScissorRightBrokenBottom -> \Cutright (marvosym)  
18820 % U+2702 BLACK SCISSORS; \ScissorRight (bding)  
18821 \DeclareTextCommand{\textScissorRight}{PU}{\9047\002}%\* U+2702  
18822 %\* \textScissorRight -> \RightScissors (marvosym)  
18823 %\* \textScissorRight -> \Leftscissors (marvosym)  
18824 % U+2703 LOWER BLADE SCISSORS; \ScissorRightBrokenTop (bding)  
18825 \DeclareTextCommand{\textScissorRightBrokenTop}{PU}{\9047\003}%\* U+2703  
18826 % U+2704 WHITE SCISSORS; \ScissorHollowRight (bding)  
18827 \DeclareTextCommand{\textScissorHollowRight}{PU}{\9047\004}%\* U+2704  
18828 % U+2706 TELEPHONE LOCATION SIGN; \PhoneHandset (bding)  
18829 \DeclareTextCommand{\textPhoneHandset}{PU}{\9047\006}%\* U+2706  
18830 % U+2707 TAPE DRIVE; \Tape (bding)  
18831 \DeclareTextCommand{\textTape}{PU}{\9047\007}%\* U+2707  
18832 % U+2708 AIRPLANE; \Plane (bding)  
18833 \DeclareTextCommand{\textPlane}{PU}{\9047\010}%\* U+2708  
18834 % U+2709 ENVELOPE; \Envelope (bding),  
18835 \DeclareTextCommand{\textEnvelope}{PU}{\9047\011}%\* U+2709

18836 %\* \textEnvelope -> \Letter (marvosym)  
18837 % U+270C VICTORY HAND; \Peace (bding)  
18838 \DeclareTextCommand{\textPeace}{PU}{\9047\014}%\* U+270C  
18839 % U+270D WRITING HAND; \WritingHand (marvosym)  
18840 \DeclareTextCommand{\textWritingHand}{PU}{\9047\015}%\* U+270D  
18841 %\* \textWritingHand -> \Writinghand (marvosym)  
18842 % U+270E LOWER RIGHT PENCIL; \PencilRightDown (bding)  
18843 \DeclareTextCommand{\textPencilRightDown}{PU}{\9047\016}%\* U+270E  
18844 % U+270F PENCIL; \PencilRight (bding)  
18845 \DeclareTextCommand{\textPencilRight}{PU}{\9047\017}%\* U+270F  
18846 % U+2710 UPPER RIGHT PENCIL; \PencilRightUp (bding)  
18847 \DeclareTextCommand{\textPencilRightUp}{PU}{\9047\020}%\* U+2710  
18848 % U+2711 WHITE NIB; \NibRight (bding)  
18849 \DeclareTextCommand{\textNibRight}{PU}{\9047\021}%\* U+2711  
18850 % U+2712 BLACK NIB; \NibSolidRight (bding)  
18851 \DeclareTextCommand{\textNibSolidRight}{PU}{\9047\022}%\* U+2712  
18852 % U+2713 CHECK MARK; checkmark; \Checkmark (bding)  
18853 \DeclareTextCommand{\textCheckmark}{PU}{\9047\023}%\* U+2713  
18854 %\* \textCheckmark -> \checkmark (MnSymbol)  
18855 % U+2714 HEAVY CHECK MARK; \CheckmarkBold (bding)  
18856 \DeclareTextCommand{\textCheckmarkBold}{PU}{\9047\024}%\* U+2714  
18857 % U+2715 MULTIPLICATION X; \XSolid (bding)  
18858 \DeclareTextCommand{\textXSolid}{PU}{\9047\025}%\* U+2715  
18859 % U+2716 HEAVY MULTIPLICATION X; \XSolidBold (bding)  
18860 \DeclareTextCommand{\textXSolidBold}{PU}{\9047\026}%\* U+2716  
18861 % U+2717 BALLOT X; \XSolidBrush (bding)  
18862 \DeclareTextCommand{\textXSolidBrush}{PU}{\9047\027}%\* U+2717  
18863 % U+2719 OUTLINED GREEK CROSS; \PlusOutline (bding)  
18864 \DeclareTextCommand{\textPlusOutline}{PU}{\9047\031}%\* U+2719  
18865 % U+271A HEAVY GREEK CROSS; \Plus (bding)  
18866 \DeclareTextCommand{\textPlus}{PU}{\9047\032}%\* U+271A  
18867 % U+271B OPEN CENTRE CROSS; \PlusThinCenterOpen (bding)  
18868 \DeclareTextCommand{\textPlusThinCenterOpen}{PU}{\9047\033}%\* U+271B  
18869 % U+271C HEAVY OPEN CENTRE CROSS; \PlusCenterOpen (bding)  
18870 \DeclareTextCommand{\textPlusCenterOpen}{PU}{\9047\034}%\* U+271C  
18871 % U+271D LATIN CROSS; \Cross (bding)  
18872 \DeclareTextCommand{\textCross}{PU}{\9047\035}%\* U+271D  
18873 % U+271E SHADOWED WHITE LATIN CROSS; \CrossOpenShadow (bding)  
18874 \DeclareTextCommand{\textCrossOpenShadow}{PU}{\9047\036}%\* U+271E  
18875 % U+271F OUTLINED LATIN CROSS; \CrossOutline (bding)  
18876 \DeclareTextCommand{\textCrossOutline}{PU}{\9047\037}%\* U+271F  
18877 % U+2720 MALTESE CROSS; \CrossMaltese (bding)  
18878 \DeclareTextCommand{\textCrossMaltese}{PU}{\9047\040}%\* U+2720  
18879 % U+2721 STAR OF DAVID; \DavidStar (bding)  
18880 \DeclareTextCommand{\textDavidStar}{PU}{\9047\041}%\* U+2721  
18881 %\* \textDavidStar -> \davidstar (wasysym)  
18882 % U+2722 FOUR TEARDROP-SPOKED ASTERISK; \FourAsterisk (bding)  
18883 \DeclareTextCommand{\textFourAsterisk}{PU}{\9047\042}%\* U+2722  
18884 % U+2723 FOUR BALLOON-SPOKED ASTERISK; \JackStar (bding)  
18885 \DeclareTextCommand{\textJackStar}{PU}{\9047\043}%\* U+2723  
18886 % U+2724 HEAVY FOUR BALLOON-SPOKED ASTERISK; \JackStarBold (bding)  
18887 \DeclareTextCommand{\textJackStarBold}{PU}{\9047\044}%\* U+2724  
18888 % U+2725 FOUR CLUB-SPOKED ASTERISK; \CrossClowerTips (bding)

18889 \DeclareTextCommand{\textClowerTips}{PU}{\9047\045}%\* U+2725  
18890 % U+2726 BLACK FOUR POINTED STAR; \FourStar (bding)  
18891 \DeclareTextCommand{\textFourStar}{PU}{\9047\046}%\* U+2726  
18892 % U+2727 WHITE FOUR POINTED STAR; \FourStarOpen (bding)  
18893 \DeclareTextCommand{\textFourStarOpen}{PU}{\9047\047}%\* U+2727  
18894 % U+272A CIRCLED WHITE STAR; \FiveStarOpenCircled (bding)  
18895 \DeclareTextCommand{\textFiveStarOpenCircled}{PU}{\9047\052}%\* U+272A  
18896 % U+272B OPEN CENTRE BLACK STAR; \FiveStarCenterOpen (bding)  
18897 \DeclareTextCommand{\textFiveStarCenterOpen}{PU}{\9047\053}%\* U+272B  
18898 % U+272C BLACK CENTRE WHITE STAR; \FiveStarOpenDotted (bding)  
18899 \DeclareTextCommand{\textFiveStarOpenDotted}{PU}{\9047\054}%\* U+272C  
18900 % U+272D OUTLINED BLACK STAR; \FiveStarOutline (bding)  
18901 \DeclareTextCommand{\textFiveStarOutline}{PU}{\9047\055}%\* U+272D  
18902 % U+272E HEAVY OUTLINED BLACK STAR; \FiveStarOutlineHeavy (bding)  
18903 \DeclareTextCommand{\textFiveStarOutlineHeavy}{PU}{\9047\056}%\* U+272E  
18904 % U+272F PINWHEEL STAR; \FiveStarConvex (bding)  
18905 \DeclareTextCommand{\textFiveStarConvex}{PU}{\9047\057}%\* U+272F  
18906 % U+2730 SHADOWED WHITE STAR; \FiveStarShadow (bding)  
18907 \DeclareTextCommand{\textFiveStarShadow}{PU}{\9047\060}%\* U+2730  
18908 % U+2731 HEAVY ASTERISK; \AsteriskBold (bding)  
18909 \DeclareTextCommand{\textAsteriskBold}{PU}{\9047\061}%\* U+2731  
18910 % U+2732 OPEN CENTRE ASTERISK; \AsteriskCenterOpen (bding)  
18911 \DeclareTextCommand{\textAsteriskCenterOpen}{PU}{\9047\062}%\* U+2732  
18912 % U+2734 EIGHT POINTED BLACK STAR; \EightStarTaper (bding)  
18913 \DeclareTextCommand{\textEightStarTaper}{PU}{\9047\064}%\* U+2734  
18914 % U+2735 EIGHT POINTED PINWHEEL STAR; \EightStarConvex (bding)  
18915 \DeclareTextCommand{\textEightStarConvex}{PU}{\9047\065}%\* U+2735  
18916 % U+2736 SIX POINTED BLACK STAR; \SixStar (bding)  
18917 \DeclareTextCommand{\textSixStar}{PU}{\9047\066}%\* U+2736  
18918 % U+2737 EIGHT POINTED RECTILINEAR BLACK STAR; \EightStar (bding)  
18919 \DeclareTextCommand{\textEightStar}{PU}{\9047\067}%\* U+2737  
18920 % U+2738 HEAVY EIGHT POINTED RECTILINEAR BLACK STAR; \EightStarBold (bding)  
18921 \DeclareTextCommand{\textEightStarBold}{PU}{\9047\070}%\* U+2738  
18922 % U+2739 TWELVE POINTED BLACK STAR; \TwelveStar (bding)  
18923 \DeclareTextCommand{\textTwelveStar}{PU}{\9047\071}%\* U+2739  
18924 % U+273A SIXTEEN POINTED ASTERISK; \SixteenStarLight (bding)  
18925 \DeclareTextCommand{\textSixteenStarLight}{PU}{\9047\072}%\* U+273A  
18926 % U+273B TEARDROP-SPOKED ASTERISK; \SixFlowerPetalRemoved (bding)  
18927 \DeclareTextCommand{\textSixFlowerPetalRemoved}{PU}{\9047\073}%\* U+273B  
18928 % U+273C OPEN CENTRE TEARDROP-SPOKED ASTERISK;  
18929 % \SixFlowerOpenCenter (bding)  
18930 \DeclareTextCommand{\textSixFlowerOpenCenter}{PU}{\9047\074}%\* U+273C  
18931 % U+273D HEAVY TEARDROP-SPOKED ASTERISK; \Asterisk (bding)  
18932 \DeclareTextCommand{\textAsterisk}{PU}{\9047\075}%\* U+273D  
18933 % U+273E SIX PETALLED BLACK AND WHITE FLORETTE; \SixFlowerAlternate (bding)  
18934 \DeclareTextCommand{\textSixFlowerAlternate}{PU}{\9047\076}%\* U+273E  
18935 % U+273F BLACK FLORETTE; \FiveFlowerPetal (bding)  
18936 \DeclareTextCommand{\textFiveFlowerPetal}{PU}{\9047\077}%\* U+273F  
18937 % U+2740 WHITE FLORETTE; \FiveFlowerOpen (bding)  
18938 \DeclareTextCommand{\textFiveFlowerOpen}{PU}{\9047\100}%\* U+2740

18939 % U+2741 EIGHT PETALLED OUTLINED BLACK FLORETTE; \EightFlowerPetal (bding)

18940 \DeclareTextCommand{\textEightFlowerPetal}{PU}{\9047\101}%\* U+2741

18941 % U+2742 CIRCLED OPEN CENTRE EIGHT POINTED STAR; \SunshineOpenCircled (bding)

18942 \DeclareTextCommand{\textSunshineOpenCircled}{PU}{\9047\102}%\* U+2742

18943 % U+2743 HEAVY TEARDROP-SPOKED PINWHEEL ASTERISK; \SixFlowerAltPetal (bding)

18944 \DeclareTextCommand{\textSixFlowerAltPetal}{PU}{\9047\103}%\* U+2743

18945 % U+2744 SNOWFLAKE; \SnowflakeChevron (bding)

18946 \DeclareTextCommand{\textSnowflakeChevron}{PU}{\9047\104}%\* U+2744

18947 % U+2745 TIGHT TRIFOLIATE SNOWFLAKE; \Snowflake (bding)

18948 \DeclareTextCommand{\textSnowflake}{PU}{\9047\105}%\* U+2745

18949 % U+2746 HEAVY CHEVRON SNOWFLAKE; \SnowflakeChevronBold (bding)

18950 \DeclareTextCommand{\textSnowflakeChevronBold}{PU}{\9047\106}%\* U+2746

18951 % U+2747 SPARKLE; \Sparkle (bding)

18952 \DeclareTextCommand{\textSparkle}{PU}{\9047\107}%\* U+2747

18953 % U+2748 HEAVY SPARKLE; \SparkleBold (bding)

18954 \DeclareTextCommand{\textSparkleBold}{PU}{\9047\110}%\* U+2748

18955 % U+2749 BALLOON-SPOKED ASTERISK; \AsteriskRoundedEnds (bding)

18956 \DeclareTextCommand{\textAsteriskRoundedEnds}{PU}{\9047\111}%\* U+2749

18957 % U+274A EIGHT TEARDROP-SPOKED PROPELLER ASTERISK;

18958 % \EightFlowerPetalRemoved (bding)

18959 \DeclareTextCommand{\textEightFlowerPetalRemoved}{PU}{\9047\112}%\* U+274A

18960 % U+274B HEAVY EIGHT TEARDROP-SPOKED PROPELLER ASTERISK;

18961 % \EightAsterisk (bding)

18962 \DeclareTextCommand{\textEightAsterisk}{PU}{\9047\113}%\* U+274B

18963 % U+274D SHADOWED WHITE CIRCLE; \CircleShadow (bding)

18964 \DeclareTextCommand{\textCircleShadow}{PU}{\9047\115}%\* U+274D

18965 % U+274F LOWER RIGHT DROP-SHADOWED WHITE SQUARE;

18966 % \SquareShadowBottomRight (bding)

18967 \DeclareTextCommand{\textSquareShadowBottomRight}{PU}{\9047\117}%\* U+274F

18968 % U+2750 UPPER RIGHT DROP-SHADOWED WHITE SQUARE;

18969 % \SquareShadowTopRight (bding)

18970 \DeclareTextCommand{\textSquareTopRight}{PU}{\9047\120}%\* U+2750

18971 % U+2751 LOWER RIGHT SHADOWED WHITE SQUARE;

18972 % \SquareCastShadowBottomRight (bding)

18973 \DeclareTextCommand{\textSquareCastShadowBottomRight}{PU}{\9047\121}%\* U+2751

18974 % U+2752 UPPER RIGHT SHADOWED WHITE SQUARE;

18975 % \SquareCastShadowTopRight (bding)

18976 \DeclareTextCommand{\textSquareCastShadowTopRight}{PU}{\9047\122}%\* U+2752

18977 % U+2756 BLACK DIAMOND MINUS WHITE X; \OrnamentDiamondSolid (bding)

18978 \DeclareTextCommand{\textDiamondSolid}{PU}{\9047\126}%\* U+2756

18979 % U+2758 LIGHT VERTICAL BAR; \RectangleThin (bding)

18980 \DeclareTextCommand{\textRectangleThin}{PU}{\9047\130}%\* U+2758

18981 % U+2759 MEDIUM VERTICAL BAR; \Rectangle (bding)

18982 \DeclareTextCommand{\textRectangle}{PU}{\9047\131}%\* U+2759

18983 % U+275A HEAVY VERTICAL BAR; \RectangleBold (bding)

18984 \DeclareTextCommand{\textRectangleBold}{PU}{\9047\132}%\* U+275A

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

18985 % U+27C2 PERPENDICULAR; perpendicular; \perp (LaTeX)

18986 \DeclareTextCommand{\textperp}{PU}{\9047\302}%\* U+27C2

18987 % \notperp (mathabx)  
18988 \DeclareTextCommand{\textnotperp}{PU}{\9047\302\83\070}%\* U+27C2 U+0338  
18989 % U+27C7 OR WITH DOT INSIDE; \veedot (MnSymbol)  
18990 \DeclareTextCommand{\textveedot}{PU}{\9047\307}%\* U+27C7  
18991 % U+27D1 AND WITH DOT; \wedgedot (MnSymbol)  
18992 \DeclareTextCommand{\textwedgedot}{PU}{\9047\321}%\* U+27D1  
18993 % U+27DC LEFT MULTIMAP; \leftspoon (MnSymbol)  
18994 \DeclareTextCommand{\textleftspoon}{PU}{\9047\334}%\* U+27DC  
18995 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET  
18996 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}%\* U+27E6  
18997 %\* \textlbrackdbl -> \lbracket (stmaryrd)  
18998 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET  
18999 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}%\* U+27E7  
19000 %\* \textrbrackdbl -> \rrbracket (stmaryrd)

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

19001 % U+27F2 ANTICLOCKWISE GAPPED CIRCLE ARROW;  
19002 % \circlearrowleft (AmS)  
19003 \DeclareTextCommand{\textcirclearrowleft}{PU}{\9047\362}%\* U+27F2  
19004 % U+27F3 CLOCKWISE GAPPED CIRCLE ARROW; \circlearrowright (AmS)  
19005 \DeclareTextCommand{\textcirclearrowright}{PU}{\9047\363}%\* U+27F3  
19006 % U+27F5 LONG LEFTWARDS ARROW; \longleftarrow (AmS)  
19007 \DeclareTextCommand{\textlongleftarrow}{PU}{\9047\365}%\* U+27F5  
19008 % U+27F6 LONG RIGHTWARDS ARROW; \longrightarrow (AmS)  
19009 \DeclareTextCommand{\textlongrightarrow}{PU}{\9047\366}%\* U+27F6  
19010 % U+27F7 LONG LEFT RIGHT ARROW; \longlefttrightarrow (AmS)  
19011 \DeclareTextCommand{\textlonglefttrightarrow}{PU}{\9047\367}%\* U+27F7  
19012 % U+27F8 LONG LEFTWARDS DOUBLE ARROW; \Longleftarrow (AmS)  
19013 \DeclareTextCommand{\textLongleftarrow}{PU}{\9047\370}%\* U+27F8  
19014 % U+27F9 LONG RIGHTWARDS DOUBLE ARROW; \Longrightarrow (AmS)  
19015 \DeclareTextCommand{\textLongrightarrow}{PU}{\9047\371}%\* U+27F9  
19016 % U+27FA LONG LEFT RIGHT DOUBLE ARROW; \Longlefttrightarrow (AmS)  
19017 \DeclareTextCommand{\textLonglefttrightarrow}{PU}{\9047\372}%\* U+27FA  
19018 % U+27FC LONG RIGHTWARDS ARROW FROM BAR; \longmapsto (AmS)  
19019 \DeclareTextCommand{\textlongmapsto}{PU}{\9047\374}%\* U+27FC  
19020 % U+27FD LONG LEFTWARDS DOUBLE ARROW FROM BAR; \Longmapsfrom (stmaryrd)  
19021 \DeclareTextCommand{\textLongmapsfrom}{PU}{\9047\375}%\* U+27FD  
19022 % U+27FE LONG RIGHTWARDS DOUBLE ARROW FROM BAR; \Longmapsto (stmaryrd)  
19023 \DeclareTextCommand{\textLongmapsto}{PU}{\9047\376}%\* U+27FE

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

19024 % U+2921 NORTH WEST AND SOUTH EAST ARROW; \nwsearrow (MnSymbol)  
19025 \DeclareTextCommand{\textnwsearrow}{PU}{\9051\041}%\* U+2921  
19026 % U+2922 NORTH EAST AND SOUTH WEST ARROW; \neswarrow (MnSymbol)  
19027 \DeclareTextCommand{\textneswarrow}{PU}{\9051\042}%\* U+2922  
19028 % U+2923 NORTH WEST ARROW WITH HOOK; \hooknwarrow (MnSymbol)  
19029 \DeclareTextCommand{\texthooknwarrow}{PU}{\9051\043}%\* U+2923  
19030 % U+2924 NORTH EAST ARROW WITH HOOK; \hooknearrow (MnSymbol)  
19031 \DeclareTextCommand{\texthooknearrow}{PU}{\9051\044}%\* U+2924  
19032 % U+2925 SOUTH EAST ARROW WITH HOOK; \hooksearrow (MnSymbol)

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19033 \DeclareTextCommand{\textlhooksearrow}{PU}{\9051\045}%* U+2925
19034 % U+2926 SOUTH WEST ARROW WITH HOOK; \rhookswarrow (MnSymbol)
19035 \DeclareTextCommand{\textrhookswarrow}{PU}{\9051\046}%* U+2926
19036 % U+2933 WAVE ARROW POINTING DIRECTLY RIGHT; \leadsto (wasysym)
19037 \DeclareTextCommand{\textleadsto}{PU}{\9051\063}%* U+2933
19038 % U+2934 ARROW POINTING RIGHTWARDS THEN CURVING UPWARDS;
19039 % \rcurvearrowne (MnSymbol)
19040 \DeclareTextCommand{\textrcurvearrowne}{PU}{\9051\064}%* U+2934
19041 % U+2935 ARROW POINTING RIGHTWARDS THEN CURVING DOWN-
WARDS;
19042 % \lcurvearrowse (MnSymbol)
19043 \DeclareTextCommand{\textlcurvearrowse}{PU}{\9051\065}%* U+2935
19044 % U+2936 ARROW POINTING DOWNWARDS THEN CURVING LEFT-
WARDS;
19045 % \lcurvearrowsw (MnSymbol)
19046 \DeclareTextCommand{\textlcurvearrowsw}{PU}{\9051\066}%* U+2936
19047 % U+2937 ARROW POINTING DOWNWARDS THEN CURVING RIGHT-
WARDS;
19048 % \rcurvearrowse (MnSymbol)
19049 \DeclareTextCommand{\textrcurvearrowse}{PU}{\9051\067}%* U+2937
19050 % U+2938 RIGHT-SIDE ARC CLOCKWISE ARROW; \lcurvearrowdown (Mn-
Symbol)
19051 \DeclareTextCommand{\textlcurvearrowdown}{PU}{\9051\070}%* U+2938
19052 %* \textlcurvearrowdown -> \RightTorque (marvosym)
19053 %* \textlcurvearrowdown -> \Righttorque (marvosym)
19054 % U+2939 LEFT-SIDE ARC ANTICLOCKWISE ARROW;
19055 % \rcurvearrowdown (MnSymbol)
19056 \DeclareTextCommand{\textrcurvearrowdown}{PU}{\9051\071}%* U+2939
19057 %* \textrcurvearrowdown -> \LeftTorque (marvosym)
19058 %* \textrcurvearrowdown -> \Lefttorque (marvosym)
19059 % U+293A TOP ARC ANTICLOCKWISE ARROW; \rcurvearrowleft (MnSym-
bol)
19060 \DeclareTextCommand{\textrcurvearrowleft}{PU}{\9051\072}%* U+293A
19061 % U+293B BOTTOM ARC ANTICLOCKWISE ARROW;
19062 % \rcurvearrowright (MnSymbol)
19063 \DeclareTextCommand{\textrcurvearrowright}{PU}{\9051\073}%* U+293B
19064 % U+294A LEFT BARB UP RIGHT BARB DOWN HARPOON; \leftrighthar-
poon (mathabx)
19065 \DeclareTextCommand{\textleftrightharpoon}{PU}{\9051\112}%* U+294A
19066 % U+294B LEFT BARB DOWN RIGHT BARB UP HARPOON; \rightlefthar-
poon (mathabx)
19067 \DeclareTextCommand{\textrightleftharpoon}{PU}{\9051\113}%* U+294B
19068 % U+294C UP BARB RIGHT DOWN BARB LEFT HARPOON;
19069 % \updownharpoonrightleft (MnSymbol)
19070 \DeclareTextCommand{\textupdownharpoonrightleft}{PU}{\9051\114}%* U+294C
19071 % U+294D UP BARB LEFT DOWN BARB RIGHT HARPOON;
19072 % \updownharpoonleftright (MnSymbol)
19073 \DeclareTextCommand{\textupdownharpoonleftright}{PU}{\9051\115}%* U+294D
19074 % U+2962 LEFTWARDS HARPOON WITH BARB UP ABOVE LEFTWARDS
19075 % HARPOON WITH BARB DOWN; \leftleftharpoons (mathabx)
19076 \DeclareTextCommand{\textleftleftharpoons}{PU}{\9051\142}%* U+2962
19077 % U+2963 UPWARDS HARPOON WITH BARB LEFT BESIDE UPWARDS
19078 % HARPOON WITH BARB RIGHT; \upupharpoons (mathabx)
19079 \DeclareTextCommand{\textupupharpoons}{PU}{\9051\143}%* U+2963

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19080 % U+2964 RIGHTWARDS HARPOON WITH BARB UP ABOVE RIGHT-  
WARDS HARPOON  
19081 % WITH BARB DOWN; \rightrightarpoons (mathabx)  
19082 \DeclareTextCommand{\textrightarpoons}{PU}{\9051\144}%\* U+2964  
19083 % U+2965 DOWNWARDS HARPOON WITH BARB LEFT BESIDE DOWN-  
WARDS HARPOON  
19084 % WITH BARB RIGHT; \downdownarpoons (mathabx)  
19085 \DeclareTextCommand{\textdowndownarpoons}{PU}{\9051\145}%\* U+2965  
19086 % U+296A LEFTWARDS HARPOON WITH BARB UP ABOVE LONG DASH;  
19087 % \leftbarharpoon (mathabx)  
19088 \DeclareTextCommand{\textleftbarharpoon}{PU}{\9051\152}%\* U+296A  
19089 % U+296B LEFTWARDS HARPOON WITH BARB DOWN BELOW  
19090 % LONG DASH; \barleftharpoon (mathabx)  
19091 \DeclareTextCommand{\textbarleftharpoon}{PU}{\9051\153}%\* U+296B  
19092 % U+296C RIGHTWARDS HARPOON WITH BARB UP ABOVE  
19093 % LONG DASH; \rightbarharpoon (mathabx)  
19094 \DeclareTextCommand{\textrightbarharpoon}{PU}{\9051\154}%\* U+296C  
19095 % U+296D RIGHTWARDS HARPOON WITH BARB DOWN BELOW  
19096 % LONG DASH; \barrightharpoon (mathabx)  
19097 \DeclareTextCommand{\textbarrightharpoon}{PU}{\9051\155}%\* U+296D  
19098 % U+296E UPWARDS HARPOON WITH BARB LEFT BESIDE DOWN-  
WARDS HARPOON  
19099 % WITH BARB RIGHT; \updownarpoons (mathabx)  
19100 \DeclareTextCommand{\textupdownarpoons}{PU}{\9051\156}%\* U+296E  
19101 % U+296F DOWNWARDS HARPOON WITH BARB LEFT BESIDE UP-  
WARDS HARPOON  
19102 % WITH BARB RIGHT; \downuparpoons (mathabx)  
19103 \DeclareTextCommand{\textdownuparpoons}{PU}{\9051\157}%\* U+296F  
19104 % U+297F DOWN FISH TAIL  
19105 \DeclareTextCommand{\textmoo}{PU}{\9051\177\83\066}%\* U+297F U+0336

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

19106 % U+2987 Z NOTATION LEFT IMAGE BRACKET; \lparenthesis (stmaryrd)  
19107 \DeclareTextCommand{\textlparenthesis}{PU}{\9051\207}%\* U+2987  
19108 % U+2988 Z NOTATION RIGHT IMAGE BRACKET; \rrparenthesis (stmaryrd)  
19109 \DeclareTextCommand{\textrrparenthesis}{PU}{\9051\210}%\* U+2988  
19110 % U+29B0 REVERSED EMPTY SET; \invdiameter (wasysym)  
19111 \DeclareTextCommand{\textinvdiameter}{PU}{\9051\260}%\* U+29B0  
19112 % U+29B6 CIRCLED VERTICAL BAR; \obar (stmaryrd)  
19113 \DeclareTextCommand{\textobar}{PU}{\9051\266}%\* U+29B6  
19114 %\* \textobar -> \textvarobar (stmaryrd)  
19115 % U+29B8 CIRCLED REVERSE SOLIDUS; \obslash (stmaryrd)  
19116 \DeclareTextCommand{\textobslash}{PU}{\9051\270}%\* U+29B8  
19117 %\* \textobslash -> \circledbslash (txfonts/pxfonts)  
19118 %\* \textobslash -> \obackslash (mathabx)  
19119 %\* \textobslash -> \varobslash (stmaryrd)  
19120 % U+29BA CIRCLE DIVIDED BY HORIZONTAL BAR AND TOP HALF  
19121 % DIVIDED BY VERTICAL BAR; \obot (mathabx)  
19122 \DeclareTextCommand{\textobot}{PU}{\9051\272}%\* U+29BA  
19123 %\* \textobot -> \odplus (ulsy)  
19124 % U+29BB CIRCLE WITH SUPERIMPOSED X; \NoChemicalCleaning (mar-  
vosym)  
19125 \DeclareTextCommand{\textNoChemicalCleaning}{PU}{\9051\273}%\* U+29BB  
19126 % U+29C0 CIRCLED LESS-THAN; \olessthan (stmaryrd)

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19127 \DeclareTextCommand{\textolessthan}{PU}{\9051\300}%* U+29C0
19128 %* \textolessthan -> \varolessthan (stmaryrd)
19129 % U+29C1 CIRCLED GREATER-THAN; \ogreaterthan (stmaryrd)
19130 \DeclareTextCommand{\textogreaterthan}{PU}{\9051\301}%* U+29C1
19131 %* \textogreaterthan -> \varogreaterthan (stmaryrd)
19132 % U+29C4 SQUARED RISING DIAGONAL SLASH; \boxslash (mathabx, stmaryrd)
19133 \DeclareTextCommand{\textboxslash}{PU}{\9051\304}%* U+29C4
19134 % U+29C5 SQUARED FALLING DIAGONAL SLASH; \boxbslash (stmaryrd)
19135 \DeclareTextCommand{\textboxbslash}{PU}{\9051\305}%* U+29C5
19136 % U+29C6 SQUARED ASTERISK; \boxast (stmaryrd)
19137 \DeclareTextCommand{\textboxast}{PU}{\9051\306}%* U+29C6
19138 % U+29C7 SQUARED SMALL CIRCLE; \boxcircle (stmaryrd)
19139 \DeclareTextCommand{\textboxcircle}{PU}{\9051\307}%* U+29C7
19140 % U+29C8 SQUARED SQUARE; \boxbox (stmaryrd)
19141 \DeclareTextCommand{\textboxbox}{PU}{\9051\310}%* U+29C8
19142 % U+29D3 BLACK BOWTIE; \Valve (marvosym)
19143 \DeclareTextCommand{\textValve}{PU}{\9051\323}%* U+29D3
19144 % U+29DF DOUBLE-ENDED MULTIMAP; \multimapboth (txfonts/pxfonts)
19145 \DeclareTextCommand{\textmultimapboth}{PU}{\9051\337}%* U+29DF
19146 % U+29E2 SHUFFLE PRODUCT; \shuffle (shuffle)
19147 \DeclareTextCommand{\textshuffle}{PU}{\9051\342}%* U+29E2

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

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19148 % U+2A04 N-ARY UNION OPERATOR WITH PLUS; \uplus (LaTeX)
19149 \DeclareTextCommand{\textuplus}{PU}{\9052\004}%* U+2A04
19150 % U+2A07 TWO LOGICAL AND OPERATOR; \bigdoublewedge (MnSymbol)
19151 \DeclareTextCommand{\textbigdoublewedge}{PU}{\9052\007}%* U+2A07
19152 % U+2A08 TWO LOGICAL OR OPERATOR; \bigdoublevee (MnSymbol)
19153 \DeclareTextCommand{\textbigdoublevee}{PU}{\9052\010}%* U+2A08
19154 % U+2A1D JOIN; \Join (latexsym, amssymb, mathabx, txfonts,
19155 %   pxfonts, wasysym)
19156 \DeclareTextCommand{\textJoin}{PU}{\9052\035}%* U+2A1D
19157 % U+2A1F Z NOTATION SCHEMA COMPOSITION; \fatsemi (stmaryrd)
19158 \DeclareTextCommand{\textfatsemi}{PU}{\9052\037}%* U+2A1F
19159 % U+2A22 PLUS SIGN WITH SMALL CIRCLE ABOVE; \circplus (mathabx)
19160 \DeclareTextCommand{\textcircplus}{PU}{\9052\042}%* U+2A22
19161 % U+2A2A MINUS SIGN WITH DOT BELOW; \minusdot (MnSymbol)
19162 \DeclareTextCommand{\textminusdot}{PU}{\9052\052}%* U+2A2A
19163 %* \textminusdot -> \divdot (mathabx)
19164 % U+2A30 MULTIPLICATION SIGN WITH DOT ABOVE; \dottimes (mathabx)
19165 \DeclareTextCommand{\textdottimes}{PU}{\9052\060}%* U+2A30
19166 % U+2A32 SEMIDIRECT PRODUCT WITH BOTTOM CLOSED;
19167 %   \dtimes (mathdesign)
19168 \DeclareTextCommand{\textdtimes}{PU}{\9052\062}%* U+2A32
19169 % U+2A38 CIRCLED DIVISION SIGN; \odiv (mathabx)
19170 \DeclareTextCommand{\textodiv}{PU}{\9052\070}%* U+2A38
19171 % U+2A3C INTERIOR PRODUCT; \invneg (MnSymbol)
19172 \DeclareTextCommand{\textinvneg}{PU}{\9052\074}%* U+2A3C
19173 % U+2A4E DOUBLE SQUARE INTERSECTION; \sqdoublecap (mathabx)
19174 \DeclareTextCommand{\textsqdoublecap}{PU}{\9052\116}%* U+2A4E
19175 %* \textsqdoublecap -> \doublesqcap (MnSymbol)
19176 % U+2A40 INTERSECTION WITH DOT; \capdot (MnSymbol)
19177 \DeclareTextCommand{\textcapdot}{PU}{\9052\100}%* U+2A40
19178 % U+2A4F DOUBLE SQUARE UNION; \sqdoublecup (mathabx)

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19179 \DeclareTextCommand{\textsqdoublecup}{PU}{\9052\117}%* U+2A4F
19180 %* \textsqdoublecup -> \doublesqcup (MnSymbol)
19181 % U+2A55 TWO INTERSECTING LOGICAL AND; \doublewedge (MnSymbol)
19182 \DeclareTextCommand{\textdoublewedge}{PU}{\9052\125}%* U+2A55
19183 % U+2A56 TWO INTERSECTING LOGICAL OR; \doublevee (MnSymbol)
19184 \DeclareTextCommand{\textdoublevee}{PU}{\9052\126}%* U+2A56
19185 %* \textdoublevee -> \merge (stmaryrd)
19186 % U+2A5E LOGICAL AND WITH DOUBLE OVERBAR;
19187 % \doublebarwedge (AmS)
19188 \DeclareTextCommand{\textdoublebarwedge}{PU}{\9052\136}%* U+2A5E
19189 % U+2A63 LOGICAL OR WITH DOUBLE UNDERBAR;
19190 % \veedoublebar (mahtabx)
19191 \DeclareTextCommand{\textveedoublebar}{PU}{\9052\143}%* U+2A63
19192 % U+2A66 EQUALS SIGN WITH DOT BELOW; \eqdot (MnSymbol)
19193 \DeclareTextCommand{\texteqdot}{PU}{\9052\146}%* U+2A66
19194 % \neqdot (MnSymbol)
19195 \DeclareTextCommand{\textneqdot}{PU}{\9052\146\83\070}%* U+2A66 U+0338
19196 % U+2A74 DOUBLE COLON EQUAL; \coloncolonequals (colonequals)
19197 \DeclareTextCommand{\textcoloncolonequals}{PU}{\9052\164}%* U+2A74
19198 % U+2A7D LESS-THAN OR SLANTED EQUAL TO; \leqslant (AmS)
19199 \DeclareTextCommand{\textleqslant}{PU}{\9052\175}%* U+2A7D
19200 % \nleqslant (txfonts/pxfonts)
19201 \DeclareTextCommand{\textnleqslant}{PU}{\9052\175\83\070}%* U+2A7D U+0338
19202 % U+2A7E GREATER-THAN OR SLANTED EQUAL TO; \geqslant (AmS)
19203 \DeclareTextCommand{\textgeqslant}{PU}{\9052\176}%* U+2A7E
19204 % \ngeqslant (txfonts/pxfonts)
19205 \DeclareTextCommand{\textngeqslant}{PU}{\9052\176\83\070}%* U+2A7E U+0338
19206 % U+2A85 LESS-THAN OR APPROXIMATE; \lessapprox (AmS)
19207 \DeclareTextCommand{\textlessapprox}{PU}{\9052\205}%* U+2A85
19208 % \nlessapprox (txfonts/pxfonts)
19209 \DeclareTextCommand{\textnlessapprox}{PU}{\9052\205\83\070}%* U+2A85 U+0338
19210 % U+2A86 GREATER-THAN OR APPROXIMATE; \gtrapprox (AmS)
19211 \DeclareTextCommand{\textgtrapprox}{PU}{\9052\206}%* U+2A86
19212 % \ngtrapprox (txfonts/pxfonts)
19213 \DeclareTextCommand{\textngtrapprox}{PU}{\9052\206\83\070}%* U+2A86 U+0338
19214 % U+2A87 LESS-THAN AND SINGLE-LINE NOT EQUAL TO; \lneq (AmS)
19215 \DeclareTextCommand{\textlneq}{PU}{\9052\207}%* U+2A87
19216 % U+2A88 GREATER-THAN AND SINGLE-LINE NOT EQUAL TO;
19217 % \gneq (AmS)
19218 \DeclareTextCommand{\textgneq}{PU}{\9052\210}%* U+2A88
19219 % U+2A89 LESS-THAN AND NOT APPROXIMATE; \lnapprox (AmS)
19220 \DeclareTextCommand{\textlnapprox}{PU}{\9052\211}%* U+2A89
19221 % U+2A8A GREATER-THAN AND NOT APPROXIMATE; \gnapprox (AmS)
19222 \DeclareTextCommand{\textgnapprox}{PU}{\9052\212}%* U+2A8A
19223 % U+2A8B LESS-THAN ABOVE DOUBLE-LINE EQUAL ABOVE GREATER-
    THAN;
19224 % \lesseqgtr (AmS)
19225 \DeclareTextCommand{\textlesseqgtr}{PU}{\9052\213}%* U+2A8B
19226 % U+2A8C GREATER-THAN ABOVE DOUBLE-LINE EQUAL ABOVE LESS-
    THAN;
19227 % \gtreqless (AmS)
19228 \DeclareTextCommand{\textgtreqless}{PU}{\9052\214}%* U+2A8C
19229 % U+2A95 SLANTED EQUAL TO OR LESS-THAN; \eqslantless (AmS)
19230 \DeclareTextCommand{\texteqslantless}{PU}{\9052\225}%* U+2A95

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19231 % U+2A96 SLANTED EQUAL TO OR GREATER-THAN; \eqslantgtr (AmS)  
19232 \DeclareTextCommand{\texteqslantgtr}{PU}{\9052\226}%\* U+2A96  
19233 % U+2AA6 LESS-THAN CLOSED BY CURVE; \leftslice (stmaryrd)  
19234 \DeclareTextCommand{\textleftslice}{PU}{\9052\246}%\* U+2AA6  
19235 % U+2AA7 GREATER-THAN CLOSED BY CURVE; \rightslice (stmaryrd)  
19236 \DeclareTextCommand{\textrightslice}{PU}{\9052\247}%\* U+2AA7  
19237 % U+2AAF PRECEDES ABOVE SINGLE-LINE EQUALS SIGN; \preceq (Mn-Symbol)  
19238 \DeclareTextCommand{\textpreceq}{PU}{\9052\257}%\* U+2AAF  
19239 % \npreceq (txfonts/pxfonts)  
19240 \DeclareTextCommand{\textnpreceq}{PU}{\9052\257\83\070}%\* U+2AAF U+0338  
19241 % U+2AB0 SUCCEEDS ABOVE SINGLE-LINE EQUALS SIGN; \succeq (Mn-Symbol)  
19242 \DeclareTextCommand{\textsucceq}{PU}{\9052\260}%\* U+2AB0  
19243 % \nsucceq (txfonts/pxfonts)  
19244 \DeclareTextCommand{\textnsucceq}{PU}{\9052\260\83\070}%\* U+2AB0 U+0338  
19245 % U+2AB1 PRECEDES ABOVE SINGLE-LINE NOT EQUAL TO; \precneq (mathabx)  
19246 \DeclareTextCommand{\textprecneq}{PU}{\9052\261}%\* U+2AB1  
19247 % U+2AB2 SUCCEEDS ABOVE SINGLE-LINE NOT EQUAL TO; \succneq (mathabx)  
19248 \DeclareTextCommand{\textsuccneq}{PU}{\9052\262}%\* U+2AB2  
19249 % U+2AB3 PRECEDES ABOVE EQUALS SIGN; \preceqq (txfonts/pxfonts)  
19250 \DeclareTextCommand{\textpreceqq}{PU}{\9052\263}%\* U+2AB3  
19251 % \npreceqq (txfonts/pxfonts)  
19252 \DeclareTextCommand{\textnpreceqq}{PU}{\9052\263\83\070}%\* U+2AB3 U+0338  
19253 % U+2AB4 SUCCEEDS ABOVE EQUALS SIGN; \succeqq (txfonts/pxfonts)  
19254 \DeclareTextCommand{\textsucceqq}{PU}{\9052\264}%\* U+2AB4  
19255 % \nsucceqq (txfonts/pxfonts)  
19256 \DeclareTextCommand{\textnsucceqq}{PU}{\9052\264\83\070}%\* U+2AB4 U+0338  
19257 % U+2AB5 PRECEDES ABOVE NOT EQUAL TO; \precneqq (txfonts/pxfonts)  
19258 \DeclareTextCommand{\textprecneqq}{PU}{\9052\265}%\* U+2AB5  
19259 % U+2AB6 SUCCEEDS ABOVE NOT EQUAL TO; \succneqq (txfonts/pxfonts)  
19260 \DeclareTextCommand{\textsuccneqq}{PU}{\9052\266}%\* U+2AB6  
19261 % U+2AB7 PRECEDES ABOVE ALMOST EQUAL TO; \precapprox (AmS)  
19262 \DeclareTextCommand{\textprecapprox}{PU}{\9052\267}%\* U+2AB7  
19263 % \nprecapprox (txfonts/pxfonts)  
19264 \DeclareTextCommand{\textnprecapprox}{PU}{\9052\267\83\070}%\* U+2AB7 U+0338  
19265 % U+2AB8 SUCCEEDS ABOVE ALMOST EQUAL TO; \succapprox (AmS)  
19266 \DeclareTextCommand{\textsuccapprox}{PU}{\9052\270}%\* U+2AB8  
19267 % \nsuccapprox (txfonts/pxfonts)  
19268 \DeclareTextCommand{\textnsuccapprox}{PU}{\9052\270\83\070}%\* U+2AB8 U+0338  
19269 % U+2AB9 PRECEDES ABOVE NOT ALMOST EQUAL TO; \precnapprox (AmS)  
19270 \DeclareTextCommand{\textprecnapprox}{PU}{\9052\271}%\* U+2AB9  
19271 % U+2ABA SUCCEEDS ABOVE NOT ALMOST EQUAL TO; \succnapprox (AmS)  
19272 \DeclareTextCommand{\textsuccnapprox}{PU}{\9052\272}%\* U+2ABA  
19273 % U+2AC5 SUBSET OF ABOVE EQUALS SIGN; \subseteqq (AmS)  
19274 \DeclareTextCommand{\textsubseteqq}{PU}{\9052\305}%\* U+2AC5  
19275 % \nsubseteqq (txfonts/pxfonts, mathabx)  
19276 \DeclareTextCommand{\textnsubseteqq}{PU}{\9052\305\83\070}%\* U+2AC5 U+0338  
19277 % U+2AC6 SUPERSET OF ABOVE EQUALS SIGN; \supseteqq (AmS)  
19278 \DeclareTextCommand{\textsupseteqq}{PU}{\9052\306}%\* U+2AC6

19279 % \nsupseteqq (mathabx)  
 19280 \DeclareTextCommand{\textnsupseteqq}{PU}{\9052\306\83\070}%\* U+2AC6 U+0338  
 19281 % U+2AE3 DOUBLE VERTICAL BAR LEFT TURNSTILE  
 19282 \DeclareTextCommand{\textdashV}{PU}{\9052\343}%\* U+2AE3  
 19283 %\* \textdashV -> \leftVdash (MnSymbol)  
 19284 % \ndashV (mathabx)  
 19285 \DeclareTextCommand{\textndashV}{PU}{\9052\343\83\070}%\* U+2AE3 U+0338  
 19286 %\* \textndashV -> \nleftVdash (MnSymbol)  
 19287 % U+2AE4 VERTICAL BAR DOUBLE LEFT TURNSTILE; \Dashv (mathabx)  
 19288 \DeclareTextCommand{\textDashv}{PU}{\9052\344}%\* U+2AE4  
 19289 %\* \textDashv -> \leftmodels (MnSymbol)  
 19290 % \nDashv (mathabx)  
 19291 \DeclareTextCommand{\textnDashv}{PU}{\9052\344\83\070}%\* U+2AE4 U+0338  
 19292 %\* \textnDashv -> \nleftmodels (MnSymbol)  
 19293 % U+2AE5 DOUBLE VERTICAL BAR DOUBLE LEFT TURNSTILE;  
 19294 % \DashV (mathabx)  
 19295 \DeclareTextCommand{\textDashV}{PU}{\9052\345}%\* U+2AE5  
 19296 %\* \textDashV -> \leftModels (MnSymbol)  
 19297 % \nDashV (mathabx)  
 19298 \DeclareTextCommand{\textnDashV}{PU}{\9052\345\83\070}%\* U+2AE5 U+0338  
 19299 %\* \textnDashV -> \nleftModels (MnSymbol)  
 19300 % U+2AEA DOUBLE DOWN TACK; \downmodels (MnSymbol)  
 19301 \DeclareTextCommand{\textdownmodels}{PU}{\9052\352}%\* U+2AEA  
 19302 % \ndownmodels (MnSymbol)  
 19303 \DeclareTextCommand{\textndownmodels}{PU}{\9052\352\83\070}%\* U+2AEA U+0338  
 19304 % U+2AEB DOUBLE UP TACK; \upmodels (MnSymbol)  
 19305 \DeclareTextCommand{\textupmodels}{PU}{\9052\353}%\* U+2AEB  
 19306 % \nupmodels (MnSymbol)  
 19307 \DeclareTextCommand{\textnupmodels}{PU}{\9052\353\83\070}%\* U+2AEB U+0338  
 19308 % U+2AEF VERTICAL LINE WITH CIRCLE ABOVE; \upspoon (MnSymbol)  
 19309 \DeclareTextCommand{\textupspoon}{PU}{\9052\357}%\* U+2AEF  
 19310 % U+2AF4 TRIPLE VERTICAL BAR BINARY RELATION;  
 19311 % \interleave (stmaryrd)  
 19312 \DeclareTextCommand{\textinterleave}{PU}{\9052\364}%\* U+2AF4  
 19313 % U+2AFD DOUBLE SOLIDUS OPERATOR; \sslash (stmaryrd)  
 19314 \DeclareTextCommand{\textsslash}{PU}{\9052\375}%\* U+2AFD  
 19315 %\* \textsslash -> \varparallel (txfonts\pxfonts)

**47.2.36 Miscellaneous Symbols and Arrows: U+2B00 to U+2BFF**

19316 % U+2B20 WHITE PENTAGON; \pentagon (wasysym)  
 19317 \DeclareTextCommand{\textpentagon}{PU}{\9053\040}%\* U+2B20  
 19318 % U+2B21 WHITE HEXAGON; \varhexagon (wasysym)  
 19319 \DeclareTextCommand{\textvarhexagon}{PU}{\9053\041}%\* U+2B21

**47.2.37 Latin Extended-C: U+2C60 to U+2C7F**

19320 % U+2C7C LATIN SUBSCRIPT SMALL LETTER J  
 19321 \DeclareTextCommand{\textjinferior}{PU}{\9054\174}%\* U+2C7C

**47.2.38 Supplemental Punctuation: U+2E00 to U+2E7F**

19322 % U+2E13 DOTTED OBELOS; \slashdiv (MnSymbol)  
 19323 \DeclareTextCommand{\textslashdiv}{PU}{\9056\023}%\* U+2E13  
 19324 % U+2E18 INVERTED INTERROBANG; \textinterrobangdown (textcomp)  
 19325 \DeclareTextCommand{\textinterrobangdown}{PU}{\9056\030}%\* U+2E18  
 19326 % U+2E2D FIVE DOT MARK; \fivedots (MnSymbol)

19327 \DeclareTextCommand{\textfivedots}{PU}{\9056\055}%\* U+2E2D

#### 47.2.39 Modifier Tone Letters: U+A700 to U+A71F

19328 % U+A71B MODIFIER LETTER RAISED UP ARROW; \textupstep (tipa)

19329 \DeclareTextCommand{\textupstep}{PU}{\9247\033}% U+A71B

19330 % U+A71C MODIFIER LETTER RAISED DOWN ARROW;

19331 % \textdownstep (tipa)

19332 \DeclareTextCommand{\textdownstep}{PU}{\9247\034}% U+A71C

#### 47.2.40 Latin Extended-D: U+A720 to U+A7FF

19333 % U+A727 LATIN SMALL LETTER HENG; \textheng (tipx)

19334 \DeclareTextCommand{\textPUheng}{PU}{\9247\047}% U+A727

19335 %\* \textPUheng -> \textheng (tipx)

19336 % U+A72C LATIN CAPITAL LETTER CUATRILLO; \textlhookfour (tipx)

19337 \DeclareTextCommand{\textPUIhookfour}{PU}{\9247\054}% U+A72C

19338 %\* \textPUIhookfour -> \textlhookfour (tipx)

19339 % U+A730 LATIN LETTER SMALL CAPITAL F; \textscf (tipx)

19340 \DeclareTextCommand{\textPUscf}{PU}{\9247\060}% U+A730

19341 %\* \textPUscf -> \textscf (tipx)

19342 % U+A735 LATIN SMALL LETTER AO; \textao lig (tipx)

19343 \DeclareTextCommand{\textPUaolig}{PU}{\9247\065}% U+A735

19344 %\* \textPUaolig -> \textao lig (tipx)

19345 % U+A74F LATIN SMALL LETTER OO; \oo (wsuipa)

19346 \DeclareTextCommand{\textoo}{PU}{\9247\117}%\* U+A74F

19347 % U+A788 MODIFIER LETTER LOW CIRCUMFLEX ACCENT

19348 \DeclareTextCommand{\textcircumlw}{PU}{\9247\210}% U+A788

#### 47.2.41 Alphabetic Presentation Forms: U+FB00 to U+FB4F

19349 % U+FB01 LATIN SMALL LIGATURE FI; fi

19350 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01

19351 % U+FB02 LATIN SMALL LIGATURE FL; fl

19352 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02

#### 47.2.42 Musical Symbols: U+1D100 to U+1D1FF

19353 % U+1D13B MUSICAL SYMBOL WHOLE REST; \GaPa (harmony)

19354 \DeclareTextCommand{\textGaPa}{PU}{\9330\064\9335\073}%\* U+1D13B

19355 % U+1D13C MUSICAL SYMBOL HALF REST; \HaPa (harmony)

19356 \DeclareTextCommand{\textHaPa}{PU}{\9330\064\9335\074}%\* U+1D13C

19357 % U+1D13D MUSICAL SYMBOL QUARTER REST; \ViPa (harmony)

19358 \DeclareTextCommand{\textViPa}{PU}{\9330\064\9335\075}%\* U+1D13D

19359 % U+1D13E MUSICAL SYMBOL EIGHTH REST; \AcPa (harmony)

19360 \DeclareTextCommand{\textAcPa}{PU}{\9330\064\9335\076}%\* U+1D13E

19361 % U+1D13F MUSICAL SYMBOL SIXTEENTH REST; \SePa (harmony)

19362 \DeclareTextCommand{\textSePa}{PU}{\9330\064\9335\077}%\* U+1D13F

19363 % U+1D140 MUSICAL SYMBOL THIRTY-SECOND REST; \ZwPa (harmony)

19364 \DeclareTextCommand{\textZwPa}{PU}{\9330\064\9335\100}%\* U+1D140

19365 % U+1D15D MUSICAL SYMBOL WHOLE NOTE; \fullnote (wasysym)

19366 \DeclareTextCommand{\textfullnote}{PU}{\9330\064\9335\135}%\* U+1D15D

19367 %\* \textfullnote -> \Ganz (harmony)

19368 % U+1D15E MUSICAL SYMBOL HALF NOTE; \halfnote (wasysym)

19369 \DeclareTextCommand{\texthalfnote}{PU}{\9330\064\9335\136}%\* U+1D15E

19370 %\* \texthalfnote -> \Halb (harmony)

19371 % U+1D15F MUSICAL SYMBOL QUARTER NOTE; \Vier (harmony)

19372 \DeclareTextCommand{\textVier}{PU}{\9330\064\9335\137}%\* U+1D15F

19373 % U+1D160 MUSICAL SYMBOL EIGHTH NOTE; \Acht (harmony)  
 19374 \DeclareTextCommand{\textAcht}{PU}{\9330\064\9335\140}%\* U+1D160  
 19375 % U+1D161 MUSICAL SYMBOL SIXTEENTH NOTE; \Sech (harmony)  
 19376 \DeclareTextCommand{\textSech}{PU}{\9330\064\9335\141}%\* U+1D161  
 19377 % U+1D162 MUSICAL SYMBOL THIRTY-SECOND NOTE; \Zwdr (harmony)  
 19378 \DeclareTextCommand{\textZwdr}{PU}{\9330\064\9335\142}%\* U+1D162

#### 47.2.43 Miscellaneous Symbols and Pictographs: U+1F300 to U+1F5FF

19379 % U+1F30D EARTH GLOBE EUROPE-AFRICA; \Mundus (marvosym)  
 19380 \DeclareTextCommand{\textMundus}{PU}{\9330\074\9337\015}%\* U+1F30D  
 19381 % U+1F319 CRESCENT MOON; \Moon (marvosym)  
 19382 \DeclareTextCommand{\textMoon}{PU}{\9330\074\9337\031}%\* U+1F319  
 19383 % U+1F468 MAN; \ManFace (marvosym)  
 19384 \DeclareTextCommand{\textManFace}{PU}{\9330\075\9334\150}%\* U+1F468  
 19385 % U+1F469 WOMAN; \WomanFace (marvosym)  
 19386 \DeclareTextCommand{\textWomanFace}{PU}{\9330\075\9334\151}%\* U+1F469  
 19387 %\* \textWomanFace -> \Womanface (marvosym)  
 19388 % U+1F4E0 FAX MACHINE; \Fax (marvosym)  
 19389 \DeclareTextCommand{\textFax}{PU}{\9330\075\9334\340}%\* U+1F4E0  
 19390 %\* \textFax -> \Faxmachine (marvosym)  
 19391 % U+1F525 FIRE; \Fire (ifsym)  
 19392 \DeclareTextCommand{\textFire}{PU}{\9330\075\9335\045}%\* U+1F525

#### 47.2.44 Transport and Map Symbols: U+1F680 to U+1F6FF

19393 % U+1F6B2 BICYCLE; \Bicycle (marvosym)  
 19394 \DeclareTextCommand{\textBicycle}{PU}{\9330\075\9336\262}%\* U+1F6B2  
 19395 % U+1F6B9 MENS SYMBOL; \Gentsroom (marvosym)  
 19396 \DeclareTextCommand{\textGentsroom}{PU}{\9330\075\9336\271}%\* U+1F6B9  
 19397 % U+1F6BA WOMENS SYMBOL; \Ladiesroom (marvosym)  
 19398 \DeclareTextCommand{\textLadiesroom}{PU}{\9330\075\9336\272}%\* U+1F6BA

#### 47.2.45 Miscellaneous

19399 \DeclareTextCommand{\SS}{PU}{SS}%  
 19400 % \textcopyleft (textcomp)  
 19401 \DeclareTextCommand{\textcopyleft}{PU}{\9041\204\9040\335}% U+2184 U+20DD  
 19402 % \ccnc (ccllicenses)  
 19403 \DeclareTextCommand{\textccnc}{PU}{\80\044\9040\340}%\* U+0024 U+20E0  
 19404 % \ccnd (ccllicenses)  
 19405 \DeclareTextCommand{\textccnd}{PU}{=\9040\335}%\* U+003D U+20DD  
 19406 % \ccsa (ccllicenses)  
 19407 \DeclareTextCommand{\textccsa}{PU}{\9047\362\9040\335}%\* U+27F2 U+20DD  
 19408 % \Info (marvosym, china2e)  
 19409 \DeclareTextCommand{\textInfo}{PU}{\9330\065\9334\042\9040\336}%\* U+1D422 U+20DE  
 19410 % \CESign (marvosym)  
 19411 \DeclareTextCommand{\textCESign}{PU}{\80\103\80\105}%\* U+0043 U+0045  
 19412 %\* \textCESign -> \CESign (marvosym)

#### 47.2.46 Aliases

Aliases (german.sty)

19413 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}%  
 19414 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}%  
 19415 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}%  
 19416 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}%

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19417 \DeclareTextCommand{\textflqq}{PU}{\guillemetleft}%
19418 \DeclareTextCommand{\textfrqq}{PU}{\guillemetright}%
19419 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}%
19420 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}%
Aliases (math names)
19421 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}%*
19422 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}%*
19423 \DeclareTextCommand{\textdiv}{PU}{\textdivide}%*
19424 \DeclareTextCommand{\textpm}{PU}{\textplusminus}%*
19425 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}%*
19426 </puenc>

```

### 47.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```

19427 <*puvnenc>
19428 \DeclareTextCommand{\abreve}{PU}{\81\003}% U+0103
19429 \DeclareTextCommand{\acircumflex}{PU}{\80\342}% U+00E2
19430 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}% U+00EA
19431 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}% U+00F4
19432 \DeclareTextCommand{\ohorn}{PU}{\81\241}% U+01A1
19433 \DeclareTextCommand{\uhorn}{PU}{\81\260}% U+01B0
19434 \DeclareTextCommand{\ABREVE}{PU}{\81\002}% U+0102
19435 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}% U+00C2
19436 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}% U+00CA
19437 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}% U+00D4
19438 \DeclareTextCommand{\OHORN}{PU}{\81\240}% U+01A0
19439 \DeclareTextCommand{\UHORN}{PU}{\81\257}% U+01AF
19440 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1
19441 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}% U+1EA1
19442 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0
19443 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}% U+1EA3
19444 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3
19445 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}% U+1EAF
19446 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}% U+1EB7
19447 \DeclareTextCompositeCommand{\`}{PU}{\abreve}{\9036\261}% U+1EB1
19448 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}% U+1EB3
19449 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}% U+1EB5
19450 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}% U+1EA5
19451 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}% U+1EAD
19452 \DeclareTextCompositeCommand{\`}{PU}{\acircumflex}{\9036\247}% U+1EA7
19453 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}% U+1EA9
19454 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}% U+1EAB
19455 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9
19456 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}% U+1EB9
19457 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8
19458 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}% U+1EBB
19459 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD
19460 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}% U+1EBF
19461 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}% U+1EC7
19462 \DeclareTextCompositeCommand{\`}{PU}{\ecircumflex}{\9036\301}% U+1EC1
19463 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}% U+1EC3

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19464 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}% U+1EC5  
19465 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
19466 \DeclareTextCompositeCommand{d}{PU}{i}{\9036\313}% U+1ECB  
19467 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
19468 \DeclareTextCompositeCommand{h}{PU}{i}{\9036\311}% U+1EC9  
19469 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
19470 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
19471 \DeclareTextCompositeCommand{d}{PU}{o}{\9036\315}% U+1ECD  
19472 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
19473 \DeclareTextCompositeCommand{h}{PU}{o}{\9036\317}% U+1ECF  
19474 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
19475 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}% U+1ED1  
19476 \DeclareTextCompositeCommand{d}{PU}{\ocircumflex}{\9036\331}% U+1ED9  
19477 \DeclareTextCompositeCommand{\`}{PU}{\ocircumflex}{\9036\323}% U+1ED3  
19478 \DeclareTextCompositeCommand{h}{PU}{\ocircumflex}{\9036\325}% U+1ED5  
19479 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}% U+1ED7  
19480 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}% U+1EDB  
19481 \DeclareTextCompositeCommand{d}{PU}{\ohorn}{\9036\343}% U+1EE3  
19482 \DeclareTextCompositeCommand{\`}{PU}{\ohorn}{\9036\335}% U+1EDD  
19483 \DeclareTextCompositeCommand{h}{PU}{\ohorn}{\9036\337}% U+1EDF  
19484 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}% U+1EE1  
19485 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
19486 \DeclareTextCompositeCommand{d}{PU}{u}{\9036\345}% U+1EE5  
19487 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
19488 \DeclareTextCompositeCommand{h}{PU}{u}{\9036\347}% U+1EE7  
19489 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
19490 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}% U+1EE9  
19491 \DeclareTextCompositeCommand{d}{PU}{\uhorn}{\9036\361}% U+1EF1  
19492 \DeclareTextCompositeCommand{\`}{PU}{\uhorn}{\9036\353}% U+1EEB  
19493 \DeclareTextCompositeCommand{h}{PU}{\uhorn}{\9036\355}% U+1EED  
19494 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}% U+1EEF  
19495 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
19496 \DeclareTextCompositeCommand{d}{PU}{y}{\9036\365}% U+1EF5  
19497 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3  
19498 \DeclareTextCompositeCommand{h}{PU}{y}{\9036\367}% U+1EF7  
19499 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9  
19500 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
19501 \DeclareTextCompositeCommand{d}{PU}{A}{\9036\240}% U+1EA0  
19502 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
19503 \DeclareTextCompositeCommand{h}{PU}{A}{\9036\242}% U+1EA2  
19504 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
19505 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}% U+1EAE  
19506 \DeclareTextCompositeCommand{d}{PU}{\ABREVE}{\9036\266}% U+1EB6  
19507 \DeclareTextCompositeCommand{\`}{PU}{\ABREVE}{\9036\260}% U+1EB0  
19508 \DeclareTextCompositeCommand{h}{PU}{\ABREVE}{\9036\262}% U+1EB2  
19509 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}% U+1EB4  
19510 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}% U+1EA4  
19511 \DeclareTextCompositeCommand{d}{PU}{\ACIRCUMFLEX}{\9036\254}% U+1EAC  
19512 \DeclareTextCompositeCommand{\`}{PU}{\ACIRCUMFLEX}{\9036\246}% U+1EA6  
19513 \DeclareTextCompositeCommand{h}{PU}{\ACIRCUMFLEX}{\9036\250}% U+1EA8  
19514 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}% U+1EAA  
19515 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
19516 \DeclareTextCompositeCommand{d}{PU}{E}{\9036\270}% U+1EB8  
19517 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8

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19518 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}% U+1EBA
19519 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBB
19520 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\276}% U+1EBE
19521 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}% U+1EC6
19522 \DeclareTextCompositeCommand{\`}{PU}{\ECIRCUMFLEX}{\9036\300}% U+1EC0
19523 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}% U+1EC2
19524 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}% U+1EC4
19525 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD
19526 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}% U+1ECA
19527 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC
19528 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}% U+1EC8
19529 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128
19530 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3
19531 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}% U+1ECC
19532 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2
19533 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}% U+1ECE
19534 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5
19535 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}% U+1ED0
19536 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}% U+1ED8
19537 \DeclareTextCompositeCommand{\`}{PU}{\OCIRCUMFLEX}{\9036\322}% U+1ED2
19538 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}% U+1ED4
19539 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}% U+1ED6
19540 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\332}% U+1EDA
19541 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}% U+1EE2
19542 \DeclareTextCompositeCommand{\`}{PU}{\OHORN}{\9036\334}% U+1EDC
19543 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}% U+1EDE
19544 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}% U+1EE0
19545 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA
19546 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4
19547 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9
19548 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}% U+1EE6
19549 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168
19550 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}% U+1EE8
19551 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}% U+1EF0
19552 \DeclareTextCompositeCommand{\`}{PU}{\UHORN}{\9036\352}% U+1EEA
19553 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}% U+1EEC
19554 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}% U+1EEE
19555 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD
19556 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4
19557 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2
19558 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}% U+1EF6
19559 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8
19560 </puvnenc>

```

## 47.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```

19561 <*puarenc>
19562 % U+0621;afi57409;ARABIC LETTER HAMZA
19563 \DeclareTextCommand{\hamza}{PU}{\86\041}% U+0621
19564 % U+0622;afi57410;ARABIC LETTER ALEF WITH MADDA ABOVE
19565 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% U+0622
19566 % U+0623;afi57411;ARABIC LETTER ALEF WITH HAMZA ABOVE

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19567 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% U+0623  
19568 % U+0624;afii57412;ARABIC LETTER WAW WITH HAMZA ABOVE  
19569 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% U+0624  
19570 % U+0625;afii57413;ARABIC LETTER ALEF WITH HAMZA BELOW  
19571 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% U+0625  
19572 % U+0626;afii57414;ARABIC LETTER YEH WITH HAMZA ABOVE  
19573 \DeclareTextCommand{\yahamza}{PU}{\86\046}% U+0626  
19574 % U+0627;afii57415;ARABIC LETTER ALEF  
19575 \DeclareTextCommand{\alef}{PU}{\86\047}% U+0627  
19576 % U+0628;afii57416;ARABIC LETTER BEH  
19577 \DeclareTextCommand{\baa}{PU}{\86\050}% U+0628  
19578 % U+0629;afii57417;ARABIC LETTER TEH MARBUTA  
19579 \DeclareTextCommand{\T}{PU}{\86\051}% U+0629  
19580 % U+062A;afii57418;ARABIC LETTER TEH  
19581 \DeclareTextCommand{\taa}{PU}{\86\052}% U+062A  
19582 % U+062B;afii57419;ARABIC LETTER THEH  
19583 \DeclareTextCommand{\thaa}{PU}{\86\053}% U+062B  
19584 % U+062C;afii57420;ARABIC LETTER JEEM  
19585 \DeclareTextCommand{\jeem}{PU}{\86\054}% U+062C  
19586 % U+062D;afii57421;ARABIC LETTER HAH  
19587 \DeclareTextCommand{\Haa}{PU}{\86\055}% U+062D  
19588 % U+062E;afii57422;ARABIC LETTER KHAH  
19589 \DeclareTextCommand{\kha}{PU}{\86\056}% U+062E  
19590 % U+062F;afii57423;ARABIC LETTER DAL  
19591 \DeclareTextCommand{\dal}{PU}{\86\057}% U+062F  
19592 % U+0630;afii57424;ARABIC LETTER THAL  
19593 \DeclareTextCommand{\dhal}{PU}{\86\060}% U+0630  
19594 % U+0631;afii57425;ARABIC LETTER REH  
19595 \DeclareTextCommand{\ra}{PU}{\86\061}% U+0631  
19596 % U+0632;afii57426;ARABIC LETTER ZAIN  
19597 \DeclareTextCommand{\zay}{PU}{\86\062}% U+0632  
19598 % U+0633;afii57427;ARABIC LETTER SEEN  
19599 \DeclareTextCommand{\seen}{PU}{\86\063}% U+0633  
19600 % U+0634;afii57428;ARABIC LETTER SHEEN  
19601 \DeclareTextCommand{\sheen}{PU}{\86\064}% U+0634  
19602 % U+0635;afii57429;ARABIC LETTER SAD  
19603 \DeclareTextCommand{\sad}{PU}{\86\065}% U+0635  
19604 % U+0636;afii57430;ARABIC LETTER DAD  
19605 \DeclareTextCommand{\dad}{PU}{\86\066}% U+0636  
19606 % U+0637;afii57431;ARABIC LETTER TAH  
19607 \DeclareTextCommand{\Ta}{PU}{\86\067}% U+0637  
19608 % U+0638;afii57432;ARABIC LETTER ZAH  
19609 \DeclareTextCommand{\za}{PU}{\86\070}% U+0638  
19610 % U+0639;afii57433;ARABIC LETTER AIN  
19611 \DeclareTextCommand{\ayn}{PU}{\86\071}% U+0639  
19612 % U+063A;afii57434;ARABIC LETTER GHAIN  
19613 \DeclareTextCommand{\ghayn}{PU}{\86\072}% U+063A  
19614 % U+0640;afii57440;ARABIC TATWEEL  
19615 \DeclareTextCommand{\tatweel}{PU}{\86\100}% U+0640  
19616 % U+0641;afii57441;ARABIC LETTER FEH  
19617 \DeclareTextCommand{\fa}{PU}{\86\101}% U+0641  
19618 % U+0642;afii57442;ARABIC LETTER QAF  
19619 \DeclareTextCommand{\qaf}{PU}{\86\102}% U+0642  
19620 % U+0643;afii57443;ARABIC LETTER KAF

19621 \DeclareTextCommand{\kaf}{PU}{\86\103}% U+0643  
19622 % U+0644;afii57444;ARABIC LETTER LAM  
19623 \DeclareTextCommand{\lam}{PU}{\86\104}% U+0644  
19624 % U+0645;afii57445;ARABIC LETTER MEEM  
19625 \DeclareTextCommand{\meem}{PU}{\86\105}% U+0645  
19626 % U+0646;afii57446;ARABIC LETTER NOON  
19627 \DeclareTextCommand{\nun}{PU}{\86\106}% U+0646  
19628 % U+0647;afii57470;ARABIC LETTER HEH  
19629 \DeclareTextCommand{\ha}{PU}{\86\107}% U+0647  
19630 % U+0648;afii57448;ARABIC LETTER WAW  
19631 \DeclareTextCommand{\waw}{PU}{\86\110}% U+0648  
19632 % U+0649;afii57449;ARABIC LETTER ALEF MAKSURA  
19633 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% U+0649  
19634 % U+064A;afii57450;ARABIC LETTER YEH  
19635 \DeclareTextCommand{\ya}{PU}{\86\112}% U+064A  
  
19636 % U+064B;afii57451;ARABIC FATHATAN  
19637 \DeclareTextCommand{\nasb}{PU}{\86\113}% U+064B  
19638 % U+064C;afii57452;ARABIC DAMMATAN  
19639 \DeclareTextCommand{\raff}{PU}{\86\114}% U+064C  
19640 % U+064D;afii57453;ARABIC KASRATAN  
19641 \DeclareTextCommand{\jarr}{PU}{\86\115}% U+064D  
19642 % U+064E;afii57454;ARABIC FATHA  
19643 \DeclareTextCommand{\fatha}{PU}{\86\116}% U+064E  
19644 % U+064F;afii57455;ARABIC DAMMA  
19645 \DeclareTextCommand{\damma}{PU}{\86\117}% U+064F  
19646 % U+0650;afii57456;ARABIC KASRA  
19647 \DeclareTextCommand{\kasra}{PU}{\86\120}% U+0650  
19648 % U+0651;afii57457;ARABIC SHADDA  
19649 \DeclareTextCommand{\shadda}{PU}{\86\121}% U+0651  
19650 % U+0652;afii57458;ARABIC SUKUN  
19651 \DeclareTextCommand{\sukun}{PU}{\86\122}% U+0652  
  
Farsi  
19652 % U+067E ARABIC LETTER PEH; afii57506  
19653 \DeclareTextCommand{\peh}{PU}{\86\176}% U+067E  
19654 % U+0686 ARABIC LETTER TCHEH; afii57507  
19655 \DeclareTextCommand{\tcheh}{PU}{\86\206}% U+0686  
19656 % U+0698 ARABIC LETTER JEH; afii57508  
19657 \DeclareTextCommand{\jeh}{PU}{\86\230}% U+0698  
19658 % U+06A9 ARABIC LETTER KEHEH  
19659 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% U+06A9  
19660 % U+06AF ARABIC LETTER GAF; afii57509  
19661 \DeclareTextCommand{\gaf}{PU}{\86\257}% U+06AF  
19662 % U+06CC ARABIC LETTER FARSI YEH  
19663 \DeclareTextCommand{\farsiya}{PU}{\86\314}% U+06CC  
  
19664 % U+200C ZERO WIDTH NON-JOINER; afii61664  
19665 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% U+200C  
19666 % U+200D ZERO WIDTH JOINER; afii301  
19667 \DeclareTextCommand{\textEncodingNoboundary}{PU}{\9040\015}% U+200D  
19668 (/puarenc)  
19669 (\*psdextra)  
19670 \Hy@VersionCheck{psdextra.def}  
19671 \DeclareTextCommand{\textGamma}{PU}{\83\223}%\* U+0393

19672 \DeclareTextCommand{\textDelta}{PU}{\83\224}%\* U+0394  
19673 \DeclareTextCommand{\textTheta}{PU}{\83\230}%\* U+0398  
19674 \DeclareTextCommand{\textLambda}{PU}{\83\233}%\* U+039B  
19675 \DeclareTextCommand{\textXi}{PU}{\83\236}%\* U+039E  
19676 \DeclareTextCommand{\textPi}{PU}{\83\240}%\* U+03A0  
19677 \DeclareTextCommand{\textSigma}{PU}{\83\243}%\* U+03A3  
19678 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}%\* U+03A5  
19679 \DeclareTextCommand{\textPhi}{PU}{\83\246}%\* U+03A6  
19680 \DeclareTextCommand{\textChi}{PU}{\83\247}%\* U+03A7  
19681 \DeclareTextCommand{\textPsi}{PU}{\83\250}%\* U+03A8  
19682 \DeclareTextCommand{\textOmega}{PU}{\83\251}%\* U+03A9  
19683 \DeclareTextCommand{\textalpha}{PU}{\83\261}%\* U+03B1  
19684 \DeclareTextCommand{\textbeta}{PU}{\83\262}%\* U+03B2  
19685 \DeclareTextCommand{\textgamma}{PU}{\83\263}%\* U+03B3  
19686 \DeclareTextCommand{\textdelta}{PU}{\83\264}%\* U+03B4  
19687 \DeclareTextCommand{\textepsilon}{PU}{\83\265}%\* U+03B5  
19688 \DeclareTextCommand{\textzeta}{PU}{\83\266}%\* U+03B6  
19689 \DeclareTextCommand{\texteta}{PU}{\83\267}%\* U+03B7  
19690 \DeclareTextCommand{\texttheta}{PU}{\83\270}%\* U+03B8  
19691 \DeclareTextCommand{\textiota}{PU}{\83\271}%\* U+03B9  
19692 \DeclareTextCommand{\textkappa}{PU}{\83\272}%\* U+03BA  
19693 \DeclareTextCommand{\textlambda}{PU}{\83\273}%\* U+03BB  
19694 \DeclareTextCommand{\textmugreek}{PU}{\83\274}%\* U+03BC  
19695 \DeclareTextCommand{\textnu}{PU}{\83\275}%\* U+03BD  
19696 \DeclareTextCommand{\textxi}{PU}{\83\276}%\* U+03BE  
19697 \DeclareTextCommand{\textpi}{PU}{\83\300}%\* U+03C0  
19698 \DeclareTextCommand{\extrho}{PU}{\83\301}%\* U+03C1  
19699 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}%\* U+03C2  
19700 \DeclareTextCommand{\textsigma}{PU}{\83\303}%\* U+03C3  
19701 \DeclareTextCommand{\texttau}{PU}{\83\304}%\* U+03C4  
19702 \DeclareTextCommand{\textupsilon}{PU}{\83\305}%\* U+03C5  
19703 \DeclareTextCommand{\textphi}{PU}{\83\306}%\* U+03C6  
19704 \DeclareTextCommand{\textchi}{PU}{\83\307}%\* U+03C7  
19705 \DeclareTextCommand{\textpsi}{PU}{\83\310}%\* U+03C8  
19706 \DeclareTextCommand{\textomega}{PU}{\83\311}%\* U+03C9  
19707 \newcommand\*{\psdmapshortnames}{%  
19708 \let\MVPlus\textMVPlus  
19709 \let\MVComma\textMVComma  
19710 \let\MVMinus\textMVMinus  
19711 \let\MVPeriod\textMVPeriod  
19712 \let\MVDivision\textMVDivision  
19713 \let\MVZero\textMVZero  
19714 \let\MVOne\textMVOne  
19715 \let\MVTwo\textMVTwo  
19716 \let\MVThree\textMVThree  
19717 \let\MVFour\textMVFfour  
19718 \let\MVFive\textMVFfive  
19719 \let\MVSix\textMVSsix  
19720 \let\MVSeven\textMVSeven  
19721 \let\MVEight\textMVEight  
19722 \let\MVNine\textMVNine  
19723 \let\MVAt\textMVAat  
19724 \let\copyright\textcopyright  
19725 \let\twosuperior\texttwosuperior

19726 \let\threesuperior\textthreesuperior  
19727 \let\onesuperior\textonesuperior  
19728 \let\Thorn\textThorn  
19729 \let\thorn\textthorn  
19730 \let\hbar\texthbar  
19731 \let\hausaB\texthausaB  
19732 \let\hausaD\texthausaD  
19733 \let\hausaK\texthausaK  
19734 \let\barl\textbarl  
19735 \let\inve\textinve  
19736 \let\slashc\textslashc  
19737 \let\scripta\textscripta  
19738 \let\openo\textopeno  
19739 \let\rtaild\textrtaild  
19740 \let\reve\textreve  
19741 \let\schwa\textschwa  
19742 \let\niepsilon\textniepsilon  
19743 \let\repsilon\textrepsilon  
19744 \let\rhookrepsilon\text\rhookrepsilon  
19745 \let\scriptg\textscriptg  
19746 \let\scg\textscg  
19747 \let\ipagamma\textipagamma  
19748 \let\babygamma\textbabygamma  
19749 \let\bari\textbari  
19750 \let\niota\textniota  
19751 \let\sci\textsci  
19752 \let\scn\textscn  
19753 \let\niphi\textniphi  
19754 \let\longlegr\textlonglegr  
19755 \let\scr\textscr  
19756 \let\invscr\textinvscr  
19757 \let\esh\textesh  
19758 \let\baru\textbaru  
19759 \let\niupsilon\textniupsilon  
19760 \let\scriptv\textscriptv  
19761 \let\turnv\textturnv  
19762 \let\turnw\textturnw  
19763 \let\turny\textturny  
19764 \let\scy\textscy  
19765 \let\yogh\textyogh  
19766 \let\glotstop\textglotstop  
19767 \let\revglotstop\textrevglotstop  
19768 \let\invglotstop\textinvglotstop  
19769 \let\Gamma\textGamma  
19770 \let\Delta\textDelta  
19771 \let\Theta\textTheta  
19772 \let\Lambda\textLambda  
19773 \let\Xi\textXi  
19774 \let\Pi\textPi  
19775 \let\Sigma\textSigma  
19776 \let\Upsilon\textUpsilon  
19777 \let\Phi\textPhi  
19778 \let\Psi\textPsi  
19779 \let\Omega\textOmega

19780 `\let\alpha\textalpha`  
19781 `\let\beta\textbeta`  
19782 `\let\gamma\textgamma`  
19783 `\let\delta\textdelta`  
19784 `\let\epsilon\textepsilon`  
19785 `\let\zeta\textzeta`  
19786 `\let\eta\texteta`  
19787 `\let\theta\texttheta`  
19788 `\let\iota\textiota`  
19789 `\let\kappa\textkappa`  
19790 `\let\lambda\textlambda`  
19791 `\let\mu\textmu`  
19792 `\let\mugreek\textmugreek`  
19793 `\let\nu\textnu`  
19794 `\let\xi\textxi`  
19795 `\let\pi\textpi`  
19796 `\let\rho\textrho`  
19797 `\let\varsigma\textvarsigma`  
19798 `\let\sigma\textsigma`  
19799 `\let\tau\texttau`  
19800 `\let\upsilon\textupsilon`  
19801 `\let\phi\textphi`  
19802 `\let\chi\textchi`  
19803 `\let\psi\textpsi`  
19804 `\let\omega\textomega`  
19805 `\let\scd\textscd`  
19806 `\let\scu\textscu`  
19807 `\let\iinferior\textiinferior`  
19808 `\let\rinferior\textrinferior`  
19809 `\let\uinferior\textuinferior`  
19810 `\let\vinferior\textvinferior`  
19811 `\let\betainferior\textbetainferior`  
19812 `\let\gammainferior\textgammainferior`  
19813 `\let\rhoinferior\textrhoinferior`  
19814 `\let\phiinferior\textphiinferior`  
19815 `\let\chiinferior\textchiinferior`  
19816 `\let\barsci\textbarsci`  
19817 `\let\barp\textbarp`  
19818 `\let\barscu\textbarscu`  
19819 `\let\htrtaild\texthtrtaild`  
19820 `\let\dagger\textdagger`  
19821 `\let\bullet\textbullet`  
19822 `\let\hdotfor\texthdotfor`  
19823 `\let\prime\textprime`  
19824 `\let\second\textsecond`  
19825 `\let\third\textthird`  
19826 `\let\backprime\textbackprime`  
19827 `\let\lefttherefore\textlefttherefore`  
19828 `\let\fourth\textfourth`  
19829 `\let\diamonddots\textdiamonddots`  
19830 `\let\zerosuperior\textzerosuperior`  
19831 `\let\isuperior\textisuperior`  
19832 `\let\foursuperior\textfoursuperior`  
19833 `\let\fivesuperior\textfivesuperior`

19834 \let\sixsuperior\textsixsuperior  
19835 \let\sevensuperior\textsevensuperior  
19836 \let\eightsuperior\texteightsuperior  
19837 \let\ninesuperior\textninesuperior  
19838 \let\plussuperior\textplussuperior  
19839 \let\minussuperior\textminussuperior  
19840 \let\equalsuperior\textequalsuperior  
19841 \let\parenleftsuperior\textparenleftsuperior  
19842 \let\parenrightsuperior\textparenrightsuperior  
19843 \let\nsuperior\textnsuperior  
19844 \let\zeroinferior\textzeroinferior  
19845 \let\oneinferior\textoneinferior  
19846 \let\twoinferior\texttwoinferior  
19847 \let\threeinferior\textthreeinferior  
19848 \let\fourinferior\textfourinferior  
19849 \let\fiveinferior\textfiveinferior  
19850 \let\sixinferior\textsixinferior  
19851 \let\seveninferior\textseveninferior  
19852 \let\eightinferior\texteightinferior  
19853 \let\nineinferior\textnineinferior  
19854 \let\plusinferior\textplusinferior  
19855 \let\minusinferior\textminusinferior  
19856 \let\equalsinferior\textequalsinferior  
19857 \let\parenleftinferior\textparenleftinferior  
19858 \let\parenrightinferior\textparenrightinferior  
19859 \let\ainferior\textainferior  
19860 \let\einferior\texteinferior  
19861 \let\oinferior\textoinferior  
19862 \let\xinferior\textxinferior  
19863 \let\schwainferior\textschwainferior  
19864 \let\hinferior\texthinferior  
19865 \let\kinferior\textkinferior  
19866 \let\linferior\textlinferior  
19867 \let\minferior\textminferior  
19868 \let\ninferior\textninferior  
19869 \let\pinferior\textpinferior  
19870 \let\sinferior\textsinferior  
19871 \let\tinferior\texttinferior  
19872 \let\Deleatur\textDeleatur  
19873 \let\hslash\texthslash  
19874 \let\Im\textIm  
19875 \let\ell\textell  
19876 \let\wp\textwp  
19877 \let\Re\textRe  
19878 \let\mho\textmho  
19879 \let\riota\textriota  
19880 \let\Finv\textFinv  
19881 \let\aleph\textaleph  
19882 \let\beth\textbeth  
19883 \let\gimel\textgimel  
19884 \let\daleth\textdaleth  
19885 \let\xfax\textfax  
19886 \let\Game\textGame  
19887 \let\leftarrow\textleftarrow

19888 `\let\uparrow\textuparrow`  
19889 `\let\rightarrow\textrightarrow`  
19890 `\let\downarrow\textdownarrow`  
19891 `\let\leftrightarrow\textleftrightarrow`  
19892 `\let\updownarrow\textupdownarrow`  
19893 `\let\nwarrow\textnwarrow`  
19894 `\let\nearrow\textnearrow`  
19895 `\let\searrow\textsearrow`  
19896 `\let\swarrow\textswarrow`  
19897 `\let\nleftarrow\textnleftarrow`  
19898 `\let\nrightarrow\textnrightarrow`  
19899 `\let\twoheadleftarrow\texttwoheadleftarrow`  
19900 `\let\ntwoheadleftarrow\textntwoheadleftarrow`  
19901 `\let\twoheaduparrow\texttwoheaduparrow`  
19902 `\let\twoheadrightarrow\texttwoheadrightarrow`  
19903 `\let\ntwoheadrightarrow\textntwoheadrightarrow`  
19904 `\let\twoheaddownarrow\texttwoheaddownarrow`  
19905 `\let\leftarrowtail\textleftarrowtail`  
19906 `\let\rightarrowtail\textrightarrowtail`  
19907 `\let\mapsto\textmapsto`  
19908 `\let\hookrightarrow\texthookrightarrow`  
19909 `\let\hookleftarrow\texthookleftarrow`  
19910 `\let\looparrowleft\textlooparrowleft`  
19911 `\let\looparrowright\textlooparrowright`  
19912 `\let\nleftrightarrow\textnleftrightarrow`  
19913 `\let\lightning\textlightning`  
19914 `\let\dLsh\textdLsh`  
19915 `\let\curvearrowleft\textcurvearrowleft`  
19916 `\let\curvearrowright\textcurvearrowright`  
19917 `\let\leftharpoonup\textleftharpoonup`  
19918 `\let\leftharpoondown\textleftharpoondown`  
19919 `\let\upharpoonright\textupharpoonright`  
19920 `\let\upharpoonleft\textupharpoonleft`  
19921 `\let\upharpoonup\textupharpoonup`  
19922 `\let\upharpoondown\textupharpoondown`  
19923 `\let\downharpoonright\textdownharpoonright`  
19924 `\let\downharpoonleft\textdownharpoonleft`  
19925 `\let\rightleftarrows\textrightleftarrows`  
19926 `\let\updownarrows\textupdownarrows`  
19927 `\let\leftrightarrows\textleftrightarrows`  
19928 `\let\leftleftarrows\textleftleftarrows`  
19929 `\let\upuparrows\textupuparrows`  
19930 `\let\righttrightarrows\textrighttrightarrows`  
19931 `\let\downdownarrows\textdowndownarrows`  
19932 `\let\leftrightharpoons\textleftrightharpoons`  
19933 `\let\rightleftharpoons\textrightleftharpoons`  
19934 `\let\nLeftarrow\textnLeftarrow`  
19935 `\let\nLeftrightarrow\textnLeftrightarrow`  
19936 `\let\nRrightarrow\textnRrightarrow`  
19937 `\let\Leftarrow\textLeftarrow`  
19938 `\let\Uparrow\textUparrow`  
19939 `\let\Rrightarrow\textRrightarrow`  
19940 `\let\Downarrow\textDownarrow`  
19941 `\let\Leftrightarrow\textLeftrightarrow`

19942 `\let\Updownarrow\textUpdownarrow`  
19943 `\let\Nwarrow\textNwarrow`  
19944 `\let\Nearrow\textNearrow`  
19945 `\let\Searrow\textSearrow`  
19946 `\let\Swarrow\textSwarrow`  
19947 `\let\Lleftarrow\textLleftarrow`  
19948 `\let\Rrightarrow\textRrightarrow`  
19949 `\let\leftsquigarrow\textleftsquigarrow`  
19950 `\let\rightsquigarrow\textrightsquigarrow`  
19951 `\let\dashleftarrow\textdashleftarrow`  
19952 `\let\dasheduparrow\textdasheduparrow`  
19953 `\let\dashrightarrow\textdashrightarrow`  
19954 `\let\dasheddownarrow\textdasheddownarrow`  
19955 `\let\pointer\textpointer`  
19956 `\let\downuparrows\textdownuparrows`  
19957 `\let\leftarrowtriangle\textleftarrowtriangle`  
19958 `\let\rightarrowtriangle\textrightarrowtriangle`  
19959 `\let\leftrightarrowtriangle\textleftrightarrowtriangle`  
19960 `\let\forall\textforall`  
19961 `\let\complement\textcomplement`  
19962 `\let\partial\textpartial`  
19963 `\let\exists\textexists`  
19964 `\let\nexists\textnexists`  
19965 `\let\emptyset\textemptyset`  
19966 `\let\triangle\texttriangle`  
19967 `\let\nabla\textnabla`  
19968 `\let\in\textin`  
19969 `\let\notin\textnotin`  
19970 `\let\smallin\textsmallin`  
19971 `\let\ni\textni`  
19972 `\let\notowner\textnotowner`  
19973 `\let\smallowns\textsmallowns`  
19974 `\let\prod\textprod`  
19975 `\let\amalg\textamalg`  
19976 `\let\sum\textsum`  
19977 `\let\mp\textmp`  
19978 `\let\dotplus\textdotplus`  
19979 `\let\Divides\textDivides`  
19980 `\let\DividesNot\textDividesNot`  
19981 `\let\setminus\textsetminus`  
19982 `\let\ast\textast`  
19983 `\let\circ\textcirc`  
19984 `\let\surd\textsurd`  
19985 `\let\propto\textpropto`  
19986 `\let\infty\textinfty`  
19987 `\let\angle\textangle`  
19988 `\let\measuredangle\textmeasuredangle`  
19989 `\let\sphericalangle\textsphericalangle`  
19990 `\let\mid\textmid`  
19991 `\let\nmid\textnmid`  
19992 `\let\parallel\textparallel`  
19993 `\let\nparallel\textnparallel`  
19994 `\let\wedge\textwedge`  
19995 `\let\owedge\textowedge`



19996 \let\vee\textvee  
 19997 \let\ovee\textovee  
 19998 \let\cap\textcap  
 19999 \let\cup\textcup  
 20000 \let\int\textint  
 20001 \let\iint\textiint  
 20002 \let\iiint\textiiint  
 20003 \let\oint\textoint  
 20004 \let\oiint\textoiint  
 20005 \let\ointclockwise\textointclockwise  
 20006 \let\ointctrlockwise\textointctrlockwise  
 20007 \let\therefore\texttherefore  
 20008 \let\because\textbecause  
 20009 \let\vdots\textvdots  
 20010 \let\squaredots\textsquaredots  
 20011 \let\dotminus\textdotminus  
 20012 \let\eqcolon\texteqcolon  
 20013 \let\sim\textsim  
 20014 \let\backsim\textbacksim  
 20015 \let\nbacksim\textnbacksim  
 20016 \let\wr\textwr  
 20017 \let\sim\textnsim  
 20018 \let\eqsim\texteqsim  
 20019 \let\neqsim\textneqsim  
 20020 \let\simeq\textsimeq  
 20021 \let\nsimeq\textnsimeq  
 20022 \let\cong\textcong  
 20023 \let\ncong\textncong  
 20024 \let\approx\textapprox  
 20025 \let\napprox\textnapprox  
 20026 \let\approxeq\textapproxeq  
 20027 \let\napproxeq\textnapproxeq  
 20028 \let\triplesim\texttriplesim  
 20029 \let\ntriplesim\textntriplesim  
 20030 \let\backcong\textbackcong  
 20031 \let\nbackcong\textnbackcong  
 20032 \let\asymp\textasymp  
 20033 \let\nasymp\textnasymp  
 20034 \let\Bumpeq\textBumpeq  
 20035 \let\nBumpeq\textnBumpeq  
 20036 \let\bumpeq\textbumpeq  
 20037 \let\nbumpeq\textnbumpeq  
 20038 \let\doteq\textdoteq  
 20039 \let\ndoteq\textndoteq  
 20040 \let\doteqdot\textdoteqdot  
 20041 \let\ndoteq\textndoteq  
 20042 \let\fallingdoteq\textfallingdoteq  
 20043 \let\nfallingdoteq\textnfallingdoteq  
 20044 \let\risingdoteq\textrisingdoteq  
 20045 \let\nrisingdoteq\textnrisingdoteq  
 20046 \let\colonequals\textcolonequals  
 20047 \let\equalscolon\textequalscolon  
 20048 \let\eqcirc\texteqcirc  
 20049 \let\neqcirc\textneqcirc

20050 \let\circeq\textcirceq  
 20051 \let\ncirceq\textncirceq  
 20052 \let\hateq\texthateq  
 20053 \let\nhateq\textnhateq  
 20054 \let\triangleeq\texttriangleeq  
 20055 \let\neq\textneq  
 20056 \let\ne\textne  
 20057 \let\equiv\textequiv  
 20058 \let\nequiv\textnequiv  
 20059 \let\leq\textleq  
 20060 \let\le\textle  
 20061 \let\geq\textgeq  
 20062 \let\ge\textge  
 20063 \let\leqq\textleqq  
 20064 \let\hleqq\texthleqq  
 20065 \let\geqq\textgeqq  
 20066 \let\ngqq\textngqq  
 20067 \let\lneqq\textlneqq  
 20068 \let\gneqq\textgneqq  
 20069 \let\ll\textll  
 20070 \let\nll\textnll  
 20071 \let\gg\textgg  
 20072 \let\ngg\textngg  
 20073 \let\between\textbetween  
 20074 \let\nless\textnless  
 20075 \let\ngtr\textngtr  
 20076 \let\hleq\texthleq  
 20077 \let\ngq\textngq  
 20078 \let\lesssim\textlesssim  
 20079 \let\gtrsim\textgtrsim  
 20080 \let\nlesssim\textnlesssim  
 20081 \let\ngtrsim\textngtrsim  
 20082 \let\lessgtr\textlessgtr  
 20083 \let\gtrless\textgtrless  
 20084 \let\ngtrless\textngtrless  
 20085 \let\nlessgtr\textnlessgtr  
 20086 \let\prec\textprec  
 20087 \let\succ\textsucc  
 20088 \let\preccurlyeq\textpreccurlyeq  
 20089 \let\succcurlyeq\textsucccurlyeq  
 20090 \let\precsim\textprecsim  
 20091 \let\nprecsim\textnprecsim  
 20092 \let\succsim\textsuccsim  
 20093 \let\nsuccsim\textnsuccsim  
 20094 \let\nprec\textnprec  
 20095 \let\nsucc\textnsucc  
 20096 \let\subset\textsubset  
 20097 \let\supset\textsupset  
 20098 \let\nsubset\textnsubset  
 20099 \let\nsupset\textnsupset  
 20100 \let\subseteq\textsubseteq  
 20101 \let\supseteq\textsupseteq  
 20102 \let\nsubseteq\textnsubseteq  
 20103 \let\nsupseteq\textnsupseteq

20104 \let\subsetneq\textsubsetneq  
20105 \let\supsetneq\textsupsetneq  
20106 \let\cupdot\textcupdot  
20107 \let\cupplus\textcupplus  
20108 \let\sqsubset\textsqsubset  
20109 \let\nsqsubset\textnsqsubset  
20110 \let\sqsupset\textsqsupset  
20111 \let\nsqsupset\textnsqsupset  
20112 \let\sqsubseteq\textsqsubseq  
20113 \let\nsqsubseq\textnsqsubseq  
20114 \let\sqsupseteq\textsqsupseq  
20115 \let\nsqsupseq\textnsqsupseq  
20116 \let\sqcap\textsqcap  
20117 \let\sqcup\textsqcup  
20118 \let\oplus\textoplus  
20119 \let\ominus\textominus  
20120 \let\otimes\textotimes  
20121 \let\oslash\textoslash  
20122 \let\odot\textodot  
20123 \let\circledcirc\textcircledcirc  
20124 \let\circledast\textcircledast  
20125 \let\circleddash\textcircleddash  
20126 \let\boxplus\textboxplus  
20127 \let\boxminus\textboxminus  
20128 \let\boxtimes\textboxtimes  
20129 \let\boxdot\textboxdot  
20130 \let\vdash\textvdash  
20131 \let\dashv\textdashv  
20132 \let\ndashv\textndashv  
20133 \let\top\texttop  
20134 \let\ndownvdash\textndownvdash  
20135 \let\bot\textbot  
20136 \let\nupvdash\textnupvdash  
20137 \let\VDash\textVDash  
20138 \let\Vdash\textVdash  
20139 \let\Vvdash\textVvdash  
20140 \let\NVdash\textNVdash  
20141 \let\VDash\textVDash  
20142 \let\Nvdash\textNvdash  
20143 \let\NVdash\textNVdash  
20144 \let\Nvdash\textNvdash  
20145 \let\NVdash\textNVdash  
20146 \let\lhd\textlhd  
20147 \let\rhd\textrhd  
20148 \let\unlhd\textunlhd  
20149 \let\unrhd\textunrhd  
20150 \let\multimapdotbothA\textmultimapdotbothA  
20151 \let\multimapdotbothB\textmultimapdotbothB  
20152 \let\multimap\textmultimap  
20153 \let\veebar\textveebar  
20154 \let\barwedge\textbarwedge  
20155 \let\star\textstar  
20156 \let\divideontimes\textdivideontimes  
20157 \let\bowtie\textbowtie

20158 `\let\ltimes\textltimes`  
20159 `\let\rtimes\textrtimes`  
20160 `\let\leftthreetimes\textleftthreetimes`  
20161 `\let\rightthreetimes\textrightthreetimes`  
20162 `\let\backsimeq\textbacksimeq`  
20163 `\let\nbacksimeq\textnbacksimeq`  
20164 `\let\curlyvee\textcurlyvee`  
20165 `\let\curlywedge\textcurlywedge`  
20166 `\let\Subset\textSubset`  
20167 `\let\nSubset\textnSubset`  
20168 `\let\Supset\textSupset`  
20169 `\let\nSupset\textnSupset`  
20170 `\let\Cap\textCap`  
20171 `\let\Cup\textCup`  
20172 `\let\pitchfork\textpitchfork`  
20173 `\let\lessdot\textlessdot`  
20174 `\let\gtrdot\textgtrdot`  
20175 `\let\lll\textlll`  
20176 `\let\ggg\textggg`  
20177 `\let\lesseqgtr\textlesseqgtr`  
20178 `\let\gtreqless\textgtreqless`  
20179 `\let\curlyeqprec\textcurlyeqprec`  
20180 `\let\ncurlyeqprec\textncurlyeqprec`  
20181 `\let\curlyeqsucc\textcurlyeqsucc`  
20182 `\let\ncurlyeqsucc\textncurlyeqsucc`  
20183 `\let\npreccurlyeq\textnpreccurlyeq`  
20184 `\let\nsucccurlyeq\textnsucccurlyeq`  
20185 `\let\nqsubseteq\textnqsubseteq`  
20186 `\let\nqsupseteq\textnqsupseteq`  
20187 `\let\sqsubsetneq\textsqsubsetneq`  
20188 `\let\sqsupsetneq\textsqsupsetneq`  
20189 `\let\lnsim\textlnsim`  
20190 `\let\gnsim\textgnsim`  
20191 `\let\precnsim\textprecnsim`  
20192 `\let\succnsim\textsuccnsim`  
20193 `\let\ntriangleleft\textntriangleleft`  
20194 `\let\ntriangleright\textntriangleright`  
20195 `\let\ntrianglelefteq\textntrianglelefteq`  
20196 `\let\ntrianglerighteq\textntrianglerighteq`  
20197 `\let\vdots\textvdots`  
20198 `\let\cdots\textcdots`  
20199 `\let\udots\textudots`  
20200 `\let\ddots\textddots`  
20201 `\let\barin\textbarin`  
20202 `\let\diameter\textdiameter`  
20203 `\let\backneg\textbackneg`  
20204 `\let\wasylozenge\textwasylozenge`  
20205 `\let\invbackneg\textinvbackneg`  
20206 `\let\clock\textclock`  
20207 `\let\ulcorner\textulcorner`  
20208 `\let\urcorner\texturcorner`  
20209 `\let\llcorner\textllcorner`  
20210 `\let\lrcorner\textlrcorner`  
20211 `\let\frown\textfrown`

20212 \let\smile\textsmile  
20213 \let\Keyboard\textKeyboard  
20214 \let\langle\textlangle  
20215 \let\rangle\textrangle  
20216 \let\APLinv\textAPLinv  
20217 \let\Tumbler\textTumbler  
20218 \let\notslash\textnotslash  
20219 \let\notbackslash\textnotbackslash  
20220 \let\boxbackslash\textboxbackslash  
20221 \let\APLleftarrowbox\textAPLleftarrowbox  
20222 \let\APLrightarrowbox\textAPLrightarrowbox  
20223 \let\APLuparrowbox\textAPLuparrowbox  
20224 \let\APLdownarrowbox\textAPLdownarrowbox  
20225 \let\APLinput\textAPLinput  
20226 \let\Request\textRequest  
20227 \let\Beam\textBeam  
20228 \let\hexagon\texthexagon  
20229 \let\APLbox\textAPLbox  
20230 \let\ForwardToIndex\textForwardToIndex  
20231 \let\RewindToIndex\textRewindToIndex  
20232 \let\bbslash\textbbslash  
20233 \let\CircledA\textCircledA  
20234 \let\CleaningF\textCleaningF  
20235 \let\CleaningFF\textCleaningFF  
20236 \let\CleaningP\textCleaningP  
20237 \let\CleaningPP\textCleaningPP  
20238 \let\CuttingLine\textCuttingLine  
20239 \let\UParrow\textUParrow  
20240 \let\bigtriangleup\textbigtriangleup  
20241 \let\Forward\textForward  
20242 \let\triangleright\texttriangleright  
20243 \let\RHD\textRHD  
20244 \let\DOWNarrow\textDOWNarrow  
20245 \let\bigtriangledown\textbigtriangledown  
20246 \let\Rewind\textRewind  
20247 \let\triangleleft\texttriangleleft  
20248 \let\LHD\textLHD  
20249 \let\diamond\textdiamond  
20250 \let\lozenge\textlozenge  
20251 \let\LEFTCIRCLE\textLEFTCIRCLE  
20252 \let\RIGHTCIRCLE\textRIGHTCIRCLE  
20253 \let\openbullet\textopenbullet  
20254 \let\boxbar\textboxbar  
20255 \let\bigcircle\textbigcircle  
20256 \let\Cloud\textCloud  
20257 \let\FiveStar\textFiveStar  
20258 \let\FiveStarOpen\textFiveStarOpen  
20259 \let\Phone\textPhone  
20260 \let\boxempty\textboxempty  
20261 \let\Checkedbox\textCheckedbox  
20262 \let\Crossedbox\textCrossedbox  
20263 \let\Coffeecup\textCoffeecup  
20264 \let\HandCuffLeft\textHandCuffLeft  
20265 \let\HandCuffRight\textHandCuffRight

20266 \let\HandLeft\textHandLeft  
 20267 \let\HandRight\textHandRight  
 20268 \let\Radioactivity\textRadioactivity  
 20269 \let\Biohazard\textBiohazard  
 20270 \let\Ankh\textAnkh  
 20271 \let\YinYang\textYinYang  
 20272 \let\frownie\textfrownie  
 20273 \let\smiley\textsmiley  
 20274 \let\blacksmiley\textblacksmiley  
 20275 \let\sun\textsun  
 20276 \let\leftmoon\textleftmoon  
 20277 \let\rightmoon\textrightmoon  
 20278 \let\mercury\textmercury  
 20279 \let\earth\textearth  
 20280 \let\male\textmale  
 20281 \let\jupiter\textjupiter  
 20282 \let\saturn\textsaturn  
 20283 \let\uranus\texturanus  
 20284 \let\neptune\textneptune  
 20285 \let\pluto\textpluto  
 20286 \let\aries\textaries  
 20287 \let\taurus\texttaurus  
 20288 \let\gemini\textgemini  
 20289 \let\cancer\textcancer  
 20290 \let\leo\textleo  
 20291 \let\virgo\textvirgo  
 20292 \let\libra\textlibra  
 20293 \let\scorpio\textscorpio  
 20294 \let\sagittarius\textsagittarius  
 20295 \let\capricornus\textcapricornus  
 20296 \let\aquarius\textaquarius  
 20297 \let\pisces\textpisces  
 20298 \let\quarternote\textquarternote  
 20299 \let\twonotes\texttwonotes  
 20300 \let\sixteenthnote\textsixteenthnote  
 20301 \let\flat\textflat  
 20302 \let\natural\textnatural  
 20303 \let\sharp\textsharp  
 20304 \let\recycle\textrecycle  
 20305 \let\Wheelchair\textWheelchair  
 20306 \let\Flag\textFlag  
 20307 \let\MineSign\textMineSign  
 20308 \let\ds\textds  
 20309 \let\dsmedical\textdsmedical  
 20310 \let\dsjuridical\textdsjuridical  
 20311 \let\dschemical\textdschemical  
 20312 \let\dsbiological\textdsbiological  
 20313 \let\dscommercial\textdscommercial  
 20314 \let\manstar\textmanstar  
 20315 \let\danger\textdanger  
 20316 \let\FemaleFemale\textFemaleFemale  
 20317 \let\MaleMale\textMaleMale  
 20318 \let\FemaleMale\textFemaleMale  
 20319 \let\Hermaphrodite\textHermaphrodite

20320 \let\Neutral\textNeutral  
20321 \let\hexstar\texthexstar  
20322 \let\SunClod\textSunClod  
20323 \let\Rain\textRain  
20324 \let\noway\textnoway  
20325 \let\Mountain\textMountain  
20326 \let\Tent\textTent  
20327 \let\ScissorRight\textScissorRight  
20328 \let\ScissorRightBrokenTop\textScissorRightBrokenTop  
20329 \let\ScissorHollowRight\textScissorHollowRight  
20330 \let\PhoneHandset\textPhoneHandset  
20331 \let\Tape\textTape  
20332 \let\Plane\textPlane  
20333 \let\Envelope\textEnvelope  
20334 \let\Peace\textPeace  
20335 \let\WritingHand\textWritingHand  
20336 \let\PencilRightDown\textPencilRightDown  
20337 \let\PencilRight\textPencilRight  
20338 \let\PencilRightUp\textPencilRightUp  
20339 \let\NibRight\textNibRight  
20340 \let\NibSolidRight\textNibSolidRight  
20341 \let\Checkmark\textCheckmark  
20342 \let\CheckmarkBold\textCheckmarkBold  
20343 \let\XSolid\textXSolid  
20344 \let\XSolidBold\textXSolidBold  
20345 \let\XSolidBrush\textXSolidBrush  
20346 \let\PlusOutline\textPlusOutline  
20347 \let\Plus\textPlus  
20348 \let\PlusThinCenterOpen\textPlusThinCenterOpen  
20349 \let\PlusCenterOpen\textPlusCenterOpen  
20350 \let\Cross\textCross  
20351 \let\CrossOpenShadow\textCrossOpenShadow  
20352 \let\CrossOutline\textCrossOutline  
20353 \let\CrossMaltese\textCrossMaltese  
20354 \let\DavidStar\textDavidStar  
20355 \let\FourAsterisk\textFourAsterisk  
20356 \let\JackStar\textJackStar  
20357 \let\JackStarBold\textJackStarBold  
20358 \let\CloverTips\textCloverTips  
20359 \let\FourStar\textFourStar  
20360 \let\FourStarOpen\textFourStarOpen  
20361 \let\FiveStarOpenCircled\textFiveStarOpenCircled  
20362 \let\FiveStarCenterOpen\textFiveStarCenterOpen  
20363 \let\FiveStarOpenDotted\textFiveStarOpenDotted  
20364 \let\FiveStarOutline\textFiveStarOutline  
20365 \let\FiveStarOutlineHeavy\textFiveStarOutlineHeavy  
20366 \let\FiveStarConvex\textFiveStarConvex  
20367 \let\FiveStarShadow\textFiveStarShadow  
20368 \let\AsteriskBold\textAsteriskBold  
20369 \let\AsteriskCenterOpen\textAsteriskCenterOpen  
20370 \let\EightStarTaper\textEightStarTaper  
20371 \let\EightStarConvex\textEightStarConvex  
20372 \let\SixStar\textSixStar  
20373 \let\EightStar\textEightStar

20374 \let\EightStarBold\textEightStarBold  
20375 \let\TwelveStar\textTwelveStar  
20376 \let\SixteenStarLight\textSixteenStarLight  
20377 \let\SixFlowerPetalRemoved\textSixFlowerPetalRemoved  
20378 \let\SixFlowerOpenCenter\textSixFlowerOpenCenter  
20379 \let\Asterisk\textAsterisk  
20380 \let\SixFlowerAlternate\textSixFlowerAlternate  
20381 \let\FiveFlowerPetal\textFiveFlowerPetal  
20382 \let\FiveFlowerOpen\textFiveFlowerOpen  
20383 \let\EightFlowerPetal\textEightFlowerPetal  
20384 \let\SunshineOpenCircled\textSunshineOpenCircled  
20385 \let\SixFlowerAltPetal\textSixFlowerAltPetal  
20386 \let\SnowflakeChevron\textSnowflakeChevron  
20387 \let\Snowflake\textSnowflake  
20388 \let\SnowflakeChevronBold\textSnowflakeChevronBold  
20389 \let\Sparkle\textSparkle  
20390 \let\SparkleBold\textSparkleBold  
20391 \let\AsteriskRoundedEnds\textAsteriskRoundedEnds  
20392 \let\EightFlowerPetalRemoved\textEightFlowerPetalRemoved  
20393 \let\EightAsterisk\textEightAsterisk  
20394 \let\CircleShadow\textCircleShadow  
20395 \let\SquareShadowBottomRight\textSquareShadowBottomRight  
20396 \let\SquareTopRight\textSquareTopRight  
20397 \let\SquareCastShadowBottomRight\textSquareCastShadowBottomRight  
20398 \let\SquareCastShadowTopRight\textSquareCastShadowTopRight  
20399 \let\DiamondSolid\textDiamondSolid  
20400 \let\RectangleThin\textRectangleThin  
20401 \let\Rectangle\textRectangle  
20402 \let\RectangleBold\textRectangleBold  
20403 \let\perp\textperp  
20404 \let\notperp\textnotperp  
20405 \let\veedot\textveedot  
20406 \let\wedgedot\textwedgedot  
20407 \let\leftspoon\textleftspoon  
20408 \let\lbrackdbl\textlbrackdbl  
20409 \let\rbrackdbl\textrbrackdbl  
20410 \let\circlearrowleft\textcirclearrowleft  
20411 \let\circlearrowright\textcirclearrowright  
20412 \let\longleftarrow\textlongleftarrow  
20413 \let\longrightarrow\textlongrightarrow  
20414 \let\longleftarrow\textlongleftarrow  
20415 \let\longrightarrow\textlongrightarrow  
20416 \let\longleftarrow\textlongleftarrow  
20417 \let\longrightarrow\textlongrightarrow  
20418 \let\longmapsto\textlongmapsto  
20419 \let\longmapsfrom\textlongmapsfrom  
20420 \let\longmapsto\textlongmapsto  
20421 \let\nwsearrow\textnwsearrow  
20422 \let\neswarrow\textneswarrow  
20423 \let\hookrightarrow\texthookrightarrow  
20424 \let\rhookrightarrow\text\rhookrightarrow  
20425 \let\hookrightarrow\texthookrightarrow  
20426 \let\rhookrightarrow\text\rhookrightarrow  
20427 \let\leadsto\textleadsto



20428 `\let\rcurvearrowne\extrcurvearrowne`  
 20429 `\let\lcurvearrowse\textlcurvearrowse`  
 20430 `\let\lcurvearrowsw\textlcurvearrowsw`  
 20431 `\let\rcurvearrowse\extrcurvearrowse`  
 20432 `\let\lcurvearrowdown\textlcurvearrowdown`  
 20433 `\let\rcurvearrowdown\extrcurvearrowdown`  
 20434 `\let\rcurvearrowleft\extrcurvearrowleft`  
 20435 `\let\rcurvearrowright\extrcurvearrowright`  
 20436 `\let\leftrightharpoon\textleftrightharpoon`  
 20437 `\let\rightleftharpoon\textrightleftharpoon`  
 20438 `\let\updownharpoonrightleft\textupdownharpoonrightleft`  
 20439 `\let\updownharpoonleftright\textupdownharpoonleftright`  
 20440 `\let\leftleftharpoons\textleftleftharpoons`  
 20441 `\let\upupharpoons\textupupharpoons`  
 20442 `\let\righttrightharpoons\textrighttrightharpoons`  
 20443 `\let\downdownharpoons\textdowndownharpoons`  
 20444 `\let\leftbarharpoon\textleftbarharpoon`  
 20445 `\let\barleftharpoon\textbarleftharpoon`  
 20446 `\let\rightbarharpoon\textrightbarharpoon`  
 20447 `\let\barrightharpoon\textbarrightharpoon`  
 20448 `\let\updownharpoons\textupdownharpoons`  
 20449 `\let\downupharpoons\textdownupharpoons`  
 20450 `\let\moo\textmoo`  
 20451 `\let\llparenthesis\textllparenthesis`  
 20452 `\let\rrparenthesis\textrrparenthesis`  
 20453 `\let\invdiameter\textinvdiameter`  
 20454 `\let\obar\textobar`  
 20455 `\let\obslash\textobslash`  
 20456 `\let\obot\textobot`  
 20457 `\let\NoChemicalCleaning\textNoChemicalCleaning`  
 20458 `\let\olessthan\textolessthan`  
 20459 `\let\ogreaterthan\textogreaterthan`  
 20460 `\let\boxslash\textboxslash`  
 20461 `\let\boxbslash\textboxbslash`  
 20462 `\let\boxast\textboxast`  
 20463 `\let\boxcircle\textboxcircle`  
 20464 `\let\boxbox\textboxbox`  
 20465 `\let\Valve\textValve`  
 20466 `\let\multimapboth\textmultimapboth`  
 20467 `\let\shuffle\textshuffle`  
 20468 `\let\uplus\textuplus`  
 20469 `\let\bigdoublewedge\textbigdoublewedge`  
 20470 `\let\bigdoublevee\textbigdoublevee`  
 20471 `\let\Join\textJoin`  
 20472 `\let\fatsemi\textfatsemi`  
 20473 `\let\cirplus\textcirplus`  
 20474 `\let\minusdot\textminusdot`  
 20475 `\let\dottimes\textdottimes`  
 20476 `\let\dtimes\textdtimes`  
 20477 `\let\odiv\textodiv`  
 20478 `\let\invneg\textinvneg`  
 20479 `\let\squdoublecap\textsqudoublecap`  
 20480 `\let\capdot\textcapdot`  
 20481 `\let\squdoublecup\textsqudoublecup`

20482 `\let\doublewedge\textdoublewedge`  
 20483 `\let\doublevee\textdoublevee`  
 20484 `\let\doublebarwedge\textdoublebarwedge`  
 20485 `\let\veedoublebar\textveedoublebar`  
 20486 `\let\eqdot\texteqdot`  
 20487 `\let\neqdot\textneqdot`  
 20488 `\let\coloncolonequals\textcoloncolonequals`  
 20489 `\let\leqslant\textleqslant`  
 20490 `\let\neqslant\textneqslant`  
 20491 `\let\geqslant\textgeqslant`  
 20492 `\let\ngeqslant\textngeqslant`  
 20493 `\let\lessapprox\textlessapprox`  
 20494 `\let\nlessapprox\textnlessapprox`  
 20495 `\let\gtrapprox\textgtrapprox`  
 20496 `\let\ngtrapprox\textngtrapprox`  
 20497 `\let\lneq\textlneq`  
 20498 `\let\gneq\textgneq`  
 20499 `\let\lnapprox\textlnapprox`  
 20500 `\let\gnapprox\textgnapprox`  
 20501 `\let\lesseqqgtr\textlesseqqgtr`  
 20502 `\let\gtreqqless\textgtreqqless`  
 20503 `\let\eqslantless\texteqslantless`  
 20504 `\let\eqslantgtr\texteqslantgtr`  
 20505 `\let\leftslice\textleftslice`  
 20506 `\let\rightslice\textrightslice`  
 20507 `\let\preceq\textpreceq`  
 20508 `\let\npreceq\textnpreceq`  
 20509 `\let\succeq\textsucceq`  
 20510 `\let\nsucceq\textnsucceq`  
 20511 `\let\precneq\textprecneq`  
 20512 `\let\succneq\textsuccneq`  
 20513 `\let\preceqq\textpreceqq`  
 20514 `\let\npreceqq\textnpreceqq`  
 20515 `\let\succeqq\textsucceqq`  
 20516 `\let\nsucceqq\textnsucceqq`  
 20517 `\let\precneqq\textprecneqq`  
 20518 `\let\succneqq\textsuccneqq`  
 20519 `\let\precapprox\textprecapprox`  
 20520 `\let\nprecapprox\textnprecapprox`  
 20521 `\let\succapprox\textsuccapprox`  
 20522 `\let\nsuccapprox\textnsuccapprox`  
 20523 `\let\precnapprox\textprecnapprox`  
 20524 `\let\succnapprox\textsuccnapprox`  
 20525 `\let\subseteqq\textsubseteqq`  
 20526 `\let\nsubseteqq\textnsubseteqq`  
 20527 `\let\supseteqq\textsupseteqq`  
 20528 `\let\nsupseteqq\textnsupseteqq`  
 20529 `\let\dashV\textdashV`  
 20530 `\let\ndashV\textndashV`  
 20531 `\let\Dashv\textDashv`  
 20532 `\let\ndashv\textndashv`  
 20533 `\let\DashV\textDashV`  
 20534 `\let\ndashV\textndashV`  
 20535 `\let\downmodels\textdownmodels`

20536 \let\ndownmodels\textndownmodels  
20537 \let\upmodels\textupmodels  
20538 \let\nupmodels\textnupmodels  
20539 \let\upspoon\textupspoon  
20540 \let\interleave\textinterleave  
20541 \let\slash\textslash  
20542 \let\pentagon\textpentagon  
20543 \let\varhexagon\textvarhexagon  
20544 \let\jinferior\textjinferior  
20545 \let\slashdiv\textslashdiv  
20546 \let\fivedots\textfivedots  
20547 \let\oo\textoo  
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20554 \let\fullnote\textfullnote  
20555 \let\halfnote\texthalfnote  
20556 \let\Vier\textVier  
20557 \let\Acht\textAcht  
20558 \let\Sech\textSech  
20559 \let\Zwdr\textZwdr  
20560 \let\Mundus\textMundus  
20561 \let\Moon\textMoon  
20562 \let\ManFace\textManFace  
20563 \let\WomanFace\textWomanFace  
20564 \let\Fax\textFax  
20565 \let\Fire\textFire  
20566 \let\Bicycle\textBicycle  
20567 \let\Gentsroom\textGentsroom  
20568 \let\Ladiesroom\textLadiesroom  
20569 \let\ccnc\textccnc  
20570 \let\ccsa\textccsa  
20571 \let\Info\textInfo  
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20573 \let\neg\textneg  
20574 \let\times\texttimes  
20575 \let\div\textdiv  
20576 \let\pm\textpm  
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20581 \let\fcdice\HyPsd@DieFace  
20582 \let\MoonPha\HyPsd@MoonPha  
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 20604 `\let\crossh\texthbar`  
 20605 `\let\planck\texthbar`  
 20606 `\let\eng\ng`  
 20607 `\let\engma\ng`  
 20608 `\let\crossb\textcrb`  
 20609 `\let\textbarb\textcrb`  
 20610 `\let\barb\textcrb`  
 20611 `\let\Florin\textflorin`  
 20612 `\let\hv\texthvlig`  
 20613 `\let\hausak\texthtk`  
 20614 `\let\crossnilambda\textcrlambda`  
 20615 `\let\barlambda\textcrlambda`  
 20616 `\let\lambdabar\textcrlambda`  
 20617 `\let\lambdaslash\textcrlambda`  
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 20631 `\let\hookb\texthtb`  
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 20640 `\let\hookrepsilon\textrhookrepsilon`  
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20821 \let\APLup\textbigtriangleup  
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20920 \let\Faxmachine\textFax
20921 \let\CEsign\textCESign
20922 }% \psdaliasnames
20923 </psdextra>
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20926 \begin{document}
20927 \end{document}
20928 </check>
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	4299, 5237, 5238, 5239,		
	5240, 5248, 6423, 6431,		
	7134, 7136, 7137, 7140,		
	7147, 11238, 11239, 11240,		
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	<code>\yahamza</code> . . . . .	19573	
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	<code>\Yingyang</code> . . . . .	18636, 20839	
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