

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

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

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## 1 Documentation overview for hyperref

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

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

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

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

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

Source code documentation:

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

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

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

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### 3 File hyccheck.tex

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

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

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

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

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

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

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

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

`\HyC@checkPackage`

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```



```

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

```

`\HyC@noValue`

```

85 \def\HyC@noValue{NoValue}

```

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

```

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

```

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

```

90 \newtoks\HyC@Toks

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

```

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

```

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

```

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

```

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

```

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

```

`\HyC@checkItem` A single check.

```

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

```

`\HyC@string` Some shorthands.

```

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

```

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

```

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

```

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

```

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

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

```

## 4 Package options and setup

### 4.1 Save catcodes

There are many packages that change the standard catcodes.

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

```

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

```

\Hy@SetCatcodes

```

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

```

```

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

```

\Hy@RestoreCatcodes

```

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

```

231 \Hy@SetCatcodes

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

```

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

```

```

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

```

## 4.2 Version check

\Hy@VersionChecked

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

\Hy@VersionCheck

```

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

```

```

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

```

\Hy@@VersionCheck

```

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

```

### 4.3 Checks with regular expressions

```

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

```

## 4.4 Compatibility with format dumps

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

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

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

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

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

`\Hy@AtEndOfPackage`

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

`\Hy@AtBeginDocumentHook`

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

`\Hy@AtEndOfPackageHook`

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

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

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

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

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

## 4.5 Switches

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

Defaults for the switches are now set.

```
414 \Hy@backreffalse
```



```

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

```

## 5 Common help macros

\Hy@StepCount

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

\Hy@GlobalStepCount

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

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

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

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

```

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

```

## 5.1 Macros for recursions

```

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

```

## 5.2 Babel's protection of shorthand characters

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

```

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

```

## 5.3 Coordinate transformations

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

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

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

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

Example (TeX):

```

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

```

`\hypercalsbp`

```

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

```

## 6 Dealing with PDF strings

The PDF string stuff done by Heiko Oberdiek.

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

## 6.1 Description of PDF strings

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

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

## 6.2 Definition of `\pdfstringdef`

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

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

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

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

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

`ppercaseUnsupportedInPdfStrings`  
`owercaseUnsupportedInPdfStrings`

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

```

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

```

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

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

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

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

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

```
497 \begingroup
```

### 6.2.1 Preprocessing

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

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

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

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

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

```

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

```

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

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

```

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

```

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

```

515 \@inmathwarn\pdfstringdef

```

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

```

516 \let\@inmathwarn\HyPsd@inmathwarn

```

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

```

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

```

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

```

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

```

```

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

```

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

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

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

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

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

```

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

```

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

```

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

```

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

```

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

```

```

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

```

#### Package pifont.

```

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

```

#### Environments.

```

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

```

#### Package color.

```

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

```

#### Upper- and lowercase.

```

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

```

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

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

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

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

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

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

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

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

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

**Package german.**

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

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

**Package FrenchPro.** This package uses:

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

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

**AMS classes.**

```
625 \HyPsd@AMSclassfix
```



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

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

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

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

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

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

**Miscellaneous commands.**

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

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

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

**Patch for `cjk` bookmarks.**

```
642 \HyPsd@CJKhook
```

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

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

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

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

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

### Package xspace.

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

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

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

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

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

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

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

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

Support for package 'xargs':

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

### 6.2.2 Expansion

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

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

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

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

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

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

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

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

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

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

### 6.2.3 Postprocessing

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```

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

```

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

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

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

```

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

```

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

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

```

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

```

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

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

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

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

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

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

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

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

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

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

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

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

```

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

```

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

```

783 \pdfstringdefPostHook#1%
784 \endgroup
785 }

```

`\Hy@pdfstringdef`

```

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

```

## 6.3 Encodings

### 6.3.1 XeTeX

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

### 6.3.2 Workaround for package linguex

```

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

```



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

\Hy@SaveCatcodeSettings

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

\Hy@RestoreCatcodeSettings

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

### 6.3.4 PD1 encoding

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

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

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

### 6.3.5 PU encoding

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

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

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

`\HyPsd@LoadExtra`

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

```

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

```

## 6.4 Additional user commands

### 6.4.1 `\texorpdfstring`

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

```

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

```

### 6.4.2 Hooks for `\pdfstringdef`

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

```

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

```

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

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

```

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

```

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

```

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

```

`\HyPsd@DisableCommands`

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

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

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

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

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

## 6.5 Help macros for expansion

### 6.5.1 `\ignorespaces`

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

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

### 6.5.2 Babel languages

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

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

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

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

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

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

```
928 <*package>
```

### 6.5.3 CJK patch

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

```
\HyPsd@CJKhook
```

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

### 6.5.4 CJK bookmarks

```
\HyPsd@CJKhook
```

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

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

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

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

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

```

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

```

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

```

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

```

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

```

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

```

```

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

```

### 6.5.5 CJK unicode

\HyPsd@CJKhook@unicode

```

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

```

\HyPsd@CJK@Unicode

```

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

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

```

```

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

```



```

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

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

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

```

```

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

```

```

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

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

```

### 6.5.6 \@inmathwarn-Patch

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

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

```

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

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

```

```

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

```

`\HyPsd@add@accent`

```

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

```

### 6.5.7 Unexpandable spaces

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

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

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

```

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

```

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

```

1288 \HyPsd@LetUnexpandableSpace\HyPsd@UnexpandableSpace

```

### 6.5.8 Marker for commands

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

```

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

```

### 6.5.9 `\hspace` fix

`\HyPsd@hspace`

```

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

```

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

```

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

```

```

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

```

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

```

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

```

### 6.5.10 Fix for AMS classes

```

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

```

### 6.5.11 Reference commands

`\HyPsd@href`

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

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

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

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

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

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

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

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

`\HyPsd@@@autorefname`

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

### 6.5.12 Redefining the defining commands

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



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

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

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

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

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

```

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

```

```

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

```

### 6.5.13 \ifnextchar

`\HyPsd@ifnextchar` In `\pdfstringdef \ifnextchar` is disabled via a `\let` command to save time. First a warning message is given, then the three arguments are canceled. `\@ifnextchar` cannot work in a correct manner, because it uses `\futurelet`, but this is a stomach feature, that doesn't work in an expanding context. There are several variants of `\@ifnextchar`:

- `\@ifnextchar`
- `\kernel@ifnextchar`
- `\new@ifnextchar` from package `amsgen.sty` (bug report `latex/3662`).

```

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

```

### 6.5.14 \@protected@testoptifnextchar

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

```

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

```

## 6.6 Help macros for postprocessing

### 6.6.1 Generic warning.

`\HyPsd@Warning` For several reasons `\space` is masked and does not have its normal meaning. But it is used in warning messages, so it is redefined locally:

```

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

```

## 6.6.2 Protecting spaces

`\HyPsd@ProtectSpaces` `\HyPsd@ProtectSpaces` calls with the expanded string `\HyPsd@@ProtectSpacesFi`. The expanded string is protected by `|` at the beginning and end of the expanded string. Because of this there can be no group at the beginning or end of the string and grouping characters are not removed by the call of `\HyPsd@@ProtectSpacesFi`.

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

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

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

### Remove mask.

`\HyPsd@RemoveMask` `\HyPsd@RemoveMask` removes the protecting `|`. It is used by `\HyPsd@@ProtectSpacesFi` and by the code in `\pdfstringdef` that removes the grouping characters.

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

## 6.6.3 Remove grouping braces

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

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

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

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

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

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

```

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

```

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

```

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

```

#### 6.6.4 Catcode check

**Workaround for LuaTeX.** `\HyPsd@CheckCatcodes` might trigger a bug of LuaTeX (0.60.2, 0.70.1, 0.70.2, ...) in the comparison with `\ifcat`, see <http://tracker.luatex.org/view.php?id=773>.

```

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

```

### Check catcodes.

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

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

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

```

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

```

```

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

```

```

1613 }%
1614 \endgroup

```

### Remove counts, dimens, skips.

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

```

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

```

`\HyPsd@AfterDimenRemove` If the value of the `dimen` (`\kern`) is zero, it can be removed silently. All other values are difficult to interpret. Negative values do not work in bookmarks. Should positive values be removed or should they be replaced by space(s)? The following code replaces positive values greater than `1ex` with a space and removes them else.

```

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

```

`\HyPsd@AfterSkipRemove` The glue part of skips do not work in PDF strings and are ignored. Skips (`\hskip`), that are not zero, have the same interpreting problems like `dimens` (see above).

```

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

```

### Catcode warnings.

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

```

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

```

```

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

```

\HyPsd@RemoveSpaceWarning

```

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

```

\HyPsd@ReplaceSpaceWarning

```

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

```

### 6.6.5 Check for wrong glyphs

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

```

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

```



```

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

```

## Spaces.

`\HyPsd@spaceopti` In the string the spaces are represented by `\HyPsd@spaceopti` tokens. Within an `\edef` it prints itself as a simple space and looks for its next argument. If another space follows, so it replaces the next `\HyPsd@spaceopti` by an protected space `\040`.

```

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

```

### 6.6.6 Replacing tokens

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

```

#1 Exact the tokens that should be replaced.
#2 The replacement (don't need to be expanded).
#3 Command with the string.
1727 \def\HyPsd@Subst#1#2#3{%
1728 \def\HyPsd@@ReplaceFi##1##1##2\END\fi{%
1729 \fi
1730 ##1%
1731 \ifx\scrollmode##2\scrollmode

```

```

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

```

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

```

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

```

`\HyPsd@EscapeTeX`

```

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

```

### 6.6.7 Support for package `xspace`

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

```

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

```

```

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

```

### 6.6.8 Converting to Unicode

Eight bit characters are converted to the sixteen bit ones, \8 is replaced by \00, and \9 is removed. The result should be a valid Unicode PDF string without the Unicode marker at the beginning.

```

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

```

\HyPsd@ConvertToUnicode

```

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

```

\HyPsd@DoConvert

```

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

```

\HyPsd@DoEscape

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

\HyPsd@GetTwoBytes

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

\HyPsd@GetOneByte

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

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

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

\HyPsd@Char

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

```

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

```

change 2022-02-21 For the case that utf8 chars are protected we need to expand them. This works only is `\UTFviii@loop` is not defined in a group, which will be the case in the new latex code, so we test for it.

```

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

```

### 6.6.9 Support for UTF-8 input encoding

After `\usepackage[utf8]{inputenc}` there are macros that expect the UTF-8 octets as arguments. Therefore we can calculate the PDF octal sequences directly. Because the PDF format is limited to UCS-2, conversion macros are needed for UTF-8 sequences with two and three octets only.

This calculation must be done in an expandable context, so we use `eTeX` here

for performance reasons. Unhappily the results of divisions are rounded. Thus a circumvention via `\dimexpr` is used, e.g.:

```

\numexpr 123/4\relax is replaced by
\number\dimexpr.25\dimexpr 123sp\relax\relax

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

```

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

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

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

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

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

$$\tag{5}$$

```

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

```

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

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

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

```

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

```

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

```

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

```

```

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

```

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```



```

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

```

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

```

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

```

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

`\HyPsd@DieFace` Die faces are provided by

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

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

```

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

```

```

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

```

`\HyPsd@DieFaceLarge`

```

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

```

### 6.6.11 Support for moon phases of package china2e

```

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

```

### 6.6.12 Support for package pifont

`\HyPsd@ding`

```

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

```

```

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

```

\HyPsd@@ding

```

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

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

```

```

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

```

## 7 Support of other packages

### 7.1 Package subfigure

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

```

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

```

## 7.2 Package xr and xr-hyper

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

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

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

## 8 Help macros for links

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

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

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

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

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

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

```

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

```

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

```

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

```

```

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

```

## 9 Options

```

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

```

### 9.1 Help macros

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

```

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

\IfHyperBooleanExists

```

```

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

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

```

#### \IfHyperBoolean

```

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

```

#### \Hy@boolkey

```

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

```

#### \Hy@WarnOptionValue

```

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

```

#### \Hy@DisableOption

```

2365 \def\Hy@DisableOption#1{%

```



```

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

```

`\Hy@WarnOptionDisabled`

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

\Hy@UseNameKey

```

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

```

## 9.2 Defining the options

```

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

```

```

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

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

```

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

```

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

```

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

```

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

```

```

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

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

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

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

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

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

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

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

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

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

```

```

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

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

```

```

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

```

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

```

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

```

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

```

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

```

Legacy name, earlier releases assumed 1.x

```

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

```

if pdfminorversion is defined, make sure pdfmajorversion is too.

```

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

```

```

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

```

## 10 Options for different drivers

```

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

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

```

```

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

```



```

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

```

```

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

```

```

2846 }

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

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

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

```

## 11 Options to add extra features

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

```

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

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

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

```

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

```

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

```

```

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

```

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

```

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

```

```

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

```

## 12 Language options

The \autoref feature depends on the language.

```

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

```

```

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

```

```

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

```

Next commented section for Russian is provided by Olga Lapko.

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

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

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

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

```
3071 \def\equationautorefname{\cyr\cyrv\cyrery\cyr.}%
```

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

```
3072 % \def\equationautorefname{%
3073 % \cyr\cyrv\cyrery\cyr\cyrz\cyr\cyrn\cyr\cyr
3074 % }%
```

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

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

```

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

```

Commented form of the full synonym for “footnote”. It has common form for both nominative and accusative but changes in other forms, like “of \autoref{auto}”

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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



```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

```

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

```

```

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

```

```

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

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

```

Greek, see github issue 52

```

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

```

```

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

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

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

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

```

```

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

```

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

```

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

```

```

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

```

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

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

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

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

## 13 Options to change appearance of links

Colouring links at the L<sup>A</sup>T<sub>E</sub>X level is useful for debugging, perhaps.

```
3352 \define@key{Hyp}{colorlinks}[true]{%
3353   \Hy@boolkey{colorlinks}{#1}%
3354 }
3355 \DeclareVoidOption{hidelinks}{%
3356   \Hy@colorlinksfalse
3357   \Hy@ocgcolorlinksfalse
3358   \Hy@frenchlinksfalse
3359   \def\Hy@colorlink##1{\begingroup}%
3360   \def\Hy@endcolorlink{\endgroup}%
3361   \def\@pdfborder{0 0 0}%
3362   \let\@pdfborderstyle\@empty
3363 }
3364 \define@key{Hyp}{ocgcolorlinks}[true]{%
3365   \Hy@boolkey{ocgcolorlinks}{#1}%
3366 }
3367 \Hy@AtBeginDocument{%
3368   \begingroup
3369   \@ifundefined{OBJ@OCG@view}{%
3370     \ifHy@ocgcolorlinks
3371       \Hy@Warning{%
3372         Driver does not support `ocgcolorlinks',\MessageBreak
3373         using `colorlinks' instead%
3374       }%
3375     }%
3376   }
```

```

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

```

## 14 Bookmarking

```

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

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

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

```

The depth of the outlines is controlled by option `bookmarksdepth`. The option acts globally and distinguishes three cases:

- `bookmarksdepth`: Without value `hyperref` uses counter `tocdepth` (compatible behaviour and default).
- `bookmarksdepth=<number>`: the depth is set to `<number>`.
- `bookmarksdepth=<name>`: The `<name>` must not start with a number or minus sign. It is a document division name (part, chapter, section, ...). Internally the value of macro `\toclevel@<name>` is used.

```

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

```

```

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

```

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

```

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

```

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

```

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

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

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

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

```



```

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

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

```

## 15 PDF-specific options

`\@pdfpagetransition` The value of option `pdfpagetransition` is stored in `\@pdfpagetransition`. Its initial value is set to `\relax` in order to be able to differentiate between a not used option and an option with an empty value.

```

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

```

`\@pdfpageduration` The value of option `pdfpageduration` is stored in `\@pdfpageduration`. Its initial value is set to `\relax` in order to be able to differentiate between a not used option and an option with an empty value.

```

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

```

The value of the `bordercolor` options are not processed by the color package. Therefore the value consists of space separated rgb numbers in the range 0 until 1.

Package `xcolor` provides `\XC@bordercolor` since version 1.1. If the two spaces in the color specification are missing, then the value is processed as color specification from package `xcolor` by using `\XC@bordercolor` (since `xcolor` 2004/05/09 v1.11, versions 2005/03/24 v2.02 until 2006/11/28 v2.10 do not work because of a bug that is fixed in 2007/01/21 v2.11).

```

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

```

```

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

```

```

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

```

```

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

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

```

```

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

```

```

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

```

```

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

```



```

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

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

```

```

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

```

```

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

```

Test according to ABNF of RFC 3066.

```

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

```

Test according to ABNF of RFC 5646.

```

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

```

```

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

```

Test for unique extensions.

```

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

```

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

```

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

```

```

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

```

Default values:

```

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

```

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

```

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

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

```

After processing options.

## 15.1 Package xspace support

```

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

```

## 15.2 Option draft

```

4226 \Hy@AtBeginDocument{%

```

```

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

```

### 15.3 PDF/A

```

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

```



```

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

```

## 15.4 Patch for babel's \texttilde

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

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

```

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

```

```

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

```

#### 15.4.1 Driver loading

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

```

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

```

```

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

```

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

```

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

```

```

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

```

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

```

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

```

```

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

```

```

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

```

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

```

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

```

#### 15.4.2 Bookmarks

```

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

```

```
4579 \ifHy@bookmarksopen
```

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

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

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

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

```

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

```

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

```

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

```

for grouping consistency:

```

4678   \def\Hy@colorlink#1{\begingroup}%

```



```

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

```

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

```

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

```

## 16 User hypertext macros

We need to normalise all user commands taking a URL argument; Within the argument the following special definitions apply: \#, \%, ~ produce #, %, ~ respectively. for consistency ~ produces ~ as well. At the *top level only* ie not within the argument of another command, you can use # and % unescaped, to

produce themselves. even if, say, # is entered as # it will be converted to \# so it does not die if written to an aux file etc. \# will write as # locally while making \specials. The catcode : is set to other to avoid problems with expl3 syntax.

```

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

```

```

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

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

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

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

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

```

```

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

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

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

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

```

4879 \fi

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

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

Option ‘pdfremotestartview’.

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

Option ‘pdfnewwindow’.

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

Option ‘ismap’.

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

Option ‘nextactionraw’.

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

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

```

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

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

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

```

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

```

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

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

```

```

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

```

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

```

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

```

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

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

To make this easier, we define `\hyperget`

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

## 16.1 Link box support for XeTeX

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



```

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

```

## 17 Underlying basic hypertext macros

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

```

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

```

```

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

```

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

```

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

```

Parameters are:

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

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

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

Now (potentially), we are passed: 1) The link type 2) The internal name, 3) the link string, 4) the URL type (http, mailto, file etc), 5) the URL details 6) anything after a real : in the URL 7) the whole URL again

```
5149 \def\@pdftempwordfile{file}%
5150 \def\@pdftempwordrun{run}%
5151 \def\@hyper@readexternallink#1#2#3#4:#5:#6\#7{%
```

If there are no colons at all (#6 is blank), its a local file; if the URL type (#4) is blank, its probably a Mac filename, so treat it like a file: URL. The only flaw is if its a relative Mac path, with several colon-separated elements — then we lose. Such names must be prefixed with an explicit dvi:

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

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

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

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

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

otherwise its a URL

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

By default, turn run: into file:

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

```

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

```

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

```

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

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

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

```

```

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

```

Anchors have a name, and marked text. We have to be careful with the marked text, as if we break off part of something to put a `\special` around it, all hell breaks loose. Therefore, we check the category code of the first token, and only proceed if its safe. Tanmoy sorted this out.

A curious case arises if the original parameter was in braces. That means that `#2` comes here a multiple letters, and the `noexpand` just looks at the first one, putting the rest in the output. Yuck.

```

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

```

```

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

```

## 18 Option ‘destlabel’

```

5286 \ifHy@destlabel

```

\hyper@newdestlabel

```

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

```

\hyper@destlabel@hook

```

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

```

\Hy@DestRename

```

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

```

\HyperDestRename

```

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

```

```

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

```

\Hy@IsNotEmpty

```

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

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

```

\HyperDestLabelReplace

```

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

```

\HyperDestNameFilter

```

5346 \let\HyperDestNameFilter\HyperDestLabelReplace

5347 \else

```

\hyper@newdestlabel

```

5348 \let\hyper@newdestlabel\@gobbletwo

```

\HyperDestLabelReplace

```

5349 \let\HyperDestLabelReplace\@firstofone

```

\HyperDestRename

```

5350 \let\HyperDestRename\@gobbletwo

5351 \fi

5352 \Hy@DisableOption{destlabel}

```

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

```

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

```

## 19 Forms creation

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

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

### 19.1 Field flags

The field flags are organized in a bit set.

```
5357 \RequirePackage{bitset}
```

Each flag has a option name, an `\if` switch, and a bit position. The default is always ‘false’, the flag is clear. This is also the default of the switch created by `\newif`.

The names of the flags in the PDF specification (1.7) are used as lowercase option names.

```
\HyField@NewFlag #1: type: F annot flags, Ff field flags
```

```
#2: PDF name
```

```
#3: PDF position
```

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

```
\HyField@NewFlagOnly
```

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

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

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

```
\HyField@NewBitsetFlag Package ‘bitset’ uses zero based positions, the PDF specification starts with one.
```

```
#1: option
```

```
#2: PDF name
```

```
#3: type: F annot flags, Ff field flags
```

```
#4: PDF position
```

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



```

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

```

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

```

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

```

\HyField@@UseFlag

```

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

```

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

```

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

```

\HyField@@SetFlag

```

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

```

\HyField@PrintFlags

```

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

```

```

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

```

### 19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```

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

```

“Table 8.75 Field flags specific to button fields”

```

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

```

“Table 8.77 Field flags specific to text fields”

```

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

```

“Table 8.79 field flags specific to choice fields”

```

5448 \HyField@NewFlag{Ff}{Combo}{18}
5449 \HyField@NewFlag{Ff}{Edit}{19}
5450 \HyField@NewFlag{Ff}{Sort}{20}
5451 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4
5452 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5453 \HyField@NewFlag{Ff}{CommitOnSelChange}{27}% PDF 1.5

```

Signature fields are not supported.

Until 6.76i hyperref uses field option ‘combo’ to set three flags ‘Combo’, ‘Edit’, and ‘Sort’. Option ‘popdown’ sets flag ‘Combo’ only.

```

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

```

Annotation flags. The form objects are widget annotations. There are two flags for readonly settings, the one in the annotation flags is ignored, instead the other in the field flags is used.

Flag `Print` is not much useful, because hyperref do not use the appearance entry of the annotations for most fields.

```

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

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

```

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

```

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

```

```

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

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

```

### 19.1.2 Set submit flags

\HyField@FlagsSubmit

```

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

```

```

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

```

### 19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

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

```

### 19.1.4 Pushbutton field

\HyField@FlagsPushButton

```

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

```

### 19.1.5 Check box field

\HyField@FlagsCheckBox

```

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

```

```

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

```

### 19.1.6 Radio button field

\HyField@FlagsRadioButton

```

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

```

### 19.1.7 Text fields

\HyField@FlagsText

```

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

```

```

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

```

### 19.1.8 Choice fields

\HyField@FlagsChoice

```

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

```

## 19.2 Choice field

\HyField@PDFChoices #1: list of choices in key value syntax, key = exported name, value = displayed text.

Input: \Fld@default, \Fld@value, \ifFld@multiselect

Result: \Fld@choices with entries: /Opt, /DV, /V, /I.

```

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

```

```

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

```

\HyField@@PDFChoices

```

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

```



```

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

```

### 19.3 Forms

\HyField@SetKeys

```

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

```

```

5786 }

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

```

```

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

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

```

```

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

```

```

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

```

```

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

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

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

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

```

```

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

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

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

```

```

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

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

```



```

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

```

Default options for the types of \ChoiceMenu.

```

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

```

## 20 Setup

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

## 21 Low-level utility macros

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

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

Support \label before \begin{document}.

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

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

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

```

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

```

## 22 Localized nullifying of package

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

```

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

```

```

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

```

## 23 Package nohyperref

This package is introduced by Sebastian Rahtz.

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

Some low-level commands:

```

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

```

Some top-level commands:

```

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

```

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

## 24 The Mangling Of Aux and Toc Files

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

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

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

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

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

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

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

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

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

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

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

```

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

```

## 25 Title strings

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

```

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

```

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

```

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

```

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

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

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

In the macro `\author` the newline can perhaps separate the different authors, so the newline expands here to a comma with space.

The possible arguments such as space or the optional argument after the newline macros are not detected.

A possible <sup>1</sup>removes its argument.

```
6417 \def\Hy@UseMaketitleString#1{%
6418   \@ifundefined{Hy@#1}{}{}%
6419   \begingroup
6420     \let\Hy@saved@hook\pdfstringdefPreHook
6421     \pdfstringdefDisableCommands{%
6422       \expandafter\let\expandafter\\ \csname Hy@newline@#1\endcsname
6423       \let\newline\\%
6424       \def\and{; }%
6425       \let\thanks\@gobble%
6426     }%
6427     \expandafter\ifx\csname @pdf#1\endcsname\@empty
6428     \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
6429       \csname Hy@#1\endcsname\@empty
6430     }%
6431   \fi
6432   \global\let\pdfstringdefPreHook\Hy@saved@hook
6433 \endgroup
6434 }%
6435 }
6436 \def\Hy@newline@title#1{ #1}
6437 \def\Hy@newline@author#1{, #1}
6438 \def\Hy@UseMaketitleInfos{%
6439   \Hy@UseMaketitleString{title}%
6440   \Hy@UseMaketitleString{author}%
6441 }
```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.

## 27 Every page

```
6442 \RequirePackage{atbegshi}[2007/09/09]
6443 \let\Hy@EveryPageHook\@empty
6444 \let\Hy@EveryPageBoxHook\@empty
6445 \let\Hy@FirstPageHook\@empty
6446 \AtBeginShipout{%
6447   \Hy@EveryPageHook
6448   \ifx\Hy@EveryPageBoxHook\@empty
```

```

6449 \else
6450 \setbox\AtBeginShipoutBox=\vbox{%
6451 \offinterlineskip
6452 \Hy@EveryPageBoxHook
6453 \box\AtBeginShipoutBox
6454 }%
6455 \fi
6456 }
6457 \Hy@iffileloaded{hpdftex.def}{-%
6458 \AtBeginShipout{%
6459 \Hy@FirstPageHook
6460 \global\let\Hy@FirstPageHook\@empty
6461 }%
6462 }-%
6463 \AtBeginShipoutFirst{%
6464 \Hy@FirstPageHook
6465 }%
6466 }
6467 \g@addto@macro\Hy@FirstPageHook{%
6468 \PDF@FinishDoc
6469 \global\let\PDF@FinishDoc\@empty
6470 }

```

## 27.1 PDF /PageLabels

Internal macros of this module are marked with `\HyPL@`.

```

6471 \ifHy@pdfpagelabels
6472 \begingroup\expandafter\expandafter\expandafter\endgroup
6473 \expandafter\ifx\csname thepage\endcsname\relax
6474 \Hy@pdfpagelabelsfalse
6475 \Hy@WarningNoLine{%
6476 Option `pdfpagelabels' is turned off\MessageBreak
6477 because \string\thepage\space is undefined%
6478 }%
6479 \csname fi\endcsname
6480 \csname iffalse\expandafter\endcsname
6481 \fi

```

`\thispdfpagelabel` The command `\thispdfpagelabel` allows to label a special page without the redefinition of `\thepage` for the page.

```

6482 \def\thispdfpagelabel#1{%
6483 \gdef\HyPL@thisLabel{#1}%
6484 }%
6485 \global\let\HyPL@thisLabel\relax

```

`\HyPL@Labels` The page labels are collected in `\HyPL@Labels` and set at the end of the document.

```

6486 \let\HyPL@Labels\@empty

```

`\Hy@abspage` We have to know the the absolute page number and introduce a new counter for that.

```

6487 \newcount\Hy@abspage
6488 \Hy@abspage=0 %

```



For comparisons with the values of the previous page, some variables are needed:

```
6489 \def\HyPL@LastType{init}%
6490 \def\HyPL@LastNumber{0}%
6491 \let\HyPL@LastPrefix\@empty
```

Definitions for the PDF names of the L<sup>A</sup>T<sub>E</sub>X pendants.

```
6492 \def\HyPL@arabic{D}%
6493 \def\HyPL@Roman{R}%
6494 \def\HyPL@roman{r}%
6495 \def\HyPL@Alph{A}%
6496 \def\HyPL@alph{a}%

6497 \let\HyPL@SlidesSetPage\@empty
6498 \@ifclassloaded{slides}{%
6499   \def\HyPL@SlidesSetPage{%
6500     \advance\c@page\@ne
6501     \ifnum\value{page}>\@ne
6502       \protected@edef\HyPL@SlidesOptionalPage{%
6503         \Hy@SlidesFormatOptionalPage{\thepage}%
6504       }%
6505     \else
6506       \let\HyPL@SlidesOptionalPage\@empty
6507     \fi
6508     \advance\c@page-\@ne
6509     \def\HyPL@page{%
6510       \csname the\Hy@SlidesPage\endcsname
6511       \HyPL@SlidesOptionalPage
6512     }%
6513   }%
6514 }{}
```

`\HyPL@EveryPage` If a page is shipout and the page number is known, `\HyPL@EveryPage` has to be called. It stores the current page label.

```
6515 \def\HyPL@EveryPage{%
6516   \begingroup
6517   \ifx\HyPL@thisLabel\relax
6518     \let\HyPL@page\thepage
6519     \HyPL@SlidesSetPage
6520   \else
6521     \let\HyPL@page\HyPL@thisLabel
6522     \global\let\HyPL@thisLabel\relax
6523   \fi
6524   \let\HyPL@Type\relax
6525   \ifnum\c@page>0 %
6526     \ifx\HyPL@SlidesSetPage\@empty
6527       \expandafter\HyPL@CheckThePage\HyPL@page\@nil
6528     \fi
6529   \fi
6530   \let\Hy@temp Y%
6531   \ifx\HyPL@Type\HyPL@LastType
6532   \else
6533     \let\Hy@temp N%
6534   \fi
6535   \ifx\HyPL@Type\relax
6536     \pdfstringdef\HyPL@Prefix{\HyPL@page}%

```

```

6537 \else
6538 \pdfstringdef\HyPL@Prefix\HyPL@Prefix
6539 \fi
6540 \ifx\HyPL@Prefix\HyPL@LastPrefix
6541 \else
6542 \let\Hy@temp N%
6543 \fi
6544 \if Y\Hy@temp
6545 \advance\c@page by -1 %
6546 \ifnum\HyPL@LastNumber=\the\c@page\relax
6547 \else
6548 \let\Hy@temp N%
6549 \fi
6550 \Hy@StepCount\c@page
6551 \fi
6552 \if N\Hy@temp
6553 \ifx\HyPL@Type\relax
6554 \HyPL@StorePageLabel{/P(\HyPL@Prefix)}%
6555 \else
6556 \HyPL@StorePageLabel{%
6557 \ifx\HyPL@Prefix\@empty
6558 \else
6559 /P(\HyPL@Prefix)%
6560 \fi
6561 /S/\csname HyPL\HyPL@Type\endcsname
6562 \ifnum\the\c@page=1 %
6563 \else
6564 \space/St \the\c@page
6565 \fi
6566 }%
6567 \fi
6568 \fi
6569 \xdef\HyPL@LastNumber{\the\c@page}%
6570 \global\let\HyPL@LastType\HyPL@Type
6571 \global\let\HyPL@LastPrefix\HyPL@Prefix
6572 \endgroup
6573 \Hy@GlobalStepCount\Hy@abspage
6574 }%

```

`\HyPL@CheckThePage` Macro `\HyPL@CheckThePage` calls `\HyPL@@CheckThePage` that does the job.

```

6575 \def\HyPL@CheckThePage#1\@nil{%
6576 \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
6577 }%

```

`\HyPL@@CheckThePage` The first check is, is `\thepage` is defined such as in L<sup>A</sup>T<sub>E</sub>X, e. g.: `\csname @arabic\endcsname\c@page`. In the current implemenation the check fails, if there is another `\csname` before.

The second check tries to detect `\arabic{page}` at the end of the definition text of `\thepage`.

```

6578 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
6579 \def\Hy@tempa{#4}%
6580 \def\Hy@tempb{\csname\endcsname\c@page}%
6581 \ifx\Hy@tempa\Hy@tempb
6582 \expandafter\ifx\csname HyPL#3\endcsname\relax
6583 \else

```

```

6584     \def\HyPL@Type{#3}%
6585     \def\HyPL@Prefix{#2}%
6586     \fi
6587   \else
6588     \begingroup
6589     \let\Hy@next\endgroup
6590     \let\HyPL@found\@undefined
6591     \def\arabic{\HyPL@Format{arabic}}%
6592     \def\Roman{\HyPL@Format{Roman}}%
6593     \def\roman{\HyPL@Format{roman}}%
6594     \def\Alph{\HyPL@Format{Alph}}%
6595     \def\alph{\HyPL@Format{alph}}%
6596     \protected@edef\Hy@temp{#1}%
6597     \ifx\HyPL@found\relax
6598       \toks@\expandafter{\Hy@temp}%
6599       \edef\Hy@next{\endgroup
6600         \noexpand\HyPL@@@CheckThePage\the\toks@
6601         \noexpand\HyPL@found\relax\noexpand\@nil
6602       }%
6603     \fi
6604     \Hy@next
6605   \fi
6606 }%

```

`\HyPL@Format` The help macro `\HyPL@Format` is executed while a `\protected@edef` in the second check method of `\HyPL@@@CheckPage`. The first occurrences of, for example, `\arabic{page}` is marked by `\HyPL@found` that is also defined by `\csname`.

```

6607 \def\HyPL@Format#1#2{%
6608   \ifx\HyPL@found\@undefined
6609     \expandafter\ifx\csname c@#2\endcsname\c@page
6610       \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
6611     \else
6612       \expandafter\noexpand\csname#1\endcsname{#2}%
6613     \fi
6614   \else
6615     \expandafter\noexpand\csname#1\endcsname{#2}%
6616   \fi
6617 }%

```

`\HyPL@@@CheckThePage` If the second check method is successful, `\HyPL@@@CheckThePage` scans the result of `\HyPL@Format` and stores the found values.

```

6618 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
6619   \def\Hy@tempa{#3}%
6620   \def\Hy@tempb{\HyPL@found\relax}%
6621   \ifx\Hy@tempa\Hy@tempb
6622     \def\HyPL@Type{#2}%
6623     \def\HyPL@Prefix{#1}%
6624   \fi
6625 }%

```

`\HyPL@StorePageLabel` Dummy for drivers that does not support `/PageLabel`.

```

6626 \providecommand*\HyPL@StorePageLabel[1]{}%

```

`\HyPL@Useless` The `/PageLabels` entry does not make sense, if the absolute page numbers and the page labels are the same. Then `\HyPL@Labels` has the meaning of `\HyPL@Useless`.

```
6627 \def\HyPL@Useless{0<</S/D>>}%
6628 \@onelevel@sanitize\HyPL@Useless
```

`\HyPL@SetPageLabels` The page labels are written to the PDF catalogue. The command `\Hy@PutCatalog` is defined in the driver files.

```
6629 \def\HyPL@SetPageLabels{%
6630   \@onelevel@sanitize\HyPL@Labels
6631   \ifx\HyPL@Labels\@empty
6632     \else
6633     \ifx\HyPL@Labels\HyPL@Useless
6634     \else
6635     \Hy@PutCatalog{/PageLabels<</Nums\HyPL@Labels>>}%
6636     \fi
6637   \fi
6638 }%
```

```
6639 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
6640 \fi
```

Option ‘pdfpagelabels’ has been used and is now disabled.

```
6641 \Hy@DisableOption{pdfpagelabels}
6642 </package>
```

### 27.1.1 pdfTeX and VTeX

Because of pdfTeX’s `\pdfcatalog` command the `/PageLabels` entry can set at end of document in the first run.

`\Hy@PutCatalog`

```
6643 <*pdfTeX>
6644 \pdf@ifdraftmode{%
6645   \let\Hy@PutCatalog\@gobble
6646 }{%
6647   \let\Hy@PutCatalog\pdfcatalog
6648 }
6649 </pdfTeX>
```

The code for VTeX is more complicate, because it does not allow the direct access to the `/Catalog` object. The command scans its argument and looks for a `/PageLabels` entry.

VTeX 6.59g is the first version, that implements `\special{!pdfpagelabels...}`. For this version `\VTeXversion` reports 660.

```
6650 <*vTeX>
6651 \providecommand*\XR@ext}{pdf}
6652 \edef\VTeXversion{%
6653   \ifx\VTeXversion\@undefined
6654     \z@
6655   \else
6656     \ifx\VTeXversion\relax
6657     \z@
```

```

6658 \else
6659 \VTeXversion
6660 \fi
6661 \fi
6662 }
6663 \begingroup
6664 \ifnum\Hy@VTeXversion<660 %
6665 \gdef\Hy@PutCatalog#1{%
6666 \Hy@WarningNoLine{%
6667 VTeX 6.59g or above required for pdfpagelabels%
6668 }%
6669 }%
6670 \else
6671 \gdef\Hy@PutCatalog#1{%
6672 \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
6673 }%
6674 \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
6675 \ifx\#2\%
6676 \else
6677 \immediate\special{!pdfpagelabels #2}%
6678 \fi
6679 }%
6680 \fi
6681 \endgroup
6682 </vtx>

6683 (*pdfTeX | vtx)

```

`\HyPL@StorePageLabel` This macro adds the entry #1 to `\HyPL@Labels`.

```

6684 \ifHy@pdfpagelabels
6685 \def\HyPL@StorePageLabel#1{%
6686 \toks@\expandafter{\HyPL@Labels}%
6687 \xdef\HyPL@Labels{%
6688 \the\toks@
6689 \the\Hy@abspage<<#1>>%
6690 }%
6691 }%

```

Package `atveryend` is used to get behind the final `\clearpage` and to avoid a `\clearpage` in `\AtEndDocument`. Then the PDF catalog entry for `\PageLabels` is set.

```

6692 \RequirePackage{atveryend}[2009/12/07]%
6693 \AtVeryEndDocument{%
6694 \HyPL@SetPageLabels
6695 }%

6696 \fi
6697 </pdfTeX | vtx>

```

### 27.1.2 xetex

```

6698 (*xetex)
6699 \HyPsd@LoadUnicode
6700 \Hy@unicodetrue
6701 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode

```

```

6702 \else
6703 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
6704 \fi
6705 \define@key{Hyp}{unicode}[true]{%
6706 \Hy@boolkey{unicode}{#1}%
6707 \ifHy@unicode
6708 \else
6709 \Hy@Warning{%
6710 XeTeX driver only supports `unicode=true'. Ignoring\MessageBreak
6711 option setting `unicode=false'%
6712 }%
6713 \Hy@unicodetrue
6714 \fi
6715 }
6716 \define@key{Hyp}{pdfencoding}{%
6717 \edef\HyPsd@temp{#1}%
6718 \ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
6719 \let\HyPsd@pdfencoding\HyPsd@temp
6720 \else
6721 \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
6722 \let\HyPsd@pdfencoding\HyPsd@temp
6723 \else
6724 \Hy@Warning{%
6725 XeTeX driver only supports\MessageBreak
6726 `pdfencoding=unicode|auto'. Ignoring option\MessageBreak
6727 setting `pdfencoding=\HyPsd@temp'%
6728 }%
6729 \fi
6730 \fi
6731 }
6732 \let\HyXeTeX@CheckUnicode\relax

```

Since 2016 (x)dvipdfmx has a special to control the spacing of annotation borders.

So let's make use of it:

```

6733 \def\setpdfinkmargin#1{%
6734 \begingroup
6735 \setlength{\dimen@}{#1}%
6736 \special{dvipdfmx:config g \strip@pt\dimen@}%
6737 \endgroup}
6738 </xetex>

```

set the pdf version

```

6739 < *dvipdfm | xetex>
6740 \special{pdf:majorversion \Hy@pdf@majorversion}
6741 \special{pdf:minorversion \Hy@pdf@minorversion}
6742 </dvipdfm | xetex>

```

### 27.1.3 pdfmarkbase, dvipdfm, xetex

```

6743 < *pdfmarkbase>
6744 \begingroup
6745 \@ifundefined{headerps@out}{-}{%
6746 \toks@\expandafter{\Hy@FirstPageHook}%
6747 \xdef\Hy@FirstPageHook{%
6748 \noexpand\headerps@out{%
6749 systemdict /pdfmark known%

```

```

6750     {%
6751     userdict /?pdfmark systemdict /exec get put%
6752     }{%
6753     userdict /?pdfmark systemdict /pop get put %
6754     userdict /pdfmark systemdict /cleartomark get put%
6755     }%
6756     ifelse%
6757     }%
6758     \the\toks@
6759     }%
6760     }%
6761 \endgroup
6762 </pdfmarkbase>

```

\Hy@PutCatalog

```

6763 <dvipdfm | xetex>\def\Hy@PutCatalog#1{\@pdfm@mark{docview <<#1>>}}
6764 (*pdfmarkbase)
6765 \def\Hy@PutCatalog#1{%
6766   \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} <<#1>>}}%
6767 }
6768 </pdfmarkbase>

6769 (*pdfmarkbase | dvipdfm | xetex)
6770 \ifHy@pdfpagelabels

```

\HyPL@StorePageLabel This macro writes a string to the .aux file.

```

6771 \def\HyPL@StorePageLabel#1{%
6772   \if@filesw
6773   \beginpage
6774   \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
6775   \immediate\write\@mainaux{%
6776     \string\HyPL@Entry{\Hy@tempa}%
6777   }%
6778   \endgroup
6779   \fi
6780 }%

```

Write a dummy definition of \HyPL@Entry for the case, that the next run is done without hyperref. A marker for the rerun warning is set and the /PageLabels is written.

```

6781 \Hy@AtBeginDocument{%
6782   \if@filesw
6783   \immediate\write\@mainaux{%
6784     \string\providecommand\string*\string\HyPL@Entry[1]{}%
6785   }%
6786   \fi
6787   \ifx\HyPL@Labels\@empty
6788   \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
6789   \else
6790   \HyPL@SetPageLabels
6791   \fi
6792   \let\HyPL@Entry\@gobble
6793 }%

```

`\HyPL@Entry`

```
6794 \def\HyPL@Entry#1{%
6795   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
6796     \HyPL@Labels
6797     #1%
6798   }%
6799 }%

6800 \fi
6801 </pdfmarkbase | dvipdfm | xetex>
6802 (*packageEnd)

6803 \ifx\MaybeStopEarly\relax
6804 \else
6805   \Hy@stoppedearlytrue
6806   \expandafter\MaybeStopEarly
6807 \fi
6808 \Hy@stoppedearlyfalse
```

## 28 Automated L<sup>A</sup>T<sub>E</sub>X hypertext cross-references

Anything which can be referenced advances some counter; we overload this to put in a hypertext starting point (with no visible anchor), and make a note of that for later use in `\label`. This will fail badly if `\theH<name>` does not expand to a sensible reference. This means that classes or package which introduce new elements need to define an equivalent `\theH<name>` for every `\the<name>`. We do make a trap to make `\theH<name>` be the same as `\arabic{<name>}`, if `\theH<name>` is not defined, but this is not necessarily a good idea. Alternatively, the ‘naturalnames’ option uses whatever L<sup>A</sup>T<sub>E</sub>X provides, which may be useable. But then its up to you to make sure these are legal PDF and HTML names. The ‘hypertextnames=false’ option just makes up arbitrary names.

All the shenanigans is to make sure section numbers etc are always arabic, separated by dots. Who knows how people will set up `\@currentlabel`? If they put spaces in, or brackets (quite legal) then the hypertext processors will get upset.

But this is flaky, and open to abuse. Styles like `subeqn` will mess it up, for starters. Appendices are an issue, too. We just hope to cover most situations. We can at least cope with the standard sectioning structure, allowing for `\part` and `\chapter`.

Start with a fallback for equations

```
6809 \def\Hy@CounterExists#1{%
6810   \begingroup\expandafter\expandafter\expandafter\endgroup
6811   \expandafter\ifx\csname c@#1\endcsname\relax
6812     \expandafter\@gobble
6813   \else
6814     \begingroup\expandafter\expandafter\expandafter\endgroup
6815     \expandafter\ifx\csname the#1\endcsname\relax
6816       \expandafter\expandafter\expandafter\@gobble
6817     \else
6818       \expandafter\expandafter\expandafter\@firstofone
6819     \fi
6820 \fi
6821 }
```



change 2024-10-13: do not define if format is new enough.

```

6822 \IfFormatAtLeastTF{2024-11-01}{-}
6823 {
6824   \Hy@CounterExists{section}{%
6825     \providecommand\theHequation{\theHsection.\arabic{equation}}%
6826   }
6827   \providecommand\theHequation{\arabic{equation}}%
6828   \Hy@CounterExists{part}{%
6829     \providecommand\theHpart{\arabic{part}}%
6830   }
6831   \@ifundefined{thechapter}{%
6832     \providecommand\theHsection  {\arabic{section}}%
6833     \providecommand\theHfigure   {\arabic{figure}}%
6834     \providecommand\theHtable    {\arabic{table}}%
6835   }{%
6836     \providecommand\theHchapter  {\arabic{chapter}}%
6837     \providecommand\theHfigure   {\theHchapter.\arabic{figure}}%
6838     \providecommand\theHtable    {\theHchapter.\arabic{table}}%
6839     \providecommand\theHsection  {\theHchapter.\arabic{section}}%
6840   }
6841   \providecommand\theHsubsection {\theHsection.\arabic{subsection}}
6842   \providecommand\theHsubsubsection{\theHsubsection.\arabic{subsubsec-
tion}}
6843   \providecommand\theHparagraph  {\theHsubsubsection.\arabic{paragraph}}
6844   \providecommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
6845   \providecommand\theHtheorem    {\theHsection.\arabic{theorem}}
6846   \providecommand\theHthm        {\theHsection.\arabic{thm}}
6847 }

```

Thanks to Greta Meyer (gbd@pop.cwru.edu) for making me realize that enumeration starts at 0 for every list! But `\item` occurs inside `\trivlist`, so check if its a real `\item` before incrementing counters.

```

6848 \let\H@item\item
6849 \newcounter{Item}
6850 \IfFormatAtLeastTF{2024-11-01}{-}
6851 {\def\theHItem{\arabic{Item}}}
6852 \def\item{%
6853   \@hyper@itemfalse
6854   \if@nmbriest\@hyper@itemtrue\fi
6855   \H@item
6856 }

6857 \IfFormatAtLeastTF{2024-11-01}{-}
6858 {
6859   \providecommand\theHenumi    {\theHItem}
6860   \providecommand\theHenumii   {\theHItem}
6861   \providecommand\theHenumiii  {\theHItem}
6862   \providecommand\theHenumiv   {\theHItem}
6863   \providecommand\theHHfootnote {\arabic{Hfootnote}}
6864   \providecommand\theHmpfootnote{\arabic{mpfootnote}}
6865 }

```

Tanmoy asked for this default handling of undefined `\theH<name>` situations. It really isn't clear what would be ideal, whether to turn off hyperizing of unknown

elements, to pick up the textual definition of the counter, or to default it to something like `\arabic{name}`. We take the latter course, slightly worriedly.

```
6866 \let\H@refstepcounter\@kernel@refstepcounter
6867 \edef\name@of@eq{equation}%
```

We do not want the handler for `\refstepcounter` to cut in during the processing of `\item` (we handle that separately), so we provide a bypass conditional. change 2022-04-22: removed test for the slide counter and for the equation name. change 2022-05-02: added the new boolean set by `\LinkTargetOn/\LinkTargetOff`

```
6868 \newif\if@hyper@item
6869 \newif\if@skiphyperref
6870 \@hyper@itemfalse
6871 \@skiphyperreffalse
6872 \ExplSyntaxOn
6873 \IfFormatAtLeastTF{2024-11-01}
6874 {
6875   \NewSocketPlug{refstepcounter}{hyperref}{\ifHy@pdfstring\else#1\fi}
6876   \AssignSocketPlug{refstepcounter}{hyperref}
6877   \NewSocketPlug{refstepcounter/target}{hyperref}
6878   {
6879     \bool_lazy_and:nnT
6880     { \l__hyp_target_create_bool }
6881     { ! \legacy_if_p:n{@skiphyperref} }
6882     {
6883       \legacy_if:nTF {@hyper@item}
6884       {
6885         \stepcounter{Item}%
6886         \hyper@refstepcounter{Item}%
6887         \@hyper@itemfalse
6888       }
6889       {
6890         \hyper@refstepcounter{\@currentcounter}%
6891       }
6892     }
6893   }
6894   \AssignSocketPlug{refstepcounter/target}{hyperref}
6895 }
6896 {
6897   \def\refstepcounter#1{%
6898     \legacy_if:nF {Hy@pdfstring}
6899     {
6900       \H@refstepcounter{#1}%
6901       \bool_lazy_and:nnT
6902       { \l__hyp_target_create_bool }
6903       { ! \legacy_if_p:n{@skiphyperref} }
6904       {
6905         \legacy_if:nTF {@hyper@item}
6906         {
6907           \stepcounter{Item}%
6908           \hyper@refstepcounter{Item}%
6909           \@hyper@itemfalse
6910         }
6911         {
6912           \hyper@refstepcounter{#1}%
```

```

6913     }
6914   }
6915 }
6916 }
6917 }
6918 \ExplSyntaxOff
6919 \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.

```

6920 \newif\ifmeasuring@\measuring@false
6921 \newcommand\Hy@ifnotmeasuring[1]{#1}
6922 \AddToHook{package/amsmath/after}
6923 {
6924   \renewcommand\Hy@ifnotmeasuring[1]
6925     {\ifmeasuring@ \else #1\fi}
6926 }

```

`\hyper@refstepcounter`

```

6927 \def\hyper@refstepcounter#1{%
6928   \HyCnt@ProvideTheHCounter{#1}%
6929   \hyper@makecurrent{#1}%
6930   \Hy@ifnotmeasuring
6931     {\Hy@raisedlink{%
6932       \hyper@anchorstart{\@currentHref}\hyper@anchorend
6933     }}%
6934 }

```

`\Hy@ProvideTheHCounter` `\theH<counter>` is not set for counters that are defined before ‘hyperref’ is loaded. In `\cl@@ckpt`, the clear counter list of the artificial counter `@ckpt`,  $\LaTeX$  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.

```

6935 \def\HyCnt@ProvideTheHCounter#1{%
6936   \@ifundefined{theH#1}{%
6937     \expandafter\def\csname theH#1\endcsname{}%
6938     \def\Hy@temp{\@elt{#1}}%
6939     \@onelevel@sanitize\Hy@temp
6940     \let\HyOrg@elt\@elt
6941     \edef\@elt{%
6942       \noexpand\HyCnt@LookForParentCounter
6943       \expandafter\noexpand\csname theH#1\endcsname
6944     }%
6945     \cl@@ckpt
6946     \let\@elt\HyOrg@elt
6947     \expandafter
6948     \Hy@LocalAppendToMacro\csname theH#1\endcsname\expandafter\endcsname
6949     \expandafter{%
6950       \expandafter\@arabic\csname c@#1\endcsname
6951     }%

```

```
6952 }{}%
6953 }
```

\Hy@LookForParentCounter

```
6954 \def\HyCnt@LookForParentCounter#1#2{%
6955 \expandafter\let\expandafter\Hy@temp@A\csname cl@#2\endcsname
6956 \@ifundefined{cl@#2}{%
6957 }{%
6958 \@onelevel@sanitize\Hy@temp@A
6959 \edef\Hy@temp@A{%
6960 \noexpand\in@{\Hy@temp}{\Hy@temp@A}%
6961 }\Hy@temp@A
6962 \ifin@
6963 \@ifundefined{theH#2}{%
6964 \expandafter\Hy@LocalAppendToMacro\expandafter#1%
6965 \expandafter{%
6966 \expandafter\@arabic\csname c@#2\endcsname.%
6967 }%
6968 }{%
6969 \expandafter\Hy@LocalAppendToMacro\expandafter#1%
6970 \expandafter{%
6971 \csname theH#2\endcsname.%
6972 }%
6973 }%
6974 \fi
6975 }%
6976 }
```

After `\appendix` “chapter” (or “section” for classes without chapter) should be replaced by “appendix” to get `\autoref` work. Macro `\Hy@chapapp` contains the current valid name like `\@chapapp`, which cannot be used, because this string depends on the current language.

The “french” package defines counter `\thechapter` by `\newcounterchapter`, if `\@ifundefinedchapter`.

```
6977 \begingroup\expandafter\expandafter\expandafter\endgroup
6978 \expandafter\ifx\csname chapter\endcsname\relax
6979 \def\Hy@chapterstring{section}%
6980 \else
6981 \def\Hy@chapterstring{chapter}%
6982 \fi
6983 \def\Hy@appendixstring{appendix}
6984 \def\Hy@chapapp{\Hy@chapterstring}
6985 \@ifundefined{appendix}{%
6986 }{%
6987 \let\HyOrg@appendix\appendix
6988 \def\Hy@AlphNoErr#1{%
6989 \ifnum\value{#1}>26 %
6990 Alph\number\value{#1}%
6991 \else
6992 \ifnum\value{#1}<1 %
6993 Alph\number\value{#1}%
6994 \else
6995 \Alph{#1}%
6996 \fi
```

```

6997 \fi
6998 }%
6999 \def\appendix{%
7000 \@ifundefined{chapter}{%
7001 \gdef\theHsection{\Hy@AlphNoErr{section}}%
7002 }{%
7003 \gdef\theHchapter{\Hy@AlphNoErr{chapter}}%
7004 }%
7005 \xdef\Hy@chapapp{\Hy@appendixstring}%
7006 \HyOrg@appendix
7007 }%
7008 }

```

\Hy@Test@alph

```

7009 \def\Hy@Test@alph#1{%
7010 \ifcase#1\or
7011 a\or b\or c\or d\or e\or f\or g\or h\or i\or j\or
7012 k\or l\or m\or n\or o\or p\or q\or r\or s\or t\or
7013 u\or v\or w\or x\or y\or z%
7014 \else
7015 \@ctrerr
7016 \fi
7017 }

```

\Hy@Test@Alph

```

7018 \def\Hy@Test@Alph#1{%
7019 \ifcase#1\or
7020 A\or B\or C\or D\or E\or F\or G\or H\or I\or J\or
7021 K\or L\or M\or N\or O\or P\or Q\or R\or S\or T\or
7022 U\or V\or W\or X\or Y\or Z%
7023 \else
7024 \@ctrerr
7025 \fi
7026 }

```

We define a hook to allow to overwrite the next destination name.

```

7027 \NewHook{__hyp/target/setname }
7028 \define@key{Hyp}{next-anchor}{%
7029 \AddToHookNext{__hyp/target/setname}%
7030 {\Hy@MakeCurrentHref{#1}}%
7031 }

```

\hyper@makecurrent Because of Babel mucking around, nullify \textlatin when making names. And \@number because of babel's lrbabel.def. change 2021-08-15: For new formats we add a hook which allows to overwrite the name of the next destination.

```

7032 \def\hyper@makecurrent#1{%
7033 \begingroup
7034 \Hy@safe@activestru
7035 \edef\Hy@param{#1}%
7036 \ifx\Hy@param\Hy@chapterstring
7037 \let\Hy@param\Hy@chapapp
7038 \fi
7039 \ifHy@hypertexnames

```

```

7040 \let\@number\@firstofone
7041 \def\@fnsymbol##1{fnsymbol\number##1}%
7042 \def\@arabic##1{\number##1}%
7043 \ifx\@alph\Hy@Test@alph
7044 \else
7045 \def\@alph{alph\number}%
7046 \fi
7047 \ifx\@Alph\Hy@Test@Alph
7048 \else
7049 \def\@Alph{Alph\number}%
7050 \fi
7051 \ifHy@naturalnames
7052 \let\textlatin\@firstofone
7053 \xdef\HyperGlobalCurrentHref{\csname the#1\endcsname}%
7054 \else
7055 \xdef\HyperGlobalCurrentHref{%
7056 \csname
7057 the%
7058 \expandafter\ifx\csname theH#1\endcsname\relax\else H\fi
7059 #1%
7060 \endcsname
7061 }%
7062 \fi
7063 \xdef\HyperGlobalCurrentHref{%
7064 \Hy@param.\expandafter\strip@prefix\meaning\HyperGlobalCurrentHref
7065 }%
7066 \else
7067 \Hy@GlobalStepCount\Hy@linkcounter
7068 \xdef\HyperGlobalCurrentHref{\Hy@param.\the\Hy@linkcounter}%
7069 \fi
7070 \endgroup
7071 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
7072 \ifHy@localanchorname
7073 \let\@currentHref\HyperLocalCurrentHref
7074 \else
7075 \global\let\@currentHref\HyperGlobalCurrentHref
7076 \fi
7077 \UseHook{__hyp/target/setname}%
7078 }

```

\Hy@MakeCurrentHref

```

7079 \def\Hy@MakeCurrentHref#1{%
7080 \edef\HyperLocalCurrentHref{#1}%
7081 \@onelevel@sanitize\HyperLocalCurrentHref
7082 \global\let\HyperGlobalCurrentHref\HyperLocalCurrentHref
7083 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
7084 \ifHy@localanchorname
7085 \let\@currentHref\HyperLocalCurrentHref
7086 \else
7087 \global\let\@currentHref\HyperGlobalCurrentHref
7088 \fi
7089 }

```

\Hy@MakeCurrentHrefAuto This command is e.g. used to create destinations for unnumbered sections and

chapters. For new formats we add a hook which allows to overwrite the name of the next destination.

```
7090 \def\Hy@MakeCurrentHrefAuto#1{%
7091 \Hy@GlobalStepCount\Hy@linkcounter
7092 \Hy@MakeCurrentHref{#1.\the\Hy@linkcounter}%
7093 \UseHook{__hyp/target/setname}}
```

\@currentHlabel \@currentHlabel is only defined for compatibility with package ‘hypdvips’.

```
7094 \def\@currentHlabel{\@currentHref}
```

## 29 Package ifthen support

Since version 6.75a this is done in package nameref.

For compatibility \hypergetref and \hypergetpageref are still provided. But they do not generate warnings, if the reference is undefined.

```
7095 \def\hypergetref#1{\getrefbykeydefault{#1}{}}{??}}
7096 \def\hypergetpageref#1{\getrefbykeydefault{#1}{page}{0}}
```

## 30 Package varwidth support

2023-11-07: varwidth needs a special configuration point to inserts its handler. We use a socket for this.

```
7097 \@if@t@r\fmtversion{2023-11-01}
7098 {
7099 \AddToHook{package/varwidth/after}
7100 {
7101 \NewSocketPlug{hyp/raisedlink}{varwidth}{\@vwid@wrap{#1}}
7102 \appto\@vwid@setup{\AssignSocketPlug{hyp/raisedlink}{varwidth}}
7103 }
7104 }
```

## 31 Package titlesec and titletoc support

This code is contributed by Javier Bezos (Email: jbezos@arrakis.es).

Package titlesec support:

```
7105 \@ifpackageloaded{titlesec}{%
7106 \def\ttl@Hy@steplink#1{%
7107 \Hy@MakeCurrentHrefAuto{#1*}%
7108 \edef\ttl@Hy@saveanchor{%
7109 \noexpand\Hy@raisedlink{%
7110 \noexpand\hyper@anchorstart{\@currentHref}%
7111 \noexpand\hyper@anchorend
7112 \def\noexpand\ttl@Hy@SavedCurrentHref{\@currentHref}%
7113 \noexpand\ttl@Hy@PatchSaveWrite
7114 }%
7115 }%
7116 }%
7117 \def\ttl@Hy@PatchSaveWrite{%
7118 \begingroup
```

```

7119 \toks@\expandafter{\ttl@savewrite}%
7120 \edef\x{\endgroup
7121 \def\noexpand\ttl@savewrite{%
7122 \let\noexpand\@currentHref
7123 \noexpand\ttl@Hy@SavedCurrentHref
7124 \the\toks@
7125 }%
7126 }%
7127 \x
7128 }%
7129 \def\ttl@Hy@refstepcounter#1{%
7130 \let\ttl@b\Hy@raisedlink
7131 \def\Hy@raisedlink##1{%
7132 \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
7133 }%
7134 \refstepcounter{#1}%
7135 \let\Hy@raisedlink\ttl@b
7136 }%
7137 }{}

```

## 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

```

7138 \@ifpackageloaded{longtable}{%
7139 \@ifundefined{hyper@nopatch@longtable}{%
7140 \begingroup
7141 \def\y{\LT@array}%
7142 \@ifundefined{scr@LT@array}{%
7143 \@ifundefined{adl@LT@array}{\def\y{\adl@LT@array}}%
7144 }{\def\y{\scr@LT@array}}%
7145 \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
7146 \expandafter\endgroup
7147 \expandafter\def\y[##1]##2{%
7148 \H@refstepcounter{#1}%
7149 \hyper@makecurrent{table}%
7150 \let\Hy@LT@currentHref\@currentHref
7151 #2\@sharp###4%
7152 }%
7153 }%
7154 \expandafter\expandafter\expandafter\x\y[##1]{##2}\@nil

```

Patch of `\LT@start`: add anchor before first line after `\vskip\LTpre`

```

7155 \begingroup
7156 \def\x#1\ifvoid\LT@foot#2\fi#3\@nil{%
7157 \endgroup
7158 \def\LT@start{%
7159 #1%
7160 \ifvoid\LT@foot#2\fi
7161 \let\@currentHref\Hy@LT@currentHref

```



```

7162     \Hy@raisedlink{%
7163       \hyper@anchorstart{\@currentHref}\hyper@anchorend
7164     }%
7165     #3%
7166   }%
7167 }%
7168 \expandafter\x\LT@start\@nil
7169 }{}
7170 }{}

```

### 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`

```

7171 \let\new@refstepcounter\refstepcounter
7172 \let\H@equation\equation
7173 \let\H@endequation\endequation
7174 \@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.

```

7175 \@ifpackageloaded{amsmath}{}{}%
7176 \def\equation{%
7177   \let\refstepcounter\H@refstepcounter
7178   \H@equation
7179   \hyper@makecurrent{equation}%

```

`\mathopen` is needed in case the equation starts with an unary minus, for example.

```

7180   \mathopen{%
7181     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
7182   }%
7183   \let\refstepcounter\new@refstepcounter
7184 }%
7185 \def\endequation{%
7186   \ifx\Hy@raisedlink\@empty
7187     \hyper@anchorend
7188   \else
7189     \mathclose{\Hy@raisedlink{\hyper@anchorend}}%
7190   \fi
7191   \H@endequation
7192 }%
7193 }
7194 }{}

```

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.

```

7195 \newif\if@eqnstar
7196 \@eqnstarfalse
7197 \let\H@eqnarray\eqnarray
7198 \let\H@endeqnarray\endeqnarray
7199 \@ifundefined{hyper@nopatch@mathenv}{%
7200   \def\eqnarray{%
7201     \let\Hy@reserved@a\relax
7202     \def\@currentHref{}%
7203     \H@eqnarray
7204     \if@eqnstar
7205     \else
7206       \ifx\\\@currentHref\%
7207       \else
7208         \hyper@makecurrent{equation}%
7209         \mathopen{%
7210           \Hy@raisedlink{%
7211             \hyper@anchorstart{\@currentHref}\hyper@anchorend
7212           }%
7213         }%
7214       \fi
7215     \fi
7216   }
7217   \def\endeqnarray{%
7218     \H@endeqnarray
7219   }
7220 }{}

```

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.

```

7221 \@namedef{eqnarray*}{%
7222   \protected\def\@eqnocr{\nonumber\@seqnrcr}\@eqnstartrue\eqnarray
7223 }
7224 \@namedef{endeqnarray*}{%
7225   \nonumber\endeqnarray\@eqnstarfalse
7226 }

```

Then again, we have the `subeqnarray` package. Tanmoy provided some code for this:

```

7227 \@ifundefined{subeqnarray}{-}{%
7228   \let\H@subeqnarray\subeqnarray
7229   \let\H@endsubeqnarray\endsubeqnarray
7230   \def\subeqnarray{%
7231     \let\Hy@reserved@a\relax
7232     \H@subeqnarray
7233     \hyper@makecurrent{equation}%
7234     \hyper@anchorstart{\@currentHref}{-}\hyper@anchorend
7235   }%
7236   \def\endsubeqnarray{%
7237     \H@endsubeqnarray
7238   }%

```

```

7239 \providecommand\theHsubequation{\theHequation\alph{subequation}}%
7240 }

```

The aim of this macro is to produce a sanitized version of its argument, to make it a safe label.

```

7241 \def\make@stripped@name#1{%
7242   \begingroup
7243   \escapechar\m@ne
7244   \global\let\newname\@empty
7245   \protected@edef\Hy@tempa{#1}%
7246   \edef\@tempb{%
7247     \noexpand\@tfor\noexpand\Hy@tempa:=%
7248     \expandafter\strip@prefix\meaning\Hy@tempa
7249   }%
7250   \@tempb\do{%
7251     \if\Hy@tempa\else
7252     \if\Hy@tempa\else
7253       \xdef\newname{\newname\Hy@tempa}%
7254     \fi
7255   \fi
7256   }%
7257 \endgroup
7258 }

```

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.

```

7259 \AddToHook{cmd/subequations/before}
7260 {%
7261   \stepcounter{equation}%
7262   \protected@edef\theHparentequation{\theHequation}%
7263   \addtocounter{equation}{-1}%
7264 }
7265
7266 \AddToHook{cmd/subequations/after}
7267 {%
7268   \def\theHequation{\theHparentequation\alph{equation}}%
7269   \ignorespaces
7270 }

```

## 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).

```

7271 \newcommand\Hy@theorem@refstepcounter[1]
7272  {%
7273   \H@refstepcounter{#1}%
7274   \hyper@makecurrent{#1}%
7275   \global\let\Hy@dth@currentHref\@currentHref
7276   \Hy@theorem@makelinktarget{\Hy@dth@currentHref}%
7277  }
7278 \newcommand\Hy@theorem@makelinktarget[1]
7279  {
7280   \AddToHookNext{cmd/item/before}
7281   {\AddToHookNext{para/begin}
7282    {\let\Hy@tempa\@currentHref
7283     \MakeLinkTarget*{#1}% \Hy@dth@currentHref
7284     \global\let\@currentHref\Hy@tempa
7285     }%
7286   }%
7287  }

```

`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.

```

7288 \AddToHook{begindocument}
7289  {%
7290   \@ifundefined{deferred@thm@head}{}
7291   {%
7292    \let\Hy@deferred@thm@head\deferred@thm@head
7293    \def\deferred@thm@head#1{\Hy@deferred@thm@head{#1}}%

```

```

7294 \renewcommand\Hy@theorem@makelinktarget[1]
7295 {%
7296 \AddToHookNext{cmd/deferred@thm@head/before}
7297 {\AddToHookNext{para/begin}
7298 {\let\Hy@tempa\@currentHref
7299 \MakeLinkTarget*{#1}%
7300 \global\let\@currentHref\Hy@tempa
7301 }%
7302 }%
7303 }%
7304 }%
7305 }
7306 \@ifundefined{hyper@nopatch@thm}{%
7307 \AtBeginDocument{%
7308 \ifpackageloaded{cleveref}
7309 {\AddToHook{cmd/@thm/before}{\ifhmode\unskip\fi}}
7310 {%
7311 \ifpatchable\@thm{\refstepcounter}
7312 {\patchcmd\@thm{\refstepcounter}{\Hy@theorem@refstepcounter}{}{}}
7313 {}%
7314 }}{}

```

## 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 additions links to footnotes is handled elsewhere.

```

7315 \@ifundefined{hyper@nopatch@footnote}{%
7316 \ifHy@hyperfootnotes
7317 \@ifundefined{theHfootnote}
7318 {\newcounter{Hfootnote}}
7319 {\let\H@@theHfootnote\theHfootnote
7320 \let\theHfootnote\undefined
7321 \newcounter{Hfootnote}
7322 \let\theHfootnote\H@@theHfootnote
7323 }%

```

where is this used?

```

7324 \@ifundefined{theHHmpfootnote}{%
7325 \let\theHHmpfootnote\theHHfootnote
7326 }{}
7327 \let\H@@@footnotetext\@footnotetext
7328 \let\H@@@footnotemark\@footnotemark
7329 \def\@xfootnotenext[#1]{%
7330 \begingroup
7331 \csname c@\@mpfn\endcsname #1\relax
7332 \unrestored@protected@xdef\@thefnmark{\thempfn}%
7333 \endgroup
7334 \ifx\@footnotetext\@mpfootnotetext
7335 \expandafter\H@@@mpfootnotetext

```

```

7336 \else
7337 \expandafter\H@@footnotetext
7338 \fi
7339 }%
7340 \def\xfootnotemark[#1]{%
7341 \begingroup
7342 \c@footnote #1\relax
7343 \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7344 \endgroup
7345 \H@@footnotemark
7346 }%
7347 \let\H@@mpfootnotetext\@mpfootnotetext
7348 \long\def\@mpfootnotetext#1{%
7349 \H@@mpfootnotetext{%
7350 \ifHy@nesting
7351 \expandafter\@firstoftwo
7352 \else
7353 \expandafter\@secondoftwo
7354 \fi
7355 {%
7356 \expandafter\hyper@@anchor\expandafter{%
7357 \Hy@footnote@currentHref
7358 }\ignorespaces #1}%
7359 }{%
7360 \Hy@raisedlink{%
7361 \expandafter\hyper@@anchor\expandafter{%
7362 \Hy@footnote@currentHref
7363 }\relax}%
7364 }\ignorespaces #1%
7365 }%
7366 }%
7367 }%
7368 \long\def\@footnotetext#1{%
7369 \H@@footnotetext{%
7370 \ifHy@nesting
7371 \expandafter\@firstoftwo
7372 \else
7373 \expandafter\@secondoftwo
7374 \fi
7375 {%
7376 \expandafter\hyper@@anchor\expandafter{%
7377 \Hy@footnote@currentHref
7378 }\ignorespaces #1}%
7379 }{%
7380 \Hy@raisedlink{%
7381 \expandafter\hyper@@anchor\expandafter{%
7382 \Hy@footnote@currentHref
7383 }\relax}%
7384 }%
7385 \let\@currentHref\Hy@footnote@currentHref
7386 \let\@currentlabelname\@empty
7387 \ignorespaces #1%
7388 }%
7389 }%

```

7390 }%

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.

```
7391 \def\@footnotemark{%
7392   \leavevmode
7393   \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7394   \stepcounter{Hfootnote}%
7395   \global\let\Hy@saved@currentHref\@currentHref
7396   \hyper@makecurrent{Hfootnote}%
7397   \global\let\Hy@footnote@currentHref\@currentHref
7398   \global\let\@currentHref\Hy@saved@currentHref
7399   \hyper@linkstart{link}{\Hy@footnote@currentHref}%
7400   \@makefnmark
7401   \hyper@linkend
7402   \ifhmode\spacefactor\@x@sf\fi
7403   \relax
7404 }%
```

`Tabularx` causes footnote problems, disable the linking if that is loaded. Since v6.82i footnotes are only disabled inside the environment ‘`tabularx`’.

```
7405 \@ifpackageloaded{tabularx}{%
7406   \let\HyOrg@TX@endtabularx\TX@endtabularx
7407   \def\Hy@tabularx@hook{%
7408     \let\@footnotetext\H@\@footnotetext
7409     \let\@footnotemark\H@\@footnotemark
7410     \let\@mpfootnotetext\H@\@mpfootnotetext
7411   }%
7412   \begingroup
7413   \toks@\expandafter{\TX@endtabularx}%
7414   \xdef\Hy@gtemp{%
7415     \noexpand\Hy@tabularx@hook
7416     \the\toks@
7417   }%
7418   \endgroup
7419   \let\TX@endtabularx\Hy@gtemp
7420 }-}%
```

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

```
7421 \@ifpackageloaded{longtable}{%
7422   \CheckCommand{\LT@p@ftntext}[1]{%
7423     \edef\@tempa{%
7424       \the\LT@p@ftn
7425       \noexpand\footnotetext[\the\c@footnote]%
7426     }%
7427     \global\LT@p@ftn\expandafter{\@tempa{#1}}%
7428   }%
7429   \long\def\LT@p@ftntext#1{%
7430     \edef\@tempa{%
```

```

7431 \the\LT@p@ftn
7432 \begingroup
7433 \noexpand\c@footnote=\the\c@footnote\relax
7434 \noexpand\protected@xdef\noexpand\@thefnmark{%
7435 \noexpand\thempfn
7436 }%
7437 \noexpand\Hy@LT@footnotetext{%
7438 \Hy@footnote@currentHref
7439 }%
7440 }%
7441 \global\LT@p@ftn\expandafter{%
7442 \@tempa{#1}%
7443 \endgroup
7444 }%
7445 }%
7446 \long\def\Hy@LT@footnotetext#1#2{%
7447 \H@@@footnotetext{%
7448 \ifHy@nesting
7449 \hyper@@anchor{#1}{#2}%
7450 \else
7451 \Hy@raisedlink{%
7452 \hyper@@anchor{#1}{\relax}%
7453 }%
7454 \def\@currentHref{#1}%
7455 \let\@currentlabelname\@empty
7456 #2%
7457 \fi
7458 }%
7459 }%
7460 }{}%

```

Footnotes for fancyvrb (Fix by Manuel Pégourié-Gonnard).

```

7461 \@ifpackageloaded{fancyvrb}{%
7462 \def\V@@@footnotetext{%
7463 \insert\footins\bgroup
7464 \csname reset@font\endcsname
7465 \footnotesize
7466 \interlinepenalty\interfootnotelinepenalty
7467 \splittopskip\footnotesep
7468 \splitmaxdepth\dp\strutbox
7469 \floatingpenalty \@MM
7470 \hsize\columnwidth
7471 \@parboxrestore
7472 \def\@currentcounter{footnote}%
7473 \protected@edef\@currentlabel{\csname p@footnote\endcsname\@thefn-
mark}%
7474 \@makefntext{}%
7475 \rule{z@}{\footnotesep}%
7476 \bgroup
7477 \aftergroup\V@@@footnotetext
7478 \Hy@raisedlink{%
7479 \expandafter\hyper@@anchor\expandafter{%
7480 \Hy@footnote@currentHref
7481 }{\relax}%
7482 }%

```



```

7483 \let\@currentHref\Hy@footnote@currentHref
7484 \let\@currentlabelname\@empty
7485 \ignorespaces
7486 }%
7487 }{}%

```

KOMA-Script or newer LaTeX defines `\footref` that uses both `\ref` and `\@footnotemark` resulting in two links, one of them wrong.

```

7488 \def\Hy@temp#1{%
7489 \begingroup
7490 \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7491 \endgroup
7492 \@footnotemark
7493 }%
7494 \ifx\Hy@temp\footref
7495 \def\footref#1{%
7496 \begingroup
7497 \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7498 \endgroup
7499 \H@@footnotemark
7500 }%
7501 \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.

```

7502 \let\HyOrg@maketitle\maketitle
7503 \def\maketitle{%
7504 \let\Hy@saved@footnotemark\@footnotemark
7505 \let\Hy@saved@footnotetext\@footnotetext
7506 \let\@footnotemark\H@@footnotemark
7507 \let\@footnotetext\H@@footnotetext
7508 \@ifnextchar[\Hy@maketitle@optarg{% ]
7509 \HyOrg@maketitle
7510 \Hy@maketitle@end
7511 }%
7512 }%
7513 \def\Hy@maketitle@optarg[#1]{%
7514 \HyOrg@maketitle[#{#1}]%
7515 \Hy@maketitle@end
7516 }%
7517 \def\Hy@maketitle@end{%
7518 \ifx\@footnotemark\H@@footnotemark
7519 \let\@footnotemark\Hy@saved@footnotemark
7520 \fi
7521 \ifx\@footnotetext\H@@footnotetext
7522 \let\@footnotetext\Hy@saved@footnotetext
7523 \fi
7524 }%

```

`\realfootnote` Does anyone remember the function and purpose of `\realfootnote`?

```

7525 \def\realfootnote{%
7526 \@ifnextchar[\@xfootnote%]
7527 {\stepcounter{\@mpfn}%
7528 \protected@xdef\@thefnmark{\thempfn}}%

```

```

7529 \H@@footnotemark\H@@footnotetext
7530 }%
7531 }%

7532 \fi
7533 }{}
7534 \Hy@DisableOption{hyperfootnotes}

7535 \</packageEnd>
7536 (*check)
7537 \checklatex
7538 \checkcommand\def\xfootnotenext[#1]{%
7539 \begingroup
7540 \csname c@\@mpfn\endcsname #1\relax
7541 \unrestored@protected@xdef\@thefnmark{\thempfn}%
7542 \endgroup
7543 \@footnotetext
7544 }
7545 \checkcommand\def\xfootnotemark[#1]{%
7546 \begingroup
7547 \c@footnote #1\relax
7548 \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7549 \endgroup
7550 \@footnotemark
7551 }
7552 \checkcommand\def\@footnotemark{%
7553 \leavevmode
7554 \ifhmode\edef\x@sf{\the\spacefactor}\nobreak\fi
7555 \@makefnmark
7556 \ifhmode\spacefactor\x@sf\fi
7557 \relax
7558 }
7559 \</check>
7560 (*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.

```

7561 \@ifundefined{hyper@nopatch@caption}{%
7562 \def\caption{%
7563 \ifx\@capttype\@undefined
7564 \@latex@error{\noexpand\caption outside float}\@ehd
7565 \expandafter\@gobble
7566 \else
7567 \H@refstepcounter\@capttype
7568 \let\Hy@tempa\@caption
7569 \@ifundefined{float@caption}{%
7570 }{%
7571 \expandafter\ifx\csname @float@c@\@capttype\endcsname
7572 \float@caption
7573 \let\Hy@tempa\Hy@float@caption
7574 \fi
7575 }%

```

```

7576 \expandafter\@firstofone
7577 \fi
7578 {\@dblarg{\Hy@tempa\@captype}}%
7579 }
7580 \long\def\@caption#1[#2]#3{%
7581 \expandafter\ifx\csname if@capstart\expandafter\endcsname
7582 \csname iftrue\endcsname
7583 \global\let\@currentHref\hc@currentHref
7584 \else
7585 \hyper@makecurrent{\@captype}%
7586 \fi
7587 \@ifundefined{NR@gettitle}{%
7588 \def\@currentlabelname{#2}%
7589 }{%
7590 \NR@gettitle{#2}%
7591 }%
7592 \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
7593 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7594 }%
7595 \begingroup
7596 \@parboxrestore
7597 \if@minipage
7598 \setminipage
7599 \fi
7600 \normalsize
7601 \expandafter\ifx\csname if@capstart\expandafter\endcsname
7602 \csname iftrue\endcsname
7603 \global\@capstartfalse
7604 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
7605 \else
7606 \@makecaption{\csname fnum@#1\endcsname}{%
7607 \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

7608 \ifHy@nesting
7609 \expandafter\hyper@@anchor\expandafter{\@currentHref}{#3}%
7610 \else
7611 \Hy@raisedlink{%
7612 \expandafter\hyper@@anchor\expandafter{%
7613 \@currentHref
7614 }{\relax}%
7615 }%
7616 #3%
7617 \fi

```

as the anchor are set manually here, we have to update the tagging info. For now we test for the format but this should go again in 2025.

```

7618 \IfFormatAtLeastTF{2024-11-01}{\UseTaggingSocket{recordtarget}}{%
7619 }%
7620 \fi
7621 \par
7622 \endgroup
7623 }%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’.

```

7624 \let\Hy@float@caption\@caption
7625 \newcommand{\HyNew@float@makebox}[1]{%
7626   \HyOrg@float@makebox{%
7627     #1\relax
7628     \ifx\Hy@float@currentHref\@undefined
7629       \else
7630         \expandafter\hyper@@anchor\expandafter{%
7631           \Hy@float@currentHref
7632         }\relax}%
7633     \global\let\Hy@float@currentHref\@undefined
7634   \fi
7635 }%
7636 }%
7637 \@ifpackageloaded{float}{%
7638   \def\Hy@float@caption{%
7639     \ifx\Hy@float@currentHref\@undefined
7640       \hyper@makecurrent{\@capttype}%
7641       \global\let\Hy@float@currentHref\@currentHref
7642     \else
7643       \let\@currentHref\Hy@float@currentHref
7644     \fi
7645     \float@caption
7646   }%
7647   \let\HyOrg@float@makebox\float@makebox
7648   \let\float@makebox\HyNew@float@makebox
7649 }{}

7650 \endpackage
7651 \check
7652 \checklat[1999/06/01 - 2000/06/01]
7653 \checkcommand\def\caption{%
7654   \ifx\@capttype\@undefined
7655     \@latex@error{\noexpand\caption outside float}\@ehd
7656     \expandafter\@gobble
7657   \else
7658     \refstepcounter\@capttype
7659     \expandafter\@firstofone
7660   \fi
7661   {\@dblarg{\@caption\@capttype}}%
7662 }
7663 \checkcommand\long\def\@caption#1[#2]#3{%
7664   \par
7665   \addcontentsline{\csname ext@#1\endcsname}{#1}{%
7666     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}}%
7667   }%
7668   \begingroup
7669     \@parboxrestore
7670     \if@minipage
7671       \setminipage
7672     \fi

```

```

7673 \normalsize
7674 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
7675 \endgroup
7676 }
7677 </check>
7678 <*packageEnd>

```

## 37 Bibliographic references

This is not very robust, since many styles redefine these things. The package used to redefine `\@citex` and the like; then we tried adding the `hyperref` call explicitly into the `.aux` file. Now we redefine `\bibcite`; this still breaks some citation packages so we have to work around them. But this remains extremely dangerous. Any or all of *achemso* and *drftcite* may break.

However, lets make an attempt to get *natbib* right, because that’s a powerful, important package. Patrick Daly ([daly@linmpi.mpg.de](mailto:daly@linmpi.mpg.de)) has provided hooks for us, so all we need to do is activate them.

```

7679 \def\hyper@natlinkstart#1{%
7680 \Hy@backout{#1}%
7681 \hyper@linkstart{cite}{cite.#1}%
7682 \def\hyper@nat@current{#1}%
7683 }
7684 \def\hyper@natlinkend{%
7685 \hyper@linkend
7686 }
7687 \def\hyper@natlinkbreak#1#2{%
7688 \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
7689 }
7690 \def\hyper@natanchorstart#1{%
7691 \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
7692 }
7693 \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.

```

7694 \@ifundefined{hyper@nopatch@bib}
7695 {%
7696 \@ifundefined{NAT@parse}{%
7697 \providecommand*\@extra@binfo{}%
7698 \providecommand*\@extra@b@citeb{}%
7699 \def\bibcite#1#2{%
7700 \@newl@bel{b}{#1\@extra@binfo}{%
7701 \hyper@link{cite}{cite.#1\@extra@b@citeb}{#2}%
7702 }%
7703 }%
7704 \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.”.

```

7705 \let\Hy@bibcite\bibcite
7706 \begingroup

```

```

7707 \ifundefined{bbl@cite@choice}{}{%
7708 \g@addto@macro\bbl@cite@choice{%
7709 \let\bibcite\Hy@bibcite
7710 }%
7711 }%
7712 \endgroup
\@BIBLABEL is working around a 'feature' of RevTeX.
7713 \providecommand*\@BIBLABEL{\@biblabel}%
7714 \def\@bibitem[#1]#2{%
7715 \@skiphyperreftrue
7716 \H@item{%
7717 \ifx\Hy@raisedlink\@empty
7718 \hyper@anchorstart{cite.#2\@extra@b@citeb}%
7719 \@BIBLABEL{#1}%
7720 \hyper@anchorend
7721 \else
7722 \Hy@raisedlink{%
7723 \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
7724 }%
7725 \@BIBLABEL{#1}%
7726 \fi
7727 \hfill
7728 }%
7729 \@skiphyperreffalse
7730 \if@filesw
7731 \begingroup
7732 \let\protect\noexpand
7733 \immediate\write\@auxout{%
7734 \string\bibcite{#2}{#1}%
7735 }%
7736 \endgroup
7737 \fi
7738 \ignorespaces
7739 }%

```

Since `\bibitem` is doing its own labelling, call the raw version of `\item`, to avoid extra spurious labels

```

7740 \def\@bibitem#1{%
7741 \@skiphyperreftrue\H@item\@skiphyperreffalse
7742 \Hy@raisedlink{%
7743 \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
7744 }%
7745 \if@filesw
7746 \begingroup
7747 \let\protect\noexpand
7748 \immediate\write\@auxout{%
7749 \string\bibcite{#1}{\the\value{\@listctr}}%
7750 }%
7751 \endgroup
7752 \fi
7753 \ignorespaces
7754 }%
7755 }{}%
7756 }{}

```

```

7757 </packageEnd>
7758 <*check>
7759 \checklatex
7760 \checkcommand\def\@lbibitem[#1]#2{%
7761 \item[\@biblabel{#1}\hfill]%
7762 \if@filesw
7763 {%
7764 \let\protect\noexpand
7765 \immediate\write\@auxout{%
7766 \string\bibcite{#2}{#1}%
7767 }%
7768 }%
7769 \fi
7770 \ignorespaces
7771 }
7772 \checkcommand\def\@bibitem#1{%
7773 \item
7774 \if@filesw
7775 \immediate\write\@auxout{%
7776 \string\bibcite{#1}{\the\value{\@listctr}}%
7777 }%
7778 \fi
7779 \ignorespaces
7780 }
7781 </check>
7782 <*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.

```

7783 \@ifpackageloaded{harvard}{%
7784 \Hy@AtBeginDocument{%
7785 \Hy@Info{*** compatibility with harvard **** }%
7786 \Hy@raiselinksfalse
7787 \def\harvardcite#1#2#3#4{%
7788 \global\@namedef{HAR@fn@#1}{\hyper@@link[cite]{#1}{#2}}%
7789 \global\@namedef{HAR@an@#1}{\hyper@@link[cite]{#1}{#3}}%
7790 \global\@namedef{HAR@yr@#1}{\hyper@@link[cite]{#1}{#4}}%
7791 \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
7792 }%
7793 \def\HAR@citetoaux#1{%
7794 \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
7795 \ifHy@backref
7796 \ifx\@empty\@currentlabel
7797 \else
7798 \@bsphack
7799 \if@filesw

```

```

7800     \protected@write\@auxout{}{%
7801     \string\@writefile{brf}{%
7802     \string\backcite{#1}{%
7803     {\thepage}{\@currentlabel}{\@currentHref}%
7804     }%
7805     }%
7806     }%
7807     \fi
7808     \@esphack
7809     \fi
7810     \fi
7811 }%
7812 \def\harvarditem{%
7813 \@ifnextchar{\@harvarditem}{\@harvarditem[\null]}%
7814 }%
7815 \def\@harvarditem[#1]#2#3#4#5\par{%
7816 \item[]%
7817 \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
7818 \if@filesw
7819 \begingroup
7820 \def\protect##1{\string ##1\space}%
7821 \ifthenelse{\equal{#1}{\null}}%
7822 {\def\next{{#4}{#2}{#2}{#3}}}%
7823 {\def\next{{#4}{#2}{#1}{#3}}}%
7824 \immediate\write\@auxout{\string\harvardcite\codeof\next}%
7825 \endgroup
7826 \fi
7827 \protect\hspace*{-\labelwidth}%
7828 \protect\hspace*{-\labelsep}%
7829 \ignorespaces
7830 #5%
7831 \ifHy@backref
7832 \newblock
7833 \backref{\csname br@#4\endcsname}%
7834 \fi
7835 \par
7836 }%

```

\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:

```

7837 \long\def\HAR@checkcitations#1#2#3#4{%
7838 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%
7839 \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
7840 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#3}}%
7841 \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
7842 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#4}}%
7843 \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
7844 \else
7845 \@tempswatruue
7846 \fi
7847 \else
7848 \@tempswatruue
7849 \fi

```



```

7850     \else
7851     \@tempswatru
7852     \fi
7853   }%
7854 }%

7855 }{}

```

## 37.2 Package chicago

The links by `\citeN` and `\shortciteN` should include the closing parentheses.

```
7856 \@ifpackageloaded{chicago}{%
```

```
\citeN
```

```

7857 \def\citeN{%
7858   \def\@citesep{-1000}%
7859   \def\@cite##1##2{##1}%
7860   \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
7861   \@citedata@opt
7862 }%

```

```
\shortciteN
```

```

7863 \def\shortciteN{%
7864   \def\@citesep{-1000}%
7865   \def\@cite##1##2{##1}%
7866   \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
7867   \@citedata@opt
7868 }%

```

```
\@citedata@opt
```

```

7869 \def\@citedata@opt{%
7870   \let\@cite@opt\@empty
7871   \@ifnextchar [{%
7872     \@tempswatru
7873     \@citedatax@opt
7874   }{%
7875     \@tempswafalse
7876     \@citedatax[]%
7877   }%
7878 }%

```

```
\@citedatax@opt
```

```

7879 \def\@citedatax@opt[#1]{%
7880   \def\@cite@opt{, #1}%
7881   \@citedatax[{#1}]%
7882 }%

7883 }{}

```

## 38 Page numbers

The last page should not contain a /Dur key, because there is no page after the last page. Therefore at the last page there should be a command `\hypersetup{pdfpageduration={}}`. This can be set with `\AtEndDocument`, but it can be too late, if the last page is already finished, or too early, if lots of float pages will follow. Therefore currently nothing is done by hyperref.

Experimental!

This where we supply a destination for each page.

The name of destination is stored in the global command `\@currentHpage`, this allows it to retrieve it with an extended reference system like zref or the new property code from L<sup>A</sup>T<sub>E</sub>X 2023-11-01.

```
7884 \def\@currentHpage{Doc-Start}
7885 \ifclassloaded{slides}{-%
7886 \def\Hy@SlidesFormatOptionalPage#1{(#1)}%
7887 \def\Hy@PageAnchorSlidesPlain{%
7888 \advance\c@page\@ne
7889 \xdef\@currentHpage{page.\the\c@slide.\the\c@overlay.\the\c@note%
7890 \ifnum\c@page=\@ne
7891 \else
7892 .\the\c@page
7893 \fi}%
7894 \edef\Hy@TempPageAnchor{%
7895 \noexpand\hyper@@anchor{%
7896 \@currentHpage
7897 }%
7898 }%
7899 \advance\c@page-\@ne
7900 }%
7901 \def\Hy@PageAnchorSlide{%
7902 \advance\c@page\@ne
7903 \ifnum\c@page>\@ne
7904 \@ifundefined{theHpage}{%
7905 \protected@edef\Hy@TheSlideOptionalPage{%
7906 \Hy@SlidesFormatOptionalPage{thepage}%
7907 }%
7908 }{%
7909 \protected@edef\Hy@TheSlideOptionalPage{%
7910 \Hy@SlidesFormatOptionalPage{theHpage}%
7911 }%
7912 }%
7913 \else
7914 \def\Hy@TheSlideOptionalPage{}%
7915 \fi
7916 \advance\c@page-\@ne
7917 \pdfstringdef\@the@H@page{%
7918 \csname
7919 the%
7920 \@ifundefined{theH\Hy@SlidesPage}{H}%
7921 \Hy@SlidesPage
7922 \endcsname
7923 \Hy@TheSlideOptionalPage
7924 }%
7925 \@gobblethree
```

```

7926 }%
7927 \def\Hy@SlidesPage{slide}%
7928 \g@addto@macro\slide{%
7929   \def\Hy@SlidesPage{slide}%
7930 }%
7931 \g@addto@macro\overlay{%
7932   \def\Hy@SlidesPage{overlay}%
7933 }%
7934 \g@addto@macro\note{%
7935   \def\Hy@SlidesPage{note}%
7936 }%
7937 }{%
7938   \def\Hy@PageAnchorSlidesPlain{}}%
7939   \def\Hy@PageAnchorSlide{}}%
7940 }
7941 \def\Hy@EveryPageAnchor{%
7942   \Hy@DistillerDestFix
7943   \ifHy@pageanchor
7944     \ifHy@hypertextnames
7945       \ifHy@plainpages
7946         \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
7947         \xdef\@currentHpage{page.\the\c@page}%
7948         \Hy@PageAnchorSlidesPlain
7949       \else
7950         \begingroup
7951         \let\@number\@firstofone
7952         \Hy@unicodetofalse
7953         \Hy@PageAnchorSlide
7954         \pdfstringdef\@the@H@page{\thepage}%
7955         \endgroup
7956         \EdefUnescapeString\@the@H@page{\@the@H@page}%
7957         \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
7958         \xdef\@currentHpage{page.\@the@H@page}%
7959       \fi
7960     \else
7961       \Hy@GlobalStepCount\Hy@pagecounter
7962       \def\Hy@TempPageAnchor{%
7963         \hyper@@anchor{page.\the\Hy@pagecounter}}%
7964       }%
7965       \xdef\@currentHpage{page.\the\Hy@pagecounter}%
7966     \fi
7967   \vbox to 0pt{%
7968     \kern\voffset
7969     \kern\topmargin
7970     \kern-1bp\relax
7971     \hbox to 0pt{%
7972       \kern\hoffset
7973       \kern\ifodd\value{page}%
7974         \oddsidemargin
7975       \else
7976         \evensidemargin
7977       \fi
7978     \kern-1bp\relax
7979     \Hy@TempPageAnchor\relax

```

```

7980     \hss
7981   }%
7982   \vss
7983 }%
7984 \fi
7985 }
7986 \g@addto@macro\Hy@EveryPageBoxHook{%
7987   \Hy@EveryPageAnchor
7988 }

```

## 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.

```

7989 \providecommand\protected@file@percent{}
7990 \ifundefined{hyper@nopatch@toc}{%
7991   \def\addcontentsline#1#2#3{% toc extension, type, tag
7992     \begingroup
7993       \let\label@gobble
7994       \ifx\@currentHref\@empty
7995         \Hy@Warning{%
7996           No destination for bookmark of \string\addcontentsline,%
7997           \MessageBreak destination is added%
7998       }%
7999       \phantomsection
8000     \fi
8001     \expandafter\ifx\csname toplevel@#2\endcsname\relax
8002       \begingroup
8003         \def\Hy@tempa{#1}%
8004         \ifx\Hy@tempa\Hy@bookmarkstype
8005           \Hy@WarningNoLine{%
8006             bookmark level for unknown #2 defaults to 0%
8007           }%
8008         \else
8009           \Hy@Info{bookmark level for unknown #2 defaults to 0}%
8010         \fi
8011       \endgroup
8012       \expandafter\gdef\csname toplevel@#2\endcsname{0}%
8013     \fi
8014     \edef\Hy@toclevel{\csname toplevel@#2\endcsname}%
8015     \Hy@writebookmark{\csname the#2\endcsname}%
8016       {#3}%
8017       {\@currentHref}%
8018       {\Hy@toclevel}%
8019       {#1}%
8020     \ifHy@verbose
8021       \begingroup
8022         \def\Hy@tempa{#3}%
8023         \@onelevel@sanitize\Hy@tempa

```

```

8024 \let\temp@online\on@line
8025 \let\on@line\@empty
8026 \Hy@Info{%
8027   bookmark\temp@online:\MessageBreak
8028   thecounter {\csname the#2\endcsname}\MessageBreak
8029   text {\Hy@tempa}\MessageBreak
8030   reference {\@currentHref}\MessageBreak
8031   toplevel {\Hy@toplevel}\MessageBreak
8032   type {#1}%
8033 }%
8034 \endgroup
8035 \fi
8036 \addtocontents{#1}{%
8037 \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}\protected@file@per-
cent
8038 }%
8039 \endgroup
8040 }
8041 }{}

```

`\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:

```

8042 \protected\def\Hy@toclinkstart{\hyper@linkstart{link}{\Hy@tocdestname}}
8043 \protected\def\Hy@toclinkend{\hyper@linkend}
8044
8045 \@ifundefined{hyper@nopatch@toc}{%
8046 \def\contentsline#1#2#3#4{%
8047 \begingroup
8048 \Hy@safe@activestrue
8049 \edef\x{\endgroup
8050 \def\noexpand\Hy@tocdestname{#4}%
8051 }\x
8052 \ifx\Hy@tocdestname\@empty
8053 \csname l@#1\endcsname{#2}{#3}%
8054 \else
8055 \ifcase\Hy@linktoc % none
8056 \csname l@#1\endcsname{#2}{#3}%
8057 \or % section
8058 \csname l@#1\endcsname{%
8059 \Hy@toclinkstart{#2}\Hy@toclinkend
8060 }{#3}%
8061 \or % page
8062 \def\Hy@temp{#3}%
8063 \ifx\Hy@temp\@empty
8064 \csname l@#1\endcsname{#2}{#3}%
8065 \else
8066 \csname l@#1\endcsname{#2}{#3}%
8067 \Hy@toclinkstart{#3}\Hy@toclinkend
8068 }%
8069 \fi
8070 \else % all
8071 \def\Hy@temp{#3}%

```

```

8072     \ifx\Hy@temp\@empty
8073       \csname l@#1\endcsname{%
8074         \Hy@toclinkstart{#2}\Hy@toclinkend
8075       }{}%
8076     \else
8077       \csname l@#1\endcsname{%
8078         \Hy@toclinkstart{#2}\Hy@toclinkend
8079       }{%
8080         \Hy@toclinkstart{#3}\Hy@toclinkend
8081       }%
8082     \fi
8083   \fi
8084 \fi
8085 }
8086 }{}

8087 \</packageEnd>
8088 \< *check>
8089 \checklatex
8090 \checkcommand\def\addcontentsline#1#2#3{%
8091   \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
8092 }
8093 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
8094 \</check>
8095 \< *packageEnd>

```

## 40 New counters

The whole theorem business makes up new counters on the fly; we are going to intercept this. Sigh. Do it at the level where new counters are defined. change 2024-02-14: use a csname to handle counter names with commands, see issue #330 change 2024-10-13: disable patches in new format 2024-11-01.

```

8096 \IfFormatAtLeastTF{2024-11-01}{\def\hyper@nopatch@counter{}}{}
8097 \@ifundefined{hyper@nopatch@counter}
8098 {
8099   \let\H@definecounter\@definecounter
8100   \def\@definecounter#1{%
8101     \H@definecounter{#1}%
8102     \expandafter
8103     \gdef\csname theH#1\expandafter\endcsname\expandafter
8104       {\expandafter\@arabic\csname c@#1\endcsname}}%
8105   }{}

```

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.

```

8106 \@ifundefined{hyper@nopatch@counter}
8107 {
8108   \let\H@newctr\@newctr
8109   \def\@newctr#1[#2]{%
8110     \H@newctr#1[#2]}%
8111   \expandafter\gdef\csname theH#1\endcsname{%
8112     \csname the\@ifundefined{theH#2}{}{H}#2\endcsname.\arabic{#1}%
8113   }%

```

```

8114 }
8115 }{}

```

## 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.

```

8116 \ifundefined{hyper@nopatch@amsmath@tag}
8117 {%
8118   \AddToHook{package/amsmath/after}{%
8119     \def\Hy@make@anchor{%
8120       \Hy@MakeCurrentHrefAuto{AMS}%
8121       \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
8122     }%
8123     \def\Hy@make@df@tag@@#1{%
8124       \gdef\df@tag{%
8125         \maketag@@@{\Hy@make@anchor#1}%
8126         \def\@currentlabel{#1}%
8127       }%
8128     }%
8129     \def\Hy@make@df@tag@@@#1{%
8130       \gdef\df@tag{%
8131         \tagform@{\Hy@make@anchor#1}%
8132         \toks@\@xp{\p@equation{#1}}%
8133         \edef\@currentlabel{\the\toks@}%
8134       }%
8135     }%
8136     \let\HyOrg@make@df@tag@@\make@df@tag@@
8137     \let\HyOrg@make@df@tag@@@\make@df@tag@@@
8138     \let\make@df@tag@@\Hy@make@df@tag@@
8139     \let\make@df@tag@@@\Hy@make@df@tag@@@
8140   }{}
8141 }{}

```

This code I simply cannot remember what I was trying to achieve. The final result seems to do nothing anyway.

```

\let\H@tagform@\tagform@
\def\tagform@#1{%
  \maketag@@@{\hyper@@anchor{\@currentHref}%
    {(\ignorespaces#1\unskip)}}%
}
\def\eqref#1{\textup{\H@tagform@\ref{#1}}}

```

## 41.1 \@addtoreset and \numberwithin patches

\@addtoreset puts a counter to the reset list of another counter. After a reset the counter starts again with perhaps already used values. Therefore the hyperref version of the counter print command \theHcounter is redefined in order to add the parent counter. change 2024-07-10: define \HyOrg@addtoreset always for cleveref compability with tagging code, see <https://github.com/latex3/tagging-project/issues/2>

```

8142 \def\HyOrg@addtoreset#1#2{\expandafter\@cons\csname cl@#2\endcsname {{#1}}}
8143 \@ifundefined{hyper@nopatch@counter}
8144 {
8145   \let\HyOrg@addtoreset\@addtoreset
8146   \def\@addtoreset#1#2{%
8147     \HyOrg@addtoreset{#1}{#2}%
8148     \expandafter\xdef\csname theH#1\endcsname{%
8149       \expandafter\noexpand
8150         \csname the\@ifundefined{theH#2}{}H#2\endcsname
8151         .\noexpand\the\noexpand\value{#1}%
8152     }%
8153   }
8154 }{}

```

\numberwithin A appropriate definition of hyperref's companion counter (\theH...) is added for correct link names.

```

8155 </packageEnd>
8156 <*check>
8157 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
8158 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
8159   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
8160     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
8161       \@addtoreset{#2}{#3}%
8162       \@xp\xdef\csname the#2\endcsname{%
8163         \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8164       }%
8165     }%
8166   }%
8167 }%
8168 </check>

```

change 2023-06-14: use hook to make independent of loading order

```

8169 (*packageEnd)
8170 \@ifundefined{hyper@nopatch@counter}
8171 {
8172   \AddToHook{package/amsmath/after}{%
8173     \renewcommand*\numberwithin}[3][\arabic]{%
8174       \@ifundefined{c@#2}{\@nocounterr{#2}}{%
8175         \@ifundefined{c@#3}{\@nocnterr{#3}}{%
8176           \HyOrg@addtoreset{#2}{#3}%
8177           \@xp\xdef\csname the#2\endcsname{%
8178             \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8179           }%
8180         \@xp\xdef\csname theH#2\endcsname{%
8181           \@xp\@nx
8182           \csname the\@ifundefined{theH#3}{}H#3\endcsname

```



```

8183     .\@nx#1{#2}%
8184     }%
8185     }%
8186     }%
8187     }%
8188     }{}
8189     }{}

```

## 42 Included figures

Simply intercept the low level graphics package macro.

```

8190 \ifHy@hyperfigures
8191 \let\Hy@Gin@setfile\Gin@setfile
8192 \def\Gin@setfile#1#2#3{%
8193   \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
8194 }%
8195 \fi
8196 \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.

```

8197 \ifHy@hyperindex
8198 \def\HyInd@ParenLeft{(%
8199 \def\HyInd@ParenRight{)%
8200 \def\hyperindexformat#1#2{%
8201   \let\HyOrg@hyperpage\hyperpage
8202   \let\hyperpage\@firstofone
8203   #1{\HyOrg@hyperpage{#2}}%
8204   \let\hyperpage\HyOrg@hyperpage
8205 }%
8206 \Hy@nextfalse
8207 \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
8208 \@ifpackageloaded{index}{\Hy@nexttrue}{}%
8209 \@ifpackageloaded{amsmidx}{\Hy@nexttrue}{}%
8210 \begingroup
8211 \lccode`|=\expandafter`\HyInd@EncapChar\relax
8212 \lccode`\/=\relax
8213 \lowercase{\endgroup
8214 \ifHy@next
8215   \let\HyInd@org@wrindex\@wrindex
8216   \def\@wrindex#1#2{\HyInd@@wrindex{#1}#2|\\}%
8217   \def\HyInd@@wrindex#1#2|#3|#4\\{%

```

```

8218     \ifx\|#3\|%
8219         \HyInd@org@wrindex{#1}{#2|hyperpage}%
8220     \else
8221         \HyInd@@@wrindex{#1}{#2}#3\|%
8222     \fi
8223 }%
8224 \def\HyInd@@@wrindex#1#2#3#4\|%
8225     \def\Hy@temp@A{#3}%
8226     \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8227         \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8228         \relax
8229     \HyInd@org@wrindex{#1}{%
8230         #2|hyperindexformat{/#3#4}%
8231     }%
8232 \else
8233     \ifx\|#4\|%
8234         \ifx\Hy@temp@A\HyInd@ParenRight
8235             \HyInd@org@wrindex{#1}{#2|#3}%
8236         \else
8237             \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
8238         \fi
8239     \else
8240         \HyInd@org@wrindex{#1}{%
8241             #2|#3hyperindexformat{/#4}%
8242         }%
8243     \fi
8244 \fi
8245 }%
8246 \else
8247     \def\@wrindex#1{\@wrindex#1||\}%
8248     \def\@wrindex#1|#2|#3\|%
8249     \if@filesw
8250         \ifx\|#2\|%
8251             \protected@write\@indexfile{}{%
8252                 \string\indexentry{#1|hyperpage}{\thepage}%
8253             }%
8254         \else
8255             \HyInd@@@wrindex{#1}#2\|%
8256         \fi
8257     \fi
8258 \endgroup
8259 \@esphack
8260 }%
8261 \def\HyInd@@@wrindex#1#2#3\|%
8262     \def\Hy@temp@A{#2}%
8263     \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8264         \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8265         \relax
8266     \protected@write\@indexfile{}{%
8267         \string\indexentry{%
8268             #1|hyperindexformat{/#2#3}%
8269         }{\thepage}%
8270     }%
8271 \else

```

```

8272 \ifx\#3\%
8273 \ifx\Hy@temp@A\HyInd@ParenRight
8274 \HyInd@DefKey{#1}%
8275 \@ifundefined{HyInd@(\HyInd@key)}{%
8276 \let\Hy@temp\@empty
8277 }{%
8278 \expandafter\let\expandafter\Hy@temp
8279 \csname HyInd@(\HyInd@key)\endcsname
8280 }%
8281 \protected@write\@indexfile{}{%
8282 \string\indexentry{#1|#2\Hy@temp}{\thepage}%
8283 }%
8284 \else
8285 \protected@write\@indexfile{}{%
8286 \string\indexentry{#1|#2hyperpage}{\thepage}%
8287 }%
8288 \HyInd@DefKey{#1}%
8289 \expandafter
8290 \gdef\csname HyInd@(\HyInd@key)\endcsname{%
8291 hyperpage%
8292 }%
8293 \fi
8294 \else
8295 \protected@write\@indexfile{}{%
8296 \string\indexentry{%
8297 #1|#2hyperindexformat{/#3}%
8298 }{\thepage}%
8299 }%
8300 \ifx\Hy@temp@A\HyInd@ParenLeft
8301 \HyInd@DefKey{#1}%
8302 \expandafter
8303 \gdef\csname HyInd@(\HyInd@key)\endcsname{%
8304 hyperindexformat{/#3}%
8305 }%
8306 \fi
8307 \fi
8308 \fi
8309 }%
8310 \def\HyInd@DefKey#1{%
8311 \begingroup
8312 \let\protect\@unexpandable@protect
8313 \edef\Hy@temp{#1}%
8314 \@onelevel@sanitize\Hy@temp
8315 \global\let\HyInd@key\Hy@temp
8316 \endgroup
8317 }%
8318 \fi
8319 }%
8320 \fi
8321 \Hy@DisableOption{hyperindex}
8322 \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.

```
8323 \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.

```
8324 \def\hyperpage#1{%
8325   \HyInd@hyperpage#1\nohyperpage{ }\@nil
8326 }
8327 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{%
8328   \HyInd@@hyperpage{#1}%
8329   #2%
8330   \def\Hy@temp{#3}%
8331   \ifx\Hy@temp\@empty
8332   \else
8333     \Hy@ReturnAfterFi{%
8334       \HyInd@hyperpage#3\@nil
8335     }%
8336   \fi
8337 }
8338 \def\HyInd@@hyperpage#1{\@hyperpage#1----\}
8339 \def\@hyperpage#1--#2--#3\{\%
8340   \ifx\#2\%
8341     \@commahyperpage{#1}%
8342   \else
8343     \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
8344   \fi
8345 }
8346 \def\@commahyperpage#1{\@commahyperpage#1, \}
8347 \def\@commahyperpage#1, #2,#3\{\%
8348   \ifx\#2\%
8349     \HyInd@pagelink{#1}%
8350   \else
8351     \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
8352   \fi
8353 }
```

The argument of `\hyperpage` can be empty. And the line breaking algorithm of `Makeindex` can introduce spaces. So we have to remove them.

```
8354 \def\HyInd@pagelink#1{%
8355   \begingroup
8356   \toks@={}%
8357   \HyInd@removespaces#1 \@nil
8358   \endgroup
8359 }
8360 \def\HyInd@removespaces#1 #2\@nil{%
8361   \toks@=\expandafter{\the\toks@#1}%
8362   \ifx\#2\%
8363     \edef\x{\the\toks@}%
8364     \ifx\x\@empty
8365     \else
8366       \hyperlink{page.\the\toks@}{\the\toks@}%
8367     \fi
8368   \else
8369     \Hy@ReturnAfterFi{%
8370       \HyInd@removespaces#2\@nil
```

```

8371 }%
8372 \fi
8373 }

```

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.

```

8374 \ifHy@texht
8375 \expandafter\endinput
8376 \fi
8377 \let\real@setref\@setref
8378 \def\@setref#1#2#3{% csname, extract group, refname
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 \expandafter\Hy@setref@link#1\@empty\@empty\@empty\@nil{#2}%
8387 \fi
8388 }

```

`\Hy@setref@link` extracts the reference information entries, because `\hyper@@link` does not expand arguments for the automatic link type detection.

```

8389 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
8390 \begingroup
8391 \toks0={\hyper@@link{#5}{#4}}%
8392 \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
8393 \edef\x{\endgroup
8394 \the\toks0 {\the\toks1 }%
8395 }%
8396 \x
8397 }
8398 \def\@pagesetref#1#2#3{% csname, extract macro, ref
8399 \ifx#1\relax
8400 \protect\G@refundefinedtrue
8401 \nfss@text{\reset@font\bfseries ??}%
8402 \@latex@warning{%
8403 Reference `#3' on page \thepage \space undefined%
8404 }%
8405 \else
8406 \protect\hyper@@link
8407 {\expandafter\@fifthoffive#1}%
8408 {page.\expandafter\@secondoffive#1}%
8409 {\expandafter\@secondoffive#1}%
8410 \fi
8411 }
8412 </packageEnd>
8413 <*check>
8414 \checklatex
8415 \checkcommand\def\@setref#1#2#3{%
8416 \ifx#1\relax

```

```

8417 \protect\G@refundefinedtrue
8418 \nfss@text{\reset@font\bfseries ??}%
8419 \@latex@warning{%
8420   Reference `#3' on page \thepage\space undefined%
8421 }%
8422 \else
8423   \expandafter#2#1\null
8424 \fi
8425 }
8426 </check>
8427 <*packageEnd>

```

Now some extended referencing. `\ref*` and `\pageref*` are not linked, and `\autoref` prefixes with a tag based on the type.

```

8428 \def\HyRef@StarSetRef#1{%
8429   \begingroup
8430   \Hy@safe@activetrue
8431   \let\protect\@unexpandable@protect
8432   \edef\x{#1}%
8433   \@onelevel@sanitize\x
8434   \edef\x{\endgroup
8435     \noexpand\HyRef@@StarSetRef
8436     \expandafter\noexpand\csname r@\x\endcsname{\x}%
8437   }%
8438   \x
8439 }
8440 \def\HyRef@@StarSetRef#1#2#3{%
8441   \ifx#1\@undefined
8442     \let#1\relax
8443   \fi
8444   \real@setref#1#3{#2}%
8445 }
8446 \def\@refstar#1{%
8447   \HyRef@StarSetRef{#1}\@firstoffive
8448 }
8449 \def\@pagerefstar#1{%
8450   \HyRef@StarSetRef{#1}\@secondoffive
8451 }
8452 \def\@namerefstar#1{%
8453   \HyRef@StarSetRef{#1}\@thirdoffive
8454 }
8455 \def\@Refstar#1{%
8456   \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
8457 }%
8458 \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
8459   \MakeUppercase#1%
8460 }%
8461 \def\HyRef@Ref#1{%
8462   \hyperref[#{1}]{\Ref*{#1}}%
8463 }%
8464 \Hy@AtBeginDocument{%
8465   \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.

```

8466 \@ifundefined{hyper@nopatch@varioref}
8467 {
8468   \renewcommand\Vref@star[2][]{%
8469     \begingroup
8470     \let\T@pageref\@pagerefstar
8471     \Ref*{#2}
8472     \vpageref[#1]{#2}%
8473   \endgroup
8474 }%
8475 \renewcommand\Vr@f[2][]{%
8476   \begingroup
8477   \let\T@pageref\@pagerefstar
8478   \hyperref[{#2}]{%
8479     \Ref*{#2}
8480     \vpageref[#1]{#2}%
8481   }%
8482   \endgroup
8483 }%
8484 \renewcommand\vr@f[2][]{%
8485   \begingroup
8486   \let\T@pageref\@pagerefstar
8487   \hyperref[{#2}]{%
8488     \ref*{#2}
8489     \vpageref[#1]{#2}%
8490   }%
8491   \endgroup
8492 }%
8493 \renewcommand\vref@star[2][]{%
8494   \begingroup
8495   \let\T@pageref\@pagerefstar
8496   \ref*{#2}
8497   \vpageref[#1]{#2}%
8498   \endgroup
8499 }%
8500 }{}%
8501 }{}%
8502 }

8503 \DeclareRobustCommand*\autopageref{%
8504   \@ifstar{%
8505     \HyRef@autopagerefname\pageref*%
8506   }\HyRef@autopageref
8507 }
8508 \def\HyRef@autopageref#1{%
8509   \hyperref[{#1}]{\HyRef@autopagerefname\pageref*{#1}}%
8510 }
8511 \def\HyRef@autopagerefname{%
8512   \@ifundefined{pageautorefname}{%
8513     \@ifundefined{pagename}{%
8514       \Hy@Warning{No autoref name for `page'}%
8515     }{}%
8516     \pagename\nobreakspace
8517   }%
8518 }{}%

```

```

8519 \pageautorefname\nobreakspace
8520 }%
8521 }

```

\leavevmode is added to make package wrapfigure happy, if \autoref starts a paragraph.

```

8522 \NewDocumentCommand\autoref{s}
8523   {\leavevmode
8524   \IfBooleanTF{#1}{\HyRef@autoref@gobbletwo}{\HyRef@autoref\hyper@@link}}
8525 \def\HyRef@autoref#1#2{%
8526   \begingroup
8527   \Hy@safe@activestrue
8528   \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
8529   \endgroup
8530 }
8531 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
8532   \HyRef@ShowKeysRef{#2}%
8533   \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
8534   \edef\HyRef@thisref{%
8535     \expandafter\@fourthoffive#1\@empty\@empty\@empty
8536   }%
8537   \expandafter\HyRef@testreftype\HyRef@thisref.\.%
8538   \Hy@safe@activestrue
8539   #3{%
8540     \expandafter\@fifthoffive#1\@empty\@empty\@empty
8541   }{%
8542     \expandafter\@fourthoffive#1\@empty\@empty\@empty
8543   }{%
8544     \HyRef@currentHtag
8545     \expandafter\@firstoffive#1\@empty\@empty\@empty
8546     \null
8547   }%
8548   \else
8549     \protect\G@refundefinedtrue
8550     \nfss@text{\reset@font\bfseries ??}%
8551     \@latex@warning{%
8552       Reference `#2' on page \thepage\space undefined%
8553     }%
8554   \fi
8555 }
8556 \def\HyRef@testreftype#1.#2\{\%
8557   \@ifundefined{#1autorefname}{\%
8558     \@ifundefined{#1name}{\%
8559       \HyRef@StripStar#1\*\@nil{#1}%
8560     \@ifundefined{\HyRef@name autorefname}{\%
8561       \@ifundefined{\HyRef@name name}{\%
8562         \def\HyRef@currentHtag{\%
8563           \Hy@Warning{No autoref name for `#1'}%
8564         }{%
8565           \edef\HyRef@currentHtag{\%
8566             \expandafter\noexpand\csname\HyRef@name name\endcsname
8567             \noexpand~%
8568           }%
8569         }%

```



```

8570 }{%
8571   \edef\HyRef@currentHtag{%
8572     \expandafter\noexpand
8573     \csname\HyRef@name autorefname\endcsname
8574     \noexpand~%
8575   }%
8576 }%
8577 }{%
8578   \edef\HyRef@currentHtag{%
8579     \expandafter\noexpand\csname#1name\endcsname
8580     \noexpand~%
8581   }%
8582 }%
8583 }{%
8584   \edef\HyRef@currentHtag{%
8585     \expandafter\noexpand\csname#1autorefname\endcsname
8586     \noexpand~%
8587   }%
8588 }%
8589 }
8590 \def\HyRef@StripStar#1*\#2\@nil#3{%
8591   \def\HyRef@name{#2}%
8592   \ifx\HyRef@name\HyRef@CaseStar
8593     \def\HyRef@name{#1}%
8594   \else
8595     \def\HyRef@name{#3}%
8596   \fi
8597 }
8598 \def\HyRef@CaseStar{*\\}
8599 \def\HyRef@currentHtag{}

```

Support for package showkeys.

`\HyRef@ShowKeysRef`

```

8600 \let\HyRef@ShowKeysRef@gobble
8601 \def\HyRef@ShowKeysInit{%
8602   \@ifundefined{SK@@label}{-}{}
8603   {%
8604     \ifx\SK@ref\@empty
8605     \else
8606       \def\HyRef@ShowKeysRef{%
8607         \SK@\SK@\@ref
8608       }%
8609     \fi
8610   }%
8611 }
8612 \AddToHook{package/showkeys/after}{\HyRef@ShowKeysInit}

```

Defaults for the names that `\autoref` uses.

```

8613 \providecommand*\AMSautorefname{\equationautorefname}
8614 \providecommand*\Hfootnoteautorefname{\footnoteautorefname}
8615 \providecommand*\Itemautorefname{\itemautorefname}
8616 \providecommand*\itemautorefname{item}
8617 \providecommand*\equationautorefname{Equation}
8618 \providecommand*\footnoteautorefname{footnote}

```

```

8619 \providecommand*\itemautorefname{item}
8620 \providecommand*\figureautorefname{Figure}
8621 \providecommand*\tableautorefname{Table}
8622 \providecommand*\partautorefname{Part}
8623 \providecommand*\appendixautorefname{Appendix}
8624 \providecommand*\chapterautorefname{chapter}
8625 \providecommand*\sectionautorefname{section}
8626 \providecommand*\subsectionautorefname{subsection}
8627 \providecommand*\subsubsectionautorefname{subsubsection}
8628 \providecommand*\paragraphautorefname{paragraph}
8629 \providecommand*\subparagraphautorefname{subparagraph}
8630 \providecommand*\FancyVerbLineautorefname{line}
8631 \providecommand*\theoremautorefname{Theorem}
8632 \providecommand*\pageautorefname{page}
8633 </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 pdfTeX offers `\pdfescapestring`.

```

8634 (*pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo)
8635 \begingroup\expandafter\expandafter\expandafter\endgroup
8636 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
8637 \begingroup
8638 \catcode`\| =0 %
8639 \@makeother\|%
8640 |\@firstofone{\endgroup
8641 |def|Hy@pstringdef#1#2{%
8642 |begingroup
8643 |edef~{|string~}%
8644 |xdef|Hy@gtemp{#2}%
8645 |endgroup
8646 |let#1|Hy@gtemp
8647 |@onelevel@sanitize#1%
8648 |edef#1{|expandafter|Hy@ExchangeBackslash#1\|@nil}%
8649 |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
8650 |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
8651 }%
8652 |def|Hy@ExchangeBackslash#1\#2|@nil{%
8653 #1%
8654 |ifx|\#2|\%%
8655 |else
8656 \\\%
8657 |Hy@ReturnAfterFi{%
8658 |Hy@ExchangeBackslash#2|@nil

```

```

8659     }%
8660     |fi
8661     }%
8662 }%
8663 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
8664     #1%
8665     \ifx\#2\%
8666     \else
8667     \@backslashchar(%
8668     \Hy@ReturnAfterFi{%
8669     \Hy@ExchangeLeftParenthesis#2\@nil
8670     }%
8671     \fi
8672 }%
8673 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
8674     #1%
8675     \ifx\#2\%
8676     \else
8677     \@backslashchar)%
8678     \Hy@ReturnAfterFi{%
8679     \Hy@ExchangeRightParenthesis#2\@nil
8680     }%
8681     \fi
8682 }%
8683 \else
8684 \def\Hy@pstringdef#1#2{%
8685     \begingroup
8686     \edef~{\string~}%
8687     \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
8688     \endgroup
8689     \let#1\Hy@gtemp
8690 }%
8691 \fi
8692 </pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>

```

## 44.2 pdfTeX

```

8693 (*pdfTeX)
8694 \providecommand*\XR@ext}{pdf}
8695 \Hy@setbreaklinks{true}
8696 \def\HyPat@ObjRef{%
8697     [0-9]*[1-9][0-9]* 0 R%
8698 }

```

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`

```

8699 \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
8700 \def\Hy@pdfminorversion{\pdfminorversion}%
8701 \ifHy@ocgcolorlinks

```

```

8702 \ifnum\Hy@pdfmajorminor@version<105 %
8703 \kvsetkeys{Hyp}{pdfversion=1.5}%
8704 \fi
8705 \fi
8706 \ifHy@setpdfversion
8707 \ifnum\Hy@pdf@majorminor@version<105 %
8708 \@ifundefined{pdfobjcompresslevel}{%
8709 }{%
8710 \ifHy@verbose
8711 \Hy@InfoNoLine{%
8712 PDF object streams are disabled, because they are%
8713 \MessageBreak
8714 not supported in requested PDF version %
8715 \Hy@pdf@majorversion.\Hy@pdf@minorversion
8716 }%
8717 \fi
8718 \pdfobjcompresslevel=\z@
8719 }%
8720 \fi
8721 \ifnum\Hy@pdfmajorminor@version=\Hy@pdf@majorminor@version\relax
8722 \else
8723 \let\Hy@temp\@empty
8724 \def\Hy@temp@A#1#2{%
8725 \ifnum#1>\z@
8726 \edef\Hy@temp{%
8727 \Hy@temp
8728 \space\space
8729 \the#1\space #2%
8730 \ifnum#1=\@ne\else s\fi
8731 \MessageBreak
8732 }%
8733 \fi
8734 }%
8735 \Hy@temp@A\pdflastobj{PDF object}%
8736 \Hy@temp@A\pdflastxform{formXObject}%
8737 \Hy@temp@A\pdflastximage{imageXObject}%
8738 \Hy@temp@A\pdflastannot{annotation}%
8739 \@ifundefined{pdflastlink}{%
8740 }{%
8741 \Hy@temp@A\pdflastlink{link}%
8742 }%
8743 \ifx\Hy@temp\@empty
8744 \Hy@pdfmajorversion=\Hy@pdf@majorversion\relax
8745 \Hy@pdfminorversion=\Hy@pdf@minorversion\relax
8746 \else
8747 \let\Hy@temp@A\@empty
8748 \ifnum\Hy@pdf@majorminor@version=104 %
8749 \IfFileExists{pdf14.sty}{%
8750 \def\Hy@temp@A{%
8751 \MessageBreak
8752 Or \string\RequirePackage{pdf14} can be used%
8753 \MessageBreak
8754 before \string\documentclass\space as shortcut%
8755 }%

```

```

8756     }{}%
8757   \fi
8758   \Hy@WarningNoLine{%
8759     The PDF version number could not be set,\MessageBreak
8760     because some PDF objects are already written:%
8761     \MessageBreak
8762     \Hy@temp
8763     The version should be set as early as possible:%
8764     \MessageBreak
8765     \space\space
8766     \expandafter\string\Hy@pdfmajorversion=\Hy@pdf@majorversion, %
8767     \expandafter\string\Hy@pdfminorversion=\Hy@pdf@minorversion
8768     \string\relax
8769     \ifnum\Hy@pdf@majorminor@version<105 %
8770     \@ifundefined{pdfobjcompresslevel}{%
8771     }{%
8772     \MessageBreak
8773     \space\space
8774     \string\pdfobjcompresslevel=0\string\relax
8775     }%
8776     \fi
8777     \Hy@temp@A
8778   }%
8779   \fi
8780 \fi
8781 \PackageInfo{hyperref}{%
8782   \expandafter\string\Hy@pdfmajorversion.%
8783   \expandafter\string\Hy@pdfminorversion
8784   :=\number\Hy@pdf@majorversion.\number\Hy@pdf@minorversion\space
8785 }%
8786 \fi
8787 \edef\Hy@pdf@majorversion{\number\Hy@pdfmajorversion}%
8788 \edef\Hy@pdf@minorversion{\number\Hy@pdfminorversion}%
8789 \Hy@DisableOption{pdfversion}%

8790 \ifHy@ocgcolorlinks
8791   \pdf@ifdraftmode{}{%
8792     \immediate\pdfobj{%
8793       <<%
8794         /Type/OCG%
8795         /Name(View)%
8796         /Usage<<%
8797           /Print<<%
8798             /PrintState/OFF%
8799           >>%
8800         /View<<%
8801           /ViewState/ON%
8802         >>%
8803       >>%
8804     >>%
8805   }%
8806   \edef\OBJ@OCG@view{\the\pdfastobj\space 0 R}%
8807   \immediate\pdfobj{%
8808     <<%
8809     /Type/OCG%

```

```

8810     /Name(Print)%
8811     /Usage<<%
8812     /Print<<%
8813         /PrintState/ON%
8814     >>%
8815     /View<<%
8816         /ViewState/OFF%
8817     >>%
8818     >>%
8819     >>%
8820 }%
8821 \edef\OBJ@OCG@print{\the\pdfastobj\space 0 R}%
8822 \immediate\pdfobj{%
8823     [%
8824     \OBJ@OCG@view\space\OBJ@OCG@print
8825     ]%
8826 }%
8827 \edef\OBJ@OCGs{\the\pdfastobj\space 0 R}%
8828 \pdfcatalog{%
8829     /OCProperties<<%
8830         /OCGs \OBJ@OCGs
8831     /D<<%
8832         /OFF[\OBJ@OCG@print]%
8833         /AS[%
8834             <<%
8835                 /Event/View%
8836                 /OCGs \OBJ@OCGs
8837                 /Category[/View]%
8838             >>%
8839             <<%
8840                 /Event/Print%
8841                 /OCGs \OBJ@OCGs
8842                 /Category[/Print]%
8843             >>%
8844             <<%
8845                 /Event/Export%
8846                 /OCGs \OBJ@OCGs
8847                 /Category[/Print]%
8848             >>%
8849         ]%
8850     >>%
8851     >>%
8852 }%
8853 \begingroup
8854     \edef\x{\endgroup
8855     \pdfpageresources{%
8856         \the\pdfpageresources
8857         /Properties<<%
8858             /OCView \OBJ@OCG@view
8859             /OCPrint \OBJ@OCG@print
8860         >>%
8861     }%
8862 }%
8863 \x

```

```

8864 }%
8865 \Hy@AtBeginDocument{%
8866   \def\Hy@colorlink#1{%
8867     \begingroup
8868     \ifHy@ocgcolorlinks
8869       \def\Hy@ocgcolor{#1}%
8870       \setbox0=\hbox\bgroup\color@begingroup
8871     \else
8872       \HyColor@UseColor#1%
8873     \fi
8874   }%
8875   \def\Hy@endcolorlink{%
8876     \ifHy@ocgcolorlinks
8877       \color@endgroup\egroup
8878     \mbox{%
8879       \pdfiteral page{/OC/OCPrint BDC}%
8880       \rlap{\copy0}%
8881       \pdfiteral page{EMC/OC/OCView BDC}%
8882     \begingroup
8883     \expandafter\HyColor@UseColor\Hy@ocgcolor
8884     \box0 %
8885     \endgroup
8886     \pdfiteral page{EMC}%
8887   }%
8888   \fi
8889 \endgroup
8890 }%
8891 }%
8892 \else
8893 \Hy@DisableOption{ocgcolorlinks}%
8894 \fi

```

First, allow for some changes and additions to pdftex syntax:

```

8895 \def\setpdfinkmargin#1{%
8896   \begingroup
8897   \setlength{\dimen@}{#1}%
8898   \expandafter\endgroup
8899   \expandafter\pdfinkmargin\the\dimen@\relax
8900 }
8901 \pdfinkmargin1pt %

```

First set up the default linking

```
8902 \providecommand*\@pdfview{XYZ}
```

First define the anchors:

```

8903 \Hy@WrapperDef\new@pdfink#1{%
8904   \ifhmode
8905     \@savsf\spacefactor
8906   \fi
8907   \Hy@SaveLastskip
8908   \Hy@VerboseAnchor{#1}%
8909   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
8910   \Hy@DestName\Hy@pstringDest\@pdfview
8911   \Hy@RestoreLastskip
8912   \ifhmode

```

```

8913 \spacefactor\@savsf
8914 \fi
8915 }
8916 \let\pdf@endanchor\@empty

```

\Hy@DestName Wrap the call of \pdfdest name in \Hy@DestName. Then it can easier be caught by package hypdestopt.

```

8917 \def\Hy@DestName#1#2{%
8918 \pdfdest name{#1}#2\relax
8919 }

```

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.

```

8920 \providecommand*\@pdfborder{0 0 1}
8921 \providecommand*\@pdfborderstyle{}
8922 \def\Hy@undefinedname{UNDEFINED}
8923 \def\find@pdfink#1#2{%
8924 \leavevmode
8925 \protected@edef\Hy@testname{#2}%
8926 \ifx\Hy@testname\@empty
8927 \Hy@Warning{%
8928 Empty destination name,\MessageBreak
8929 using '\Hy@undefinedname'%
8930 }%
8931 \let\Hy@testname\Hy@undefinedname
8932 \else
8933 \Hy@pstringdef\Hy@testname{%
8934 \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
8935 }%
8936 \fi
8937 \Hy@StartlinkName{%
8938 \ifHy@pdfa /F 4\fi
8939 \Hy@setpdfborder
8940 \Hy@setpdfhighlight
8941 \ifx\CurrentBorderColor\relax
8942 \else
8943 /C[\CurrentBorderColor]%
8944 \fi
8945 }\Hy@testname
8946 \expandafter\Hy@colorlink\csname @#1color\endcsname
8947 }
8948 \def\Hy@StartlinkName#1#2{%
8949 \pdfstartlink attr{#1}goto name{#2}\relax
8950 }
8951 \def\close@pdfink{%
8952 \Hy@endcolorlink
8953 \Hy@VerboseLinkStop
8954 \pdfendlink
8955 }
8956 \def\hyper@anchor#1{%
8957 \new@pdfink{#1}\anchor@spot\pdf@endanchor
8958 }

```



```

8959 \def\hyper@anchorstart#1{%
8960 \new@pdfink{#1}%
8961 \Hy@activeanchortrue
8962 }
8963 \def\hyper@anchorend{%
8964 \pdf@endanchor
8965 \Hy@activeanchorfalse
8966 }
8967 \def\hyper@linkstart#1#2{%
8968 \Hy@VerboseLinkStart{#1}{#2}%
8969 \@ifundefined{@#1bordercolor}{%
8970 \let\CurrentBorderColor\relax
8971 }{%
8972 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8973 }%
8974 \find@pdfink{#1}{#2}%
8975 }
8976 \def\hyper@linkend{\close@pdfink}
8977 \def\hyper@link#1#2#3{%
8978 \Hy@VerboseLinkStart{#1}{#2}%
8979 \@ifundefined{@#1bordercolor}{%
8980 \let\CurrentBorderColor\relax
8981 }{%
8982 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8983 }%
8984 \find@pdfink{#1}{#2}#3\Hy@xspace@end
8985 \close@pdfink
8986 }
8987 \let\CurrentBorderColor\@linkbordercolor
8988 \def\hyper@linkurl#1#2{%
8989 \begingroup
8990 \Hy@pstringdef\Hy@pstringURI{#2}%
8991 \hyper@chars
8992 \leavevmode
8993 \pdfstartlink
8994 attr{%
8995 \Hy@setpdfborder
8996 \Hy@setpdfhighlight
8997 \ifx\@urlbordercolor\relax
8998 \else
8999 /C[\@urlbordercolor]%
9000 \fi
9001 }%
9002 user{%
9003 /Subtype/Link%
9004 \ifHy@pdfa /F 4\fi
9005 /A<<%
9006 /Type/Action%
9007 /S/URI%
9008 /URI(\Hy@pstringURI)%
9009 \ifHy@href@ismap
9010 /IsMap true%
9011 \fi
9012 \Hy@href@nextactionraw

```

```

9013     >>%
9014   }%
9015   \relax
9016   \Hy@colorlink\@urlcolor#1\Hy@xspace@end
9017   \close@pdfink
9018 \endgroup
9019 }
9020 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
9021 \begingroup
9022   \def\Hy@pstringF{#2}%
9023   \Hy@CleanupFile\Hy@pstringF
9024   \Hy@pstringdef\Hy@pstringF\Hy@pstringF
9025   \Hy@pstringdef\Hy@pstringD{#3}%
9026   \Hy@MakeRemoteAction
9027   \leavevmode
9028   \pdfstartlink
9029   attr{%
9030     \Hy@setpdfborder
9031     \Hy@setpdfhighlight
9032     \ifx\@filebordercolor\relax
9033       \else
9034         /C[\@filebordercolor]%
9035       \fi
9036     }%
9037   user {%
9038     /Subtype/Link%
9039     \ifHy@pdfa /F 4\fi
9040     /A<<%
9041     /F(\Hy@pstringF)%
9042     /S/GoToR%
9043     \Hy@SetNewWindow

```

If #3 is empty, page 0; if its a number, Page number, otherwise a named destination.

```

\afterassignment\xxx\count@=0\foo!%

\def\xxx#1!{%
  \ifx\xxx#1\xxx
    foo was an integer
  \else
    it wasnt
  \fi}

9044     \ifx\#3\%
9045       /D[\Hy@href@page\@pdfremotestartview]%
9046     \else
9047       /D(\Hy@pstringD)%
9048     \fi
9049     \Hy@href@nextactionraw
9050     >>%
9051   }%
9052   \relax
9053   \Hy@colorlink\@filecolor#1\Hy@xspace@end
9054   \close@pdfink

```

```

9055 \endgroup
9056 }
9057 \def\@hyper@launch run:#1\|#2#3{% filename, anchor text linkname
9058 \begingroup
9059 \Hy@pstringdef\Hy@pstringF{#1}%
9060 \Hy@pstringdef\Hy@pstringP{#3}%
9061 \leavevmode
9062 \pdfstartlink
9063 attr{%
9064 \Hy@setpdfborder
9065 \Hy@setpdfhighlight
9066 \ifx\@runbordercolor\relax
9067 \else
9068 /C[\@runbordercolor]%
9069 \fi
9070 }%
9071 user {%
9072 /Subtype/Link%
9073 \ifHy@pdfa /F 4\fi
9074 /A<<%
9075 /F(\Hy@pstringF)%
9076 /S/Launch%
9077 \Hy@SetNewWindow
9078 \ifx\|#3\|%
9079 \else
9080 /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
9081 \fi
9082 \Hy@href@nextactionraw
9083 >>%
9084 }%
9085 \relax
9086 \Hy@colorlink\@runcolor#2\Hy@xspace@end
9087 \close@pdfink
9088 \endgroup
9089 }

```

\PDF@SetupDox

```

9090 \def\PDF@SetupDoc{%
9091 \ifx\@pdfpagescrop\@empty
9092 \else
9093 \edef\process@me{%
9094 \pdfpagesattr={%
9095 /CropBox[\@pdfpagescrop]%
9096 \expandafter\ifx\expandafter\|\the\pdfpagesattr\|
9097 \else
9098 ~~J\the\pdfpagesattr
9099 \fi
9100 }%
9101 }%
9102 \process@me
9103 \fi
9104 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9105 \pdfcatalog{%
9106 /PageMode/\@pdfpagemode

```

```

9107 \ifx\@baseurl\@empty
9108 \else
9109 /URI<</Base(\Hy@pstringB)>>%
9110 \fi
9111 }%
9112 \ifx\@pdfstartpage\@empty
9113 \else
9114 \ifx\@pdfstartview\@empty
9115 \else
9116 openaction goto page\@pdfstartpage{\@pdfstartview}%
9117 \fi
9118 \fi
9119 \edef\Hy@temp{%
9120 \ifHy@pdftoolbar\else /HideToolbar true\fi
9121 \ifHy@pdfmenubar\else /HideMenubar true\fi
9122 \ifHy@pdfwindowui\else /HideWindowUI true\fi
9123 \ifHy@pdffitwindow /FitWindow true\fi
9124 \ifHy@pdfcenterwindow /CenterWindow true\fi
9125 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9126 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9127 \Hy@UseNameKey{Direction}\@pdfdirection
9128 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9129 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9130 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9131 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9132 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9133 \Hy@UseNameKey{Duplex}\@pdfduplex
9134 \ifx\@pdfpicktraybypdfsize\@empty
9135 \else
9136 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9137 \fi
9138 \ifx\@pdfprintpagerange\@empty
9139 \else
9140 /PrintPageRange[\@pdfprintpagerange]%
9141 \fi
9142 \ifx\@pdfnumcopies\@empty
9143 \else
9144 /NumCopies \@pdfnumcopies
9145 \fi
9146 }%
9147 \pdfcatalog{%
9148 \ifx\Hy@temp\@empty
9149 \else
9150 /ViewerPreferences<<\Hy@temp>>%
9151 \fi
9152 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9153 \ifx\@pdflang\relax
9154 \else
9155 /Lang(\@pdflang)%
9156 \fi
9157 }%
9158 }

```

\PDF@FinishDoc

```

9159 \def\PDF@FinishDoc{%
9160   \pdf@ifdraftmode{}{%
9161     \Hy@UseMaketitleInfos
9162     \HyInfo@GenerateAddons
9163     \pdfinfo{%
9164       /Author(\@pdfauthor)%
9165       /Title(\@pdftitle)%
9166       /Subject(\@pdfsubject)%
9167       /Creator(\@pdfcreator)%
9168       \ifx\@pdfcreationdate\@empty
9169         \else
9170           /CreationDate(\@pdfcreationdate)%
9171         \fi
9172       \ifx\@pdfmoddate\@empty
9173         \else
9174           /ModDate(\@pdfmoddate)%
9175         \fi
9176       \ifx\@pdfproducer\relax
9177         \else
9178           /Producer(\@pdfproducer)%
9179         \fi
9180       /Keywords(\@pdfkeywords)%
9181       \ifx\@pdftrapped\@empty
9182         \else
9183           /Trapped/\@pdftrapped
9184         \fi
9185       \HyInfo@Addons
9186     }%
9187   }%
9188   \Hy@DisableOption{pdfauthor}%
9189   \Hy@DisableOption{pdftitle}%
9190   \Hy@DisableOption{pdfsubject}%
9191   \Hy@DisableOption{pdfcreator}%
9192   \Hy@DisableOption{addtopdfcreator}%
9193   \Hy@DisableOption{pdfcreationdate}%
9194   \Hy@DisableOption{pdfmoddate}%
9195   \Hy@DisableOption{pdfproducer}%
9196   \Hy@DisableOption{pdfkeywords}%
9197   \Hy@DisableOption{pdftrapped}%
9198   \Hy@DisableOption{pdfinfo}%
9199 }

```

`\hyper@pagetransition` `\@pdfpagetransition` is initialized with `\relax`. So it indicates, if option `pdfpagetransition` is used. First previous `/Trans` entries are removed. If a new `/Trans` key exists, it is appended to `\pdfpageattr`.

```

9200 \def\hyper@pagetransition{%
9201   \ifx\@pdfpagetransition\relax
9202   \else
9203     \expandafter\Hy@RemoveTransPageAttr
9204     \the\pdfpageattr^^J/Trans{}>>\END
9205   \ifx\@pdfpagetransition\@empty
9206   \else
9207     \edef\@processme{%
9208       \global\pdfpageattr{%

```

```

9209     \the\pdfpageattr
9210     ^^J/Trans << /S /\@pdfpagetransition\space >>%
9211     }%
9212     }%
9213     \@processme
9214     \fi
9215     \fi
9216     }

```

`\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.

```

9217 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
9218   \ifx\#2\%
9219     \global\pdfpageattr{#1}%
9220   \else
9221     \Hy@RemoveTransPageAttr#1#4\END
9222   \fi
9223 }

```

`\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`.

```

9224 \def\hyper@pageduration{%
9225   \ifx\@pdfpageduration\relax
9226   \else
9227     \expandafter
9228     \Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{ } \END
9229     \ifx\@pdfpageduration\@empty
9230     \else
9231       \edef\@processme{%
9232         \global\pdfpageattr{%
9233           \the\pdfpageattr
9234             ^^J/Dur \@pdfpageduration\space
9235         }%
9236       }%
9237       \@processme
9238     \fi
9239   \fi
9240 }

```

`\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.

```

9241 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
9242   \ifx\#2\%
9243     \global\pdfpageattr{#1}%
9244   \else
9245     \Hy@RemoveDurPageAttr#1#4\END
9246   \fi

```

```

9247 }
9248 \pdf@ifdraftmode{}{%
9249 \g@addto@macro\Hy@EveryPageHook{%
9250 \hyper@pagetransition
9251 \hyper@pageduration
9252 }%
9253 }

```

Also XeTeX support `\pdfpagewidth` and `\pdfpageheight`, but it does not provide `\pdfhorigin` and `\pdfvorigin`.

```

9254 </pdftex>
9255 (*pdftex | xetex)
9256 \Hy@AtBeginDocument{%
9257 \ifHy@setpagesize
9258 \expandafter\@firstofone
9259 \else
9260 \expandafter\@gobble
9261 \fi
9262 {%
9263 \@ifclassloaded{seminar}{%
9264 (*pdftex)
9265 \setlength{\pdfhorigin}{1truein}%
9266 \setlength{\pdfvorigin}{1truein}%
9267 </pdftex>
9268 \ifportrait
9269 \ifdim\paperwidth=\z@
9270 \else
9271 \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
9272 \fi
9273 \ifdim\paperheight=\z@
9274 \else
9275 \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
9276 \fi
9277 \else
9278 \ifdim\paperheight=\z@
9279 \else
9280 \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
9281 \fi
9282 \ifdim\paperwidth=\z@
9283 \else
9284 \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
9285 \fi
9286 \fi
9287 }{%
9288 \ifnum\mag=\@m
9289 \ifdim\stockwidth>\z@
9290 \ifdim\stockheight>\z@
9291 \setlength{\pdfpagewidth}{\stockwidth}%
9292 \setlength{\pdfpageheight}{\stockheight}%
9293 \else
9294 \ifdim\paperwidth>\z@
9295 \ifdim\paperheight>\z@
9296 \setlength{\pdfpagewidth}{\paperwidth}%
9297 \setlength{\pdfpageheight}{\paperheight}%

```

```

9298         \fi
9299         \fi
9300     \fi
9301 \else
9302     \ifdim\stockwidth=\z@
9303     \ifdim\paperwidth>\z@
9304     \ifdim\paperheight>\z@
9305         \setlength{\pdfpagewidth}{\paperwidth}%
9306         \setlength{\pdfpageheight}{\paperheight}%
9307     \fi
9308     \fi
9309 \fi
9310 \fi
9311 \fi
9312 }%
9313 }%
9314 \Hy@DisableOption{setpagesize}%
9315 }
9316 (/pdfTeX | xetex)
9317 (*pdfTeX)
9318 \def\Acrobatmenu#1#2{%
9319 \Hy@Acrobatmenu{#1}{#2}{%
9320 \leavevmode
9321 \EdefEscapeName\Hy@temp@menu{#1}%
9322 \pdfstartlink
9323 attr{%
9324 \Hy@setpdfborder
9325 \Hy@setpdfhighlight
9326 \ifx\@menubordercolor\relax
9327 \else
9328 /C[\@menubordercolor]%
9329 \fi
9330 }%
9331 user{%
9332 /Subtype/Link%
9333 \ifHy@pdfa /F 4\fi
9334 /A<<%
9335 /S/Named%
9336 /N/\Hy@temp@menu
9337 \Hy@href@nextactionraw
9338 >>%
9339 }%
9340 \relax
9341 \Hy@colorlink\@menucolor#2%
9342 \close@pdfink
9343 }%
9344 }

```

#### 44.2.1 Fix for problem with different nesting levels

`\AtBeginShipoutFirst` adds an additional box layer around the first output page. This disturbs pdfTeX's low level link commands `\pdfstartlink` and `\pdfendlink`, if a link is broken across the first and second output page.

The problem could be fixed by replacing `\AtBeginShipoutFirst`, because the



box layer is not necessary for 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.

9345  $\langle$ /pdf $\TeX$  $\rangle$

### 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.

```
9346  $\langle$ *hypertex $\rangle$ 
9347 \providecommand*\XR@ext}{dvi}
9348 \let\PDF@FinishDoc\@empty
9349 \def\PDF@SetupDoc{%
9350   \ifx\@baseurl\@empty
9351     \else
9352       \special{html:<base href="\@baseurl">}%
9353   \fi
9354 }
9355 \Hy@WrapperDef\hyper@anchor#1{%
```

```

9356 \Hy@SaveLastskip
9357 \Hy@VerboseAnchor{#1}%
9358 \begingroup
9359 \let\protect=\string
9360 \hyper@chars
9361 \special{html:<a name=%
9362 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9363 \endgroup
9364 \Hy@activeanchortrue
9365 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9366 \special{html:</a>}%
9367 \Hy@activeanchorfalse
9368 \Hy@RestoreLastskip
9369 }
9370 \Hy@WrapperDef\hyper@anchorstart#1{%
9371 \Hy@SaveLastskip
9372 \Hy@VerboseAnchor{#1}%
9373 \begingroup
9374 \hyper@chars
9375 \special{html:<a name=%
9376 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9377 \endgroup
9378 \Hy@activeanchortrue
9379 }
9380 \def\hyper@anchorend{%
9381 \special{html:</a>}%
9382 \Hy@activeanchorfalse
9383 \Hy@RestoreLastskip
9384 }
9385 \def\@urltype{url}
9386 \def\hyper@linkstart#1#2{%
9387 \Hy@VerboseLinkStart{#1}{#2}%
9388 \expandafter\Hy@colorlink\csname @#1color\endcsname
9389 \def\Hy@tempa{#1}%
9390 \ifx\Hy@tempa\@urltype
9391 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9392 \else
9393 \begingroup
9394 \hyper@chars
9395 \special{html:<a href=%
9396 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
9397 \endgroup
9398 \fi
9399 }
9400 \def\hyper@linkend{%
9401 \special{html:</a>}%
9402 \Hy@endcolorlink
9403 }
9404 \def\hyper@linkfile#1#2#3{%
9405 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
9406 }
9407 \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.

```
9408 \leavevmode
9409 \ifHy@raiselinks
9410 \Hy@SaveSpaceFactor
9411 \Hy@SaveSavedSpaceFactor
9412 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9413 \Hy@RestoreSavedSpaceFactor
9414 \@linkdim\dp\@tempboxa
9415 \lower\@linkdim\hbox{%
9416 \hyper@chars
9417 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
9418 }%
9419 \Hy@colorlink\@urlcolor
9420 \Hy@RestoreSpaceFactor
9421 #1%
9422 \Hy@SaveSpaceFactor
9423 \@linkdim\ht\@tempboxa
```

Because of the interaction with the dvilips processor, we have to subtract a little from the height. This is not clean, or checked. Check with Mark Doyle about what gives here. It may not be needed with the new dvips (Jan 1997).

```
9424 \advance\@linkdim by -6.5\p@
9425 \raise\@linkdim\hbox{\special{html:</a>}}%
9426 \Hy@endcolorlink
9427 \Hy@RestoreSpaceFactor
9428 \else
9429 \begingroup
9430 \hyper@chars
9431 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
9432 \Hy@colorlink\@urlcolor#1\Hy@xspace@end
9433 \special{html:</a>}}%
9434 \Hy@endcolorlink
9435 \endgroup
9436 \fi
9437 }
```

Very poor implementation of \hyper@link without considering #1.

```
9438 \def\hyper@link#1#2#3{%
9439 \Hy@VerboseLinkStart{#1}{#2}%
9440 \hyper@linkurl{#3}{\#\Hy@HyperDestNameFilter{#2}}%
9441 }

9442 \def\hyper@image#1#2{%
9443 \begingroup
9444 \hyper@chars
9445 \special{html:<img src=\hyper@quote#1\hyper@quote>}}%
9446 \endgroup
9447 }
9448 </hypertex>
9449 <*\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 de-

fine 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 hypertext cfg. For dviwindo, L<sup>A</sup>T<sub>E</sub>X must specify the size of the active area for links. For some hooks this information is available but for some, the start and end of the link are specified separately in which case a fixed size area of 10000000sp wide by `\baselineskip` high is used.

```

9450 \providecommand*\XR@ext}{dvi}
9451 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
9452 \Hy@WrapperDef\hyper@anchor#1{%
9453   \Hy@SaveLastskip
9454   \Hy@VerboseAnchor{#1}%
9455   \begingroup
9456     \let\protect=\string
9457     \special{mark: #1}%
9458   \endgroup
9459   \Hy@activeanchortrue
9460   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9461   \Hy@activeanchorfalse
9462   \Hy@RestoreLastskip
9463 }
9464 \Hy@WrapperDef\hyper@anchorstart#1{%
9465   \Hy@SaveLastskip
9466   \Hy@VerboseAnchor{#1}%
9467   \special{mark: #1}%
9468   \Hy@activeanchortrue
9469 }
9470 \def\hyper@anchorend{%
9471   \Hy@activeanchorfalse
9472   \Hy@RestoreLastskip
9473 }
9474 \def\hyper@linkstart#1#2{%
9475   \Hy@VerboseLinkStart{#1}{#2}%
9476   \expandafter\Hy@colorlink\csname @#1color\endcsname
9477   \special{button: %
9478     10000000 %
9479     \number\baselineskip\space
9480     #2%
9481   }%
9482 }
9483 \def\hyper@linkend{%
9484   \Hy@endcolorlink
9485 }
9486 \def\hyper@link#1#2#3{%
9487   \Hy@VerboseLinkStart{#1}{#2}%
9488   \leavevmode
9489   \ifHy@raiselinks
9490     \Hy@SaveSpaceFactor
9491     \Hy@SaveSavedSpaceFactor
9492     \sbox\@tempboxa{\Hy@RestoreSpaceFactor#3}%
9493     \Hy@RestoreSavedSpaceFactor

```

```

9494 \@linkdim\dp\@tempboxa
9495 \lower\@linkdim\hbox{%
9496 \special{button: %
9497 \number\wd\@tempboxa\space
9498 \number\ht\@tempboxa\space
9499 #2%
9500 }%
9501 \expandafter\Hy@colorlink\csname @#1color\endcsname
9502 \Hy@RestoreSpaceFactor
9503 #3\Hy@xspace@end
9504 \Hy@SaveSpaceFactor
9505 \Hy@endcolorlink
9506 }%
9507 \@linkdim\ht\@tempboxa
9508 \advance\@linkdim by -6.5\p@
9509 \raise\@linkdim\hbox{}%
9510 \Hy@RestoreSpaceFactor
9511 \else
9512 \special{button: %
9513 \number\wd\@tempboxa\space
9514 \number\ht\@tempboxa\space
9515 #2%
9516 }%
9517 \expandafter\Hy@colorlink\csname @#1color\endcsname
9518 #3\Hy@xspace@end
9519 \Hy@endcolorlink
9520 \fi
9521 }
9522 \def\hyper@linkurl#1#2{%
9523 \begingroup
9524 \hyper@chars
9525 \leavevmode
9526 \ifHy@raiselinks
9527 \Hy@SaveSpaceFactor
9528 \Hy@SaveSavedSpaceFactor
9529 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9530 \Hy@RestoreSavedSpaceFactor
9531 \@linkdim\dp\@tempboxa
9532 \lower\@linkdim\hbox{%
9533 \special{button: %
9534 \number\wd\@tempboxa\space
9535 \number\ht\@tempboxa\space
9536 launch: \wwwbrowser\space
9537 #2%
9538 }%
9539 \Hy@colorlink\@urlcolor
9540 \Hy@RestoreSpaceFactor
9541 #1\Hy@xspace@end
9542 \Hy@SaveSpaceFactor
9543 \Hy@endcolorlink
9544 }%
9545 \@linkdim\ht\@tempboxa
9546 \advance\@linkdim by -6.5\p@
9547 \raise\@linkdim\hbox{}%

```

```

9548 \Hy@RestoreSpaceFactor
9549 \else
9550 \special{button: %
9551 \number\wd\@tempboxa\space
9552 \number\ht\@tempboxa\space
9553 launch: \wwwbrowser\space
9554 #2%
9555 }%
9556 \Hy@colorlink\@urlcolor
9557 #1\Hy@xspace@end
9558 \Hy@endcolorlink
9559 \fi
9560 \endgroup
9561 }
9562 \def\hyper@linkfile#1#2#3{%
9563 \begingroup
9564 \hyper@chars
9565 \leavevmode
9566 \ifHy@raiselinks
9567 \Hy@SaveSpaceFactor
9568 \Hy@SaveSavedSpaceFactor
9569 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9570 \Hy@RestoreSavedSpaceFactor
9571 \@linkdim\dp\@tempboxa
9572 \lower\@linkdim\hbox{%
9573 \special{button: %
9574 \number\wd\@tempboxa\space
9575 \number\ht\@tempboxa\space
9576 #3,%
9577 file: #2%
9578 }%
9579 \Hy@colorlink\@filecolor
9580 \Hy@RestoreSpaceFactor
9581 #1\Hy@xspace@end
9582 \Hy@SaveSpaceFactor
9583 \Hy@endcolorlink
9584 }%
9585 \@linkdim\ht\@tempboxa
9586 \advance\@linkdim by -6.5\p@
9587 \raise\@linkdim\hbox{}}%
9588 \Hy@RestoreSpaceFactor
9589 \else
9590 \special{button: %
9591 \number\wd\@tempboxa\space
9592 \number\ht\@tempboxa\space
9593 #3,%
9594 file: #2%
9595 }%
9596 \Hy@colorlink\@filecolor
9597 #1\Hy@xspace@end
9598 \Hy@endcolorlink
9599 \fi
9600 \endgroup
9601 }

```

```

9602 \HyInfo@AddonUnsupportedtrue
9603 \def\PDF@FinishDoc{%
9604   \Hy@UseMaketitleInfos
9605   \HyInfo@TrappedUnsupported
9606   \special{PDF: Keywords \@pdfkeywords}%
9607   \special{PDF: Title \@pdftitle}%
9608   \special{PDF: Creator \@pdfcreator}%
9609   \ifx\@pdfcreationdate\@empty
9610   \else
9611     \special{PDF: CreationDate \@pdfcreationdate}%
9612   \fi
9613   \ifx\@pdfmoddate\@empty
9614   \else
9615     \special{PDF: ModDate \@pdfmoddate}%
9616   \fi
9617   \special{PDF: Author \@pdfauthor}%
9618   \ifx\@pdfproducer\relax
9619   \else
9620     \special{PDF: Producer \@pdfproducer}%
9621   \fi
9622   \special{PDF: Subject \@pdfsubject}%
9623   \Hy@DisableOption{pdfauthor}%
9624   \Hy@DisableOption{pdftitle}%
9625   \Hy@DisableOption{pdfsubject}%
9626   \Hy@DisableOption{pdfcreator}%
9627   \Hy@DisableOption{addtopdfcreator}%
9628   \Hy@DisableOption{pdfcreationdate}%
9629   \Hy@DisableOption{pdfcreationdate}%
9630   \Hy@DisableOption{pdfmoddate}%
9631   \Hy@DisableOption{pdfproducer}%
9632   \Hy@DisableOption{pdfkeywords}%
9633   \Hy@DisableOption{pdftrapped}%
9634   \Hy@DisableOption{pdfinfo}%
9635 }
9636 \def\PDF@SetupDoc{%
9637   \ifx\@baseurl\@empty
9638   \else
9639     \special{PDF: Base \@baseurl}%
9640   \fi
9641   \ifx\@pdfpagescrop\@empty\else
9642     \special{PDF: BBox \@pdfpagescrop}%
9643   \fi
9644   \def\Hy@temp{}%
9645   \ifx\@pdfstartpage\@empty
9646   \else
9647     \ifx\@pdfstartview\@empty
9648     \else
9649       \edef\Hy@temp{%
9650         ,Page=\@pdfstartpage
9651         ,View=\@pdfstartview
9652       }%
9653     \fi
9654   \fi
9655   \edef\Hy@temp{%

```

```

9656 \noexpand\pdfmark{%
9657   pdfmark=/DOCVIEW,%
9658   PageMode=/\@pdfpagemode
9659   \Hy@temp
9660 }%
9661 }%
9662 \Hy@temp
9663 \ifx \@pdfpagescrop \@empty
9664 \else
9665   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9666 \fi
9667 \edef\Hy@temp{%
9668   \ifHy@pdftoolbar\else /HideToolbar true\fi
9669   \ifHy@pdfmenubar\else /HideMenubar true\fi
9670   \ifHy@pdfwindowui\else /HideWindowUI true\fi
9671   \ifHy@pdffitwindow /FitWindow true\fi
9672   \ifHy@pdfcenterwindow /CenterWindow true\fi
9673   \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9674   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9675   \Hy@UseNameKey{Direction}\@pdfdirection
9676   \Hy@UseNameKey{ViewArea}\@pdfviewarea
9677   \Hy@UseNameKey{ViewClip}\@pdfviewclip
9678   \Hy@UseNameKey{PrintArea}\@pdfprintarea
9679   \Hy@UseNameKey{PrintClip}\@pdfprintclip
9680   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9681   \Hy@UseNameKey{Duplex}\@pdfduplex
9682   \ifx \@pdfpicktraybypdfsize \@empty
9683   \else
9684     /PickTrayByPDFSize \@pdfpicktraybypdfsize
9685   \fi
9686   \ifx \@pdfprintpagerange \@empty
9687   \else
9688     /PrintPageRange[\@pdfprintpagerange]%
9689   \fi
9690   \ifx \@pdfnumcopies \@empty
9691   \else
9692     /NumCopies \@pdfnumcopies
9693   \fi
9694 }%
9695 \pdfmark{pdfmark=/PUT,%
9696   Raw={%
9697     \string{Catalog\string}<<%
9698     \ifx\Hy@temp \@empty
9699     \else
9700       /ViewerPreferences<<\Hy@temp>>%
9701     \fi
9702     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9703     \ifx \@pdflang\relax
9704     \else
9705       /Lang(\@pdflang)%
9706     \fi
9707     >>%
9708   }%
9709 }%

```



```

9710 }
9711 </dviwindo>
9712 < *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.

```

9713 \special{dvipdfmx:config C 0x0010}
9714 \providecommand*{\XR@ext}{pdf}
9715 \Hy@setbreaklinks{true}
9716 \def\HyPat@ObjRef{%
9717   @[^ ]+}%
9718 }
9719 \newsavebox{\pdfm@box}
9720 \def\@pdfm@mark#1{\special{pdf:#1}}
9721 \Hy@WrapperDef\@pdfm@dest#1{%
9722   \Hy@SaveLastskip
9723   \Hy@VerboseAnchor{#1}%
9724   \begingroup
9725     \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9726     \def\x{XYZ}%
9727     \ifx\x\@pdfview
9728       \def\x{XYZ @xpos @ypos null}%
9729     \else
9730       \def\x{FitH}%
9731       \ifx\x\@pdfview
9732         \def\x{FitH @ypos}%
9733       \else
9734         \def\x{FitBH}%
9735         \ifx\x\@pdfview
9736           \def\x{FitBH @ypos}%
9737         \else
9738           \def\x{FitV}%
9739           \ifx\x\@pdfview
9740             \def\x{FitV @xpos}%
9741           \else
9742             \def\x{FitBV}%
9743             \ifx\x\@pdfview
9744               \def\x{FitBV @xpos}%
9745             \else
9746               \def\x{Fit}%
9747               \ifx\x\@pdfview
9748                 \let\x\@pdfview
9749               \else
9750                 \def\x{FitB}%
9751                 \ifx\x\@pdfview
9752                   \let\x\@pdfview
9753                 \else
9754                   \def\x{FitR}%
9755                   \ifx\x\@pdfview

```

```

9756         \Hy@Warning{\pdfview=FitR' is not supported}%
9757         \def\x{XYZ @xpos @ypos null}%
9758     \else
9759         \@onelevel@sanitize\@pdfview
9760         \Hy@Warning{%
9761             Unknown value `\'@pdfview' for pdfview%
9762         }%
9763         \def\x{XYZ @xpos @ypos null}%
9764     \fi
9765 \fi
9766 \fi
9767 \fi
9768 \fi
9769 \fi
9770 \fi
9771 \fi
9772 \pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
9773 \endgroup
9774 \Hy@RestoreLastskip
9775 }
9776 \providecommand*\@pdfview{XYZ}
9777 \providecommand*\@pdfborder{0 0 1}
9778 \providecommand*\@pdfborderstyle{}
9779 \def\hyper@anchor#1{%
9780     \pdfm@dest{#1}%
9781 }
9782 \def\hyper@anchorstart#1{%
9783     \Hy@activeanchortrue
9784     \pdfm@dest{#1}%
9785 }
9786 \def\hyper@anchorend{%
9787     \Hy@activeanchorfalse
9788 }
9789 \newcounter{Hy@AnnotLevel}
9790 \ifHy@ocgcolorlinks
9791     \def\OBJ@OCG@view{@OCG@view}%
9792     \pdfm@mark{%
9793         obj \OBJ@OCG@view <<%
9794         /Type/OCG%
9795         /Name(View)%
9796         /Usage<<%
9797         /Print<<%
9798         /PrintState/OFF%
9799         >>%
9800         /View<<%
9801         /ViewState/ON%
9802         >>%
9803         >>%
9804         >>%
9805     }%
9806     \pdfm@mark{close \OBJ@OCG@view}%
9807     \def\OBJ@OCG@print{@OCG@print}%
9808     \pdfm@mark{%

```

```

9809   obj \OBJ@OCG@print <<%
9810     /Type/OCG%
9811     /Name(Print)%
9812     /Usage<<%
9813       /Print<<%
9814         /PrintState/ON%
9815       >>%
9816     /View<<%
9817       /ViewState/OFF%
9818     >>%
9819   >>%
9820 >>%
9821 }%
9822 \@pdfm@mark{close \OBJ@OCG@print}%
9823 \def\OBJ@OCGs{@OCGs}%
9824 \@pdfm@mark{%
9825   obj \OBJ@OCGs [%
9826     \OBJ@OCG@view\space\OBJ@OCG@print
9827   ]%
9828 }%
9829 \@pdfm@mark{close \OBJ@OCGs}%
9830 \@pdfm@mark{%
9831   put @catalog <<%
9832     /OCProperties<<%
9833     /OCGs \OBJ@OCGs
9834     /D<<%
9835     /OFF[\OBJ@OCG@print]%
9836     /AS[%
9837       <<%
9838         /Event/View%
9839         /OCGs \OBJ@OCGs
9840         /Category[/View]%
9841       >>%
9842     <<%
9843     /Event/Print%
9844     /OCGs \OBJ@OCGs
9845     /Category[/Print]%
9846     >>%
9847     <<%
9848     /Event/Export%
9849     /OCGs \OBJ@OCGs
9850     /Category[/Print]%
9851     >>%
9852   ]%
9853   >>%
9854 >>%
9855 >>%
9856 }%
9857 \AtBeginShipout{%
9858   \setbox\AtBeginShipoutBox=\hbox{%
9859     \copy\AtBeginShipoutBox
9860     \@pdfm@mark{%
9861       put @resources <<%
9862         /Properties<<%

```

```

9863         /OCView \OBJ@OCG@view
9864         /OCPrint \OBJ@OCG@print
9865     >>%
9866     >>%
9867     }%
9868     }%
9869     }%
9870 \Hy@AtBeginDocument{%
9871     \def\Hy@colorlink#1{%
9872         \begingroup
9873         \ifHy@ocgcolorlinks
9874             \def\Hy@ocgcolor{#1}%
9875             \setbox0=\hbox\bgroup\color@begingroup
9876         \else
9877             \HyColor@UseColor#1%
9878         \fi
9879     }%
9880 \def\Hy@endcolorlink{%
9881     \ifHy@ocgcolorlinks
9882         \color@endgroup\egroup
9883         \mbox{%
9884             \@pdfm@mark{content /OC/OCPrint BDC}%
9885             \rlap{\copy0}%
9886             \@pdfm@mark{content EMC/OC/OCView BDC}%
9887         \begingroup
9888             \expandafter\HyColor@UseColor\Hy@ocgcolor
9889             \box0 %
9890         \endgroup
9891         \@pdfm@mark{content EMC}%
9892     }%
9893     \fi
9894     \endgroup
9895     }%
9896     }%
9897 \else
9898     \Hy@DisableOption{ocgcolorlinks}%
9899 \fi

```

Use primitive counter arithmetic here to avoid amsmath redefining `\stepcounter` (github issue/13)

```

9900 \def\Hy@BeginAnnot#1{%
9901     \global\advance\c@Hy@AnnotLevel\@ne
9902     \ifnum\c@Hy@AnnotLevel=\@ne
9903         #1%
9904     \fi
9905 }
9906 \def\Hy@endAnnot{%
9907     \ifnum\value{Hy@AnnotLevel}=\@ne
9908         \Hy@endcolorlink
9909         \@pdfm@mark{eann}%
9910     \fi
9911     \global\advance\c@Hy@AnnotLevel\m@ne
9912 }
9913 \def\Hy@undefinedname{UNDEFINED}

```

```

9914 \def\hyper@linkstart#1#2{%
9915   \Hy@VerboseLinkStart{#1}{#2}%
9916   \leavevmode
9917   \Hy@BeginAnnot{%
9918     \protected@edef\Hy@testname{#2}%
9919     \ifx\Hy@testname\@empty
9920       \Hy@Warning{%
9921         Empty destination name,\MessageBreak
9922         using ` \Hy@undefinedname'%
9923       }%
9924       \let\Hy@testname\Hy@undefinedname
9925     \else
9926       \Hy@pstringdef\Hy@testname{%
9927         \expandafter\HyperDestNameFilter\expandafter{%
9928           \Hy@testname
9929         }%
9930       }%
9931     \fi
9932   \@pdfm@mark{%
9933     bann<<%
9934     /Type/Annot%
9935     /Subtype/Link%
9936     \ifHy@pdfa /F 4\fi
9937     \Hy@setpdfborder
9938     \Hy@setpdfhighlight
9939     \expandafter\ifx\csname @#1bordercolor\endcsname\relax
9940     \else
9941       /C[\csname @#1bordercolor\endcsname]%
9942     \fi
9943     /A<<%
9944     /S/GoTo%
9945     /D(\Hy@testname)%
9946     \Hy@href@nextactionraw
9947     >>%
9948     >>%
9949   }%
9950   \expandafter\Hy@colorlink\csname @#1color\endcsname
9951 }%
9952 }
9953 \def\hyper@linkend{\Hy@EndAnnot}%
9954 \def\hyper@link#1#2#3{%
9955   \hyper@linkstart{#1}{#2}#3\Hy@xspace@end\hyper@linkend
9956 }
9957 \def\hyper@linkfile#1#2#3{%
9958   \leavevmode
9959   \Hy@BeginAnnot{%
9960     \def\Hy@pstringF{#2}%
9961     \Hy@CleanupFile\Hy@pstringF
9962     \Hy@pstringdef\Hy@pstringF\Hy@pstringF
9963     \Hy@pstringdef\Hy@pstringD{#3}%
9964     \Hy@MakeRemoteAction
9965     \@pdfm@mark{%
9966       bann<<%
9967       /Type/Annot%

```

```

9968     /Subtype/Link%
9969     \ifHy@pdfa /F 4\fi
9970     \Hy@setpdfborder
9971     \Hy@setpdfhighlight
9972     \ifx\@filebordercolor\relax
9973     \else
9974     /C[\@filebordercolor]%
9975     \fi
9976     /A<<%
9977     /S/GoToR%
9978     /F(\Hy@pstringF)%
9979     /D%
9980     \ifx\#3\%
9981     [\Hy@href@page\@pdfremotestartview]%
9982     \else
9983     (\Hy@pstringD)%
9984     \fi
9985     \Hy@SetNewWindow
9986     \Hy@href@nextactionraw
9987     >>%
9988     >>%
9989     }%
9990     \Hy@colorlink\@filecolor
9991     }%
9992     #1\Hy@xspace@end
9993     \Hy@EndAnnot
9994 }
9995 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
9996 \leavevmode
9997 \Hy@BeginAnnot{%
9998 \Hy@pstringdef\Hy@pstringF{#1}%
9999 \Hy@pstringdef\Hy@pstringP{#3}%
10000 \@pdfm@mark{%
10001 bann<<%
10002 /Type/Annot%
10003 /Subtype/Link%
10004 \ifHy@pdfa /F 4\fi
10005 \Hy@setpdfborder
10006 \Hy@setpdfhighlight
10007 \ifx\@runbordercolor\relax
10008 \else
10009 /C[\@runbordercolor]%
10010 \fi
10011 /A<<%
10012 /F(\Hy@pstringF)%
10013 /S/Launch%
10014 \Hy@SetNewWindow
10015 \ifx\#3\%
10016 \else
10017 /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
10018 \fi
10019 \Hy@href@nextactionraw
10020 >>%
10021 >>%

```

```

10022 }%
10023 \Hy@colorlink\@runcolor
10024 }%
10025 #2\Hy@xspace@end
10026 \Hy@EndAnnot
10027 }
10028 \def\hyper@linkurl#1#2{%
10029 \leavevmode
10030 \Hy@BeginAnnot{%
10031 \Hy@pstringdef\Hy@pstringURI{#2}%
10032 \@pdfm@mark{%
10033 bann<<%
10034 /Type/Annot%
10035 /Subtype/Link%
10036 \ifHy@pdfa /F 4\fi
10037 \Hy@setpdfborder
10038 \Hy@setpdfhighlight
10039 \ifx\@urlbordercolor\relax
10040 \else
10041 /C[\@urlbordercolor]%
10042 \fi
10043 /A<<%
10044 /S/URI%
10045 /URI(\Hy@pstringURI)%
10046 \ifHy@href@ismap
10047 /IsMap true%
10048 \fi
10049 \Hy@href@nextactionraw
10050 >>%
10051 >>%
10052 }%
10053 \Hy@colorlink\@urlcolor
10054 }%
10055 #1\Hy@xspace@end
10056 \Hy@EndAnnot
10057 }
10058 \def\Acrobatmenu#1#2{%
10059 \Hy@Acrobatmenu{#1}{#2}{%
10060 \Hy@BeginAnnot{%
10061 \EdefEscapeName\Hy@temp@menu{#1}%
10062 \@pdfm@mark{%
10063 bann<<%
10064 /Type/Annot%
10065 /Subtype/Link%
10066 \ifHy@pdfa /F 4\fi
10067 \Hy@setpdfborder
10068 \Hy@setpdfhighlight
10069 \ifx\@menubordercolor\relax
10070 \else
10071 /C[\@menubordercolor]%
10072 \fi
10073 /A<<%
10074 /S/Named%
10075 /N/\Hy@temp@menu

```

```

10076         \Hy@href@nextactionraw
10077         >>%
10078     >>%
10079     }%
10080     \Hy@colorlink\@menucolor
10081     }%
10082     #2\Hy@xspace@end
10083     \Hy@EndAnnot
10084     }%
10085 }
10086
10087 \def\PDF@FinishDoc{%
10088     \Hy@UseMaketitleInfos
10089     \HyInfo@GenerateAddons
10090     \@pdfm@mark{%
10091     docinfo<<%
10092         /Title(\@pdftitle)%
10093         /Subject(\@pdfsubject)%
10094         /Creator(\@pdfcreator)%
10095         \ifx\@pdfcreationdate\@empty
10096         \else
10097             /CreationDate(\@pdfcreationdate)%
10098         \fi
10099         \ifx\@pdfmoddate\@empty
10100         \else
10101             /ModDate(\@pdfmoddate)%
10102         \fi
10103         /Author(\@pdfauthor)%
10104         \ifx\@pdfproducer\relax
10105         \else
10106             /Producer(\@pdfproducer)%
10107         \fi
10108         /Keywords(\@pdfkeywords)%
10109         \ifx\@pdftrapped\@empty
10110         \else
10111             /Trapped/\@pdftrapped
10112         \fi
10113         \HyInfo@Addons
10114     >>%
10115     }%
10116     \Hy@DisableOption{pdfauthor}%
10117     \Hy@DisableOption{pdftitle}%
10118     \Hy@DisableOption{pdfsubject}%
10119     \Hy@DisableOption{pdfcreator}%
10120     \Hy@DisableOption{addtopdfcreator}%
10121     \Hy@DisableOption{pdfcreationdate}%
10122     \Hy@DisableOption{pdfcreationdate}%
10123     \Hy@DisableOption{pdfmoddate}%
10124     \Hy@DisableOption{pdfproducer}%
10125     \Hy@DisableOption{pdfkeywords}%
10126     \Hy@DisableOption{pdftrapped}%
10127     \Hy@DisableOption{pdfinfo}%
10128 }
10129 \def\PDF@SetupDoc{%

```



```

10130 \edef\Hy@temp{%
10131   \ifHy@pdftoolbar\else /HideToolbar true\fi
10132   \ifHy@pdfmenubar\else /HideMenubar true\fi
10133   \ifHy@pdfwindowui\else /HideWindowUI true\fi
10134   \ifHy@pdffitwindow /FitWindow true\fi
10135   \ifHy@pdfcenterwindow /CenterWindow true\fi
10136   \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10137   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10138   \Hy@UseNameKey{Direction}\@pdfdirection
10139   \Hy@UseNameKey{ViewArea}\@pdfviewarea
10140   \Hy@UseNameKey{ViewClip}\@pdfviewclip
10141   \Hy@UseNameKey{PrintArea}\@pdfprintarea
10142   \Hy@UseNameKey{PrintClip}\@pdfprintclip
10143   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10144   \Hy@UseNameKey{Duplex}\@pdfduplex
10145   \ifx\@pdfpicktraybypdfsize\@empty
10146   \else
10147     /PickTrayByPDFSize \@pdfpicktraybypdfsize
10148   \fi
10149   \ifx\@pdfprintpagerange\@empty
10150   \else
10151     /PrintPageRange[\@pdfprintpagerange]%
10152   \fi
10153   \ifx\@pdfnumcopies\@empty
10154   \else
10155     /NumCopies \@pdfnumcopies
10156   \fi
10157 }%
10158 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10159 \@pdfm@mark{%
10160   docview<<%
10161     \ifx\@pdfstartpage\@empty
10162     \else
10163       \ifx\@pdfstartview\@empty
10164       \else
10165         /OpenAction[@page\@pdfstartpage\@pdfstartview]%
10166       \fi
10167     \fi
10168     \ifx\@baseurl\@empty
10169     \else
10170       /URI<</Base(\Hy@pstringB)>>%
10171     \fi
10172     /PageMode/\@pdfpagemode
10173     \ifx\Hy@temp\@empty
10174     \else
10175       /ViewerPreferences<<\Hy@temp>>%
10176     \fi
10177     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10178     \ifx\@pdflang\relax
10179     \else
10180       /Lang(\@pdflang)%
10181     \fi
10182   >>%
10183 }%

```

```

10184 \ifx\@pdfpagescrop\@empty
10185 \else
10186 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}%
10187 \fi
10188 }
10189 </dvi pdfm | xetex>
10190 (*dvi pdfm | xetex)

```

#### \hyper@pagetransition

```

10191 \def\hyper@pagetransition{%
10192 \ifx\@pdfpagetransition\relax
10193 \else
10194 \ifx\@pdfpagetransition\@empty
10195 \else
10196 \special{pdf:put @thispage %
10197 <</Trans<</S/\@pdfpagetransition>>>}%
10198 }%
10199 \fi
10200 \fi
10201 }

```

#### \hyper@pageduration

```

10202 \def\hyper@pageduration{%
10203 \ifx\@pdfpageduration\relax
10204 \else
10205 \ifx\@pdfpageduration\@empty
10206 \else
10207 \special{pdf:put @thispage %
10208 <</Dur \@pdfpageduration>>}%
10209 }%
10210 \fi
10211 \fi
10212 }

10213 \g@addto@macro\Hy@EveryPageBoxHook{%
10214 \hyper@pagetransition
10215 \hyper@pageduration
10216 }

10217 </dvi pdfm | xetex>

```

XeTeX uses pdfTeX's method \pdfpagewidth and \pdfpageheight for setting the paper size.

```

10218 (*dvi pdfm)
10219 \AtBeginShipoutFirst{%
10220 \ifHy@setpagesize
10221 \begingroup
10222 \ifnum\mag=\@m
10223 \ifdim\stockwidth>\z@
10224 \ifdim\stockheight>\z@
10225 \special{papersize=\the\stockwidth,\the\stockheight}%
10226 \else
10227 \ifdim\paperwidth>\z@
10228 \ifdim\paperheight>\z@

```

```

10229     \special{papersize=\the\paperwidth,\the\paperheight}%
10230     \fi
10231     \fi
10232     \fi
10233     \else
10234     \ifdim\stockwidth=\z@
10235     \ifdim\paperwidth>\z@
10236     \ifdim\paperheight>\z@
10237     \special{papersize=\the\paperwidth,\the\paperheight}%
10238     \fi
10239     \fi
10240     \fi
10241     \fi
10242     \fi
10243 \endgroup
10244 \fi
10245 \Hy@DisableOption{setpagesize}%
10246 }
10247 </dviptfm>

```

## 44.6 VTeX typesetting system

Provided by MicroPress, May 1998. They require VTeX version 6.02 or newer; see <http://www.micropress-inc.com/> for details.

```

10248 <*\vtxhtml>
10249 \providecommand*\XR@ext{html}
10250 \RequirePackage{vtxhtml}
10251 \newif\if@Localurl
10252 \let\PDF@FinishDoc\@empty
10253 \def\PDF@SetupDoc{%
10254   \ifx\@baseurl\@empty
10255   \else
10256     \special{!direct <base href="\@baseurl">}%
10257   \fi
10258 }
10259 \def\@urltype{url}
10260 \def\hyper@link#1#2#3{%
10261   \Hy@VerboseLinkStart{#1}{#2}%
10262   \leavevmode
10263   \special{!direct <a href=%
10264     \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
10265   #3\Hy@xspace@end
10266   \special{!direct </a>}%
10267 }
10268 \def\hyper@linkurl#1#2{%
10269   \begingroup
10270     \hyper@chars
10271     \leavevmode
10272     \MathBSuppress=1\relax
10273     \special{!direct <a href=%
10274       \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}%
10275     #1\Hy@xspace@end
10276     \MathBSuppress=0\relax
10277     \special{!direct </a>}%

```

```

10278 \endgroup
10279 }
10280 \def\hyper@linkfile#1#2#3{%
10281 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
10282 }
10283 \def\hyper@linkstart#1#2{%
10284 \Hy@VerboseLinkStart{#1}{#2}%
10285 \def\Hy@tempa{#1}\ifx\Hy@tempa \@urlltype
10286 \@Localurltrue
10287 \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
10288 \else
10289 \@Localurlfalse
10290 \begingroup
10291 \hyper@chars
10292 \special{!aref \HyperDestNameFilter{#2}}%
10293 \endgroup
10294 \fi
10295 }
10296 \def\hyper@linkend{%
10297 \if@Localurl
10298 \special{!endaref}%
10299 \else
10300 \special{!direct </a>}%
10301 \fi
10302 }
10303 \Hy@WrapperDef\hyper@anchorstart#1{%
10304 \Hy@SaveLastskip
10305 \Hy@VerboseAnchor{#1}%
10306 \begingroup
10307 \hyper@chars
10308 \special{!aname #1}%
10309 \special{!direct <a name=%
10310 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10311 \endgroup
10312 \Hy@activeanchortrue
10313 }
10314 \def\hyper@anchorend{%
10315 \special{!direct </a>}%
10316 \Hy@activeanchorfalse
10317 \Hy@RestoreLastskip
10318 }
10319 \Hy@WrapperDef\hyper@anchor#1{%
10320 \Hy@SaveLastskip
10321 \Hy@VerboseAnchor{#1}%
10322 \begingroup
10323 \let\protect=\string
10324 \hyper@chars
10325 \leavevmode
10326 \special{!aname #1}%
10327 \special{!direct <a name=%
10328 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10329 \endgroup
10330 \Hy@activeanchortrue
10331 \bgroup\anchor@spot\egroup

```

```

10332 \special{!direct </a>}%
10333 \Hy@activeanchorfalse
10334 \Hy@RestoreLastskip
10335 }
10336 \def\@Form[#1]{%
10337 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10338 }
10339 \let\@endForm\@empty
10340 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10341 \Hy@Message{Sorry, TeXpider does not yet support FORM gauges}%
10342 }
10343 \def\@TextField[#1]#2{% parameters, label
10344 \Hy@Message{Sorry, TeXpider does not yet support FORM text fields}%
10345 }
10346 \def\@CheckBox[#1]#2{% parameters, label
10347 \Hy@Message{Sorry, TeXpider does not yet support FORM checkboxes}%
10348 }
10349 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10350 \Hy@Message{Sorry, TeXpider does not yet support FORM choice menus}%
10351 }
10352 \def\@PushButton[#1]#2{% parameters, label
10353 \Hy@Message{Sorry, TeXpider does not yet support FORM pushbuttons}%
10354 }
10355 \def\@Reset[#1]#2{%
10356 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10357 }
10358 \def\@Submit[#1]#2{%
10359 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10360 }
10361 </vtxhtml>
10362 <*vtx>

```

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.

```

10363 \ifcsname mediaheight\endcsname
10364 \ifHy@setpagesize
10365 \providecommand*{\VTeXInitMediaSize}{%
10366 \ifnum\mag=\@m
10367 \ifdim\stockwidth>\z@
10368 \ifdim\stockheight>\z@
10369 \setlength\mediaheight\stockheight
10370 \setlength\mediawidth\stockwidth
10371 \else
10372 \ifdim\paperwidth>\z@
10373 \ifdim\paperheight>\z@
10374 \setlength\mediaheight\paperheight
10375 \setlength\mediawidth\paperwidth
10376 \fi
10377 \fi
10378 \fi
10379 \else
10380 \ifdim\stockwidth=\z@
10381 \ifdim\paperwidth>\z@

```

```

10382         \ifdim\paperheight>\z@
10383         \setlength\mediaheight\paperheight
10384         \setlength\mediawidth\paperwidth
10385     \fi
10386 \fi
10387 \fi
10388 \fi
10389 \fi
10390 }%
10391 \Hy@AtBeginDocument{\VTeXInitMediaSize}%
10392 \fi
10393 \Hy@DisableOption{setpagesize}%
10394 \fi

```

Older versions of VTeX require xyz in lower case.

```

10395 \providecommand*\@pdfview{xyz}
10396 \providecommand*\@pdfborder{0 0 1}
10397 \providecommand*\@pdfborderstyle{}
10398 \let\CurrentBorderColor\@linkbordercolor
10399 \Hy@WrapperDef\hyper@anchor#1{%
10400 \Hy@SaveLastskip
10401 \Hy@VerboseAnchor{#1}%
10402 \begingroup
10403 \let\protect=\string
10404 \hyper@chars
10405 \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10406 \endgroup
10407 \Hy@activeanchortrue
10408 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
10409 \Hy@activeanchorfalse
10410 \Hy@RestoreLastskip
10411 }
10412 \Hy@WrapperDef\hyper@anchorstart#1{%
10413 \Hy@SaveLastskip
10414 \Hy@VerboseAnchor{#1}%
10415 \begingroup
10416 \hyper@chars
10417 \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10418 \endgroup
10419 \Hy@activeanchortrue
10420 }
10421 \def\hyper@anchorend{%
10422 \Hy@activeanchorfalse
10423 \Hy@RestoreLastskip
10424 }
10425 \def\@urltype{url}
10426 \def\Hy@undefinedname{UNDEFINED}
10427 \def\hyper@linkstart#1#2{%
10428 \Hy@VerboseLinkStart{#1}{#2}%
10429 \Hy@pstringdef\Hy@pstringURI{#2}%
10430 \expandafter\Hy@colorlink\csname @#1color\endcsname
10431 \@ifundefined{@#1bordercolor}{%
10432 \let\CurrentBorderColor\relax
10433 }{%
10434 \edef\CurrentBorderColor{%

```

```

10435 \csname @#1bordercolor\endcsname
10436 }%
10437 }%
10438 \def\Hy@tempa{#1}%
10439 \ifx\Hy@tempa\urltype
10440 \special{!%
10441   aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10442   \ifHy@href@ismap
10443     /IsMap true%
10444   \fi
10445   \Hy@href@nextactionraw
10446   >,%
10447   a=<%
10448   \ifHy@pdfa /F 4\fi
10449   \Hy@setpdfborder
10450   \ifx\CurrentBorderColor\relax
10451     \else
10452     /C [\CurrentBorderColor]%
10453   \fi
10454   >%
10455 }%
10456 \else
10457 \protected@edef\Hy@testname{#2}%
10458 \ifx\Hy@testname@empty
10459 \Hy@Warning{%
10460   Empty destination name,\MessageBreak
10461   using '\Hy@undefinedname'%
10462 }%
10463 \let\Hy@testname\Hy@undefinedname
10464 \fi
10465 \special{!%
10466   aref \expandafter\HyperDestNameFilter
10467   \expandafter{\Hy@testname};%
10468   a=<%
10469   \ifHy@pdfa /F 4\fi
10470   \Hy@setpdfborder
10471   \ifx\CurrentBorderColor\relax
10472     \else
10473     /C [\CurrentBorderColor]%
10474   \fi
10475   >%
10476 }%
10477 \fi
10478 }
10479 \def\hyper@linkend{%
10480 \special{!endaref}%
10481 \Hy@endcolorlink
10482 }
10483 \def\hyper@linkfile#1#2#3{%
10484 \leavevmode
10485 \def\Hy@pstringF{#2}%
10486 \Hy@CleanupFile\Hy@pstringF
10487 \special{!%
10488   aref <%

```

```

10489 \ifnum\Hy@VTeXversion>753 \ifHy@pdfnewwindow n\fi
10490 f=\Hy@pstringF>#3;%
10491 a=<%
10492 \ifHy@pdfa /F 4\fi
10493 \Hy@setpdfborder
10494 \ifx\@filebordercolor\relax
10495 \else
10496 /C [\@filebordercolor]%
10497 \fi
10498 >%
10499 }%
10500 \Hy@colorlink\@filecolor
10501 #1\Hy@xspace@end
10502 \Hy@endcolorlink
10503 \special{!endaref}%
10504 }
10505 \def\hyper@linkurl#1#2{%
10506 \begingroup
10507 \Hy@pstringdef\Hy@pstringURI{#2}%
10508 \hyper@chars
10509 \leavevmode
10510 \special{!%
10511 aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10512 \ifHy@href@ismap
10513 /IsMap true%
10514 \fi
10515 \Hy@href@nextactionraw
10516 >;%
10517 a=<%
10518 \ifHy@pdfa /F 4\fi
10519 \Hy@setpdfborder
10520 \ifx\@urlbordercolor\relax
10521 \else
10522 /C [\@urlbordercolor]%
10523 \fi
10524 >%
10525 }%
10526 \Hy@colorlink\@urlcolor
10527 #1\Hy@xspace@end
10528 \Hy@endcolorlink
10529 \special{!endaref}%
10530 \endgroup
10531 }
10532 \def\hyper@link#1#2#3{%
10533 \Hy@VerboseLinkStart{#1}{#2}%
10534 \@ifundefined{@#1bordercolor}{%
10535 \let\CurrentBorderColor\relax
10536 }{%
10537 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
10538 }%
10539 \leavevmode
10540 \protected@edef\Hy@testname{#2}%
10541 \ifx\Hy@testname\@empty
10542 \Hy@Warning{%

```



```

10543     Empty destination name, \MessageBreak
10544     using ` \Hy@undefinedname'%
10545 }%
10546 \let \Hy@testname \Hy@undefinedname
10547 \fi
10548 \special{!%
10549   aref \expandafter \HyperDestNameFilter
10550     \expandafter { \Hy@testname };%
10551   a=<%
10552     \ifHy@pdfa /F 4 \fi
10553     \Hy@setpdfborder
10554     \ifx \CurrentBorderColor \relax
10555     \else
10556     /C [ \CurrentBorderColor ]%
10557     \fi
10558   >%
10559 }%
10560 \expandafter
10561 \Hy@colorlink \csname @#1color \endcsname
10562   #3 \Hy@xspace@end
10563 \Hy@endcolorlink
10564 \special{!endaref}%
10565 }
10566 \def \hyper@image#1#2{%
10567 \hyper@linkurl{#2}{#1}%
10568 }
10569 \def \@hyper@launch run:#1\#2#3{%
10570 \Hy@pstringdef \Hy@pstringF{#1}%
10571 \Hy@pstringdef \Hy@pstringP{#3}%
10572 \leavevmode
10573 \special{!aref %
10574   <u=%
10575     /Type/Action%
10576     /S/Launch%
10577     /F(\Hy@pstringF)%
10578     \Hy@SetNewWindow
10579     \ifx\#3\%
10580     \else
10581     /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>%
10582     \fi
10583     \Hy@href@nextactionraw
10584   >:%
10585   a=<%
10586     \ifHy@pdfa /F 4 \fi
10587     \Hy@setpdfborder
10588     \ifx \@runbordercolor \relax
10589     \else
10590     /C[ \@runbordercolor ]%
10591     \fi
10592   >%
10593 }%
10594 \Hy@colorlink \@runcolor
10595   #2 \Hy@xspace@end
10596 \Hy@endcolorlink

```

```

10597 \special{!endaref}%
10598 }
10599 \def\Acrobatmenu#1#2{%
10600 \EdefEscapeName\Hy@temp@menu{#1}%
10601 \Hy@Acrobatmenu{#1}{#2}{%
10602 \special{!%
10603   aref <u=/S /Named /N /\Hy@temp@menu>;%
10604   a=<%
10605     \ifHy@pdfa /F 4\fi
10606     \Hy@setpdfborder
10607     \ifx\@menubordercolor\relax
10608     \else
10609     /C[\@menubordercolor]%
10610     \fi
10611   >%
10612 }%
10613 \Hy@colorlink\@menucolor
10614 #2\Hy@xspace@end
10615 \Hy@endcolorlink
10616 \special{!endaref}%
10617 }%
10618 }

```

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*.

```

10619 \ifnum\Hy@VTeXversion<702 %
10620 \else
10621 \def\hyper@pagetransition{%
10622 \ifx\@pdfpagetransition\relax
10623 \else
10624 \ifx\@pdfpagetransition\@empty

```

Standard incantation.

1. Does an old entry have to be deleted? 2. If 1=yes, how to delete?

```

10625 \else
10626 \hvtex@parse@trans\@pdfpagetransition
10627 \fi
10628 \fi
10629 }%

```

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:

```

10630 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
10631 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
10632 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
10633 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
10634 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
10635 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
10636 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%

```

Optional parameters:

```

10637 \def\hvtex@par@dimension{/Dm}%
10638 \def\hvtex@par@direction{/Di}%
10639 \def\hvtex@par@duration{/D}%
10640 \def\hvtex@par@motion{/M}%

```

Tokenizer:

```

10641 \def\hvtex@gettoken{%
10642   \expandafter\hvtex@gettoken@\hvtex@buffer\@nil
10643 }%

```

Notice that tokens in the input buffer must be space delimited.

```

10644 \def\hvtex@gettoken@#1 #2\@nil{%
10645   \edef\hvtex@token{#1}%
10646   \edef\hvtex@buffer{#2}%
10647 }%
10648 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

10649 \let\hvtex@trans@code\@empty
10650 \let\hvtex@param@dimension\@empty
10651 \let\hvtex@param@direction\@empty
10652 \let\hvtex@param@duration\@empty
10653 \let\hvtex@param@motion\@empty
10654 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

10655 \hvtex@gettoken
10656 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

10657   \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

10658   \else
10659     \hvtex@gettoken
10660   \fi
10661 \fi
10662 \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```

10663 \hvtex@trans@params
10664 }%

```

Reentrant macro to parse optional parameters.

```

10665 \def\hvtex@trans@params{%
10666   \ifx\hvtex@buffer\@empty
10667   \else
10668     \hvtex@gettoken
10669     \let\hvtex@trans@par\hvtex@token
10670     \ifx\hvtex@buffer\@empty
10671     \else
10672       \hvtex@gettoken
10673       \ifx\hvtex@trans@par\hvtex@par@duration
/D is the effect duration in seconds. VTEX special takes it in milliseconds.
10674         \let\hvtex@param@duration\hvtex@token
10675         \else \ifx\hvtex@trans@par\hvtex@par@motion
/M can be either /I or /O
10676           \expandafter\edef\expandafter\hvtex@param@motion
10677           \expandafter{\expandafter\@gobble\hvtex@token}%
10678           \else \ifx\hvtex@trans@par\hvtex@par@dimension
/Dm can be either /H or /V
10679             \expandafter\edef\expandafter\hvtex@param@dimension
10680             \expandafter{\expandafter\@gobble\hvtex@token}%
10681             \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).

```

10682       \let\hvtex@param@direction\hvtex@token
10683       \fi\fi\fi\fi
10684       \fi
10685       \fi
10686       \ifx\hvtex@buffer\@empty
10687       \let\next\hvtex@produce@trans
10688       \else
10689       \let\next\hvtex@trans@params
10690       \fi
10691       \next
10692   }%

```

Merge <transition\_effect> and issue the special when possible. Too lazy to validate optional parameters.

```

10693 \def\hvtex@produce@trans{%
10694   \let\vtex@trans@special\@empty
10695   \if S\hvtex@trans@code
10696     \edef\vtex@trans@special{\hvtex@trans@code
10697       \hvtex@param@dimension\hvtex@param@motion}%
10698   \else\if B\hvtex@trans@code
10699     \edef\vtex@trans@special{%
10700       \hvtex@trans@code\hvtex@param@dimension
10701     }%
10702   \else\if X\hvtex@trans@code
10703     \edef\vtex@trans@special{%
10704       \hvtex@trans@code\hvtex@param@motion
10705     }%
10706   \else\if W\hvtex@trans@code
10707     \edef\vtex@trans@special{%

```

```

10708     \hvtex@trans@code\hvtex@param@direction
10709     }%
10710 \else\if D\hvtex@trans@code
10711     \let\vtex@trans@special\hvtex@trans@code
10712 \else\if R\hvtex@trans@code
10713     \let\vtex@trans@special\hvtex@trans@code
10714 \else\if G\hvtex@trans@code
10715     \edef\vtex@trans@special{%
10716     \hvtex@trans@code\hvtex@param@direction
10717     }%
10718     \fi\fi\fi\fi\fi\fi
10719     \ifx\vtex@trans@special\@empty
10720     \else
10721     \ifx\hvtex@param@duration\@empty
10722     \else
10723     \setlength{\dimen@}{\hvtex@param@duration\p@}%

```

I'm not guilty of possible overflow.

```

10724     \multiply\dimen@\@m
10725     \edef\vtex@trans@special{%
10726     \vtex@trans@special,\strip@pt\dimen@
10727     }%
10728     \fi

```

And all the mess is just for this.

```

10729     \special{!trans \vtex@trans@special}%
10730     \fi
10731     }%
10732 \def\hyper@pageduration{%
10733 \ifx\@pdfpageduration\relax
10734 \else
10735 \ifx\@pdfpageduration\@empty
10736 \special{!duration-}%
10737 \else
10738 \special{!duration \@pdfpageduration}%
10739 \fi
10740 \fi
10741 }%
10742 \g@addto@macro\Hy@EveryPageBoxHook{%
10743 \hyper@pagetransition
10744 \hyper@pageduration
10745 }%
10746 \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

```

10747 \ifx\@pdfproducer\relax
10748 \def\@pdfproducer{VTeX}%
10749 \ifnum\Hy@VTeXversion>\z@
10750 \count@\VTeXversion
10751 \divide\count@ 100 %
10752 \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
10753 \multiply\count@ -100 %
10754 \advance\count@\VTeXversion
10755 \edef\@pdfproducer{%
10756 \@pdfproducer
10757 .\ifnum\count@<10 0\fi\the\count@
10758 \ifx\VTeXOS\@undefined\else
10759 \ifnum\VTeXOS>0 %
10760 \ifnum\VTeXOS<6 %
10761 \space(%
10762 \ifcase\VTeXOS
10763 \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
10764 \fi
10765 )%
10766 \fi
10767 \fi
10768 \fi
10769 ,\space
10770 \ifnum\OpMode=\@ne PDF\else PS\fi
10771 \space backend%
10772 \ifx\gexmode\@undefined\else
10773 \ifnum\gexmode>\z@\space with GeX\fi
10774 \fi
10775 }%
10776 \fi
10777 \fi

```

Current `!pdfinfo` key syntax:

| Key      | Field                            | Type   |
|----------|----------------------------------|--------|
| <b>a</b> | <b>A</b> uthor                   | String |
| <b>b</b> | <b>C</b> rop <b>B</b> ox         | String |
| <b>c</b> | <b>C</b> reator                  | String |
| <b>k</b> | <b>K</b> eywords                 | String |
| <b>l</b> | <b>P</b> age <b>L</b> ayout      | PS     |
| <b>p</b> | <b>P</b> age <b>M</b> ode        | PS     |
| <b>r</b> | <b>P</b> roducer                 | String |
| <b>s</b> | <b>S</b> ubject                  | String |
| <b>t</b> | <b>T</b> itle                    | String |
| <b>u</b> | <b>U</b> RI                      | PS     |
| <b>v</b> | <b>V</b> iew <b>P</b> references | PS     |

Note: PS objects that are dicts are in <<.>> (yuck; no choice).

```

10778 \def\PDF@SetupDoc{%
10779 \ifx\@pdfpagescrop\@empty
10780 \else
10781 \special{!pdfinfo b=<\@pdfpagescrop>}%
10782 \fi
10783 \ifx\@pdfstartpage\@empty
10784 \else

```

```

10785 \ifx\@pdfstartview\@empty
10786 \else
10787 \special{!onopen Page\@pdfstartpage}%
10788 \fi
10789 \fi
10790 \special{!pdfinfo p=</\@pdfpagemode>}%
10791 \ifx\@baseurl\@empty
10792 \else
10793 \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
10794 \fi
10795 \special{!pdfinfo v=<<<%
10796 \ifHy@pdftoolbar\else /HideToolbar true\fi
10797 \ifHy@pdfmenubar\else /HideMenubar true\fi
10798 \ifHy@pdfwindowui\else /HideWindowUI true\fi
10799 \ifHy@pdfwindow /FitWindow true\fi
10800 \ifHy@pdfcenterwindow /CenterWindow true\fi
10801 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10802 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10803 \Hy@UseNameKey{Direction}\@pdfdirection
10804 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10805 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10806 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10807 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10808 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10809 \Hy@UseNameKey{Duplex}\@pdfduplex
10810 \ifx\@pdfpicktraybypdfsize\@empty
10811 \else
10812 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10813 \fi
10814 \ifx\@pdfprintpagerange\@empty
10815 \else
10816 /PrintPageRange[\@pdfprintpagerange]%
10817 \fi
10818 \ifx\@pdfnumcopies\@empty
10819 \else
10820 /NumCopies \@pdfnumcopies
10821 \fi
10822 >>>}%
10823 \ifx\@pdfpagelayout\@empty
10824 \else
10825 \special{!pdfinfo l=</\@pdfpagelayout\space>}%
10826 \fi
10827 }%
10828 \HyInfo@AddonUnsupportedtrue
10829 \define@key{Hyp}{pdfcreationdate}{%
10830 \Hy@Warning{%
10831 VTeX does not support pdfcreationdate.\MessageBreak
10832 Therefore its setting is ignored%
10833 }%
10834 }
10835 \define@key{Hyp}{pdfmoddate}{%
10836 \Hy@Warning{%
10837 VTeX does not support pdfmoddate.\MessageBreak
10838 Therefore its setting is ignored%

```

```

10839 }%
10840 }
10841 \def\PDF@FinishDoc{%
10842   \Hy@UseMaketitleInfos
10843   \HyInfo@TrappedUnsupported
10844   \special{!pdfinfo a=<\@pdfauthor>}%
10845   \special{!pdfinfo t=<\@pdftitle>}%
10846   \special{!pdfinfo s=<\@pdfsubject>}%
10847   \special{!pdfinfo c=<\@pdfcreator>}%
10848   \ifx\@pdfproducer\relax
10849   \else
10850     \special{!pdfinfo r=<\@pdfproducer>}%
10851   \fi
10852   \special{!pdfinfo k=<\@pdfkeywords>}%
10853   \Hy@DisableOption{pdfauthor}%
10854   \Hy@DisableOption{pdftitle}%
10855   \Hy@DisableOption{pdfsubject}%
10856   \Hy@DisableOption{pdfcreator}%
10857   \Hy@DisableOption{addtopdfcreator}%
10858   \Hy@DisableOption{pdfcreationdate}%
10859   \Hy@DisableOption{pdfcreationdate}%
10860   \Hy@DisableOption{pdfmoddate}%
10861   \Hy@DisableOption{pdfproducer}%
10862   \Hy@DisableOption{pdfkeywords}%
10863   \Hy@DisableOption{pdftrapped}%
10864   \Hy@DisableOption{pdfinfo}%
10865 }
10866 </vtex>

```

## 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.

```

10867 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
10868 <packageEnd>\providecommand*\Hy@DistillerDestFix{}
10869 <*pdfmark | dviwindo>
10870 \def\Hy@DistillerDestFix{%
10871   \begingroup
10872   \let\x\literalps@out

```

The fix has to be passed unchanged through GeX, if VTeX in PostScript mode with GeX is used.

```

10873   \ifnum \@ifundefined{OpMode}{0}{%
10874     \@ifundefined{gexmode}{0}{%
10875       \ifnum\gexmode>0 \OpMode\else 0\fi
10876     }>1 %

```



```

10877 \def\x##1{%
10878 \immediate\special{!##1}%
10879 }%
10880 \fi
10881 \x{%
10882 /product where{%
10883 pop %
10884 product(Distiller)search{%
10885 pop pop pop %
10886 version(.)search{%
10887 exch pop exch pop%
10888 (3011)eq{%
10889 gsave %
10890 newpath 0 0 moveto closepath clip%
10891 /Courier findfont 10 scalefont setfont %
10892 72 72 moveto(.)show %
10893 grestore%
10894 }if%
10895 }{pop}ifelse%
10896 }{pop}ifelse%
10897 }if%
10898 }%
10899 \endgroup
10900 }
10901 </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

```

```

10902 (*pdfmark)
10903 \Hy@breaklinks@unsupported
10904 \def\HyPat@ObjRef{%
10905 \{[~{}]+\}%
10906 }
10907 \Hy@WrapperDef\hyper@anchor#1{%
10908 \Hy@SaveLastskip
10909 \Hy@VerboseAnchor{#1}%
10910 \begingroup
10911 \pdfmark[\anchor@spot]{%
10912 pdfmark=/DEST,%
10913 linktype=anchor,%
10914 View=/\@pdfview \@pdfviewparams,%

```

```

10915     DestAnchor={#1}%
10916   }%
10917 \endgroup
10918 \Hy@RestoreLastskip
10919 }
10920 \@ifundefined{hyper@anchorstart}{\endinput}
10921 \Hy@WrapperDef\hyper@anchorstart#1{%
10922   \Hy@SaveLastskip
10923   \Hy@VerboseAnchor{#1}%
10924   \literalps@out{H.S}%
10925   \Hy@AllowHyphens
10926   \xdef\hyper@currentanchor{#1}%
10927   \Hy@activeanchortrue
10928 }
10929 \def\hyper@anchorend{%
10930   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
10931   \pdfmark{%
10932     pdfmark=/DEST,%
10933     linktype=anchor,%
10934     View=/\@pdfview \@pdfviewparams,%
10935     DestAnchor=\hyper@currentanchor,%
10936   }%
10937   \Hy@activeanchorfalse
10938   \Hy@RestoreLastskip
10939 }
10940 \def\hyper@linkstart#1#2{%
10941   \Hy@VerboseLinkStart{#1}{#2}%
10942   \ifHy@breaklinks
10943   \else
10944     \leavevmode
10945     \ifmmode
10946       \def\Hy@LinkMath{$}%
10947     \else
10948       \let\Hy@LinkMath\@empty
10949     \fi
10950     \Hy@SaveSpaceFactor
10951     \hbox\bgroup
10952     \Hy@RestoreSpaceFactor
10953     \Hy@LinkMath
10954   \fi
10955   \expandafter\Hy@colorlink\csname @#1color\endcsname
10956   \literalps@out{H.S}%
10957   \Hy@AllowHyphens
10958   \xdef\hyper@currentanchor{#2}%
10959   \gdef\hyper@currentlinktype{#1}%
10960 }
10961 \def\hyper@linkend{%
10962   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
10963   \@ifundefined{@\hyper@currentlinktype bordercolor}{%
10964     \let\Hy@tempcolor\relax
10965   }{%
10966     \edef\Hy@tempcolor{%
10967       \csname @\hyper@currentlinktype bordercolor\endcsname
10968     }%

```

```

10969 }%
10970 \pdfmark{%
10971   pdfmark=/ANN,%
10972   linktype=link,%
10973   Subtype=/Link,%
10974   PDFAFlags=4,%
10975   Dest=\hyper@currentanchor,%
10976   AcroHighlight=\@pdfhighlight,%
10977   Border=\@pdfborder,%
10978   BorderStyle=\@pdfborderstyle,%
10979   Color=\Hy@tempcolor,%
10980   Raw=H.B%
10981 }%
10982 \Hy@endcolorlink
10983 \ifHy@breaklinks
10984 \else
10985   \Hy@LinkMath
10986   \Hy@SaveSpaceFactor
10987 \egroup
10988 \Hy@RestoreSpaceFactor
10989 \fi
10990 }

```

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.

```

10991 \begingroup
10992 \catcode`P=12 %
10993 \catcode`T=12 %
10994 \lowercase{\endgroup
10995 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
10996 }
10997 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

`\hyper@pagetransition`

```

10998 \def\hyper@pagetransition{%
10999 \ifx\@pdfpagetransition\relax
11000 \else
11001 \ifx\@pdfpagetransition\@empty
11002 % 1. Does an old entry have to be deleted?
11003 % 2. If 1=yes, how to delete?
11004 \else
11005 \pdfmark{%
11006   pdfmark=/PUT,%
11007   Raw={%
11008     \string{ThisPage\string}%
11009     <</Trans << /S /\@pdfpagetransition\space >> >>%
11010   }%
11011 }%
11012 \fi
11013 \fi
11014 }

```

`\hyper@pageduration`

```

11015 \def\hyper@pageduration{%
11016 \ifx\@pdfpageduration\relax
11017 \else
11018 \ifx\@pdfpageduration\@empty
11019 % 1. Does an old entry have to be deleted?
11020 % 2. If 1=yes, how to delete?
11021 \else
11022 \pdfmark{%
11023 pdfmark=/PUT,%
11024 Raw={%
11025 \string{ThisPage\string}%
11026 <</Dur \@pdfpageduration>>%
11027 }%
11028 }%
11029 \fi
11030 \fi
11031 }

11032 \g@addto@macro\Hy@EveryPageBoxHook{%
11033 \hyper@pagetransition
11034 \hyper@pageduration
11035 }

11036 \def\hyper@image#1#2{%
11037 \hyper@linkurl{#2}{#1}%
11038 }

11039 \def\Hy@undefinedname{UNDEFINED}
11040 \def\hyper@link#1#2#3{%
11041 \Hy@VerboseLinkStart{#1}{#2}%
11042 \@ifundefined{@#1bordercolor}{%
11043 \let\Hy@tempcolor\relax
11044 }{%
11045 \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
11046 }%
11047 \begingroup
11048 \protected@edef\Hy@testname{#2}%
11049 \ifx\Hy@testname\@empty
11050 \Hy@Warning{%
11051 Empty destination name,\MessageBreak
11052 using '\Hy@undefinedname'%
11053 }%
11054 \let\Hy@testname\Hy@undefinedname
11055 \fi
11056 \pdfmark[#{#3}]{%
11057 Color=\Hy@tempcolor,%
11058 linktype={#1},%
11059 AcroHighlight=\@pdfhighlight,%
11060 Border=\@pdfborder,%
11061 BorderStyle=\@pdfborderstyle,%
11062 pdfmark=/ANN,%
11063 Subtype=/Link,%
11064 PDFAFlags=4,%
11065 Dest=\Hy@testname
11066 }%
11067 \endgroup

```

```

11068 }
11069 \newtoks\pdf@docset
11070 \def\PDF@FinishDoc{%
11071   \Hy@UseMaketitleInfos
11072   \HyInfo@GenerateAddons
11073   \let\Hy@temp\@empty
11074   \ifx\@pdfcreationdate\@empty
11075   \else
11076     \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
11077   \fi
11078   \ifx\@pdfmoddate\@empty
11079   \else
11080     \expandafter\def\expandafter\Hy@temp\expandafter{%
11081       \Hy@temp
11082       ModDate=\@pdfmoddate,%
11083     }%
11084   \fi
11085   \ifx\@pdfproducer\relax
11086   \else
11087     \expandafter\def\expandafter\Hy@temp\expandafter{%
11088       \Hy@temp
11089       Producer=\@pdfproducer,%
11090     }%
11091   \fi
11092   \expandafter
11093   \pdfmark\expandafter{%
11094     \Hy@temp
11095     pdfmark=/DOCINFO,%
11096     Title=\@pdftitle,%
11097     Subject=\@pdfsubject,%
11098     Creator=\@pdfcreator,%
11099     Author=\@pdfauthor,%
11100     Keywords=\@pdfkeywords,%
11101     Trapped=\@pdftrapped
11102   }%
11103   \ifx\HyInfo@Addons\@empty
11104   \else
11105     \pdfmark{%
11106       pdfmark=/DOCINFO,%
11107       Raw={\HyInfo@Addons}%
11108     }%
11109   \fi
11110   \Hy@DisableOption{pdfauthor}%
11111   \Hy@DisableOption{pdftitle}%
11112   \Hy@DisableOption{pdfsubject}%
11113   \Hy@DisableOption{pdfcreator}%
11114   \Hy@DisableOption{addtopdfcreator}%
11115   \Hy@DisableOption{pdfcreationdate}%
11116   \Hy@DisableOption{pdfcreationdate}%
11117   \Hy@DisableOption{pdfmoddate}%
11118   \Hy@DisableOption{pdfproducer}%
11119   \Hy@DisableOption{pdfkeywords}%
11120   \Hy@DisableOption{pdftrapped}%
11121   \Hy@DisableOption{pdfinfo}%

```

```

11122 }
11123 \def\PDF@SetupDoc{%
11124   \def\Hy@temp{}%
11125   \ifx\@pdfstartpage\@empty
11126   \else
11127     \ifx\@pdfstartview\@empty
11128     \else
11129       \edef\Hy@temp{%
11130         ,Page=\@pdfstartpage
11131         ,View=\@pdfstartview
11132       }%
11133     \fi
11134   \fi
11135   \edef\Hy@temp{%
11136     \noexpand\pdfmark{%
11137       pdfmark=/DOCVIEW,%
11138       PageMode=/\@pdfpagemode
11139     }\Hy@temp
11140   }%
11141 }%
11142 \Hy@temp
11143 \ifx\@pdfpagescrop\@empty
11144 \else
11145   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
11146 \fi
11147 \edef\Hy@temp{%
11148   \ifHy@pdftoolbar\else /HideToolbar true\fi
11149   \ifHy@pdfmenubar\else /HideMenubar true\fi
11150   \ifHy@pdfwindowui\else /HideWindowUI true\fi
11151   \ifHy@pdffitwindow /FitWindow true\fi
11152   \ifHy@pdfcenterwindow /CenterWindow true\fi
11153   \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
11154   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
11155   \Hy@UseNameKey{Direction}\@pdfdirection
11156   \Hy@UseNameKey{ViewArea}\@pdfviewarea
11157   \Hy@UseNameKey{ViewClip}\@pdfviewclip
11158   \Hy@UseNameKey{PrintArea}\@pdfprintarea
11159   \Hy@UseNameKey{PrintClip}\@pdfprintclip
11160   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
11161   \Hy@UseNameKey{Duplex}\@pdfduplex
11162   \ifx\@pdfpicktraybypdfsize\@empty
11163   \else
11164     /PickTrayByPDFSize \@pdfpicktraybypdfsize
11165   \fi
11166   \ifx\@pdfprintpagerange\@empty
11167   \else
11168     /PrintPageRange[\@pdfprintpagerange]%
11169   \fi
11170   \ifx\@pdfnumcopies\@empty
11171   \else
11172     /NumCopies \@pdfnumcopies
11173   \fi
11174 }%
11175 \Hy@pstringdef\Hy@pstringB{\@baseurl}%

```

```

11176 \pdfmark{%
11177   pdfmark=/PUT,%
11178   Raw={%
11179     \string{Catalog\string}<<%
11180     \ifx\Hy@temp\@empty
11181     \else
11182       /ViewerPreferences<<\Hy@temp>>%
11183     \fi
11184     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
11185     \ifx\@pdflang\relax
11186     \else
11187       /Lang(\@pdflang)%
11188     \fi
11189     \ifx\@baseurl\@empty
11190     \else
11191       /URI<</Base(\Hy@pstringB)>>%
11192     \fi
11193   >>%
11194 }%
11195 }%
11196 }
11197 \pdfmark}
11198 (*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.

```

11199 \newif\ifHy@pdfmarkerror
11200 \def\pdfmark{\@ifnextchar{\pdfmark@}{\pdfmark@[]}}
11201 \def\pdfmark@[#1]#2{%
11202   \Hy@pdfmarkerrorfalse
11203   \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
11204   \@processme
11205   \let\pdf@type\relax
11206   \let\pdf@objdef\@empty
11207   \kvsetkeys{PDF}{#2}%
11208   \ifHy@pdfmarkerror
11209   \else
11210     \ifx\pdf@type\relax
11211       \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
11212       \ifx\#1\%
11213       \else
11214         \pdf@rect{#1}%
11215       \fi
11216     \else
11217       \ifx\#1\%
11218         \literalps@out{%
11219           [%
11220           \ifx\pdf@objdef\@empty
11221           \else
11222             /_objdef\string{\pdf@objdef\string}%

```

```

11223     \fi
11224     \the\pdf@toks\space\pdf@type\space pdfmark%
11225   }%
11226 \else
11227 \@ifundefined{@\pdf@linktype color}{%
11228   \Hy@colorlink\@linkcolor
11229 }{%
11230   \expandafter\Hy@colorlink
11231     \csname @\pdf@linktype color\endcsname
11232 }%
11233 \pdf@rect{#1}%
11234 \literalps@out{%
11235   [%
11236   \ifx\pdf@objdef\@empty
11237   \else
11238     /_objdef\string{\pdf@objdef\string}%
11239   \fi
11240   \the\pdf@toks\space\pdf@type\space pdfmark%
11241   }%
11242   \Hy@endcolorlink
11243 \fi
11244 \fi
11245 \fi
11246 }

```

The complicated bit is working out the right enclosing rectangle of some piece of T<sub>E</sub>X text, needed by the /Rect key. This solution originates with Toby Thain ([toby@netspace.net.au](mailto:toby@netspace.net.au)).

For the case breaklinks is enabled, I have added two hooks, the first one for package setouterhbox, it provides a hopefully better method without setting the text twice.

```
\usepackage[hyperref]{setouterhbox}
```

With the second hook, also you can set the text twice, e.g.:

```

\long\def\Hy@setouterhbox#1#2{\long\def\my@temp{#2}}
\def\Hy@breaklinksunhbox#1{\my@temp}

```

```

11247 \newsavebox{\pdf@box}
11248 \providecommand*\Hy@setouterhbox{\sbox}
11249 \providecommand*\Hy@breaklinksunhbox{\unhbox}
11250 \def\Hy@DEST{/DEST}
11251 \def\pdf@rect#1{%
11252   \begingroup
11253   \chardef\x=1 %
11254   \def\Hy@temp{#1}%
11255   \ifx\Hy@temp\@empty
11256     \chardef\x=0 %
11257   \else
11258     \def\y{\anchor@spot}%
11259     \ifx\Hy@temp\y
11260       \def\y{\relax}%
11261     \ifx\anchor@spot\y
11262       \chardef\x=0 %

```



```

11263     \fi
11264     \fi
11265     \fi
11266 \expandafter\endgroup
11267 \ifcase\x
11268   \literalps@out{H.S}%
11269   \literalps@out{H.R}%
11270 \else
11271   \leavevmode
11272   \Hy@SaveSpaceFactor
11273   \ifmmode
11274     \def\Hy@LinkMath{${}}%
11275   \else
11276     \let\Hy@LinkMath\@empty
11277   \fi
11278 \ifHy@breaklinks
11279   \Hy@setouterhbox\pdf@box{%
11280     \Hy@RestoreSpaceFactor
11281     \Hy@LinkMath
11282     \Hy@AllowHyphens#1\Hy@xspace@end
11283     \Hy@LinkMath
11284     \Hy@SaveSpaceFactor
11285   }%
11286 \else
11287   \sbox\pdf@box{%
11288     \Hy@RestoreSpaceFactor
11289     \Hy@LinkMath
11290     #1\Hy@xspace@end
11291     \Hy@LinkMath
11292     \Hy@SaveSpaceFactor
11293   }%
11294 \fi
11295 \dimen@ht\pdf@box
11296 \ifdim\dp\pdf@box=\z@
11297   \literalps@out{H.S}%
11298 \else
11299   \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
11300 \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...).

```

11301 \ifHy@breaklinks
11302   \ifhmode
11303     \Hy@breaklinksunhbox\pdf@box
11304   \else
11305     \box\pdf@box
11306   \fi
11307 \else
11308   \expandafter\box\pdf@box
11309 \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

11310 \ifdim\dimen@=\z@
11311 \literalps@out{H.R.}%
11312 \else
11313 \raise\dimen@\hbox{\literalps@out{H.R.}}%
11314 \fi
11315 \Hy@RestoreSpaceFactor
11316 \fi
11317 \ifx\pdf@type\Hy@DEST
11318 \else
11319 \pdf@addtoksx{H.B.}%
11320 \fi
11321 }

```

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.

```

11322 \newtoks\pdf@toks
11323 \newtoks\pdf@defaulttoks
11324 \pdf@defaulttoks={}%
11325 \def\pdf@addtoks#1#2{%
11326 \edef\@processme{\pdf@toks{\the\pdf@toks/#2 #1}}%
11327 \@processme
11328 }
11329 \def\pdf@addtoksx#1{%
11330 \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
11331 \@processme
11332 }
11333 \def\PDFdefaults#1{%
11334 \pdf@defaulttoks={#1}%
11335 }

```

This is the list of allowed keys. See the Acrobat manual for an explanation.

```

11336 % what is the type of pdfmark?
11337 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
11338 % what is the link type?
11339 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
11340 \def\pdf@linktype{link}
11341 % named object?
11342 \define@key{PDF}{objdef}{\edef\pdf@objdef{#1}}
11343 \let\pdf@objdef\@empty
11344 % parameter is a stream of PDF
11345 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
11346 % parameter is a name
11347 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
11348 % parameter is a array
11349 \define@key{PDF}{Border}{%
11350 \edef\Hy@temp{#1}%
11351 \ifx\Hy@temp\@empty
11352 \else
11353 \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
11354 \fi
11355 }
11356 \let\Hy@BorderArrayPatch\@empty

```

```

11357 % parameter is a dictionary
11358 \define@key{PDF}{BorderStyle}{%
11359   \edef\Hy@temp{#1}%
11360   \ifx\Hy@temp\@empty
11361     \else
11362     \pdf@addtoks{<<#1>>}{BS}%
11363   \fi
11364 }
11365 % parameter is a array
11366 \define@key{PDF}{Color}{%
11367   \ifx\relax#1\relax
11368   \else
11369   \pdf@addtoks{[#1]}{Color}% hash-ok
11370   \fi
11371 }
11372 % parameter is a string
11373 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
11374 % parameter is a integer
11375 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
11376 % parameter is a array
11377 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
11378 % parameter is a string
11379 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
11380 % parameter is a string or file
11381 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
11382 % parameter is a destination
11383 \define@key{PDF}{Dest}{%
11384   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11385   \ifx\Hy@pstringDest\@empty
11386     \Hy@pdfmarkerrortrue
11387     \Hy@Warning{Destination with empty name ignored}%
11388   \else
11389     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11390   \fi
11391 }
11392 \define@key{PDF}{DestAnchor}{%
11393   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11394   \ifx\Hy@pstringDest\@empty
11395     \Hy@pdfmarkerrortrue
11396     \Hy@Warning{Destination with empty name ignored}%
11397   \else
11398     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11399   \fi
11400 }
11401 % parameter is a string
11402 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
11403 % parameter is a string
11404 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
11405 % parameter is a int
11406 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
11407 \define@key{PDF}{PDFAFlags}{%
11408   \ifHy@pdfa
11409   \pdf@addtoks{#1}{F}%
11410   \fi

```

```

11411 }
11412 % parameter is a name
11413 \define@key{PDF}{AcroHighlight}{%
11414   \begingroup
11415   \edef\x{#1}%
11416   \expandafter\endgroup\ifx\x\@empty
11417   \else
11418     \pdf@addtoks{#1}{H}%
11419   \fi
11420 }
11421 % parameter is a string
11422 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
11423 % parameter is a string
11424 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
11425 % parameter is a string
11426 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11427 % parameter is a string
11428 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
11429 % parameter is a Boolean
11430 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
11431 % parameter is a integer or name
11432 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
11433 % parameter is a name
11434 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
11435 % parameter is a string
11436 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
11437 % parameter is a array
11438 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
11439 % parameter is a integer
11440 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
11441 % parameter is a name
11442 \define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
11443 % parameter is a string
11444 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
11445 % parameter is a string
11446 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
11447 % parameter is a string
11448 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
11449 % parameter is an array
11450 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
11451 % parameter is a string
11452 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

11453 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
11454 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
11455 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
11456 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11457 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
11458 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
11459 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
11460 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11461 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
11462 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}
11463 \define@key{PDF}{Trapped}{%

```

```

11464 \edef\Hy@temp{#1}%
11465 \ifx\Hy@temp\@empty
11466 \else
11467 \pdf@addtoks{/#1}{Trapped}%
11468 \fi
11469 }
11470
11471 </pdfmarkbase>
11472 <*pdfmark>
11473 \def\Acrobatmenu#1#2{%
11474 \EdefEscapeName\Hy@temp@menu{#1}%
11475 \Hy@Acrobatmenu{#1}{#2}{%
11476 \pdfmark[#{#2}]{%
11477 linktype=menu,%
11478 pdfmark=/ANN,%
11479 AcroHighlight=\@pdfhighlight,%
11480 Border=\@pdfborder,%
11481 BorderStyle=\@pdfborderstyle,%
11482 Color=\@menubordercolor,%
11483 Action={<</Subtype/Named/N/\Hy@temp@menu>>},%
11484 Subtype=/Link,%
11485 PDFAFlags=4%
11486 }%
11487 }%
11488 }

```

And now for some useful examples:

```

11489 \def\PDFNextPage{\@ifnextchar[{\PDFNextPage@}{\PDFNextPage@[]}}
11490 \def\PDFNextPage@[#1]#2{%
11491 \pdfmark[#{#2}]{%
11492 #1,%
11493 Border=\@pdfborder,%
11494 BorderStyle=\@pdfborderstyle,%
11495 Color=.2 .1 .5,%
11496 pdfmark=/ANN,%
11497 Subtype=/Link,%
11498 PDFAFlags=4,%
11499 Page=/Next%
11500 }%
11501 }
11502 \def\PDFPreviousPage{%
11503 \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
11504 }
11505 \def\PDFPreviousPage@[#1]#2{%
11506 \pdfmark[#{#2}]{%
11507 #1,%
11508 Border=\@pdfborder,%
11509 BorderStyle=\@pdfborderstyle,%
11510 Color=.4 .4 .1,%
11511 pdfmark=/ANN,%
11512 Subtype=/Link,%
11513 PDFAFlags=4,%
11514 Page=/Prev%
11515 }%
11516 }

```

```

11517 \def\PDFOpen#1{%
11518   \pdfmark{#1,pdfmark=/DOCVIEW}%
11519 }

```

This will only work if you use Distiller 2.1 or higher.

```

11520 \def\hyper@linkurl#1#2{%
11521   \begingroup
11522     \Hy@pstringdef\Hy@pstringURI{#2}%
11523     \hyper@chars
11524     \leavevmode
11525     \pdfmark[{#1}]{%
11526       pdfmark=/ANN,%
11527       linktype=url,%
11528       AcroHighlight=\@pdfhighlight,%
11529       Border=\@pdfborder,%
11530       BorderStyle=\@pdfborderstyle,%
11531       Color=\@urlbordercolor,%
11532       Action={<<%
11533         /Subtype/URI%
11534         /URI(\Hy@pstringURI)%
11535         \ifHy@href@ismap
11536           /IsMap true%
11537         \fi
11538       >>},%
11539       Subtype=/Link,%
11540       PDFAFlags=4%
11541     }%
11542   \endgroup
11543 }
11544 \def\hyper@linkfile#1#2#3{%
11545   \begingroup
11546     \def\Hy@pstringF{#2}%
11547     \Hy@CleanupFile\Hy@pstringF
11548     \Hy@pstringdef\Hy@pstringF\Hy@pstringF
11549     \Hy@pstringdef\Hy@pstringD{#3}%
11550     \Hy@MakeRemoteAction
11551     \leavevmode
11552     \pdfmark[{#1}]{%
11553       pdfmark=/ANN,%
11554       Subtype=/Link,%
11555       PDFAFlags=4,%
11556       AcroHighlight=\@pdfhighlight,%
11557       Border=\@pdfborder,%
11558       BorderStyle=\@pdfborderstyle,%
11559       linktype=file,%
11560       Color=\@filebordercolor,%
11561       Action={%
11562         <<%
11563           /S/GoToR%
11564           \Hy@SetNewWindow
11565           /F(\Hy@pstringF)%
11566           /D%
11567           \ifx\#3\%
11568             [\Hy@href@page\@pdfremotestartview]%
11569           \else

```

```

11570      (\Hy@pstringD)cvn%
11571      \fi
11572      \Hy@href@nextactionraw
11573      >>%
11574      }%
11575      }%
11576 \endgroup
11577 }
11578 \def\@hyper@launch run:#1\|#2#3{%
11579 \begingroup
11580 \Hy@pstringdef\Hy@pstringF{#1}%
11581 \Hy@pstringdef\Hy@pstringP{#3}%
11582 \leavevmode
11583 \pdfmark[#{#2}]{%
11584 pdfmark=/ANN,%
11585 Subtype=/Link,%
11586 PDFAFlags=4,%
11587 AcroHighlight=\@pdfhighlight,%
11588 Border=\@pdfborder,%
11589 BorderStyle=\@pdfborderstyle,%
11590 linktype=run,%
11591 Color=\@runbordercolor,%
11592 Action={%
11593 <<%
11594 /S/Launch%
11595 \Hy@SetNewWindow
11596 /F(\Hy@pstringF)%
11597 \ifx\|#3\|%
11598 \else
11599 /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
11600 \fi
11601 \Hy@href@nextactionraw
11602 >>%
11603 }%
11604 }%
11605 \endgroup
11606 }
11607 \</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.

```

11608 (*dvips)
11609 \providecommand*\XR@ext}{pdf}
11610 \let\Hy@raisedlink\@empty
11611 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
11612 \def\headerps@out#1{\special{! #1}}%
11613 \input{pdfmark.def}%

```

```

11614 \ifx\@pdfproducer\relax
11615 \def\@pdfproducer{dvips + Distiller}%
11616 \fi
11617 \providecommand*\@pdfborder{0 0 1}
11618 \providecommand*\@pdfborderstyle{}
11619 \providecommand*\@pdfview{XYZ}
11620 \providecommand*\@pdfviewparams{ H.V}
11621 \def\Hy@BorderArrayPatch{BorderArrayPatch}

11622 \g@addto@macro\Hy@FirstPageHook{%
11623 \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.

```

11624 /DvipsToPDF{72.27 mul Resolution div} def%
11625 /PDFToDvips{72.27 div Resolution mul} def%
11626 /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.

```

11627 product (Ghostscript) search {pop pop pop revision 927 gt}%
11628 {pop false} ifelse%
11629 {%
11630 /BorderArrayPatch{} def%
11631 }%
11632 {%
11633 /BorderArrayPatch{%
11634 [exch{%
11635 dup dup type/integertype eq exch type/realttype eq or%
11636 {BPToDvips}if%
11637 }forall]%
11638 }def%
11639 } 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.

```

11640 /HyperBorder {1 PDFToDvips} def%
11641 /H.V {pdf@hoff pdf@voff null} def%
11642 /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

```

11643 /H.S {%
11644   currentpoint %
11645   HyperBorder add /pdf@lly exch def %
11646   dup DvipsToPDF 72 add /pdf@hoff exch def %
11647   HyperBorder sub /pdf@llx exch def%
11648 } def%
```

The calculation of upper left  $y$  is done without raising the point in  $\TeX$ , by simply adding on the current `\baselineskip` to the current  $y$ . This is usually too much, so we remove a notional 2 points.

We have to see what the current `baselineskip` is, and convert it to the dvips coordinate system.

Argument: `baselineskip` in pt. The  $x$  and  $y$  coordinates of the current point, minus the `baselineskip`

```

11649 /H.L {%
11650   2 sub dup%
11651   /HyperBasePt exch def %
11652   PDFToDvips /HyperBaseDvips exch def %
11653   currentpoint %
11654   HyperBaseDvips sub /pdf@ury exch def%
11655   /pdf@urx exch def%
11656 } def%
11657 /H.A {%
11658   H.L %
11659 % |pdf@voff| = the distance from the top of the page to a point
11660 % |\baselineskip| above the current point in PDF coordinates
11661   currentpoint exch pop %
11662   vsize 72 sub exch DvipsToPDF %
11663   HyperBasePt sub % baseline skip
11664   sub /pdf@voff exch def%
11665 } def%
11666 /H.R {%
11667   currentpoint %
11668   HyperBorder sub /pdf@ury exch def %
11669   HyperBorder add /pdf@urx exch def %
11670 % |pdf@voff| = the distance from the top of the page to the current point, in
11671 % PDF coordinates
11672   currentpoint exch pop vsize 72 sub %
11673   exch DvipsToPDF sub /pdf@voff exch def%
11674 } def%
11675 }%
11676 }
11677 \AtBeginShipoutFirst{%
11678   \ifHy@setpagesize
11679     \begingroup
11680     \ifnum\mag=\@m
11681       \ifdim\stockwidth>\z@
11682         \ifdim\stockheight>\z@
11683           \special{papersize=\the\stockwidth,\the\stockheight}%
11684         \else
11685           \ifdim\paperwidth>\z@
11686             \ifdim\paperheight>\z@
```

```

11687         \special{papersize=\the\paperwidth,\the\paperheight}%
11688         \fi
11689     \fi
11690 \fi
11691 \else
11692     \ifdim\stockwidth=\z@
11693     \ifdim\paperwidth>\z@
11694     \ifdim\paperheight>\z@
11695         \special{papersize=\the\paperwidth,\the\paperheight}%
11696     \fi
11697 \fi
11698 \fi
11699 \fi
11700 \fi
11701 \endgroup
11702 \fi
11703 \Hy@DisableOption{setpagesize}%
11704 }

11705 \def\setpdfinkmargin#1{%
11706 \begingroup
11707     \setlength{\dimen@}{#1}%
11708     \literalps@out{%
11709         /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
11710     }%
11711 \endgroup
11712 }

11713 </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.

```

11714 (*vtexpdfmark)
11715 \providecommand*\XR@ext}{pdf}
11716 \let\Hy@raisedlink\@empty
11717 \def\literalps@out#1{\special{pS:#1}}%
11718 \def\headerps@out#1{\immediate\special{pS:#1}}%
11719 \input{pdfmark.def}%
11720 \ifx\@pdfproducer\relax
11721     \ifnum\OpMode=\@ne
11722         \def\@pdfproducer{VTeX}%
11723     \else
11724         \def\@pdfproducer{VTeX + Distiller}%
11725     \fi
11726 \fi
11727 \providecommand*\@pdfborder{0 0 1}
11728 \providecommand*\@pdfborderstyle{}
11729 \providecommand*\@pdfview{XYZ}
11730 \providecommand*\@pdfviewparams{ H.V}
11731 \g@addto@macro\Hy@FirstPageHook{%

```

```

11732 \headerps@out{%
11733   /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.

```

11734   /HyperBorder {1} def%
11735   /H.V {pdf@hoff pdf@voff null} def%
11736   /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:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

11737   /H.S {%
11738     currentpoint %
11739     HyperBorder sub%
11740     /pdf@lly exch def %
11741     dup 72 add /pdf@hoff exch def %
11742     HyperBorder sub%
11743     /pdf@llx exch def%
11744   } def%

```

The  $x$  and  $y$  coordinates of the current point, minus the `\baselineskip`:  $\text{pdf@ury} = Y_c + \text{HyperBasePt} + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

11745   /H.L {%
11746     2 sub%
11747     /HyperBasePt exch def %
11748     currentpoint %
11749     HyperBasePt add HyperBorder add%
11750     /pdf@ury exch def %
11751     HyperBorder add%
11752     /pdf@urx exch def%
11753   } def%
11754   /H.A {%
11755     H.L %
11756     currentpoint exch pop %
11757     vsize 72 sub exch %
11758     HyperBasePt add add%
11759     /pdf@voff exch def%
11760   } def%

```

$\text{pdf@ury} = Y_c + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

11761   /H.R {%
11762     currentpoint %
11763     HyperBorder add%
11764     /pdf@ury exch def %
11765     HyperBorder add%
11766     /pdf@urx exch def %
11767     currentpoint exch pop vsize 72 sub add%
11768     /pdf@voff exch def%
11769   } def%
11770 }%
11771 }

```

```

11772 \def\setpdfinkmargin#1{%
11773   \begingroup
11774   \setlength{\dimen@}{#1}%

```

```

11775 \literalps@out{%
11776 /HyperBorder{\strip@pt\dimen@}def%
11777 }%
11778 \endgroup
11779 }
11780 </vtexpdfmark>

```

## 44.11 Textures

```

11781 (*textures)
11782 \providecommand*\XR@ext}{pdf}

```

At the suggestion of Jacques Distler (distler@golem.ph.utexas.edu), try to derive a suitable driver for Textures. This was initially a copy of dvips, with some guesses about Textures behaviour. Ross Moore (ross@maths.mq.edu.au) has added modifications for better compatibility, and to support use of pdfmark.

Start by defining a macro that expands to the end-of-line character. This will be used to format the appearance of PostScript code, to enhance readability, and avoid excessively long lines which might otherwise become broken to bad places.

`\Hy@ps@CR`. The macro `\Hy@ps@CR` contains the end-of-line character.

```

11783 \begingroup
11784 \obeylines %
11785 \gdef\Hy@ps@CR{\noexpand
11786 }%
11787 \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`.

```

11788 \def\literalps@out#1{%
11789 \special{postscript 0 0 transform}%
11790 \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
11791 }%
11792 %

```

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.

```

11793 \def\headerps@out#1{%
11794 \special{%
11795 prepostscript TeXdict begin\Hy@ps@CR
11796 #1\Hy@ps@CR
11797 end%
11798 }%
11799 }%
11800 %

```

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.

```

11801 \g@addto@macro\Hy@FirstPageHook{%
11802 \headerps@out{%
11803 /betterpdfmark {%
11804   systemdict begin %
11805   dup /BP eq%
11806   {cleartomark gsave nulldevice []%
11807   {dup /EP eq%
11808   {cleartomark cleartomark grestore}%
11809   {cleartomark}%
11810   ifelse%
11811   }ifelse %
11812   end%
11813 }def\Hy@ps@CR
11814 ___pdfmark___ not{/pdfmark /betterpdfmark load def}if%
11815 }% end of \headerps@out
11816 }% end of \AtBeginShipoutFirst
11817 %
11818 \input{pdfmark.def}%
11819 %
11820 \ifx\@pdfproducer\relax
11821 \def\@pdfproducer{Textures + Distiller}%
11822 \fi
11823 \providecommand*\@pdfborder{0 0 1}
11824 \providecommand*\@pdfborderstyle{}
11825 \providecommand*\@pdfview{XYZ}
11826 \providecommand*\@pdfviewparams{ H.V}
11827 %

```

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  $\TeX$ .

```

11828 \Hy@AtBeginDocument{%
11829 \headerps@out{%

```

`Textures` lives in normal points, I think. So conversion from one coordinate system to another involves doing nothing.

```

11830 /vsize {\Hy@pageheight} def%
11831 /DvipsToPDF {} def%
11832 /PDFToDvips {} def%
11833 /BPToDvips {} def%
11834 /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
11835 /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
11836 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
11837 /H.S {%
11838   currentpoint %
11839   HyperBorder add /pdf@lly exch def %
11840   dup DvipsToPDF 72 add /pdf@hoff exch def %
11841   HyperBorder sub /pdf@llx exch def%
11842 } def\Hy@ps@CR

```

```

11843 /H.L {%
11844   2 sub %
11845   PDFToDvips /HyperBase exch def %
11846   currentpoint %
11847   HyperBase sub /pdf@ury exch def%
11848   /pdf@urx exch def%
11849 } def\Hy@ps@CR
11850 /H.A {%
11851   H.L %
11852   currentpoint exch pop %
11853   vsize 72 sub exch DvipsToPDF %
11854   HyperBase sub % baseline skip
11855   sub /pdf@voff exch def%
11856 } def\Hy@ps@CR
11857 /H.R {%
11858   currentpoint %
11859   HyperBorder sub /pdf@ury exch def %
11860   HyperBorder add /pdf@urx exch def %
11861   currentpoint exch pop vsize 72 sub %
11862   exch DvipsToPDF sub /pdf@voff exch def%
11863 } def\Hy@ps@CR
11864 }%
11865 }

11866 \def\setpdfinkmargin#1{%
11867   \begingroup
11868   \setlength{\dimen@}{#1}%
11869   \literalps@out{%
11870     /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
11871   }%
11872   \endgroup
11873 }

11874 \Hy@AtBeginDocument{%
11875   \ifHy@colorlinks
11876     \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
11877   \fi
11878 }

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.

11879 \expandafter\let\expandafter\keepPDF@SetupDoc
11880 \csname PDF@SetupDoc\endcsname
11881 \def\PDF@SetupDoc{%
11882   \ifx\@baseurl\@empty
11883     \else
11884       \special{html:<base href="\@baseurl">}%
11885     \fi
11886   \keepPDF@SetupDoc
11887 }
11888 \Hy@WrapperDef\hyper@anchor#1{%
11889   \Hy@SaveLastskip
11890   \Hy@VerboseAnchor{#1}%
11891   \begingroup

```

```

11892 \let\protect=\string
11893 \special{html:<a name=%
11894 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11895 \endgroup
11896 \Hy@activeanchortrue
11897 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
11898 \special{html:</a>}%
11899 \Hy@activeanchorfalse
11900 \Hy@RestoreLastskip
11901 }
11902 \Hy@WrapperDef\hyper@anchorstart#1{%
11903 \Hy@SaveLastskip
11904 \Hy@VerboseAnchor{#1}%
11905 \begingroup
11906 \hyper@chars
11907 \special{html:<a name=%
11908 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11909 \endgroup
11910 \Hy@activeanchortrue
11911 }
11912 \def\hyper@anchorend{%
11913 \special{html:</a>}%
11914 \Hy@activeanchorfalse
11915 \Hy@RestoreLastskip
11916 }
11917 \def\@urltype{url}
11918 \def\hyper@linkstart#1#2{%
11919 \Hy@VerboseLinkStart{#1}{#2}%
11920 \expandafter\Hy@colorlink\csname @#1color\endcsname
11921 \def\Hy@tempa{#1}%
11922 \ifx\Hy@tempa\@urltype
11923 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11924 \else
11925 \begingroup
11926 \hyper@chars
11927 \special{%
11928 html:<a href=%
11929 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>%
11930 }%
11931 \endgroup
11932 \fi
11933 }
11934 \def\hyper@linkend{%
11935 \special{html:</a>}%
11936 \Hy@endcolorlink
11937 }
11938 \def\hyper@linkfile#1#2#3{%
11939 \hyper@linkurl{#1}{%
11940 \Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi
11941 }%
11942 }
11943 \def\hyper@linkurl#1#2{%
11944 \leavevmode
11945 \ifHy@raiselinks

```

```

11946 \Hy@SaveSpaceFactor
11947 \Hy@SaveSavedSpaceFactor
11948 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
11949 \Hy@RestoreSavedSpaceFactor
11950 \@linkdim\dp\@tempboxa
11951 \lower\@linkdim\hbox{%
11952   \hyper@chars
11953   \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
11954 }%
11955 \Hy@colorlink\@urlcolor
11956 \Hy@RestoreSpaceFactor
11957 #1\Hy@xspace@end
11958 \Hy@SaveSpaceFactor
11959 \@linkdim\ht\@tempboxa
11960 \advance\@linkdim by -6.5\p@
11961 \raise\@linkdim\hbox{\special{html:</a>}}%
11962 \Hy@endcolorlink
11963 \Hy@RestoreSpaceFactor
11964 \else
11965 \begingroup
11966   \hyper@chars
11967   \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
11968   \Hy@colorlink\@urlcolor#1\Hy@xspace@end
11969   \special{html:</a>}}%
11970   \Hy@endcolorlink
11971 \endgroup
11972 \fi
11973 }

```

Very poor implementation of \hyper@link without considering #1.

```

11974 \def\hyper@link#1#2#3{%
11975   \Hy@VerboseLinkStart{#1}{#2}%
11976   \hyper@linkurl{#3}{\#HyperDestNameFilter{#2}}%
11977 }
11978 \def\hyper@image#1#2{%
11979   \begingroup
11980     \hyper@chars
11981     \special{html:<img src=\hyper@quote#1\hyper@quote>}}%
11982   \endgroup
11983 }
11984 </textures>

```

## 44.12 dvipsone

```

11985 % \subsection{dvipsone driver}
11986 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
11987 % |\special| commands.
11988 (*dvipsone)
11989 \providecommand*\XR@ext}{pdf}
11990 \let\Hy@raisedlink\@empty
11991 \providecommand*\@pdfborder{0 0 1}
11992 \providecommand*\@pdfborderstyle{}
11993 \def\literalps@out#1{\special{ps:#1}}%
11994 \def\headerps@out#1{\special{headertext=#1}}%

```



```

11995 \input{pdfmark.def}%
11996 \HyInfo@AddonUnsupportedtrue
11997 \def\PDF@FinishDoc{%
11998   \Hy@UseMaketitleInfos
11999   \HyInfo@TrappedUnsupported
12000   \special{PDF: Keywords \@pdfkeywords}%
12001   \special{PDF: Title \@pdftitle}%
12002   \special{PDF: Creator \@pdfcreator}%
12003   \ifx\@pdfcreationdate\@empty
12004   \else
12005     \special{PDF: CreationDate \@pdfcreationdate}%
12006   \fi
12007   \ifx\@pdfmoddate\@empty
12008   \else
12009     \special{PDF: ModDate \@pdfmoddate}%
12010   \fi
12011   \special{PDF: Author \@pdfauthor}%
12012   \ifx\@pdfproducer\relax
12013   \else
12014     \special{PDF: Producer \@pdfproducer}%
12015   \fi
12016   \special{PDF: Subject \@pdfsubject}%
12017   \Hy@DisableOption{pdfauthor}%
12018   \Hy@DisableOption{pdftitle}%
12019   \Hy@DisableOption{pdfsubject}%
12020   \Hy@DisableOption{pdfcreator}%
12021   \Hy@DisableOption{addtopdfcreator}%
12022   \Hy@DisableOption{pdfcreationdate}%
12023   \Hy@DisableOption{pdfcreationdate}%
12024   \Hy@DisableOption{pdfmoddate}%
12025   \Hy@DisableOption{pdfproducer}%
12026   \Hy@DisableOption{pdfkeywords}%
12027   \Hy@DisableOption{pdftrapped}%
12028   \Hy@DisableOption{pdfinfo}%
12029 }
12030 \def\PDF@SetupDoc{%
12031   \def\Hy@temp{ }%
12032   \ifx\@pdfstartpage\@empty
12033   \else
12034     \ifx\@pdfstartview\@empty
12035     \else
12036       \edef\Hy@temp{%
12037         ,Page=\@pdfstartpage
12038         ,View=\@pdfstartview
12039       }%
12040     \fi
12041   \fi
12042   \edef\Hy@temp{%
12043     \noexpand\pdfmark{%
12044       pdfmark=/DOCVIEW,%
12045       PageMode=/\@pdfpagemode
12046     }\Hy@temp
12047   }%
12048 }%

```

```

12049 \Hy@temp
12050 \ifx\@pdfpagescrop\@empty
12051 \else
12052   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
12053 \fi
12054 \edef\Hy@temp{%
12055   \ifHy@pdftoolbar\else /HideToolbar true\fi
12056   \ifHy@pdfmenubar\else /HideMenubar true\fi
12057   \ifHy@pdfwindowui\else /HideWindowUI true\fi
12058   \ifHy@pdfwindow /FitWindow true\fi
12059   \ifHy@pdfcenterwindow /CenterWindow true\fi
12060   \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
12061   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
12062   \Hy@UseNameKey{Direction}\@pdfdirection
12063   \Hy@UseNameKey{ViewArea}\@pdfviewarea
12064   \Hy@UseNameKey{ViewClip}\@pdfviewclip
12065   \Hy@UseNameKey{PrintArea}\@pdfprintarea
12066   \Hy@UseNameKey{PrintClip}\@pdfprintclip
12067   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
12068   \Hy@UseNameKey{Duplex}\@pdfduplex
12069   \ifx\@pdfpicktraybypdfsize\@empty
12070   \else
12071     /PickTrayByPDFSize \@pdfpicktraybypdfsize
12072   \fi
12073   \ifx\@pdfprintpagerange\@empty
12074   \else
12075     /PrintPageRange[\@pdfprintpagerange]%
12076   \fi
12077   \ifx\@pdfnumcopies\@empty
12078   \else
12079     /NumCopies \@pdfnumcopies
12080   \fi
12081 }%
12082 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
12083 \pdfmark{%
12084   pdfmark=/PUT,%
12085   Raw={%
12086     \string{Catalog}\string}<<%
12087     \ifx\Hy@temp\@empty
12088     \else
12089       /ViewerPreferences<<\Hy@temp>>%
12090     \fi
12091     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
12092     \ifx\@pdflang\relax
12093     \else
12094       /Lang(\@pdflang)%
12095     \fi
12096     \ifx\@baseurl\@empty
12097     \else
12098       /URI<</Base(\Hy@pstringB)>>%
12099     \fi
12100   >>%
12101 }%
12102 }%

```

```

12103 }
12104 \providecommand*\@pdfview{XYZ}
12105 \providecommand*\@pdfviewparams{ %
12106   gsave revscl currentpoint grestore %
12107   72 add exch pop null exch null%
12108 }
12109 \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 T<sub>E</sub>X.

```

12110 \g@addto@macro\Hy@FirstPageHook{%
12111   \headerps@out{%

```

dvipsone lives in scaled points; does this mean 65536 or 65781?

```

12112   /DvipsToPDF { 65781 div } def%
12113   /PDFToDvips { 65781 mul } def%
12114   /BPToDvips{65781 mul}def%
12115   /HyperBorder { 1 PDFToDvips } def%
12116   /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.

```

12117   /BorderArrayPatch{%
12118     [exch{%
12119       dup dup type/integertype eq exch type/realttype eq or%
12120       {BPToDvips}if%
12121     }forall]%
12122   }def%
12123   /H.S {%
12124     currentpoint %
12125     HyperBorder add /pdf@lly exch def %
12126     dup DvipsToPDF 72 add /pdf@hoff exch def %
12127     HyperBorder sub /pdf@llx exch def%
12128   } def%
12129   /H.L {%
12130     2 sub %
12131     PDFToDvips /HyperBase exch def %
12132     currentpoint %
12133     HyperBase sub /pdf@ury exch def%
12134     /pdf@urx exch def%
12135   } def%
12136   /H.A {%
12137     H.L %
12138     currentpoint exch pop %
12139     HyperBase sub % baseline skip
12140     DvipsToPDF /pdf@voff exch def%
12141   } def%
12142   /H.R {%
12143     currentpoint %
12144     HyperBorder sub /pdf@ury exch def %
12145     HyperBorder add /pdf@urx exch def %

```

```

12146     currentpoint exch pop DvipsToPDF /pdf@voff exch def%
12147   } def%
12148 }%
12149 }

12150 \def\setpdfinkmargin#1{%
12151   \begingroup
12152   \setlength{\dimen@}{#1}%
12153   \literalps@out{%
12154     /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
12155   }%
12156   \endgroup
12157 }

12158 </dvipsone>

```

## 44.13 TeX4ht

```

12159 <{*tex4ht}
12160 \providecommand*\XR@ext}{html}
12161 \let\Hy@raisedlink\@empty
12162 \@ifpackageloaded{tex4ht}{%
12163   \Hy@InfoNoLine{tex4ht is already loaded}%
12164 }{%
12165   \RequirePackage[hTeX4ht]{tex4ht}%
12166 }
12167 \hyperlinkfileprefix{}
12168 \let\PDF@FinishDoc\@empty
12169 \def\PDF@SetupDoc{%
12170   \ifx\@baseurl\@empty
12171     \else
12172     \special{t4ht=<base href="\@baseurl">}%
12173   \fi
12174 }
12175 \Hy@WrapperDef\hyper@anchor#1{%
12176   \Hy@SaveLastskip
12177   \Hy@VerboseAnchor{#1}%
12178   \begingroup
12179   \let\protect=\string
12180   \special{t4ht=<a name=%
12181     \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12182   \endgroup
12183   \Hy@activeanchortrue
12184   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
12185   \special{t4ht=</a>}%
12186   \Hy@activeanchorfalse
12187   \Hy@RestoreLastskip
12188 }
12189 \Hy@WrapperDef\hyper@anchorstart#1{%
12190   \Hy@SaveLastskip
12191   \Hy@VerboseAnchor{#1}%
12192   \begingroup
12193   \hyper@chars\special{t4ht=<a name=%
12194     \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12195   \endgroup
12196   \Hy@activeanchortrue

```

```

12197 }
12198 \def\hyper@anchorend{%
12199 \special{t4ht=</a>}%
12200 \Hy@activeanchorfalse
12201 \Hy@RestoreLastskip
12202 }
12203 \def\@urltype{url}
12204 \def\hyper@linkstart#1#2{%
12205 \Hy@VerboseLinkStart{#1}{#2}%
12206 \expandafter\Hy@colorlink\csname @#1color\endcsname
12207 \def\Hy@tempa{#1}%
12208 \ifx\Hy@tempa\@urltype
12209 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12210 \else
12211 \begingroup
12212 \hyper@chars
12213 \special{t4ht=<a href=%
12214 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
12215 \endgroup
12216 \fi
12217 }
12218 \def\hyper@linkend{%
12219 \special{t4ht=</a>}%
12220 \Hy@endcolorlink
12221 }
12222 \def\hyper@linkfile#1#2#3{%
12223 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
12224 }
12225 \def\hyper@linkurl#1#2{%
12226 \leavevmode
12227 \ifHy@raiselinks
12228 \Hy@SaveSpaceFactor
12229 \Hy@SaveSavedSpaceFactor
12230 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
12231 \Hy@RestoreSavedSpaceFactor
12232 \@linkdim\dp\@tempboxa
12233 \lower\@linkdim\hbox{%
12234 \begingroup
12235 \hyper@chars
12236 \special{%
12237 t4ht=<a href=\hyper@quote#2\hyper@quote>%
12238 }%
12239 \endgroup
12240 }%
12241 \Hy@colorlink\@urlcolor
12242 \Hy@RestoreSpaceFactor
12243 #1\Hy@xspace@end
12244 \Hy@SaveSpaceFactor
12245 \Hy@endcolorlink
12246 \@linkdim\ht\@tempboxa
12247 \advance\@linkdim by -6.5\p@
12248 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
12249 \Hy@RestoreSpaceFactor
12250 \else

```

```

12251 \begingroup
12252 \hyper@chars
12253 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12254 \Hy@colorlink\@urlcolor
12255 #1\Hy@xspace@end
12256 \Hy@endcolorlink
12257 \special{t4ht=</a>}%
12258 \endgroup
12259 \fi
12260 }

```

Poor implementation of \hyper@link without considering #1.

```

12261 \def\hyper@link#1#2#3{%
12262 \Hy@VerboseLinkStart{#1}{#2}%
12263 \hyper@linkurl{#3}{\#\HyperDestNameFilter{#2}}%
12264 }
12265 \def\hyper@image#1#2{%
12266 \begingroup
12267 \hyper@chars
12268 \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
12269 \endgroup
12270 }
12271 \let\autoref\ref
12272 \ifx \rEFLiNK \UnDef
12273 \def\rEFLiNK #1#2{#2}%
12274 \fi
12275 \let\backref\@gobble

```

Fix for tex4ht.

```

12276 \AtBeginDocument{%
12277 \expandafter
12278 \let\expandafter\Hy@OrgMakeLabel\csname Make:Label\endcsname
12279 \expandafter\def\csname Make:Label\endcsname#1#2{%
12280 \ifhmode
12281 \Hy@SaveSpaceFactor
12282 \else
12283 \global\Hy@SavedSpaceFactor=1000 %
12284 \fi
12285 \Hy@OrgMakeLabel{#1}{%
12286 \Hy@RestoreSpaceFactor
12287 #2\Hy@xspace@end%
12288 \Hy@SaveSpaceFactor
12289 }%
12290 \Hy@RestoreSpaceFactor
12291 }%
12292 }
12293 </tex4ht>
12294 <*\tex4htcfg>
12295 \IfFileExists{\jobname.cfg}{\endinput}{-}
12296 \Preamble{html}
12297 \begin{document}%
12298 \EndPreamble
12299 \def\TeX{TeX}
12300 \def\OMEGA{Omega}
12301 \def\LaTeX{LaTeX}

```

```

12302 \def\LaTeXe{\LaTeX2e}
12303 \def\TeX{e-TeX}
12304 \def\MF{Metafont}
12305 \def\MP{MetaPost}
12306 </tex4htcfg>

```

## 45 Driver-specific form support

### 45.1 pdfmarks

change 2020-06-20: added /Euro to encoding

```

12307 (*pdfmark)
12308 \long\def\@Form[#1]{%
12309 \g@addto@macro\Hy@FirstPageHook{%
12310 \headerps@out{%
12311 [%
12312 /_objdef{pdfDocEncoding}%
12313 /type/dict%
12314 /OBJ pdfmark%
12315 [%
12316 {pdfDocEncoding}%
12317 <<%
12318 /Type/Encoding%
12319 /Differences[%
12320 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
12321 /tilde %
12322 39/quotesingle %
12323 96/grave %
12324 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
12325 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
12326 /quotedblbase/quotedblleft/quotedblright/quoteleft%
12327 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%
12328 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
12329 160/Euro %
12330 164/currency %
12331 166/brokenbar %
12332 168/dieresis/copyright/ordfeminine %
12333 172/logicalnot/.notdef/registered/macron/degree/plusminus%
12334 /twosuperior/threesuperior/acute/mu %
12335 183/periodcentered/cedilla/onesuperior/ordmasculine %
12336 188/onequarter/onehalf/threequarters %
12337 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
12338 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
12339 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
12340 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
12341 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
12342 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
12343 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
12344 /iacute/icircumflex/idieresis/eth/ntilde/ograve/oacute%
12345 /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%
12346 /ucircumflex/udieresis/yacute/thorn/ydieresis%
12347 ]%
12348 >>%
12349 /PUT pdfmark%

```

```

12350 [%
12351  /_objdef{ZaDb}%
12352  /type/dict%
12353 /OBJ pdfmark%
12354 [%
12355  {ZaDb}%
12356  <<%
12357   /Type/Font%
12358   /Subtype/Type1%
12359   /Name/ZaDb%
12360   /BaseFont/ZapfDingbats%
12361  >>%
12362 /PUT pdfmark%
12363 [%
12364  /_objdef{Helv}%
12365  /type/dict%
12366 /OBJ pdfmark%
12367 [%
12368  {Helv}%
12369  <<%
12370   /Type/Font%
12371   /Subtype/Type1%
12372   /Name/Helv%
12373   /BaseFont/Helvetica%
12374   /Encoding{pdfDocEncoding}%
12375  >>%
12376 /PUT pdfmark%
12377 [%
12378  /_objdef{aform}%
12379  /type/dict%
12380 /OBJ pdfmark%
12381 [%
12382  /_objdef{afields}%
12383  /type/array%
12384 /OBJ pdfmark%
12385 [%
12386  /_objdef{corder}%
12387  /type/array%
12388 /OBJ pdfmark%
12389 {%
12390  [%
12391   /BBox[0 0 100 100]%
12392   /_objdef{Check}%
12393  /BP pdfmark %
12394  1 0 0 setrgbcolor%
12395  /ZapfDingbats 80 selectfont %
12396  20 20 moveto%
12397  (4)show%
12398  [/EP pdfmark%
12399  [%
12400   /BBox[0 0 100 100]%
12401   /_objdef{Cross}%
12402  /BP pdfmark %
12403  1 0 0 setrgbcolor%

```



12404 /ZapfDingbats 80 selectfont %  
12405 20 20 moveto%  
12406 (8)show%  
12407 [/EP pdfmark%  
12408 [%  
12409 /BBox[0 0 250 100]%  
12410 /\_objdef{Submit}%  
12411 /BP pdfmark %  
12412 0.6 setgray %  
12413 0 0 250 100 rectfill %  
12414 1 setgray %  
12415 2 2 moveto %  
12416 2 98 lineto %  
12417 248 98 lineto %  
12418 246 96 lineto %  
12419 4 96 lineto %  
12420 4 4 lineto %  
12421 fill %  
12422 0.34 setgray %  
12423 248 98 moveto %  
12424 248 2 lineto %  
12425 2 2 lineto %  
12426 4 4 lineto %  
12427 246 4 lineto %  
12428 246 96 lineto %  
12429 fill%  
12430 /Helvetica 76 selectfont %  
12431 0 setgray %  
12432 8 22.5 moveto%  
12433 (Submit)show%  
12434 [/EP pdfmark%  
12435 [%  
12436 /BBox[0 0 250 100]%  
12437 /\_objdef{SubmitP}%  
12438 /BP pdfmark %  
12439 0.6 setgray %  
12440 0 0 250 100 rectfill %  
12441 0.34 setgray %  
12442 2 2 moveto %  
12443 2 98 lineto %  
12444 248 98 lineto %  
12445 246 96 lineto %  
12446 4 96 lineto %  
12447 4 4 lineto %  
12448 fill %  
12449 1 setgray %  
12450 248 98 moveto %  
12451 248 2 lineto %  
12452 2 2 lineto %  
12453 4 4 lineto %  
12454 246 4 lineto %  
12455 246 96 lineto %  
12456 fill%  
12457 /Helvetica 76 selectfont %

```

12458 0 setgray %
12459 10 20.5 moveto%
12460 (Submit)show%
12461 [/EP pdfmark%
12462 } ?pdfmark%
12463 [%
12464 {aform}%
12465 <<%
12466 /Fields{afields}%
12467 /DR<<%
12468 /Font<<%
12469 /ZaDb{ZaDb}%
12470 /Helv{Helv}%
12471 >>%
12472 >>%
12473 /DA(/Helv 10 Tf 0 g)%
12474 /CO{corder}%
12475 \ifHy@pdfa
12476 \else
12477 \ifHyField@NeedAppearances
12478 /NeedAppearances true%
12479 \fi
12480 \fi
12481 >>%
12482 /PUT pdfmark%
12483 [%
12484 {Catalog}%
12485 <<%
12486 /AcroForm{aform}%
12487 >>%
12488 /PUT pdfmark%
12489 }}%
12490 \kvsetkeys{Form}{#1}%
12491 }
12492 \let\@endForm\@empty
12493 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12494 \Hy@Message{Sorry, pdfmark drivers do not support FORM gauges}%
12495 }

12496 \newcount\HyField@AnnotCount
12497 \HyField@AnnotCount=\z@
12498 \def\HyField@AdvanceAnnotCount{%
12499 \global\advance\HyField@AnnotCount\@ne
12500 }
12501 \def\HyField@TheAnnotCount{%
12502 \the\HyField@AnnotCount
12503 }

12504 \edef\Fld@pageobjref{/P\string{ThisPage\string}}
12505 \def\HyField@AddToFields#1{%
12506 \pdfmark{%
12507 pdfmark=/APPEND,%
12508 Raw={%
12509 \string{afields\string}%
12510 \string{#1\HyField@TheAnnotCount\string}%

```

```

12511 }%
12512 }%
12513 \ifx\Fld@calculate@code\@empty
12514 \else
12515 \pdfmark{%
12516 pdfmark=/APPEND,%
12517 Raw={%
12518 \string{corder\string}%
12519 \string{#1\HyField@TheAnnotCount\string}%
12520 }%
12521 }%
12522 \fi
12523 }

12524 \def\@TextField[#1]#2{% parameters, label
12525 \def\Fld@name{#2}%
12526 \let\Fld@default\@empty
12527 \let\Fld@value\@empty
12528 \def\Fld@width{\DefaultWidthofText}%
12529 \def\Fld@height{%
12530 \ifFld@multiline
12531 \DefaultHeightofTextMultiline
12532 \else
12533 \DefaultHeightofText
12534 \fi
12535 }%
12536 \begingroup
12537 \expandafter\HyField@SetKeys\expandafter{%
12538 \DefaultOptionsofText,#1%
12539 }%
12540 \HyField@FlagsText
12541 \ifFld@hidden\def\Fld@width{1sp}\fi
12542 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12543 \HyField@AdvanceAnnotCount
12544 \LayoutTextField{#2}{%
12545 \leavevmode
12546 \Hy@escapeform\PDFForm@Text
12547 \pdfmark{\MakeTextField{\Fld@width}{\Fld@height}}{%
12548 pdfmark=/ANN,%
12549 objdef=text\HyField@TheAnnotCount,%
12550 Raw={\PDFForm@Text}%
12551 }%
12552 }%
12553 \HyField@AddToFields{text}%
12554 \endgroup
12555 }

12556 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12557 \def\Fld@name{#2}%
12558 \let\Fld@default\relax
12559 \let\Fld@value\relax
12560 \def\Fld@width{\DefaultWidthofChoiceMenu}%
12561 \def\Fld@height{\DefaultHeightofChoiceMenu}%
12562 \begingroup
12563 \Fld@menulength=0 %
12564 \@tempdima\z@

```

```

12565 \@for\@curropt:=#3\do{%
12566 \expandafter\Fld@checkequals\@curropt==\\%
12567 \Hy@StepCount\Fld@menulength
12568 \settowidth{\@tempdimb}{\@currDisplay}%
12569 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12570 }%
12571 \advance\@tempdima by 15\p@
12572 \begingroup
12573 \HyField@SetKeys{#1}%
12574 \edef\x{\endgroup
12575 \noexpand\expandafter
12576 \noexpand\HyField@SetKeys
12577 \noexpand\expandafter{%
12578 \expandafter\noexpand\csname DefaultOptionsof%
12579 \ifFld@radio
12580 Radio%
12581 \else
12582 \ifFld@combo
12583 \ifFld@popdown
12584 PopdownBox%
12585 \else
12586 ComboBox%
12587 \fi
12588 \else
12589 ListBox%
12590 \fi
12591 \fi
12592 \endcsname
12593 }%
12594 }\x
12595 \HyField@SetKeys{#1}%
12596 \ifFld@hidden\def\Fld@width{1sp}\fi
12597 \ifx\Fld@value\relax
12598 \let\Fld@value\Fld@default
12599 \fi
12600 \LayoutChoiceField{#2}{%
12601 \ifFld@radio
12602 \HyField@FlagsRadioButton
12603 \@@Radio{#3}%
12604 \else
12605 \begingroup
12606 \HyField@FlagsChoice
12607 \ifdim\Fld@width<\@tempdima
12608 \ifdim\@tempdima<1cm\@tempdima1cm\fi
12609 \edef\Fld@width{\the\@tempdima}%
12610 \fi
12611 \ifFld@combo
12612 \else
12613 \@tempdima=\the\Fld@menulength\Fld@charsize
12614 \advance\@tempdima by \Fld@borderwidth bp %
12615 \advance\@tempdima by \Fld@borderwidth bp %
12616 \edef\Fld@height{\the\@tempdima}%
12617 \fi
12618 \@@ListBox{#3}%

```

```

12619     \endgroup
12620     \fi
12621   }%
12622 \endgroup
12623 }
12624 \def\@@Radio#1{%
12625   \Fld@listcount=0 %
12626   \EdefEscapeName\Fld@default{\Fld@default}%
12627   \@for\@curropt:=#1\do{%
12628     \expandafter\Fld@checkequals\@curropt==\%
12629     \EdefEscapeName\@currValue{\@currValue}%
12630     \Hy@StepCount\Fld@listcount
12631     \@currDisplay\space
12632     \Hy@escapeform\PDFForm@Radio
12633     \ifnum\Fld@listcount=1 %
12634       \HyField@AdvanceAnnotCount
12635     \fi
12636     \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
12637       pdfmark=/ANN,%
12638       objdef=\ifnum\Fld@listcount=1 radio\HyField@TheAnnotCount\fi,%
12639       Raw={%
12640         \PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>%
12641       }%
12642     } % deliberate space between radio buttons
12643     \ifnum\Fld@listcount=1 %
12644       \HyField@AddToFields{radio}%
12645     \fi
12646   }%
12647 }
12648 \newcount\Fld@listcount
12649 \def\@@ListBox#1{%
12650   \HyField@PDFChoices{#1}%
12651   \Hy@escapeform\PDFForm@List
12652   \HyField@AdvanceAnnotCount
12653   \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
12654     pdfmark=/ANN,%
12655     objdef=list\HyField@TheAnnotCount,%
12656     Raw={\PDFForm@List}%
12657   }%
12658   \HyField@AddToFields{list}%
12659 }
12660 \def\@PushButton[#1]#2{% parameters, label
12661   \def\Fld@name{#2}%
12662   \begingroup
12663     \expandafter\HyField@SetKeys\expandafter{%
12664       \DefaultOptionsofPushButton,#1%
12665     }%
12666     \ifHy@pdfa
12667       \Hy@Error{%
12668         PDF/A: Push button with JavaScript is prohibited%
12669       }\@ehc
12670     \LayoutPushButtonField{%
12671       \leavevmode
12672       \MakeButtonField{#2}%

```

```

12673 }%
12674 \else
12675 \HyField@FlagsPushButton
12676 \ifFld@hidden\def\Fld@width{1sp}\fi
12677 \HyField@AdvanceAnnotCount
12678 \LayoutPushButtonField{%
12679 \leavevmode
12680 \Hy@escapeform\PDFForm@Push
12681 \pdfmark[\MakeButtonField{#2}]{%
12682 pdfmark=/ANN,%
12683 objdef=push\HyField@TheAnnotCount,%
12684 Raw={\PDFForm@Push}%
12685 }%
12686 }%
12687 \HyField@AddToFields{push}%
12688 \fi
12689 \endgroup
12690 }
12691 \def\@Submit[#1]#2{%
12692 \def\Fld@width{\DefaultWidthofSubmit}%
12693 \def\Fld@height{\DefaultHeightofSubmit}%
12694 \begingroup
12695 \expandafter\HyField@SetKeys\expandafter{%
12696 \DefaultOptionsofSubmit,#1%
12697 }%
12698 \HyField@FlagsPushButton
12699 \HyField@FlagsSubmit
12700 \ifFld@hidden\def\Fld@width{1sp}\fi
12701 \Hy@escapeform\PDFForm@Submit
12702 \HyField@AdvanceAnnotCount
12703 \pdfmark[\MakeButtonField{#2}]{%
12704 pdfmark=/ANN,%
12705 objdef=submit\HyField@TheAnnotCount,%
12706 Raw={\PDFForm@Submit /AP<</N{Submit}/D{SubmitP}>>}}%
12707 }%
12708 \HyField@AddToFields{submit}%
12709 \endgroup
12710 }
12711 \def\@Reset[#1]#2{%
12712 \def\Fld@width{\DefaultWidthofReset}%
12713 \def\Fld@height{\DefaultHeightofReset}%
12714 \begingroup
12715 \expandafter\HyField@SetKeys\expandafter{%
12716 \DefaultOptionsofReset,#1%
12717 }%
12718 \leavevmode
12719 \ifHy@pdfa
12720 \Hy@Error{%
12721 PDF/A: Reset action is prohibited%
12722 } \@ehc
12723 \MakeButtonField{#2}%
12724 \else
12725 \HyField@FlagsPushButton
12726 \ifFld@hidden\def\Fld@width{1sp}\fi

```

```

12727 \Hy@escapeform\PDFForm@Reset
12728 \HyField@AdvanceAnnotCount
12729 \pdfmark[\MakeButtonField{#2}]{%
12730 pdfmark=/ANN,%
12731 objdef=reset\HyField@TheAnnotCount,%
12732 Raw={\PDFForm@Reset}%
12733 }%
12734 \HyField@AddToFields{reset}%
12735 \fi
12736 \endgroup
12737 }%
12738 \def\@CheckBox[#1]#2{% parameters, label
12739 \def\Fld@name{#2}%
12740 \def\Fld@default{0}%
12741 \begingroup
12742 \def\Fld@width{\DefaultWidthofCheckBox}%
12743 \def\Fld@height{\DefaultHeightofCheckBox}%
12744 \expandafter\HyField@SetKeys\expandafter{%
12745 \DefaultOptionsofCheckBox,#1%
12746 }%
12747 \HyField@FlagsCheckBox
12748 \ifFld@hidden\def\Fld@width{1sp}\fi
12749 \HyField@AdvanceAnnotCount
12750 \LayoutCheckField{#2}{%
12751 \leavevmode
12752 \Hy@escapeform\PDFForm@Check
12753 \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
12754 pdfmark=/ANN,%
12755 objdef=check\HyField@TheAnnotCount,%
12756 Raw={\PDFForm@Check}%
12757 }%
12758 }%
12759 \HyField@AddToFields{check}%
12760 \endgroup
12761 }
12762 \pdfmark)

```

## 45.2 HyperTeX

```

12763 (*hypertext)
12764 \def\@Form[#1]{%
12765 \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12766 }
12767 \let\@endForm\@empty
12768 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12769 \Hy@Message{Sorry, HyperTeX does not support FORM gauges}%
12770 }
12771 \def\@TextField[#1]#2{% parameters, label
12772 \Hy@Message{Sorry, HyperTeX does not support FORM text fields}%
12773 }
12774 \def\@CheckBox[#1]#2{% parameters, label
12775 \Hy@Message{Sorry, HyperTeX does not support FORM checkboxes}%
12776 }
12777 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices

```

```

12778 \Hy@Message{Sorry, HyperTeX does not support FORM choice menus}%
12779 }
12780 \def\@PushButton[#1]#2{% parameters, label
12781 \Hy@Message{Sorry, HyperTeX does not support FORM pushbuttons}%
12782 }
12783 \def\@Reset[#1]#2{%
12784 \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12785 }
12786 \def\@Submit[#1]#2{%
12787 \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12788 }
12789 </hypertex>

```

### 45.3 TeX4ht

```

12790 (*tex4ht)
12791 \def\@Form[#1]{%
12792 \kvsetkeys{Form}{#1}%
12793 \HCode{<form action="\Form@action" method="\Form@method">%
12794 }
12795 \def\@endForm{\HCode{</form>}}
12796 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12797 \Hy@Message{Sorry, TeX4ht does not support gauges}%
12798 }
12799 \def\@TextField[#1]#2{% parameters, label
12800 \let\Hy@reserved@a\@empty
12801 \def\Fld@name{#2}%
12802 \let\Fld@default\@empty
12803 \bgroup
12804 \Field@toks={ }%
12805 \kvsetkeys{Field}{#1}%
12806 \HCode{<label for="\Fld@name">#2</label>}%
12807 \ifFld@password
12808 \@@PasswordField
12809 \else
12810 \@@TextField
12811 \fi
12812 \egroup
12813 }
12814 \def\@@PasswordField{%
12815 \HCode{%
12816 <input type="password" %
12817 id="\Fld@name" %
12818 name="\Fld@name" %
12819 \ifFld@hidden type="hidden" \fi
12820 value="\Fld@default" %
12821 \the\Field@toks
12822 >%
12823 }%
12824 }
12825 \def\@@TextField{%
12826 \ifFld@multiline
12827 \HCode{<textarea %
12828 \ifFld@readonly readonly \fi
12829 id="\Fld@name" %

```



```

12830     name="\Fld@name" %
12831     \ifFld@hidden type="hidden" \fi
12832     \the\Field@toks>%
12833 }%
12834 \Fld@default
12835 \HCode{</textarea>}%
12836 \else
12837 \HCode{<input type="textbox" %
12838     \ifFld@readonly readonly \fi
12839     id="\Fld@name" %
12840     name="\Fld@name" %
12841     \ifFld@hidden type="hidden" \fi
12842     value="\Fld@default" %
12843     \the\Field@toks>%
12844 }%
12845 \fi
12846 }
12847 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12848 \def\Fld@name{#2}%
12849 \let\Fld@default\@empty
12850 \let\Hy@reserved@a\relax
12851 \begingroup
12852 \expandafter\Fld@findlength#3\\%
12853 \Field@toks={ }%
12854 \kvsetkeys{Field}{#1}%
12855 #2%
12856 \ifFld@radio
12857 \expandafter\@@Radio#3\\%
12858 \else
12859 \expandafter\@@Menu#3\\%
12860 \fi
12861 \endgroup
12862 }
12863 \def\Fld@findlength#1\\{%
12864 \Fld@menulength=0 %
12865 \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
12866 }
12867 \def\@@Menu#1\\{%
12868 \HCode{<select size="\the\Fld@menulength" %
12869     name="\Fld@name" %
12870     \the\Field@toks>%
12871 }%
12872 \@for\@curropt:=#1\do{%
12873 \expandafter\Fld@checkequals\@curropt==\\%
12874 \HCode{<option %
12875     \ifx\@curropt\Fld@default selected \fi
12876     value="\@currValue">\@currDisplay</option>%
12877 }%
12878 }%
12879 \HCode{</select>}%
12880 }
12881 \def\@@Radio#1\\{%
12882 \@for\@curropt:=#1\do{%
12883 \expandafter\Fld@checkequals\@curropt==\\%

```

```

12884 \HCode{<input type="radio" %
12885 \ifx\@curropt\Fld@default checked \fi
12886 name="\Fld@name" %
12887 value="\@currValue" %
12888 \the\Field@toks>%
12889 }%
12890 \@currDisplay
12891 }%
12892 }
12893 \def\@PushButton[#1]#2{% parameters, label
12894 \def\Fld@name{#2}%
12895 \bgroup
12896 \Field@toks={ }%
12897 \kvsetkeys{Field}{#1}%
12898 \HCode{<input type="button" %
12899 name="\Fld@name" %
12900 value="#2" %
12901 \the\Field@toks>%
12902 }%
12903 \HCode{</button>}%
12904 \egroup
12905 }
12906 \def\@Submit[#1]#2{%
12907 \HCode{<button type="submit">#2</button>}%
12908 }
12909 \def\@Reset[#1]#2{%
12910 \HCode{<button type="reset">#2</button>}%
12911 }
12912 \def\@CheckBox[#1]#2{% parameters, label
12913 \let\Hy@reserved@a\@empty
12914 \def\Fld@name{#2}%
12915 \def\Fld@default{0}%
12916 \bgroup
12917 \Field@toks={ }%
12918 \kvsetkeys{Field}{#1}%
12919 \HCode{<input type="checkbox" %
12920 \ifFld@checked checked \fi
12921 \ifFld@disabled disabled \fi
12922 \ifFld@readonly readonly \fi
12923 name="\Fld@name" %
12924 \ifFld@hidden type="hidden" \fi
12925 value="\Fld@default" %
12926 \the\Field@toks>%
12927 #2%
12928 }%
12929 \egroup
12930 }
12931 </tex4ht>

```

## 45.4 pdfTeX

```

12932 (*pdfTeX)
12933 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12934 \Hy@Message{Sorry, pdfTeX does not support FORM gauges}%
12935 }

```

```

12936 \def\MakeFieldObject#1#2{\sbox0{#1}%
12937 \immediate\pdfxform0 %
12938 \expandafter\edef\csname #2Object\endcsname{%
12939 \the\pdfastxform\space 0 R%
12940 }%
12941 % \hbox to 0pt{\hskip-\maxdimen{\pdfrefxform \the\pdfastxform}}%
12942 }%
12943 \let\HyField@afields\@empty
12944 \let\HyField@cofields\@empty
12945 \@ifundefined{pdfastlink}
12946 {%
12947 \let\HyField@AddToFields\relax
12948 \PackageInfo{hyperref}{%
12949 You need pdfTeX 1.40.0 for setting the /Fields entry.%
12950 \MessageBreak
12951 Adobe Reader/Acrobat accepts an empty /Field array,%
12952 \MessageBreak
12953 but other PDF viewers might complain%
12954 }}%
12955 {%
12956 \let\HyField@AuxAddToFields\@gobble
12957 \let\HyField@AuxAddToCoFields\@gobbletwo
12958 \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.

```

12959 \def\HyField@ABD@AuxAddToCoFields#1#2{%
12960 \begingroup
12961 \Hy@safe@activetrue
12962 \let\@secondoftwo\relax
12963 \ifx\HyField@cofields\@empty
12964 \xdef\HyField@cofields{%
12965 \@secondoftwo{#1}{ #2 0 R}%
12966 }%
12967 \else
12968 \let\@secondoftwo\relax
12969 \def\HyField@AddCoField###1##2###3{%
12970 \ifx##1\@empty
12971 \@secondoftwo{#1}{ #2 0 R}%
12972 \expandafter\@gobble
12973 \else
12974 \ifnum\pdfstrcmp{##2}{#1}>\z@
12975 \@secondoftwo{#1}{ #2 0 R}%
12976 \@secondoftwo{##2}{##3}%
12977 \expandafter\expandafter\expandafter\@gobble
12978 \else
12979 \@secondoftwo{##2}{##3}%
12980 \fi
12981 \fi
12982 \HyField@AddCoField
12983 }%
12984 \xdef\HyField@cofields{%
12985 \expandafter\HyField@AddCoField
12986 \HyField@cofields\@empty\@empty\@empty
12987 }%

```

```

12988     \fi
12989     \endgroup
12990 }%
12991 \Hy@AtBeginDocument{%
12992   \if@filesw
12993     \immediate\write\@mainaux{%
12994       \string\providecommand\string\HyField@AuxAddToFields[1]{}%
12995     }%
12996     \immediate\write\@mainaux{%
12997       \string\providecommand\string\HyField@AuxAddToCoFields[2]{}%
12998     }%
12999   \fi
13000   \let\HyField@AfterAuxOpen\@firstofone
13001   \def\HyField@AuxAddToFields#1{%
13002     \xdef\HyField@afields{%
13003       \ifx\HyField@afields\@empty
13004         \else
13005           \HyField@afields
13006         \space
13007       \fi
13008       #1 0 R.%
13009     }%
13010   }%
13011   \let\HyField@AuxAddToCoFields\HyField@ABD@AuxAddToCoFields
13012 }%
13013 \def\HyField@AddToFields{%
13014   \expandafter\HyField@@AddToFields\expandafter{%
13015     \the\pdfastlink
13016   }%
13017   \ifx\Fld@calculate@code\@empty
13018   \else
13019     \begingroup
13020     \Hy@safe@activestrue
13021     \edef\Hy@temp{%
13022       \endgroup
13023       \if@filesw
13024         \write\@mainaux{%
13025           \string\HyField@AuxAddToCoFields{%
13026             \Fld@calculate@sortkey
13027           }{%
13028             \the\pdfastlink
13029           }%
13030         }%
13031       \fi
13032     }%
13033     \Hy@temp
13034   \fi
13035 }%
13036 \def\HyField@@AddToFields#1{%
13037   \HyField@AfterAuxOpen{%
13038     \if@filesw
13039       \write\@mainaux{%
13040         \string\HyField@AuxAddToFields{#1}%
13041       }%

```

```

13042   \fi
13043   }%
13044 }%
13045 }
13046 \def\@Form[#1]{%
13047   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13048   \kvsetkeys{Form}{#1}%
13049   \pdf@ifdraftmode{}{%
13050     \Hy@FormObjects
13051     \ifnum\pdfTeXversion>13 %
13052       \pdfrefobj\OBJ@pdfdocencoding
13053       \pdfrefobj\OBJ@ZaDb
13054       \pdfrefobj\OBJ@Helv
13055     \fi
13056     \AtVeryEndDocument{%
13057       \immediate\pdfobj{%
13058         <<%
13059         /Fields[\HyField@afields]%
13060         \ifx\HyField@cofields\@empty
13061           \else
13062             /CO[\romannumeral-`Q\HyField@cofields]%
13063           \fi
13064         /DR<<%
13065         /Font<<%
13066           /ZaDb \OBJ@ZaDb\space 0 R%
13067           /Helv \OBJ@Helv\space 0 R%
13068         >>%
13069       >>%
13070       /DA(/Helv 10 Tf 0 g)%
13071       \ifHy@pdfa
13072       \else
13073         \ifHyField@NeedAppearances
13074         /NeedAppearances true%
13075       \fi
13076       \fi
13077     >>%
13078   }%
13079   \edef\OBJ@acroform{\the\pdflastobj}%
13080   \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
13081 }%
13082 }%
13083 \MakeFieldObject{%
Same as \ding{123} of package pifont.
13084   \begingroup
13085   \fontfamily{pzd}%
13086   \fontencoding{U}%
13087   \fontseries{m}%
13088   \fontshape{n}%
13089   \selectfont
13090   \char123 %
13091   \endgroup
13092 }{Ding}%
13093 \MakeFieldObject{%
13094   \fbox{\textcolor{yellow}{\textsf{Submit}}}%

```

```

13095 }{Submit}%
13096 \MakeFieldObject{%
13097   \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
13098 }{SubmitP}%
13099 }
13100 \let\@endForm\@empty
13101 \let\HyAnn@AbsPageLabel\@empty
13102 \let\Fld@pageobjref\@empty
13103 \@ifundefined{pdfpageref}{%
13104 }{%
13105   \@ifpackageloaded{zref-abspage}{%
13106     \newcount\HyAnn@Count
13107     \HyAnn@Count=\z@
13108     \def\HyAnn@AbsPageLabel{%
13109       \global\advance\HyAnn@Count by\@ne
13110       \zref@labelbyprops{HyAnn@\the\HyAnn@Count}{abspage}%
13111       \zref@refused{HyAnn@\the\HyAnn@Count}%
13112     }%
13113     \def\Fld@pageobjref{%
13114       \zref@ifrefundefined{HyAnn@\the\HyAnn@Count}{%
13115         }{%
13116           \zref@ifrefcontainsprop{HyAnn@\the\HyAnn@Count}{abspage}{%
13117             /P \pdfpageref
13118             \zref@extractdefault{HyAnn@\the\HyAnn@Count}{abspage}{1} %
13119             \space 0 R%
13120           }{%
13121             }%
13122           }%
13123         }%
13124       }{%
13125         }%
13126     }
13127 \def\@TextField[#1]#2{% parameters, label
13128   \def\Fld@name{#2}%
13129   \let\Fld@default\@empty
13130   \let\Fld@value\@empty
13131   \def\Fld@width{\DefaultWidthofText}%
13132   \def\Fld@height{%
13133     \ifFld@multiline
13134       \DefaultHeightofTextMultiline
13135     \else
13136       \DefaultHeightofText
13137     \fi
13138   }%
13139   \begingroup
13140     \expandafter\HyField@SetKeys\expandafter{%
13141       \DefaultOptionsofText,#1%
13142     }%
13143   \PDFForm@Name
13144   \HyField@FlagsText
13145   \ifFld@hidden\def\Fld@width{1sp}\fi
13146   \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13147   \LayoutTextField{#2}%
13148   \leavevmode

```

```

13149 \HyAnn@AbsPageLabel
13150 \Hy@escapeform\PDFForm@Text
13151 \pdfstartlink user {\PDFForm@Text}\relax
13152 \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
13153 \HyField@AddToFields
13154 }%
13155 \endgroup
13156 }
13157 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13158 \def\Fld@name{#2}%
13159 \let\Fld@default\relax
13160 \let\Fld@value\relax
13161 \def\Fld@width{\DefaultWidthofChoiceMenu}%
13162 \def\Fld@height{\DefaultHeightofChoiceMenu}%
13163 \begingroup
13164 \Fld@menulength=0 %
13165 \@tempdima\z@
13166 \@for\@curropt:=#3\do{%
13167 \expandafter\Fld@checkequals\@curropt==\%
13168 \Hy@StepCount\Fld@menulength
13169 \settowidth{\@tempdimb}{\@currDisplay}%
13170 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13171 }%
13172 \advance\@tempdima by 15\p@
13173 \begingroup
13174 \HyField@SetKeys{#1}%
13175 \edef\x{\endgroup
13176 \noexpand\expandafter
13177 \noexpand\HyField@SetKeys
13178 \noexpand\expandafter{%
13179 \expandafter\noexpand\csname DefaultOptionsof%
13180 \ifFld@radio
13181 Radio%
13182 \else
13183 \ifFld@combo
13184 \ifFld@popdown
13185 PopdownBox%
13186 \else
13187 ComboBox%
13188 \fi
13189 \else
13190 ListBox%
13191 \fi
13192 \fi
13193 \endcsname
13194 }%
13195 }\x
13196 \HyField@SetKeys{#1}%
13197 \PDFForm@Name
13198 \ifFld@hidden\def\Fld@width{1sp}\fi
13199 \ifx\Fld@value\relax
13200 \let\Fld@value\Fld@default
13201 \fi
13202 \LayoutChoiceField{#2}{%

```

```

13203 \ifFld@radio
13204 \HyField@FlagsRadioButton
13205 \@@Radio{#3}%
13206 \else
13207 \beginngroup
13208 \HyField@FlagsChoice
13209 \ifdim\Fld@width<\@tempdima
13210 \ifdim\@tempdima<1cm\@tempdima1cm\fi
13211 \edef\Fld@width{\the\@tempdima}%
13212 \fi
13213 \ifFld@combo
13214 \else
13215 \@tempdima=\the\Fld@menulength\Fld@charsize
13216 \advance\@tempdima by \Fld@borderwidth bp %
13217 \advance\@tempdima by \Fld@borderwidth bp %
13218 \edef\Fld@height{\the\@tempdima}%
13219 \fi
13220 \@@ListBox{#3}%
13221 \endgroup
13222 \fi
13223 }%
13224 \endgroup
13225 }
13226 \def\@@Radio#1{%
13227 \Fld@listcount=0 %
13228 \EdefEscapeName\Fld@default{\Fld@default}%
13229 \@for\@curropt:=#1\do{%
13230 \expandafter\Fld@checkequals\@curropt==\%
13231 \EdefEscapeName\@currValue{\@currValue}%
13232 \Hy@StepCount\Fld@listcount
13233 \@currDisplay\space
13234 \leavevmode
13235 \HyAnn@AbsPageLabel
13236 \Hy@escapeform\PDFForm@Radio
13237 \pdfstartlink user {%
13238 \PDFForm@Radio
13239 /AP<<%
13240 /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.

```

13241 \/\@currValue\space \DingObject
13242 >>%
13243 >>%
13244 }%
13245 \relax
13246 \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
13247 \ifnum\Fld@listcount=1 %
13248 \HyField@AddToFields
13249 \fi
13250 \space % deliberate space between radio buttons
13251 }%
13252 }

```



```

13253 \newcount\Fld@listcount
13254 \def\@@ListBox#1{%
13255   \HyField@PDFChoices{#1}%
13256   \leavevmode
13257   \HyAnn@AbsPageLabel
13258   \Hy@escapeform\PDFForm@List
13259   \pdfstartlink user {\PDFForm@List}\relax
13260   \MakeChoiceField{\Fld@width}{\Fld@height}%
13261   \pdfendlink
13262   \HyField@AddToFields
13263 }
13264 \def\@PushButton[#1]#2{% parameters, label
13265   \def\Fld@name{#2}%
13266   \begingroup
13267     \expandafter\HyField@SetKeys\expandafter{%
13268       \DefaultOptionsofPushButton,#1%
13269     }%
13270     \PDFForm@Name
13271     \ifHy@pdfa
13272       \Hy@Error{%
13273         PDF/A: Push button with JavaScript is prohibited%
13274       } \@ehc
13275       \LayoutPushButtonField{%
13276         \leavevmode
13277         \MakeButtonField{#2}%
13278       }%
13279     \else
13280       \HyField@FlagsPushButton
13281       \ifFld@hidden\def\Fld@width{1sp}\fi
13282       \LayoutPushButtonField{%
13283         \leavevmode
13284         \HyAnn@AbsPageLabel
13285         \Hy@escapeform\PDFForm@Push
13286         \pdfstartlink user {\PDFForm@Push}\relax
13287         \MakeButtonField{#2}%
13288         \pdfendlink
13289         \HyField@AddToFields
13290       }%
13291     \fi
13292   \endgroup
13293 }
13294 \def\@Submit[#1]#2{%
13295   \def\Fld@width{\DefaultWidthofSubmit}%
13296   \def\Fld@height{\DefaultHeightofSubmit}%
13297   \begingroup
13298     \expandafter\HyField@SetKeys\expandafter{%
13299       \DefaultOptionsofSubmit,#1%
13300     }%
13301     \HyField@FlagsPushButton
13302     \HyField@FlagsSubmit
13303     \ifFld@hidden\def\Fld@width{1sp}\fi
13304     \leavevmode
13305     \HyAnn@AbsPageLabel
13306     \Hy@escapeform\PDFForm@Submit

```

```

13307 \pdfstartlink user {%
13308 \PDFForm@Submit
13309 /AP<</N \SubmitObject/D \SubmitPObject>>%
13310 }%
13311 \relax
13312 \MakeButtonField{#2}%
13313 \pdfendlink
13314 \HyField@AddToFields
13315 \endgroup
13316 }
13317 \def\@Reset[#1]#2{%
13318 \def\Fld@width{\DefaultWidthofReset}%
13319 \def\Fld@height{\DefaultHeightofReset}%
13320 \begingroup
13321 \expandafter\HyField@SetKeys\expandafter{%
13322 \DefaultOptionsofReset,#1%
13323 }%
13324 \leavevmode
13325 \ifHy@pdfa
13326 \Hy@Error{%
13327 PDF/A: Reset action is prohibited%
13328 } \@ehc
13329 \MakeButtonField{#2}%
13330 \else
13331 \HyField@FlagsPushButton
13332 \ifFld@hidden\def\Fld@width{1sp}\fi
13333 \HyAnn@AbsPageLabel
13334 \Hy@escapeform\PDFForm@Reset
13335 \pdfstartlink user {\PDFForm@Reset}\relax
13336 \MakeButtonField{#2}%
13337 \pdfendlink
13338 \HyField@AddToFields
13339 \fi
13340 \endgroup
13341 }
13342 \def\@CheckBox[#1]#2{% parameters, label
13343 \def\Fld@name{#2}%
13344 \def\Fld@default{0}%
13345 \begingroup
13346 \def\Fld@width{\DefaultWidthofCheckBox}%
13347 \def\Fld@height{\DefaultHeightofCheckBox}%
13348 \expandafter\HyField@SetKeys\expandafter{%
13349 \DefaultOptionsofCheckBox,#1%
13350 }%
13351 \PDFForm@Name
13352 \HyField@FlagsCheckBox
13353 \ifFld@hidden\def\Fld@width{1sp}\fi
13354 \LayoutCheckField{#2}{%
13355 \leavevmode
13356 \HyAnn@AbsPageLabel
13357 \Hy@escapeform\PDFForm@Check
13358 \pdfstartlink user {\PDFForm@Check}\relax
13359 \MakeCheckField{\Fld@width}{\Fld@height}%
13360 \pdfendlink

```

```

13361 \HyField@AddToFields
13362 }%
13363 \endgroup
13364 }
13365 \def\Hy@FormObjects{%
13366 \pdfobj {%
13367 <<%
13368 /Type/Encoding%
13369 /Differences[%
13370 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
13371 /ring/tilde %
13372 39/quotesingle %
13373 96/grave %
13374 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13375 /fraction/guilsingleft/guilsingright/minus/perthousand%
13376 /quotedblbase/quotedblleft/quotedblright/quoteleft%
13377 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
13378 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13379 160/Euro %
13380 164/currency %
13381 166/brokenbar %
13382 168/dieresis/copyright/ordfeminine %
13383 172/logicalnot/.notdef/registered/macron/degree/plusminus%
13384 /twosuperior/threesuperior/acute/mu %
13385 183/periodcentered/cedilla/onesuperior/ordmasculine %
13386 188/onequarter/onehalf/threequarters %
13387 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13388 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
13389 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
13390 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
13391 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
13392 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
13393 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
13394 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
13395 /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
13396 /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
13397 ]%
13398 >>%
13399 }%
13400 \xdef\OBJ@pdfdocencoding{\the\pdfastobj}%
13401 \pdfobj{%
13402 <<%
13403 /Type/Font%
13404 /Subtype/Type1%
13405 /Name/ZaDb%
13406 /BaseFont/ZapfDingbats%
13407 >>%
13408 }%
13409 \xdef\OBJ@ZaDb{\the\pdfastobj}%
13410 \pdfobj{%
13411 <<%
13412 /Type/Font%
13413 /Subtype/Type1%
13414 /Name/Helv%

```

```

13415 /BaseFont/Helvetica%
13416 /Encoding \OBJ@pdfdocencoding\space 0 R%
13417 >>%
13418 }%
13419 \xdef\OBJ@Helv{\the\pdfastobj}%
13420 \global\let\Hy@FormObjects\relax
13421 }
13422 \pdfTeX

```

## 45.5 dvipdfm, xetex

D. P. Story adapted the pdf $\TeX$  forms part for dvipdfm, of which version 0.12.7b or higher is required because of a bug.

```
13423 (*dvipdfm | xetex)
```

\@Gauge

```

13424 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
13425 \Hy@Message{Sorry, dvipdfm/XeTeX does not support FORM gauges}%
13426 }

```

\@Form

```

13427 \def\@Form[#1]{%
13428 \ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13429 \kvsetkeys{Form}{#1}%
13430 \Hy@FormObjects
13431 \@pdfm@mark{obj @afields []}%
13432 \@pdfm@mark{obj @corder []}%
13433 \@pdfm@mark{%
13434 obj @aform <<%
13435 /Fields @afields%
13436 /DR<<%
13437 /Font<<%
13438 /ZaDb @OBJZaDb%
13439 /Helv @OBJHelv%
13440 >>%
13441 >>%
13442 /DA(/Helv 10 Tf 0 g)%
13443 /CO @corder%
13444 \ifHy@pdfa
13445 \else
13446 \ifHyField@NeedAppearances
13447 /NeedAppearances true%
13448 \fi
13449 \fi
13450 >>%
13451 }%
13452 \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
13453 }

```

\@endForm

```
13454 \let\@endForm\@empty
```

\dvipdfm@setdim \dvipdfm@setdim sets dimensions for ann using \pdfm@box.

```
13455 \def\dvipdfm@setdim{%
```

```

13456 height \the\ht\pdfm@box\space
13457 width \the\wd\pdfm@box\space
13458 depth \the\dp\pdfm@box\space
13459 }

```

\HyField@AnnotCount

```

13460 \newcount\HyField@AnnotCount
13461 \HyField@AnnotCount=\z@

```

\HyField@AdvanceAnnotCount

```

13462 \def\HyField@AdvanceAnnotCount{%
13463 \global\advance\HyField@AnnotCount\@ne
13464 }

```

\HyField@TheAnnotCount

```

13465 \def\HyField@TheAnnotCount{%
13466 \the\HyField@AnnotCount
13467 }

```

\Fld@pageobjref

```

13468 \def\Fld@pageobjref{/P @thispage}%

```

\HyField@AddToFields

```

13469 \def\HyField@AddToFields#1{%
13470 \@pdfm@mark{put @afields @#1\HyField@TheAnnotCount}%
13471 \if\Fld@calculate@code\@empty
13472 \else
13473 \@pdfm@mark{put @corder @#1\HyField@TheAnnotCount}%
13474 \fi
13475 }

```

\@TextField

```

13476 \def\@TextField[#1]#2{% parameters, label
13477 \def\Fld@name{#2}%
13478 \let\Fld@default\@empty
13479 \let\Fld@value\@empty
13480 \def\Fld@width{\DefaultWidthofText}%
13481 \def\Fld@height{%
13482 \if\Fld@multiline
13483 \DefaultHeightofTextMultiline
13484 \else
13485 \DefaultHeightofText
13486 \fi
13487 }%
13488 \begingroup
13489 \expandafter\HyField@SetKeys\expandafter{%
13490 \DefaultOptionsofText,#1%
13491 }%
13492 \PDFForm@Name
13493 \HyField@FlagsText
13494 \if\Fld@hidden\def\Fld@width{1sp}\fi
13495 \if\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13496 \setbox\pdfm@box=\hbox{%

```

```

13497   \MakeTextField{\Fld@width}{\Fld@height}%
13498   }%
13499   \HyField@AdvanceAnnotCount
13500   \LayoutTextField{#2}{%
13501     \leavevmode
13502     \Hy@escapeform\PDFForm@Text
13503     \@pdfm@mark{%
13504       ann @text\HyField@TheAnnotCount\space
13505       \dviPDFm@setdim << \PDFForm@Text >>%
13506     }%
13507   }%
13508   \unhbox\pdfm@box
13509   \HyField@AddToFields{text}%
13510   % record in @afields array
13511 \endgroup
13512 }

```

#### \@ChoiceMenu

```

13513 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13514   \def\Fld@name{#2}%
13515   \let\Fld@default\relax
13516   \let\Fld@value\relax
13517   \def\Fld@width{\DefaultWidthofChoiceMenu}%
13518   \def\Fld@height{\DefaultHeightofChoiceMenu}%
13519   \begingroup
13520     \Fld@menulength=0 %
13521     \@tempdima\z@
13522     \@for\@curropt:=#3\do{%
13523       \expandafter\Fld@checkequals\@curropt==\%
13524       \Hy@StepCount\Fld@menulength
13525       \settowidth{\@tempdimb}{\@currDisplay}%
13526       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13527     }%
13528     \advance\@tempdima by 15\p@
13529     \begingroup
13530       \HyField@SetKeys{#1}%
13531     \edef\x{\endgroup
13532       \noexpand\expandafter
13533       \noexpand\HyField@SetKeys
13534       \noexpand\expandafter{%
13535         \expandafter\noexpand\curname DefaultOptionsof%
13536         \ifFld@radio
13537           Radio%
13538         \else
13539           \ifFld@combo
13540             \ifFld@popdown
13541               PopdownBox%
13542             \else
13543               ComboBox%
13544             \fi
13545           \else
13546             ListBox%
13547           \fi
13548         \fi

```

```

13549     \endcsname
13550   }%
13551 } \x
13552 \HyField@SetKeys{#1}%
13553 \PDFForm@Name
13554 \ifFld@hidden\def\Fld@width{1sp}\fi
13555 \ifx\Fld@value\relax
13556   \let\Fld@value\Fld@default
13557 \fi
13558 \LayoutChoiceField{#2}{%
13559   \ifFld@radio
13560     \HyField@FlagsRadioButton
13561     \@@Radio{#3}%
13562   \else
13563     \begingroup
13564       \HyField@FlagsChoice
13565       \ifdim\Fld@width<\@tempdima
13566         \ifdim\@tempdima<1cm\@tempdima1cm\fi
13567         \edef\Fld@width{\the\@tempdima}%
13568       \fi
13569       \ifFld@combo
13570     \else
13571       \@tempdima=\the\Fld@menulength\Fld@charsize
13572       \advance\@tempdima by \Fld@borderwidth bp %
13573       \advance\@tempdima by \Fld@borderwidth bp %
13574       \edef\Fld@height{\the\@tempdima}%
13575     \fi
13576     \@@ListBox{#3}%
13577   \endgroup
13578 \fi
13579 }%
13580 \endgroup
13581 }

```

#### \@@Radio

```

13582 \def\@@Radio#1{%
13583   \Fld@listcount=0 %
13584   \EdefEscapeName\Fld@default{\Fld@default}%
13585   \setbox\pdfm@box=\hbox{%
13586     \MakeRadioField{\Fld@width}{\Fld@height}%
13587   }%
13588   \@for\@curropt:=#1\do{%
13589     \expandafter\Fld@checkequals\@curropt==\%
13590     \EdefEscapeName\@currValue{\@currValue}%
13591     \Hy@StepCount\Fld@listcount
13592     \@currDisplay\space
13593     \leavevmode
13594     \Hy@escapeform\PDFForm@Radio
13595     \ifnum\Fld@listcount=1 %
13596       \HyField@AdvanceAnnotCount
13597     \fi
13598     \@pdfm@mark{%
13599       ann %
13600     \ifnum\Fld@listcount=1 %

```

```

13601     @radio\HyField@TheAnnotCount%
13602     \space
13603     \fi
13604     \dvipdfm@setdim
13605     <<%
13606     \PDFForm@Radio
13607     /AP<</N<</\@currValue /null>>>>%
13608     >>%
13609     }%
13610     \unhcopy\pdfm@box\space% deliberate space between radio buttons
13611     \ifnum\Fld@listcount=1 %
13612     \HyField@AddToFields{radio}%
13613     \fi
13614     }%
13615     }

```

\Fld@listcount

```

13616 \newcount\Fld@listcount

```

\@@ListBox

```

13617 \def\@@ListBox#1{%
13618   \HyField@PDFChoices{#1}%
13619   \setbox\pdfm@box=\hbox{%
13620     \MakeChoiceField{\Fld@width}{\Fld@height}%
13621   }%
13622   \leavevmode
13623   \Hy@escapeform\PDFForm@List
13624   \HyField@AdvanceAnnotCount
13625   \@pdfm@mark{%
13626     ann @list\HyField@TheAnnotCount\space
13627     \dvipdfm@setdim
13628     <<\PDFForm@List>>%
13629   }%
13630   \unhbox\pdfm@box
13631   \HyField@AddToFields{list}%
13632 }

```

\@PushButton

```

13633 \def\@PushButton[#1]#2{% parameters, label
13634   \def\Fld@name{#2}%
13635   \begingroup
13636   \expandafter\HyField@SetKeys\expandafter{%
13637     \DefaultOptionsofPushButton,#1%
13638   }%
13639   \PDFForm@Name
13640   \ifHy@pdfa
13641     \Hy@Error{%
13642       PDF/A: Push button with JavaScript is prohibited%
13643     }@\ehc
13644     \LayoutPushButtonField{%
13645       \leavevmode
13646       \MakeButtonField{#2}%
13647     }%
13648     \else

```



```

13649 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13650 \HyField@FlagsPushButton
13651 \ifFld@hidden\def\Fld@width{1sp}\fi
13652 \HyField@AdvanceAnnotCount
13653 \LayoutPushButtonField{%
13654 \leavevmode
13655 \Hy@escapeform\PDFForm@Push
13656 \@pdfm@mark{%
13657 ann @push\HyField@TheAnnotCount\space
13658 \dviPDFForm@setdim
13659 <<\PDFForm@Push>>%
13660 }%
13661 }%
13662 \unhbox\pdfm@box
13663 \HyField@AddToFields{push}%
13664 \fi
13665 \endgroup
13666 }

```

\@Submit

```

13667 \def\@Submit[#1]#2{%
13668 \def\Fld@width{\DefaultWidthofSubmit}%
13669 \def\Fld@height{\DefaultHeightofSubmit}%
13670 \begingroup
13671 \expandafter\HyField@SetKeys\expandafter{%
13672 \DefaultOptionsofSubmit,#1%
13673 }%
13674 \HyField@FlagsPushButton
13675 \HyField@FlagsSubmit
13676 \ifFld@hidden\def\Fld@width{1sp}\fi
13677 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13678 \leavevmode
13679 \Hy@escapeform\PDFForm@Submit
13680 \HyField@AdvanceAnnotCount
13681 \@pdfm@mark{%
13682 ann @submit\HyField@TheAnnotCount\space
13683 \dviPDFForm@setdim
13684 <<\PDFForm@Submit>>%
13685 }%
13686 \unhbox\pdfm@box%
13687 \HyField@AddToFields{submit}%
13688 \endgroup
13689 }

```

\@Reset

```

13690 \def\@Reset[#1]#2{%
13691 \def\Fld@width{\DefaultWidthofReset}%
13692 \def\Fld@height{\DefaultHeightofReset}%
13693 \begingroup
13694 \expandafter\HyField@SetKeys\expandafter{%
13695 \DefaultOptionsofReset,#1%
13696 }%
13697 \leavevmode
13698 \ifHy@pdfa

```

```

13699 \Hy@Error{%
13700 PDF/A: Reset action is prohibited%
13701 } \@ehc
13702 \MakeButtonField{#2}%
13703 \else
13704 \HyField@FlagsPushButton
13705 \ifFld@hidden\def\Fld@width{1sp}\fi
13706 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13707 \Hy@escapeform\PDFForm@Reset
13708 \HyField@AdvanceAnnotCount
13709 \@pdfm@mark{%
13710 ann @reset\HyField@TheAnnotCount\space
13711 \dvi pdfm@setdim
13712 <<\PDFForm@Reset>>%
13713 }%
13714 \unhbox\pdfm@box
13715 \HyField@AddToFields{reset}%
13716 \fi
13717 \endgroup
13718 }

```

#### \@CheckBox

```

13719 \def\@CheckBox[#1]#2{% parameters, label
13720 \def\Fld@name{#2}%
13721 \def\Fld@default{0}%
13722 \begingroup
13723 \def\Fld@width{\DefaultWidthofCheckBox}%
13724 \def\Fld@height{\DefaultHeightofCheckBox}%
13725 \expandafter\HyField@SetKeys\expandafter{%
13726 \DefaultOptionsofCheckBox,#1%
13727 }%
13728 \PDFForm@Name
13729 \HyField@FlagsCheckBox
13730 \ifFld@hidden\def\Fld@width{1sp}\fi
13731 \setbox\pdfm@box=\hbox{%
13732 \MakeCheckField{\Fld@width}{\Fld@height}%
13733 }%
13734 \HyField@AdvanceAnnotCount
13735 \LayoutCheckField{#2}%
13736 \leavevmode
13737 \Hy@escapeform\PDFForm@Check
13738 \@pdfm@mark{%
13739 ann @check\HyField@TheAnnotCount\space
13740 \dvi pdfm@setdim
13741 <<\PDFForm@Check>>%
13742 }%
13743 \unhbox\pdfm@box
13744 \HyField@AddToFields{check}%
13745 }%
13746 \endgroup
13747 }

13748 \def\Hy@FormObjects{%
13749 \@pdfm@mark{obj @OBJpdfdocencoding%

```

13750 <<%  
13751 /Type/Encoding%  
13752 /Differences[%  
13753 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %  
13754 39/quotesingle %  
13755 96/grave %  
13756 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%  
13757 /fraction/guilsingleft/guilsingright/minus/perthousand%  
13758 /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%  
13759 /quotesinglbase/trademark/ffi/ff/Lslash/OE/Scaron/Ydieresis%  
13760 /Zcaron/dotlessi/lslash/oe/scaron/zcaron %  
13761 160/Euro %  
13762 164/currency %  
13763 166/brokenbar %  
13764 168/dieresis/copyright/ordfeminine %  
13765 172/logicalnot/.notdef/registered/macron/degree/plusminus%  
13766 /twosuperior/threesuperior/acute/mu %  
13767 183/periodcentered/cedilla/onesuperior/ordmasculine %  
13768 188/onequarter/onehalf/threequarters %  
13769 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%  
13770 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%  
13771 /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%  
13772 /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%  
13773 /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%  
13774 /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%  
13775 /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%  
13776 /eth/ntilde/ograve/oacute/ocircumflex/otilde/odieresis%  
13777 /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%  
13778 /thorn/ydieresis%  
13779 ]%  
13780 >>%  
13781 }%  
13782 \@pdfm@mark{obj @OBJZaDb%  
13783 <<%  
13784 /Type/Font%  
13785 /Subtype/Type1%  
13786 /Name/ZaDb%  
13787 /BaseFont/ZapfDingbats%  
13788 >>%  
13789 }%  
13790 \@pdfm@mark{obj @OBJHelv%  
13791 <<%  
13792 /Type/Font%  
13793 /Subtype/Type1%  
13794 /Name/Helv%  
13795 /BaseFont/Helvetica%  
13796 /Encoding @OBJpdfdocencoding%  
13797 >>%  
13798 }%  
13799 \global\let\Hy@FormObjects\relax  
13800 }  
13801 (/dvipdfm | xetex)

## 45.6 Common forms part

```
13802 (*pdfform)
\Fld@pageobjref
13803 \providecommand*\Fld@pageobjref{}

\Hy@escapestring
13804 \@ifundefined{pdf@escapestring}
13805 {%
13806 \let\Hy@escapestring\@firstofone
13807 \def\Hy@escapeform#1{%
13808 \ifHy@pdfescapeform
13809 \def\Hy@escapestring##1{%
13810 \noexpand\Hy@escapestring{\noexpand##1}%
13811 }%
13812 \edef\Hy@temp{#1}%
13813 \expandafter\Hy@@escapeform\Hy@temp\Hy@escapestring}\@nil
13814 \def\Hy@escapestring##1{%
13815 \@ifundefined{Hy@esc@\string##1}{%
13816 ##1%
13817 \ThisShouldNotHappen
13818 }{%
13819 \csname Hy@esc@\string##1\endcsname
13820 }%
13821 }%
13822 \else
13823 \let\Hy@escapestring\@firstofone
13824 \fi
13825 }%
13826 \def\Hy@@escapeform#1\Hy@escapestring#2#3\@nil{%
13827 \ifx\#3\%
13828 \else
13829 \expandafter
13830 \Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
13831 \Hy@ReturnAfterFi{%
13832 \Hy@@escapeform#3\@nil
13833 }%
13834 \fi
13835 }%
13836 }{%
13837 \def\Hy@escapeform#1{%
13838 \ifHy@pdfescapeform
13839 \let\Hy@escapestring\pdfescapestring
13840 \else
13841 \let\Hy@escapestring\@firstofone
13842 \fi
13843 }%
13844 \Hy@escapeform}%
13845 }

\PDFForm@Name
13846 \def\PDFForm@Name{%
13847 \PDFForm@@Name\Fld@name
13848 \ifx\Fld@altname\relax
```

```

13849 \else
13850 \PDFForm@@Name\Fld@altname
13851 \fi
13852 \ifx\Fld@mappingname\relax
13853 \else
13854 \PDFForm@@Name\Fld@mappingname
13855 \fi
13856 }

```

#### \PDFForm@@Name

```

13857 \def\PdfForm@@Name#1{%
13858 \begingroup
13859 \ifnum\Hy@pdf@major@minor@version<105 % implementation note 117, PDF spec 1.7
13860 \ifHy@unicode
13861 \Hy@unicodedefalse
13862 \fi
13863 \fi
13864 \pdfstringdef\Hy@gtemp#1%
13865 \endgroup
13866 \let#1\Hy@gtemp
13867 }

```

#### \Fld@additionalactions

```

13868 \def\Fld@@additionalactions{%
K input (keystroke) format
13869 \ifx\Fld@keystroke@code\@empty
13870 \else
13871 /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
13872 \fi
F display format
13873 \ifx\Fld@format@code\@empty
13874 \else
13875 /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
13876 \fi
V validation
13877 \ifx\Fld@validate@code\@empty
13878 \else
13879 /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
13880 \fi
C calculation
13881 \ifx\Fld@calculate@code\@empty
13882 \else
13883 /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
13884 \fi
Fo receiving the input focus
13885 \ifx\Fld@onfocus@code\@empty
13886 \else
13887 /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
13888 \fi

```

Bl loosing the input focus (blurred)

```
13889 \ifx\Fld@onblur@code\@empty
13890 \else
13891 /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
13892 \fi
```

D pressing the mouse button (down)

```
13893 \ifx\Fld@onmousedown@code\@empty
13894 \else
13895 /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
13896 \fi
```

U releasing the mouse button (up)

```
13897 \ifx\Fld@onmouseup@code\@empty
13898 \else
13899 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
13900 \fi
```

E cursor enters the annotation's active area.

```
13901 \ifx\Fld@onenter@code\@empty
13902 \else
13903 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
13904 \fi
```

X cursor exits the annotation's active area.

```
13905 \ifx\Fld@onexit@code\@empty
13906 \else
13907 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
13908 \fi
13909 }
13910 \def\Fld@additionalactions{%
13911 \if-\Fld@@additionalactions-%
13912 \else
13913 \ifHy@pdfa
13914 \else
13915 /AA<<\Fld@@additionalactions>>%
13916 \fi
13917 \fi
13918 }
```

\Fld@annotnames

```
13919 \def\Fld@annotnames{%
13920 /T(\Fld@name)%
13921 \ifx\Fld@altname\relax
13922 \else
13923 /TU(\Fld@altname)%
13924 \fi
13925 \ifx\Fld@mappingname\relax
13926 \else
13927 /TM(\Fld@mappingname)%
13928 \fi
13929 }
```

\PDFForm@Check

```
13930 \def\PDFForm@Check{%
```

```

13931 /Subtype/Widget%
13932 \Fld@annotflags
13933 \Fld@pageobjref
13934 \Fld@annotnames
13935 /FT/Btn%
13936 \Fld@flags
13937 /Q \Fld@align
13938 /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
13939 /AP<< /N <</Yes<<>>>> >> %new string /Yes is from below
13940 /MK<<%
13941 \ifnum\Fld@rotation=\z@
13942 \else
13943 /R \Fld@rotation
13944 \fi
13945 \ifx\Fld@bordercolor\relax
13946 \else
13947 /BC[\Fld@bordercolor]%
13948 \fi
13949 \ifx\Fld@bcolor\relax
13950 \else
13951 /BG[\Fld@bcolor]%
13952 \fi
13953 /CA(\Hy@escapestring{\Fld@cbsymbol})%
13954 >>%
13955 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13956 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13957 /H/P%
13958 \ifFld@checked /V/Yes/AS/Yes\else /V/Off/AS/Off\fi
13959 \Fld@additionalactions
13960 }

```

#### \PDFForm@Push

```

13961 \ifHy@pdfa
13962 \else
13963 \def\PDFForm@Push{%
13964 /Subtype/Widget%
13965 \Fld@annotflags
13966 \Fld@pageobjref
13967 \Fld@annotnames
13968 /FT/Btn%
13969 \Fld@flags
13970 /H/P%
13971 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13972 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13973 \ifx\Fld@bordercolor\relax\else 1\fi
13974 \space
13975 \else
13976 /MK<<%
13977 \ifnum\Fld@rotation=\z@
13978 \else
13979 /R \Fld@rotation
13980 \fi
13981 \ifx\Fld@bordercolor\relax
13982 \else

```

```

13983      /BC[\Fld@bordercolor]%
13984      \fi
13985      >>%
13986      \fi
13987      /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick@code})>>%
13988      \Fld@additionalactions
13989      }%
13990      \fi

```

#### \PDFForm@List

```

13991 \def\PDFForm@List{%
13992   /Subtype/Widget%
13993   \Fld@annotflags
13994   \Fld@pageobjref
13995   \Fld@annotnames
13996   /FT/Ch%
13997   \Fld@flags
13998   /Q \Fld@align
13999   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14000   \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14001     \ifx\Fld@bordercolor\relax\else 1\fi
14002     \ifx\Fld@bcolor\relax \else 1\fi
14003     \space
14004   \else
14005     /MK<<%
14006     \ifnum\Fld@rotation=\z@
14007     \else
14008       /R \Fld@rotation
14009     \fi
14010     \ifx\Fld@bordercolor\relax
14011     \else
14012       /BC[\Fld@bordercolor]%
14013     \fi
14014     \ifx\Fld@bcolor\relax
14015     \else
14016       /BG[\Fld@bcolor]%
14017     \fi
14018     >>%
14019   \fi
14020   /DA(/Helv \strip@pt\Fld@charsize\space Tf%
14021     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14022   \Fld@choices
14023   \Fld@additionalactions
14024 }

```

#### \PDFForm@Radio

```

14025 \def\PDFForm@Radio{%
14026   /Subtype/Widget%
14027   \Fld@annotflags
14028   \Fld@pageobjref
14029   \Fld@annotnames
14030   /FT/Btn%
14031   \Fld@flags
14032   /H/P%

```



```

14033 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14034 /MK<<%
14035 \ifnum\Fld@rotation=\z@
14036 \else
14037 /R \Fld@rotation
14038 \fi
14039 \ifx\Fld@bordercolor\relax
14040 \else
14041 /BC[\Fld@bordercolor]%
14042 \fi
14043 \ifx\Fld@bcolor\relax
14044 \else
14045 /BG[\Fld@bcolor]%
14046 \fi
14047 /CA(\Hy@escapestring{\Fld@radiosymbol})%
14048 >>%
14049 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
14050 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%

```

New code, the default value is used for all buttons

```

14051 \ifx\Fld@default\@empty
14052 /V/Off%
14053 /DV/Off%
14054 \else
14055 /V/\Fld@default
14056 /DV/\Fld@default
14057 \fi
14058 \Fld@additionalactions
14059 }

```

#### \PDFForm@Text

```

14060 \def\PDFForm@Text{%
14061 /Subtype/Widget%
14062 \Fld@annotflags
14063 \Fld@pageobjref
14064 \Fld@annotnames
14065 /FT/Tx%
14066 \Fld@flags
14067 /Q \Fld@align
14068 /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
14069 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14070 \ifx\Fld@bordercolor\relax\else 1\fi
14071 \ifx\Fld@bcolor\relax \else 1\fi
14072 \space
14073 \else
14074 /MK<<%
14075 \ifnum\Fld@rotation=\z@
14076 \else
14077 /R \Fld@rotation
14078 \fi
14079 \ifx\Fld@bordercolor\relax
14080 \else
14081 /BC[\Fld@bordercolor]%
14082 \fi

```

```

14083     \ifx\Fld@bcolor\relax
14084     \else
14085       /BG[\Fld@bcolor]%
14086     \fi
14087   >>%
14088 \fi
14089 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
14090   \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14091 /DV(\Hy@escapestring{\Fld@default})%
14092 /V(\Hy@escapestring{\Fld@value})%
14093 \Fld@additionalactions
14094 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
14095 }

```

#### \PDFForm@Submit

```

14096 \def\PDFForm@Submit{%
14097   /Subtype/Widget%
14098   \Fld@annotflags
14099   \Fld@pageobjref
14100   \Fld@annotnames
14101   /FT/Btn%
14102   \Fld@flags
14103   /H/P%
14104   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14105   \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14106     \ifx\Fld@bordercolor\relax\else 1\fi
14107     \space
14108   \else
14109     /MK<<%
14110     \ifnum\Fld@rotation=\z@
14111     \else
14112       /R \Fld@rotation
14113     \fi
14114     \ifx\Fld@bordercolor\relax
14115     \else
14116       /BC[\Fld@bordercolor]%
14117     \fi
14118     >>%
14119   \fi
14120 /A<<%
14121 /S/SubmitForm%
14122 /F<<%
14123 /FS/URL%
14124 /F(\Hy@escapestring{\Form@action})%
14125 >>%
14126 \Fld@submitflags
14127 >>%
14128 \Fld@additionalactions
14129 }

```

#### \PDFForm@Reset

```

14130 \ifHy@pdfa
14131 \else
14132 \def\PDFForm@Reset{%

```

```

14133 /Subtype/Widget%
14134 \Fld@annotflags
14135 \Fld@pageobjref
14136 \Fld@annotnames
14137 /FT/Btn%
14138 \Fld@flags
14139 /H/P%
14140 /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
14141 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14142 \ifx\Fld@bordercolor\relax\else 1\fi
14143 \space
14144 \else
14145 /MK<<%
14146 \ifnum\Fld@rotation=\z@
14147 \else
14148 /R \Fld@rotation
14149 \fi
14150 \ifx\Fld@bordercolor\relax
14151 \else
14152 /BC[\Fld@bordercolor]%
14153 \fi
14154 % /CA (Clear)
14155 % /AC (Done)
14156 >>%
14157 \fi
14158 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14159 /A<</S/ResetForm>>%
14160 \Fld@additionalactions
14161 }%
14162 \fi

14163 </pdfform>
14164 <*packageEnd>

```

## 46 Bookmarks in the PDF file

This was originally developed by Yannis Haralambous (it was the separate `repere.sty`); it needed the `repere` or `makebook.pl` post-processor to work properly. Now redundant, as it is done entirely in  $\LaTeX$  macros.

To write out the current section title, and its rationalized number, we have to intercept the `\@sect` command, which is rather dangerous. But how else to see the information we need? We do the *same* for `\@ssect`, giving anchors to unnumbered sections. This allows things like bibliographies to get bookmarks when used with a manual `\addcontentsline`

```

14165 \def\phantomsection{%
14166 \Hy@MakeCurrentHrefAuto{section*}%
14167 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
14168 }
14169 </packageEnd>

```

### 46.1 Bookmarks

14170 (\*outlines)

This section was written by Heiko Oberdiek; the code replaces an earlier version by David Carlisle.

The first part of bookmark code is in section 6. Further documentation is available as paper and slides of the talk, that Heiko Oberdiek has given at the EuroTeX'99 meeting in Heidelberg. See `paper.pdf` and `slides.pdf` in the `doc` directory of `hyperref`.

When using the right-to-left typesetting based on  $\varepsilon$ -TeX, the order of the `\BOOKMARK` commands written to the `\@outlinefile` could appear wrong, because of mis-feature of  $\varepsilon$ -TeX's implementation (that it processes the shipped out lines left-to-right, instead of the order in which they appear in the document). The wrong order will appear when the file contains two bookmarks on the same line typeset right-to-left.

To work around this problem, the `bookmark@seq@number` counter is used to write the bookmark's sequential number into a comment in the `\@outlinefile`, which could be used to post-process it to achieve the proper ordering of `\BOOKMARK` commands in that file.

```
14171 \def\Hy@writebookmark#1#2#3#4#5{%
14172   % section number, text, label, level, file
14173   \ifx\WriteBookmarks\relax%
14174   \else
14175     \ifnum#4>\Hy@bookmarksdepth\relax
14176     \else
14177       \@@writetorep{#1}{#2}{#3}{#4}{#5}%
14178     \fi
14179   \fi
14180 }
14181 \def\Hy@currentbookmarklevel{0}
14182 \def\Hy@numberline#1{#1 }
14183 \def\@@writetorep#1#2#3#4#5{%
14184   \begingroup
14185   \edef\Hy@tempa{#5}%
14186   \ifx\Hy@tempa\Hy@bookmarkstype
14187     \edef\Hy@level{#4}%
14188     \ifx\Hy@levelcheck Y%
14189       \@tempcnta\Hy@level\relax
14190       \advance\@tempcnta by -1 %
14191       \ifnum\Hy@currentbookmarklevel<\@tempcnta
14192         \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
14193       \advance\@tempcnta by 1 %
14194       \Hy@Warning{%
14195         Difference (\the\@tempcnta) between bookmark levels is %
14196         greater \MessageBreak than one, level fixed%
14197       }%
14198       \@tempcnta\Hy@currentbookmarklevel
14199       \advance\@tempcnta by 1 %
14200       \edef\Hy@level{\the\@tempcnta}%
14201     \fi
14202   \else
14203     \global\let\Hy@levelcheck Y%
14204   \fi
14205   \global\let\Hy@currentbookmarklevel\Hy@level
```

```

14206 \@tempcnta\Hy@level\relax
14207 \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
14208 \advance\@tempcnta by -1 %
14209 \edef\Hy@tempa{#3}%
14210 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
14211 \ifx\Hy@tempa\Hy@tempb
14212   \Hy@Warning{%
14213     The anchor of a bookmark and its parent's must not%
14214     \MessageBreak be the same. Added a new anchor%
14215   }%
14216   \phantomsection
14217 \fi
14218 \ifHy@bookmarksnumbered
14219   \let\numberline\Hy@numberline
14220   \let\booknumberline\Hy@numberline
14221   \let\partnumberline\Hy@numberline
14222   \let\chapternumberline\Hy@numberline
14223 \else
14224   \let\numberline\@gobble
14225   \let\booknumberline\@gobble
14226   \let\partnumberline\@gobble
14227   \let\chapternumberline\@gobble
14228 \fi
14229 \pdfstringdef\Hy@tempa{#2}%
14230 \HyPsd@SanitizeForOutFile\Hy@tempa
14231 \if@filesw
14232   \stepcounter{bookmark@seq@number}%
14233   \@ifundefined{@outlinefile}{%
14234     }{%
14235     \protected@write\@outlinefile{ }{%
14236       \protect\BOOKMARK
14237       [\Hy@level][\@bookmarkopenstatus{\Hy@level}]{#3}%
14238       {\Hy@tempa}{\Hy@tempb}%
14239       \@percentchar\space\thebookmark@seq@number
14240     }%
14241   }%
14242 \fi
14243 \fi
14244 \endgroup
14245 }
14246 \newcounter{bookmark@seq@number}

14247 \begingroup
14248 \lccode` (= ` { %
14249 \lccode` ) = ` } %
14250 \lccode` 1 = \z@
14251 \lccode` 2 = \z@
14252 \lccode` 3 = \z@
14253 \lccode` 5 = \z@
14254 \lccode` 7 = \z@
14255 \lccode` \# = \z@
14256 \lccode` \` = \z@
14257 \lccode` \{ = \z@
14258 \lccode` \} = \z@
14259 \lowercase{%

```

```

14260 \endgroup
14261 \def\HyPsd@SanitizeForOutFile#1{%
14262   \@onelevel@sanitize\Hy@tempa
14263   \escapechar`\\%
14264   \edef\Hy@tempa{%
14265     \expandafter\HyPsd@SanitizeOut@BraceLeft\Hy@tempa\@nil
14266   }%
14267   \edef\Hy@tempa{%
14268     \expandafter\HyPsd@SanitizeOut@BraceRight\Hy@tempa\@nil
14269   }%
14270 }%
14271 \def\HyPsd@SanitizeOut@BraceLeft#1(#2\@nil{%
14272   #1%
14273   \ifx\#2\\%
14274     \expandafter\@gobble
14275   \else
14276     \expandafter\@firstofone
14277   \fi
14278   {%
14279     \string\173%
14280     \HyPsd@SanitizeOut@BraceLeft#2\@nil
14281   }%
14282 }%
14283 \def\HyPsd@SanitizeOut@BraceRight#1)#2\@nil{%
14284   #1%
14285   \ifx\#2\\%
14286     \expandafter\@gobble
14287   \else
14288     \expandafter\@firstofone
14289   \fi
14290   {%
14291     \string\175%
14292     \HyPsd@SanitizeOut@BraceRight#2\@nil
14293   }%
14294 }%
14295 }

```

In the call of \BOOKMARK the braces around #4 are omitted, because it is not likely, that the level number contains ].

```

14296 \newcommand{\currentpdfbookmark}{%
14297   \pdfbookmark[\Hy@currentbookmarklevel]%
14298 }
14299 \newcommand{\subpdfbookmark}{%
14300   \@tempcnta\Hy@currentbookmarklevel
14301   \Hy@StepCount\@tempcnta
14302   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
14303 }
14304 \newcommand{\belowpdfbookmark}[2]{%
14305   \@tempcnta\Hy@currentbookmarklevel
14306   \Hy@StepCount\@tempcnta
14307   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
14308   \advance\@tempcnta by -1 %
14309   \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
14310 }

```

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.

```

14311 \renewcommand\pdfbookmark[3][0]{%
14312 \Hy@writebookmark-}{#2}{#3.#1}{#1}{toc}%
14313 \hyper@anchorstart{#3.#1}\hyper@anchorend
14314 }
14315 \def\BOOKMARK{%
14316 \@ifnextchar{\@BOOKMARK}{\@BOOKMARK[1][-]}%
14317 }
14318 \def\@BOOKMARK[#1]{%
14319 \@ifnextchar{\@BOOKMARK[#1]}{\@BOOKMARK[#1][-]}%
14320 }

```

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`

```

14321 \RequirePackage{rerunfilecheck}[2009/12/10]
14322 \def\Hy@OutlineRerunCheck{%
14323 \RerunFileCheck{\jobname.out}{%
14324 \immediate\closeout\@outlinefile
14325 }{%
14326 Rerun to get outlines right\MessageBreak
14327 or use package `bookmark'%
14328 }%
14329 }

```

#### 46.1.2 Driver stuff

The VTEX section was written originally by VTEX, but then amended by Denis Girou ([denis.girou@idris.fr](mailto:denis.girou@idris.fr)), then by by Taco Hoekwater ([taco.hoekwater@wkap.nl](mailto:taco.hoekwater@wkap.nl)). The problem is that VTEX, with its close integration of the PDF backend, does look at the contents of bookmarks, escaping `\` and the like.

```

14330 (*vtex)
14331 \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.

```

14332 \begingroup
14333 \catcode`\'=12 %
14334 \ifnum\Hy@VTeXversion<650 %
14335 \catcode`\ "=12 %
14336 \gdef\hv@pdf@char#1#2#3{%
14337 \char
14338 \ifcase'#1#2#3 %
14339 "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
14340 \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
14341 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
14342 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%

```

```

14343 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
14344 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
14345 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
14346 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
14347 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
14348 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
14349 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
14350 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
14351 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
14352 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
14353 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
14354 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
14355 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
14356 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
14357 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
14358 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
14359 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
14360 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
14361 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
14362 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
14363 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
14364 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
14365 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
14366 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
14367 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
14368 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
14369 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
14370 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
14371 \fi
14372 }%
14373 \else
14374 \gdef\hv@pdf@char{\char'}%
14375 \fi
14376 \endgroup

```

\@@BOOKMARK

```

14377 \def\@@BOOKMARK[#1][#2]#3#4#5{%
14378 \expandafter\edef\csname @count@#3\endcsname{%
14379 \the\@serial@counter
14380 }%
14381 \edef\@mycount{\the\@serial@counter}%
14382 \Hy@StepCount\@serial@counter
14383 \edef\@parcount{%
14384 \expandafter\ifx\csname @count@#5\endcsname\relax
14385 0%
14386 \else
14387 \csname @count@#5\endcsname
14388 \fi
14389 }%
14390 \immediate\special{%
14391 !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
14392 s=\ifx#2-c\else o\fi,t=#4%
14393 }%
14394 }%

```



\ReadBookmarks

```
14395 \def\ReadBookmarks{%
14396   \begingroup
14397   \def\0{\hv@pdf@char 0}%
14398   \def\1{\hv@pdf@char 1}%
14399   \def\2{\hv@pdf@char 2}%
14400   \def\3{\hv@pdf@char 3}%
14401   \def\{({}%
14402   \def\)}{)%
14403   \def\do##1{%
14404     \ifnum\catcode`##1=\active
14405       \@makeother##1%
14406     \else
14407       \ifnum\catcode`##1=6 %
14408         \@makeother##1%
14409       \fi
14410     \fi
14411   }%
14412   \dospecials
14413   \Hy@safe@activetrue
14414   \InputIfFileExists{\jobname.out}{-}{-}%
14415 \endgroup
14416 \ifx\WriteBookmarks\relax
14417 \else
14418   \if@filesw
14419     \newwrite\@outlinefile
14420     \Hy@OutlineRerunCheck
14421     \immediate\openout\@outlinefile=\jobname.out\relax
14422   \fi
14423 \fi
14424 }

14425 </vtex>
14426 (*!vtex)
14427 \def\ReadBookmarks{%
14428   \pdf@ifdraftmode{-}{-}%
14429   \begingroup
14430   \def\do##1{%
14431     \ifnum\catcode`##1=\active
14432       \@makeother##1%
14433     \else
14434       \ifnum\catcode`##1=6 %
14435         \@makeother##1%
14436       \fi
14437     \fi
14438   }%
14439   \dospecials
14440   \Hy@safe@activetrue
14441   \escapechar=`\%
14442   \def\@BBOOKMARK[##1][##2]##3##4##5{%
14443     \calc@bm@number{##5}%
14444   }%
14445   \InputIfFileExists{\jobname.out}{-}{-}%
14446   \ifx\WriteBookmarks\relax
```

```

14447     \global\let\WriteBookmarks\relax
14448     \fi
14449     \def\@@BOOKMARK[##1][##2]##3##4##5{%
14450     \def\Hy@temp{##4}%
14451 (*pdfTeX)
14452     \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14453     \Hy@OutlineName{\Hy@pstringName{%
14454     ##2\check@bm@number{##3}}%
14455     }{%
14456     \expandafter\strip@prefix\meaning\Hy@temp
14457     }%
14458 (/pdfTeX)
14459 (*pdfmark)
14460     \pdfmark{%
14461     pdfmark=/OUT,%
14462     Count={##2\check@bm@number{##3}},%
14463     Dest={##3},%
14464     Title=\expandafter\strip@prefix\meaning\Hy@temp
14465     }%
14466 (/pdfmark)
14467 (*dvipdfm|xetex)
14468     \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14469     \@pdfm@mark{%
14470     outline \ifHy@DvipdfmxOutlineOpen
14471     [%
14472     \ifnum##21>\z@
14473     \else
14474     -%
14475     \fi
14476     ] %
14477     \fi
14478     ##1<<%
14479     /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
14480     /A<<%
14481     /S/GoTo%
14482     /D(\Hy@pstringName)%
14483     >>%
14484     >>%
14485     }%
14486 (/dvipdfm|xetex)
14487     }%
14488     \begingroup
14489     \def\WriteBookmarks{0}%
14490     \InputIfFileExists{jobname.out}{-}{-}%
14491     \endgroup
14492     %{\escapechar\m@ne\InputIfFileExists{jobname.out}{-}{-}}%
14493     \endgroup
14494     }%
14495     \ifx\WriteBookmarks\relax
14496     \else
14497     \if@filesw
14498     \newwrite\@outlinefile
14499     \Hy@OutlineRerunCheck
14500     \immediate\openout\@outlinefile=jobname.out\relax

```

```

14501   \fi
14502   \fi
14503 }
14504 (*pdfTeX)
14505 \def\Hy@OutlineName#1#2#3#4{%
14506   \pdfoutline goto name{#2}count#3{#4}%
14507 }
14508 (/pdfTeX)
14509 \def\check@bm@number#1{%
14510   \expandafter\ifx\csname B_#1\endcsname\relax
14511     0%
14512   \else
14513     \csname B_#1\endcsname
14514   \fi
14515 }
14516 \def\calc@bm@number#1{%
14517   \@tempcnta=\check@bm@number{#1}\relax
14518   \advance\@tempcnta by 1 %
14519   \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
14520 }
14521 (/!vTeX)

14522 \ifHy@implicit
14523 \else
14524   \expandafter\endinput
14525 \fi

14526 (/outlines)
14527 (*outlines | hypertex)

14528 \newlength\Hy@SectionHShift
14529 \def\Hy@SectionAnchorHref#1{%
14530   \ifx\protect\@typeset@protect
14531     \Hy@@@SectionAnchor{#1}%
14532   \fi
14533 }
14534 \DeclareRobustCommand*{\Hy@@@SectionAnchor}[1]{%
14535   \leavevmode
14536   \hbox to 0pt{%
14537     \kern-\Hy@SectionHShift
14538     \Hy@raisedlink{%
14539       \hyper@anchorstart{#1}\hyper@anchorend
14540     }%
14541     \hss
14542   }%
14543 }
14544 \AddToNoCaseChangeList{\Hy@@@SectionAnchor}
14545 \@ifundefined{hyper@nopatch@sectioning}
14546 {
14547   \let\H@old@ssect\@ssect
14548   \def\@ssect#1#2#3#4#5{%
14549     \Hy@MakeCurrentHrefAuto{section*}%
14550     \setlength{\Hy@SectionHShift}{#1}%
14551     \begingroup
14552     \toks@{\H@old@ssect{#1}{#2}{#3}{#4}}%
14553     \toks\tw@\expandafter{%

```

```

14554 \expandafter\Hy@sectionAnchorHref\expandafter{\@currentHref}%
14555 #5%
14556 }%
14557 \edef\x{\endgroup
14558 \the\toks@\the\toks\tw@}%
14559 }\x
14560 }
14561 \let\H@old@schapter\@schapter
14562 \def\@schapter#1{%
14563 \begingroup
14564 \let\@mkboth\@gobbletwo
14565 \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14566 \Hy@raisedlink{%
14567 \hyper@anchorstart{\@currentHref}\hyper@anchorend
14568 }%
14569 \endgroup
14570 \H@old@schapter{#1}%
14571 }

```

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:

```

14572 \@ifundefined{chapter}{-}{%
14573 \let\Hy@org@chapter\@chapter
14574 \def\@chapter{%
14575 \def\Hy@next{%
14576 \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14577 \Hy@raisedlink{%
14578 \hyper@anchorstart{\@currentHref}\hyper@anchorend
14579 }%
14580 }%
14581 \ifnum\c@secnumdepth>\m@ne
14582 \@ifundefined{if@mainmatter}%
14583 \iftrue{\csname if@mainmatter\endcsname}%
14584 \let\Hy@next\relax
14585 \fi
14586 \fi
14587 \Hy@next
14588 \Hy@org@chapter
14589 }%
14590 }

14591 \let\H@old@part\@part
14592 \@ifundefined{chapter}
14593 {\let\Hy@secnum@part\z@}
14594 {\let\Hy@secnum@part\m@ne}
14595 \def\@part{%
14596 \ifnum\Hy@secnum@part>\c@secnumdepth
14597 \phantomsection
14598 \fi
14599 \H@old@part
14600 }

14601 \let\H@old@spart\@spart
14602 \def\@spart#1{%

```

```

14603 \Hy@MakeCurrentHrefAuto{part*}%
14604 \Hy@raisedlink{%
14605   \hyper@anchorstart{\@currentHref}\hyper@anchorend
14606 }%
14607 \H@old@spart{#1}%
14608 }
14609 \let\H@old@sect\@sect
14610 \def\@sect#1#2#3#4#5#6[#7]#8{%
14611   \ifnum #2>\c@secnumdepth
14612     \expandafter\@firstoftwo
14613   \else
14614     \expandafter\@secondoftwo
14615   \fi
14616   {%
14617     \Hy@MakeCurrentHrefAuto{section*}%
14618     \setlength{\Hy@SectionHShift}{#3}%
14619     \begingroup
14620     \toks@{\H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}}%
14621     \toks\tw@\expandafter{%
14622       \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14623       #8%
14624     }%
14625     \edef\x{\endgroup
14626       \the\toks@\the\toks\tw@}%
14627     }\x
14628   }{%
14629     \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}{#8}%
14630   }%
14631 }
14632 }{}

14633 </outlines | hypertex>
14634 (*outlines)

14635 \expandafter\def\csname Parent-4\endcsname{}
14636 \expandafter\def\csname Parent-3\endcsname{}
14637 \expandafter\def\csname Parent-2\endcsname{}
14638 \expandafter\def\csname Parent-1\endcsname{}
14639 \expandafter\def\csname Parent0\endcsname{}
14640 \expandafter\def\csname Parent1\endcsname{}
14641 \expandafter\def\csname Parent2\endcsname{}
14642 \expandafter\def\csname Parent3\endcsname{}
14643 \expandafter\def\csname Parent4\endcsname{}

14644 </outlines>

```

## 47 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek.

### 47.1 PD1 encoding

```
14645 (*pd1enc)
```

14646 \DeclareFontEncoding{PD1}{-}{}

#### Accents

14647 \DeclareTextAccent{\`}{PD1}{\textasciigrave}  
14648 \DeclareTextAccent{\' }{PD1}{\textacute}  
14649 \DeclareTextAccent{\^}{PD1}{\textasciicircum}  
14650 \DeclareTextAccent{\~}{PD1}{\texttilde}  
14651 \DeclareTextAccent{\"}{PD1}{\textasciidieresis}  
14652 \DeclareTextAccent{\r}{PD1}{\textring}  
14653 \DeclareTextAccent{\v}{PD1}{\textasciicaron}  
14654 \DeclareTextAccent{\.}{PD1}{\textdotaccent}  
14655 \DeclareTextAccent{\c}{PD1}{\textcedilla}  
14656 \DeclareTextAccent{\=} {PD1}{\textasciimacron}  
14657 \DeclareTextAccent{\b}{PD1}{\textmacronbelow}  
14658 \DeclareTextAccent{\d}{PD1}{\textdotbelow}  
14659 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textasciigrave}  
14660 \DeclareTextCompositeCommand{\' }{PD1}{\@empty}{\textacute}  
14661 \DeclareTextCompositeCommand{\^}{PD1}{\@empty}{\textasciicircum}  
14662 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}  
14663 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textasciidieresis}  
14664 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}  
14665 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textasciicaron}  
14666 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}  
14667 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}  
14668 \DeclareTextCompositeCommand{\=} {PD1}{\@empty}{\textasciimacron}  
14669 \DeclareTextCompositeCommand{\b}{PD1}{\@empty}{\textmacronbelow}  
14670 \DeclareTextCompositeCommand{\d}{PD1}{\@empty}{\textdotbelow}  
14671 \DeclareTextCompositeCommand{\`}{PD1}{\ }{\textasciigrave}  
14672 \DeclareTextCompositeCommand{\' }{PD1}{\ }{\textacute}  
14673 \DeclareTextCompositeCommand{\^}{PD1}{\ }{\textasciicircum}  
14674 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\texttilde}  
14675 \DeclareTextCompositeCommand{\"}{PD1}{\ }{\textasciidieresis}  
14676 \DeclareTextCompositeCommand{\r}{PD1}{\ }{\textring}  
14677 \DeclareTextCompositeCommand{\v}{PD1}{\ }{\textasciicaron}  
14678 \DeclareTextCompositeCommand{\.}{PD1}{\ }{\textdotaccent}  
14679 \DeclareTextCompositeCommand{\c}{PD1}{\ }{\textcedilla}  
14680 \DeclareTextCompositeCommand{\=} {PD1}{\ }{\textasciimacron}  
14681 \DeclareTextCompositeCommand{\b}{PD1}{\ }{\textmacronbelow}  
14682 \DeclareTextCompositeCommand{\d}{PD1}{\ }{\textdotbelow}  
14683 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}  
14684 \DeclareTextCommand{\t}{PD1}[1]{\TextSymbolUnavailable{\t{#1}}#1}  
14685 \DeclareTextCommand{\newtie}{PD1}[1]{%  
14686 \TextSymbolUnavailable{\newtie{#1}}#1%  
14687 }

Special white space escape characters not for use in bookmarks but for other PDF strings.

14688 % U+0009 (CHARACTER TABULATION)  
14689 \DeclareTextCommand{\textHT}{PD1}{\011}% U+0009  
14690 % U+000A (LINE FEED)  
14691 \DeclareTextCommand{\textLF}{PD1}{\012}% U+000A  
14692 % U+000D (CARRIAGE RETURN)  
14693 \DeclareTextCommand{\textCR}{PD1}{\015}% U+000D

#### Accent glyph names

14694 % U+02D8 BREVE; breve

14695 \DeclareTextCommand{\textasciibreve}{PD1}{\030}% U+02D8  
14696 % U+02C7 CARON; caron  
14697 \DeclareTextCommand{\textasciicaron}{PD1}{\031}% U+02C7  
14698 % U+02C6 MODIFIER LETTER CIRCUMFLEX ACCENT; circumflex  
14699 \DeclareTextCommand{\textcircumflex}{PD1}{\032}% U+02C6  
14700 % U+02D9 DOT ABOVE; dotaccent  
14701 \DeclareTextCommand{\textdotaccent}{PD1}{\033}% U+02D9  
14702 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
14703 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034}% U+02DD  
14704 % U+02DB OGONEK; ogonek  
14705 \DeclareTextCommand{\textogonek}{PD1}{\035}% U+02DB  
14706 % U+02DA RING ABOVE; ring  
14707 \DeclareTextCommand{\textring}{PD1}{\036}% U+02DA  
14708 % U+02DC SMALL TILDE; ilde, \*tilde  
14709 \DeclareTextCommand{\texttilde}{PD1}{\037}% U+02DC  
  
\040: U+0020 SPACE; \*space, spacehackarabic  
\041: U+0021 EXCLAMATION MARK; exclam  
14710 % U+0022 QUOTATION MARK; quotedbl  
14711 \DeclareTextCommand{\textquotedbl}{PD1}{"}% \042 U+0022  
14712 % U+0023 NUMBER SIGN; numbersign  
14713 \DeclareTextCommand{\textnumbersign}{PD1}{\043}% U+0023  
14714 % U+0024 DOLLAR SIGN; dollar  
14715 \DeclareTextCommand{\textdollar}{PD1}{\044}% U+0024  
14716 % U+0025 PERCENT SIGN; percent  
14717 \DeclareTextCommand{\textpercent}{PD1}{\045}% U+0025  
14718 % U+0026 AMPERSAND; ampersand  
14719 \DeclareTextCommand{\textampersand}{PD1}{\046}% U+0026  
  
\047: U+0027 APOSTROPHE; quotesingle  
  
  
14720 % U+0028 LEFT PARENTHESIS; parenleft  
14721 \DeclareTextCommand{\textparenleft}{PD1}{\string\{}% \050 U+0028  
14722 % U+0029 RIGHT PARENTHESIS; parenright  
14723 \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  
14724 % U+002E FULL STOP; period  
14725 \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  
14726 % U+003C LESS-THAN SIGN; less  
14727 \DeclareTextCommand{\textless}{PD1}{<}% \074 U+003C  
  
\075: U+003D EQUALS SIGN; equal  
14728 % U+003E GREATER-THAN SIGN; greater  
14729 \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  
14730 % U+005C REVERSE SOLIDUS; backslash  
14731 \DeclareTextCommand{\textbackslash}{PD1}{\134}% U+005C  
14732 % "U+2216 SET MINUS" simulated by "U+005C REVERSE SOLIDUS"  
14733 \DeclareTextCommand{\textsetminus}{PD1}{\textbackslash}  
\135: U+005D RIGHT SQUARE BRACKET; bracketright  
14734 % U+005E CIRCUMFLEX ACCENT; asciicircum  
14735 \DeclareTextCommand{\textasciicircum}{PD1}{\136}% U+005E  
14736 % U+005F LOW LINE; underscore  
14737 \DeclareTextCommand{\textunderscore}{PD1}{\137}% U+005F  
14738 \DeclareTextCommand{\textmacronbelow}{PD1}{\137}% U+005F  
14739 % U+0060 GRAVE ACCENT; grave  
14740 \DeclareTextCommand{\textasciigrave}{PD1}{\140}% U+0060  
\141: U+0061 LATIN SMALL LETTER A; a  
...  
\150: U+0068 LATIN SMALL LETTER H; h  
14741 % U+0069 LATIN SMALL LETTER I; i  
14742 \DeclareTextCompositeCommand{\.}{PD1}{i}{i}% \151 U+0069  
\152: U+006A LATIN SMALL LETTER J; j  
...  
\172: U+007A LATIN SMALL LETTER Z; z  
14743 % U+007B LEFT CURLY BRACKET; braceleft  
14744 \DeclareTextCommand{\textbraceleft}{PD1}{\173}% U+007B  
14745 % U+007C VERTICAL LINE; \*bar, verticalbar  
14746 \DeclareTextCommand{\textbar}{PD1}{|}% U+007C  
14747 % U+007D RIGHT CURLY BRACKET; braceright  
14748 \DeclareTextCommand{\textbraceright}{PD1}{\175}% U+007D  
14749 % U+007E TILDE; asciitilde  
14750 \DeclareTextCommand{\textasciitilde}{PD1}{\176}% U+007E  
Slot \177 (0x7F) is undefined in PDFDocEncoding.  
14751 % U+2022 BULLET; bullet  
14752 \DeclareTextCommand{\textbullet}{PD1}{\200}% U+2022  
14753 % U+2020 DAGGER; dagger  
14754 \DeclareTextCommand{\textdagger}{PD1}{\201}% U+2020  
14755 % U+2021 DOUBLE DAGGER; daggerdbl; \ddagger (LaTeX)  
14756 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202}% U+2021  
14757 \DeclareTextCommand{\textddagger}{PD1}{\textdaggerdbl}  
14758 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
14759 \DeclareTextCommand{\textellipsis}{PD1}{\203}% U+2026  
14760 % U+2014 EM DASH; emdash  
14761 \DeclareTextCommand{\textemdash}{PD1}{\204}% U+2014  
14762 % U+2013 EN DASH; endash  
14763 \DeclareTextCommand{\textendash}{PD1}{\205}% U+2013  
14764 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
14765 \DeclareTextCommand{\textflorin}{PD1}{\206}% U+0192  
14766 % U+2044 FRACTION SLASH; fraction  
14767 \DeclareTextCommand{\textfractionsolidus}{PD1}{\207}% U+2044



14768 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
 ingleft  
 14769 \DeclareTextCommand{\guilingleft}{PD1}{\210}% U+2039  
 14770 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
 ingright  
 14771 \DeclareTextCommand{\guilsingright}{PD1}{\211}% U+203A  
 14772 % U+2212 MINUS SIGN; minus  
 14773 \DeclareTextCommand{\textminus}{PD1}{\212}% U+2212  
 14774 % U+2030 PER MILLE SIGN; perthousand  
 14775 \DeclareTextCommand{\textperthousand}{PD1}{\213}% U+2030  
 14776 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 14777 \DeclareTextCommand{\quotedblbase}{PD1}{\214}% U+201E  
 14778 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 14779 \DeclareTextCommand{\textquotedblleft}{PD1}{\215}% U+201C  
 14780 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 14781 \DeclareTextCommand{\textquotedblright}{PD1}{\216}% U+201D  
 14782 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 14783 \DeclareTextCommand{\textquoteleft}{PD1}{\217}% U+2018  
 14784 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 14785 \DeclareTextCommand{\textquoteright}{PD1}{\220}% U+2019  
 14786 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 14787 \DeclareTextCommand{\quotesinglbase}{PD1}{\221}% U+201A  
 14788 % U+2122 TRADE MARK SIGN; trademark  
 14789 \DeclareTextCommand{\texttrademark}{PD1}{\222}% U+2122  
 14790 % U+FB01 LATIN SMALL LIGATURE FI; fi  
 14791 \DeclareTextCommand{\textfi}{PD1}{\223}% U+FB01  
 14792 % U+FB02 LATIN SMALL LIGATURE FL; fl  
 14793 \DeclareTextCommand{\textfl}{PD1}{\224}% U+FB02  
 14794 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
 14795 \DeclareTextCommand{\L}{PD1}{\225}% U+0141  
 14796 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
 14797 \DeclareTextCommand{\OE}{PD1}{\226}% U+0152  
 14798 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
 14799 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227}% U+0160  
 14800 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
 14801 \DeclareTextCompositeCommand{\Y}{PD1}{Y}{\230}% U+0178  
 14802 \DeclareTextCommand{\IJ}{PD1}{IJ}% ligature U+0049 U+004A  
 14803 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
 14804 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231}% U+017D  
 14805 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
 14806 \DeclareTextCommand{\i}{PD1}{\232}% U+0131  
 14807 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
 14808 \DeclareTextCommand{\l}{PD1}{\233}% U+0142  
 14809 % U+0153 LATIN SMALL LIGATURE OE; oe  
 14810 \DeclareTextCommand{\oe}{PD1}{\234}% U+0153  
 14811 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
 14812 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235}% U+0161  
 14813 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
 14814 \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.  
 14815 % U+20AC EURO SIGN; \*Euro, euro  
 14816 \DeclareTextCommand{\texteuro}{PD1}{\240}% U+20AC  
 14817 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown

14818 \DeclareTextCommand{\textexclamdown}{PD1}{\241}% U+00A1  
14819 % U+00A2 CENT SIGN; cent  
14820 \DeclareTextCommand{\textcent}{PD1}{\242}% U+00A2  
14821 % U+00A3 POUND SIGN; sterling  
14822 \DeclareTextCommand{\textsterling}{PD1}{\243}% U+00A3  
14823 % U+00A4 CURRENCY SIGN; currency  
14824 \DeclareTextCommand{\textcurrency}{PD1}{\244}% U+00A4  
14825 % U+00A5 YEN SIGN; yen  
14826 \DeclareTextCommand{\textyen}{PD1}{\245}% U+00A5  
14827 % U+00A6 BROKEN BAR; brokenbar  
14828 \DeclareTextCommand{\textbrokenbar}{PD1}{\246}% U+00A6  
14829 % U+00A7 SECTION SIGN; section  
14830 \DeclareTextCommand{\textsection}{PD1}{\247}% U+00A7  
14831 % U+00A8 DIAERESIS; dieresis  
14832 \DeclareTextCommand{\textasciidieresis}{PD1}{\250}% U+00A8  
14833 % U+00A9 COPYRIGHT SIGN; copyright  
14834 \DeclareTextCommand{\textcopyright}{PD1}{\251}% U+00A9  
14835 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
14836 \DeclareTextCommand{\textordfeminine}{PD1}{\252}% U+00AA  
14837 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetleft  
14838 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB  
14839 \DeclareTextCommand{\guillemetleft}{PD1}{\253}% U+00AB  
14840 % U+00AC NOT SIGN; logicalnot  
14841 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC  
14842 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not  
  
No glyph \255 in PDFDocEncoding.  
14843 % U+00AE REGISTERED SIGN; registered  
14844 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE  
14845 % U+00AF MACRON; \*macron, overscore  
14846 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF  
14847 % U+00B0 DEGREE SIGN; degree  
14848 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0  
14849 % U+00B1 PLUS-MINUS SIGN; plusminus  
14850 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1  
14851 % U+00B2 SUPERSCRIPT TWO; twosuperior  
14852 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}%\* U+00B2  
14853 % U+00B3 SUPERSCRIPT THREE; threesuperior  
14854 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}%\* U+00B3  
14855 % U+00B4 ACUTE ACCENT; acute  
14856 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4  
14857 % U+00B5 MICRO SIGN; mu, mul  
14858 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5  
14859 % U+00B6 PILCROW SIGN; paragraph  
14860 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6  
14861 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
14862 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7  
14863 % U+00B8 CEDILLA; cedilla  
14864 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8  
14865 % U+00B9 SUPERSCRIPT ONE; onesuperior  
14866 \DeclareTextCommand{\textonesuperior}{PD1}{\271}%\* U+00B9  
14867 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
14868 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA  
14869 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetright  
14870 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB

14871 \DeclareTextCommand{\guillemetright}{PD1}{\273}% U+00BB  
14872 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
14873 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC  
14874 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
14875 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD  
14876 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
14877 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE  
14878 % U+00BF INVERTED QUESTION MARK; questiondown  
14879 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF  
14880 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
14881 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0  
14882 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
14883 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1  
14884 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
14885 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2  
14886 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
14887 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3  
14888 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
14889 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304}% U+00C4  
14890 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
14891 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5  
14892 % U+00C6 LATIN CAPITAL LETTER AE; AE  
14893 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6  
14894 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
14895 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7  
14896 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
14897 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310}% U+00C8  
14898 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
14899 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311}% U+00C9  
14900 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
14901 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312}% U+00CA  
14902 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
14903 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313}% U+00CB  
14904 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
14905 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314}% U+00CC  
14906 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
14907 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315}% U+00CD  
14908 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
14909 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316}% U+00CE  
14910 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
14911 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317}% U+00CF  
14912 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
14913 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0  
14914 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0  
14915 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
14916 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321}% U+00D1  
14917 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
14918 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322}% U+00D2  
14919 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
14920 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323}% U+00D3  
14921 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
14922 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324}% U+00D4  
14923 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
14924 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325}% U+00D5

14925 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
14926 \DeclareTextCompositeCommand{"}{PD1}{O}{\326}% U+00D6  
14927 % U+00D7 MULTIPLICATION SIGN; multiply  
14928 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7  
14929 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
14930 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8  
14931 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
14932 \DeclareTextCompositeCommand{"}{PD1}{U}{\331}% U+00D9  
14933 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
14934 \DeclareTextCompositeCommand{"}{PD1}{U}{\332}% U+00DA  
14935 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
14936 \DeclareTextCompositeCommand{"}{PD1}{U}{\333}% U+00DB  
14937 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
14938 \DeclareTextCompositeCommand{"}{PD1}{U}{\334}% U+00DC  
14939 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
14940 \DeclareTextCompositeCommand{"}{PD1}{Y}{\335}% U+00DD  
14941 % U+00DE LATIN CAPITAL LETTER THORN; Thorn; \TH, \Thorn (wasysym)  
14942 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE  
14943 \DeclareTextCommand{\textThorn}{PD1}{\336}%\* U+00DE  
14944 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
14945 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF  
14946 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
14947 \DeclareTextCompositeCommand{"}{PD1}{a}{\340}% U+00E0  
14948 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
14949 \DeclareTextCompositeCommand{"}{PD1}{a}{\341}% U+00E1  
14950 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
14951 \DeclareTextCompositeCommand{"}{PD1}{a}{\342}% U+00E2  
14952 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
14953 \DeclareTextCompositeCommand{"}{PD1}{a}{\343}% U+00E3  
14954 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
14955 \DeclareTextCompositeCommand{"}{PD1}{a}{\344}% U+00E4  
14956 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
14957 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345}% U+00E5  
14958 % U+00E6 LATIN SMALL LETTER AE; ae  
14959 \DeclareTextCommand{\ae}{PD1}{\346}% U+00E6  
14960 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
14961 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347}% U+00E7  
14962 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
14963 \DeclareTextCompositeCommand{"}{PD1}{e}{\350}% U+00E8  
14964 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
14965 \DeclareTextCompositeCommand{"}{PD1}{e}{\351}% U+00E9  
14966 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
14967 \DeclareTextCompositeCommand{"}{PD1}{e}{\352}% U+00EA  
14968 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
14969 \DeclareTextCompositeCommand{"}{PD1}{e}{\353}% U+00EB  
14970 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
14971 \DeclareTextCompositeCommand{"}{PD1}{i}{\354}% U+00EC  
14972 \DeclareTextCompositeCommand{"}{PD1}{i}{\354}% U+00EC  
14973 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
14974 \DeclareTextCompositeCommand{"}{PD1}{i}{\355}% U+00ED  
14975 \DeclareTextCompositeCommand{"}{PD1}{i}{\355}% U+00ED  
14976 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
14977 \DeclareTextCompositeCommand{"}{PD1}{i}{\356}% U+00EE  
14978 \DeclareTextCompositeCommand{"}{PD1}{i}{\356}% U+00EE

14979 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
14980 \DeclareTextCompositeCommand{"}{PD1}{i}{\357}% U+00EF  
14981 \DeclareTextCompositeCommand{"}{PD1}{i}{\357}% U+00EF  
14982 % U+00F0 LATIN SMALL LETTER ETH; eth  
14983 \DeclareTextCommand{\dh}{PD1}{\360}% U+00F0  
14984 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
14985 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361}% U+00F1  
14986 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
14987 \DeclareTextCompositeCommand{\`}{PD1}{o}{\362}% U+00F2  
14988 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
14989 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363}% U+00F3  
14990 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
14991 \DeclareTextCompositeCommand{\^}{PD1}{o}{\364}% U+00F4  
14992 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
14993 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365}% U+00F5  
14994 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
14995 \DeclareTextCompositeCommand{"}{PD1}{o}{\366}% U+00F6  
14996 % U+00F7 DIVISION SIGN; divide  
14997 \DeclareTextCommand{\textdivide}{PD1}{\367}% U+00F7  
14998 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
14999 \DeclareTextCommand{\o}{PD1}{\370}% U+00F8  
15000 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
15001 \DeclareTextCompositeCommand{\`}{PD1}{u}{\371}% U+00F9  
15002 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
15003 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372}% U+00FA  
15004 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
15005 \DeclareTextCompositeCommand{\^}{PD1}{u}{\373}% U+00FB  
15006 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
15007 \DeclareTextCompositeCommand{"}{PD1}{u}{\374}% U+00FC  
15008 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
15009 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375}% U+00FD  
15010 % U+00FE LATIN SMALL LETTER THORN; thorn; \th, \thorn (wasysym)  
15011 \DeclareTextCommand{\th}{PD1}{\376}% U+00FE  
15012 \DeclareTextCommand{\textthorn}{PD1}{\376}%\* U+00FE  
15013 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
15014 \DeclareTextCompositeCommand{"}{PD1}{y}{\377}% U+00FF  
15015 \DeclareTextCommand{\ij}{PD1}{ij}% ligature U+0069 U+006A

Glyphs that consist of several characters.  
15016 \DeclareTextCommand{\SS}{PD1}{SS}%  
15017 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}%

Aliases (german.sty)  
15018 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}%  
15019 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}%  
15020 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}%  
15021 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}%  
15022 \DeclareTextCommand{\textflqq}{PD1}{\guillemetleft}%  
15023 \DeclareTextCommand{\textfrqq}{PD1}{\guillemetright}%  
15024 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}%  
15025 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}%

Aliases (math names)  
15026 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}%  
15027 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}%  
15028 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}%

```

15029 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}%
15030 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}%
15031 \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).

```

15032 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek
15033 \DeclareTextCompositeCommand{\'}{PD1}{c}{c}% cacute
15034 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek
15035 \DeclareTextCompositeCommand{\'}{PD1}{n}{n}% nacute
15036 \DeclareTextCompositeCommand{\'}{PD1}{s}{s}% sacute
15037 \DeclareTextCompositeCommand{\'}{PD1}{z}{z}% zacute
15038 \DeclareTextCompositeCommand{\.}{PD1}{z}{z}% zdot
15039 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek
15040 \DeclareTextCompositeCommand{\'}{PD1}{C}{C}% Cacute
15041 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek
15042 \DeclareTextCompositeCommand{\'}{PD1}{N}{N}% Nacute
15043 \DeclareTextCompositeCommand{\'}{PD1}{S}{S}% Sacute
15044 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z}% Zacute
15045 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z}% Zdot
15046 </pd1enc>

```

## 47.2 PU encoding

```

15047 <*puenc>
15048 \DeclareFontEncoding{PU}{}{}

```

### 47.2.1 NFSS2 accents

```

15049 % U+0300 COMBINING GRAVE ACCENT; gravecmb, *gravecomb
15050 \DeclareTextCommand{\`}{PU}[1]{#1\83\000}% U+0300
15051 % U+0301 COMBINING ACUTE ACCENT; acutecmb, *acutecomb
15052 \DeclareTextCommand{\'}{PU}[1]{#1\83\001}% U+0301
15053 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb
15054 \DeclareTextCommand{\^}{PU}[1]{#1\83\002}% U+0302
15055 % U+0303 COMBINING TILDE; tildecmb, *tildecmb
15056 \DeclareTextCommand{\~}{PU}[1]{#1\83\003}% U+0303
15057 % U+0304 COMBINING MACRON; macroncmb
15058 \DeclareTextCommand{\=}{PU}[1]{#1\83\004}% U+0304
15059 % U+0306 COMBINING BREVE; brevecmb
15060 \DeclareTextCommand{\u}{PU}[1]{#1\83\006}% U+0306
15061 \ifx\CYRDZE\@undefined \else
15062 \DeclareTextCommand{\U}{PU}[1]{#1\83\006}% U+0306
15063 \fi
15064 % U+0307 COMBINING DOT ABOVE; dotaccentcmb
15065 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307
15066 % U+0308 COMBINING DIAERESIS; dieresiscmb
15067 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308
15068 % U+030A COMBINING RING ABOVE; ringcmb
15069 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A
15070 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb
15071 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B
15072 % U+030C COMBINING CARON; caroncmb
15073 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C
15074 </puenc>

```

```

15075 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb
15076 (puextra)\DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F
15077 (*puenc)
15078 \ifx\CYRDZE\@undefined \else
15079 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F
15080 \fi
15081 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb
15082 \DeclareTextCommand{\textinvbreve}{PU}[1]{#1\83\021}% U+0311
15083 \DeclareTextCommand{\newtie}{PU}[1]{#1\83\021}% U+0311
15084 % U+0323 COMBINING DOT BELOW; dotbelowcmb, *dotbelowcmb
15085 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323
15086 % U+0324 COMBINING DIAERESIS BELOW; dieresisbelowcmb; \textsubum-
    laut (tipa)
15087 \DeclareTextCommand{\textsubumlaut}{PU}[1]{#1\83\044}% U+0324
15088 % U+0325 COMBINING RING BELOW; ringbelowcmb; \textsubring (tipa)
15089 \DeclareTextCommand{\textsubring}{PU}[1]{#1\83\045}% U+0325
15090 % U+0327 COMBINING CEDILLA; cedillacmb
15091 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327
15092 % U+0328 COMBINING OGONEK; ogonekcmb
15093 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328
15094 % U+032D COMBINING CIRCUMFLEX ACCENT BELOW;
15095 % \textsubcircum (tipa)
15096 \DeclareTextCommand{\textsubcircum}{PU}[1]{#1\83\055}% U+032D
15097 % U+032E COMBINING BREVE BELOW; brevebelowcmb
15098 \DeclareTextCommand{\textsubbreve}{PU}[1]{#1\83\056}% U+032E
15099 % U+0330 COMBINING TILDE BELOW; tildebelowcmb; \textsubtilde (tipa)
15100 \DeclareTextCommand{\textsubtilde}{PU}[1]{#1\83\060}% U+0330
15101 % U+0331 COMBINING MACRON BELOW; macronbelowcmb
15102 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331
15103 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddou-
    blecmb
15104 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361
15105 % U+20DD COMBINING ENCLOSING CIRCLE
15106 \DeclareTextCommand{\textcircled}{PU}[1]{#1\9040\335}% U+20DD

```

Double accents.

```

15107 \DeclareTextCommand{\textacutemacron}{PU}[1]{#1\83\001\83\004}% U+0301 U+0304
15108 \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.

```

15109 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textasciigrave}%
15110 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}%
15111 \DeclareTextCompositeCommand{\^}{PU}{\@empty}{\textasciicircum}%
15112 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}%
15113 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textasciidieresis}%
15114 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}%
15115 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textasciicaron}%
15116 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}%
15117 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}%
15118 \DeclareTextCompositeCommand{\u}{PU}{\@empty}{\textasciibreve}%
15119 (/puenc)
15120 (puextra)\DeclareTextCompositeCommand{\G}{PU}{\@empty}{\textdoublegrave}%
15121 (*puenc)
15122 \DeclareTextCompositeCommand{\=}{PU}{\@empty}{\textasciimacron}%

```

```

15123 \DeclareTextCompositeCommand{\H}{PU}{\@empty}{\texthungarumlaut}%
15124 \DeclareTextCompositeCommand{\k}{PU}{\@empty}{\textogonek}%
15125 \DeclareTextCompositeCommand{\textinvbreve}{PU}{\@empty}{\{\ \83\021\}}% U+0311
15126 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{\@empty}{\{\ \83\044\}}% U+0324
15127 \DeclareTextCompositeCommand{\textsubring}{PU}{\@empty}{\textringlow}%
15128 \DeclareTextCompositeCommand{\textsubcircum}{PU}{\@empty}{\textcircum-
low}%
15129 \DeclareTextCompositeCommand{\textsubbreve}{PU}{\@empty}{\{\ \83\056\}}% U+032E
15130 \DeclareTextCompositeCommand{\textsubtilde}{PU}{\@empty}{\texttildebelow}%
15131 \DeclareTextCompositeCommand{\b}{PU}{\@empty}{\textmacronbelow}%
15132 \DeclareTextCompositeCommand{\d}{PU}{\@empty}{\textdotbelow}%
15133 \DeclareTextCompositeCommand{\t}{PU}{\@empty}{\texttie}%
15134 \DeclareTextCompositeCommand{\newtie}{PU}{\@empty}{\textnewtie}%
15135 \DeclareTextCompositeCommand{\textcircled}{PU}{\@empty}{\textbigcircle}%
15136 \DeclareTextCompositeCommand{\textacutemacron}{PU}{\@empty}{\{\ \83\001\83\004\}}% U+0301 U
15137 \DeclareTextCompositeCommand{\textgravemacron}{PU}{\@empty}{\{\ \83\000\83\004\}}% U+0300 U
15138 \DeclareTextCompositeCommand{\`}{PU}{\ }{\textasciigrave}%
15139 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textacute}%
15140 \DeclareTextCompositeCommand{\~}{PU}{\ }{\textasciicircum}%
15141 \DeclareTextCompositeCommand{\~}{PU}{\ }{\texttilde}%
15142 \DeclareTextCompositeCommand{\"}{PU}{\ }{\textasciidieresis}%
15143 \DeclareTextCompositeCommand{\r}{PU}{\ }{\textring}%
15144 \DeclareTextCompositeCommand{\v}{PU}{\ }{\textasciicaron}%
15145 \DeclareTextCompositeCommand{\.}{PU}{\ }{\textdotaccent}%
15146 \DeclareTextCompositeCommand{\c}{PU}{\ }{\textcedilla}%
15147 \DeclareTextCompositeCommand{\u}{PU}{\ }{\textasciibreve}%
15148 (/puenc)
15149 (puextra)\DeclareTextCompositeCommand{\G}{PU}{\ }{\textdoublegrave}%
15150 (*puenc)
15151 \DeclareTextCompositeCommand{\=} {PU}{\ }{\textasciimacron}%
15152 \DeclareTextCompositeCommand{\H}{PU}{\ }{\texthungarumlaut}%
15153 \DeclareTextCompositeCommand{\k}{PU}{\ }{\textogonek}%
15154 \DeclareTextCompositeCommand{\textinvbreve}{PU}{\ }{\{\ \83\021\}}% U+0311
15155 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{\ }{\{\ \83\044\}}% U+0324
15156 \DeclareTextCompositeCommand{\textsubring}{PU}{\ }{\textringlow}%
15157 \DeclareTextCompositeCommand{\textsubcircum}{PU}{\ }{\textcircumlow}%
15158 \DeclareTextCompositeCommand{\textsubbreve}{PU}{\ }{\{\ \83\056\}}% U+032E
15159 \DeclareTextCompositeCommand{\textsubtilde}{PU}{\ }{\texttildebelow}%
15160 \DeclareTextCompositeCommand{\b}{PU}{\ }{\textmacronbelow}%
15161 \DeclareTextCompositeCommand{\d}{PU}{\ }{\textdotbelow}%
15162 \DeclareTextCompositeCommand{\t}{PU}{\ }{\texttie}%
15163 \DeclareTextCompositeCommand{\newtie}{PU}{\ }{\textnewtie}%
15164 \DeclareTextCompositeCommand{\textcircled}{PU}{\ }{\textbigcircle}%
15165 \DeclareTextCompositeCommand{\textacutemacron}{PU}{\ }{\{\ \83\001\83\004\}}% U+0301 U+0304
15166 \DeclareTextCompositeCommand{\textgravemacron}{PU}{\ }{\{\ \83\000\83\004\}}% U+0300 U+0304

Accents for capitals (see encoding TS1)
15167 \DeclareTextCommand{\capitalcedilla}{PU}[1]{\c{#1}}%
15168 \DeclareTextCommand{\capitalogonek}{PU}[1]{\k{#1}}%
15169 \DeclareTextCommand{\capitalgrave}{PU}[1]{\`{#1}}%
15170 \DeclareTextCommand{\capitalacute}{PU}[1]{\'{#1}}%
15171 \DeclareTextCommand{\capitalcircumflex}{PU}[1]{\^{#1}}%
15172 \DeclareTextCommand{\capitaltilde}{PU}[1]{\~{#1}}%
15173 \DeclareTextCommand{\capitaldieresis}{PU}[1]{\"{#1}}%

```



15174 \DeclareTextCommand{\capitalhungarumlaut}{PU}[1]{\H{#1}}%  
 15175 \DeclareTextCommand{\capitalring}{PU}[1]{\r{#1}}%  
 15176 \DeclareTextCommand{\capitalcaron}{PU}[1]{\v{#1}}%  
 15177 \DeclareTextCommand{\capitalbreve}{PU}[1]{\u{#1}}%  
 15178 \DeclareTextCommand{\capitalmacron}{PU}[1]{\={#1}}%  
 15179 \DeclareTextCommand{\capitaldotaccent}{PU}[1]{\.\{#1}}%  
 15180 \DeclareTextCommand{\capitaltie}{PU}[1]{\t{#1}}%  
 15181 \DeclareTextCommand{\capitalnewtie}{PU}[1]{\newtie{#1}}%

#### 47.2.2 Basic Latin: U+0000 to U+007F

Special white space escape characters.

15182 % U+0009 (CHARACTER TABULATION)  
 15183 \DeclareTextCommand{\textHT}{PU}{\80\011}% U+0009  
 15184 % U+000A (LINE FEED)  
 15185 \DeclareTextCommand{\textLF}{PU}{\80\012}% U+000A  
 15186 % U+000D (CARRIAGE RETURN)  
 15187 \DeclareTextCommand{\textCR}{PU}{\80\015}% U+000D  
 \80\040: U+0020 SPACE; space, spacehackarabic  
 \80\041: U+0021 EXCLAMATION MARK; exclam  
 15188 % U+0022 QUOTATION MARK; quotedbl  
 15189 \DeclareTextCommand{\textquotedbl}{PU}{"}% \80\042 U+0022  
 15190 % U+0023 NUMBER SIGN; numbersign  
 15191 \DeclareTextCommand{\textnumbersign}{PU}{\80\043}% U+0023  
 15192 % U+0024 DOLLAR SIGN; dollar  
 15193 \DeclareTextCommand{\textdollar}{PU}{\80\044}% U+0024  
 15194 %\* \textdollar -> \mathdollar  
 15195 %\* \textdollar -> \EyesDollar (marvosym)  
 15196 % U+0025 PERCENT SIGN; percent  
 15197 \DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025  
 15198 % U+0026 AMPERSAND; ampersand  
 15199 \DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026  
 15200 %\* \textampersand -> \binampersand (stmaryrd)  
 15201 %\* \textampersand -> \with (cml)  
 15202 % U+0027 APOSTROPHE; quotesingle  
 15203 \DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027  
 15204 % U+0028 LEFT PARENTHESIS; parenleft  
 15205 \DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028  
 15206 % U+0029 RIGHT PARENTHESIS; parenright  
 15207 \DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029  
 15208 % U+002A ASTERISK; asterisk; (?)  
 15209 \DeclareTextCommand{\textasteriskcentered}{PU}{\80\052}% U+002A  
 15210 % U+002B PLUS SIGN; plus; \MVPlus (marvosym)  
 15211 \DeclareTextCommand{\textMVPlus}{PU}{\80\053}%\* U+002B  
 15212 % U+002C COMMA; comma; \MVComma (marvosym)  
 15213 \DeclareTextCommand{\textMVComma}{PU}{\80\054}%\* U+002C  
 15214 % U+002D HYPHEN-MINUS; hyphen; \MVMinus (marvosym)  
 15215 \DeclareTextCommand{\textMVMinus}{PU}{\80\055}%\* U+002D  
 15216 % U+002E FULL STOP; period; \MVPeriod (marvosym)  
 15217 \DeclareTextCommand{\textMVPeriod}{PU}{\80\056}%\* U+002E  
 15218 % U+002F SOLIDUS; slash; \MVDivision (marvosym)  
 15219 \DeclareTextCommand{\textMVDivision}{PU}{\80\057}%\* U+002F  
 15220 % U+0030 DIGIT ZERO; zero; \MVZero (marvosym)  
 15221 \DeclareTextCommand{\textMVZero}{PU}{\80\060}%\* U+0030

15222 % U+0031 DIGIT ONE; one; \MVOne (marvosym)  
15223 \DeclareTextCommand{\textMVOne}{PU}{\80\061}%\* U+0031  
15224 % U+0032 DIGIT TWO; two; \MVTwo (marvosym)  
15225 \DeclareTextCommand{\textMVTwo}{PU}{\80\062}%\* U+0032  
15226 % U+0033 DIGIT THREE; three; \MVThree (marvosym)  
15227 \DeclareTextCommand{\textMVThree}{PU}{\80\063}%\* U+0033  
15228 % U+0034 DIGIT FOUR; four; \MVFfour (marvosym)  
15229 \DeclareTextCommand{\textMVFfour}{PU}{\80\064}%\* U+0034  
15230 % U+0035 DIGIT FIVE; five; \MVFfive (marvosym)  
15231 \DeclareTextCommand{\textMVFfive}{PU}{\80\065}%\* U+0035  
15232 % U+0036 DIGIT SIX; six; \MVSix (marvosym)  
15233 \DeclareTextCommand{\textMVSix}{PU}{\80\066}%\* U+0036  
15234 % U+0037 DIGIT SEVEN; seven; \MVSeven (marvosym)  
15235 \DeclareTextCommand{\textMVSeven}{PU}{\80\067}%\* U+0037  
15236 % U+0038 DIGIT EIGHT; eight; \MVEight (marvosym)  
15237 \DeclareTextCommand{\textMVEight}{PU}{\80\070}%\* U+0038  
15238 % U+0039 DIGIT NINE; nine; \MVNine (marvosym)  
15239 \DeclareTextCommand{\textMVNine}{PU}{\80\071}%\* U+0039  
  
\80\072: U+003A COLON; colon  
\80\073: U+003B SEMICOLON; semicolon  
  
15240 % U+003C LESS-THAN SIGN; less  
15241 \DeclareTextCommand{\textless}{PU}{<}% \80\074 U+003C  
  
\80\075: U+003D EQUALS SIGN; equal  
  
15242 % U+003E GREATER-THAN SIGN; greater  
15243 \DeclareTextCommand{\textgreater}{PU}{>}% \80\076 U+003E  
  
\80\077: U+003F QUESTION MARK; question  
  
15244 % U+0040 COMMERCIAL AT; at; \MVAt (marvosym)  
15245 \DeclareTextCommand{\textMVAt}{PU}{\80\100}%\* U+0040  
  
\80\101: U+0041 LATIN CAPITAL LETTER A; A  
  
...  
\80\132: U+005A LATIN CAPITAL LETTER Z; Z  
\80\133: U+005B LEFT SQUARE BRACKET; bracketleft  
  
15246 % U+005C REVERSE SOLIDUS; backslash  
15247 \DeclareTextCommand{\textbackslash}{PU}{\80\134}% U+005C  
  
\80\135: U+005D RIGHT SQUARE BRACKET; bracketright  
  
15248 % U+005E CIRCUMFLEX ACCENT; asciicircum  
15249 \DeclareTextCommand{\textasciicircum}{PU}{\80\136}% U+005E  
15250 % U+005F LOW LINE; underscore  
15251 \DeclareTextCommand{\textunderscore}{PU}{\80\137}% U+005F  
15252 %\* \textunderscore -> \mathunderscore (LaTeX)  
15253 % U+0060 GRAVE ACCENT; grave  
15254 \DeclareTextCommand{\textasciigrave}{PU}{\80\140}% U+0060  
  
\80\141: U+0061 LATIN SMALL LETTER A; a  
  
...  
\80\150: U+0068 LATIN SMALL LETTER H; h  
  
15255 % U+0069 LATIN SMALL LETTER I; i  
15256 \DeclareTextCompositeCommand{\.}{PU}{i}% \80\151 U+0069  
15257 \DeclareTextCompositeCommand{\.}{PU}{i}% \80\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  
 15258 % U+007B LEFT CURLY BRACKET; braceleft  
 15259  $\backslash \text{DeclareTextCommand}\{\backslash \text{textbraceleft}\}\{\text{PU}\}\{\backslash 80\backslash 173\}$ % U+007B  
 15260 % U+007C VERTICAL LINE; \*bar, verticalbar  
 15261  $\backslash \text{DeclareTextCommand}\{\backslash \text{textbar}\}\{\text{PU}\}\{\backslash 80\backslash 174\}$  U+007C  
 15262 %\*  $\backslash \text{textbar} \rightarrow \backslash \text{textvtrline}$  (tipa)  
 15263 % U+007D RIGHT CURLY BRACKET; braceright  
 15264  $\backslash \text{DeclareTextCommand}\{\backslash \text{textbraceright}\}\{\text{PU}\}\{\backslash 80\backslash 175\}$ % U+007D  
 15265 % U+007E TILDE; asciitilde  
 15266  $\backslash \text{DeclareTextCommand}\{\backslash \text{textasciitilde}\}\{\text{PU}\}\{\backslash 80\backslash 176\}$ % U+007E

### 47.2.3 Latin-1 Supplement: U+0080 to U+00FF

$\backslash 80\backslash 240$ : U+00A0 NO-BREAK SPACE; nbspace, nonbreakingspace  
 15267 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
 15268  $\backslash \text{DeclareTextCommand}\{\backslash \text{textexclamdown}\}\{\text{PU}\}\{\backslash 80\backslash 241\}$ % U+00A1  
 15269 % U+00A2 CENT SIGN; cent  
 15270  $\backslash \text{DeclareTextCommand}\{\backslash \text{textcent}\}\{\text{PU}\}\{\backslash 80\backslash 242\}$ % U+00A2  
 15271 % U+00A3 POUND SIGN; sterling  
 15272  $\backslash \text{DeclareTextCommand}\{\backslash \text{textsterling}\}\{\text{PU}\}\{\backslash 80\backslash 243\}$ % U+00A3  
 15273 %\*  $\backslash \text{textsterling} \rightarrow \backslash \text{mathsterling}$  (LaTeX)  
 15274 %\*  $\backslash \text{textsterling} \rightarrow \backslash \text{pounds}$  (LaTeX)  
 15275 % U+00A4 CURRENCY SIGN; currency  
 15276  $\backslash \text{DeclareTextCommand}\{\backslash \text{textcurrency}\}\{\text{PU}\}\{\backslash 80\backslash 244\}$ % U+00A4  
 15277 % U+00A5 YEN SIGN; yen  
 15278  $\backslash \text{DeclareTextCommand}\{\backslash \text{textyen}\}\{\text{PU}\}\{\backslash 80\backslash 245\}$ % U+00A5  
 15279 % U+00A6 BROKEN BAR; brokenbar  
 15280  $\backslash \text{DeclareTextCommand}\{\backslash \text{textbrokenbar}\}\{\text{PU}\}\{\backslash 80\backslash 246\}$ % U+00A6  
 15281 %\*  $\backslash \text{textbrokenbar} \rightarrow \backslash \text{brokenvert}$  (wasysym)  
 15282 % U+00A7 SECTION SIGN; section  
 15283  $\backslash \text{DeclareTextCommand}\{\backslash \text{textsection}\}\{\text{PU}\}\{\backslash 80\backslash 247\}$ % U+00A7  
 15284 %\*  $\backslash \text{textsection} \rightarrow \backslash \text{mathsection}$  (LaTeX)  
 15285 %\*  $\backslash \text{textsection} \rightarrow \backslash \text{S}$  (LaTeX)  
 15286 % U+00A8 DIAERESIS; diaeresis  
 15287  $\backslash \text{DeclareTextCommand}\{\backslash \text{textasciidieresis}\}\{\text{PU}\}\{\backslash 80\backslash 250\}$ % U+00A8  
 15288 % U+00A9 COPYRIGHT SIGN; copyright  
 15289  $\backslash \text{DeclareTextCommand}\{\backslash \text{textcopyright}\}\{\text{PU}\}\{\backslash 80\backslash 251\}$ %\* U+00A9  
 15290 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
 15291  $\backslash \text{DeclareTextCommand}\{\backslash \text{textordfeminine}\}\{\text{PU}\}\{\backslash 80\backslash 252\}$ % U+00AA  
 15292 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetleft  
 15293  $\backslash \text{DeclareTextCommand}\{\backslash \text{guillemotleft}\}\{\text{PU}\}\{\backslash 80\backslash 253\}$ % U+00AB  
 15294  $\backslash \text{DeclareTextCommand}\{\backslash \text{guillemetleft}\}\{\text{PU}\}\{\backslash 80\backslash 253\}$ % U+00AB  
 15295 % U+00AC NOT SIGN; logicalnot  
 15296  $\backslash \text{DeclareTextCommand}\{\backslash \text{textlogicalnot}\}\{\text{PU}\}\{\backslash 80\backslash 254\}$ % U+00AC  
 15297  $\backslash \text{DeclareTextCommand}\{\backslash \text{textlnot}\}\{\text{PU}\}\{\backslash 80\backslash 254\}$ % U+00AC  
 $\backslash 80\backslash 255$ : U+00AD SOFT HYPHEN; sftthyphen, softthyphen  
 15298 % U+00AE REGISTERED SIGN; registered  
 15299  $\backslash \text{DeclareTextCommand}\{\backslash \text{textregistered}\}\{\text{PU}\}\{\backslash 80\backslash 256\}$ % U+00AE  
 15300 % U+00AF MACRON; \*macron, overscore  
 15301  $\backslash \text{DeclareTextCommand}\{\backslash \text{textasciimacron}\}\{\text{PU}\}\{\backslash 80\backslash 257\}$ % U+00AF  
 15302 % U+00B0 DEGREE SIGN; degree

15303 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0  
15304 % U+00B1 PLUS-MINUS SIGN; plusminus  
15305 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1  
15306 % U+00B2 SUPERSCRIPT TWO; twosuperior  
15307 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}%\* U+00B2  
15308 % U+00B3 SUPERSCRIPT THREE; threesuperior  
15309 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}%\* U+00B3  
15310 % U+00B4 ACUTE ACCENT; acute  
15311 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4  
15312 \DeclareTextCommand{\textasciiacute}{PU}{\80\264}% U+00B4  
15313 % U+00B5 MICRO SIGN; mu, mu1  
15314 \DeclareTextCommand{\textmu}{PU}{\80\265}% U+00B5  
15315 % U+00B6 PILCROW SIGN; paragraph  
15316 \DeclareTextCommand{\textparagraph}{PU}{\80\266}% U+00B6  
15317 %\* \textparagraph -> \mathparagraph (LaTeX)  
15318 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
15319 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267}% U+00B7  
15320 %\* \textperiodcentered -> \MultiplicationDot (marvosym)  
15321 %\* \textperiodcentered -> \Squaredot (marvosym)  
15322 % U+00B8 CEDILLA; cedilla  
15323 \DeclareTextCommand{\textcedilla}{PU}{\80\270}% U+00B8  
15324 % U+00B9 SUPERSCRIPT ONE; onesuperior  
15325 \DeclareTextCommand{\textonesuperior}{PU}{\80\271}%\* U+00B9  
15326 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
15327 \DeclareTextCommand{\textordmasculine}{PU}{\80\272}% U+00BA  
15328 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetright  
15329 \DeclareTextCommand{\guillemotright}{PU}{\80\273}% U+00BB  
15330 \DeclareTextCommand{\guillemetright}{PU}{\80\273}% U+00BB  
15331 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
15332 \DeclareTextCommand{\textonequarter}{PU}{\80\274}% U+00BC  
15333 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
15334 \DeclareTextCommand{\textonehalf}{PU}{\80\275}% U+00BD  
15335 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
15336 \DeclareTextCommand{\textthreequarters}{PU}{\80\276}% U+00BE  
15337 % U+00BF INVERTED QUESTION MARK; questiondown  
15338 \DeclareTextCommand{\textquestiondown}{PU}{\80\277}% U+00BF  
15339 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
15340 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
15341 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
15342 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
15343 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
15344 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302}% U+00C2  
15345 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
15346 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
15347 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
15348 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304}% U+00C4  
15349 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
15350 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305}% U+00C5  
15351 % U+00C6 LATIN CAPITAL LETTER AE; AE  
15352 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6  
15353 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
15354 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7  
15355 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
15356 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8

15357 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
15358 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
15359 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
15360 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312}% U+00CA  
15361 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
15362 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313}% U+00CB  
15363 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
15364 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
15365 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
15366 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
15367 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
15368 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316}% U+00CE  
15369 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
15370 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317}% U+00CF  
15371 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
15372 \DeclareTextCommand{\DH}{PU}{\80\320}% U+00D0  
15373 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
15374 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321}% U+00D1  
15375 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
15376 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
15377 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
15378 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
15379 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
15380 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324}% U+00D4  
15381 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
15382 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
15383 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
15384 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326}% U+00D6  
15385 % U+00D7 MULTIPLICATION SIGN; multiply  
15386 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7  
15387 %\* \textmultiply -> \vartimes (stmaryrd)  
15388 %\* \textmultiply -> \MVMultiplication (marvosym)  
15389 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
15390 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8  
15391 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
15392 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9  
15393 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
15394 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA  
15395 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
15396 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333}% U+00DB  
15397 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
15398 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334}% U+00DC  
15399 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
15400 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD  
15401 % U+00DE LATIN CAPITAL LETTER THORN; Thorn; \TH, \Thorn (wasysym)  
15402 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE  
15403 \DeclareTextCommand{\textThorn}{PU}{\80\336}%\* U+00DE  
15404 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
15405 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF  
15406 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
15407 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0  
15408 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
15409 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1  
15410 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex

15411 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\342}% U+00E2  
15412 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
15413 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
15414 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
15415 \DeclareTextCompositeCommand{"}{PU}{a}{\80\344}% U+00E4  
15416 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
15417 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5  
15418 % U+00E6 LATIN SMALL LETTER AE; ae  
15419 \DeclareTextCommand{\ae}{PU}{\80\346}% U+00E6  
15420 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
15421 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7  
15422 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
15423 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8  
15424 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
15425 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
15426 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
15427 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA  
15428 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
15429 \DeclareTextCompositeCommand{"}{PU}{e}{\80\353}% U+00EB  
15430 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
15431 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
15432 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
15433 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
15434 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
15435 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
15436 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
15437 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
15438 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
15439 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
15440 \DeclareTextCompositeCommand{"}{PU}{i}{\80\357}% U+00EF  
15441 \DeclareTextCompositeCommand{"}{PU}{i}{\80\357}% U+00EF  
15442 % U+00F0 LATIN SMALL LETTER ETH; eth  
15443 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0  
15444 %\* \dh -> \eth (wsuipa, phonetic)  
15445 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
15446 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361}% U+00F1  
15447 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
15448 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
15449 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
15450 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
15451 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
15452 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364}% U+00F4  
15453 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
15454 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
15455 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
15456 \DeclareTextCompositeCommand{"}{PU}{o}{\80\366}% U+00F6  
15457 % U+00F7 DIVISION SIGN; divide  
15458 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7  
15459 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
15460 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8  
15461 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
15462 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
15463 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
15464 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA

15465 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
 15466 \DeclareTextCompositeCommand{\u}{PU}{u}{\80\373}% U+00FB  
 15467 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
 15468 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374}% U+00FC  
 15469 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
 15470 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
 15471 % U+00FE LATIN SMALL LETTER THORN; thorn;  
 15472 % \th, \thorn (wasysym), \textthorn (tipa)  
 15473 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE  
 15474 \DeclareTextCommand{\textthorn}{PU}{\80\376}%\* U+00FE  
 15475 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
 15476 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377}% U+00FF

#### 47.2.4 Latin Extended-A: U+0080 to U+017F

15477 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron  
 15478 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% U+0100  
 15479 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron  
 15480 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% U+0101  
 15481 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve  
 15482 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% U+0102  
 15483 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve  
 15484 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% U+0103  
 15485 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek  
 15486 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% U+0104  
 15487 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek  
 15488 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% U+0105  
 15489 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacute  
 15490 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% U+0106  
 15491 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacute  
 15492 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% U+0107  
 15493 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex  
 15494 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% U+0108  
 15495 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex  
 15496 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% U+0109  
 15497 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotac-  
 cent  
 15498 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% U+010A  
 15499 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent  
 15500 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% U+010B  
 15501 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron  
 15502 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% U+010C  
 15503 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron  
 15504 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% U+010D  
 15505 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron  
 15506 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% U+010E  
 15507 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron  
 15508 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% U+010F  
 15509 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash  
 15510 \DeclareTextCommand{\DJ}{PU}{\81\020}% U+0110  
 15511 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron;  
 15512 % \textcrd (tipa)  
 15513 \DeclareTextCommand{\dj}{PU}{\81\021}% U+0111  
 15514 \DeclareTextCommand{\textcrd}{PU}{\81\021}% U+0111

15515 %\* \textcrd -> \crossd (wsuipa)  
15516 % An alternate glyph with the stroke through the bowl:  
15517 %\* \textcrd -> \textbard (tipa)  
15518 %\* \textcrd -> \bard (wsuipa)  
15519 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron  
15520 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% U+0112  
15521 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron  
15522 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% U+0113  
15523 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve  
15524 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% U+0114  
15525 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve  
15526 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% U+0115  
15527 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent  
15528 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% U+0116  
15529 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent  
15530 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% U+0117  
15531 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek  
15532 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% U+0118  
15533 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek  
15534 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% U+0119  
15535 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron  
15536 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% U+011A  
15537 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron  
15538 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% U+011B  
15539 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex  
15540 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% U+011C  
15541 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex  
15542 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% U+011D  
15543 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve  
15544 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% U+011E  
15545 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve  
15546 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% U+011F  
15547 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotac-  
cent  
15548 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% U+0120  
15549 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent  
15550 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% U+0121  
15551 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcom-  
mmaaccent  
15552 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% U+0122  
15553 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent  
15554 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% U+0123  
15555 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex  
15556 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% U+0124  
15557 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex  
15558 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% U+0125  
15559 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar  
15560 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126  
15561 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar; \hbar (AmS)  
15562 \DeclareTextCommand{\texthbar}{PU}{\81\047}%\* U+0127  
15563 %\* \texthbar -> \textcrh (tipa)  
15564 %\* \texthbar -> \crossh (wsuipa)  
15565 %\* \texthbar -> \planck (phonetic)  
15566 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; Itilde



15567 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128  
15568 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde  
15569 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
15570 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
15571 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron  
15572 \DeclareTextCompositeCommand{=} {PU}{I}{\81\052}% U+012A  
15573 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron  
15574 \DeclareTextCompositeCommand{=} {PU}{i}{\81\053}% U+012B  
15575 \DeclareTextCompositeCommand{=} {PU}{i}{\81\053}% U+012B  
15576 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibreve  
15577 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C  
15578 % U+012D LATIN SMALL LETTER I WITH BREVE; ibreve  
15579 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
15580 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
15581 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek  
15582 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E  
15583 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek  
15584 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
15585 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
15586 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent  
15587 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% U+0130  
15588 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
15589 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131  
15590 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ  
15591 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132  
15592 % U+0133 LATIN SMALL LIGATURE IJ; ij  
15593 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133  
15594 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex  
15595 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% U+0134  
15596 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex  
15597 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
15598 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
15599 % U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaac-  
cent  
15600 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136  
15601 % U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent  
15602 \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`.

15603 % U+0138 LATIN SMALL LETTER KRA; kgreenlandic  
15604 \DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138  
15605 % U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute  
15606 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071}% U+0139  
15607 % U+013A LATIN SMALL LETTER L WITH ACUTE; lacute  
15608 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072}% U+013A  
15609 % U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaac-  
cent  
15610 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B  
15611 % U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent  
15612 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C  
15613 % U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron  
15614 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D

15615 % U+013E LATIN SMALL LETTER L WITH CARON; lcaron  
15616 \DeclareTextCompositeCommand{\v}{PU}{1}{\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.  
15617 % U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotac-  
cent  
15618 \DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F  
15619 % U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent  
15620 \DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140  
15621 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
15622 \DeclareTextCommand{\L}{PU}{\81\101}% U+0141  
15623 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
15624 \DeclareTextCommand{\l}{PU}{\81\102}% U+0142  
15625 % U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute  
15626 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103}% U+0143  
15627 % U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute  
15628 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104}% U+0144  
15629 % U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaac-  
cent  
15630 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105}% U+0145  
15631 % U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent  
15632 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106}% U+0146  
15633 % U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron  
15634 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107}% U+0147  
15635 % U+0148 LATIN SMALL LETTER N WITH CARON; ncaron  
15636 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110}% U+0148  
15637 % U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napos-  
trophe, quoterightn  
15638 \DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149  
15639 % U+014A LATIN CAPITAL LETTER ENG; Eng  
15640 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A  
15641 % U+014B LATIN SMALL LETTER ENG; eng  
15642 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B  
15643 %\* \ng -> \eng (wsuipa)  
15644 %\* \ng -> \engma (phonetic)  
15645 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron  
15646 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114}% U+014C  
15647 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron  
15648 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115}% U+014D  
15649 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve  
15650 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116}% U+014E  
15651 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve  
15652 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117}% U+014F  
15653 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odbla-  
cute, Ohungarumlaut  
15654 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120}% U+0150  
15655 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odbla-  
cute, ohungarumlaut  
15656 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121}% U+0151  
15657 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
15658 \DeclareTextCommand{\OE}{PU}{\81\122}% U+0152  
15659 % U+0153 LATIN SMALL LIGATURE OE; oe  
15660 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153

15661 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute  
15662 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124}% U+0154  
15663 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute  
15664 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125}% U+0155  
15665 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcommaac-  
cent  
15666 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126}% U+0156  
15667 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcommaaccent  
15668 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127}% U+0157  
15669 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron  
15670 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130}% U+0158  
15671 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron  
15672 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131}% U+0159  
15673 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute  
15674 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132}% U+015A  
15675 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute  
15676 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133}% U+015B  
15677 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex  
15678 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134}% U+015C  
15679 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex  
15680 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135}% U+015D  
15681 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla  
15682 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136}% U+015E  
15683 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla  
15684 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137}% U+015F  
15685 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
15686 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140}% U+0160  
15687 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
15688 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141}% U+0161  
15689 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcommaac-  
cent  
15690 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162  
15691 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcommaaccent  
15692 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163  
15693 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron  
15694 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164  
15695 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron  
15696 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165  
15697 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar  
15698 \DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166  
15699 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar  
15700 \DeclareTextCommand{\texttslash}{PU}{\81\147}% U+0167  
15701 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde  
15702 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168  
15703 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde  
15704 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
15705 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron  
15706 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152}% U+016A  
15707 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron  
15708 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153}% U+016B  
15709 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve  
15710 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154}% U+016C  
15711 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve  
15712 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155}% U+016D

15713 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring  
15714 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156}% U+016E  
15715 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring  
15716 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157}% U+016F  
15717 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Udblacute, Uhungarumlaut  
15718 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160}% U+0170  
15719 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; udblacute, uhungarumlaut  
15720 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161}% U+0171  
15721 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek  
15722 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162}% U+0172  
15723 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek  
15724 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163}% U+0173  
15725 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex  
15726 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164}% U+0174  
15727 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex  
15728 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165}% U+0175  
15729 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex  
15730 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166}% U+0176  
15731 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex  
15732 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167}% U+0177  
15733 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
15734 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170}% U+0178  
15735 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute  
15736 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171}% U+0179  
15737 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute  
15738 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172}% U+017A  
15739 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent  
15740 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173}% U+017B  
15741 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent  
15742 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174}% U+017C  
15743 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
15744 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175}% U+017D  
15745 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
15746 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176}% U+017E  
15747 % U+017F LATIN SMALL LETTER LONG S; longs, slong  
15748 \DeclareTextCommand{\textlongS}{PU}{\81\177}% U+017F

#### 47.2.5 Latin Extended-B: U+0180 to U+024F

15749 % U+0180 LATIN SMALL LETTER B WITH STROKE; bstroke; \textcrb (tipa)  
15750 \DeclareTextCommand{\textcrb}{PU}{\81\200}% U+0180  
15751 %\* \textcrb -> \crossb (wsuipa)  
15752 % An alternate glyph with the stroke through the bowl:  
15753 %\* \textcrb -> \textbarb (tipa)  
15754 %\* \textcrb -> \barb (wsuipa)  
15755 % U+0181 LATIN CAPITAL LETTER B WITH HOOK; Bhook; \hausab (phonetic)  
15756 \DeclareTextCommand{\texthausab}{PU}{\81\201}%\* U+0181  
15757 % U+0188 LATIN SMALL LETTER C WITH HOOK; chook; \texthtc (tipa)  
15758 \DeclareTextCommand{\texthtc}{PU}{\81\210}% U+0188  
15759 % U+018A LATIN CAPITAL LETTER D WITH HOOK; Dhook; \hausad (phonetic)  
15760 \DeclareTextCommand{\texthausad}{PU}{\81\212}%\* U+018A

15761 % U+018E LATIN CAPITAL LETTER REVERSED E; Ereversed  
15762 \DeclareTextCommand{\textEreversed}{PU}{\81\216}% U+018E  
15763 \DeclareTextCommand{\textrevE}{PU}{\81\216}% U+018E  
15764 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
15765 \DeclareTextCommand{\textflorin}{PU}{\81\222}% U+0192  
15766 %\* \textflorin -> \Florin (marvosym)  
15767 % U+0195 LATIN SMALL LETTER HV; hv; \texthvlig (tipa)  
15768 \DeclareTextCommand{\texthvlig}{PU}{\81\225}% U+0195  
15769 %\* \texthvlig -> \hv (wsuipa)  
15770 % U+0198 LATIN CAPITAL LETTER K WITH HOOK; Khook; \hausak (pho-  
netic)  
15771 \DeclareTextCommand{\texthausak}{PU}{\81\230}%\* U+0198  
15772 % U+0199 LATIN SMALL LETTER K WITH HOOK; khook; \texthtk (tipa)  
15773 \DeclareTextCommand{\texthtk}{PU}{\81\231}% U+0199  
15774 %\* \texthtk -> \hausak (phonetic)  
15775 % U+019A LATIN SMALL LETTER L WITH BAR; lbar;  
15776 % \textbarl (tipa), \barl (wsuipa)  
15777 \DeclareTextCommand{\textbarl}{PU}{\81\232}%\* U+019A  
15778 % U+019B LATIN SMALL LETTER LAMBDA WITH STROKE/  
15779 % LATIN SMALL LETTER BARRED LAMBDA; lambdastroke;  
15780 % \textcrlambda (tipa)  
15781 \DeclareTextCommand{\textcrlambda}{PU}{\81\233}% U+019B  
15782 %\* \textcrlambda -> \crossnilambda (wsuipa)  
15783 %\* \textcrlambda -> \barlambda (phonetic)  
15784 %\* \textcrlambda -> \lambdabar (txfonts/pxfonts)  
15785 %\* \textcrlambda -> \lambdaslash (txfonts/pxfonts)  
15786 % U+019E LATIN SMALL LETTER N WITH LONG RIGHT LEG; nlegright-  
long;  
15787 % \textnrleg (tipx)  
15788 \DeclareTextCommand{\textPUnrleg}{PU}{\81\236}% U+019E  
15789 %\* \textPUnrleg -> \textnrleg (tipx)  
15790 % U+01A5 LATIN SMALL LETTER P WITH HOOK; phook; \texthtp (tipa)  
15791 \DeclareTextCommand{\texthtp}{PU}{\81\245}% U+01A5  
15792 % U+01AB LATIN SMALL LETTER T WITH PALATAL HOOK; tpalatalhook;  
15793 % \textlhookt (tipa)  
15794 \DeclareTextCommand{\textlhookt}{PU}{\81\253}% U+01AB  
15795 % U+01AD LATIN SMALL LETTER T WITH HOOK; thook; \texthtt (tipa)  
15796 \DeclareTextCommand{\texthtt}{PU}{\81\255}% U+01AD  
15797 % U+01B9 LATIN SMALL LETTER EZH REVERSED/  
15798 % LATIN SMALL LETTER REVERSED YOGH; \textrevyogh (tipa)  
15799 \DeclareTextCommand{\textrevyogh}{PU}{\81\271}% U+01B9  
15800 % U+01BB LATIN LETTER TWO WITH STROKE; twostroke; \textcrtwo (tipa)  
15801 \DeclareTextCommand{\textcrtwo}{PU}{\81\273}% U+01BB  
15802 % U+01BE LATIN LETTER INVERTED GLOTTAL STOP WITH STROKE;  
15803 % glottalinvertedstroke; \textcrinvglotstop (tipa)  
15804 \DeclareTextCommand{\textcrinvglotstop}{PU}{\81\276}% U+01BE  
15805 % U+01BF LATIN LETTER WYNN; wynn; \textwynn (tipa)  
15806 \DeclareTextCommand{\textwynn}{PU}{\81\277}% U+01BF  
15807 % U+01C0 LATIN LETTER DENTAL CLICK/LATIN LETTER PIPE; clickden-  
tal;  
15808 % \textpipe (tipa)  
15809 \DeclareTextCommand{\textpipe}{PU}{\81\300}% U+01C0  
15810 %\* \textpipe -> \textpipevar (tipx)  
15811 % U+01C1 LATIN LETTER LATERAL CLICK/LATIN LETTER

15812 % DOUBLE PIPE; clicklateral; \textdoublepipe (tipa)  
15813 \DeclareTextCommand{\textdoublepipe}{PU}{\81\301}% U+01C1  
15814 %\* \textdoublepipe -> \textdoublepipevar (tipx)  
15815 % U+01C2 LATIN LETTER ALVEOLAR CLICK/LATIN LETTER PIPE DOUBLE BAR;  
15816 % clickalveolar; \textdoublebarpipe (tipa)  
15817 \DeclareTextCommand{\textdoublebarpipe}{PU}{\81\302}% U+01C2  
15818 %\* \textdoublebarpipe -> \textdoublebarpipevar (tipx)  
15819 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron  
15820 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315}% U+01CD  
15821 % U+01CE LATIN SMALL LETTER A WITH CARON; acaron  
15822 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316}% U+01CE  
15823 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icaron  
15824 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317}% U+01CF  
15825 % U+01D0 LATIN SMALL LETTER I WITH CARON; icaron  
15826 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
15827 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
15828 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocaron  
15829 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1  
15830 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocaron  
15831 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2  
15832 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucaron  
15833 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3  
15834 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucaron  
15835 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4  
15836 % U+01DD LATIN SMALL LETTER TURNED E; eturned; \inve (wasysym)  
15837 \DeclareTextCommand{\textinve}{PU}{\81\335}%\* U+01DD  
15838 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke  
15839 \DeclareTextCommand{\textGslash}{PU}{\81\344}% U+01E4  
15840 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke  
15841 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5  
15842 %\* \textgslash -> \textcrg (tipa)  
15843 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcaron  
15844 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6  
15845 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcaron  
15846 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7  
15847 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcaron  
15848 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8  
15849 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcaron  
15850 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9  
15851 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek  
15852 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA  
15853 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek  
15854 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB  
15855 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcaron  
15856 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
15857 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
15858 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute  
15859 \DeclareTextCompositeCommand{\'}{PU}{G}{\81\364}% U+01F4  
15860 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute  
15861 \DeclareTextCompositeCommand{\'}{PU}{g}{\81\365}% U+01F5  
15862 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE  
15863 \DeclareTextCompositeCommand{\`}{PU}{N}{\81\370}% U+01F8  
15864 % U+01F9 LATIN SMALL LETTER N WITH GRAVE

15865 \DeclareTextCompositeCommand{\`}{PU}{n}{\81\371}% U+01F9  
15866 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute  
15867 \DeclareTextCompositeCommand{\'}{PU}{\AE}{\81\374}% U+01FC  
15868 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute  
15869 \DeclareTextCompositeCommand{\'}{PU}{\ae}{\81\375}% U+01FD  
15870 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE;  
15871 % \*Oslashacute, Ostrokeacute  
15872 \DeclareTextCompositeCommand{\'}{PU}{\O}{\81\376}% U+01FE  
15873 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE;  
15874 % \*oslashacute, ostrokeacute  
15875 \DeclareTextCompositeCommand{\'}{PU}{\o}{\81\377}% U+01FF  
15876 </puenc>  
15877 (\*puextra)  
15878 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave  
15879 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200  
15880 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave  
15881 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201  
15882 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave  
15883 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204  
15884 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave  
15885 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205  
15886 </puextra>  
15887 (\*puenc)  
15888 % U+0206 LATIN CAPITAL LETTER E WITH INVERTED BREVE; Einvert-  
edbreve  
15889 \DeclareTextCompositeCommand{\textinvbreve}{PU}{E}{\82\006}% U+0206  
15890 % U+0207 LATIN SMALL LETTER E WITH INVERTED BREVE; einvert-  
breve  
15891 \DeclareTextCompositeCommand{\textinvbreve}{PU}{e}{\82\007}% U+0207  
15892 </puenc>  
15893 (\*puextra)  
15894 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; Idblgrave  
15895 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208  
15896 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave  
15897 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
15898 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
15899 </puextra>  
15900 (\*puenc)  
15901 % U+020A LATIN CAPITAL LETTER I WITH INVERTED BREVE; Iinverted-  
breve  
15902 \DeclareTextCompositeCommand{\textinvbreve}{PU}{I}{\82\012}% U+020A  
15903 % U+020B LATIN SMALL LETTER I WITH INVERTED BREVE; iinverted-  
breve  
15904 \DeclareTextCompositeCommand{\textinvbreve}{PU}{i}{\82\013}% U+020B  
15905 \DeclareTextCompositeCommand{\textinvbreve}{PU}{i}{\82\013}% U+020B  
15906 </puenc>  
15907 (\*puextra)  
15908 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave  
15909 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C  
15910 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave  
15911 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D  
15912 </puextra>  
15913 (\*puenc)  
15914 % U+020E LATIN CAPITAL LETTER O WITH INVERTED BREVE; Oinvert-

edbreve  
 15915 \DeclareTextCompositeCommand{\textinvbreve}{PU}{O}{\82\016}% U+020E  
 15916 % U+020F LATIN SMALL LETTER O WITH INVERTED BREVE; oinverted-  
 breve  
 15917 \DeclareTextCompositeCommand{\textinvbreve}{PU}{o}{\82\017}% U+020F  
 15918 (/puenc)  
 15919 (\*puextra)  
 15920 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave  
 15921 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210  
 15922 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave  
 15923 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211  
 15924 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave  
 15925 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214  
 15926 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave  
 15927 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215  
 15928 (/puextra)  
 15929 (\*puenc)  
 15930 % U+0216 LATIN CAPITAL LETTER U WITH INVERTED BREVE; Uinverted-  
 edbreve  
 15931 \DeclareTextCompositeCommand{\textinvbreve}{PU}{U}{\82\026}% U+0216  
 15932 % U+0217 LATIN SMALL LETTER U WITH INVERTED BREVE; uinverted-  
 breve  
 15933 \DeclareTextCompositeCommand{\textinvbreve}{PU}{u}{\82\027}% U+0217  
 15934 % U+021E LATIN CAPITAL LETTER H WITH CARON  
 15935 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E  
 15936 % U+021F LATIN SMALL LETTER H WITH CARON  
 15937 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F  
 15938 % U+0221 LATIN SMALL LETTER D WITH CURL; \textctd (tipa)  
 15939 \DeclareTextCommand{\textctd}{PU}{\82\041}% U+0221  
 15940 % U+0225 LATIN SMALL LETTER Z WITH HOOK; \textcommatailz (tipa)  
 15941 \DeclareTextCommand{\textcommatailz}{PU}{\82\045}% U+0225  
 15942 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE  
 15943 \DeclareTextCompositeCommand{\.}{PU}{A}{\82\046}% U+0226  
 15944 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE  
 15945 \DeclareTextCompositeCommand{\.}{PU}{a}{\82\047}% U+0227  
 15946 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA  
 15947 \DeclareTextCompositeCommand{\c}{PU}{E}{\82\050}% U+0228  
 15948 % U+0229 LATIN SMALL LETTER E WITH CEDILLA  
 15949 \DeclareTextCompositeCommand{\c}{PU}{e}{\82\051}% U+0229  
 15950 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE  
 15951 \DeclareTextCompositeCommand{\.}{PU}{O}{\82\056}% U+022E  
 15952 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE  
 15953 \DeclareTextCompositeCommand{\.}{PU}{o}{\82\057}% U+022F  
 15954 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON  
 15955 \DeclareTextCompositeCommand{\=} {PU}{Y}{\82\062}% U+0232  
 15956 % U+0233 LATIN SMALL LETTER Y WITH MACRON  
 15957 \DeclareTextCompositeCommand{\=} {PU}{y}{\82\063}% U+0233  
 15958 % U+0235 LATIN SMALL LETTER N WITH CURL; \textctn (tipa)  
 15959 \DeclareTextCommand{\textctn}{PU}{\82\065}% U+0235  
 15960 % U+0236 LATIN SMALL LETTER T WITH CURL; \textctt (tipa)  
 15961 \DeclareTextCommand{\textctt}{PU}{\82\066}% U+0236  
 15962 % U+0237 LATIN SMALL LETTER DOTLESS J  
 15963 \DeclareTextCommand{\j}{PU}{\82\067}% U+0237  
 15964 % U+0238 LATIN SMALL LETTER DB DIGRAPH; \textdblig (tipx)



15965 \DeclareTextCommand{\textPUdblig}{PU}{\82\070}% U+0238  
15966 %\* \textPUdblig -> \textdblig (tipx)  
15967 % U+0239 LATIN SMALL LETTER QP DIGRAPH; \textqplig (tipx)  
15968 \DeclareTextCommand{\textPUqplig}{PU}{\82\071}% U+0239  
15969 %\* \textPUqplig -> \textqplig (tipx)  
15970 % U+023C LATIN SMALL LETTER C WITH STROKE; \slashc (wsuipa)  
15971 \DeclareTextCommand{\textslashc}{PU}{\82\074}%\* U+023C  
15972 %\* \textslashc -> \textcentoldstyle (textcomp)  
15973 % With bar instead of stroke:  
15974 %\* \textslashc -> \textbarc (tipa)

#### 47.2.6 IPA Extensions: U+0250 to U+02AF

15975 % U+0250 LATIN SMALL LETTER TURNED A; aturned; \textturna (tipa)  
15976 \DeclareTextCommand{\textturna}{PU}{\82\120}% U+0250  
15977 %\* \textturna -> \inva (wasysym)  
15978 % U+0251 LATIN SMALL LETTER ALPHA/LATIN SMALL LETTER  
15979 % SCRIPT A; ascript; \textscripta (tipa), \scripta (wsuipa)  
15980 \DeclareTextCommand{\textscripta}{PU}{\82\121}%\* U+0251  
15981 %\* \textscripta -> \vara (phonetic)  
15982 % U+0252 LATIN SMALL LETTER TURNED ALPHA; ascriptturned;  
15983 % \textturnscripta (tipa)  
15984 \DeclareTextCommand{\textturnscripta}{PU}{\82\122}% U+0252  
15985 %\* \textturnscripta -> \invscripta (wsuipa)  
15986 %\* \textturnscripta -> \rotvara (phonetic)  
15987 % U+0253 LATIN CAPITAL LETTER B WITH HOOK; bhook; \texthtb (tipa)  
15988 \DeclareTextCommand{\texthtb}{PU}{\82\123}% U+0253  
15989 %\* \texthtb -> \hookb (wsuipa)  
15990 %\* \texthtb -> \hausab (phonetic)  
15991 % U+0254 LATIN SMALL LETTER OPEN O; oopen;  
15992 % \textopeno (tipa), \openo (wasysym)  
15993 \DeclareTextCommand{\textopeno}{PU}{\82\124}%\* U+0254  
15994 %\* \textopeno -> \varopeno (phonetic)  
15995 % U+0255 LATIN SMALL LETTER C WITH CURL; ccurl; \textctc (tipa)  
15996 \DeclareTextCommand{\textctc}{PU}{\82\125}% U+0255  
15997 %\* \textctc -> \curlyc (wsuipa)  
15998 % U+0256 LATIN SMALL LETTER D WITH TAIL; dtail; \textrtaid (tipa)  
15999 \DeclareTextCommand{\textrtaid}{PU}{\82\126}%\* U+0256  
16000 %\* \textrtaid -> \taild (wsuipa)  
16001 % U+0257 LATIN SMALL LETTER D WITH HOOK; dhook; \texthtd (tipa)  
16002 \DeclareTextCommand{\texthtd}{PU}{\82\127}% U+0257  
16003 %\* \texthtd -> \hookd (wsuipa)  
16004 %\* \texthtd -> \hausad (phonetic)  
16005 % U+0258 LATIN SMALL LETTER REVERSED E; ereversed;  
16006 % \textreve (tipa), \reve (wsuipa)  
16007 \DeclareTextCommand{\textreve}{PU}{\82\130}%\* U+0258  
16008 % U+0259 LATIN SMALL LETTER SCHWA; schwa;  
16009 % \textschwa (tipa), \schwa (wsuipa, phonetic)  
16010 \DeclareTextCommand{\textschwa}{PU}{\82\131}%\* U+0259  
16011 % U+025A LATIN SMALL LETTER SCHWA WITH HOOK; schwahook;  
16012 % \textrhookschwa (tipa)  
16013 \DeclareTextCommand{\textrhookschwa}{PU}{\82\132}% U+025A  
16014 %\* \textrhookschwa -> \ver (wsuipa)  
16015 % U+025B LATIN SMALL LETTER OPEN E/LATIN SMALL LETTER EP-  
SILON; eopen;

16016 % \niepsilon (wsuipa)  
16017 \DeclareTextCommand{\textniepsilon}{PU}{\82\133}%\* U+025B  
16018 %\* \textniepsilon -> \epsi (phonetic)  
16019 % U+025C LATIN SMALL LETTER REVERSED OPEN E; eopenreversed;  
16020 % \textrepsilon (tipa), \repsilon (wsuipa)  
16021 \DeclareTextCommand{\textrepsilon}{PU}{\82\134}%\* U+025C  
16022 % U+025D LATIN SMALL LETTER REVERSED OPEN E WITH HOOK; eopenreversedhook;  
16023 % \texthookrepsilon (tipa)  
16024 \DeclareTextCommand{\texthookrepsilon}{PU}{\82\135}%\* U+025D  
16025 %\* \texthookrepsilon -> \hookrepsilon (wsuipa)  
16026 % U+025E LATIN SMALL LETTER CLOSED REVERSED OPEN E; eopenreversedclosed;  
16027 % \textcloserepsilon (tipa)  
16028 \DeclareTextCommand{\textcloserepsilon}{PU}{\82\136}% U+025E  
16029 %\* \textcloserepsilon -> \closedrepsilon (wsuipa)  
16030 % U+025F LATIN SMALL LETTER DOTLESS J WITH STROKE; jdotlessstroke;  
16031 % \textbardotlessj (tipa)  
16032 \DeclareTextCommand{\textbardotlessj}{PU}{\82\137}% U+025F  
16033 %\* \textbardotlessj -> \barj (phonetic)  
16034 % U+0260 LATIN SMALL LETTER G WITH HOOK; ghook; \texthtg (tipa)  
16035 \DeclareTextCommand{\texthtg}{PU}{\82\140}% U+0260  
16036 %\* \texthtg -> \hookg (wsuipa)  
16037 % U+0261 LATIN SMALL LETTER SCRIPT G; gscript;  
16038 % \textscriptg (tipa), \scriptg (wsuipa)  
16039 \DeclareTextCommand{\textscriptg}{PU}{\82\141}%\* U+0261  
16040 %\* \textscriptg -> \varg (phonetic)  
16041 % U+0262 LATIN LETTER SMALL CAPITAL G; \textscg (tipa), \scg (wsuipa)  
16042 \DeclareTextCommand{\textscg}{PU}{\82\142}%\* U+0262  
16043 % U+0263 LATIN SMALL LETTER GAMMA; gammalatin-small;  
16044 % \ipagamma (wsuipa), \vod (phonetic)  
16045 \DeclareTextCommand{\textipagamma}{PU}{\82\143}%\* U+0263  
16046 %\* \textipagamma -> \vod (pnonetic)  
16047 % U+0264 LATIN SMALL LETTER RAMS HORN; ramshorn;  
16048 % \babygamma (wsuipa)  
16049 \DeclareTextCommand{\textbabygamma}{PU}{\82\144}%\* U+0264  
16050 % U+0265 LATIN SMALL LETTER TURNED H; hturned; \textturnh (tipa)  
16051 \DeclareTextCommand{\textturnh}{PU}{\82\145}% U+0265  
16052 %\* \textturnh -> \invh (wsuipa)  
16053 %\* \textturnh -> \udesc (phonetic)  
16054 % U+0266 LATIN SMALL LETTER H WITH HOOK; hhook; \texthth (tipa)  
16055 \DeclareTextCommand{\texthth}{PU}{\82\146}% U+0266  
16056 %\* \texthth -> \hookh (wsuipa)  
16057 %\* \texthth -> \voicedh (phonetic)  
16058 % U+0267 LATIN SMALL LETTER HENG WITH HOOK; henghook; \textheng (tipa)  
16059 \DeclareTextCommand{\textheng}{PU}{\82\147}% U+0267  
16060 %\* \textheng -> \hookheng (wsuipa)  
16061 % U+0268 LATIN SMALL LETTER I WITH STROKE;  
16062 % \textbari (tipa), \bari (wsuipa)  
16063 \DeclareTextCommand{\textbari}{PU}{\82\150}%\* U+0268  
16064 %\* \textbari -> \ibar (phonetic)  
16065 % U+0269 LATIN SMALL LETTER IOTA; iotalatin; \niota (wsuipa)

16066 \DeclareTextCommand{\textniota}{PU}{\82\151}%\* U+0269  
16067 %\* \textniota -> \vari (phonetic)  
16068 % U+026A LATIN LETTER SMALL CAPITAL I; \textsci (tipa), \sci (wsuipa)  
16069 \DeclareTextCommand{\textsci}{PU}{\82\152}%\* U+026A  
16070 % U+026B LATIN SMALL LETTER L WITH MIDDLE TILDE; lmiddletilde;  
16071 % \textltilde (tipa)  
16072 \DeclareTextCommand{\textltilde}{PU}{\82\153}% U+026B  
16073 %\* \textltilde -> \tildel (wsuipa)  
16074 % U+026C LATIN SMALL LETTER L WITH BELT; lbelt; \textbeltl (tipa)  
16075 \DeclareTextCommand{\textbeltl}{PU}{\82\154}% U+026C  
16076 %\* \textbeltl -> \latfric (wsuipa)  
16077 % U+026D LATIN SMALL LETTER L WITH RETROFLEX HOOK;  
16078 % lhookretroflex; \textrtaill (tipa)  
16079 \DeclareTextCommand{\textrtaill}{PU}{\82\155}% U+026D  
16080 %\* \textrtaill -> \taill (wsuipa)  
16081 % U+026E LATIN SMALL LETTER LEZH; lezh; \textlyoghlig (tipa)  
16082 \DeclareTextCommand{\textlyoghlig}{PU}{\82\156}% U+026E  
16083 %\* \textlyoghlig -> \lz (wsuipa)  
16084 % U+026F LATIN SMALL LETTER TURNED M; mturned; \textturnm (tipa)  
16085 \DeclareTextCommand{\textturnm}{PU}{\82\157}% U+026F  
16086 %\* \textturnm -> \invm (wsuipa)  
16087 %\* \textturnm -> \rotm (phonetic)  
16088 % U+0270 LATIN SMALL LETTER TURNED M WITH LONG LEG; mlongleg-  
turned;  
16089 % \textturnmrlleg (tipa)  
16090 \DeclareTextCommand{\textturnmrlleg}{PU}{\82\160}% U+0270  
16091 %\* \textturnmrlleg -> \legm (wsuipa)  
16092 % U+0271 LATIN SMALL LETTER M WITH HOOK; mhook; \textltailm (tipa)  
16093 \DeclareTextCommand{\textltailm}{PU}{\82\161}% U+0271  
16094 %\* \textltailm -> \labdentalnas (wsuipa)  
16095 %\* \textltailm -> \emgma (phonetic)  
16096 % U+0272 LATIN SMALL LETTER N WITH LEFT HOOK; nhookleft; \textl-  
tailn (tipa)  
16097 \DeclareTextCommand{\textltailn}{PU}{\82\162}% U+0272  
16098 %\* \textltailn -> \nj (wsuipa)  
16099 %\* \textltailn -> \nya (phonetic)  
16100 % U+0273 LATIN SMALL LETTER N WITH RETROFLEX HOOK;  
16101 % nhookretroflex; \textrtailn (tipa)  
16102 \DeclareTextCommand{\textrtailn}{PU}{\82\163}% U+0273  
16103 %\* \textrtailn -> \tailn (wsuipa)  
16104 % U+0274 LATIN LETTER SMALL CAPITAL N; \textscn (tipa), \scn (wsuipa)  
16105 \DeclareTextCommand{\textscn}{PU}{\82\164}%\* U+0274  
16106 % U+0275 LATIN CAPITAL LETTER O WITH MIDDLE TILDE/  
16107 % LATIN CAPITAL LETTER BARRED O; obarred;  
16108 % \textbaro (tipa), \baro (wsuipa)  
16109 % But \baro from stmaryrd is different!  
16110 \DeclareTextCommand{\textbaro}{PU}{\82\165}% U+0275  
16111 % U+0276 LATIN LETTER SMALL CAPITAL OE; \textscelig (tipa)  
16112 \DeclareTextCommand{\textscelig}{PU}{\82\166}% U+0276  
16113 % U+0277 LATIN SMALL LETTER CLOSED OMEGA; omegalatinclosed;  
16114 % \textcloseomega (tipa)  
16115 \DeclareTextCommand{\textcloseomega}{PU}{\82\167}% U+0277  
16116 %\* \textcloseomega -> \closedniomega (wsuipa)  
16117 %\* \textcloseomega -> \varomega (phonetic)

16118 % U+0278 LATIN SMALL LETTER PHI; philatin; \nphi (wsuipa)  
16119 \DeclareTextCommand{\textnphi}{PU}{\82\170}%\* U+0278  
16120 % U+0279 LATIN SMALL LETTER TURNED R; rturned; \textturnr (tipa)  
16121 \DeclareTextCommand{\textturnr}{PU}{\82\171}% U+0279  
16122 %\* \textturnr -> \invr (wsuipa)  
16123 %\* \textturnr -> \rotr (phonetic)  
16124 % U+027A LATIN SMALL LETTER TURNED R WITH LONG LEG;  
16125 % rlonglegturned; \textturnlonglegr (tipa)  
16126 \DeclareTextCommand{\textturnlonglegr}{PU}{\82\172}% U+027A  
16127 %\* \textturnlonglegr -> \invlegr (wsuipa)  
16128 % U+027B LATIN SMALL LETTER TURNED R WITH HOOK; rhookturned;  
16129 % \textturnrrtail (tipa)  
16130 \DeclareTextCommand{\textturnrrtail}{PU}{\82\173}% U+027B  
16131 %\* \textturnrrtail -> \tailinvr (wsuipa)  
16132 % U+027C LATIN SMALL LETTER R WITH LONG LEG; rlongleg; \textlonglegr (tipa)  
16133 \DeclareTextCommand{\textlonglegr}{PU}{\82\174}%\* U+027C  
16134 %\* \textlonglegr -> \legr (wsuipa)  
16135 % U+027D LATIN SMALL LETTER R WITH TAIL; rhook; \textrtailr (tipa)  
16136 \DeclareTextCommand{\textrtailr}{PU}{\82\175}% U+027D  
16137 %\* \textrtailr -> \tailr (wsuipa)  
16138 % U+027E LATIN SMALL LETTER R WITH FISHHOOK; rfishhook;  
16139 % \textfishhookr (tipa)  
16140 \DeclareTextCommand{\textfishhookr}{PU}{\82\176}% U+027E  
16141 %\* \textfishhookr -> \flapr (wsuipa)  
16142 %\* \textfishhookr -> \flap (phonetic)  
16143 % U+027F LATIN SMALL LETTER REVERSED R WITH FISHHOOK; rfishhookreversed;  
16144 % \textlhtlongi (tipa)  
16145 \DeclareTextCommand{\textlhtlongi}{PU}{\82\177}% U+027F  
16146 % U+0280 LATIN LETTER SMALL CAPITAL R; \textscr (tipa), \scr (wsuipa)  
16147 \DeclareTextCommand{\textscr}{PU}{\82\200}%\* U+0280  
16148 % U+0281 LATIN LETTER SMALL CAPITAL INVERTED R; Rsmallinverted;  
16149 % \textinvscr (tipa), \invscr (wsuipa)  
16150 \DeclareTextCommand{\textinvscr}{PU}{\82\201}%\* U+0281  
16151 % U+0282 LATIN SMALL LETTER S WITH HOOK; shook; \textrtails (tipa)  
16152 \DeclareTextCommand{\textrtails}{PU}{\82\202}% U+0282  
16153 %\* \textrtails -> \tails (wsuipa)  
16154 % U+0283 LATIN SMALL LETTER ESH; esh; \textesh (tipa), \esh (wsuipa)  
16155 \DeclareTextCommand{\textesh}{PU}{\82\203}%\* U+0283  
16156 % U+0284 LATIN SMALL LETTER DOTLESS J WITH STROKE AND HOOK;  
16157 % dotlessjstrokehook; \texthtbardotlessj (tipa)  
16158 \DeclareTextCommand{\texthtbardotlessj}{PU}{\82\204}% U+0284  
16159 % U+0285 LATIN SMALL LETTER SQUAT REVERSED ESH; eshsquatreversed;  
16160 % \textvibyi (tipa)  
16161 \DeclareTextCommand{\textvibyi}{PU}{\82\205}% U+0285  
16162 % U+0286 LATIN SMALL LETTER ESH WITH CURL; eshcurl; \textctesh (tipa)  
16163 \DeclareTextCommand{\textctesh}{PU}{\82\206}% U+0286  
16164 %\* \textctesh -> \curlyesh (wsuipa)  
16165 % U+0287 LATIN SMALL LETTER TURNED T; tturned; \textturnt (tipa)  
16166 \DeclareTextCommand{\textturnt}{PU}{\82\207}% U+0287  
16167 %\* \textturnt -> \clickt (wsuipa)  
16168 % U+0288 LATIN SMALL LETTER T WITH RETROFLEX HOOK; retroflex-

```

hook;
16169 % \texttrtail (tipa)
16170 \DeclareTextCommand{\texttrtail}{PU}{\82\210}% U+0288
16171 %* \texttrtail -> \tailt (wsuipa)
16172 % U+0289 LATIN SMALL LETTER U BAR; ubar;
16173 % \textbaru (tipa), \baru (wsuipa)
16174 \DeclareTextCommand{\textbaru}{PU}{\82\211}%* U+0289
16175 %* \textbaru -> \ubar (phonetic)
16176 % U+028A LATIN SMALL LETTER UPSILON; \niupsilon (wsuipa)
16177 \DeclareTextCommand{\textniupsilon}{PU}{\82\212}%* U+028A
16178 %* \textniupsilon -> \rotOmega (phonetic)
16179 % U+028B LATIN SMALL LETTER V WITH HOOK/LATIN SMALL LET-
TER SCRIPT V;
16180 % vhook; \textscriptv (tipa), \scriptv (wsuipa)
16181 \DeclareTextCommand{\textscriptv}{PU}{\82\213}%* U+028B
16182 % U+028C LATIN SMALL LETTER TURNED V; vturned; \textturnv (tipa)
16183 \DeclareTextCommand{\textturnv}{PU}{\82\214}%* U+028C
16184 %* \textturnv -> \invv (wsuipa)
16185 %* \textturnv -> \pwedge (phonetic)
16186 % U+028D LATIN SMALL LETTER TURNED W; wturned; \textturnw (tipa)
16187 \DeclareTextCommand{\textturnw}{PU}{\82\215}%* U+028D
16188 %* \textturnw -> \invw (wsuipa)
16189 %* \textturnw -> \rotw (phonetic)
16190 % U+028E LATIN SMALL LETTER TURNED Y; yturned; \textturny (tipa)
16191 \DeclareTextCommand{\textturny}{PU}{\82\216}%* U+028E
16192 %* \textturny -> \invy (wsuipa)
16193 %* \textturny -> \roty (phonetic)
16194 % U+028F LATIN LETTER SMALL CAPITAL Y; \textscy (tipa), \scy (wsuipa)
16195 \DeclareTextCommand{\textscy}{PU}{\82\217}%* U+028F
16196 % U+0290 LATIN SMALL LETTER Z WITH RETROFLEX HOOK; zretroflex-
hook;
16197 % \textrtailz (tipa)
16198 \DeclareTextCommand{\textrtailz}{PU}{\82\220}% U+0290
16199 %* \textrtailz -> \tailz (wsuipa)
16200 % U+0291 LATIN SMALL LETTER Z WITH CURL; zcurl; \textctz (tipa)
16201 \DeclareTextCommand{\textctz}{PU}{\82\221}% U+0291
16202 %* \textctz -> \curlyz (wsuipa)
16203 % U+0292 LATIN SMALL LETTER EZH/LATIN SMALL LETTER YOGH; ezh;
16204 % \textyogh (tipa), \yogh (wsuipa)
16205 \DeclareTextCommand{\textyogh}{PU}{\82\222}%* U+0292
16206 % U+0293 LATIN SMALL LETTER EZH WITH CURL/LATIN SMALL LET-
TER YOGH CURL;
16207 % ezhcurl; \textctyogh (tipa)
16208 \DeclareTextCommand{\textctyogh}{PU}{\82\223}% U+0293
16209 %* \textctyogh -> \curlyyogh (wsuipa)
16210 % U+0294 LATIN LETTER GLOTTAL STOP; glottalstop;
16211 % \textglotstop (tipa), \glotstop (wsuipa)
16212 \DeclareTextCommand{\textglotstop}{PU}{\82\224}%* U+0294
16213 %* \textglotstop -> \ejjective (wsuipa)
16214 %* \textglotstop -> \glottal (phonetic)
16215 % U+0295 LATIN LETTER PHARYNGEAL VOICED FRICATIVE/
16216 % LATIN LETTER REVERSED GLOTTAL STOP; glottalstopreversed;
16217 % \textrevglotstop (tipa), \revglotstop (wsuipa)
16218 \DeclareTextCommand{\textrevglotstop}{PU}{\82\225}%* U+0295

```

16219 %\* \textrevglotstop -> \reweject (wsuipa)  
16220 % U+0296 LATIN LETTER INVERTED GLOTTAL STOP; glottalstopinverted;  
16221 % \textinvglotstop (tipa), \invglotstop (wsuipa)  
16222 \DeclareTextCommand{\textinvglotstop}{PU}{\82\226}%\* U+0296  
16223 % U+0297 LATIN LETTER STRETCHED C; cstretched; \textstretchc (tipa)  
16224 \DeclareTextCommand{\textstretchc}{PU}{\82\227}% U+0297  
16225 %\* \textstretchc -> \clickc (wsuipa)  
16226 %\* \textstretchc -> \textstretchcvar (tipx)  
16227 % U+0298 LATIN LETTER BILABIAL CLICK; bilabialclick;  
16228 % \textbullseye (tipa)  
16229 \DeclareTextCommand{\textbullseye}{PU}{\82\230}% U+0298  
16230 %\* \textbullseye -> \clickb (wsuipa)  
16231 %\* \textbullseye -> \textObullseye (tipx)  
16232 % U+0299 LATIN LETTER SMALL CAPITAL B; \textscb (tipa)  
16233 \DeclareTextCommand{\textscb}{PU}{\82\231}% U+0299  
16234 % U+029A LATIN SMALL LETTER CLOSED OPEN E; eopenclosed;  
16235 % \textcloseepsilon (tipa)  
16236 \DeclareTextCommand{\textcloseepsilon}{PU}{\82\232}% U+029A  
16237 % U+029B LATIN LETTER SMALL CAPITAL G WITH HOOK; Gsmallhook;  
16238 % \texthtscg (tipa)  
16239 \DeclareTextCommand{\texthtscg}{PU}{\82\233}% U+029B  
16240 % U+029C LATIN LETTER SMALL CAPITAL H; \textsch (tipa)  
16241 \DeclareTextCommand{\textsch}{PU}{\82\234}% U+029C  
16242 % U+029D LATIN SMALL LETTER J WITH CROSSED-TAIL; jcrossed-  
tail; \textcdj (tipa)  
16243 \DeclareTextCommand{\textctj}{PU}{\82\235}% U+029D  
16244 %\* \textctj -> \textctjvar (tipx)  
16245 % U+029E LATIN SMALL LETTER TURNED K; kturned; \textturnk (tipa)  
16246 \DeclareTextCommand{\textturnk}{PU}{\82\236}% U+029E  
16247 %\* \textturnk -> \textturnsck (tipx)  
16248 % U+029F LATIN LETTER SMALL CAPITAL L; \textscL (tipa)  
16249 \DeclareTextCommand{\textscL}{PU}{\82\237}% U+029F  
16250 % U+02A0 LATIN SMALL LETTER Q WITH HOOK; qhook; \texthtq (tipa)  
16251 \DeclareTextCommand{\texthtq}{PU}{\82\240}% U+02A0  
16252 % U+02A1 LATIN LETTER GLOTTAL STOP WITH STROKE; glottalstop-  
stroke;  
16253 % \textbarglotstop (tipa)  
16254 \DeclareTextCommand{\textbarglotstop}{PU}{\82\241}% U+02A1  
16255 % U+02A2 LATIN LETTER REVERSED GLOTTAL STOP WITH STROKE/  
16256 % LATIN LETTER REVERSED GLOTTAL STOP BAR; glottalstopstrokere-  
versed;  
16257 % \textbarrevglotstop (tipa)  
16258 \DeclareTextCommand{\textbarrevglotstop}{PU}{\82\242}% U+02A2  
16259 % U+02A3 LATIN SMALL LETTER DZ DIGRAPH; dzaltone; \textdzlig (tipa)  
16260 \DeclareTextCommand{\textdzlig}{PU}{\82\243}% U+02A3  
16261 %\* \textdzlig -> \dz (wsuipa)  
16262 % U+02A4 LATIN SMALL LETTER DEZH DIGRAPH; dezH; \textdyogh-  
lig (tipa)  
16263 \DeclareTextCommand{\textdyoghlig}{PU}{\82\244}% U+02A4  
16264 % U+02A5 LATIN SMALL LETTER DZ DIGRAPH WITH CURL; dzcurl;  
16265 % \textdctzlig (tipa)  
16266 \DeclareTextCommand{\textdctzlig}{PU}{\82\245}% U+02A5  
16267 % U+02A6 LATIN SMALL LETTER TS DIGRAPH; ts; \texttslig (tipa)  
16268 \DeclareTextCommand{\texttslig}{PU}{\82\246}% U+02A6

16269 % U+02A7 LATIN SMALL LETTER TESH DIGRAPH; tesh; \texttreshlig (tipa)  
16270 \DeclareTextCommand{\texttreshlig}{PU}{\82\247}% U+02A7  
16271 %\* \texttreshlig -> \tesh (wsuipa)  
16272 % U+02A8 LATIN SMALL LETTER TC DIGRAPH WITH CURL; tccurl;  
16273 % \texttctclig (tipa)  
16274 \DeclareTextCommand{\texttctclig}{PU}{\82\250}% U+02A8  
16275 % U+02AE LATIN SMALL LETTER TURNED H WITH FISHHOOK;  
16276 % \textlhtlongy (tipa)  
16277 \DeclareTextCommand{\textlhtlongy}{PU}{\82\256}% U+02AE  
16278 % U+02AF LATIN SMALL LETTER TURNED H WITH FISHHOOK AND TAIL;  
16279 % \textvibyy (tipa)  
16280 \DeclareTextCommand{\textvibyy}{PU}{\82\257}% U+02AF

#### 47.2.7 Spacing Modifier Letters: U+02B0 to U+02FF

16281 % U+02BD MODIFIER LETTER REVERSED COMMA;  
16282 % commareversedmod, afi64937; \textrevapostrophe (tipa)  
16283 \DeclareTextCommand{\textrevapostrophe}{PU}{\82\275}% U+02BD  
16284 % U+02C0 MODIFIER LETTER GLOTTAL STOP; glottalstopmod;  
16285 % \textraiseglotstop (tipa)  
16286 \DeclareTextCommand{\textraiseglotstop}{PU}{\82\300}% U+02C0  
16287 % U+02C2 MODIFIER LETTER LEFT ARROWHEAD; arrowheadleftmod;  
16288 % \textlptr (tipa)  
16289 \DeclareTextCommand{\textlptr}{PU}{\82\302}% U+02C2  
16290 % U+02C3 MODIFIER LETTER RIGHT ARROWHEAD; arrowheadrightmod;  
16291 % \textrptr (tipa)  
16292 \DeclareTextCommand{\textrptr}{PU}{\82\303}% U+02C3  
16293 % U+02C7 CARON; caron  
16294 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7  
16295 % U+02C8 MODIFIER LETTER VERTICAL LINE; verticallinemod;  
16296 % \textprimstress (tipa)  
16297 \DeclareTextCommand{\textprimstress}{PU}{\82\310}% U+02C8  
16298 % U+02CC MODIFIER LETTER LOW VERTICAL LINE; verticallinelowmod;  
16299 % \textsecstress (tipa)  
16300 \DeclareTextCommand{\textsecstress}{PU}{\82\314}% U+02CC  
16301 % U+02D0 MODIFIER LETTER TRIANGULAR COLON; colontriangularmod;  
16302 % \textlengthmark (tipa)  
16303 \DeclareTextCommand{\textlengthmark}{PU}{\82\320}% U+02D0  
16304 % U+02D1 MODIFIER LETTER HALF TRIANGULAR COLON; colontriangu-  
larhalfmod;  
16305 % \texthalflength (tipa)  
16306 \DeclareTextCommand{\texthalflength}{PU}{\82\321}% U+02D1  
16307 % U+02D8 BREVE; breve  
16308 \DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8  
16309 % U+02D9 DOT ABOVE; dotaccent  
16310 \DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9  
16311 % U+02DA RING ABOVE; ring  
16312 \DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA  
16313 % U+02DB OGONEK; ogonek  
16314 \DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB  
16315 % U+02DC SMALL TILDE; ilde, \*tilde  
16316 \DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC  
16317 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
16318 \DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD  
16319 \DeclareTextCommand{\textacutedbl}{PU}{\82\335}% U+02DD

```

16320 % U+02F3 MODIFIER LETTER LOW RING
16321 \DeclareTextCommand{\textringlow}{PU}{\82\363}% U+02F3
16322 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT
16323 \DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5
16324 % U+02F7 MODIFIER LETTER LOW TILDE
16325 \DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7
16326 % U+02F9 MODIFIER LETTER BEGIN HIGH TONE; \textopencorner (tipa)
16327 \DeclareTextCommand{\textopencorner}{PU}{\82\371}% U+02F9
16328 % U+02FA MODIFIER LETTER END HIGH TONE; \textcorner (tipa)
16329 \DeclareTextCommand{\textcorner}{PU}{\82\372}% U+02FA

```

#### 47.2.8 Combining Diacritical Marks: U+0300 to U+036F

```

16330 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb
16331 \DeclareTextCommand{\textdoublegrave}{PU}{ \83\017}% U+030F
16332 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb
16333 \DeclareTextCommand{\textnewtie}{PU}{ \83\021}% U+0311
16334 % U+0323 COMBINING DOT BELOW; dotbelowcmb, *dotbelowcmb
16335 \DeclareTextCommand{\textdotbelow}{PU}{ \83\043}% U+0323
16336 % U+0331 COMBINING MACRON BELOW; macronbelowcmb
16337 \DeclareTextCommand{\textmacronbelow}{PU}{ \83\061}% U+0331
16338 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddou-
    blecmb
16339 \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.

```

16340 \ifx\textBeta\@undefined \else
16341 \input{puenc-greek.def}
16342 \fi
16343 \end{puenc}

```

#### 47.2.10 Cyrillic: U+0400 to U+04FF

Thanks to Vladimir Volovich (vov@vov.vsu.ru) for the help with the Cyrillic glyph names. Cyrillic only loaded if `\CYRDZE` is defined.

```

16344 (*puenc)
16345 \ifx\CYRDZE\@undefined \else
16346 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE
16347 \DeclareTextCompositeCommand{\`}{PU}{\CYRE}{\84\000}% U+0400
16348 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrillic, *afi10023
16349 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401
16350 \DeclareTextCompositeCommand{\"}{PU}{\CYRE}{\84\001}% U+0401
16351 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, *afi10051
16352 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402
16353 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, *afi10052
16354 \DeclareTextCompositeCommand{\'}{PU}{\CYRG}{\84\003}% U+0403
16355 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrillic, *afi10053
16356 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404
16357 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzecyrillic, *afi10054
16358 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405
16359 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I;
16360 % Icyrillic, *afi10055
16361 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406

```



16362 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrillic, \*afii10056  
16363 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407  
16364 \DeclareTextCompositeCommand{\CYRII}{PU}{\84\007}% U+0407  
16365 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, \*afii10057  
16366 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408  
16367 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, \*afii10058  
16368 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409  
16369 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, \*afii10059  
16370 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A  
16371 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, \*afii10060  
16372 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B  
16373 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, \*afii10061  
16374 \DeclareTextCompositeCommand{\CYRK}{PU}{\84\014}% U+040C  
16375 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE  
16376 \DeclareTextCompositeCommand{\CYRI}{PU}{\84\015}% U+040D  
16377 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrillic, \*afii10062  
16378 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E  
16379 \DeclareTextCompositeCommand{\CYRU}{PU}{\84\016}% U+040E  
16380 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, \*afii10145  
16381 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F  
16382 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, \*afii10017  
16383 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410  
16384 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrillic, \*afii10018  
16385 \DeclareTextCommand{\CYRB}{PU}{\84\021}% U+0411  
16386 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, \*afii10019  
16387 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412  
16388 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, \*afii10020  
16389 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413  
16390 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, \*afii10021  
16391 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414  
16392 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, \*afii10022  
16393 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415  
16394 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, \*afii10024  
16395 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416  
16396 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, \*afii10025  
16397 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417  
16398 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrillic, \*afii10026  
16399 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418  
16400 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; Ishortcyrillic, \*afii10027  
16401 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419  
16402 \DeclareTextCompositeCommand{\CYRI}{PU}{\84\031}% U+0419  
16403 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, \*afii10028  
16404 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A  
16405 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, \*afii10029  
16406 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B  
16407 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, \*afii10030  
16408 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C  
16409 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, \*afii10031  
16410 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D  
16411 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, \*afii10032  
16412 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E  
16413 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, \*afii10033  
16414 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F  
16415 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, \*afii10034

16416 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420  
16417 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, \*afii10035  
16418 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421  
16419 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, \*afii10036  
16420 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422  
16421 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, \*afii10037  
16422 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423  
16423 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, \*afii10038  
16424 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424  
16425 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, \*afii10039  
16426 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425  
16427 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, \*afii10040  
16428 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426  
16429 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, \*afii10041  
16430 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427  
16431 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, \*afii10042  
16432 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428  
16433 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, \*afii10043  
16434 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429  
16435 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN;  
16436 % Hardsigncyrillic, \*afii10044  
16437 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A  
16438 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, \*afii10045  
16439 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B  
16440 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN;  
16441 % Softsigncyrillic, \*afii10046  
16442 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C  
16443 % U+042D CYRILLIC CAPITAL LETTER E; Ereversedcyrillic, \*afii10047  
16444 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D  
16445 % U+042E CYRILLIC CAPITAL LETTER YU; IUcyrillic, \*afii10048  
16446 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E  
16447 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, \*afii10049  
16448 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F  
16449 % U+0430 CYRILLIC SMALL LETTER A; acyrillic, \*afii10065  
16450 \DeclareTextCommand{\cyra}{PU}{\84\060}% U+0430  
16451 % U+0431 CYRILLIC SMALL LETTER BE; \*afii10066, becyrillic  
16452 \DeclareTextCommand{\cyrb}{PU}{\84\061}% U+0431  
16453 % U+0432 CYRILLIC SMALL LETTER VE; \*afii10067, vecyrillic  
16454 \DeclareTextCommand{\cyrv}{PU}{\84\062}% U+0432  
16455 % U+0433 CYRILLIC SMALL LETTER GHE; \*afii10068, gecyrillic  
16456 \DeclareTextCommand{\cyrg}{PU}{\84\063}% U+0433  
16457 % U+0434 CYRILLIC SMALL LETTER DE; \*afii10069, decyrillic  
16458 \DeclareTextCommand{\cyrd}{PU}{\84\064}% U+0434  
16459 % U+0435 CYRILLIC SMALL LETTER IE; \*afii10070, iecyrillic  
16460 \DeclareTextCommand{\cyre}{PU}{\84\065}% U+0435  
16461 % U+0436 CYRILLIC SMALL LETTER ZHE; \*afii10072, zhacyrillic  
16462 \DeclareTextCommand{\cyrzh}{PU}{\84\066}% U+0436  
16463 % U+0437 CYRILLIC SMALL LETTER ZE; \*afii10073, zecyrillic  
16464 \DeclareTextCommand{\cyrz}{PU}{\84\067}% U+0437  
16465 % U+0438 CYRILLIC SMALL LETTER I; \*afii10074, iicyrillic  
16466 \DeclareTextCommand{\cyri}{PU}{\84\070}% U+0438  
16467 % U+0439 CYRILLIC SMALL LETTER SHORT I; \*afii10075, iishortcyrillic  
16468 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% U+0439  
16469 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}% U+0439

16470 % U+043A CYRILLIC SMALL LETTER KA; \*afii10076, kacyrillic  
16471 \DeclareTextCommand{\cyrk}{PU}{\84\072}% U+043A  
16472 % U+043B CYRILLIC SMALL LETTER EL; \*afii10077, elcyrillic  
16473 \DeclareTextCommand{\cyrll}{PU}{\84\073}% U+043B  
16474 % U+043C CYRILLIC SMALL LETTER EM; \*afii10078, emcyrillic  
16475 \DeclareTextCommand{\cyrml}{PU}{\84\074}% U+043C  
16476 % U+043D CYRILLIC SMALL LETTER EN; \*afii10079, encyrillic  
16477 \DeclareTextCommand{\cyrn}{PU}{\84\075}% U+043D  
16478 % U+043E CYRILLIC SMALL LETTER O; \*afii10080, ocyrillic  
16479 \DeclareTextCommand{\cyro}{PU}{\84\076}% U+043E  
16480 % U+043F CYRILLIC SMALL LETTER PE; \*afii10081, pecyrillic  
16481 \DeclareTextCommand{\cyrp}{PU}{\84\077}% U+043F  
16482 % U+0440 CYRILLIC SMALL LETTER ER; \*afii10082, ercyrillic  
16483 \DeclareTextCommand{\cyrre}{PU}{\84\100}% U+0440  
16484 % U+0441 CYRILLIC SMALL LETTER ES; \*afii10083, escyrillic  
16485 \DeclareTextCommand{\cyrse}{PU}{\84\101}% U+0441  
16486 % U+0442 CYRILLIC SMALL LETTER TE; \*afii10084, tecyrillic  
16487 \DeclareTextCommand{\cyrte}{PU}{\84\102}% U+0442  
16488 % U+0443 CYRILLIC SMALL LETTER U; \*afii10085, ucyrillic  
16489 \DeclareTextCommand{\cyrue}{PU}{\84\103}% U+0443  
16490 % U+0444 CYRILLIC SMALL LETTER EF; \*afii10086, efcyrillic  
16491 \DeclareTextCommand{\cyrfe}{PU}{\84\104}% U+0444  
16492 % U+0445 CYRILLIC SMALL LETTER HA; \*afii10087, khacyrillic  
16493 \DeclareTextCommand{\cyrhe}{PU}{\84\105}% U+0445  
16494 % U+0446 CYRILLIC SMALL LETTER TSE; \*afii10088, tsecyrillic  
16495 \DeclareTextCommand{\cyrte}{PU}{\84\106}% U+0446  
16496 % U+0447 CYRILLIC SMALL LETTER CHE; \*afii10089, checyrillic  
16497 \DeclareTextCommand{\cyrche}{PU}{\84\107}% U+0447  
16498 % U+0448 CYRILLIC SMALL LETTER SHA; \*afii10090, shacyrillic  
16499 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% U+0448  
16500 % U+0449 CYRILLIC SMALL LETTER SHCHA; \*afii10091, shchacyrillic  
16501 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% U+0449  
16502 % U+044A CYRILLIC SMALL LETTER HARD SIGN; \*afii10092, hardsigncyril-  
lic  
16503 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% U+044A  
16504 %\* \cyrhrdsn -> \hardsign (tipa)  
16505 % U+044B CYRILLIC SMALL LETTER YERU; \*afii10093, yericyrillic  
16506 \DeclareTextCommand{\cyrery}{PU}{\84\113}% U+044B  
16507 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; \*afii10094, softsigncyrillic  
16508 \DeclareTextCommand{\cyrstsn}{PU}{\84\114}% U+044C  
16509 %\* \cyrstsn -> \softsign (tipa)  
16510 % U+044D CYRILLIC SMALL LETTER E; \*afii10095, ereversedcyrillic  
16511 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% U+044D  
16512 % U+044E CYRILLIC SMALL LETTER YU; \*afii10096, iucyrillic  
16513 \DeclareTextCommand{\cyrue}{PU}{\84\116}% U+044E  
16514 % U+044F CYRILLIC SMALL LETTER YA; \*afii10097, iacyrillic  
16515 \DeclareTextCommand{\cyrue}{PU}{\84\117}% U+044F  
16516 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE  
16517 \DeclareTextCompositeCommand{\`}{PU}{\cyrue}{\84\120}% U+0450  
16518 % U+0451 CYRILLIC SMALL LETTER IO; \*afii10071, iocyrillic  
16519 \DeclareTextCommand{\cyrue}{PU}{\84\121}% U+0451  
16520 \DeclareTextCompositeCommand{\"}{PU}{\cyrue}{\84\121}% U+0451  
16521 % U+0452 CYRILLIC SMALL LETTER DJE; \*afii10099, djecyrillic  
16522 \DeclareTextCommand{\cyrue}{PU}{\84\122}% U+0452

16523 % U+0453 CYRILLIC SMALL LETTER GJE; \*afii10100, gjecyrillic  
16524 \DeclareTextCompositeCommand{\'}{PU}{\cyrg}{\84\123}% U+0453  
16525 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; \*afii10101, ecyrillic  
16526 \DeclareTextCommand{\cyrie}{PU}{\84\124}% U+0454  
16527 % U+0455 CYRILLIC SMALL LETTER DZE; \*afii10102, dzecyrillic  
16528 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% U+0455  
16529 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I;  
16530 % \*afii10103, icyrillic  
16531 \DeclareTextCommand{\cyrii}{PU}{\84\126}% U+0456  
16532 % U+0457 CYRILLIC SMALL LETTER YI; \*afii10104, yicyrillic  
16533 \DeclareTextCommand{\cyryi}{PU}{\84\127}% U+0457  
16534 \DeclareTextCompositeCommand{\"}{PU}{\cyrii}{\84\127}% U+0457  
16535 % U+0458 CYRILLIC SMALL LETTER JE; \*afii10105, jecyrillic  
16536 \DeclareTextCommand{\cyrje}{PU}{\84\130}% U+0458  
16537 % U+0459 CYRILLIC SMALL LETTER LJE; \*afii10106, ljecyrillic  
16538 \DeclareTextCommand{\cyrlje}{PU}{\84\131}% U+0459  
16539 % U+045A CYRILLIC SMALL LETTER NJE; \*afii10107, njecyrillic  
16540 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% U+045A  
16541 % U+045B CYRILLIC SMALL LETTER TSHE; \*afii10108, tshecyrillic  
16542 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% U+045B  
16543 % U+045C CYRILLIC SMALL LETTER KJE; \*afii10109, kjecyrillic  
16544 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% U+045C  
16545 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE  
16546 \DeclareTextCompositeCommand{\`}{PU}{\cyri}{\84\135}% U+045D  
16547 % U+045E CYRILLIC SMALL LETTER SHORT U; \*afii10110, ushortcyrillic  
16548 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E  
16549 \DeclareTextCompositeCommand{\U}{PU}{\curu}{\84\136}% U+045E  
16550 % U+045F CYRILLIC SMALL LETTER DZHE; \*afii10193, dzhecyrillic  
16551 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% U+045F  
16552 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic  
16553 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460  
16554 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrillic  
16555 \DeclareTextCommand{\cyromega}{PU}{\84\141}% U+0461  
16556 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, \*afii10146  
16557 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462  
16558 % U+0463 CYRILLIC SMALL LETTER YAT; \*afii10194, yatcyrillic  
16559 \DeclareTextCommand{\cyryat}{PU}{\84\143}% U+0463  
16560 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic  
16561 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464  
16562 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrillic  
16563 \DeclareTextCommand{\cyriote}{PU}{\84\145}% U+0465  
16564 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslitlecyrillic  
16565 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466  
16566 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslitlecyrillic  
16567 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467  
16568 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslitlei-  
otifiedcyrillic  
16569 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468  
16570 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslitlei-  
otifiedcyrillic  
16571 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469  
16572 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbigcyrillic  
16573 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A  
16574 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbigcyrillic

16575 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B  
16576 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbigiotified-cyrillic  
16577 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C  
16578 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbigiotified-cyrillic  
16579 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D  
16580 % U+046E CYRILLIC CAPITAL LETTER KSI; Ksicyrillic  
16581 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% U+046E  
16582 % U+046F CYRILLIC SMALL LETTER KSI; ksicyrillic  
16583 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F  
16584 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psicyrillic  
16585 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470  
16586 % U+0471 CYRILLIC SMALL LETTER PSI; psicyrillic  
16587 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471  
16588 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, \*afii10147  
16589 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472  
16590 % U+0473 CYRILLIC SMALL LETTER FITA; \*afii10195, fitacyrillic  
16591 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473  
16592 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, \*afii10148  
16593 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474  
16594 % U+0475 CYRILLIC SMALL LETTER IZHITSA; \*afii10196, izhitsacyrillic  
16595 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475  
16596 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE GRAVE ACCENT; Izhitsadblgravecyrillic  
16597 % GRAVE ACCENT; Izhitsadblgravecyrillic  
16598 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% U+0476  
16599 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE GRAVE ACCENT; izhitsadblgravecyrillic  
16600 % GRAVE ACCENT; izhitsadblgravecyrillic  
16601 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477  
16602 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic  
16603 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478  
16604 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic  
16605 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479  
16606 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyrillic  
16607 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A  
16608 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic  
16609 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B  
16610 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatitlocyrillic  
16611 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C  
16612 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlocyrillic  
16613 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D  
16614 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic  
16615 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E  
16616 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic  
16617 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F  
16618 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic  
16619 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480  
16620 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic  
16621 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481  
16622 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic  
16623 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% U+0482

\84\203: U+0483 COMBINING CYRILLIC TITLO; titlocyrilliccmb  
 \84\204: U+0484 COMBINING CYRILLIC PALATALIZATION; palatalization-cyrilliccmb  
 \84\205: U+0485 COMBINING CYRILLIC DASIA PNEUMATA; dasiapneumatocyrilliccmb  
 \84\206: U+0486 COMBINING CYRILLIC PSILI PNEUMATA; psilipneumatocyrilliccmb  
 \84\207: U+0487 COMBINING CYRILLIC POKRYTIE  
 \84\210: U+0488 COMBINING CYRILLIC HUNDRED THOUSANDS SIGN  
 \84\211: U+0489 COMBINING CYRILLIC MILLIONS SIGN  
 16624 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL  
 16625 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A  
 16626 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL  
 16627 \DeclareTextCommand{\cyrishrtdsc}{PU}{\84\213}% U+048B  
 16628 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN  
 16629 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C  
 16630 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN  
 16631 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D  
 16632 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK  
 16633 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E  
 16634 % U+048F CYRILLIC SMALL LETTER ER WITH TICK  
 16635 \DeclareTextCommand{\cyrrtick}{PU}{\84\217}% U+048F  
 16636 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturn-cyrillic, \*afii10050  
 16637 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490  
 16638 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; \*afii10098, gheupturncyrillic  
 16639 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491  
 16640 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestroke-cyrillic  
 16641 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492  
 16642 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic  
 16643 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% U+0493  
 16644 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK;  
 16645 % Ghemiddlehookcyrillic  
 16646 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494  
 16647 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK;  
 16648 % ghemiddlehookcyrillic  
 16649 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495  
 16650 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER;  
 16651 % Zhedescendercyrillic  
 16652 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496  
 16653 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER;  
 16654 % zhedescendercyrillic  
 16655 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% U+0497  
 16656 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescendercyrillic  
 16657 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498  
 16658 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498  
 16659 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescendercyrillic  
 16660 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% U+0499  
 16661 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499

16662 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescendercyrillic  
16663 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A  
16664 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kadescendercyrillic  
16665 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% U+049B  
16666 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE; Kavertikalstrokecyrillic  
16667 % Kavertikalstrokecyrillic  
16668 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C  
16669 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE; kavertikalstrokecyrillic  
16670 % kavertikalstrokecyrillic  
16671 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D  
16672 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic  
16673 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E  
16674 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic  
16675 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% U+049F  
16676 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic  
16677 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0  
16678 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic  
16679 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1  
16680 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescendercyrillic  
16681 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2  
16682 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endescendercyrillic  
16683 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3  
16684 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic  
16685 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4  
16686 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic  
16687 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5  
16688 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemiddlehookcyrillic  
16689 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6  
16690 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddlehookcyrillic  
16691 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7  
16692 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyrillic  
16693 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8  
16694 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic  
16695 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% U+04A9  
16696 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescendercyrillic  
16697 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA  
16698 \DeclareTextCompositeCommand{\k}{PU}{\CYRS}{\84\252}% U+04AA  
16699 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescendercyrillic  
16700 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% U+04AB  
16701 \DeclareTextCompositeCommand{\k}{PU}{\cyr}{\84\253}% U+04AB  
16702 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescendercyrillic  
16703 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC  
16704 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescendercyrillic

16705 \DeclareTextCommand{\cyrt dsc}{PU}{\84\255}% U+04AD  
16706 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic  
16707 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE  
16708 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; ustraightcyrillic  
16709 \DeclareTextCommand{\cyry}{PU}{\84\257}% U+04AF  
16710 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Us-  
straightstrokecyrillic  
16711 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0  
16712 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; us-  
straightstrokecyrillic  
16713 \DeclareTextCommand{\cyryhcrs}{PU}{\84\261}% U+04B1  
16714 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hadescen-  
dencyrillic  
16715 \DeclareTextCommand{\CYRH DSC}{PU}{\84\262}% U+04B2  
16716 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadescen-  
dencyrillic  
16717 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% U+04B3  
16718 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetsecyrillic  
16719 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4  
16720 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetsecyrillic  
16721 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% U+04B5  
16722 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER;  
16723 % Chedescendencyrillic  
16724 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6  
16725 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescen-  
dencyrillic  
16726 \DeclareTextCommand{\cyrchr dsc}{PU}{\84\267}% U+04B7  
16727 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE;  
16728 % Cheverticalstrokecyrillic  
16729 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8  
16730 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE;  
16731 % cheverticalstrokecyrillic  
16732 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9  
16733 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic  
16734 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA  
16735 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic  
16736 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB  
16737 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasian-  
cyrillic  
16738 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC  
16739 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyril-  
lic  
16740 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% U+04BD  
16741 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCEN-  
DER; Chedescenderabkhasiancyrillic  
16742 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE  
16743 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE  
16744 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCEN-  
DER; chedescenderabkhasiancyrillic  
16745 \DeclareTextCommand{\cyrabhch dsc}{PU}{\84\277}% U+04BF  
16746 \DeclareTextCompositeCommand{\k}{PU}{\cyrabhch}{\84\277}% U+04BF  
16747 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic  
16748 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0  
16749 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic



16750 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1  
16751 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic  
16752 \DeclareTextCompositeCommand{\U}{PU}{\cyrzH}{\84\302}% U+04C2  
16753 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic  
16754 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3  
16755 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic  
16756 \DeclareTextCommand{\cyrkHk}{PU}{\84\304}% U+04C4  
16757 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL  
16758 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5  
16759 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL  
16760 \DeclareTextCommand{\cyrlDsc}{PU}{\84\306}% U+04C6  
16761 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic  
16762 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7  
16763 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic  
16764 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% U+04C8  
16765 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakas-  
siancyrillic  
16766 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB  
16767 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassian-  
cyrillic  
16768 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% U+04CC  
16769 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL  
16770 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD  
16771 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL  
16772 \DeclareTextCommand{\cyrmdsc}{PU}{\84\316}% U+04CE  
\84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA  
16773 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevecyrillic  
16774 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0  
16775 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevecyrillic  
16776 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% U+04D1  
16777 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyril-  
lic  
16778 \DeclareTextCompositeCommand{\"}{PU}{\CYRA}{\84\322}% U+04D2  
16779 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresiscyrillic  
16780 \DeclareTextCompositeCommand{\"}{PU}{\cyra}{\84\323}% U+04D3  
16781 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aiecyrillic  
16782 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4  
16783 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aiecyrillic  
16784 \DeclareTextCommand{\cyrae}{PU}{\84\325}% U+04D5  
16785 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrevecyrillic  
16786 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6  
16787 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrevecyrillic  
16788 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% U+04D7  
16789 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwacyrillic  
16790 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8  
16791 % U+04D9 CYRILLIC SMALL LETTER SCHWA; \*afii10846, schwacyrillic  
16792 \DeclareTextCommand{\cyrSchwa}{PU}{\84\331}% U+04D9  
16793 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS;  
16794 % Schwadieresiscyrillic  
16795 \DeclareTextCompositeCommand{\"}{PU}{\CYRSCHWA}{\84\332}% U+04DA  
16796 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS;  
16797 % schwadieresiscyrillic  
16798 \DeclareTextCompositeCommand{\"}{PU}{\cyrSchwa}{\84\333}% U+04DB  
16799 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhediere-

siscyrillic  
 16800 \DeclareTextCompositeCommand{"}{PU}{\CYRZH}{\84\334}% U+04DC  
 16801 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedieresis-cyrillic  
 16802 \DeclareTextCompositeCommand{"}{PU}{\cyrzh}{\84\335}% U+04DD  
 16803 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedieresis-cyrillic  
 16804 \DeclareTextCompositeCommand{"}{PU}{\CYRZ}{\84\336}% U+04DE  
 16805 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedieresis-cyrillic  
 16806 \DeclareTextCompositeCommand{"}{PU}{\cyrz}{\84\337}% U+04DF  
 16807 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasian-cyrillic  
 16808 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0  
 16809 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasian-cyrillic  
 16810 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% U+04E1  
 16811 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Iacroncyrillic  
 16812 \DeclareTextCompositeCommand{=} {PU}{\CYRI}{\84\342}% U+04E2  
 16813 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacroncyrillic  
 16814 \DeclareTextCompositeCommand{=} {PU}{\cyri}{\84\343}% U+04E3  
 16815 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresis-cyrillic  
 16816 \DeclareTextCompositeCommand{"}{PU}{\CYRI}{\84\344}% U+04E4  
 16817 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresis-cyrillic  
 16818 \DeclareTextCompositeCommand{"}{PU}{\cyri}{\84\345}% U+04E5  
 16819 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresis-cyrillic  
 16820 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% U+04E6  
 16821 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresis-cyrillic  
 16822 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% U+04E7  
 16823 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarred-cyrillic  
 16824 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8  
 16825 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarred-cyrillic  
 16826 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9  
 16827 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERESIS; Obarreddieresis-cyrillic  
 16828 % Obarreddieresis-cyrillic  
 16829 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% U+04EA  
 16830 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS; Obarreddieresis-cyrillic  
 16831 % obarreddieresis-cyrillic  
 16832 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% U+04EB  
 16833 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS  
 16834 \DeclareTextCompositeCommand{"}{PU}{\CYREREV}{\84\354}% U+04EC  
 16835 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS  
 16836 \DeclareTextCompositeCommand{"}{PU}{\cyrerev}{\84\355}% U+04ED  
 16837 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacroncyrillic  
 16838 \DeclareTextCompositeCommand{=} {PU}{\CYRU}{\84\356}% U+04EE  
 16839 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacroncyrillic  
 16840 \DeclareTextCompositeCommand{=} {PU}{\cyru}{\84\357}% U+04EF  
 16841 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udieresis-cyrillic  
 16842 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U+04F0  
 16843 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udieresis-cyrillic  
 16844 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% U+04F1  
 16845 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhun-

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garumlautcyrillic
16846 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U+04F2
16847 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhun-
garumlautcyrillic
16848 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% U+04F3
16849 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chediere-
siscyrillic
16850 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% U+04F4
16851 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieresis-
cyrillic
16852 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% U+04F5
16853 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER
16854 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6
16855 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER
16856 \DeclareTextCommand{\cyrgdsc}{PU}{\84\367}% U+04F7
16857 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudiere-
siscyrillic
16858 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% U+04F8
16859 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudiere-
siscyrillic
16860 \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
16861 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK
16862 \DeclareTextCommand{\CYRHHK}{PU}{\84\374}% U+04FC
16863 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK
16864 \DeclareTextCommand{\cyrhk}{PU}{\84\375}% U+04FD
16865 \fi
\84\376: U+04FE CYRILLIC CAPITAL LETTER HA WITH STROKE
\84\377: U+04FF CYRILLIC SMALL LETTER HA WITH STROKE

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#### 47.2.11 Hebrew: U+0590 to U+05FF

Macro names are taken from `he8enc.def`. `hebrew` is only loaded if `\hebdalet` is defined

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16866 \ifx\hebdalet\@undefined\else
16867 % U+05C3 HEBREW PUNCTUATION SOF PASUQ
16868 \DeclareTextCommand{\sofpasuq}{PU}{\85\303}% U+05C3
16869 % U+05D0 HEBREW LETTER ALEF
16870 \DeclareTextCommand{\hebalef}{PU}{\85\320}% U+05D0
16871 % U+05D1 HEBREW LETTER BET
16872 \DeclareTextCommand{\hebbet}{PU}{\85\321}% U+05D1
16873 % U+05D2 HEBREW LETTER GIMEL
16874 \DeclareTextCommand{\hebgimel}{PU}{\85\322}% U+05D2
16875 % U+05D3 HEBREW LETTER DALET
16876 \DeclareTextCommand{\hebdalet}{PU}{\85\323}% U+05D3
16877 % U+05D4 HEBREW LETTER HE
16878 \DeclareTextCommand{\hebhe}{PU}{\85\324}% U+05D4
16879 % U+05D5 HEBREW LETTER VAV
16880 \DeclareTextCommand{\hebvav}{PU}{\85\325}% U+05D5

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16881 % U+05D6 HEBREW LETTER ZAYIN  
16882 \DeclareTextCommand{\hebzyain}{PU}{\85\326}% U+05D6  
16883 % U+05D7 HEBREW LETTER HET  
16884 \DeclareTextCommand{\hebhet}{PU}{\85\327}% U+05D7  
16885 % U+05D8 HEBREW LETTER TET  
16886 \DeclareTextCommand{\hebtet}{PU}{\85\330}% U+05D8  
16887 % U+05D9 HEBREW LETTER YOD  
16888 \DeclareTextCommand{\hebyod}{PU}{\85\331}% U+05D9  
16889 % U+05DA HEBREW LETTER FINAL KAF  
16890 \DeclareTextCommand{\hebfinalkaf}{PU}{\85\332}% U+05DA  
16891 % U+05DB HEBREW LETTER KAF  
16892 \DeclareTextCommand{\hebkafe}{PU}{\85\333}% U+05DB  
16893 % U+05DC HEBREW LETTER LAMED  
16894 \DeclareTextCommand{\heblamed}{PU}{\85\334}% U+05DC  
16895 % U+05DD HEBREW LETTER FINAL MEM  
16896 \DeclareTextCommand{\hebfinalmem}{PU}{\85\335}% U+05DD  
16897 % U+05DE HEBREW LETTER MEM  
16898 \DeclareTextCommand{\hebmem}{PU}{\85\336}% U+05DE  
16899 % U+05DF HEBREW LETTER FINAL NUN  
16900 \DeclareTextCommand{\hebfinalnun}{PU}{\85\337}% U+05DF  
16901 % U+05E0 HEBREW LETTER NUN  
16902 \DeclareTextCommand{\hebnun}{PU}{\85\340}% U+05E0  
16903 % U+05E1 HEBREW LETTER SAMEKH  
16904 \DeclareTextCommand{\hebsamekh}{PU}{\85\341}% U+05E1  
16905 % U+05E2 HEBREW LETTER AYIN  
16906 \DeclareTextCommand{\hebayin}{PU}{\85\342}% U+05E2  
16907 % U+05E3 HEBREW LETTER FINAL PE  
16908 \DeclareTextCommand{\hebfinalpe}{PU}{\85\343}% U+05E3  
16909 % U+05E4 HEBREW LETTER PE  
16910 \DeclareTextCommand{\hebpe}{PU}{\85\344}% U+05E4  
16911 % U+05E5 HEBREW LETTER FINAL TSADI  
16912 \DeclareTextCommand{\hebfinaltsadi}{PU}{\85\345}% U+05E5  
16913 % U+05E6 HEBREW LETTER TSADI  
16914 \DeclareTextCommand{\hebtsadi}{PU}{\85\346}% U+05E6  
16915 % U+05E7 HEBREW LETTER QOF  
16916 \DeclareTextCommand{\hebqof}{PU}{\85\347}% U+05E7  
16917 % U+05E8 HEBREW LETTER RESH  
16918 \DeclareTextCommand{\hebresh}{PU}{\85\350}% U+05E8  
16919 % U+05E9 HEBREW LETTER SHIN  
16920 \DeclareTextCommand{\hebshin}{PU}{\85\351}% U+05E9  
16921 %\* \hebshin -> \hebsin (he8)  
16922 % U+05EA HEBREW LETTER TAV  
16923 \DeclareTextCommand{\hebtav}{PU}{\85\352}% U+05EA  
16924 % U+05F0 HEBREW LIGATURE YIDDISH DOUBLE VAV  
16925 \DeclareTextCommand{\doublevav}{PU}{\85\360}% U+05F0  
16926 % U+05F1 HEBREW LIGATURE YIDDISH VAV YOD  
16927 \DeclareTextCommand{\vavyod}{PU}{\85\361}% U+05F1  
16928 % U+05F2 HEBREW LIGATURE YIDDISH DOUBLE YOD  
16929 \DeclareTextCommand{\doubleyod}{PU}{\85\362}% U+05F2  
16930 \fi

#### 47.2.12 Thai: U+0E00 to U+0E7F

16931 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai

16932 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

#### 47.2.13 Phonetic Extensions: U+1D00 to U+1D7F

16933 % U+1D00 LATIN LETTER SMALL CAPITAL A; \textscA (tipa)  
16934 \DeclareTextCommand{\textscA}{PU}{\9035\000}% U+1D00  
16935 % U+1D05 LATIN LETTER SMALL CAPITAL D; \scD (wsuipa)  
16936 \DeclareTextCommand{\textscD}{PU}{\9035\005}%\* U+1D05  
16937 % U+1D07 LATIN LETTER SMALL CAPITAL E; \textscE (tipa)  
16938 \DeclareTextCommand{\textscE}{PU}{\9035\007}% U+1D07  
16939 % U+1D0A LATIN LETTER SMALL CAPITAL J; \textscJ (tipa)  
16940 \DeclareTextCommand{\textscJ}{PU}{\9035\012}% U+1D0A  
16941 % U+1D0B LATIN LETTER SMALL CAPITAL K; \textscK (tipx)  
16942 \DeclareTextCommand{\textPUscK}{PU}{\9035\013}% U+1D0B  
16943 %\* \textPUscK -> \textscK (tipx)  
16944 % U+1D0D LATIN LETTER SMALL CAPITAL M; \textscM (tipx)  
16945 \DeclareTextCommand{\textPUscM}{PU}{\9035\015}% U+1D0D  
16946 %\* \textPUscM -> \textscM (tipx)  
16947 % U+1D18 LATIN LETTER SMALL CAPITAL P; \textscP (tipx)  
16948 \DeclareTextCommand{\textPUscP}{PU}{\9035\030}% U+1D18  
16949 %\* \textPUscP -> \textscP (tipx)  
16950 % U+1D19 LATIN LETTER SMALL CAPITAL REVERSED R; \textrevscr (tipx)  
16951 \DeclareTextCommand{\textPUrevscr}{PU}{\9035\031}% U+1D19  
16952 %\* \textPUrevscr -> \textrevscr (tipx)  
16953 % U+1D1C LATIN LETTER SMALL CAPITAL U; \textscU (tipa), \scU (wsuipa)  
16954 \DeclareTextCommand{\textscU}{PU}{\9035\034}%\* U+1D1C  
16955 % U+1D62 LATIN SUBSCRIPT SMALL LETTER I  
16956 \DeclareTextCommand{\textiinferior}{PU}{\9035\142}%\* U+1D62  
16957 % U+1D63 LATIN SUBSCRIPT SMALL LETTER R  
16958 \DeclareTextCommand{\extrinferior}{PU}{\9035\143}%\* U+1D63  
16959 % U+1D64 LATIN SUBSCRIPT SMALL LETTER U  
16960 \DeclareTextCommand{\textuinferior}{PU}{\9035\144}%\* U+1D64  
16961 % U+1D65 LATIN SUBSCRIPT SMALL LETTER V  
16962 \DeclareTextCommand{\textvinferior}{PU}{\9035\145}%\* U+1D65  
16963 % U+1D66 GREEK SUBSCRIPT SMALL LETTER BETA  
16964 \DeclareTextCommand{\textbetainferior}{PU}{\9035\146}%\* U+1D66  
16965 % U+1D67 GREEK SUBSCRIPT SMALL LETTER GAMMA  
16966 \DeclareTextCommand{\textgammainferior}{PU}{\9035\147}%\* U+1D67  
16967 % U+1D68 GREEK SUBSCRIPT SMALL LETTER RHO  
16968 \DeclareTextCommand{\extrhoinferior}{PU}{\9035\150}%\* U+1D68  
16969 % U+1D69 GREEK SUBSCRIPT SMALL LETTER PHI  
16970 \DeclareTextCommand{\textphiinferior}{PU}{\9035\151}%\* U+1D69  
16971 % U+1D6A GREEK SUBSCRIPT SMALL LETTER CHI  
16972 \DeclareTextCommand{\textchiinferior}{PU}{\9035\152}%\* U+1D6A  
16973 % U+1D7B LATIN SMALL CAPITAL LETTER I WITH STROKE;  
16974 % \barsci (wsuipa)  
16975 \DeclareTextCommand{\textbarsci}{PU}{\9035\173}%\* U+1D7B  
16976 % U+1D7D LATIN SMALL LETTER P WITH STROKE; \barp (wsuipa)  
16977 \DeclareTextCommand{\textbarp}{PU}{\9035\175}%\* U+1D7D  
16978 % U+1D7E LATIN SMALL CAPITAL LETTER U WITH STROKE;  
16979 % \barscu (wsuipa)  
16980 \DeclareTextCommand{\textbarscu}{PU}{\9035\176}%\* U+1D7E

#### 47.2.14 Phonetic Extensions Supplement: U+1D80 to U+1DBF

16981 % U+1D8F LATIN SMALL LETTER A WITH RETROFLEX HOOK; \textPurhooka (tipx)  
16982 \DeclareTextCommand{\textPurhooka}{PU}{\9035\217}% U+1D8F  
16983 %\* \textPurhooka -> \texttrhooka (tipx)  
16984 % U+1D91 LATIN SMALL LETTER D WITH HOOK AND TAIL; \texthtrtaild (tipa)  
16985 \DeclareTextCommand{\texthtrtaild}{PU}{\9035\221}%\* U+1D91  
16986 % U+1D92 LATIN SMALL LETTER E WITH RETROFLEX HOOK; \texttrhooke (tipx)  
16987 \DeclareTextCommand{\textPurhooke}{PU}{\9035\222}% U+1D92  
16988 %\* \textPurhooke -> \texttrhooke (tipx)  
16989 % U+1D93 LATIN SMALL LETTER OPEN E WITH RETROFLEX HOOK;  
16990 % \textrhookepsilon (tipx)  
16991 \DeclareTextCommand{\textPurhookepsilon}{PU}{\9035\223}% U+1D93  
16992 %\* \textPurhookepsilon -> \textrhookepsilon (tipx)  
16993 % U+1D97 LATIN SMALL LETTER OPEN O WITH RETROFLEX HOOK;  
16994 % \textrhookopeno (tipx)  
16995 \DeclareTextCommand{\textPurhookopeno}{PU}{\9035\227}% U+1D97  
16996 %\* \textPurhookopeno -> \textrhookopeno (tipx)

#### 47.2.15 Latin Extended Additional: U+1E00 to U+1EFF

16997 % U+1E00 LATIN CAPITAL LETTER A WITH RING BELOW; Aringbelow  
16998 \DeclareTextCompositeCommand{\textsubring}{PU}{A}{\9036\000}% U+1E00  
16999 % U+1E01 LATIN SMALL LETTER A WITH RING BELOW; aringbelow  
17000 \DeclareTextCompositeCommand{\textsubring}{PU}{a}{\9036\001}% U+1E01  
17001 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent  
17002 \DeclareTextCompositeCommand{.}{PU}{B}{\9036\002}% U+1E02  
17003 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent  
17004 \DeclareTextCompositeCommand{.}{PU}{b}{\9036\003}% U+1E03  
17005 % U+1E04 LATIN CAPITAL LETTER B WITH DOT BELOW; Bdotbelow  
17006 \DeclareTextCompositeCommand{d}{PU}{B}{\9036\004}% U+1E04  
17007 % U+1E05 LATIN SMALL LETTER B WITH DOT BELOW; bdotbelow  
17008 \DeclareTextCompositeCommand{d}{PU}{b}{\9036\005}% U+1E05  
17009 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow  
17010 \DeclareTextCompositeCommand{b}{PU}{B}{\9036\006}% U+1E06  
17011 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow  
17012 \DeclareTextCompositeCommand{b}{PU}{b}{\9036\007}% U+1E07  
17013 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent  
17014 \DeclareTextCompositeCommand{.}{PU}{D}{\9036\012}% U+1E0A  
17015 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent  
17016 \DeclareTextCompositeCommand{.}{PU}{d}{\9036\013}% U+1E0B  
17017 % U+1E0C LATIN CAPITAL LETTER D WITH DOT BELOW; Ddotbelow  
17018 \DeclareTextCompositeCommand{d}{PU}{D}{\9036\014}% U+1E0C  
17019 % U+1E0D LATIN SMALL LETTER D WITH DOT BELOW; ddotbelow  
17020 \DeclareTextCompositeCommand{d}{PU}{d}{\9036\015}% U+1E0D  
17021 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow  
17022 \DeclareTextCompositeCommand{b}{PU}{D}{\9036\016}% U+1E0E  
17023 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow  
17024 \DeclareTextCompositeCommand{b}{PU}{d}{\9036\017}% U+1E0F  
17025 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla  
17026 \DeclareTextCompositeCommand{c}{PU}{D}{\9036\020}% U+1E10  
17027 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla  
17028 \DeclareTextCompositeCommand{c}{PU}{d}{\9036\021}% U+1E11  
17029 % U+1E12 LATIN CAPITAL LETTER D WITH CIRCUMFLEX BELOW; Dcir-

cumflexbelow  
 17030 \DeclareTextCompositeCommand{\textsubcircum}{PU}{D}{\9036\022}% U+1E12  
 17031 % U+1E13 LATIN SMALL LETTER D WITH CIRCUMFLEX BELOW; dcir-  
 cumflexbelow  
 17032 \DeclareTextCompositeCommand{\textsubcircum}{PU}{d}{\9036\023}% U+1E13  
 17033 % U+1E14 LATIN CAPITAL LETTER E WITH MACRON AND GRAVE;  
 17034 % Emacrongrave  
 17035 \DeclareTextCompositeCommand{\textgravemacron}{PU}{E}{\9036\024}% U+1E14  
 17036 % U+1E15 LATIN SMALL LETTER E WITH MACRON AND GRAVE;  
 17037 % emacrongrave  
 17038 \DeclareTextCompositeCommand{\textgravemacron}{PU}{e}{\9036\025}% U+1E15  
 17039 % U+1E16 LATIN CAPITAL LETTER E WITH MACRON AND ACUTE;  
 17040 % Emacronacute  
 17041 \DeclareTextCompositeCommand{\textacutemacron}{PU}{E}{\9036\026}% U+1E16  
 17042 % U+1E17 LATIN SMALL LETTER E WITH MACRON AND ACUTE;  
 17043 % emacronacute  
 17044 \DeclareTextCompositeCommand{\textacutemacron}{PU}{e}{\9036\027}% U+1E17  
 17045 % U+1E18 LATIN CAPITAL LETTER E WITH CIRCUMFLEX BELOW; Ecir-  
 cumflexbelow  
 17046 \DeclareTextCompositeCommand{\textsubcircum}{PU}{E}{\9036\030}% U+1E18  
 17047 % U+1E19 LATIN SMALL LETTER E WITH CIRCUMFLEX BELOW; ecir-  
 cumflexbelow  
 17048 \DeclareTextCompositeCommand{\textsubcircum}{PU}{e}{\9036\031}% U+1E19  
 17049 % U+1E1A LATIN CAPITAL LETTER E WITH TILDE BELOW; Etildebelow  
 17050 \DeclareTextCompositeCommand{\textsubtilde}{PU}{E}{\9036\032}% U+1E1A  
 17051 % U+1E1B LATIN SMALL LETTER E WITH TILDE BELOW; etildebelow  
 17052 \DeclareTextCompositeCommand{\textsubtilde}{PU}{e}{\9036\033}% U+1E1B  
 17053 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent  
 17054 \DeclareTextCompositeCommand{\.}{PU}{F}{\9036\036}% U+1E1E  
 17055 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent  
 17056 \DeclareTextCompositeCommand{\.}{PU}{f}{\9036\037}% U+1E1F  
 17057 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron  
 17058 \DeclareTextCompositeCommand{\=}{PU}{G}{\9036\040}% U+1E20  
 17059 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron  
 17060 \DeclareTextCompositeCommand{\=}{PU}{g}{\9036\041}% U+1E21  
 17061 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent  
 17062 \DeclareTextCompositeCommand{\.}{PU}{H}{\9036\042}% U+1E22  
 17063 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent  
 17064 \DeclareTextCompositeCommand{\.}{PU}{h}{\9036\043}% U+1E23  
 17065 % U+1E24 LATIN CAPITAL LETTER H WITH DOT BELOW; Hdotbelow  
 17066 \DeclareTextCompositeCommand{\d}{PU}{H}{\9036\044}% U+1E24  
 17067 % U+1E25 LATIN SMALL LETTER H WITH DOT BELOW; hdotbelow  
 17068 \DeclareTextCompositeCommand{\d}{PU}{h}{\9036\045}% U+1E25  
 17069 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis  
 17070 \DeclareTextCompositeCommand{\"}{PU}{H}{\9036\046}% U+1E26  
 17071 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis  
 17072 \DeclareTextCompositeCommand{\"}{PU}{h}{\9036\047}% U+1E27  
 17073 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla  
 17074 \DeclareTextCompositeCommand{\c}{PU}{H}{\9036\050}% U+1E28  
 17075 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla  
 17076 \DeclareTextCompositeCommand{\c}{PU}{h}{\9036\051}% U+1E29  
 17077 % U+1E2A LATIN CAPITAL LETTER H WITH BREVE BELOW; Hbrevebelow  
 17078 \DeclareTextCompositeCommand{\textsubbreve}{PU}{H}{\9036\052}% U+1E2A  
 17079 % U+1E2B LATIN SMALL LETTER H WITH BREVE BELOW; hbrevebelow

17080 \DeclareTextCompositeCommand{\textsubbreve}{PU}{h}{\9036\053}% U+1E2B  
17081 % U+1E2C LATIN CAPITAL LETTER I WITH TILDE BELOW; Itildebelow  
17082 \DeclareTextCompositeCommand{\textsubtilde}{PU}{i}{\9036\054}% U+1E2C  
17083 % U+1E2D LATIN SMALL LETTER I WITH TILDE BELOW; itildebelow  
17084 \DeclareTextCompositeCommand{\textsubtilde}{PU}{i}{\9036\055}% U+1E2D  
17085 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute  
17086 \DeclareTextCompositeCommand{\'}{PU}{K}{\9036\060}% U+1E30  
17087 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute  
17088 \DeclareTextCompositeCommand{\'}{PU}{k}{\9036\061}% U+1E31  
17089 % U+1E32 LATIN CAPITAL LETTER K WITH DOT BELOW; Kdotbelow  
17090 \DeclareTextCompositeCommand{\d}{PU}{K}{\9036\062}% U+1E32  
17091 % U+1E33 LATIN SMALL LETTER K WITH DOT BELOW; kdotbelow  
17092 \DeclareTextCompositeCommand{\d}{PU}{k}{\9036\063}% U+1E33  
17093 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow  
17094 \DeclareTextCompositeCommand{\b}{PU}{K}{\9036\064}% U+1E34  
17095 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow  
17096 \DeclareTextCompositeCommand{\b}{PU}{k}{\9036\065}% U+1E35  
17097 % U+1E36 LATIN CAPITAL LETTER L WITH DOT BELOW; Ldotbelow  
17098 \DeclareTextCompositeCommand{\d}{PU}{L}{\9036\066}% U+1E36  
17099 % U+1E37 LATIN SMALL LETTER L WITH DOT BELOW; ldotbelow  
17100 \DeclareTextCompositeCommand{\d}{PU}{l}{\9036\067}% U+1E37  
17101 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow  
17102 \DeclareTextCompositeCommand{\b}{PU}{L}{\9036\072}% U+1E3A  
17103 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow  
17104 \DeclareTextCompositeCommand{\b}{PU}{l}{\9036\073}% U+1E3B  
17105 % U+1E3C LATIN CAPITAL LETTER L WITH CIRCUMFLEX BELOW; Lcir-  
cumflexbelow  
17106 \DeclareTextCompositeCommand{\textsubcircum}{PU}{L}{\9036\074}% U+1E3C  
17107 % U+1E3D LATIN SMALL LETTER L WITH CIRCUMFLEX BELOW; lcir-  
cumflexbelow  
17108 \DeclareTextCompositeCommand{\textsubcircum}{PU}{l}{\9036\075}% U+1E3D  
17109 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute  
17110 \DeclareTextCompositeCommand{\'}{PU}{M}{\9036\076}% U+1E3E  
17111 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute  
17112 \DeclareTextCompositeCommand{\'}{PU}{m}{\9036\077}% U+1E3F  
17113 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent  
17114 \DeclareTextCompositeCommand{\.}{PU}{M}{\9036\100}% U+1E40  
17115 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent  
17116 \DeclareTextCompositeCommand{\.}{PU}{m}{\9036\101}% U+1E41  
17117 % U+1E42 LATIN CAPITAL LETTER M WITH DOT BELOW; Mdotbelow  
17118 \DeclareTextCompositeCommand{\d}{PU}{M}{\9036\102}% U+1E42  
17119 % U+1E43 LATIN SMALL LETTER M WITH DOT BELOW; mdotbelow  
17120 \DeclareTextCompositeCommand{\d}{PU}{m}{\9036\103}% U+1E43  
17121 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent  
17122 \DeclareTextCompositeCommand{\.}{PU}{N}{\9036\104}% U+1E44  
17123 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent  
17124 \DeclareTextCompositeCommand{\.}{PU}{n}{\9036\105}% U+1E45  
17125 % U+1E46 LATIN CAPITAL LETTER N WITH DOT BELOW; Ndotbelow  
17126 \DeclareTextCompositeCommand{\d}{PU}{N}{\9036\106}% U+1E46  
17127 % U+1E47 LATIN SMALL LETTER N WITH DOT BELOW; ndotbelow  
17128 \DeclareTextCompositeCommand{\d}{PU}{n}{\9036\107}% U+1E47  
17129 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow  
17130 \DeclareTextCompositeCommand{\b}{PU}{N}{\9036\110}% U+1E48  
17131 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow



17132 \DeclareTextCompositeCommand{\b}{PU}{n}{\9036\111}% U+1E49  
17133 % U+1E4A LATIN CAPITAL LETTER N WITH CIRCUMFLEX BELOW; Ncircumflexbelow  
17134 \DeclareTextCompositeCommand{\textsubcircum}{PU}{N}{\9036\112}% U+1E4A  
17135 % U+1E4B LATIN SMALL LETTER N WITH CIRCUMFLEX BELOW; nircumflexbelow  
17136 \DeclareTextCompositeCommand{\textsubcircum}{PU}{n}{\9036\113}% U+1E4B  
17137 % U+1E50 LATIN CAPITAL LETTER O WITH MACRON AND GRAVE;  
17138 % Omacrongrave  
17139 \DeclareTextCompositeCommand{\textgravemacron}{PU}{O}{\9036\120}% U+1E50  
17140 % U+1E51 LATIN SMALL LETTER O WITH MACRON AND GRAVE;  
17141 % omacrongrave  
17142 \DeclareTextCompositeCommand{\textgravemacron}{PU}{o}{\9036\121}% U+1E51  
17143 % U+1E52 LATIN CAPITAL LETTER O WITH MACRON AND ACUTE;  
17144 % Omacronacute  
17145 \DeclareTextCompositeCommand{\textacutemacron}{PU}{O}{\9036\122}% U+1E52  
17146 % U+1E53 LATIN SMALL LETTER O WITH MACRON AND ACUTE;  
17147 % omacronacute  
17148 \DeclareTextCompositeCommand{\textacutemacron}{PU}{o}{\9036\123}% U+1E53  
17149 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute  
17150 \DeclareTextCompositeCommand{\'}{PU}{P}{\9036\124}% U+1E54  
17151 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute  
17152 \DeclareTextCompositeCommand{\'}{PU}{p}{\9036\125}% U+1E55  
17153 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent  
17154 \DeclareTextCompositeCommand{\.}{PU}{P}{\9036\126}% U+1E56  
17155 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent  
17156 \DeclareTextCompositeCommand{\.}{PU}{p}{\9036\127}% U+1E57  
17157 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent  
17158 \DeclareTextCompositeCommand{\.}{PU}{R}{\9036\130}% U+1E58  
17159 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent  
17160 \DeclareTextCompositeCommand{\.}{PU}{r}{\9036\131}% U+1E59  
17161 % U+1E5A LATIN CAPITAL LETTER R WITH DOT BELOW; Rdotbelow  
17162 \DeclareTextCompositeCommand{\d}{PU}{R}{\9036\132}% U+1E5A  
17163 % U+1E5B LATIN SMALL LETTER R WITH DOT BELOW; rdotbelow  
17164 \DeclareTextCompositeCommand{\d}{PU}{r}{\9036\133}% U+1E5B  
17165 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow  
17166 \DeclareTextCompositeCommand{\b}{PU}{R}{\9036\136}% U+1E5E  
17167 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow  
17168 \DeclareTextCompositeCommand{\b}{PU}{r}{\9036\137}% U+1E5F  
17169 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent  
17170 \DeclareTextCompositeCommand{\.}{PU}{S}{\9036\140}% U+1E60  
17171 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent  
17172 \DeclareTextCompositeCommand{\.}{PU}{s}{\9036\141}% U+1E61  
17173 % U+1E62 LATIN CAPITAL LETTER S WITH DOT BELOW; Sdotbelow  
17174 \DeclareTextCompositeCommand{\d}{PU}{S}{\9036\142}% U+1E62  
17175 % U+1E63 LATIN SMALL LETTER S WITH DOT BELOW; sdotbelow  
17176 \DeclareTextCompositeCommand{\d}{PU}{s}{\9036\143}% U+1E63  
17177 % U+1E6A LATIN CAPITAL LETTER T WITH DOT ABOVE; Tdotaccent  
17178 \DeclareTextCompositeCommand{\.}{PU}{T}{\9036\152}% U+1E6A  
17179 % U+1E6B LATIN SMALL LETTER T WITH DOT ABOVE; tdotaccent  
17180 \DeclareTextCompositeCommand{\.}{PU}{t}{\9036\153}% U+1E6B  
17181 % U+1E6C LATIN CAPITAL LETTER T WITH DOT BELOW; Tdotbelow  
17182 \DeclareTextCompositeCommand{\d}{PU}{T}{\9036\154}% U+1E6C  
17183 % U+1E6D LATIN SMALL LETTER T WITH DOT BELOW; tdotbelow

17184 \DeclareTextCompositeCommand{\d}{PU}{t}{\9036\155}% U+1E6D  
17185 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow  
17186 \DeclareTextCompositeCommand{\b}{PU}{T}{\9036\156}% U+1E6E  
17187 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow  
17188 \DeclareTextCompositeCommand{\b}{PU}{t}{\9036\157}% U+1E6F  
17189 % U+1E70 LATIN CAPITAL LETTER T WITH CIRCUMFLEX BELOW; Tcircumflexbelow  
17190 \DeclareTextCompositeCommand{\textsubcircum}{PU}{T}{\9036\160}% U+1E70  
17191 % U+1E71 LATIN SMALL LETTER T WITH CIRCUMFLEX BELOW; tcircumflexbelow  
17192 \DeclareTextCompositeCommand{\textsubcircum}{PU}{t}{\9036\161}% U+1E71  
17193 % U+1E72 LATIN CAPITAL LETTER U WITH DIAERESIS BELOW; Udieresisbelow  
17194 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{U}{\9036\162}% U+1E72  
17195 % U+1E73 LATIN SMALL LETTER U WITH DIAERESIS BELOW; udieresisbelow  
17196 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{u}{\9036\163}% U+1E73  
17197 % U+1E74 LATIN CAPITAL LETTER U WITH TILDE BELOW; Utildebelow  
17198 \DeclareTextCompositeCommand{\textsubtilde}{PU}{U}{\9036\164}% U+1E74  
17199 % U+1E75 LATIN SMALL LETTER U WITH TILDE BELOW; utildebelow  
17200 \DeclareTextCompositeCommand{\textsubtilde}{PU}{u}{\9036\165}% U+1E75  
17201 % U+1E76 LATIN CAPITAL LETTER U WITH CIRCUMFLEX BELOW; Ucircumflexbelow  
17202 \DeclareTextCompositeCommand{\textsubcircum}{PU}{U}{\9036\166}% U+1E76  
17203 % U+1E77 LATIN SMALL LETTER U WITH CIRCUMFLEX BELOW; ucircumflexbelow  
17204 \DeclareTextCompositeCommand{\textsubcircum}{PU}{u}{\9036\167}% U+1E77  
17205 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde  
17206 \DeclareTextCompositeCommand{\~}{PU}{V}{\9036\174}% U+1E7C  
17207 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde  
17208 \DeclareTextCompositeCommand{\~}{PU}{v}{\9036\175}% U+1E7D  
17209 % U+1E7E LATIN CAPITAL LETTER V WITH DOT BELOW; Vdotbelow  
17210 \DeclareTextCompositeCommand{\d}{PU}{V}{\9036\176}% U+1E7E  
17211 % U+1E7F LATIN SMALL LETTER V WITH DOT BELOW; vdotbelow  
17212 \DeclareTextCompositeCommand{\d}{PU}{v}{\9036\177}% U+1E7F  
17213 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave  
17214 \DeclareTextCompositeCommand{\`}{PU}{W}{\9036\200}% U+1E80  
17215 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave  
17216 \DeclareTextCompositeCommand{\`}{PU}{w}{\9036\201}% U+1E81  
17217 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute  
17218 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\202}% U+1E82  
17219 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute  
17220 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\203}% U+1E83  
17221 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis  
17222 \DeclareTextCompositeCommand{\"}{PU}{W}{\9036\204}% U+1E84  
17223 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis  
17224 \DeclareTextCompositeCommand{\"}{PU}{w}{\9036\205}% U+1E85  
17225 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent  
17226 \DeclareTextCompositeCommand{\.}{PU}{W}{\9036\206}% U+1E86  
17227 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent  
17228 \DeclareTextCompositeCommand{\.}{PU}{w}{\9036\207}% U+1E87  
17229 % U+1E88 LATIN CAPITAL LETTER W WITH DOT BELOW; wdotbelow  
17230 \DeclareTextCompositeCommand{\d}{PU}{W}{\9036\210}% U+1E88  
17231 % U+1E89 LATIN SMALL LETTER W WITH DOT BELOW; wdotbelow

17232 \DeclareTextCompositeCommand{\d}{PU}{w}{\9036\211}% U+1E89  
17233 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent  
17234 \DeclareTextCompositeCommand{\.}{PU}{X}{\9036\212}% U+1E8A  
17235 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent  
17236 \DeclareTextCompositeCommand{\.}{PU}{x}{\9036\213}% U+1E8B  
17237 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis  
17238 \DeclareTextCompositeCommand{"}{PU}{X}{\9036\214}% U+1E8C  
17239 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis  
17240 \DeclareTextCompositeCommand{"}{PU}{x}{\9036\215}% U+1E8D  
17241 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent  
17242 \DeclareTextCompositeCommand{\.}{PU}{Y}{\9036\216}% U+1E8E  
17243 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent  
17244 \DeclareTextCompositeCommand{\.}{PU}{y}{\9036\217}% U+1E8F  
17245 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex  
17246 \DeclareTextCompositeCommand{\^}{PU}{Z}{\9036\220}% U+1E90  
17247 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex  
17248 \DeclareTextCompositeCommand{\^}{PU}{z}{\9036\221}% U+1E91  
17249 % U+1E92 LATIN CAPITAL LETTER Z WITH DOT BELOW; Zdotbelow  
17250 \DeclareTextCompositeCommand{\d}{PU}{Z}{\9036\222}% U+1E92  
17251 % U+1E93 LATIN SMALL LETTER Z WITH DOT BELOW; zdotbelow  
17252 \DeclareTextCompositeCommand{\d}{PU}{z}{\9036\223}% U+1E93  
17253 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow  
17254 \DeclareTextCompositeCommand{\b}{PU}{Z}{\9036\224}% U+1E94  
17255 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow  
17256 \DeclareTextCompositeCommand{\b}{PU}{z}{\9036\225}% U+1E95  
17257 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow  
17258 \DeclareTextCompositeCommand{\b}{PU}{h}{\9036\226}% U+1E96  
17259 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis  
17260 \DeclareTextCompositeCommand{"}{PU}{t}{\9036\227}% U+1E97  
17261 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring  
17262 \DeclareTextCompositeCommand{\r}{PU}{w}{\9036\230}% U+1E98  
17263 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring  
17264 \DeclareTextCompositeCommand{\r}{PU}{y}{\9036\231}% U+1E99  
17265 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdotaccent  
17266 \DeclareTextCompositeCommand{\.}{PU}{\textlongs}{\9036\233}% U+1E9B  
17267 % U+1EA0 LATIN CAPITAL LETTER A WITH DOT BELOW; Adotbelow  
17268 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}% U+1EA0  
17269 % U+1EA1 LATIN SMALL LETTER A WITH DOT BELOW; adotbelow  
17270 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}% U+1EA1  
17271 % U+1EB8 LATIN CAPITAL LETTER E WITH DOT BELOW; Edotbelow  
17272 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}% U+1EB8  
17273 % U+1EB9 LATIN SMALL LETTER E WITH DOT BELOW; edotbelow  
17274 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}% U+1EB9  
17275 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde  
17276 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
17277 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde  
17278 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
17279 % U+1ECA LATIN CAPITAL LETTER I WITH DOT BELOW; Idotbelow  
17280 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}% U+1ECA  
17281 % U+1ECB LATIN SMALL LETTER I WITH DOT BELOW; idotbelow  
17282 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}% U+1ECB  
17283 % U+1ECC LATIN CAPITAL LETTER O WITH DOT BELOW; Odotbelow  
17284 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}% U+1ECC

17285 % U+1ECD LATIN SMALL LETTER O WITH DOT BELOW; odotbelow  
 17286 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}% U+1ECD  
 17287 % U+1EE4 LATIN CAPITAL LETTER U WITH DOT BELOW; Udotbelow  
 17288 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4  
 17289 % U+1EE5 LATIN SMALL LETTER U WITH DOT BELOW; udotbelow  
 17290 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}% U+1EE5  
 17291 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave  
 17292 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2  
 17293 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave  
 17294 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3  
 17295 % U+1EF4 LATIN CAPITAL LETTER Y WITH DOT BELOW; Ydotbelow  
 17296 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4  
 17297 % U+1EF5 LATIN SMALL LETTER Y WITH DOT BELOW; ydotbelow  
 17298 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}% U+1EF5  
 17299 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde  
 17300 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8  
 17301 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde  
 17302 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9

#### 47.2.16 General Punctuation: U+2000 to U+206F

17303 % U+200C ZERO WIDTH NON-JOINER; \*afii61664, zerowidthnonjoiner  
 17304 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C  
 17305 % U+2013 EN DASH; endash  
 17306 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013  
 17307 % U+2014 EM DASH; emdash  
 17308 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014  
 17309 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar  
 17310 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016  
 17311 %\* \textbardbl -> \textdoublevertline (tipa)  
 17312 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 17313 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018  
 17314 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 17315 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019  
 17316 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 17317 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A  
 17318 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 17319 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034}% U+201C  
 17320 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 17321 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035}% U+201D  
 17322 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 17323 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E  
 17324 % U+2020 DAGGER; dagger  
 17325 \DeclareTextCommand{\textdagger}{PU}{\9040\040}%\* U+2020  
 17326 %\* \textdagger -> \dag (LaTeX)  
 17327 % U+2021 DOUBLE DAGGER; daggerdbl; \ddagger (LaTeX)  
 17328 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021  
 17329 %\* \textdaggerdbl -> \ddagger (LaTeX)  
 17330 %\* \textdaggerdbl -> \ddag (LaTeX)  
 17331 % U+2022 BULLET; bullet  
 17332 \DeclareTextCommand{\textbullet}{PU}{\9040\042}%\* U+2022  
 17333 % U+2025 TWO DOT LEADER; \hdotfor (MnSymbol)  
 17334 \DeclareTextCommand{\texthdotfor}{PU}{\9040\045}%\* U+2025  
 17335 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 17336 \DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026

17337 %\* \textellipsis -> \mathellipsis  
 17338 % U+2030 PER MILLE SIGN; perthousand  
 17339 \DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030  
 17340 % U+2031 PER TEN THOUSAND SIGN  
 17341 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031  
 17342 % U+2032 PRIME; minute; \prime (MnSymbol)  
 17343 \DeclareTextCommand{\textprime}{PU}{\9040\062}%\* U+2032  
 17344 % U+2033 DOUBLE PRIME; \second (mathabx)  
 17345 \DeclareTextCommand{\textsecond}{PU}{\9040\063}%\* U+2033  
 17346 % U+2034 TRIPLE PRIME; \third (mathabx)  
 17347 \DeclareTextCommand{\textthird}{PU}{\9040\064}%\* U+2034  
 17348 % U+2035 REVERSED PRIME; \backprime (AmsS)  
 17349 \DeclareTextCommand{\textbackprime}{PU}{\9040\065}%\* U+2035  
 17350 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
     inglleft  
 17351 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071}% U+2039  
 17352 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
     inglright  
 17353 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072}% U+203A  
 17354 % U+203B REFERENCE MARK; referencemark  
 17355 \DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B  
 17356 % U+203D INTERROBANG  
 17357 \DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D  
 17358 % U+2044 FRACTION SLASH; fraction  
 17359 \DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044  
 17360 % U+2045 LEFT SQUARE BRACKET WITH QUILL  
 17361 \DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045  
 17362 % U+2046 RIGHT SQUARE BRACKET WITH QUILL  
 17363 \DeclareTextCommand{\textrquill}{PU}{\9040\106}% U+2046  
 17364 % U+2052 COMMERCIAL MINUS SIGN  
 17365 \DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052  
 17366 % U+2056 THREE DOT PUNCTUATION; \lefttherefore (MnSymbol)  
 17367 \DeclareTextCommand{\textlefttherefore}{PU}{\9040\126}%\* U+2056  
 17368 % U+2057 QUADRUPLE PRIME; \fourth (mathabx)  
 17369 \DeclareTextCommand{\textfourth}{PU}{\9040\127}%\* U+2057  
 17370 % U+2058 FOUR DOT PUNCTUATION; \diamonddots (MnSymbol)  
 17371 \DeclareTextCommand{\textdiamonddots}{PU}{\9040\130}%\* U+2058

#### 47.2.17 Superscripts and Subscripts: U+2070 to U+209F

17372 % U+2070 SUPERSCRIPT ZERO; zerosuperior  
 17373 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}%\* U+2070  
 17374 % U+2071 SUPERSCRIPT LATIN SMALL LETTER I  
 17375 \DeclareTextCommand{\textisuperior}{PU}{\9040\161}%\* U+2071  
 17376 % U+2074 SUPERSCRIPT FOUR; foursuperior  
 17377 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}%\* U+2074  
 17378 % U+2075 SUPERSCRIPT FIVE; fivesuperior  
 17379 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}%\* U+2075  
 17380 % U+2076 SUPERSCRIPT SIX; sixsuperior  
 17381 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}%\* U+2076  
 17382 % U+2077 SUPERSCRIPT SEVEN; sevensuperior  
 17383 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}%\* U+2077  
 17384 % U+2078 SUPERSCRIPT EIGHT; eightsuperior  
 17385 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170}%\* U+2078  
 17386 % U+2079 SUPERSCRIPT NINE; ninesuperior

17387 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171}%\* U+2079  
17388 % U+207A SUPERSCRIPT PLUS SIGN; plussuperior  
17389 \DeclareTextCommand{\textplussuperior}{PU}{\9040\172}%\* U+207A  
17390 % U+207B SUPERSCRIPT MINUS  
17391 \DeclareTextCommand{\textminussuperior}{PU}{\9040\173}%\* U+207B  
17392 % U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior  
17393 \DeclareTextCommand{\textequalsuperior}{PU}{\9040\174}%\* U+207C  
17394 % U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftsuperior  
17395 \DeclareTextCommand{\textparenleftsuperior}{PU}{\9040\175}%\* U+207D  
17396 % U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightsuperior  
17397 \DeclareTextCommand{\textparenrightsuperior}{PU}{\9040\176}%\* U+207E  
17398 % U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior  
17399 \DeclareTextCommand{\textnsuperior}{PU}{\9040\177}%\* U+207F  
17400 % U+2080 SUBSCRIPT ZERO; zeroinferior  
17401 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}%\* U+2080  
17402 % U+2081 SUBSCRIPT ONE; oneinferior  
17403 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201}%\* U+2081  
17404 % U+2082 SUBSCRIPT TWO; twoinferior  
17405 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}%\* U+2082  
17406 % U+2083 SUBSCRIPT THREE; threeminferior  
17407 \DeclareTextCommand{\textthreeminferior}{PU}{\9040\203}%\* U+2083  
17408 % U+2084 SUBSCRIPT FOUR; fourinferior  
17409 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204}%\* U+2084  
17410 % U+2085 SUBSCRIPT FIVE; fiveinferior  
17411 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}%\* U+2085  
17412 % U+2086 SUBSCRIPT SIX; sixinferior  
17413 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}%\* U+2086  
17414 % U+2087 SUBSCRIPT SEVEN; seveninferior  
17415 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}%\* U+2087  
17416 % U+2088 SUBSCRIPT EIGHT; eightinferior  
17417 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}%\* U+2088  
17418 % U+2089 SUBSCRIPT NINE; nineinferior  
17419 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}%\* U+2089  
17420 % U+208A SUBSCRIPT PLUS SIGN  
17421 \DeclareTextCommand{\textplusinferior}{PU}{\9040\212}%\* U+208A  
17422 % U+208B SUBSCRIPT MINUS  
17423 \DeclareTextCommand{\textminusinferior}{PU}{\9040\213}%\* U+208B  
17424 % U+208C SUBSCRIPT EQUALS SIGN  
17425 \DeclareTextCommand{\textequalsinferior}{PU}{\9040\214}%\* U+208C  
17426 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior  
17427 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}%\* U+208D  
17428 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior  
17429 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}%\* U+208E  
17430 % U+2090 LATIN SUBSCRIPT SMALL LETTER A  
17431 \DeclareTextCommand{\textainferior}{PU}{\9040\220}%\* U+2090  
17432 % U+2091 LATIN SUBSCRIPT SMALL LETTER E  
17433 \DeclareTextCommand{\texteinferior}{PU}{\9040\221}%\* U+2091  
17434 % U+2092 LATIN SUBSCRIPT SMALL LETTER O  
17435 \DeclareTextCommand{\textoinferior}{PU}{\9040\222}%\* U+2092  
17436 % U+2093 LATIN SUBSCRIPT SMALL LETTER X  
17437 \DeclareTextCommand{\textxinferior}{PU}{\9040\223}%\* U+2093  
17438 % U+2094 LATIN SUBSCRIPT SMALL LETTER SCHWA  
17439 \DeclareTextCommand{\textschwainferior}{PU}{\9040\224}%\* U+2094  
17440 % U+2095 LATIN SUBSCRIPT SMALL LETTER H

17441 \DeclareTextCommand{\textthinferior}{PU}{\9040\225}%\* U+2095  
17442 % U+2096 LATIN SUBSCRIPT SMALL LETTER K  
17443 \DeclareTextCommand{\textkinferior}{PU}{\9040\226}%\* U+2096  
17444 % U+2097 LATIN SUBSCRIPT SMALL LETTER L  
17445 \DeclareTextCommand{\textlinferior}{PU}{\9040\227}%\* U+2097  
17446 % U+2098 LATIN SUBSCRIPT SMALL LETTER M  
17447 \DeclareTextCommand{\textminferior}{PU}{\9040\230}%\* U+2098  
17448 % U+2099 LATIN SUBSCRIPT SMALL LETTER N  
17449 \DeclareTextCommand{\textninferior}{PU}{\9040\231}%\* U+2099  
17450 % U+209A LATIN SUBSCRIPT SMALL LETTER P  
17451 \DeclareTextCommand{\textpinferior}{PU}{\9040\232}%\* U+209A  
17452 % U+209B LATIN SUBSCRIPT SMALL LETTER S  
17453 \DeclareTextCommand{\textsinferior}{PU}{\9040\233}%\* U+209B  
17454 % U+209C LATIN SUBSCRIPT SMALL LETTER T  
17455 \DeclareTextCommand{\texttinferior}{PU}{\9040\234}%\* U+209C

#### 47.2.18 Currency Symbols: U+20A0 to U+20CF

17456 % U+20A1 COLON SIGN; \*colonmonetary, colonsign  
17457 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1  
17458 % U+20A4 LIRA SIGN; afi08941, \*lira  
17459 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4  
17460 % U+20A6 NAIRA SIGN  
17461 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6  
17462 % U+20A7 PESETA SIGN; peseta  
17463 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7  
17464 % U+20A9 WON SIGN; won  
17465 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9  
17466 % U+20AB DONG SIGN; dong  
17467 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB  
17468 % U+20AC EURO SIGN; \*Euro, euro  
17469 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC  
17470 %\* \texteuro -> \EurDig (marvosym)  
17471 %\* \texteuro -> \EURdig (marvosym)  
17472 %\* \texteuro -> \EurHv (marvosym)  
17473 %\* \texteuro -> \EURhv (marvosym)  
17474 %\* \texteuro -> \EurCr (marvosym)  
17475 %\* \texteuro -> \EURcr (marvosym)  
17476 %\* \texteuro -> \EurTm (marvosym)  
17477 %\* \texteuro -> \EURtm (marvosym)  
17478 %\* \texteuro -> \Eur (marvosym)  
17479 % U+20B0 GERMAN PENNY SIGN; \Deleatur (marvosym)  
17480 \DeclareTextCommand{\textDeleatur}{PU}{\9040\260}%\* U+20B0  
17481 %\* \textDeleatur -> \Denarius (marvosym)  
17482 % U+20B1 PESO SIGN  
17483 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1  
17484 % U+20B2 GUARANI SIGN  
17485 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

#### 47.2.19 Letterlike Symbols: U+2100 to U+214F

17486 % U+2103 DEGREE CELSIUS; centigrade  
17487 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103  
17488 % U+210F PLANCK CONSTANT OVER TWO PI; \hslash (AmS)  
17489 \DeclareTextCommand{\texthslash}{PU}{\9041\017}%\* U+210F  
17490 % U+2111 BLACK-LETTER CAPITAL I (=imaginary part); Ifraktur; \Im (La-

TeX)

17491 \DeclareTextCommand{\textIm}{PU}{\9041\021}%\* U+2111  
17492 % U+2113 SCRIPT SMALL L (=ell, liter); afi61289, lsquare; \ell (LaTeX)  
17493 \DeclareTextCommand{\textell}{PU}{\9041\023}%\* U+2113  
17494 % U+2116 NUMERO SIGN; \*afi61352, numero  
17495 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116  
17496 % U+2117 SOUND RECORDING COPYRIGHT  
17497 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117  
17498 % U+2118 SCRIPT CAPITAL P (=Weierstrass elliptic function);  
17499 % weierstrass; \wp (LaTeX)  
17500 \DeclareTextCommand{\textwp}{PU}{\9041\030}%\* U+2118  
17501 % U+211C BLACK-LETTER CAPITAL R (=real part); Rfraktur; \Re (LaTeX)  
17502 \DeclareTextCommand{\textRe}{PU}{\9041\034}%\* U+211C  
17503 % U+211E PRESCRIPTION TAKE; prescription  
17504 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E  
17505 % U+2120 SERVICE MARK  
17506 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120  
17507 % U+2122 TRADE MARK SIGN; trademark  
17508 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122  
17509 % U+2126 OHM SIGN; Ohm, Omega  
17510 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126  
17511 % U+2127 INVERTED OHM SIGN  
17512 \DeclareTextCommand{\textmho}{PU}{\9041\047}%\* U+2127  
17513 %\* \textmho -> \agemO (wasysym)  
17514 % U+2129 TURNED GREEK SMALL LETTER IOTA; \riota (phonetic)  
17515 \DeclareTextCommand{\textriota}{PU}{\9041\051}%\* U+2129  
17516 % U+212B ANGSTROM SIGN; angstrom  
17517 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B  
17518 % U+212E ESTIMATED SYMBOL; estimated  
17519 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E  
17520 %\* \textestimated -> \EstimatedSign (marvosym)  
17521 %\* \textestimated -> \Ecommerce (marvosym)  
17522 % U+2132 TURNED CAPITAL F; \Finv (AmS)  
17523 \DeclareTextCommand{\textFinv}{PU}{\9041\062}%\* U+2132  
17524 % U+2135 ALEF SYMBOL; aleph; \aleph (LaTeX)  
17525 \DeclareTextCommand{\textaleph}{PU}{\9041\065}%\* U+2135  
17526 % U+2136 BET SYMBOL; \beth (AmS, MnSymbol)  
17527 \DeclareTextCommand{\textbeth}{PU}{\9041\066}%\* U+2136  
17528 % U+2137 GIMEL SYMBOL; \gimel (AmS, MnSymbol)  
17529 \DeclareTextCommand{\textgimel}{PU}{\9041\067}%\* U+2137  
17530 % U+2138 DALET SYMBOL; \daleth (AmS, MnSymbol)  
17531 \DeclareTextCommand{\textdaleth}{PU}{\9041\070}%\* U+2138  
17532 % U+213B FACSIMILE SIGN; \fax (marvosym)  
17533 \DeclareTextCommand{\textfax}{PU}{\9041\073}%\* U+213B  
17534 % U+2141 TURNED SANS-SERIF CAPITAL G (=game); \Game  
17535 \DeclareTextCommand{\textGame}{PU}{\9041\101}%\* U+2141  
17536 % U+214B TURNED AMPERSAND; \invamp (txfonts/pxfonts)  
17537 \DeclareTextCommand{\textinvamp}{PU}{\9041\113}% U+214B  
17538 %\* \textinvamp -> \bindnasrepma (stmaryrd)  
17539 %\* \textinvamp -> \parr (cml)

#### 47.2.20 Number Forms: U+2150 to U+218F

17540 % U+2150 VULGAR FRACTION ONE SEVENTH  
17541 \DeclareTextCommand{\textoneseventh}{PU}{\9041\120}% U+2150



17542 % U+2151 VULGAR FRACTION ONE NINTH  
 17543 \DeclareTextCommand{\textoneninth}{PU}{\9041\121}% U+2151  
 17544 % U+2152 VULGAR FRACTION ONE TENTH  
 17545 \DeclareTextCommand{\textonetenth}{PU}{\9041\122}% U+2152  
 17546 % U+2153 VULGAR FRACTION ONE THIRD; onethird  
 17547 \DeclareTextCommand{\textonethird}{PU}{\9041\123}% U+2153  
 17548 % U+2154 VULGAR FRACTION TWO THIRDS; twothirds  
 17549 \DeclareTextCommand{\texttwothirds}{PU}{\9041\124}% U+2154  
 17550 % U+2155 VULGAR FRACTION ONE FIFTH  
 17551 \DeclareTextCommand{\textonefifth}{PU}{\9041\125}% U+2155  
 17552 % U+2156 VULGAR FRACTION TWO FIFTHS  
 17553 \DeclareTextCommand{\texttwofifths}{PU}{\9041\126}% U+2156  
 17554 % U+2157 VULGAR FRACTION THREE FIFTHS  
 17555 \DeclareTextCommand{\textthreefifths}{PU}{\9041\127}% U+2157  
 17556 % U+2158 VULGAR FRACTION FOUR FIFTHS  
 17557 \DeclareTextCommand{\textfourfifths}{PU}{\9041\130}% U+2158  
 17558 % U+2159 VULGAR FRACTION ONE SIXTH  
 17559 \DeclareTextCommand{\textonesixth}{PU}{\9041\131}% U+2159  
 17560 % U+215A VULGAR FRACTION FIVE SIXTHS  
 17561 \DeclareTextCommand{\textfivesixths}{PU}{\9041\132}% U+215A  
 17562 % U+215B VULGAR FRACTION ONE EIGHTH; oneeighth  
 17563 \DeclareTextCommand{\textoneeighth}{PU}{\9041\133}% U+215B  
 17564 % U+215C VULGAR FRACTION THREE EIGHTHS; threeeighths  
 17565 \DeclareTextCommand{\textthreeeighths}{PU}{\9041\134}% U+215C  
 17566 % U+215D VULGAR FRACTION FIVE EIGHTHS; fiveeighths  
 17567 \DeclareTextCommand{\textfiveeighths}{PU}{\9041\135}% U+215D  
 17568 % U+215E VULGAR FRACTION SEVEN EIGHTHS; seveineighths  
 17569 \DeclareTextCommand{\textseveineighths}{PU}{\9041\136}% U+215E  
 17570 % U+2184 LATIN SMALL LETTER REVERSED C  
 17571 \DeclareTextCommand{\textrevc}{PU}{\9041\204}% U+2184  
 17572 % U+2189 VULGAR FRACTION ZERO THIRDS  
 17573 \DeclareTextCommand{\textzerthirds}{PU}{\9041\211}% U+2189

#### 47.2.21 Arrows: U+2190 to U+21FF

17574 % U+2190 LEFTWARDS ARROW; arrowleft  
 17575 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}%\* U+2190  
 17576 % U+2191 UPWARDS ARROW; arrowup  
 17577 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}%\* U+2191  
 17578 % U+2192 RIGHTWARDS ARROW; arrowright  
 17579 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}%\* U+2192  
 17580 %\* \textrightarrow -> \MVRightArrow (marvosym)  
 17581 %\* \textrightarrow -> \MVRightarrow (marvosym)  
 17582 % U+2193 DOWNWARDS ARROW; arrowdown  
 17583 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}%\* U+2193  
 17584 %\* \textdownarrow -> \MVArrowDown (marvosym)  
 17585 %\* \textdownarrow -> \Force (marvosym)  
 17586 % U+2194 LEFT RIGHT ARROW; arrowboth; \leftrightarrow (LaTeX)  
 17587 \DeclareTextCommand{\textleftrightarrow}{PU}{\9041\224}%\* U+2194  
 17588 % U+2195 UP DOWN ARROW; arrowupdn; \updownarrow (LaTeX)  
 17589 \DeclareTextCommand{\textupdownarrow}{PU}{\9041\225}%\* U+2195  
 17590 % U+2196 NORTH WEST ARROW; arrowupleft; \nwarrow (LaTeX)  
 17591 \DeclareTextCommand{\textnwarrow}{PU}{\9041\226}%\* U+2196  
 17592 % U+2197 NORTH EAST ARROW; arrowupright; \nearrow (LaTeX)  
 17593 \DeclareTextCommand{\textnearrow}{PU}{\9041\227}%\* U+2197

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17594 %* \textnearrow -> \textglobrise (tipa)
17595 % U+2198 SOUTH EAST ARROW; arrowdownright; \searrow (LaTeX)
17596 \DeclareTextCommand{\textsearrow}{PU}{\9041\230}%* U+2198
17597 %* \textsearrow -> \textglobfall (tipa)
17598 % U+2199 SOUTH WEST ARROW; arrowdownleft; \swarrow (LaTeX)
17599 \DeclareTextCommand{\textswarrow}{PU}{\9041\231}%* U+2199
17600 % U+219A LEFTWARDS ARROW WITH STROKE; \leftarrow (AmS)
17601 \DeclareTextCommand{\textnleftarrow}{PU}{\9041\232}%* U+219A
17602 % U+219B RIGHTWARDS ARROW WITH STROKE; \rightarrow (AmS)
17603 \DeclareTextCommand{\textnrightarrow}{PU}{\9041\233}%* U+219B
17604 % U+219E LEFTWARDS TWO HEADED ARROW; \twoheadleftarrow (AmS)
17605 \DeclareTextCommand{\texttwoheadleftarrow}{PU}{\9041\236}%* U+219E
17606 % \twoheadleftarrow (txfonts/pxfonts)
17607 \DeclareTextCommand{\textntwoheadleftarrow}{PU}{\9041\236\83\070}%* U+219E U+0338
17608 % U+219F UPWARDS TWO HEADED ARROW; \twoheaduparrow (MnSymbol)
17609 \DeclareTextCommand{\texttwoheaduparrow}{PU}{\9041\237}%* U+219F
17610 % U+21A0 RIGHTWARDS TWO HEADED ARROW;
17611 % \twoheadrightarrow (AmS)
17612 \DeclareTextCommand{\texttwoheadrightarrow}{PU}{\9041\240}%* U+21A0
17613 % \twoheadrightarrow (txfonts/pxfonts)
17614 \DeclareTextCommand{\textntwoheadrightarrow}{PU}{\9041\240\83\070}%* U+21A0 U+0338
17615 % U+21A1 DOWNWARDS TWO HEADED ARROW; \twoheaddownarrow (Mn-
Symbol)
17616 \DeclareTextCommand{\texttwoheaddownarrow}{PU}{\9041\241}%* U+21A1
17617 % U+21A2 LEFTWARDS ARROW WITH TAIL; \leftarrowtail (AmS)
17618 \DeclareTextCommand{\textleftarrowtail}{PU}{\9041\242}%* U+21A2
17619 % U+21A3 RIGHTWARDS ARROW WITH TAIL; \rightarrowtail (AmS)
17620 \DeclareTextCommand{\textrightarrowtail}{PU}{\9041\243}%* U+21A3
17621 % U+21A6 RIGHTWARDS ARROW FROM BAR; \mapsto (LaTeX)
17622 \DeclareTextCommand{\textmapsto}{PU}{\9041\246}%* U+21A6
17623 % U+21A9 LEFTWARDS ARROW WITH HOOK; \hookleftarrow (LaTeX)
17624 \DeclareTextCommand{\texthookleftarrow}{PU}{\9041\251}%* U+21A9
17625 % U+21AA RIGHTWARDS ARROW WITH HOOK; \hookrightarrow (LaTeX)
17626 \DeclareTextCommand{\texthookrightarrow}{PU}{\9041\252}%* U+21AA
17627 % U+21AB LEFTWARDS ARROW WITH LOOP; \looparrowleft (AmS)
17628 \DeclareTextCommand{\textlooparrowleft}{PU}{\9041\253}%* U+21AB
17629 % U+21AC RIGHTWARDS ARROW WITH LOOP; \looparrowright (AmS)
17630 \DeclareTextCommand{\textlooparrowright}{PU}{\9041\254}%* U+21AC
17631 % U+21AE LEFT RIGHT ARROW WITH STROKE; \leftrightharrow (AmS)
17632 \DeclareTextCommand{\textnleftrightharrow}{PU}{\9041\256}%* U+21AE
17633 % U+21AF DOWNWARDS ZIGZAG ARROW; \lightning (stmaryrd)
17634 \DeclareTextCommand{\textlightning}{PU}{\9041\257}%* U+21AF
17635 %* \textlightning -> \Lightning (marvosym)
17636 % U+21B5 DOWNWARDS ARROW WITH CORNER LEFTWARDS;
17637 % \dls (mathabx)
17638 \DeclareTextCommand{\textdls}{PU}{\9041\265}%* U+21B5
17639 % U+21B6 ANTICLOCKWISE TOP SEMICIRCLE ARROW;
17640 % \curvearrowleft (AmS)
17641 \DeclareTextCommand{\textcurvearrowleft}{PU}{\9041\266}%* U+21B6
17642 % U+21B7 CLOCKWISE TOP SEMICIRCLE ARROW; \curvearrowright (AmS)
17643 \DeclareTextCommand{\textcurvearrowright}{PU}{\9041\267}%* U+21B7
17644 % U+21BC LEFTWARDS HARPOON WITH BARB UPWARDS; harpoonleft-
barbup;
17645 % \leftharpoonup (LaTeX)

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17646 \DeclareTextCommand{\textleftharpoonup}{PU}{\9041\274}%* U+21BC
17647 % U+21BD LEFTWARDS HARPOON WITH BARB DOWNWARDS;
17648 % \leftharpoondown (LaTeX)
17649 \DeclareTextCommand{\textleftharpoondown}{PU}{\9041\275}%* U+21BD
17650 % U+21BE UPWARDS HARPOON WITH BARB RIGHTWARDS;
17651 % \upharpoonright (AmS)
17652 \DeclareTextCommand{\textupharpoonright}{PU}{\9041\276}%* U+21BE
17653 % U+21BF UPWARDS HARPOON WITH BARB LEFTWARDS;
17654 % \upharpoonleft (AmS)
17655 \DeclareTextCommand{\textupharpoonleft}{PU}{\9041\277}%* U+21BF
17656 % U+21C0 RIGHTWARDS HARPOON WITH BARB UPWARDS; harpoonright-
    barbup
17657 % \rightharpoonup (LaTeX)
17658 \DeclareTextCommand{\textrightarpoonup}{PU}{\9041\300}%* U+21C0
17659 % U+21C1 RIGHTWARDS HARPOON WITH BARB DOWNWARDS;
17660 % \rightharpoondown (LaTeX)
17661 \DeclareTextCommand{\textrightarpoondown}{PU}{\9041\301}%* U+21C1
17662 % U+21C2 DOWNWARDS HARPOON WITH BARB RIGHTWARDS;
17663 % \downharpoonright (AmS)
17664 \DeclareTextCommand{\textdownharpoonright}{PU}{\9041\302}%* U+21C2
17665 % U+21C3 DOWNWARDS HARPOON WITH BARB LEFTWARDS;
17666 % \downharpoonleft (AmS)
17667 \DeclareTextCommand{\textdownharpoonleft}{PU}{\9041\303}%* U+21C3
17668 % U+21C4 RIGHTWARDS ARROW OVER LEFTWARDS ARROW;
17669 % \arrowrightoverleft; \rightleftarrows (MnSymbol)
17670 \DeclareTextCommand{\textrightleftarrows}{PU}{\9041\304}%* U+21C4
17671 % U+21C5 UPWARDS ARROW LEFTWARDS OF DOWNWARDS ARROW; ar-
    rowupleftofdown;
17672 % \updownarrows (MnSymbol)
17673 \DeclareTextCommand{\textupdownarrows}{PU}{\9041\305}%* U+21C5
17674 % U+21C6 LEFTWARDS ARROW OVER RIGHTWARDS ARROW; arrowleft-
    overright;
17675 % \leftrightharrows (AmS)
17676 \DeclareTextCommand{\textleftrightharrows}{PU}{\9041\306}%* U+21C6
17677 % U+21C7 LEFTWARDS PAIRED ARROWS; \leftleftarrows (AmS)
17678 \DeclareTextCommand{\textleftleftarrows}{PU}{\9041\307}%* U+21C7
17679 % U+21C8 UPWARDS PAIRED ARROWS; \upuparrows (AmS)
17680 \DeclareTextCommand{\textupuparrows}{PU}{\9041\310}%* U+21C8
17681 % U+21C9 RIGHTWARDS PAIRED ARROWS; \rightrightarrows (AmS)
17682 \DeclareTextCommand{\textrightarrows}{PU}{\9041\311}%* U+21C9
17683 % U+21CA DOWNWARDS PAIRED ARROWS; \downdownarrows (AmS)
17684 \DeclareTextCommand{\textdowndownarrows}{PU}{\9041\312}%* U+21CA
17685 % U+21CB LEFTWARDS HARPOON OVER RIGHTWARDS HARPOON;
17686 % \leftrightharpoons (AmS);
17687 \DeclareTextCommand{\textleftrightharpoons}{PU}{\9041\313}%* U+21CB
17688 % U+21CC RIGHTWARDS HARPOON OVER LEFTWARDS HARPOON;
17689 % \rightleftharpoons (LaTeX, AmS)
17690 \DeclareTextCommand{\textrightleftharpoons}{PU}{\9041\314}%* U+21CC
17691 % U+21CD LEFTWARDS DOUBLE ARROW WITH STROKE; arrowleftd-
    blstroke;
17692 % \nLeftarrow (AmS)
17693 \DeclareTextCommand{\textnLeftarrow}{PU}{\9041\315}%* U+21CD
17694 % U+21CE LEFT RIGHT DOUBLE ARROW WITH STROKE; \nLeftrightarrow
    row (AmS)

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17695 \DeclareTextCommand{\textnLeftrightarrow}{PU}{\9041\316}%* U+21CE
17696 % U+21CF RIGHTWARDS DOUBLE ARROW WITH STROKE; arrowrightd-
      blstroke;
17697 % \nRrightarrow (AmS)
17698 \DeclareTextCommand{\textnRrightarrow}{PU}{\9041\317}%* U+21CF
17699 % U+21D0 LEFTWARDS DOUBLE ARROW; arrowdblleft, arrowleftdbl;
17700 % \Leftarrow (LaTeX)
17701 \DeclareTextCommand{\textLeftrightarrow}{PU}{\9041\320}%* U+21D0
17702 % U+21D1 UPWARDS DOUBLE ARROW; arrowdblup; \Uparrow (LaTeX)
17703 \DeclareTextCommand{\textUparrow}{PU}{\9041\321}%* U+21D1
17704 % U+21D2 RIGHTWARDS DOUBLE ARROW; arrowdblright, dblarrowright;
17705 % \Rrightarrow (LaTeX)
17706 \DeclareTextCommand{\textRrightarrow}{PU}{\9041\322}%* U+21D2
17707 %* \textRrightarrow -> \Conclusion (marvosym)
17708 % U+21D3 DOWNWARDS DOUBLE ARROW; arrowdbldown; \Downarrow (La-
      TeX)
17709 \DeclareTextCommand{\textDownarrow}{PU}{\9041\323}%* U+21D3
17710 % U+21D4 LEFT RIGHT DOUBLE ARROW; arrowdblboth;
17711 % \Leftrightarrow (LaTeX)
17712 \DeclareTextCommand{\textLeftrightarrow}{PU}{\9041\324}%* U+21D4
17713 %* \textLeftrightarrow -> \Equivalence (marvosym)
17714 % U+21D5 UP DOWN DOUBLE ARROW; \Updownarrow (LaTeX)
17715 \DeclareTextCommand{\textUpdownarrow}{PU}{\9041\325}%* U+21D5
17716 % U+21D6 NORTH WEST DOUBLE ARROW; \Nwarrow (MnSymbol)
17717 \DeclareTextCommand{\textNwarrow}{PU}{\9041\326}%* U+21D6
17718 % U+21D7 NORTH EAST DOUBLE ARROW; \Nearrow (MnSymbol)
17719 \DeclareTextCommand{\textNearrow}{PU}{\9041\327}%* U+21D7
17720 % U+21D8 SOUTH EAST DOUBLE ARROW; \Searrow (MnSymbol)
17721 \DeclareTextCommand{\textSearrow}{PU}{\9041\330}%* U+21D8
17722 % U+21D9 SOUTH WEST DOUBLE ARROW; \Swarrow (MnSymbol)
17723 \DeclareTextCommand{\textSwarrow}{PU}{\9041\331}%* U+21D9
17724 % U+21DA LEFTWARDS TRIPLE ARROW; \Lleftarrow (AmS)
17725 \DeclareTextCommand{\textLleftarrow}{PU}{\9041\332}%* U+21DA
17726 % U+21DB RIGHTWARDS TRIPLE ARROW; \Rrightarrow (MnSymbol)
17727 \DeclareTextCommand{\textRrightarrow}{PU}{\9041\333}%* U+21DB
17728 % U+21DC LEFTWARDS SQUIGGLE ARROW; \leftsquigarrow (mathabx)
17729 \DeclareTextCommand{\textleftsquigarrow}{PU}{\9041\334}%* U+21DC
17730 % U+21DD RIGHTWARDS SQUIGGLE ARROW; \rightsquigarrow (mathabx)
17731 \DeclareTextCommand{\textright squigarrow}{PU}{\9041\335}%* U+21DD
17732 % U+21E0 LEFTWARDS DASHED ARROW; arrowdashleft;
17733 % \dashleftarrow (AmS)
17734 \DeclareTextCommand{\textdashleftarrow}{PU}{\9041\340}%* U+21E0
17735 %* \textdashleftarrow -> \dashedleftarrow (MnSymbol)
17736 % U+21E1 UPWARDS DASHED ARROW; arrowdashup; \dasheduparrow (Mn-
      Symbol)
17737 \DeclareTextCommand{\textdasheduparrow}{PU}{\9041\341}%* U+21E1
17738 % U+21E2 RIGHTWARDS DASHED ARROW; arrowdashright; \dashrightar-
      row (AmS)
17739 \DeclareTextCommand{\textdashrightarrow}{PU}{\9041\342}%* U+21E2
17740 %* \textdashrightarrow -> \dashedrightarrow (MnSymbol)
17741 % U+21E3 DOWNWARDS DASHED ARROW; arrowdashdown; \dasheddownar-
      row (MnSymbol)
17742 \DeclareTextCommand{\textdasheddownarrow}{PU}{\9041\343}%* U+21E3
17743 % U+21E8 RIGHTWARDS WHITE ARROW; \pointer (wasysym)

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17744 \DeclareTextCommand{\textpointer}{PU}{\9041\350}%\* U+21E8  
17745 % U+21F5 DOWNWARDS ARROW LEFTWARDS OF UPWARDS ARROW;  
17746 % \downuparrows (MnSymbol)  
17747 \DeclareTextCommand{\textdownuparrows}{PU}{\9041\365}%\* U+21F5  
17748 % U+21FD LEFTWARDS OPEN-HEADED ARROW; \leftarrowtriangle (stmaryrd)  
17749 \DeclareTextCommand{\textleftarrowtriangle}{PU}{\9041\375}%\* U+21FD  
17750 % U+21FE RIGHTWARDS OPEN-HEADED ARROW; \rightarrowtriangle (stmaryrd)  
17751 \DeclareTextCommand{\textrightarrowtriangle}{PU}{\9041\376}%\* U+21FE  
17752 % U+21FF LEFT RIGHT OPEN-HEADED ARROW; \leftrightarrowtrian-  
gle (stmaryrd)  
17753 \DeclareTextCommand{\textleftrightarrowtriangle}{PU}{\9041\377}%\* U+21FF

#### 47.2.22 Mathematical Operators: U+2200 to U+22FF

17754 % U+2200 FOR ALL; forall; \forall (LaTeX)  
17755 \DeclareTextCommand{\textforall}{PU}{\9042\000}%\* U+2200  
17756 % U+2201 COMPLEMENT; \complement (AmS)  
17757 \DeclareTextCommand{\textcomplement}{PU}{\9042\001}%\* U+2201  
17758 % U+2202 PARTIAL DIFFERENTIAL; partialdiff; \partial (LaTeX)  
17759 \DeclareTextCommand{\textpartial}{PU}{\9042\002}%\* U+2202  
17760 % U+2203 THERE EXISTS; existential; \exists (LaTeX)  
17761 \DeclareTextCommand{\textexists}{PU}{\9042\003}%\* U+2203  
17762 % U+2204 THERE DOES NOT EXIST; \nexists (AmS)  
17763 \DeclareTextCommand{\textnexists}{PU}{\9042\004}%\* U+2204  
17764 % U+2205 EMPTY SET; emptyset; \emptyset (LaTeX), \varnothing (AmS)  
17765 \DeclareTextCommand{\textemptyset}{PU}{\9042\005}%\* U+2205  
17766 %\* \textemptyset -> \varnothing (AmS)  
17767 % U+2206 INCREMENT; increment, Delta; \triangle (LaTeX)  
17768 \DeclareTextCommand{\texttriangle}{PU}{\9042\006}%\* U+2206  
17769 % U+2207 NABLA; nabla, gradient; \nabla (LaTeX)  
17770 \DeclareTextCommand{\textnabla}{PU}{\9042\007}%\* U+2207  
17771 % U+2208 ELEMENT OF; element; \in (LaTeX)  
17772 \DeclareTextCommand{\textin}{PU}{\9042\010}%\* U+2208  
17773 % U+2209 NOT AN ELEMENT OF; notelement, notelementof; \notin (LaTeX)  
17774 \DeclareTextCommand{\textnotin}{PU}{\9042\011}%\* U+2209  
17775 % U+220A SMALL ELEMENT OF; \smallin (mathdesign)  
17776 \DeclareTextCommand{\textsmallin}{PU}{\9042\012}%\* U+220A  
17777 % U+220B CONTAINS AS MEMBER; suchthat; \ni (LaTeX)  
17778 \DeclareTextCommand{\textni}{PU}{\9042\013}%\* U+220B  
17779 %\* \textni -> \owns (mathabx)  
17780 % U+220C DOES NOT CONTAIN AS MEMBER; \notowner (mathabx)  
17781 \DeclareTextCommand{\textnotowner}{PU}{\9042\014}%\* U+220C  
17782 %\* \textnotowner -> \notni (txfonts/pxfonts)  
17783 % U+220D SMALL CONTAINS AS MEMBER; \smallowns (mathdesign)  
17784 \DeclareTextCommand{\textsmallowns}{PU}{\9042\015}%\* U+220D  
17785 % U+220F N-ARY PRODUCT; \prod (LaTeX)  
17786 \DeclareTextCommand{\textprod}{PU}{\9042\017}%\* U+220F  
17787 % U+2210 N-ARY COPRODUCT; \amalg (LaTeX)  
17788 \DeclareTextCommand{\textamalg}{PU}{\9042\020}%\* U+2210  
17789 % U+2211 N-ARY SUMMATION; summation; \sum (LaTeX)  
17790 \DeclareTextCommand{\textsum}{PU}{\9042\021}%\* U+2211  
17791 % U+2212 MINUS SIGN; minus  
17792 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212  
17793 % U+2213 MINUS-OR-PLUS SIGN; minusplus; \mp (LaTeX)  
17794 \DeclareTextCommand{\textmp}{PU}{\9042\023}%\* U+2213

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17795 % U+2214 DOT PLUS; \dotplus (AmS)
17796 \DeclareTextCommand{\textdotplus}{PU}{\9042\024}%* U+2214
17797 % U+2215 DIVISION SLASH; divisionslash; \Divides (marvosym)
17798 \DeclareTextCommand{\textDivides}{PU}{\9042\025}%* U+2215
17799 % \DividesNot (marvosym)
17800 \DeclareTextCommand{\textDividesNot}{PU}{\9042\025\9040\322}%* U+2215 U+20D2
17801 % U+2216 SET MINUS; \setminus (LaTeX)
17802 \DeclareTextCommand{\textsetminus}{PU}{\9042\026}%* U+2216
17803 % U+2217 ASTERISK OPERATOR; asteriskmath; \ast (LaTeX)
17804 \DeclareTextCommand{\textast}{PU}{\9042\027}%* U+2217
17805 % U+2218 RING OPERATOR; \circ (LaTeX)
17806 \DeclareTextCommand{\textcirc}{PU}{\9042\030}%* U+2218
17807 % U+2219 BULLET OPERATOR; bulletoperator; \bullet (LaTeX)
17808 \DeclareTextCommand{\textbulletoperator}{PU}{\9042\031}% U+2219
17809 % U+221A SQUARE ROOT; radical
17810 \DeclareTextCommand{\textsqrt}{PU}{\9042\032}%* U+221A
17811 % U+221D PROPORTIONAL TO; proportional; \propto (LaTeX)
17812 \DeclareTextCommand{\textpropto}{PU}{\9042\035}%* U+221D
17813 %* \textpropto -> \varprop (wasysym)
17814 % U+221E INFINITY; infinity; \infty (LaTeX)
17815 \DeclareTextCommand{\textinfty}{PU}{\9042\036}%* U+221E
17816 % U+2220 ANGLE; angle; \angle (LaTeX)
17817 \DeclareTextCommand{\textangle}{PU}{\9042\040}%* U+2220
17818 % U+2221 MEASURED ANGLE; \measuredangle (mathabx, MnSymbol)
17819 \DeclareTextCommand{\textmeasuredangle}{PU}{\9042\041}%* U+2221
17820 % U+2222 SPHERICAL ANGLE; \sphericalangle (AmS)
17821 \DeclareTextCommand{\textsphericalangle}{PU}{\9042\042}%* U+2222
17822 %* \textsphericalangle -> \varangle (wasysym)
17823 %* \textsphericalangle -> \Anglesign (marvosym)
17824 %* \textsphericalangle -> \AngleSign (marvosym)
17825 % U+2223 DIVIDES; divides; \mid (LaTeX)
17826 \DeclareTextCommand{\textmid}{PU}{\9042\043}%* U+2223
17827 % U+2224 DOES NOT DIVIDE; \nmid (AmS)
17828 \DeclareTextCommand{\textnmid}{PU}{\9042\044}%* U+2224
17829 %* \textnmid -> \notdivides (mathabx)
17830 % U+2225 PARALLEL TO; parallel; \parallel (LaTeX)
17831 \DeclareTextCommand{\textparallel}{PU}{\9042\045}%* U+2225
17832 % U+2226 NOT PARALLEL TO; notparallel; \nparallel (AmS)
17833 \DeclareTextCommand{\textnparallel}{PU}{\9042\046}%* U+2226
17834 %* \textnparallel -> nUpdownline (MnSymbol)
17835 % U+2227 LOGICAL AND; logicaland; \wedge (LaTeX)
17836 \DeclareTextCommand{\textwedge}{PU}{\9042\047}%* U+2227
17837 % \owedge (stmaryrd)
17838 \DeclareTextCommand{\textowedge}{PU}{\9042\047\9040\335}%* U+2227 U+20DD
17839 %* \textowedge -> \varowedge (stmaryrd)
17840 % U+2228 LOGICAL OR; logicalor; \vee (LaTeX)
17841 \DeclareTextCommand{\textvee}{PU}{\9042\050}%* U+2228
17842 % \ovee (stmaryrd)
17843 \DeclareTextCommand{\textovee}{PU}{\9042\050\9040\335}%* U+2228 U+20DD
17844 %* \textovee -> \varovee (stmaryrd)
17845 % U+2229 INTERSECTION; intersection; \cap (LaTeX)
17846 \DeclareTextCommand{\textcap}{PU}{\9042\051}%* U+2229
17847 % U+222A UNION; union; \cup (LaTeX)
17848 \DeclareTextCommand{\textcup}{PU}{\9042\052}%* U+222A

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17849 % U+222B INTEGRAL; integral; \int (LaTeX)  
17850 \DeclareTextCommand{\textint}{PU}{\9042\053}%\* U+222B  
17851 %\* \textint -> \varint (wasysym)  
17852 % U+222C DOUBLE INTEGRAL; dblintegral; \iint (AmS)  
17853 \DeclareTextCommand{\textiint}{PU}{\9042\054}%\* U+222C  
17854 % U+222D TRIPLE INTEGRAL; \iiint (AmS)  
17855 \DeclareTextCommand{\textiiiint}{PU}{\9042\055}%\* U+222D  
17856 % U+222E CONTOUR INTEGRAL; contourintegral; \oint (LaTeX)  
17857 \DeclareTextCommand{\textoint}{PU}{\9042\056}%\* U+222E  
17858 %\* \textoint -> \varoint (wasysym)  
17859 % U+222F SURFACE INTEGRAL; \oiint (wasysym)  
17860 \DeclareTextCommand{\textoiint}{PU}{\9042\057}%\* U+222F  
17861 % U+2232 CLOCKWISE CONTOUR INTEGRAL;  
17862 % \ointclockwise (txfonts/pxfonts)  
17863 \DeclareTextCommand{\textointclockwise}{PU}{\9042\062}%\* U+2232  
17864 % U+2233 ANTICLOCKWISE CONTOUR INTEGRAL; \ointctrlockwise (tx-  
fonts/pxfonts)  
17865 \DeclareTextCommand{\textointctrlockwise}{PU}{\9042\063}%\* U+2233  
17866 % U+2234 THEREFORE; therefore; \therefore (AmS)  
17867 \DeclareTextCommand{\texttherefore}{PU}{\9042\064}%\* U+2234  
17868 %\* \texttherefore -> uptherefore (MnSymbol)  
17869 % U+2235 BECAUSE; because; \because (AmS)  
17870 \DeclareTextCommand{\textbecause}{PU}{\9042\065}%\* U+2235  
17871 %\* \textbecause -> \downtherefore (MnSymbol)  
17872 % U+2236 RATIO; \vdotdot (MnSymbol)  
17873 \DeclareTextCommand{\textvdotdot}{PU}{\9042\066}%\* U+2236  
17874 % U+2237 PROPORTION; \squaredots (MnSymbol)  
17875 \DeclareTextCommand{\textssquaredots}{PU}{\9042\067}%\* U+2237  
17876 % U+2238 DOT MINUS; \dotminus (MnSymbol)  
17877 \DeclareTextCommand{\textdotminus}{PU}{\9042\070}%\* U+2238  
17878 %\* \textdotminus -> \textdotdiv (mathabx)  
17879 % U+2239 EXCESS; \eqcolon (txfonts/pxfonts)  
17880 \DeclareTextCommand{\texteqcolon}{PU}{\9042\071}%\* U+2239  
17881 % U+223C TILDE OPERATOR; similar; \sim (LaTeX)  
17882 \DeclareTextCommand{\textsim}{PU}{\9042\074}%\* U+223C  
17883 %\* \textsim -> \AC (wasysym)  
17884 % U+223D REVERSED TILDE; reverseditilde; \backsim (AmS)  
17885 \DeclareTextCommand{\textbacksim}{PU}{\9042\075}%\* U+223D  
17886 % \nbacksim (txfonts/pxfonts)  
17887 \DeclareTextCommand{\textnbacksim}{PU}{\9042\075\83\070}%\* U+223D U+0338  
17888 % U+2240 WREATH PRODUCT; \wr (LaTeX)  
17889 \DeclareTextCommand{\textwr}{PU}{\9042\100}%\* U+2240  
17890 %\* \textwr -> \wreath (MnSymbol)  
17891 % U+2241 NOT TILDE; \nsim (AmS)  
17892 \DeclareTextCommand{\textnsim}{PU}{\9042\101}%\* U+2241  
17893 % U+2242 MINUS TILDE; \eqsim (MnSymbol)  
17894 \DeclareTextCommand{\texteqsim}{PU}{\9042\102}%\* U+2242  
17895 % \neqsim (MnSymbol)  
17896 \DeclareTextCommand{\textneqsim}{PU}{\9042\102\83\070}%\* U+2242 U+0338  
17897 % U+2243 ASYMPTOTICALLY EQUAL TO; asymptoticallyequal; \simeq (La-  
TeX)  
17898 \DeclareTextCommand{\textsimeq}{PU}{\9042\103}%\* U+2243  
17899 % U+2244 NOT ASYMPTOTICALLY EQUAL TO; \nsimeq (txfonts/pxfonts)  
17900 \DeclareTextCommand{\textnsimeq}{PU}{\9042\104}%\* U+2244

17901 % U+2245 APPROXIMATELY EQUAL TO; approximatelyequal; \cong (LaTeX)  
17902 \DeclareTextCommand{\textcong}{PU}{\9042\105}%\* U+2245  
17903 % U+2247 NEITHER APPROXIMATELY NOR ACTUALLY EQUAL TO;  
17904 % \ncong (AmS)  
17905 \DeclareTextCommand{\textncong}{PU}{\9042\107}%\* U+2247  
17906 % U+2248 ALMOST EQUAL TO; approxequal; \approx (LaTeX)  
17907 \DeclareTextCommand{\textapprox}{PU}{\9042\110}%\* U+2248  
17908 % U+2249 NOT ALMOST EQUAL TO; \napprox (txfonts/pxfonts0  
17909 \DeclareTextCommand{\textnapprox}{PU}{\9042\111}%\* U+2249  
17910 %\* \textnapprox -> \nthickapprox (txfonts/pxfonts)  
17911 % U+224A ALMOST EQUAL OR EQUAL TO; \approxeq (AmS)  
17912 \DeclareTextCommand{\textapproxeq}{PU}{\9042\112}%\* U+224A  
17913 % \napproxeq (txfonts/pxfonts)  
17914 \DeclareTextCommand{\textnapproxeq}{PU}{\9042\112\83\070}%\* U+224A U+0338  
17915 % U+224B TRIPLE TILDE; \triplesim (MnSymbol)  
17916 \DeclareTextCommand{\texttriplesim}{PU}{\9042\113}%\* U+224B  
17917 %\* \texttriplesim -> \VHF (wasysym)  
17918 % \ntriplesim (MnSymbol)  
17919 \DeclareTextCommand{\textntriplesim}{PU}{\9042\113\83\070}%\* U+224B U+0338  
17920 % U+224C ALL EQUAL TO; allequal; \backcong (MnSymbol)  
17921 \DeclareTextCommand{\textbackcong}{PU}{\9042\114}%\* U+224C  
17922 % \nbackcong (MnSymbol)  
17923 \DeclareTextCommand{\textnbackcong}{PU}{\9042\114\83\070}%\* U+224C U+0338  
17924 % U+224D EQUIVALENT TO; \asymp (LaTeX)  
17925 \DeclareTextCommand{\textasympt}{PU}{\9042\115}%\* U+224D  
17926 % \nasympt (txfonts/pxfonts)  
17927 \DeclareTextCommand{\textnasympt}{PU}{\9042\115\83\070}%\* U+224D U+0338  
17928 %\* \textnasympt -> \notasympt (mathabx)  
17929 % U+224E GEOMETRICALLY EQUIVALENT TO; \Bumpeq (AmS)  
17930 \DeclareTextCommand{\textBumpeq}{PU}{\9042\116}%\* U+224E  
17931 % \nBumpeq (txfonts/pxfonts)  
17932 \DeclareTextCommand{\textnBumpeq}{PU}{\9042\116\83\070}%\* U+224E U+0338  
17933 % U+224F DIFFERENCE BETWEEN; \bumpeq (AmS)  
17934 \DeclareTextCommand{\textbumpeq}{PU}{\9042\117}%\* U+224F  
17935 % \nbumpeq (txfonts/pxfonts)  
17936 \DeclareTextCommand{\textnbumpeq}{PU}{\9042\117\83\070}%\* U+224F U+0338  
17937 % U+2250 APPROACHES THE LIMIT; approaches; \doteq (LaTeX)  
17938 \DeclareTextCommand{\textdoteq}{PU}{\9042\120}%\* U+2250  
17939 % \ndoteq (MnSymbol)  
17940 \DeclareTextCommand{\textndoteq}{PU}{\9042\120\83\070}%\* U+2250 U+0338  
17941 % U+2251 GEOMETRICALLY EQUAL TO; geometricallyequal;  
17942 % \doteqdot (AmS)  
17943 \DeclareTextCommand{\textdoteqdot}{PU}{\9042\121}%\* U+2251  
17944 %\* \textdoteqdot -> \Doteq (MnSymbol)  
17945 % \nDoteq (MnSymbol)  
17946 \DeclareTextCommand{\textnDoteq}{PU}{\9042\121\83\070}%\* U+2251 U+0338  
17947 % U+2252 APPROXIMATELY EQUAL TO OR THE IMAGE OF; approx-  
equalorimage;  
17948 % \fallingdotseq (AmS)  
17949 \DeclareTextCommand{\textfallingdotseq}{PU}{\9042\122}%\* U+2252  
17950 % \nfallingdotseq (MnSymbol)  
17951 \DeclareTextCommand{\textnfallingdotseq}{PU}{\9042\122\83\070}%\* U+2252 U+0338  
17952 % U+2253 IMAGE OF OR APPROXIMATELY EQUAL TO; imageorapprox-  
imatelyequal;



17953 % \risingdotseq (AmS)  
17954 \DeclareTextCommand{\textrisingdoteq}{PU}{\9042\123}%\* U+2253  
17955 % \nrisingdoteq (MnSymbol)  
17956 \DeclareTextCommand{\textnrisingdoteq}{PU}{\9042\123\83\070}%\* U+2253 U+0338  
17957 % U+2254 COLON EQUALS; \colonequals (colonequals)  
17958 \DeclareTextCommand{\textcolonequals}{PU}{\9042\124}%\* U+2254  
17959 % U+2255 EQUALS COLON; \equalscolon (colonequals)  
17960 \DeclareTextCommand{\textequalscolon}{PU}{\9042\125}%\* U+2255  
17961 % U+2256 RING IN EQUAL TO; \eqcirc (AmS)  
17962 \DeclareTextCommand{\texteqcirc}{PU}{\9042\126}%\* U+2256  
17963 % \neqcirc (MnSymbol)  
17964 \DeclareTextCommand{\textneqcirc}{PU}{\9042\126\83\070}%\* U+2256 U+0338  
17965 % U+2257 RING EQUAL TO; \circeq (AmS)  
17966 \DeclareTextCommand{\textcirceq}{PU}{\9042\127}%\* U+2257  
17967 % \ncirceq (MnSymbol)  
17968 \DeclareTextCommand{\textncirceq}{PU}{\9042\127\83\070}%\* U+2257 U+0338  
17969 % U+2259 ESTIMATES; \hateq (MnSymbol)  
17970 \DeclareTextCommand{\texthateq}{PU}{\9042\131}%\* U+2259  
17971 %\* \texthateq -> \corresponds (mathabx)  
17972 %\* \texthateq -> \Corresponds (marvosym)  
17973 % \nhateq (MnSymbol)  
17974 \DeclareTextCommand{\textnhateq}{PU}{\9042\131\83\070}%\* U+2259 U+0338  
17975 % U+225C DELTA EQUAL TO; \triangleeq (AmS)  
17976 \DeclareTextCommand{\texttriangleeq}{PU}{\9042\134}%\* U+225C  
17977 % U+2260 NOT EQUAL TO; notequal; \ne (LaTeX), \neq (LaTeX)  
17978 \DeclareTextCommand{\textneq}{PU}{\9042\140}%\* U+2260  
17979 \DeclareTextCommand{\textne}{PU}{\9042\140}%\* U+2260  
17980 %\* \textneq -> \nequal (MnSymbol)  
17981 % U+2261 IDENTICAL TO; equivalence; \equiv (LaTeX)  
17982 \DeclareTextCommand{\textequiv}{PU}{\9042\141}%\* U+2261  
17983 %\* \textequiv -> \Congruent (marvosym)  
17984 % U+2262 NOT IDENTICAL TO; notidentical; \nequiv (txfonts/pxfonts)  
17985 \DeclareTextCommand{\textnequiv}{PU}{\9042\142}%\* U+2262  
17986 %\* \textnequiv -> \NotCongruent (marvosym)  
17987 %\* \textnequiv -> \notequiv (mathabx)  
17988 % U+2264 LESS-THAN OR EQUAL TO; lessequal; \le (LaTeX), \leq (LaTeX)  
17989 \DeclareTextCommand{\textleq}{PU}{\9042\144}%\* U+2264  
17990 \DeclareTextCommand{\textle}{PU}{\9042\144}%\* U+2264  
17991 %\* \textleq -> \LessOrEqual (marvosym)  
17992 % U+2265 GREATER-THAN OR EQUAL TO; greaterequal;  
17993 % \ge (LaTeX), \geq (LaTeX)  
17994 \DeclareTextCommand{\textgeq}{PU}{\9042\145}%\* U+2265  
17995 \DeclareTextCommand{\textge}{PU}{\9042\145}%\* U+2265  
17996 %\* \textgeq -> \LargerOrEqual (marvosym)  
17997 % U+2266 LESS-THAN OVER EQUAL TO; lessoverequal; \leqq (AmS)  
17998 \DeclareTextCommand{\textleqq}{PU}{\9042\146}%\* U+2266  
17999 % \nleqq (txfonts/pxfonts)  
18000 \DeclareTextCommand{\textnleqq}{PU}{\9042\146\83\070}%\* U+2266 U+0338  
18001 % U+2267 GREATER-THAN OVER EQUAL TO; greateroverequal; \geqq (AmS)  
18002 \DeclareTextCommand{\textgeqq}{PU}{\9042\147}%\* U+2267  
18003 % \ngeqq (txfonts/pxfonts)  
18004 \DeclareTextCommand{\textngeqq}{PU}{\9042\147\83\070}%\* U+2267 U+0338  
18005 % U+2268 LESS-THAN BUT NOT EQUAL TO; \lneqq (AmS)  
18006 \DeclareTextCommand{\textlneqq}{PU}{\9042\150}%\* U+2268

18007 % U+2269 GREATER-THAN BUT NOT EQUAL TO;  $\gneqq$  (AmS)  
18008 \DeclareTextCommand{\textgneqq}{PU}{\9042\151}%\* U+2269  
18009 % U+226A MUCH LESS-THAN; muchless;  $\ll$  (LaTeX)  
18010 \DeclareTextCommand{\textll}{PU}{\9042\152}%\* U+226A  
18011 %  $\lll$  (txfonts/pxfonts)  
18012 \DeclareTextCommand{\textnll}{PU}{\9042\152\83\070}%\* U+226A U+0338  
18013 % U+226B MUCH GREATER-THAN; muchgreater;  $\gg$  (LaTeX)  
18014 \DeclareTextCommand{\textgg}{PU}{\9042\153}%\* U+226B  
18015 %  $\ngg$  (txfonts/pxfonts)  
18016 \DeclareTextCommand{\textngg}{PU}{\9042\153\83\070}%\* U+226B U+0338  
18017 % U+226C BETWEEN;  $\between$  (AmS)  
18018 \DeclareTextCommand{\textbetween}{PU}{\9042\154}%\* U+226C  
18019 % U+226E NOT LESS-THAN; notless;  $\nless$  (AmS)  
18020 \DeclareTextCommand{\textnless}{PU}{\9042\156}%\* U+226E  
18021 % U+226F NOT GREATER-THAN; notgreater;  $\ngtr$  (AmS)  
18022 \DeclareTextCommand{\textngtr}{PU}{\9042\157}%\* U+226F  
18023 % U+2270 NEITHER LESS-THAN NOR EQUAL TO; notlessnorequal;  
18024 %  $\nleq$  (AmS)  
18025 \DeclareTextCommand{\textnleq}{PU}{\9042\160}%\* U+2270  
18026 % U+2271 NEITHER GREATER-THAN NOR EQUAL TO; notgreaternorequal;  
 $\ngeq$  (AmS)  
18027 \DeclareTextCommand{\textngeq}{PU}{\9042\161}%\* U+2271  
18028 % U+2272 LESS-THAN OR EQUIVALENT TO; lessorequivalent;  $\lessim$  (AmS)  
18029 \DeclareTextCommand{\textlessim}{PU}{\9042\162}%\* U+2272  
18030 %\*  $\textlessim$  ->  $\apprle$  (wasysym)  
18031 % U+2273 GREATER-THAN OR EQUIVALENT TO; greaterorequivalent;  $\gtrsim$   
(AmS)  
18032 \DeclareTextCommand{\textgtrsim}{PU}{\9042\163}%\* U+2273  
18033 %\*  $\textgtrsim$  ->  $\apprge$  (wasysym)  
18034 % U+2274 NEITHER LESS-THAN NOR EQUIVALENT TO;  $\nlessim$  (tx-  
fonts/pxfonts)  
18035 \DeclareTextCommand{\textnlessim}{PU}{\9042\164}%\* U+2274  
18036 % U+2275 NEITHER GREATER-THAN NOR EQUIVALENT TO;  $\ngtrsim$  (tx-  
fonts/pxfonts)  
18037 \DeclareTextCommand{\textngtrsim}{PU}{\9042\165}%\* U+2275  
18038 % U+2276 LESS-THAN OR GREATER-THAN; lessorgreater;  $\lessgtr$  (AmS)  
18039 \DeclareTextCommand{\textlessgtr}{PU}{\9042\166}%\* U+2276  
18040 % U+2277 GREATER-THAN OR LESS-THAN; greaterorless;  $\gtrless$  (AmS)  
18041 \DeclareTextCommand{\textgtrless}{PU}{\9042\167}%\* U+2277  
18042 % U+2278 NEITHER LESS-THAN NOR GREATER-THAN;  $\ngtrless$  (tx-  
fonts/pxfonts)  
18043 \DeclareTextCommand{\textngtrless}{PU}{\9042\170}%\* U+2278  
18044 % U+2279 NEITHER GREATER-THAN NOR LESS-THAN;  $\nlessgtr$  (tx-  
fonts/pxfonts)  
18045 \DeclareTextCommand{\textnlessgtr}{PU}{\9042\171}%\* U+2279  
18046 % U+227A PRECEDES; precedes;  $\prec$  (LaTeX)  
18047 \DeclareTextCommand{\textprec}{PU}{\9042\172}%\* U+227A  
18048 % U+227B SUCCEEDS; succeeds;  $\succ$  (LaTeX)  
18049 \DeclareTextCommand{\textsucc}{PU}{\9042\173}%\* U+227B  
18050 % U+227C PRECEDES OR EQUAL TO;  $\preccurlyeq$  (AmS)  
18051 \DeclareTextCommand{\textpreccurlyeq}{PU}{\9042\174}%\* U+227C  
18052 % U+227D SUCCEEDS OR EQUAL TO;  $\succcurlyeq$  (AmS)  
18053 \DeclareTextCommand{\textsucccurlyeq}{PU}{\9042\175}%\* U+227D  
18054 % U+227E PRECEDES OR EQUIVALENT TO;  $\precsim$  (AmS)

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18055 \DeclareTextCommand{\textprecsim}{PU}{\9042\176}%* U+227E
18056 % \nprecsim (txfonts/pxfonts)
18057 \DeclareTextCommand{\textnprecsim}{PU}{\9042\176\83\070}%* U+227E U+0338
18058 % U+227F SUCCEEDS OR EQUIVALENT TO; \succsim (AmS)
18059 \DeclareTextCommand{\textsuccsim}{PU}{\9042\177}%* U+227F
18060 % \nsuccsim (txfonts/pxfonts)
18061 \DeclareTextCommand{\textnsuccsim}{PU}{\9042\177\83\070}%* U+227F U+0338
18062 % U+2280 DOES NOT PRECEDE; notprecedes; \nprec (AmS)
18063 \DeclareTextCommand{\textnprec}{PU}{\9042\200}%* U+2280
18064 % U+2281 DOES NOT SUCCEED; notsucceds; \nsucc (AmS)
18065 \DeclareTextCommand{\textnsucc}{PU}{\9042\201}%* U+2281
18066 % U+2282 SUBSET OF; propersubset; \subset (LaTeX)
18067 \DeclareTextCommand{\textsubset}{PU}{\9042\202}%* U+2282
18068 % U+2283 SUPERSET OF; propersuperset; \supset (LaTeX)
18069 \DeclareTextCommand{\textsupset}{PU}{\9042\203}%* U+2283
18070 % U+2284 NOT A SUBSET OF; notsubset; \nsubset (mathabx)
18071 \DeclareTextCommand{\textnsubset}{PU}{\9042\204}%* U+2284
18072 % U+2285 NOT A SUPERSET OF; notsuperset; \nsupset (mathabx)
18073 \DeclareTextCommand{\textnsupset}{PU}{\9042\205}%* U+2285
18074 % U+2286 SUBSET OF OR EQUAL TO; reflexsubset; \subseteq (LaTeX)
18075 \DeclareTextCommand{\textsubseteq}{PU}{\9042\206}%* U+2286
18076 % U+2287 SUPERSET OF OR EQUAL TO; reflexsuperset; \supseteq (LaTeX)
18077 \DeclareTextCommand{\textsupseteq}{PU}{\9042\207}%* U+2287
18078 % U+2288 NEITHER A SUBSET OF NOR EQUAL TO; \nsubseteq (AmS)
18079 \DeclareTextCommand{\textnsubseteq}{PU}{\9042\210}%* U+2288
18080 % U+2289 NEITHER A SUPERSET OF NOR EQUAL TO; \nsupseteq (AmS)
18081 \DeclareTextCommand{\textnsupseteq}{PU}{\9042\211}%* U+2289
18082 % U+228A SUBSET OF WITH NOT EQUAL TO; subsetnotequal; \subsetneq
      neq (AmS)
18083 \DeclareTextCommand{\textsubsetneq}{PU}{\9042\212}%* U+228A
18084 % U+228B SUPERSET OF WITH NOT EQUAL TO; supersetnotequal; \supsetneq
      neq (AmS)
18085 \DeclareTextCommand{\textsupsetneq}{PU}{\9042\213}%* U+228B
18086 % U+228D MULTISSET MULTIPLICATION; \cupdot (MnSymbol)
18087 \DeclareTextCommand{\textcupdot}{PU}{\9042\215}%* U+228D
18088 % U+228E MULTISSET UNION; \cupplus (MnSymbol)
18089 \DeclareTextCommand{\textcupplus}{PU}{\9042\216}%* U+228E
18090 % U+228F SQUARE IMAGE OF; \sqsubset (latexsym, ...)
18091 \DeclareTextCommand{\textsqsubset}{PU}{\9042\217}%* U+228F
18092 % \nsqsubset (txfonts/pxfonts)
18093 \DeclareTextCommand{\textnsqsubset}{PU}{\9042\217\83\070}%* U+228F U+0338
18094 % U+2290 SQUARE ORIGINAL OF; \sqsupset (latexsym, ...)
18095 \DeclareTextCommand{\textsqsupset}{PU}{\9042\220}%* U+2290
18096 % \nsqsupset (txfonts/pxfonts)
18097 \DeclareTextCommand{\textnsqsupset}{PU}{\9042\220\83\070}%* U+2290 U+0338
18098 % U+2291 SQUARE IMAGE OF OR EQUAL TO; \sqsubseteq (LaTeX)
18099 \DeclareTextCommand{\textsqsubseteq}{PU}{\9042\221}%* U+2291
18100 % \nsqsubseteq (txfonts/pxfonts)
18101 \DeclareTextCommand{\textnsqsubseteq}{PU}{\9042\221\83\070}%* U+2291 U+0338
18102 % U+2292 SQUARE ORIGINAL OF OR EQUAL TO; \sqsupseteq (LaTeX)
18103 \DeclareTextCommand{\textsqsupseteq}{PU}{\9042\222}%* U+2292
18104 % \nsqsupseteq (txfonts/pxfonts)
18105 \DeclareTextCommand{\textnsqsupseteq}{PU}{\9042\222\83\070}%* U+2292 U+0338
18106 % U+2293 SQUARE CAP; \sqcap (LaTeX)

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18107 \DeclareTextCommand{\textsqcap}{PU}{\9042\223}%* U+2293
18108 % U+2294 SQUARE CUP; \sqcup (LaTeX)
18109 \DeclareTextCommand{\textsqcup}{PU}{\9042\224}%* U+2294
18110 % U+2295 CIRCLED PLUS; circleplus; \oplus (LaTeX)
18111 \DeclareTextCommand{\textoplus}{PU}{\9042\225}%* U+2295
18112 %* \textoplus -> \varoplus (stmaryrd)
18113 % U+2296 CIRCLED MINUS; minuscircle; \ominus (LaTeX)
18114 \DeclareTextCommand{\textominus}{PU}{\9042\226}%* U+2296
18115 %* \textominus -> \varominus (stmaryrd)
18116 % U+2297 CIRCLED TIMES; circlemultiply; \otimes (LaTeX)
18117 \DeclareTextCommand{\textotimes}{PU}{\9042\227}%* U+2297
18118 %* \textotimes -> \varotimes (stmaryrd)
18119 % U+2298 CIRCLED DIVISION SLASH; \oslash (LaTeX)
18120 \DeclareTextCommand{\textoslash}{PU}{\9042\230}%* U+2298
18121 %* \textoslash -> \varoslash (stmaryrd)
18122 % U+2299 CIRCLED DOT OPERATOR; circle(d?)ot; \odot (LaTeX)
18123 \DeclareTextCommand{\textodot}{PU}{\9042\231}%* U+2299
18124 %* \textodot -> \varodot (stmaryrd)
18125 % U+229A CIRCLED RING OPERATOR; \circledcirc (AmS)
18126 \DeclareTextCommand{\textcircledcirc}{PU}{\9042\232}%* U+229A
18127 %* \textcircledcirc -> \ocirc (mathabx)
18128 %* \textcircledcirc -> \varocircle (stmaryrd)
18129 % U+229B CIRCLED ASTERISK OPERATOR; \circledast (AmS)
18130 \DeclareTextCommand{\textcircledast}{PU}{\9042\233}%* U+229B
18131 %* \textcircledast -> \varoast (stmaryrd)
18132 %* \textcircledast -> \oasterisk (mathabx)
18133 % U+229D CIRCLED DASH; \circleddash (AmS)
18134 \DeclareTextCommand{\textcircleddash}{PU}{\9042\235}%* U+229D
18135 % U+229E SQUARED PLUS; \boxplus (AmS)
18136 \DeclareTextCommand{\textboxplus}{PU}{\9042\236}%* U+229E
18137 % U+229F SQUARED MINUS; \boxminus (AmS)
18138 \DeclareTextCommand{\textboxminus}{PU}{\9042\237}%* U+229F
18139 % U+22A0 SQUARED TIMES; \boxtimes (AmS)
18140 \DeclareTextCommand{\textboxtimes}{PU}{\9042\240}%* U+22A0
18141 % U+22A1 SQUARED DOT OPERATOR; \boxdot (AmS)
18142 \DeclareTextCommand{\textboxdot}{PU}{\9042\241}%* U+22A1
18143 % U+22A2 RIGHT TACK; \vdash (LaTeX)
18144 \DeclareTextCommand{\textvdash}{PU}{\9042\242}%* U+22A2
18145 %* \textvdash -> \rightvdash (MnSymbol)
18146 % U+22A3 LEFT TACK; \dashv; \dashv (LaTeX)
18147 \DeclareTextCommand{\textdashv}{PU}{\9042\243}%* U+22A3
18148 %* \textdashv -> \leftvdash (MnSymbol)
18149 % \ndashv (mathabx)
18150 \DeclareTextCommand{\textndashv}{PU}{\9042\243\83\070}%* U+22A3 U+0338
18151 %* \textndashv -> \nleftvdash (MnSymbol)
18152 % U+22A4 DOWN TACK (=top); \tackdown; \top (LaTeX)
18153 \DeclareTextCommand{\textttop}{PU}{\9042\244}%* U+22A4
18154 %* \textttop -> \downvdash (MnSymbol)
18155 % \ndownvdash (MnSymbol)
18156 \DeclareTextCommand{\textndownvdash}{PU}{\9042\244\83\070}%* U+22A4 U+0338
18157 % U+22A5 UP TACK (=base, bottom); \bot (LaTeX)
18158 \DeclareTextCommand{\textbot}{PU}{\9042\245}%* U+22A5
18159 %* \textbot -> \upvdash (MnSymbol)
18160 % \nupvdash (MnSymbol)

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18161 \DeclareTextCommand{\textnupvdash}{PU}{\9042\245\83\070}%* U+22A5 U+0338
18162 %* \textnupvdash -> \nperp (MnSymbol)
18163 % U+22A8 TRUE; \vDash (AmS)
18164 \DeclareTextCommand{\textvDash}{PU}{\9042\250}%* U+22A8
18165 %* \textvDash -> \models (LaTeX)
18166 %* \textvDash -> \rightmodels (MnSymbol)
18167 % U+22A9 FORCES; \Vdash (AmS)
18168 \DeclareTextCommand{\textVdash}{PU}{\9042\251}%* U+22A9
18169 %* \textVdash -> \rightVdash (MnSymbol)
18170 % U+22AA TRIPLE VERTICAL BAR RIGHT TURNSTILE; \Vvdash (AmS)
18171 \DeclareTextCommand{\textVvdash}{PU}{\9042\252}%* U+22AA
18172 % \nVvash (mathabx)
18173 \DeclareTextCommand{\textnVvash}{PU}{\9042\252\83\070}%* U+22AA U+0338
18174 % U+22AB DOUBLE VERTICAL BAR DOUBLE RIGHT TURNSTILE;
18175 % \VDash (mathabx)
18176 \DeclareTextCommand{\textVDash}{PU}{\9042\253}%* U+22AB
18177 %* \textVDash -> \rightModels (MnSymbol)
18178 % U+22AC DOES NOT PROVE; \nvdash (AmS)
18179 \DeclareTextCommand{\textnvdash}{PU}{\9042\254}%* U+22AC
18180 %* \textnvdash -> \nrightvdash (MnSymbol)
18181 % U+22AD NOT TRUE; \nvDash (AmS)
18182 \DeclareTextCommand{\textnvDash}{PU}{\9042\255}%* U+22AD
18183 %* \textnvDash -> \nrightmodels (MnSymbol)
18184 %* \textnvDash -> \nmodels (MnSymbol)
18185 % U+22AE DOES NOT FORCE; \nVdash (txfonts/pxfonts)
18186 \DeclareTextCommand{\textnVdash}{PU}{\9042\256}%* U+22AE
18187 %* \textnVdash -> \nrightVdash (MnSymbol)
18188 % U+22AF NEGATED DOUBLE VERTICAL BAR DOUBLE RIGHT TURN-
      STILE; \nVDash (AmS)
18189 \DeclareTextCommand{\textnVDash}{PU}{\9042\257}%* U+22AF
18190 %* \textnVDash -> \nrightModels (MnSymbol)
18191 % U+22B2 NORMAL SUBGROUP OF; \lhd (latexsym, ...)
18192 \DeclareTextCommand{\textlhd}{PU}{\9042\262}%* U+22B2
18193 %* \textlhd -> \lessclosed (MnSymbol)
18194 % U+22B3 CONTAINS AS NORMAL SUBGROUP; \rhd (latexsym, ...)
18195 \DeclareTextCommand{\textrhd}{PU}{\9042\263}%* U+22B3
18196 %* \textrhd -> \gtrclosed (MnSymbol)
18197 % U+22B4 NORMAL SUBGROUP OF OR EQUAL TO; \unlhd (latexsym, ...)
18198 \DeclareTextCommand{\textunlhd}{PU}{\9042\264}%* U+22B4
18199 %* \textunlhd -> \leqclosed (MnSymbol)
18200 %* \textunlhd -> \trianglelefteq (MnSymbol)
18201 % U+22B5 CONTAINS AS NORMAL SUBGROUP OR EQUAL TO; \unrhd (la-
      texsym, ...)
18202 \DeclareTextCommand{\textunrhd}{PU}{\9042\265}%* U+22B5
18203 %* \textunrhd -> \geqclosed (MnSymbol)
18204 %* \textunrhd -> \trianglerighteq (MnSymbol)
18205 % U+22B6 ORIGINAL OF; \multimapdotbothA (txfonts/pxfonts)
18206 \DeclareTextCommand{\textmultimapdotbothA}{PU}{\9042\266}%* U+22B6
18207 % U+22B7 IMAGE OF; \multimapdotbothB (txfonts/pxfonts)
18208 \DeclareTextCommand{\textmultimapdotbothB}{PU}{\9042\267}%* U+22B7
18209 % U+22B8 MULTIMAP; \multimap (AmS, txfonts/pxfonts)
18210 \DeclareTextCommand{\textmultimap}{PU}{\9042\270}%* U+22B8
18211 % U+22BB XOR; \veebar (AmS)
18212 \DeclareTextCommand{\textveebar}{PU}{\9042\273}%* U+22BB

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18213 % U+22BC NAND; \barwedge (mathabx)  
18214 \DeclareTextCommand{\textbarwedge}{PU}{\9042\274}%\* U+22BC  
18215 % U+22C6 STAR OPERATOR; \star (LaTeX)  
18216 \DeclareTextCommand{\textstar}{PU}{\9042\306}%\* U+22C6  
18217 % U+22C7 DIVISION TIMES; \divideontimes (AmS)  
18218 \DeclareTextCommand{\textdivideontimes}{PU}{\9042\307}%\* U+22C7  
18219 % U+22C8 BOWTIE; \bowtie (LaTeX)  
18220 \DeclareTextCommand{\textbowtie}{PU}{\9042\310}%\* U+22C8  
18221 %\* \textbowtie -> \Bowtie (wasysym)  
18222 % U+22C9 LEFT NORMAL FACTOR SEMIDIRECT PRODUCT; \ltimes (AmS)  
18223 \DeclareTextCommand{\textltimes}{PU}{\9042\311}%\* U+22C9  
18224 % U+22CA RIGHT NORMAL FACTOR SEMIDIRECT PRODUCT;  
18225 % \rtimes (AmS)  
18226 \DeclareTextCommand{\textrtimes}{PU}{\9042\312}%\* U+22CA  
18227 % U+22CB LEFT SEMIDIRECT PRODUCT; \leftthreetimes (AmS)  
18228 \DeclareTextCommand{\textleftthreetimes}{PU}{\9042\313}%\* U+22CB  
18229 % U+22CC RIGHT SEMIDIRECT PRODUCT; \rightthreetimes (AmS)  
18230 \DeclareTextCommand{\textrightthreetimes}{PU}{\9042\314}%\* U+22CC  
18231 % U+22CD REVERSED TILDE EQUALS; \backsimeq (AmS)  
18232 \DeclareTextCommand{\textbacksimeq}{PU}{\9042\315}%\* U+22CD  
18233 % \nbacksimeq (txfonts/pxfonts)  
18234 \DeclareTextCommand{\textnbacksimeq}{PU}{\9042\315\83\070}%\* U+22CD U+0338  
18235 % U+22CE CURLY LOGICAL OR; curlyor; \curlyvee (AmS)  
18236 \DeclareTextCommand{\textcurlyvee}{PU}{\9042\316}%\* U+22CE  
18237 %\* \textcurlyvee -> \varcurlyvee (stmaryrd)  
18238 % U+22CF CURLY LOGICAL AND; curlyand; \curlywedge (AmS)  
18239 \DeclareTextCommand{\textcurlywedge}{PU}{\9042\317}%\* U+22CF  
18240 %\* \textcurlywedge -> \varcurlywedge (stmaryrd)  
18241 % U+22D0 DOUBLE SUBSET; \Subset (AmS)  
18242 \DeclareTextCommand{\textSubset}{PU}{\9042\320}%\* U+22D0  
18243 % \nSubset (txfonts/pxfonts)  
18244 \DeclareTextCommand{\textnSubset}{PU}{\9042\320\83\070}%\* U+22D0 U+0338  
18245 % U+22D1 DOUBLE SUPERSET; \Supset (AmS)  
18246 \DeclareTextCommand{\textSupset}{PU}{\9042\321}%\* U+22D1  
18247 % \nSupset (txfonts/pxfonts)  
18248 \DeclareTextCommand{\textnSupset}{PU}{\9042\321\83\070}%\* U+22D1 U+0338  
18249 % U+22D2 DOUBLE INTERSECTION; \Cap (AmS)  
18250 \DeclareTextCommand{\textCap}{PU}{\9042\322}%\* U+22D2  
18251 %\* \textCap -> \doublecap (mathabx)  
18252 % U+22D3 DOUBLE UNION; \Cup (AmS)  
18253 \DeclareTextCommand{\textCup}{PU}{\9042\323}%\* U+22D3  
18254 %\* \textCup -> \doublecup (mathabx)  
18255 % U+22D4 PITCHFORK; \pitchfork (mathabx)  
18256 \DeclareTextCommand{\textpitchfork}{PU}{\9042\324}%\* U+22D4  
18257 % U+22D6 LESS-THAN WITH DOT; \lessdot (AmS)  
18258 \DeclareTextCommand{\textlessdot}{PU}{\9042\326}%\* U+22D6  
18259 % U+22D7 GREATER-THAN WITH DOT; \gtrdot (AmS)  
18260 \DeclareTextCommand{\textgtrdot}{PU}{\9042\327}%\* U+22D7  
18261 % U+22D8 VERY MUCH LESS-THAN; \lll (AmS)  
18262 \DeclareTextCommand{\textlll}{PU}{\9042\330}%\* U+22D8  
18263 % U+22D9 VERY MUCH GREATER-THAN; \ggg (AmS)  
18264 \DeclareTextCommand{\textggg}{PU}{\9042\331}%\* U+22D9  
18265 % U+22DA LESS-THAN EQUAL TO OR GREATER-THAN; lesseqqualorgreater;  
18266 % \lesseqgtr (AmS)

18267 \DeclareTextCommand{\textlesseqgtr}{PU}{\9042\332}%\* U+22DA  
18268 % U+22DB GREATER-THAN EQUAL TO OR LESS-THAN; greaterequalorless;  
18269 % \gtreqless (AmS)  
18270 \DeclareTextCommand{\textgtreqless}{PU}{\9042\333}%\* U+22DB  
18271 % U+22DE EQUAL TO OR PRECEDES; \curlyeqprec (MnSymbol)  
18272 \DeclareTextCommand{\textcurlyeqprec}{PU}{\9042\336}%\* U+22DE  
18273 % \ncurlyeqprec (mathabx)  
18274 \DeclareTextCommand{\textncurlyeqprec}{PU}{\9042\336\83\070}%\* U+22DE U+0338  
18275 % U+22DF EQUAL TO OR SUCCEEDS; \curlyeqsucc (MnSymbol)  
18276 \DeclareTextCommand{\textcurlyeqsucc}{PU}{\9042\337}%\* U+22DF  
18277 % \ncurlyeqsucc (mathabx)  
18278 \DeclareTextCommand{\textncurlyeqsucc}{PU}{\9042\337\83\070}%\* U+22DF U+0338  
18279 % U+22E0 DOES NOT PRECEDE OR EQUAL; \npreccurlyeq (txfonts/pxfonts)  
18280 \DeclareTextCommand{\textnpreccurlyeq}{PU}{\9042\340}%\* U+22E0  
18281 % U+22E1 DOES NOT SUCCEED OR EQUAL; \nsucccurlyeq (txfonts/pxfonts)  
18282 \DeclareTextCommand{\textnsucccurlyeq}{PU}{\9042\341}%\* U+22E1  
18283 % U+22E2 NOT SQUARE IMAGE OF OR EQUAL TO; \nsqsubseteq (tx-  
fonts/pxfonts)  
18284 \DeclareTextCommand{\textnqsubseteq}{PU}{\9042\342}%\* U+22E2  
18285 % U+22E3 NOT SQUARE ORIGINAL OF OR EQUAL TO; \nsqsupseteq (tx-  
fonts/pxfonts)  
18286 \DeclareTextCommand{\textnqsupseteq}{PU}{\9042\343}%\* U+22E3  
18287 % U+22E4 SQUARE IMAGE OF OR NOT EQUAL TO; \sqsubsetneq (mathabx)  
18288 \DeclareTextCommand{\textsqsubsetneq}{PU}{\9042\344}%\* U+22E4  
18289 %\* \textsqsubsetneq -> \varsqsubsetneq (mathabx)  
18290 % U+22E5 SQUARE ORIGINAL OF OR NOT EQUAL TO; \sqsupsetneq (math-  
abx)  
18291 \DeclareTextCommand{\textsqsupsetneq}{PU}{\9042\345}%\* U+22E5  
18292 %\* \textsqsupsetneq -> \varsqsupsetneq (mathabx)  
18293 % U+22E6 LESS-THAN BUT NOT EQUIVALENT TO; \lnsim (AmS)  
18294 \DeclareTextCommand{\textlnsim}{PU}{\9042\346}%\* U+22E6  
18295 % U+22E7 GREATER-THAN BUT NOT EQUIVALENT TO; \gnsim (AmS)  
18296 \DeclareTextCommand{\textgnsim}{PU}{\9042\347}%\* U+22E7  
18297 % U+22E8 PRECEDES BUT NOT EQUIVALENT TO; \preccsim (AmS)  
18298 \DeclareTextCommand{\textpreccsim}{PU}{\9042\350}%\* U+22E8  
18299 % U+22E9 SUCCEEDS BUT NOT EQUIVALENT TO; \succsim (AmS)  
18300 \DeclareTextCommand{\textsuccsim}{PU}{\9042\351}%\* U+22E9  
18301 % U+22EA NOT NORMAL SUBGROUP OF; \ntriangleleft (AmS)  
18302 \DeclareTextCommand{\textntriangleleft}{PU}{\9042\352}%\* U+22EA  
18303 %\* \textntriangleleft -> \nlessclosed (MnSymbol)  
18304 % U+22EB DOES NOT CONTAIN AS NORMAL SUBGROUP; \ntriangleright-  
leright (AmS)  
18305 \DeclareTextCommand{\textntriangleright}{PU}{\9042\353}%\* U+22EB  
18306 %\* \textntriangleright -> \ngtrclosed (MnSymbol)  
18307 % U+22EC NOT NORMAL SUBGROUP OF OR EQUAL TO;  
18308 % \ntrianglelefteq (AmS)  
18309 \DeclareTextCommand{\textntrianglelefteq}{PU}{\9042\354}%\* U+22EC  
18310 % U+22ED DOES NOT CONTAIN AS NORMAL SUBGROUP OR EQUAL;  
18311 % \ntrianglerighteq (AmS)  
18312 \DeclareTextCommand{\textntrianglerighteq}{PU}{\9042\355}%\* U+22ED  
18313 %\* \textntrianglerighteq -> \textngeqclosed  
18314 % U+22EE VERTICAL ELLIPSIS; ellipsisvertical; \vdots (LaTeX)  
18315 \DeclareTextCommand{\textvdots}{PU}{\9042\356}%\* U+22EE  
18316 % U+22EF MIDLINE HORIZONTAL ELLIPSIS; \cdots (LaTeX)

18317 \DeclareTextCommand{\textcdots}{PU}{\9042\357}%\* U+22EF  
18318 % U+22F0 UP RIGHT DIAGONAL ELLIPSIS; \udots (MnSymbol)  
18319 \DeclareTextCommand{\textudots}{PU}{\9042\360}%\* U+22F0  
18320 % U+22F1 DOWN RIGHT DIAGONAL ELLIPSIS; \ddots (LaTeX)  
18321 \DeclareTextCommand{\textddots}{PU}{\9042\361}%\* U+22F1  
18322 % U+22F6 ELEMENT OF WITH OVERBAR; \barin (mathabx)  
18323 \DeclareTextCommand{\textbarin}{PU}{\9042\366}%\* U+22F6

#### 47.2.23 Miscellaneous Technical: U+2300 to U+23FF

18324 % U+2300 DIAMETER SIGN; \diameter (mathabx,wasysym)  
18325 \DeclareTextCommand{\textdiameter}{PU}{\9043\000}%\* U+2300  
18326 % U+2310 REVERSED NOT SIGN; \backneg (MnSymbol)  
18327 \DeclareTextCommand{\textbackneg}{PU}{\9043\020}%\* U+2310  
18328 % U+2311 SQUARE LOZENGE; \wasylozenge (wasysym)  
18329 \DeclareTextCommand{\textwasylozenge}{PU}{\9043\021}%\* U+2311  
18330 % U+2319 TURNED NOT SIGN; \invbackneg (MnSymbol)  
18331 \DeclareTextCommand{\textinvbackneg}{PU}{\9043\031}%\* U+2319  
18332 % U+231A WATCH; \clock (wasysym)  
18333 \DeclareTextCommand{\textclock}{PU}{\9043\032}%\* U+231A  
18334 %\* \textclock -> \Clocklogo (marvosym)  
18335 %\* \textclock -> \ClockLogo (marvosym)  
18336 % U+231C TOP LEFT CORNER; \ulcorner (AmS)  
18337 \DeclareTextCommand{\textulcorner}{PU}{\9043\034}%\* U+231C  
18338 % U+231D TOP RIGHT CORNER; \urcorner (AmS)  
18339 \DeclareTextCommand{\texturcorner}{PU}{\9043\035}%\* U+231D  
18340 % U+231E BOTTOM LEFT CORNER; \llcorner (AmS)  
18341 \DeclareTextCommand{\textllcorner}{PU}{\9043\036}%\* U+231E  
18342 % U+231F BOTTOM RIGHT CORNER; \lrcorner (AmS)  
18343 \DeclareTextCommand{\textlrcorner}{PU}{\9043\037}%\* U+231F  
18344 % U+2322 FROWN; \frown (LaTeX)  
18345 \DeclareTextCommand{\textfrown}{PU}{\9043\042}%\* U+2322  
18346 % U+2323 SMILE; \smile (LaTeX)  
18347 \DeclareTextCommand{\textsmile}{PU}{\9043\043}%\* U+2323  
18348 % U+2328 KEYBOARD; \Keyboard (marvosym)  
18349 \DeclareTextCommand{\textKeyboard}{PU}{\9043\050}%\* U+2328  
18350 % U+2329 LEFT-POINTING ANGLE BRACKET; \angleleft; \angle (LaTeX)  
18351 \DeclareTextCommand{\textlangle}{PU}{\9043\051}%\* U+2329  
18352 % U+232A RIGHT-POINTING ANGLE BRACKET; \angleright; \rangle (LaTeX)  
18353 \DeclareTextCommand{\textrangle}{PU}{\9043\052}%\* U+232A  
18354 % U+2339 APL FUNCTIONAL SYMBOL QUAD DIVIDE; \APLinv (wasysym)  
18355 \DeclareTextCommand{\textAPLinv}{PU}{\9043\071}%\* U+2339  
18356 % U+233C APL FUNCTIONAL SYMBOL QUAD CIRCLE; \Tumbler (marvosym)  
18357 \DeclareTextCommand{\textTumbler}{PU}{\9043\074}%\* U+233C  
18358 % U+233D APL FUNCTIONAL SYMBOL CIRCLE STILE; \baro (stmaryrd)  
18359 \DeclareTextCommand{\textstmaryrdbaro}{PU}{\9043\075}%\* U+233D  
18360 %\* \textstmaryrdbaro -> \baro (stmaryrd)  
18361 % U+233F APL FUNCTIONAL SYMBOL SLASH BAR; \notslash (wasysym)  
18362 \DeclareTextCommand{\textnotslash}{PU}{\9043\077}%\* U+233F  
18363 % U+2340 APL FUNCTIONAL SYMBOL BACKSLASH BAR;  
18364 % \notbackslash (wasysym)  
18365 \DeclareTextCommand{\textnotbackslash}{PU}{\9043\100}%\* U+2340  
18366 % U+2342 APL FUNCTIONAL SYMBOL QUAD BACKSLASH; \boxbackslash (mathabx)



18367 \DeclareTextCommand{\textboxbackslash}{PU}{\9043\102}%\* U+2342  
 18368 % U+2347 APL FUNCTIONAL SYMBOL QUAD LEFTWARDS ARROW;  
 18369 % \APLleftarrowbox (wasysym)  
 18370 \DeclareTextCommand{\textAPLleftarrowbox}{PU}{\9043\107}%\* U+2347  
 18371 % U+2348 APL FUNCTIONAL SYMBOL QUAD RIGHTWARDS ARROW;  
 18372 % \APLrightarrowbox (wasysym)  
 18373 \DeclareTextCommand{\textAPLrightarrowbox}{PU}{\9043\110}%\* U+2348  
 18374 % U+2350 APL FUNCTIONAL SYMBOL QUAD UPWARDS ARROW; \APLuparrowbox (wasysym)  
 18375 \DeclareTextCommand{\textAPLuparrowbox}{PU}{\9043\120}%\* U+2350  
 18376 % U+2357 APL FUNCTIONAL SYMBOL QUAD DOWNWARDS ARROW;  
 18377 % \APLdownarrowbox (wasysym)  
 18378 \DeclareTextCommand{\textAPLdownarrowbox}{PU}{\9043\127}%\* U+2357  
 18379 % U+235E APL FUNCTIONAL SYMBOL QUOTE QUAD;  
 18380 % \APLinput (wasysym)  
 18381 \DeclareTextCommand{\textAPLinput}{PU}{\9043\136}%\* U+235E  
 18382 % U+2370 APL FUNCTIONAL SYMBOL QUAD QUESTION; \Request (china2e)  
 18383 \DeclareTextCommand{\textRequest}{PU}{\9043\160}%\* U+2370  
 18384 % U+2393 DIRECT CURRENT SYMBOL FORM TWO; \Beam (marvosym)  
 18385 \DeclareTextCommand{\textBeam}{PU}{\9043\223}%\* U+2393  
 18386 % U+2394 SOFTWARE-FUNCTION SYMBOL; \hexagon (wasysym)  
 18387 \DeclareTextCommand{\texthexagon}{PU}{\9043\224}%\* U+2394  
 18388 % U+2395 APL FUNCTIONAL SYMBOL QUAD; \APLbox (wasysym)  
 18389 \DeclareTextCommand{\textAPLbox}{PU}{\9043\225}%\* U+2395  
 18390 % U+23ED BLACK RIGHT-POINTING DOUBLE TRIANGLE WITH VERTICAL BAR;  
 18391 % \ForwardToIndex (marvosym)  
 18392 \DeclareTextCommand{\textForwardToIndex}{PU}{\9043\355}%\* U+23ED  
 18393 % U+23EE BLACK LEFT-POINTING DOUBLE TRIANGLE WITH VERTICAL BAR;  
 18394 % \RewindToIndex (marvosym)  
 18395 \DeclareTextCommand{\textRewindToIndex}{PU}{\9043\356}%\* U+23EE

#### 47.2.24 Control Pictures: U+2400 to U+243F

18396 % U+2422 BLANK SYMBOL  
 18397 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422  
 18398 % U+2423 OPEN BOX; blank  
 18399 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

#### 47.2.25 Optical Character Recognition: U+2440 to U+245F

18400 % U+244A OCR DOUBLE BACKSLASH; \bbslash (stmaryrd)  
 18401 \DeclareTextCommand{\textbbslash}{PU}{\9044\112}%\* U+244A  
 18402 %\* \textbbslash -> \varparallelinv (txfonts/pxfonts)

#### 47.2.26 Enclosed Alphanumerics: U+2460 to U+24FF

18403 % U+2460 CIRCLED DIGIT ONE; onecircle  
 18404 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460  
 18405 % U+2461 CIRCLED DIGIT TWO; twocircle  
 18406 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461  
 18407 % U+2462 CIRCLED DIGIT THREE; threecircle  
 18408 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462  
 18409 % U+2463 CIRCLED DIGIT FOUR; fourcircle  
 18410 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463  
 18411 % U+2464 CIRCLED DIGIT FIVE; fivecircle

18412 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464  
18413 % U+2465 CIRCLED DIGIT SIX; sixcircle  
18414 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465  
18415 % U+2466 CIRCLED DIGIT SEVEN; sevencircle  
18416 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466  
18417 % U+2467 CIRCLED DIGIT EIGHT; eightcircle  
18418 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467  
18419 % U+2468 CIRCLED DIGIT NINE; ninecircle  
18420 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468  
18421 % U+2469 CIRCLED NUMBER TEN; tencircle  
18422 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469  
18423 % U+246A CIRCLED NUMBER ELEVEN; elevencircle  
18424 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A  
18425 % U+246B CIRCLED NUMBER TWELVE; twelvecircle  
18426 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B  
18427 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle  
18428 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C  
18429 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle  
18430 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D  
18431 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle  
18432 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E  
18433 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle  
18434 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F  
18435 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle  
18436 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470  
18437 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle  
18438 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471  
18439 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle  
18440 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472  
18441 % U+2473 CIRCLED NUMBER TWENTY; twentycircle  
18442 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473  
18443 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle  
18444 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6  
18445 % \CircledA (marvosym)  
18446 \DeclareTextCommand{\textCircledA}{PU}{\9044\266}%\* U+24B6  
18447 %\* \textCircledA -> \CleaningA  
18448 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle  
18449 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7  
18450 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle  
18451 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8  
18452 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle  
18453 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9  
18454 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle  
18455 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA  
18456 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle  
18457 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB  
18458 % \CleaningF (marvosym)  
18459 \DeclareTextCommand{\textCleaningF}{PU}{\9044\273}%\* U+24BB  
18460 % \CleaningFF (marvosym)  
18461 \DeclareTextCommand{\textCleaningFF}{PU}{\9044\273\83\062}%\* U+24BB U+0332  
18462 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle  
18463 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC  
18464 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle  
18465 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD

18466 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle  
18467 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE  
18468 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle  
18469 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF  
18470 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle  
18471 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0  
18472 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle  
18473 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1  
18474 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle  
18475 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2  
18476 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle  
18477 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3  
18478 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle  
18479 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4  
18480 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle  
18481 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5  
18482 % \CleaningP (marvosym)  
18483 \DeclareTextCommand{\textCleaningP}{PU}{\9044\305}%\* U+24C5  
18484 % \CleaningPP (marvosym)  
18485 \DeclareTextCommand{\textCleaningPP}{PU}{\9044\305\83\062}%\* U+24C5 U+0332  
18486 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle  
18487 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6  
18488 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle  
18489 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7  
18490 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle  
18491 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8  
18492 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle  
18493 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9  
18494 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle  
18495 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA  
18496 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle  
18497 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB  
18498 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle  
18499 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC  
18500 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle  
18501 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD  
18502 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle  
18503 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE  
18504 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle  
18505 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF  
18506 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle  
18507 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0  
18508 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle  
18509 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1  
18510 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle  
18511 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2  
18512 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle  
18513 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3  
18514 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle  
18515 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4  
18516 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle  
18517 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5  
18518 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle  
18519 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6

18520 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle  
 18521 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7  
 18522 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle  
 18523 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8  
 18524 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcircle  
 18525 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9  
 18526 % U+24DA CIRCLED LATIN SMALL LETTER K; kcircle  
 18527 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA  
 18528 % U+24DB CIRCLED LATIN SMALL LETTER L; lcircle  
 18529 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB  
 18530 % U+24DC CIRCLED LATIN SMALL LETTER M; mcircle  
 18531 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC  
 18532 % U+24DD CIRCLED LATIN SMALL LETTER N; ncircle  
 18533 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD  
 18534 % U+24DE CIRCLED LATIN SMALL LETTER O; ocircle  
 18535 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE  
 18536 % U+24DF CIRCLED LATIN SMALL LETTER P; pcircle  
 18537 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF  
 18538 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcircle  
 18539 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0  
 18540 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcircle  
 18541 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1  
 18542 % U+24E2 CIRCLED LATIN SMALL LETTER S; scircle  
 18543 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2  
 18544 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcircle  
 18545 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3  
 18546 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucircle  
 18547 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4  
 18548 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcircle  
 18549 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5  
 18550 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcircle  
 18551 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6  
 18552 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcircle  
 18553 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7  
 18554 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycircle  
 18555 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8  
 18556 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcircle  
 18557 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9  
 18558 % U+24EA CIRCLED DIGIT ZERO  
 18559 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

#### 47.2.27 Box Drawing: U+2500 to 257F

18560 % U+2504 BOX DRAWINGS LIGHT TRIPLE DASH HORIZONTAL; \Cutting-  
 Line (marvosym)  
 18561 \DeclareTextCommand{\textCuttingLine}{PU}{\9045\004}%\* U+2504  
 18562 %\* \textCuttingLine -> \Kutline (marvosym)  
 18563 %\* \textCuttingLine -> \CutLine (marvosym)  
 18564 %\* \textCuttingLine -> \Cutline (marvosym)

#### 47.2.28 Geometric Shapes: U+25A0 to U+25FF

18565 % U+25B2 BLACK UP-POINTING TRIANGLE; \UParrow (wasysym)  
 18566 \DeclareTextCommand{\textUParrow}{PU}{\9045\262}%\* U+25B2  
 18567 %\* \textUParrow -> \MoveUp (marvosym)  
 18568 % U+25B3 WHITE UP-POINTING TRIANGLE; whiteuppointingtriangle;

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18569 % \bigtriangleup (LaTeX)
18570 \DeclareTextCommand{\textbigtriangleup}{PU}{\9045\263}%* U+25B3
18571 %* \textbigtriangleup -> \APLup (wasysym)
18572 %* \textbigtriangleup -> \Bleech (marvosym)
18573 % U+25B6 BLACK RIGHT-POINTING TRIANGLE; \Forward (marvosym)
18574 \DeclareTextCommand{\textForward}{PU}{\9045\266}%* U+25B6
18575 % U+25B7 WHITE RIGHT-POINTING TRIANGLE (= z notation range restric-
tion);
18576 % whiterightpointingtriangle; \triangleright (LaTeX)
18577 \DeclareTextCommand{\texttriangleright}{PU}{\9045\267}%* U+25B7
18578 % U+25BA BLACK RIGHT-POINTING POINTER; \RHD (wasysym)
18579 \DeclareTextCommand{\textRHD}{PU}{\9045\272}%* U+25BA
18580 % U+25BC BLACK DOWN-POINTING TRIANGLE; \DOWNarrow (wasysym)
18581 \DeclareTextCommand{\textDOWNarrow}{PU}{\9045\274}%* U+25BC
18582 %* \textDOWNarrow -> \MoveDown (marvosym)
18583 % U+25BD WHITE DOWN-POINTING TRIANGLE; whitedownpointingtri-
angle;
18584 % \bigtriangledown (LaTeX)
18585 \DeclareTextCommand{\textbigtriangledown}{PU}{\9045\275}%* U+25BD
18586 %* \textbigtriangledown -> \APLdown (wasysym)
18587 % U+25C0 BLACK LEFT-POINTING TRIANGLE; \Rewind (marvosym)
18588 \DeclareTextCommand{\textRewind}{PU}{\9045\300}%* U+25C0
18589 % U+25C1 WHITE RIGHT-POINTING TRIANGLE (= z notation domain re-
striction);
18590 % whiteleftpointingtriangle; \triangleleft (LaTeX)
18591 \DeclareTextCommand{\texttriangleleft}{PU}{\9045\301}%* U+25C1
18592 % U+25C4 BLACK LEFT-POINTING POINTER; \LHD (wasysym)
18593 \DeclareTextCommand{\textLHD}{PU}{\9045\304}%* U+25C4
18594 % U+25C7 WHITE DIAMOND; whitediamond; \diamond (LaTeX)
18595 \DeclareTextCommand{\textdiamond}{PU}{\9045\307}%* U+25C7
18596 %* \textdiamond -> \Diamond (wasysym)
18597 % U+25CA LOZENGE; lozenge; \lozenge (AmS)
18598 \DeclareTextCommand{\textlozenge}{PU}{\9045\312}%* U+25CA
18599 % U+25D6 LEFT HALF BLACK CIRCLE; \LEFTCIRCLE (wasysym)
18600 \DeclareTextCommand{\textLEFTCIRCLE}{PU}{\9045\326}%* U+25D6
18601 % U+25D7 RIGHT HALF BLACK CIRCLE; \RIGHTCIRCLE (wasysym)
18602 \DeclareTextCommand{\textRIGHTCIRCLE}{PU}{\9045\327}%* U+25D7
18603 % U+25E6 WHITE BULLET; *openbullet, whitebullet
18604 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}%* U+25E6
18605 % U+25EB WHITE SQUARE WITH VERTICAL BISECTING LINE;
18606 % \boxbar (stmaryrd)
18607 \DeclareTextCommand{\textboxbar}{PU}{\9045\353}%* U+25EB
18608 % U+25EF LARGE CIRCLE; largecircle
18609 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}%* U+25EF
18610 %* \textbigcircle -> \varbigcirc (stmaryrd)
18611 %

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#### 47.2.29 Miscellaneous Symbols: U+2600 to U+26FF

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18612 % U+2601 CLOUD; \Cloud (ifsym)
18613 \DeclareTextCommand{\textCloud}{PU}{\9046\001}%* U+2601
18614 % U+2605 BLACK STAR; \FiveStar (bbding)
18615 \DeclareTextCommand{\textFiveStar}{PU}{\9046\005}%* U+2605
18616 % U+2606 WHITE STAR; \FiveStarOpen (bbding)
18617 \DeclareTextCommand{\textFiveStarOpen}{PU}{\9046\006}%* U+2606

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18618 % U+260E BLACK TELEPHONE; telephoneblack; \Phone (bbding)  
18619 \DeclareTextCommand{\textPhone}{PU}{\9046\016}%\* U+260E  
18620 %\* \textPhone -> \Telefon (marvosym)  
18621 % U+2610 BALLOT BOX; \boxempty (stmaryrd)  
18622 \DeclareTextCommand{\textboxempty}{PU}{\9046\020}%\* U+2610  
18623 %\* \textboxempty -> \Box (wasysym)  
18624 % U+2611 BALLOT BOX WITH CHECK; \Checkedbox (marvosym)  
18625 \DeclareTextCommand{\textCheckedbox}{PU}{\9046\021}%\* U+2611  
18626 %\* \textCheckedbox -> \CheckedBox (marvosym)  
18627 % U+2612 BALLOT BOX WITH X; \Crossedbox (marvosym)  
18628 \DeclareTextCommand{\textCrossedbox}{PU}{\9046\022}%\* U+2612  
18629 %\* \textCrossedbox -> \XBox (wasysym)  
18630 %\* \textCrossedbox -> \CrossedBox (marvosym)  
18631 % U+2615 HOT BEVERAGE; \Coffeecup (marvosym)  
18632 \DeclareTextCommand{\textCoffeecup}{PU}{\9046\025}%\* U+2615  
18633 % U+261A BLACK LEFT POINTING INDEX; \HandCuffLeft (bbding)  
18634 \DeclareTextCommand{\textHandCuffLeft}{PU}{\9046\032}%\* U+261A  
18635 % U+261B BLACK RIGHT POINTING INDEX; \HandCuffRight (bbding)  
18636 \DeclareTextCommand{\textHandCuffRight}{PU}{\9046\033}%\* U+261B  
18637 % U+261C WHITE LEFT POINTING INDEX; \HandLeft (bbding)  
18638 \DeclareTextCommand{\textHandLeft}{PU}{\9046\034}%\* U+261C  
18639 %\* \textHandLeft -> \rightpointleft (fourier)  
18640 % U+261E WHITE RIGHT POINTING INDEX; \HandRight (bbding)  
18641 \DeclareTextCommand{\textHandRight}{PU}{\9046\036}%\* U+261E  
18642 %\* \textHandRight -> \leftpointright (fourier)  
18643 %\* \textHandRight -> \PointingHand (marvosym)  
18644 %\* \textHandRight -> \Pointinghand (marvosym)  
18645 % U+2622 RADIOACTIVE SIGN; \Radioactivity (marvosym)  
18646 \DeclareTextCommand{\textRadioactivity}{PU}{\9046\042}%\* U+2622  
18647 %\* \textRadioactivity -> \Radiation (ifsym)  
18648 % U+2623 BIOHAZARD SIGN; \Biohazard (marvosym)  
18649 \DeclareTextCommand{\textBiohazard}{PU}{\9046\043}%\* U+2623  
18650 % U+2625 ANKH; \Ankh (marvosym)  
18651 \DeclareTextCommand{\textAnkh}{PU}{\9046\045}%\* U+2625  
18652 % U+262F YIN YANG; \YinYang (marvosym)  
18653 \DeclareTextCommand{\textYinYang}{PU}{\9046\057}%\* U+262F  
18654 %\* \textYinYang -> \Yinyang (marvosym)  
18655 %\* \textYinYang -> \YingYang (marvosym)  
18656 %\* \textYinYang -> \Yingyang (marvosym)  
18657 % U+2639 WHITE FROWNING FACE; \frownie (wasysym)  
18658 \DeclareTextCommand{\textfrownie}{PU}{\9046\071}%\* U+2639  
18659 %\* \textfrownie -> \Frowny (marvosym)  
18660 % U+263A WHITE SMILING FACE; \smiley (wasysym)  
18661 \DeclareTextCommand{\textsmiley}{PU}{\9046\072}%\* U+263A  
18662 %\* \textsmiley -> \Smiley (marvosym)  
18663 % U+263B BLACK SMILING FACE; \blacksmiley (wasysym)  
18664 \DeclareTextCommand{\textblacksmiley}{PU}{\9046\073}%\* U+263B  
18665 % U+263C WHITE SUN WITH RAYS; \sun (wasysym)  
18666 \DeclareTextCommand{\textsun}{PU}{\9046\074}%\* U+263C  
18667 %\* \textsun -> \Sun (marvosym)  
18668 % U+263D FIRST QUARTER MOON; \leftmoon (wasysym, mathabx)  
18669 \DeclareTextCommand{\textleftmoon}{PU}{\9046\075}%\* U+263D  
18670 % U+263E LAST QUARTER MOON; \rightmoon (wasysym, mathabx)  
18671 \DeclareTextCommand{\textrightmoon}{PU}{\9046\076}%\* U+263E

18672 % U+263F MERCURY; \mercury (wasysym)  
18673 \DeclareTextCommand{\textmercury}{PU}{\9046\077}%\* U+263F  
18674 %\* \textmercury -> \Mercury (marvosym)  
18675 % U+2640 FEMALE SIGN; female; \female (wasysym)  
18676 \DeclareTextCommand{\textPUfemale}{PU}{\9046\100}% U+2640  
18677 %\* \textPUfemale -> \textfemale (tipx)  
18678 %\* \textPUfemale -> \female (wasysym)  
18679 %\* \textPUfemale -> \venus (wasysym)  
18680 %\* \textPUfemale -> \Venus (marvosym)  
18681 %\* \textPUfemale -> \Female (marvosym)  
18682 % U+2641 EARTH; \earth (wasysym)  
18683 \DeclareTextCommand{\textearth}{PU}{\9046\101}%\* U+2641  
18684 %\* \textearth -> \Earth (marvosym)  
18685 % U+2642 MALE SIGN; male, mars; \male (wasysym)  
18686 \DeclareTextCommand{\textmale}{PU}{\9046\102}%\* U+2642  
18687 %\* \textmale -> \mars (wasysym)  
18688 %\* \textmale -> \Mars (marvosym)  
18689 %\* \textmale -> \Male (marvosym)  
18690 % U+2643 JUPITER; \jupiter (wasysym)  
18691 \DeclareTextCommand{\textjupiter}{PU}{\9046\103}%\* U+2643  
18692 %\* \textjupiter -> \Jupiter (marvosym)  
18693 % U+2644 SATURN; \saturn (wasysym)  
18694 \DeclareTextCommand{\textsaturn}{PU}{\9046\104}%\* U+2644  
18695 %\* \textsaturn -> \Saturn (marvosym)  
18696 % U+2645 URANUS; \uranus (wasysym)  
18697 \DeclareTextCommand{\texturanus}{PU}{\9046\105}%\* U+2645  
18698 %\* \texturanus -> \Uranus (marvosym)  
18699 % U+2646 NEPTUNE; \neptune (wasysym)  
18700 \DeclareTextCommand{\textneptune}{PU}{\9046\106}%\* U+2646  
18701 %\* \textneptune -> \Neptune (marvosym)  
18702 % U+2647 PLUTO; \pluto (wasysym)  
18703 \DeclareTextCommand{\textpluto}{PU}{\9046\107}%\* U+2647  
18704 %\* \textpluto -> \Pluto (marvosym)  
18705 % U+2648 ARIES; \aries (wasysym)  
18706 \DeclareTextCommand{\textaries}{PU}{\9046\110}%\* U+2648  
18707 %\* \textaries -> \Aries (marvosym)  
18708 % U+2649 TAURUS; \taurus (wasysym)  
18709 \DeclareTextCommand{\texttaurus}{PU}{\9046\111}%\* U+2649  
18710 %\* \texttaurus -> \Taurus (marvosym)  
18711 % U+264A GEMINI; \gemini (wasysym)  
18712 \DeclareTextCommand{\textgemini}{PU}{\9046\112}%\* U+264A  
18713 %\* \textgemini -> \Gemini (marvosym)  
18714 % U+264B CANCER; \cancer (wasysym)  
18715 \DeclareTextCommand{\textcancer}{PU}{\9046\113}%\* U+264B  
18716 %\* \textcancer -> \Cancer (marvosym)  
18717 % U+264C LEO; \leo (wasysym)  
18718 \DeclareTextCommand{\textleo}{PU}{\9046\114}%\* U+264C  
18719 %\* \textleo -> \Leo (marvosym)  
18720 % U+264D VIRGO; \virgo (wasysym)  
18721 \DeclareTextCommand{\textvirgo}{PU}{\9046\115}%\* U+264D  
18722 %\* \textvirgo -> \Virgo (marvosym)  
18723 % U+264E LIBRA; \libra (wasysym)  
18724 \DeclareTextCommand{\textlibra}{PU}{\9046\116}%\* U+264E  
18725 %\* \textlibra -> \Libra (marvosym)

18726 % U+264F SCORPIO; \scorpio (wasysym)  
18727 \DeclareTextCommand{\textscorpio}{PU}{\9046\117}%\* U+264F  
18728 %\* \textscorpio -> \Scorpio (marvosym)  
18729 % U+2650 SAGITTARIUS; \sagittarius (wasysym)  
18730 \DeclareTextCommand{\textsagittarius}{PU}{\9046\120}%\* U+2650  
18731 %\* \textsagittarius -> \Sagittarius (marvosym)  
18732 % U+2651 CAPRICORN; \capricornus (wasysym)  
18733 \DeclareTextCommand{\textcapricornus}{PU}{\9046\121}%\* U+2651  
18734 %\* \textcapricornus -> \Capricorn (marvosym)  
18735 % U+2652 AQUARIUS; \aquarius (wasysym)  
18736 \DeclareTextCommand{\textaquarius}{PU}{\9046\122}%\* U+2652  
18737 %\* \textaquarius -> \Aquarius (marvosym)  
18738 % U+2653 PISCES; \pisces (wasysym)  
18739 \DeclareTextCommand{\textpisces}{PU}{\9046\123}%\* U+2653  
18740 %\* \textpisces -> \Pisces (marvosym)  
18741 % U+2660 BLACK SPADE SUIT; spade, spadesuitblack; \spadesuit (LaTeX)  
18742 \DeclareTextCommand{\textspadesuitblack}{PU}{\9046\140}% U+2660  
18743 %\* \textspadesuitblack -> \spadesuit (MnSymbol)  
18744 % U+2661 WHITE HEART SUIT; heartsuitwhite; \heartsuit (LaTeX)  
18745 \DeclareTextCommand{\textheartsuitwhite}{PU}{\9046\141}% U+2661  
18746 %\* \textheartsuitwhite -> \Heart (marvosym)  
18747 %\* \textheartsuitwhite -> \heartsuit (MnSymbol)  
18748 % U+2662 WHITE DIAMOND SUIT; diamondsuitwhite; \diamondsuit (LaTeX)  
18749 \DeclareTextCommand{\textdiamondsuitwhite}{PU}{\9046\142}% U+2662  
18750 %\* \textdiamondsuitwhite -> \diamondsuit (MnSymbol)  
18751 % U+2663 BLACK CLUB SUIT; club, clubsuitblack; \clubsuit (LaTeX)  
18752 \DeclareTextCommand{\textclubsuitblack}{PU}{\9046\143}% U+2663  
18753 %\* \textclubsuitblack -> \clubsuit (MnSymbol)  
18754 % U+2664 WHITE SPADE SUIT; spadesuitwhite  
18755 \DeclareTextCommand{\textspadesuitwhite}{PU}{\9046\144}% U+2664  
18756 % U+2665 BLACK HEART SUIT; heartsuitblack, heart  
18757 \DeclareTextCommand{\textheartsuitblack}{PU}{\9046\145}% U+2665  
18758 % U+2666 BLACK DIAMOND SUIT; diamond  
18759 \DeclareTextCommand{\textdiamondsuitblack}{PU}{\9046\146}% U+2666  
18760 % U+2667 WHITE CLUB SUIT; clubsuitwhite  
18761 \DeclareTextCommand{\textclubsuitwhite}{PU}{\9046\147}% U+2667  
18762 % U+2669 QUARTER NOTE; quarternote; \quarternote (wasysym, arev)  
18763 \DeclareTextCommand{\textquarternote}{PU}{\9046\151}%\* U+2669  
18764 % U+266A EIGHTH NOTE; musicalnote; \textmusicalnote (textcomp)  
18765 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}% U+266A  
18766 %\* \textmusicalnote -> \eighthnote (wasysym, arev)  
18767 % U+266B BEAMED EIGHTH NOTES; eighthnotebeamed; \twonotes (wasysym)  
18768 \DeclareTextCommand{\texttwonotes}{PU}{\9046\153}%\* U+266B  
18769 % U+266C BEAMED SIXTEENTH NOTES; beamedsixteenthnotes; \sixteenth-  
note (arev)  
18770 \DeclareTextCommand{\textsixteenthnote}{PU}{\9046\154}%\* U+266C  
18771 % U+266D MUSIC FLAT SIGN; musicflatsign; \flat (LaTeX)  
18772 \DeclareTextCommand{\textflat}{PU}{\9046\155}%\* U+266D  
18773 % U+266E MUSIC NATURAL SIGN; \natural (LaTeX)  
18774 \DeclareTextCommand{\textnatural}{PU}{\9046\156}%\* U+266E  
18775 % U+266F MUSIC SHARP SIGN; musicsharpsign; \sharp (LaTeX)  
18776 \DeclareTextCommand{\textsharp}{PU}{\9046\157}%\* U+266F  
18777 % U+2672 UNIVERSAL RECYCLING SYMBOL; \recycle (recycle)  
18778 \DeclareTextCommand{\textrecycle}{PU}{\9046\162}%\* U+2672



18779 %\* \textrecycle -> \Recycling (marvosym)  
18780 % U+267F WHEELCHAIR SYMBOL; \Wheelchair (marvosym)  
18781 \DeclareTextCommand{\textWheelchair}{PU}{\9046\177}%\* U+267F  
18782 % U+2691 BLACK FLAG; \Flag (ifsym)  
18783 \DeclareTextCommand{\textFlag}{PU}{\9046\221}%\* U+2691  
18784 %\* \textFlag -> \VarFlag (ifsym)  
18785 % U+2692 HAMMER AND PICK; \MineSign (marvosym)  
18786 \DeclareTextCommand{\textMineSign}{PU}{\9046\222}%\* U+2692  
18787 % U+2694 CROSSED SWORDS; \dsmilitary (dictsym)  
18788 \DeclareTextCommand{\textdsmilitary}{PU}{\9046\224}%\* U+2694  
18789 %\* \textdsmilitary -> \textxswup (fourier)  
18790 % U+2695 STAFF OF AESCULAPIUS; \dsmedical (dictsym)  
18791 \DeclareTextCommand{\textdsmedical}{PU}{\9046\225}%\* U+2695  
18792 % U+2696 SCALES; \dsjuridical (dictsym)  
18793 \DeclareTextCommand{\textdsjuridical}{PU}{\9046\226}%\* U+2696  
18794 % U+2697 ALEMBIC; \dschemical (dictsym)  
18795 \DeclareTextCommand{\textdschemical}{PU}{\9046\227}%\* U+2697  
18796 % U+2698 FLOWER; \dsbiological (dictsym)  
18797 \DeclareTextCommand{\textdsbiological}{PU}{\9046\230}%\* U+2698  
18798 % U+269A STAFF OF HERMES; \dscommercial (dictsym)  
18799 \DeclareTextCommand{\textdscommercial}{PU}{\9046\232}%\* U+269A  
18800 % U+269D OUTLINED WHITE STAR; \manstar (manfnt)  
18801 \DeclareTextCommand{\textmanstar}{PU}{\9046\235}%\* U+269D  
18802 % U+26A0 WARNING SIGN; \danger (fourier)  
18803 \DeclareTextCommand{\textdanger}{PU}{\9046\240}%\* U+26A0  
18804 % U+26A2 DOUBLED FEMALE SIGN; \FemaleFemale (marvosym)  
18805 \DeclareTextCommand{\textFemaleFemale}{PU}{\9046\242}%\* U+26A2  
18806 % U+26A3 DOUBLED MALE SIGN; \MaleMale (marvosym)  
18807 \DeclareTextCommand{\textMaleMale}{PU}{\9046\243}%\* U+26A3  
18808 % U+26A4 INTERLOCKED FEMALE AND MALE SIGN; \FemaleMale (marvosym)  
18809 \DeclareTextCommand{\textFemaleMale}{PU}{\9046\244}%\* U+26A4  
18810 % U+26A5 MALE AND FEMALE SIGN; \Hermaphrodite (marvosym)  
18811 \DeclareTextCommand{\textHermaphrodite}{PU}{\9046\245}%\* U+26A5  
18812 % U+26AA MEDIUM WHITE CIRCLE; \Neural (marvosym)  
18813 \DeclareTextCommand{\textNeutral}{PU}{\9046\252}%\* U+26AA  
18814 % U+26AD MARRIAGE SYMBOL  
18815 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD  
18816 % U+26AE DIVORCE SYMBOL  
18817 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE  
18818 % U+26B2 NEUTER; \textunconfemale (tipx)  
18819 \DeclareTextCommand{\textPUunconfemale}{PU}{\9046\262}% U+26B2  
18820 %\* \textPUunconfemale -> \textunconfemale (tipx)  
18821 % U+26B9 SEXTILE; \hexstar (wasysym)  
18822 \DeclareTextCommand{\texthexstar}{PU}{\9046\271}%\* U+26B9  
18823 % U+26BD SOCCER BALL; \Football (marvosym)  
18824 \DeclareTextCommand{\textSoccerBall}{PU}{\9046\275}% U+26BD  
18825 %\* \textSoccerBall -> \Football (marvosym)  
18826 % U+26C5 SUN BEHIND CLOUD; \SunCloud (ifsym)  
18827 \DeclareTextCommand{\textSunCloud}{PU}{\9046\305}%\* U+26C5  
18828 % U+26C6 RAIN; \Rain (ifsym)  
18829 \DeclareTextCommand{\textRain}{PU}{\9046\306}%\* U+26C6  
18830 % U+26D4 NO ENTRY; \noway (fourier)  
18831 \DeclareTextCommand{\textnoway}{PU}{\9046\324}%\* U+26D4

18832 % U+26F0 MOUNTAIN; \Mountain (ifsym)  
18833 \DeclareTextCommand{\textMountain}{PU}{\9046\360}%\* U+26F0  
18834 % U+26FA TENT; \Tent (ifsym)  
18835 \DeclareTextCommand{\textTent}{PU}{\9046\372}%\* U+26FA

### 47.2.30 Dingbats: U+2700 to U+27BF

18836 % U+2701 UPPER BLADE SCISSORS; \ScissorRightBrokenBottom (bding)  
18837 \DeclareTextCommand{\textScissorRightBrokenBottom}{PU}{\9047\001}% U+2701  
18838 %\* \textScissorRightBrokenBottom -> \CutLeft (marvosym)  
18839 %\* \textScissorRightBrokenBottom -> \Cutright (marvosym)  
18840 % U+2702 BLACK SCISSORS; \ScissorRight (bding)  
18841 \DeclareTextCommand{\textScissorRight}{PU}{\9047\002}%\* U+2702  
18842 %\* \textScissorRight -> \RightScissors (marvosym)  
18843 %\* \textScissorRight -> \Leftscissors (marvosym)  
18844 % U+2703 LOWER BLADE SCISSORS; \ScissorRightBrokenTop (bding)  
18845 \DeclareTextCommand{\textScissorRightBrokenTop}{PU}{\9047\003}%\* U+2703  
18846 % U+2704 WHITE SCISSORS; \ScissorHollowRight (bding)  
18847 \DeclareTextCommand{\textScissorHollowRight}{PU}{\9047\004}%\* U+2704  
18848 % U+2706 TELEPHONE LOCATION SIGN; \PhoneHandset (bding)  
18849 \DeclareTextCommand{\textPhoneHandset}{PU}{\9047\006}%\* U+2706  
18850 % U+2707 TAPE DRIVE; \Tape (bding)  
18851 \DeclareTextCommand{\textTape}{PU}{\9047\007}%\* U+2707  
18852 % U+2708 AIRPLANE; \Plane (bding)  
18853 \DeclareTextCommand{\textPlane}{PU}{\9047\010}%\* U+2708  
18854 % U+2709 ENVELOPE; \Envelope (bding),  
18855 \DeclareTextCommand{\textEnvelope}{PU}{\9047\011}%\* U+2709  
18856 %\* \textEnvelope -> \Letter (marvosym)  
18857 % U+270C VICTORY HAND; \Peace (bding)  
18858 \DeclareTextCommand{\textPeace}{PU}{\9047\014}%\* U+270C  
18859 % U+270D WRITING HAND; \WritingHand (marvosym)  
18860 \DeclareTextCommand{\textWritingHand}{PU}{\9047\015}%\* U+270D  
18861 %\* \textWritingHand -> \Writinghand (marvosym)  
18862 % U+270E LOWER RIGHT PENCIL; \PencilRightDown (bding)  
18863 \DeclareTextCommand{\textPencilRightDown}{PU}{\9047\016}%\* U+270E  
18864 % U+270F PENCIL; \PencilRight (bding)  
18865 \DeclareTextCommand{\textPencilRight}{PU}{\9047\017}%\* U+270F  
18866 % U+2710 UPPER RIGHT PENCIL; \PencilRightUp (bding)  
18867 \DeclareTextCommand{\textPencilRightUp}{PU}{\9047\020}%\* U+2710  
18868 % U+2711 WHITE NIB; \NibRight (bding)  
18869 \DeclareTextCommand{\textNibRight}{PU}{\9047\021}%\* U+2711  
18870 % U+2712 BLACK NIB; \NibSolidRight (bding)  
18871 \DeclareTextCommand{\textNibSolidRight}{PU}{\9047\022}%\* U+2712  
18872 % U+2713 CHECK MARK; checkmark; \Checkmark (bding)  
18873 \DeclareTextCommand{\textCheckmark}{PU}{\9047\023}%\* U+2713  
18874 %\* \textCheckmark -> \checkmark (MnSymbol)  
18875 % U+2714 HEAVY CHECK MARK; \CheckmarkBold (bding)  
18876 \DeclareTextCommand{\textCheckmarkBold}{PU}{\9047\024}%\* U+2714  
18877 % U+2715 MULTIPLICATION X; \XSolid (bding)  
18878 \DeclareTextCommand{\textXSolid}{PU}{\9047\025}%\* U+2715  
18879 % U+2716 HEAVY MULTIPLICATION X; \XSolidBold (bding)  
18880 \DeclareTextCommand{\textXSolidBold}{PU}{\9047\026}%\* U+2716  
18881 % U+2717 BALLOT X; \XSolidBrush (bding)  
18882 \DeclareTextCommand{\textXSolidBrush}{PU}{\9047\027}%\* U+2717  
18883 % U+2719 OUTLINED GREEK CROSS; \PlusOutline (bding)

18884 \DeclareTextCommand{\textPlusOutline}{PU}{\9047\031}%\* U+2719  
18885 % U+271A HEAVY GREEK CROSS; \Plus (bding)  
18886 \DeclareTextCommand{\textPlus}{PU}{\9047\032}%\* U+271A  
18887 % U+271B OPEN CENTRE CROSS; \PlusThinCenterOpen (bding)  
18888 \DeclareTextCommand{\textPlusThinCenterOpen}{PU}{\9047\033}%\* U+271B  
18889 % U+271C HEAVY OPEN CENTRE CROSS; \PlusCenterOpen (bding)  
18890 \DeclareTextCommand{\textPlusCenterOpen}{PU}{\9047\034}%\* U+271C  
18891 % U+271D LATIN CROSS; \Cross (bding)  
18892 \DeclareTextCommand{\textCross}{PU}{\9047\035}%\* U+271D  
18893 % U+271E SHADOWED WHITE LATIN CROSS; \CrossOpenShadow (bding)  
18894 \DeclareTextCommand{\textCrossOpenShadow}{PU}{\9047\036}%\* U+271E  
18895 % U+271F OUTLINED LATIN CROSS; \CrossOutline (bding)  
18896 \DeclareTextCommand{\textCrossOutline}{PU}{\9047\037}%\* U+271F  
18897 % U+2720 MALTESE CROSS; \CrossMaltese (bding)  
18898 \DeclareTextCommand{\textCrossMaltese}{PU}{\9047\040}%\* U+2720  
18899 % U+2721 STAR OF DAVID; \DavidStar (bding)  
18900 \DeclareTextCommand{\textDavidStar}{PU}{\9047\041}%\* U+2721  
18901 %\* \textDavidStar -> \davidstar (wasysym)  
18902 % U+2722 FOUR TEARDROP-SPOKED ASTERISK; \FourAsterisk (bding)  
18903 \DeclareTextCommand{\textFourAsterisk}{PU}{\9047\042}%\* U+2722  
18904 % U+2723 FOUR BALLOON-SPOKED ASTERISK; \JackStar (bding)  
18905 \DeclareTextCommand{\textJackStar}{PU}{\9047\043}%\* U+2723  
18906 % U+2724 HEAVY FOUR BALLOON-SPOKED ASTERISK; \JackStarBold (bding)  
18907 \DeclareTextCommand{\textJackStarBold}{PU}{\9047\044}%\* U+2724  
18908 % U+2725 FOUR CLUB-SPOKED ASTERISK; \CrossClowerTips (bding)  
18909 \DeclareTextCommand{\textClowerTips}{PU}{\9047\045}%\* U+2725  
18910 % U+2726 BLACK FOUR POINTED STAR; \FourStar (bding)  
18911 \DeclareTextCommand{\textFourStar}{PU}{\9047\046}%\* U+2726  
18912 % U+2727 WHITE FOUR POINTED STAR; \FourStarOpen (bding)  
18913 \DeclareTextCommand{\textFourStarOpen}{PU}{\9047\047}%\* U+2727  
18914 % U+272A CIRCLED WHITE STAR; \FiveStarOpenCircled (bding)  
18915 \DeclareTextCommand{\textFiveStarOpenCircled}{PU}{\9047\052}%\* U+272A  
18916 % U+272B OPEN CENTRE BLACK STAR; \FiveStarCenterOpen (bding)  
18917 \DeclareTextCommand{\textFiveStarCenterOpen}{PU}{\9047\053}%\* U+272B  
18918 % U+272C BLACK CENTRE WHITE STAR; \FiveStarOpenDotted (bding)  
18919 \DeclareTextCommand{\textFiveStarOpenDotted}{PU}{\9047\054}%\* U+272C  
18920 % U+272D OUTLINED BLACK STAR; \FiveStarOutline (bding)  
18921 \DeclareTextCommand{\textFiveStarOutline}{PU}{\9047\055}%\* U+272D  
18922 % U+272E HEAVY OUTLINED BLACK STAR; \FiveStarOutlineHeavy (bding)  
18923 \DeclareTextCommand{\textFiveStarOutlineHeavy}{PU}{\9047\056}%\* U+272E  
18924 % U+272F PINWHEEL STAR; \FiveStarConvex (bding)  
18925 \DeclareTextCommand{\textFiveStarConvex}{PU}{\9047\057}%\* U+272F  
18926 % U+2730 SHADOWED WHITE STAR; \FiveStarShadow (bding)  
18927 \DeclareTextCommand{\textFiveStarShadow}{PU}{\9047\060}%\* U+2730  
18928 % U+2731 HEAVY ASTERISK; \AsteriskBold (bding)  
18929 \DeclareTextCommand{\textAsteriskBold}{PU}{\9047\061}%\* U+2731  
18930 % U+2732 OPEN CENTRE ASTERISK; \AsteriskCenterOpen (bding)  
18931 \DeclareTextCommand{\textAsteriskCenterOpen}{PU}{\9047\062}%\* U+2732  
18932 % U+2734 EIGHT POINTED BLACK STAR; \EightStarTaper (bding)  
18933 \DeclareTextCommand{\textEightStarTaper}{PU}{\9047\064}%\* U+2734  
18934 % U+2735 EIGHT POINTED PINWHEEL STAR; \EightStarConvex (bding)  
18935 \DeclareTextCommand{\textEightStarConvex}{PU}{\9047\065}%\* U+2735  
18936 % U+2736 SIX POINTED BLACK STAR; \SixStar (bding)

18937 \DeclareTextCommand{\textSixStar}{PU}{\9047\066}%\* U+2736  
18938 % U+2737 EIGHT POINTED RECTILINEAR BLACK STAR; \EightStar (bding)  
18939 \DeclareTextCommand{\textEightStar}{PU}{\9047\067}%\* U+2737  
18940 % U+2738 HEAVY EIGHT POINTED RECTILINEAR BLACK STAR; \EightStarBold (bding)  
18941 \DeclareTextCommand{\textEightStarBold}{PU}{\9047\070}%\* U+2738  
18942 % U+2739 TWELVE POINTED BLACK STAR; \TwelveStar (bding)  
18943 \DeclareTextCommand{\textTwelveStar}{PU}{\9047\071}%\* U+2739  
18944 % U+273A SIXTEEN POINTED ASTERISK; \SixteenStarLight (bding)  
18945 \DeclareTextCommand{\textSixteenStarLight}{PU}{\9047\072}%\* U+273A  
18946 % U+273B TEARDROP-SPOKED ASTERISK; \SixFlowerPetalRemoved (bding)  
18947 \DeclareTextCommand{\textSixFlowerPetalRemoved}{PU}{\9047\073}%\* U+273B  
18948 % U+273C OPEN CENTRE TEARDROP-SPOKED ASTERISK;  
18949 % \SixFlowerOpenCenter (bding)  
18950 \DeclareTextCommand{\textSixFlowerOpenCenter}{PU}{\9047\074}%\* U+273C  
18951 % U+273D HEAVY TEARDROP-SPOKED ASTERISK; \Asterisk (bding)  
18952 \DeclareTextCommand{\textAsterisk}{PU}{\9047\075}%\* U+273D  
18953 % U+273E SIX PETALLED BLACK AND WHITE FLORETTE; \SixFlowerAlternate (bding)  
18954 \DeclareTextCommand{\textSixFlowerAlternate}{PU}{\9047\076}%\* U+273E  
18955 % U+273F BLACK FLORETTE; \FiveFlowerPetal (bding)  
18956 \DeclareTextCommand{\textFiveFlowerPetal}{PU}{\9047\077}%\* U+273F  
18957 % U+2740 WHITE FLORETTE; \FiveFlowerOpen (bding)  
18958 \DeclareTextCommand{\textFiveFlowerOpen}{PU}{\9047\100}%\* U+2740  
18959 % U+2741 EIGHT PETALLED OUTLINED BLACK FLORETTE; \EightFlowerPetal (bding)  
18960 \DeclareTextCommand{\textEightFlowerPetal}{PU}{\9047\101}%\* U+2741  
18961 % U+2742 CIRCLED OPEN CENTRE EIGHT POINTED STAR; \SunshineOpenCircled (bding)  
18962 \DeclareTextCommand{\textSunshineOpenCircled}{PU}{\9047\102}%\* U+2742  
18963 % U+2743 HEAVY TEARDROP-SPOKED PINWHEEL ASTERISK; \SixFlowerAltPetal (bding)  
18964 \DeclareTextCommand{\textSixFlowerAltPetal}{PU}{\9047\103}%\* U+2743  
18965 % U+2744 SNOWFLAKE; \SnowflakeChevron (bding)  
18966 \DeclareTextCommand{\textSnowflakeChevron}{PU}{\9047\104}%\* U+2744  
18967 % U+2745 TIGHT TRIFOLIATE SNOWFLAKE; \Snowflake (bding)  
18968 \DeclareTextCommand{\textSnowflake}{PU}{\9047\105}%\* U+2745  
18969 % U+2746 HEAVY CHEVRON SNOWFLAKE; \SnowflakeChevronBold (bding)  
18970 \DeclareTextCommand{\textSnowflakeChevronBold}{PU}{\9047\106}%\* U+2746  
18971 % U+2747 SPARKLE; \Sparkle (bding)  
18972 \DeclareTextCommand{\textSparkle}{PU}{\9047\107}%\* U+2747  
18973 % U+2748 HEAVY SPARKLE; \SparkleBold (bding)  
18974 \DeclareTextCommand{\textSparkleBold}{PU}{\9047\110}%\* U+2748  
18975 % U+2749 BALLOON-SPOKED ASTERISK; \AsteriskRoundedEnds (bding)  
18976 \DeclareTextCommand{\textAsteriskRoundedEnds}{PU}{\9047\111}%\* U+2749  
18977 % U+274A EIGHT TEARDROP-SPOKED PROPELLER ASTERISK;  
18978 % \EightFlowerPetalRemoved (bding)  
18979 \DeclareTextCommand{\textEightFlowerPetalRemoved}{PU}{\9047\112}%\* U+274A  
18980 % U+274B HEAVY EIGHT TEARDROP-SPOKED PROPELLER ASTERISK;  
18981 % \EightAsterisk (bding)  
18982 \DeclareTextCommand{\textEightAsterisk}{PU}{\9047\113}%\* U+274B  
18983 % U+274D SHADOWED WHITE CIRCLE; \CircleShadow (bding)

18984 \DeclareTextCommand{\textCircleShadow}{PU}{\9047\115}%\* U+274D  
18985 % U+274F LOWER RIGHT DROP-SHADOWED WHITE SQUARE;  
18986 % \SquareShadowBottomRight (bding)  
18987 \DeclareTextCommand{\textSquareShadowBottomRight}{PU}{\9047\117}%\* U+274F  
18988 % U+2750 UPPER RIGHT DROP-SHADOWED WHITE SQUARE;  
18989 % \SquareShadowTopRight (bding)  
18990 \DeclareTextCommand{\textSquareTopRight}{PU}{\9047\120}%\* U+2750  
18991 % U+2751 LOWER RIGHT SHADOWED WHITE SQUARE;  
18992 % \SquareCastShadowBottomRight (bding)  
18993 \DeclareTextCommand{\textSquareCastShadowBottomRight}{PU}{\9047\121}%\* U+2751  
18994 % U+2752 UPPER RIGHT SHADOWED WHITE SQUARE;  
18995 % \SquareCastShadowTopRight (bding)  
18996 \DeclareTextCommand{\textSquareCastShadowTopRight}{PU}{\9047\122}%\* U+2752  
18997 % U+2756 BLACK DIAMOND MINUS WHITE X; \OrnamentDiamondSolid (bding)  
18998 \DeclareTextCommand{\textDiamondSolid}{PU}{\9047\126}%\* U+2756  
18999 % U+2758 LIGHT VERTICAL BAR; \RectangleThin (bding)  
19000 \DeclareTextCommand{\textRectangleThin}{PU}{\9047\130}%\* U+2758  
19001 % U+2759 MEDIUM VERTICAL BAR; \Rectangle (bding)  
19002 \DeclareTextCommand{\textRectangle}{PU}{\9047\131}%\* U+2759  
19003 % U+275A HEAVY VERTICAL BAR; \RectangleBold (bding)  
19004 \DeclareTextCommand{\textRectangleBold}{PU}{\9047\132}%\* U+275A

#### 47.2.31 Miscellaneous Mathematical Symbols-A: U+27C0 to U+27EF

19005 % U+27C2 PERPENDICULAR; perpendicular; \perp (LaTeX)  
19006 \DeclareTextCommand{\textperp}{PU}{\9047\302}%\* U+27C2  
19007 % \notperp (mathabx)  
19008 \DeclareTextCommand{\textnotperp}{PU}{\9047\302\83\070}%\* U+27C2 U+0338  
19009 % U+27C7 OR WITH DOT INSIDE; \veedot (MnSymbol)  
19010 \DeclareTextCommand{\textveedot}{PU}{\9047\307}%\* U+27C7  
19011 % U+27D1 AND WITH DOT; \wedgedot (MnSymbol)  
19012 \DeclareTextCommand{\textwedgedot}{PU}{\9047\321}%\* U+27D1  
19013 % U+27DC LEFT MULTIMAP; \leftspoon (MnSymbol)  
19014 \DeclareTextCommand{\textleftspoon}{PU}{\9047\334}%\* U+27DC  
19015 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET  
19016 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}%\* U+27E6  
19017 %\* \textlbrackdbl -> \llbracket (stmaryrd)  
19018 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET  
19019 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}%\* U+27E7  
19020 %\* \textrbrackdbl -> \rrbracket (stmaryrd)

#### 47.2.32 Supplemental Arrows-A: U+27F0 to U+27FF

19021 % U+27F2 ANTICLOCKWISE GAPPED CIRCLE ARROW;  
19022 % \circlearrowleft (AmS)  
19023 \DeclareTextCommand{\textcirclearrowleft}{PU}{\9047\362}%\* U+27F2  
19024 % U+27F3 CLOCKWISE GAPPED CIRCLE ARROW; \circlearrowright (AmS)  
19025 \DeclareTextCommand{\textcirclearrowright}{PU}{\9047\363}%\* U+27F3  
19026 % U+27F5 LONG LEFTWARDS ARROW; \longleftarrow (AmS)  
19027 \DeclareTextCommand{\textlongleftarrow}{PU}{\9047\365}%\* U+27F5  
19028 % U+27F6 LONG RIGHTWARDS ARROW; \longrightarrow (AmS)  
19029 \DeclareTextCommand{\textlongrightarrow}{PU}{\9047\366}%\* U+27F6  
19030 % U+27F7 LONG LEFT RIGHT ARROW; \longlefttrightarrow (AmS)  
19031 \DeclareTextCommand{\textlonglefttrightarrow}{PU}{\9047\367}%\* U+27F7  
19032 % U+27F8 LONG LEFTWARDS DOUBLE ARROW; \Longleftarrow (AmS)

19033 \DeclareTextCommand{\textLongleftarrow}{PU}{\9047\370}%\* U+27F8  
 19034 % U+27F9 LONG RIGHTWARDS DOUBLE ARROW; \Longrightarrow (AmS)  
 19035 \DeclareTextCommand{\textLongrightarrow}{PU}{\9047\371}%\* U+27F9  
 19036 % U+27FA LONG LEFT RIGHT DOUBLE ARROW; \Longleftrightarrow (AmS)  
 19037 \DeclareTextCommand{\textLongleftrightarrow}{PU}{\9047\372}%\* U+27FA  
 19038 % U+27FC LONG RIGHTWARDS ARROW FROM BAR; \longmapsto (AmS)  
 19039 \DeclareTextCommand{\textlongmapsto}{PU}{\9047\374}%\* U+27FC  
 19040 % U+27FD LONG LEFTWARDS DOUBLE ARROW FROM BAR; \Longmaps-  
 from (stmaryrd)  
 19041 \DeclareTextCommand{\textLongmapsfrom}{PU}{\9047\375}%\* U+27FD  
 19042 % U+27FE LONG RIGHTWARDS DOUBLE ARROW FROM BAR; \Longmap-  
 sto (stmaryrd)  
 19043 \DeclareTextCommand{\textLongmapsto}{PU}{\9047\376}%\* U+27FE

### 47.2.33 Supplemental Arrows-B: U+2900 to U+297F

19044 % U+2921 NORTH WEST AND SOUTH EAST ARROW; \nwsearrow (MnSym-  
 bol)  
 19045 \DeclareTextCommand{\textnwsearrow}{PU}{\9051\041}%\* U+2921  
 19046 % U+2922 NORTH EAST AND SOUTH WEST ARROW; \neswarrow (MnSym-  
 bol)  
 19047 \DeclareTextCommand{\textneswarrow}{PU}{\9051\042}%\* U+2922  
 19048 % U+2923 NORTH WEST ARROW WITH HOOK; \hooknwarrow (MnSymbol)  
 19049 \DeclareTextCommand{\texthooknwarrow}{PU}{\9051\043}%\* U+2923  
 19050 % U+2924 NORTH EAST ARROW WITH HOOK; \hooknearrow (MnSymbol)  
 19051 \DeclareTextCommand{\textrhooknearrow}{PU}{\9051\044}%\* U+2924  
 19052 % U+2925 SOUTH EAST ARROW WITH HOOK; \hooksearrow (MnSymbol)  
 19053 \DeclareTextCommand{\texthooksearrow}{PU}{\9051\045}%\* U+2925  
 19054 % U+2926 SOUTH WEST ARROW WITH HOOK; \hookswarrow (MnSymbol)  
 19055 \DeclareTextCommand{\textrhookswarrow}{PU}{\9051\046}%\* U+2926  
 19056 % U+2933 WAVE ARROW POINTING DIRECTLY RIGHT; \leadsto (wasysym)  
 19057 \DeclareTextCommand{\textleadsto}{PU}{\9051\063}%\* U+2933  
 19058 % U+2934 ARROW POINTING RIGHTWARDS THEN CURVING UPWARDS;  
 19059 % \rcurvearrowne (MnSymbol)  
 19060 \DeclareTextCommand{\textrcurvearrowne}{PU}{\9051\064}%\* U+2934  
 19061 % U+2935 ARROW POINTING RIGHTWARDS THEN CURVING DOWN-  
 WARDS;  
 19062 % \lcurvearrowse (MnSymbol)  
 19063 \DeclareTextCommand{\textlcurvearrowse}{PU}{\9051\065}%\* U+2935  
 19064 % U+2936 ARROW POINTING DOWNWARDS THEN CURVING LEFT-  
 WARDS;  
 19065 % \lcurvearrowsw (MnSymbol)  
 19066 \DeclareTextCommand{\textlcurvearrowsw}{PU}{\9051\066}%\* U+2936  
 19067 % U+2937 ARROW POINTING DOWNWARDS THEN CURVING RIGHT-  
 WARDS;  
 19068 % \rcurvearrowse (MnSymbol)  
 19069 \DeclareTextCommand{\textrcurvearrowse}{PU}{\9051\067}%\* U+2937  
 19070 % U+2938 RIGHT-SIDE ARC CLOCKWISE ARROW; \lcurvearrowdown (Mn-  
 Symbol)  
 19071 \DeclareTextCommand{\textlcurvearrowdown}{PU}{\9051\070}%\* U+2938  
 19072 %\* \textlcurvearrowdown -> \RightTorque (marvosym)  
 19073 %\* \textlcurvearrowdown -> \Righttorque (marvosym)  
 19074 % U+2939 LEFT-SIDE ARC ANTICLOCKWISE ARROW;  
 19075 % \rcurvearrowdown (MnSymbol)  
 19076 \DeclareTextCommand{\textrcurvearrowdown}{PU}{\9051\071}%\* U+2939

19077 %\* \texttrcurvearrowdown -> \LeftTorque (marvosym)  
19078 %\* \texttrcurvearrowdown -> \Lefttorque (marvosym)  
19079 % U+293A TOP ARC ANTICLOCKWISE ARROW; \rcurvearrowleft (MnSymbol)  
19080 \DeclareTextCommand{\texttrcurvearrowleft}{PU}{\9051\072}%\* U+293A  
19081 % U+293B BOTTOM ARC ANTICLOCKWISE ARROW;  
19082 % \rcurvearrowright (MnSymbol)  
19083 \DeclareTextCommand{\texttrcurvearrowright}{PU}{\9051\073}%\* U+293B  
19084 % U+294A LEFT BARB UP RIGHT BARB DOWN HARPOON; \leftrightharpoon (mathabx)  
19085 \DeclareTextCommand{\textleftrightharpoon}{PU}{\9051\112}%\* U+294A  
19086 % U+294B LEFT BARB DOWN RIGHT BARB UP HARPOON; \rightleftharpoon (mathabx)  
19087 \DeclareTextCommand{\textrightleftharpoon}{PU}{\9051\113}%\* U+294B  
19088 % U+294C UP BARB RIGHT DOWN BARB LEFT HARPOON;  
19089 % \updownharpoonrightleft (MnSymbol)  
19090 \DeclareTextCommand{\textupdownharpoonrightleft}{PU}{\9051\114}%\* U+294C  
19091 % U+294D UP BARB LEFT DOWN BARB RIGHT HARPOON;  
19092 % \updownharpoonleftright (MnSymbol)  
19093 \DeclareTextCommand{\textupdownharpoonleftright}{PU}{\9051\115}%\* U+294D  
19094 % U+2962 LEFTWARDS HARPOON WITH BARB UP ABOVE LEFTWARDS  
19095 % HARPOON WITH BARB DOWN; \leftleftharpoons (mathabx)  
19096 \DeclareTextCommand{\textleftleftharpoons}{PU}{\9051\142}%\* U+2962  
19097 % U+2963 UPWARDS HARPOON WITH BARB LEFT BESIDE UPWARDS  
19098 % HARPOON WITH BARB RIGHT; \upupharpoons (mathabx)  
19099 \DeclareTextCommand{\textupupharpoons}{PU}{\9051\143}%\* U+2963  
19100 % U+2964 RIGHTWARDS HARPOON WITH BARB UP ABOVE RIGHTWARDS HARPOON  
19101 % WITH BARB DOWN; \rightrightarpoons (mathabx)  
19102 \DeclareTextCommand{\textrightarpoons}{PU}{\9051\144}%\* U+2964  
19103 % U+2965 DOWNWARDS HARPOON WITH BARB LEFT BESIDE DOWNWARDS HARPOON  
19104 % WITH BARB RIGHT; \downdownharpoons (mathabx)  
19105 \DeclareTextCommand{\textdowndownharpoons}{PU}{\9051\145}%\* U+2965  
19106 % U+296A LEFTWARDS HARPOON WITH BARB UP ABOVE LONG DASH;  
19107 % \leftbarharpoon (mathabx)  
19108 \DeclareTextCommand{\textleftbarharpoon}{PU}{\9051\152}%\* U+296A  
19109 % U+296B LEFTWARDS HARPOON WITH BARB DOWN BELOW  
19110 % LONG DASH; \barleftharpoon (mathabx)  
19111 \DeclareTextCommand{\textbarleftharpoon}{PU}{\9051\153}%\* U+296B  
19112 % U+296C RIGHTWARDS HARPOON WITH BARB UP ABOVE  
19113 % LONG DASH; \rightbarharpoon (mathabx)  
19114 \DeclareTextCommand{\textrightbarharpoon}{PU}{\9051\154}%\* U+296C  
19115 % U+296D RIGHTWARDS HARPOON WITH BARB DOWN BELOW  
19116 % LONG DASH; \barrightharpoon (mathabx)  
19117 \DeclareTextCommand{\textbarrightharpoon}{PU}{\9051\155}%\* U+296D  
19118 % U+296E UPWARDS HARPOON WITH BARB LEFT BESIDE DOWNWARDS HARPOON  
19119 % WITH BARB RIGHT; \updownharpoons (mathabx)  
19120 \DeclareTextCommand{\textupdownharpoons}{PU}{\9051\156}%\* U+296E  
19121 % U+296F DOWNWARDS HARPOON WITH BARB LEFT BESIDE UPWARDS HARPOON  
19122 % WITH BARB RIGHT; \downupharpoons (mathabx)  
19123 \DeclareTextCommand{\textdownupharpoons}{PU}{\9051\157}%\* U+296F

19124 % U+297F DOWN FISH TAIL  
 19125 \DeclareTextCommand{\textmoo}{PU}{\9051\177\83\066}%\* U+297F U+0336

#### 47.2.34 Miscellaneous Mathematical Symbols-B: U+2980 to U+29FF

19126 % U+2987 Z NOTATION LEFT IMAGE BRACKET; \lparenthesis (stmaryrd)  
 19127 \DeclareTextCommand{\textllparenthesis}{PU}{\9051\207}%\* U+2987  
 19128 % U+2988 Z NOTATION RIGHT IMAGE BRACKET; \rrparenthesis (stmaryrd)  
 19129 \DeclareTextCommand{\textrrparenthesis}{PU}{\9051\210}%\* U+2988  
 19130 % U+29B0 REVERSED EMPTY SET; \invdiameter (wasysym)  
 19131 \DeclareTextCommand{\textinvdiameter}{PU}{\9051\260}%\* U+29B0  
 19132 % U+29B6 CIRCLED VERTICAL BAR; \obar (stmaryrd)  
 19133 \DeclareTextCommand{\textobar}{PU}{\9051\266}%\* U+29B6  
 19134 %\* \textobar -> \textvarobar (stmaryrd)  
 19135 % U+29B8 CIRCLED REVERSE SOLIDUS; \obslash (stmaryrd)  
 19136 \DeclareTextCommand{\textobslash}{PU}{\9051\270}%\* U+29B8  
 19137 %\* \textobslash -> \circledbslash (txfonts/pxfonts)  
 19138 %\* \textobslash -> \obackslash (mathabx)  
 19139 %\* \textobslash -> \varobslash (stmaryrd)  
 19140 % U+29BA CIRCLE DIVIDED BY HORIZONTAL BAR AND TOP HALF  
 19141 % DIVIDED BY VERTICAL BAR; \obot (mathabx)  
 19142 \DeclareTextCommand{\textobot}{PU}{\9051\272}%\* U+29BA  
 19143 %\* \textobot -> \odplus (ulsy)  
 19144 % U+29BB CIRCLE WITH SUPERIMPOSED X; \NoChemicalCleaning (marvosym)  
 19145 \DeclareTextCommand{\textNoChemicalCleaning}{PU}{\9051\273}%\* U+29BB  
 19146 % U+29C0 CIRCLED LESS-THAN; \olessthan (stmaryrd)  
 19147 \DeclareTextCommand{\textolessthan}{PU}{\9051\300}%\* U+29C0  
 19148 %\* \textolessthan -> \varolessthan (stmaryrd)  
 19149 % U+29C1 CIRCLED GREATER-THAN; \ogreaterthan (stmaryrd)  
 19150 \DeclareTextCommand{\textogreaterthan}{PU}{\9051\301}%\* U+29C1  
 19151 %\* \textogreaterthan -> \varogreaterthan (stmaryrd)  
 19152 % U+29C4 SQUARED RISING DIAGONAL SLASH; \boxslash (mathabx, stmaryrd)  
 19153 \DeclareTextCommand{\textboxslash}{PU}{\9051\304}%\* U+29C4  
 19154 % U+29C5 SQUARED FALLING DIAGONAL SLASH; \boxbslash (stmaryrd)  
 19155 \DeclareTextCommand{\textboxbslash}{PU}{\9051\305}%\* U+29C5  
 19156 % U+29C6 SQUARED ASTERISK; \boxast (stmaryrd)  
 19157 \DeclareTextCommand{\textboxast}{PU}{\9051\306}%\* U+29C6  
 19158 % U+29C7 SQUARED SMALL CIRCLE; \boxcircle (stmaryrd)  
 19159 \DeclareTextCommand{\textboxcircle}{PU}{\9051\307}%\* U+29C7  
 19160 % U+29C8 SQUARED SQUARE; \boxbox (stmaryrd)  
 19161 \DeclareTextCommand{\textboxbox}{PU}{\9051\310}%\* U+29C8  
 19162 % U+29D3 BLACK BOWTIE; \Valve (marvosym)  
 19163 \DeclareTextCommand{\textValve}{PU}{\9051\323}%\* U+29D3  
 19164 % U+29DF DOUBLE-ENDED MULTIMAP; \multimapboth (txfonts/pxfonts)  
 19165 \DeclareTextCommand{\textmultimapboth}{PU}{\9051\337}%\* U+29DF  
 19166 % U+29E2 SHUFFLE PRODUCT; \shuffle (shuffle)  
 19167 \DeclareTextCommand{\textshuffle}{PU}{\9051\342}%\* U+29E2

#### 47.2.35 Supplemental Mathematical Operators: U+2A00 to U+2AFF

19168 % U+2A04 N-ARY UNION OPERATOR WITH PLUS; \uplus (LaTeX)  
 19169 \DeclareTextCommand{\textuplus}{PU}{\9052\004}%\* U+2A04  
 19170 % U+2A07 TWO LOGICAL AND OPERATOR; \bigdoublewedge (MnSymbol)  
 19171 \DeclareTextCommand{\textbigdoublewedge}{PU}{\9052\007}%\* U+2A07  
 19172 % U+2A08 TWO LOGICAL OR OPERATOR; \bigdoublevee (MnSymbol)



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19173 \DeclareTextCommand{\textbigdoublevee}{PU}{\9052\010}%* U+2A08
19174 % U+2A1D JOIN; \Join (latexsym, amsfonts, amssymb, mathabx, txfonts,
19175 %   pxfonts, wasysym)
19176 \DeclareTextCommand{\textJoin}{PU}{\9052\035}%* U+2A1D
19177 % U+2A1F Z NOTATION SCHEMA COMPOSITION; \fatsemi (stmaryrd)
19178 \DeclareTextCommand{\textfatsemi}{PU}{\9052\037}%* U+2A1F
19179 % U+2A22 PLUS SIGN WITH SMALL CIRCLE ABOVE; \circplus (mathabx)
19180 \DeclareTextCommand{\textcircplus}{PU}{\9052\042}%* U+2A22
19181 % U+2A2A MINUS SIGN WITH DOT BELOW; \minusdot (MnSymbol)
19182 \DeclareTextCommand{\textminusdot}{PU}{\9052\052}%* U+2A2A
19183 %* \textminusdot -> \divdot (mathabx)
19184 % U+2A30 MULTIPLICATION SIGN WITH DOT ABOVE; \dottimes (mathabx)
19185 \DeclareTextCommand{\textdottimes}{PU}{\9052\060}%* U+2A30
19186 % U+2A32 SEMIDIRECT PRODUCT WITH BOTTOM CLOSED;
19187 %   \dtimes (mathdesign)
19188 \DeclareTextCommand{\textdtimes}{PU}{\9052\062}%* U+2A32
19189 % U+2A38 CIRCLED DIVISION SIGN; \odiv (mathabx)
19190 \DeclareTextCommand{\textodiv}{PU}{\9052\070}%* U+2A38
19191 % U+2A3C INTERIOR PRODUCT; \invneg (MnSymbol)
19192 \DeclareTextCommand{\textinvneg}{PU}{\9052\074}%* U+2A3C
19193 % U+2A4E DOUBLE SQUARE INTERSECTION; \sqdoublecap (mathabx)
19194 \DeclareTextCommand{\textsqdoublecap}{PU}{\9052\116}%* U+2A4E
19195 %* \textsqdoublecap -> \doublesqcap (MnSymbol)
19196 % U+2A40 INTERSECTION WITH DOT; \capdot (MnSymbol)
19197 \DeclareTextCommand{\textcapdot}{PU}{\9052\100}%* U+2A40
19198 % U+2A4F DOUBLE SQUARE UNION; \sqdoublecup (mathabx)
19199 \DeclareTextCommand{\textsqdoublecup}{PU}{\9052\117}%* U+2A4F
19200 %* \textsqdoublecup -> \doublesqcup (MnSymbol)
19201 % U+2A55 TWO INTERSECTING LOGICAL AND; \doublewedge (MnSymbol)
19202 \DeclareTextCommand{\textdoublewedge}{PU}{\9052\125}%* U+2A55
19203 % U+2A56 TWO INTERSECTING LOGICAL OR; \doublevee (MnSymbol)
19204 \DeclareTextCommand{\textdoublevee}{PU}{\9052\126}%* U+2A56
19205 %* \textdoublevee -> \merge (stmaryrd)
19206 % U+2A5E LOGICAL AND WITH DOUBLE OVERBAR;
19207 %   \doublebarwedge (AmS)
19208 \DeclareTextCommand{\textdoublebarwedge}{PU}{\9052\136}%* U+2A5E
19209 % U+2A63 LOGICAL OR WITH DOUBLE UNDERBAR;
19210 %   \veedoublebar (mahtabx)
19211 \DeclareTextCommand{\textveedoublebar}{PU}{\9052\143}%* U+2A63
19212 % U+2A66 EQUALS SIGN WITH DOT BELOW; \eqdot (MnSymbol)
19213 \DeclareTextCommand{\texteqdot}{PU}{\9052\146}%* U+2A66
19214 % \neqdot (MnSymbol)
19215 \DeclareTextCommand{\textneqdot}{PU}{\9052\146\83\070}%* U+2A66 U+0338
19216 % U+2A74 DOUBLE COLON EQUAL; \coloncolonequals (colonequals)
19217 \DeclareTextCommand{\textcoloncolonequals}{PU}{\9052\164}%* U+2A74
19218 % U+2A7D LESS-THAN OR SLANTED EQUAL TO; \leqslant (AmS)
19219 \DeclareTextCommand{\textleqslant}{PU}{\9052\175}%* U+2A7D
19220 % \nleqslant (txfonts/pxfonts)
19221 \DeclareTextCommand{\textnleqslant}{PU}{\9052\175\83\070}%* U+2A7D U+0338
19222 % U+2A7E GREATER-THAN OR SLANTED EQUAL TO; \geqslant (AmS)
19223 \DeclareTextCommand{\textgeqslant}{PU}{\9052\176}%* U+2A7E
19224 % \ngeqslant (txfonts/pxfonts)
19225 \DeclareTextCommand{\textngeqslant}{PU}{\9052\176\83\070}%* U+2A7E U+0338
19226 % U+2A85 LESS-THAN OR APPROXIMATE; \lessapprox (AmS)

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19227 \DeclareTextCommand{\textlessapprox}{PU}{\9052\205}%\* U+2A85  
19228 % \nlessapprox (txfonts/pxfonts)  
19229 \DeclareTextCommand{\textnlessapprox}{PU}{\9052\205\83\070}%\* U+2A85 U+0338  
19230 % U+2A86 GREATER-THAN OR APPROXIMATE; \gtrapprox (AmS)  
19231 \DeclareTextCommand{\textgtrapprox}{PU}{\9052\206}%\* U+2A86  
19232 % \ngtrapprox (txfonts/pxfonts)  
19233 \DeclareTextCommand{\textngtrapprox}{PU}{\9052\206\83\070}%\* U+2A86 U+0338  
19234 % U+2A87 LESS-THAN AND SINGLE-LINE NOT EQUAL TO; \lneq (AmS)  
19235 \DeclareTextCommand{\textlneq}{PU}{\9052\207}%\* U+2A87  
19236 % U+2A88 GREATER-THAN AND SINGLE-LINE NOT EQUAL TO;  
19237 % \gneq (AmS)  
19238 \DeclareTextCommand{\textgneq}{PU}{\9052\210}%\* U+2A88  
19239 % U+2A89 LESS-THAN AND NOT APPROXIMATE; \lnapprox (AmS)  
19240 \DeclareTextCommand{\textlnapprox}{PU}{\9052\211}%\* U+2A89  
19241 % U+2A8A GREATER-THAN AND NOT APPROXIMATE; \gnapprox (AmS)  
19242 \DeclareTextCommand{\textgnapprox}{PU}{\9052\212}%\* U+2A8A  
19243 % U+2A8B LESS-THAN ABOVE DOUBLE-LINE EQUAL ABOVE GREATER-  
THAN;  
19244 % \lesseqgtr (AmS)  
19245 \DeclareTextCommand{\textlesseqgtr}{PU}{\9052\213}%\* U+2A8B  
19246 % U+2A8C GREATER-THAN ABOVE DOUBLE-LINE EQUAL ABOVE LESS-  
THAN;  
19247 % \gtreqless (AmS)  
19248 \DeclareTextCommand{\textgtreqless}{PU}{\9052\214}%\* U+2A8C  
19249 % U+2A95 SLANTED EQUAL TO OR LESS-THAN; \eqslantless (AmS)  
19250 \DeclareTextCommand{\texteqslantless}{PU}{\9052\225}%\* U+2A95  
19251 % U+2A96 SLANTED EQUAL TO OR GREATER-THAN; \eqslantgtr (AmS)  
19252 \DeclareTextCommand{\texteqslantgtr}{PU}{\9052\226}%\* U+2A96  
19253 % U+2AA6 LESS-THAN CLOSED BY CURVE; \leftslice (stmaryrd)  
19254 \DeclareTextCommand{\textleftslice}{PU}{\9052\246}%\* U+2AA6  
19255 % U+2AA7 GREATER-THAN CLOSED BY CURVE; \rightslice (stmaryrd)  
19256 \DeclareTextCommand{\textright slice}{PU}{\9052\247}%\* U+2AA7  
19257 % U+2AAF PRECEDES ABOVE SINGLE-LINE EQUALS SIGN; \preceq (Mn-  
Symbol)  
19258 \DeclareTextCommand{\textpreceq}{PU}{\9052\257}%\* U+2AAF  
19259 % \npreceq (txfonts/pxfonts)  
19260 \DeclareTextCommand{\textnpreceq}{PU}{\9052\257\83\070}%\* U+2AAF U+0338  
19261 % U+2AB0 SUCCEEDS ABOVE SINGLE-LINE EQUALS SIGN; \succeq (Mn-  
Symbol)  
19262 \DeclareTextCommand{\textsucceq}{PU}{\9052\260}%\* U+2AB0  
19263 % \nsucceq (txfonts/pxfonts)  
19264 \DeclareTextCommand{\textnsucceq}{PU}{\9052\260\83\070}%\* U+2AB0 U+0338  
19265 % U+2AB1 PRECEDES ABOVE SINGLE-LINE NOT EQUAL TO; \prec-  
neq (mathabx)  
19266 \DeclareTextCommand{\textprecneq}{PU}{\9052\261}%\* U+2AB1  
19267 % U+2AB2 SUCCEEDS ABOVE SINGLE-LINE NOT EQUAL TO; \succ-  
neq (mathabx)  
19268 \DeclareTextCommand{\textsuccneq}{PU}{\9052\262}%\* U+2AB2  
19269 % U+2AB3 PRECEDES ABOVE EQUALS SIGN; \preceqq (txfonts/pxfonts)  
19270 \DeclareTextCommand{\textpreceqq}{PU}{\9052\263}%\* U+2AB3  
19271 % \npreceqq (txfonts/pxfonts)  
19272 \DeclareTextCommand{\textnpreceqq}{PU}{\9052\263\83\070}%\* U+2AB3 U+0338  
19273 % U+2AB4 SUCCEEDS ABOVE EQUALS SIGN; \succeqq (txfonts/pxfonts)  
19274 \DeclareTextCommand{\textsucceqq}{PU}{\9052\264}%\* U+2AB4

19275 % \nsucceqq (txfonts/pxfonts)  
19276 \DeclareTextCommand{\textnsucceqq}{PU}{\9052\264\83\070}%\* U+2AB4 U+0338  
19277 % U+2AB5 PRECEDES ABOVE NOT EQUAL TO; \precneqq (txfonts/pxfonts)  
19278 \DeclareTextCommand{\textprecneqq}{PU}{\9052\265}%\* U+2AB5  
19279 % U+2AB6 SUCCEEDS ABOVE NOT EQUAL TO; \succneqq (txfonts/pxfonts)  
19280 \DeclareTextCommand{\textsuccneqq}{PU}{\9052\266}%\* U+2AB6  
19281 % U+2AB7 PRECEDES ABOVE ALMOST EQUAL TO; \precapprox (AmS)  
19282 \DeclareTextCommand{\textprecapprox}{PU}{\9052\267}%\* U+2AB7  
19283 % \nprecapprox (txfonts/pxfonts)  
19284 \DeclareTextCommand{\textnprecapprox}{PU}{\9052\267\83\070}%\* U+2AB7 U+0338  
19285 % U+2AB8 SUCCEEDS ABOVE ALMOST EQUAL TO; \succapprox (AmS)  
19286 \DeclareTextCommand{\textsuccapprox}{PU}{\9052\270}%\* U+2AB8  
19287 % \nsuccapprox (txfonts/pxfonts)  
19288 \DeclareTextCommand{\textnsuccapprox}{PU}{\9052\270\83\070}%\* U+2AB8 U+0338  
19289 % U+2AB9 PRECEDES ABOVE NOT ALMOST EQUAL TO; \precnapprox (AmS)  
19290 \DeclareTextCommand{\textprecnapprox}{PU}{\9052\271}%\* U+2AB9  
19291 % U+2ABA SUCCEEDS ABOVE NOT ALMOST EQUAL TO; \succnapprox (AmS)  
19292 \DeclareTextCommand{\textsuccnapprox}{PU}{\9052\272}%\* U+2ABA  
19293 % U+2AC5 SUBSET OF ABOVE EQUALS SIGN; \subseteqq (AmS)  
19294 \DeclareTextCommand{\textsubseteqq}{PU}{\9052\305}%\* U+2AC5  
19295 % \nsubseteqq (txfonts/pxfonts, mathabx)  
19296 \DeclareTextCommand{\textnsubseteqq}{PU}{\9052\305\83\070}%\* U+2AC5 U+0338  
19297 % U+2AC6 SUPERSET OF ABOVE EQUALS SIGN; \supseteqq (AmS)  
19298 \DeclareTextCommand{\textsupseteqq}{PU}{\9052\306}%\* U+2AC6  
19299 % \nsupseteqq (mathabx)  
19300 \DeclareTextCommand{\textnsupseteqq}{PU}{\9052\306\83\070}%\* U+2AC6 U+0338  
19301 % U+2AE3 DOUBLE VERTICAL BAR LEFT TURNSTILE  
19302 \DeclareTextCommand{\textdashV}{PU}{\9052\343}%\* U+2AE3  
19303 %\* \textdashV -> \leftVdash (MnSymbol)  
19304 % \ndashV (mathabx)  
19305 \DeclareTextCommand{\textndashV}{PU}{\9052\343\83\070}%\* U+2AE3 U+0338  
19306 %\* \textndashV -> \nleftVdash (MnSymbol)  
19307 % U+2AE4 VERTICAL BAR DOUBLE LEFT TURNSTILE; \Dashv (mathabx)  
19308 \DeclareTextCommand{\textDashv}{PU}{\9052\344}%\* U+2AE4  
19309 %\* \textDashv -> \leftmodels (MnSymbol)  
19310 % \nDashv (mathabx)  
19311 \DeclareTextCommand{\textnDashv}{PU}{\9052\344\83\070}%\* U+2AE4 U+0338  
19312 %\* \textnDashv -> \nleftmodels (MnSymbol)  
19313 % U+2AE5 DOUBLE VERTICAL BAR DOUBLE LEFT TURNSTILE;  
19314 % \DashV (mathabx)  
19315 \DeclareTextCommand{\textDashV}{PU}{\9052\345}%\* U+2AE5  
19316 %\* \textDashV -> \leftModels (MnSymbol)  
19317 % \nDashV (mathabx)  
19318 \DeclareTextCommand{\textnDashV}{PU}{\9052\345\83\070}%\* U+2AE5 U+0338  
19319 %\* \textnDashV -> \nleftModels (MnSymbol)  
19320 % U+2AEA DOUBLE DOWN TACK; \downmodels (MnSymbol)  
19321 \DeclareTextCommand{\textdownmodels}{PU}{\9052\352}%\* U+2AEA  
19322 % \ndownmodels (MnSymbol)  
19323 \DeclareTextCommand{\textndownmodels}{PU}{\9052\352\83\070}%\* U+2AEA U+0338  
19324 % U+2AEB DOUBLE UP TACK; \upmodels (MnSymbol)  
19325 \DeclareTextCommand{\textupmodels}{PU}{\9052\353}%\* U+2AEB  
19326 % \nupmodels (MnSymbol)

19327 \DeclareTextCommand{\textnupmodels}{PU}{\9052\353\83\070}%\* U+2AEB U+0338  
19328 % U+2AEF VERTICAL LINE WITH CIRCLE ABOVE; \upspoon (MnSymbol)  
19329 \DeclareTextCommand{\textupspoon}{PU}{\9052\357}%\* U+2AEF  
19330 % U+2AF4 TRIPLE VERTICAL BAR BINARY RELATION;  
19331 % \interleave (stmaryrd)  
19332 \DeclareTextCommand{\textinterleave}{PU}{\9052\364}%\* U+2AF4  
19333 % U+2AFD DOUBLE SOLIDUS OPERATOR; \sslash (stmaryrd)  
19334 \DeclareTextCommand{\textsslash}{PU}{\9052\375}%\* U+2AFD  
19335 %\* \textsslash -> \varparallel (txfonts\pxfonts)

#### 47.2.36 Miscellaneous Symbols and Arrows: U+2B00 to U+2BFF

19336 % U+2B20 WHITE PENTAGON; \pentagon (wasysym)  
19337 \DeclareTextCommand{\textpentagon}{PU}{\9053\040}%\* U+2B20  
19338 % U+2B21 WHITE HEXAGON; \varhexagon (wasysym)  
19339 \DeclareTextCommand{\textvarhexagon}{PU}{\9053\041}%\* U+2B21

#### 47.2.37 Latin Extended-C: U+2C60 to U+2C7F

19340 % U+2C7C LATIN SUBSCRIPT SMALL LETTER J  
19341 \DeclareTextCommand{\textjinferior}{PU}{\9054\174}%\* U+2C7C

#### 47.2.38 Supplemental Punctuation: U+2E00 to U+2E7F

19342 % U+2E13 DOTTED OBELOS; \slashdiv (MnSymbol)  
19343 \DeclareTextCommand{\textslashdiv}{PU}{\9056\023}%\* U+2E13  
19344 % U+2E18 INVERTED INTERROBANG; \textinterrobangdown (textcomp)  
19345 \DeclareTextCommand{\textinterrobangdown}{PU}{\9056\030}% U+2E18  
19346 % U+2E2D FIVE DOT MARK; \fivedots (MnSymbol)  
19347 \DeclareTextCommand{\textfivedots}{PU}{\9056\055}%\* U+2E2D

#### 47.2.39 Modifier Tone Letters: U+A700 to U+A71F

19348 % U+A71B MODIFIER LETTER RAISED UP ARROW; \textupstep (tipa)  
19349 \DeclareTextCommand{\textupstep}{PU}{\9247\033}% U+A71B  
19350 % U+A71C MODIFIER LETTER RAISED DOWN ARROW;  
19351 % \textdownstep (tipa)  
19352 \DeclareTextCommand{\textdownstep}{PU}{\9247\034}% U+A71C

#### 47.2.40 Latin Extended-D: U+A720 to U+A7FF

19353 % U+A727 LATIN SMALL LETTER HENG; \textheng (tipx)  
19354 \DeclareTextCommand{\textPUheng}{PU}{\9247\047}% U+A727  
19355 %\* \textPUheng -> \textheng (tipx)  
19356 % U+A72C LATIN CAPITAL LETTER CUATRILLO; \textlhookfour (tipx)  
19357 \DeclareTextCommand{\textPULhookfour}{PU}{\9247\054}% U+A72C  
19358 %\* \textPULhookfour -> \textlhookfour (tipx)  
19359 % U+A730 LATIN LETTER SMALL CAPITAL F; \textscf (tipx)  
19360 \DeclareTextCommand{\textPUscf}{PU}{\9247\060}% U+A730  
19361 %\* \textPUscf -> \textscf (tipx)  
19362 % U+A735 LATIN SMALL LETTER AO; \textaoilig (tipx)  
19363 \DeclareTextCommand{\textPUaolig}{PU}{\9247\065}% U+A735  
19364 %\* \textPUaolig -> \textaoilig (tipx)  
19365 % U+A74F LATIN SMALL LETTER OO; \oo (wsuipa)  
19366 \DeclareTextCommand{\textoo}{PU}{\9247\117}%\* U+A74F  
19367 % U+A788 MODIFIER LETTER LOW CIRCUMFLEX ACCENT  
19368 \DeclareTextCommand{\textcircumlowlow}{PU}{\9247\210}% U+A788

#### 47.2.41 Alphabetic Presentation Forms: U+FB00 to U+FB4F

19369 % U+FB01 LATIN SMALL LIGATURE FI; fi  
 19370 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01  
 19371 % U+FB02 LATIN SMALL LIGATURE FL; fl  
 19372 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02

#### 47.2.42 Musical Symbols: U+1D100 to U+1D1FF

19373 % U+1D13B MUSICAL SYMBOL WHOLE REST; \GaPa (harmony)  
 19374 \DeclareTextCommand{\textGaPa}{PU}{\9330\064\9335\073}%\* U+1D13B  
 19375 % U+1D13C MUSICAL SYMBOL HALF REST; \HaPa (harmony)  
 19376 \DeclareTextCommand{\textHaPa}{PU}{\9330\064\9335\074}%\* U+1D13C  
 19377 % U+1D13D MUSICAL SYMBOL QUARTER REST; \ViPa (harmony)  
 19378 \DeclareTextCommand{\textViPa}{PU}{\9330\064\9335\075}%\* U+1D13D  
 19379 % U+1D13E MUSICAL SYMBOL EIGHTH REST; \AcPa (harmony)  
 19380 \DeclareTextCommand{\textAcPa}{PU}{\9330\064\9335\076}%\* U+1D13E  
 19381 % U+1D13F MUSICAL SYMBOL SIXTEENTH REST; \SePa (harmony)  
 19382 \DeclareTextCommand{\textSePa}{PU}{\9330\064\9335\077}%\* U+1D13F  
 19383 % U+1D140 MUSICAL SYMBOL THIRTY-SECOND REST; \ZwPa (harmony)  
 19384 \DeclareTextCommand{\textZwPa}{PU}{\9330\064\9335\100}%\* U+1D140  
 19385 % U+1D15D MUSICAL SYMBOL WHOLE NOTE; \fullnote (wasysym)  
 19386 \DeclareTextCommand{\textfullnote}{PU}{\9330\064\9335\135}%\* U+1D15D  
 19387 %\* \textfullnote -> \Ganz (harmony)  
 19388 % U+1D15E MUSICAL SYMBOL HALF NOTE; \halfnote (wasysym)  
 19389 \DeclareTextCommand{\texthalfnote}{PU}{\9330\064\9335\136}%\* U+1D15E  
 19390 %\* \texthalfnote -> \Halb (harmony)  
 19391 % U+1D15F MUSICAL SYMBOL QUARTER NOTE; \Vier (harmony)  
 19392 \DeclareTextCommand{\textVier}{PU}{\9330\064\9335\137}%\* U+1D15F  
 19393 % U+1D160 MUSICAL SYMBOL EIGHTH NOTE; \Acht (harmony)  
 19394 \DeclareTextCommand{\textAcht}{PU}{\9330\064\9335\140}%\* U+1D160  
 19395 % U+1D161 MUSICAL SYMBOL SIXTEENTH NOTE; \Sech (harmony)  
 19396 \DeclareTextCommand{\textSech}{PU}{\9330\064\9335\141}%\* U+1D161  
 19397 % U+1D162 MUSICAL SYMBOL THIRTY-SECOND NOTE; \Zwdr (harmony)  
 19398 \DeclareTextCommand{\textZwdr}{PU}{\9330\064\9335\142}%\* U+1D162

#### 47.2.43 Miscellaneous Symbols and Pictographs: U+1F300 to U+1F5FF

19399 % U+1F30D EARTH GLOBE EUROPE-AFRICA; \Mundus (marvosym)  
 19400 \DeclareTextCommand{\textMundus}{PU}{\9330\074\9337\015}%\* U+1F30D  
 19401 % U+1F319 CRESCENT MOON; \Moon (marvosym)  
 19402 \DeclareTextCommand{\textMoon}{PU}{\9330\074\9337\031}%\* U+1F319  
 19403 % U+1F468 MAN; \ManFace (marvosym)  
 19404 \DeclareTextCommand{\textManFace}{PU}{\9330\075\9334\150}%\* U+1F468  
 19405 % U+1F469 WOMAN; \WomanFace (marvosym)  
 19406 \DeclareTextCommand{\textWomanFace}{PU}{\9330\075\9334\151}%\* U+1F469  
 19407 %\* \textWomanFace -> \Womanface (marvosym)  
 19408 % U+1F4E0 FAX MACHINE; \Fax (marvosym)  
 19409 \DeclareTextCommand{\textFax}{PU}{\9330\075\9334\340}%\* U+1F4E0  
 19410 %\* \textFax -> \Faxmachine (marvosym)  
 19411 % U+1F525 FIRE; \Fire (ifsym)  
 19412 \DeclareTextCommand{\textFire}{PU}{\9330\075\9335\045}%\* U+1F525

#### 47.2.44 Transport and Map Symbols: U+1F680 to U+1F6FF

19413 % U+1F6B2 BICYCLE; \Bicycle (marvosym)  
 19414 \DeclareTextCommand{\textBicycle}{PU}{\9330\075\9336\262}%\* U+1F6B2  
 19415 % U+1F6B9 MENS SYMBOL; \Gentsroom (marvosym)  
 19416 \DeclareTextCommand{\textGentsroom}{PU}{\9330\075\9336\271}%\* U+1F6B9

19417 % U+1F6BA WOMENS SYMBOL; \Ladiesroom (marvosym)  
 19418 \DeclareTextCommand{\textLadiesroom}{PU}{\9330\075\9336\272}%\* U+1F6BA

#### 47.2.45 Miscellaneous

19419 \DeclareTextCommand{\SS}{PU}{SS}%  
 19420 % \textcopyleft (textcomp)  
 19421 \DeclareTextCommand{\textcopyleft}{PU}{\9041\204\9040\335}% U+2184 U+20DD  
 19422 % \ccnc (cclicens)  
 19423 \DeclareTextCommand{\textccnc}{PU}{\80\044\9040\340}%\* U+0024 U+20E0  
 19424 % \ccnd (cclicens)  
 19425 \DeclareTextCommand{\textccnd}{PU}{=\9040\335}%\* U+003D U+20DD  
 19426 % \ccsa (cclicens)  
 19427 \DeclareTextCommand{\textccsa}{PU}{\9047\362\9040\335}%\* U+27F2 U+20DD  
 19428 % \Info (marvosym, china2e)  
 19429 \DeclareTextCommand{\textInfo}{PU}{\9330\065\9334\042\9040\336}%\* U+1D422 U+20DE  
 19430 % \CESign (marvosym)  
 19431 \DeclareTextCommand{\textCESign}{PU}{\80\103\80\105}%\* U+0043 U+0045  
 19432 %\* \textCESign -> \CESign (marvosym)

#### 47.2.46 Aliases

Aliases (german.sty)

19433 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}%  
 19434 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}%  
 19435 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}%  
 19436 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}%  
 19437 \DeclareTextCommand{\textflqq}{PU}{\guillemetleft}%  
 19438 \DeclareTextCommand{\textfrqq}{PU}{\guillemetright}%  
 19439 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}%  
 19440 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}%  
 Aliases (math names)

19441 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}%\*  
 19442 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}%\*  
 19443 \DeclareTextCommand{\textdiv}{PU}{\textdivide}%\*  
 19444 \DeclareTextCommand{\textpm}{PU}{\textplusminus}%\*  
 19445 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}%\*  
 19446 </puenc>

### 47.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

19447 <\*puvnenc>  
 19448 \DeclareTextCommand{\abreve}{PU}{\81\003}% U+0103  
 19449 \DeclareTextCommand{\acircumflex}{PU}{\80\342}% U+00E2  
 19450 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}% U+00EA  
 19451 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}% U+00F4  
 19452 \DeclareTextCommand{\ohorn}{PU}{\81\241}% U+01A1  
 19453 \DeclareTextCommand{\uhorn}{PU}{\81\260}% U+01B0  
 19454 \DeclareTextCommand{\ABREVE}{PU}{\81\002}% U+0102  
 19455 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}% U+00C2  
 19456 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}% U+00CA  
 19457 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}% U+00D4

19458 \DeclareTextCommand{\OHORN}{PU}{\81\240}% U+01A0  
19459 \DeclareTextCommand{\UHORN}{PU}{\81\257}% U+01AF  
  
19460 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1  
19461 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}% U+1EA1  
19462 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0  
19463 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}% U+1EA3  
19464 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
19465 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}% U+1EAF  
19466 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}% U+1EB7  
19467 \DeclareTextCompositeCommand{\`}{PU}{\abreve}{\9036\261}% U+1EB1  
19468 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}% U+1EB3  
19469 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}% U+1EB5  
19470 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}% U+1EA5  
19471 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}% U+1EAD  
19472 \DeclareTextCompositeCommand{\`}{PU}{\acircumflex}{\9036\247}% U+1EA7  
19473 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}% U+1EA9  
19474 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}% U+1EAB  
19475 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
19476 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}% U+1EB9  
19477 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8  
19478 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}% U+1EBB  
19479 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
19480 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}% U+1EBF  
19481 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}% U+1EC7  
19482 \DeclareTextCompositeCommand{\`}{PU}{\ecircumflex}{\9036\301}% U+1EC1  
19483 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}% U+1EC3  
19484 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}% U+1EC5  
19485 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
19486 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}% U+1ECB  
19487 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
19488 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}% U+1EC9  
19489 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
19490 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
19491 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}% U+1ECD  
19492 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
19493 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}% U+1ECF  
19494 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
19495 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}% U+1ED1  
19496 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}% U+1ED9  
19497 \DeclareTextCompositeCommand{\`}{PU}{\ocircumflex}{\9036\323}% U+1ED3  
19498 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}% U+1ED5  
19499 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}% U+1ED7  
19500 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}% U+1EDB  
19501 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}% U+1EE3  
19502 \DeclareTextCompositeCommand{\`}{PU}{\ohorn}{\9036\335}% U+1EDD  
19503 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}% U+1EDF  
19504 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}% U+1EE1  
19505 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
19506 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}% U+1EE5  
19507 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
19508 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}% U+1EE7  
19509 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
19510 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}% U+1EE9  
19511 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}% U+1EF1

19512 \DeclareTextCompositeCommand{\`}{PU}{\uhorn}{\9036\353}% U+1EEB  
19513 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}% U+1EED  
19514 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}% U+1EEF  
19515 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
19516 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}% U+1EF5  
19517 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3  
19518 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}% U+1EF7  
19519 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9  
19520 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
19521 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}% U+1EA0  
19522 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
19523 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}% U+1EA2  
19524 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
19525 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}% U+1EAE  
19526 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}% U+1EB6  
19527 \DeclareTextCompositeCommand{\`}{PU}{\ABREVE}{\9036\260}% U+1EB0  
19528 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}% U+1EB2  
19529 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}% U+1EB4  
19530 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}% U+1EA4  
19531 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}% U+1EAC  
19532 \DeclareTextCompositeCommand{\`}{PU}{\ACIRCUMFLEX}{\9036\246}% U+1EA6  
19533 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}% U+1EA8  
19534 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}% U+1EA  
19535 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
19536 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}% U+1EB8  
19537 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
19538 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}% U+1EBA  
19539 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
19540 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\276}% U+1EBE  
19541 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}% U+1EC6  
19542 \DeclareTextCompositeCommand{\`}{PU}{\ECIRCUMFLEX}{\9036\300}% U+1EC0  
19543 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}% U+1EC2  
19544 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}% U+1EC4  
19545 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
19546 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}% U+1ECA  
19547 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
19548 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}% U+1EC8  
19549 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128  
19550 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
19551 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}% U+1ECC  
19552 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
19553 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}% U+1ECE  
19554 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
19555 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}% U+1ED0  
19556 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}% U+1ED8  
19557 \DeclareTextCompositeCommand{\`}{PU}{\OCIRCUMFLEX}{\9036\322}% U+1ED2  
19558 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}% U+1ED4  
19559 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}% U+1ED6  
19560 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\332}% U+1EDA  
19561 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}% U+1EE2  
19562 \DeclareTextCompositeCommand{\`}{PU}{\OHORN}{\9036\334}% U+1EDC  
19563 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}% U+1EDE  
19564 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}% U+1EE0  
19565 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA



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19566 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4
19567 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9
19568 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}% U+1EE6
19569 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168
19570 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}% U+1EE8
19571 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}% U+1EF0
19572 \DeclareTextCompositeCommand{\`}{PU}{\UHORN}{\9036\352}% U+1EEA
19573 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}% U+1EEC
19574 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}% U+1EEE
19575 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD
19576 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4
19577 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2
19578 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}% U+1EF6
19579 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8
19580 </puvnenc>

```

## 47.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```

19581 <*puarenc>
19582 % U+0621;afii57409;ARABIC LETTER HAMZA
19583 \DeclareTextCommand{\hamza}{PU}{\86\041}% U+0621
19584 % U+0622;afii57410;ARABIC LETTER ALEF WITH MADDA ABOVE
19585 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% U+0622
19586 % U+0623;afii57411;ARABIC LETTER ALEF WITH HAMZA ABOVE
19587 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% U+0623
19588 % U+0624;afii57412;ARABIC LETTER WAW WITH HAMZA ABOVE
19589 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% U+0624
19590 % U+0625;afii57413;ARABIC LETTER ALEF WITH HAMZA BELOW
19591 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% U+0625
19592 % U+0626;afii57414;ARABIC LETTER YEH WITH HAMZA ABOVE
19593 \DeclareTextCommand{\yahamza}{PU}{\86\046}% U+0626
19594 % U+0627;afii57415;ARABIC LETTER ALEF
19595 \DeclareTextCommand{\alef}{PU}{\86\047}% U+0627
19596 % U+0628;afii57416;ARABIC LETTER BEH
19597 \DeclareTextCommand{\baa}{PU}{\86\050}% U+0628
19598 % U+0629;afii57417;ARABIC LETTER TEH MARBUTA
19599 \DeclareTextCommand{\T}{PU}{\86\051}% U+0629
19600 % U+062A;afii57418;ARABIC LETTER TEH
19601 \DeclareTextCommand{\taa}{PU}{\86\052}% U+062A
19602 % U+062B;afii57419;ARABIC LETTER THEH
19603 \DeclareTextCommand{\thaa}{PU}{\86\053}% U+062B
19604 % U+062C;afii57420;ARABIC LETTER JEEM
19605 \DeclareTextCommand{\jeem}{PU}{\86\054}% U+062C
19606 % U+062D;afii57421;ARABIC LETTER HAH
19607 \DeclareTextCommand{\Haa}{PU}{\86\055}% U+062D
19608 % U+062E;afii57422;ARABIC LETTER KHAH
19609 \DeclareTextCommand{\kha}{PU}{\86\056}% U+062E
19610 % U+062F;afii57423;ARABIC LETTER DAL
19611 \DeclareTextCommand{\dal}{PU}{\86\057}% U+062F
19612 % U+0630;afii57424;ARABIC LETTER THAL
19613 \DeclareTextCommand{\dhal}{PU}{\86\060}% U+0630
19614 % U+0631;afii57425;ARABIC LETTER REH

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19615 \DeclareTextCommand{\ra}{PU}{\86\061}% U+0631  
19616 % U+0632;afii57426;ARABIC LETTER ZAIN  
19617 \DeclareTextCommand{\zay}{PU}{\86\062}% U+0632  
19618 % U+0633;afii57427;ARABIC LETTER SEEN  
19619 \DeclareTextCommand{\seen}{PU}{\86\063}% U+0633  
19620 % U+0634;afii57428;ARABIC LETTER SHEEN  
19621 \DeclareTextCommand{\sheen}{PU}{\86\064}% U+0634  
19622 % U+0635;afii57429;ARABIC LETTER SAD  
19623 \DeclareTextCommand{\sad}{PU}{\86\065}% U+0635  
19624 % U+0636;afii57430;ARABIC LETTER DAD  
19625 \DeclareTextCommand{\dad}{PU}{\86\066}% U+0636  
19626 % U+0637;afii57431;ARABIC LETTER TAH  
19627 \DeclareTextCommand{\Ta}{PU}{\86\067}% U+0637  
19628 % U+0638;afii57432;ARABIC LETTER ZAH  
19629 \DeclareTextCommand{\za}{PU}{\86\070}% U+0638  
19630 % U+0639;afii57433;ARABIC LETTER AIN  
19631 \DeclareTextCommand{\ayn}{PU}{\86\071}% U+0639  
19632 % U+063A;afii57434;ARABIC LETTER GHAIN  
19633 \DeclareTextCommand{\ghayn}{PU}{\86\072}% U+063A  
19634 % U+0640;afii57440;ARABIC TATWEEL  
19635 \DeclareTextCommand{\tatweel}{PU}{\86\100}% U+0640  
19636 % U+0641;afii57441;ARABIC LETTER FEH  
19637 \DeclareTextCommand{\fa}{PU}{\86\101}% U+0641  
19638 % U+0642;afii57442;ARABIC LETTER QAF  
19639 \DeclareTextCommand{\qaf}{PU}{\86\102}% U+0642  
19640 % U+0643;afii57443;ARABIC LETTER KAF  
19641 \DeclareTextCommand{\kaf}{PU}{\86\103}% U+0643  
19642 % U+0644;afii57444;ARABIC LETTER LAM  
19643 \DeclareTextCommand{\lam}{PU}{\86\104}% U+0644  
19644 % U+0645;afii57445;ARABIC LETTER MEEM  
19645 \DeclareTextCommand{\meem}{PU}{\86\105}% U+0645  
19646 % U+0646;afii57446;ARABIC LETTER NOON  
19647 \DeclareTextCommand{\nun}{PU}{\86\106}% U+0646  
19648 % U+0647;afii57470;ARABIC LETTER HEH  
19649 \DeclareTextCommand{\ha}{PU}{\86\107}% U+0647  
19650 % U+0648;afii57448;ARABIC LETTER WAW  
19651 \DeclareTextCommand{\waw}{PU}{\86\110}% U+0648  
19652 % U+0649;afii57449;ARABIC LETTER ALEF MAKSURA  
19653 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% U+0649  
19654 % U+064A;afii57450;ARABIC LETTER YEH  
19655 \DeclareTextCommand{\ya}{PU}{\86\112}% U+064A  
  
19656 % U+064B;afii57451;ARABIC FATHATAN  
19657 \DeclareTextCommand{\nasb}{PU}{\86\113}% U+064B  
19658 % U+064C;afii57452;ARABIC DAMMATAN  
19659 \DeclareTextCommand{\raff}{PU}{\86\114}% U+064C  
19660 % U+064D;afii57453;ARABIC KASRATAN  
19661 \DeclareTextCommand{\jarr}{PU}{\86\115}% U+064D  
19662 % U+064E;afii57454;ARABIC FATHA  
19663 \DeclareTextCommand{\fatha}{PU}{\86\116}% U+064E  
19664 % U+064F;afii57455;ARABIC DAMMA  
19665 \DeclareTextCommand{\damma}{PU}{\86\117}% U+064F  
19666 % U+0650;afii57456;ARABIC KASRA  
19667 \DeclareTextCommand{\kasra}{PU}{\86\120}% U+0650  
19668 % U+0651;afii57457;ARABIC SHADDA

19669 \DeclareTextCommand{\shadda}{PU}{\86\121}% U+0651  
19670 % U+0652;afi57458;ARABIC SUKUN  
19671 \DeclareTextCommand{\sukun}{PU}{\86\122}% U+0652  
Farsi  
19672 % U+067E ARABIC LETTER PEH; afi57506  
19673 \DeclareTextCommand{\peh}{PU}{\86\176}% U+067E  
19674 % U+0686 ARABIC LETTER TCHEH; afi57507  
19675 \DeclareTextCommand{\tcheh}{PU}{\86\206}% U+0686  
19676 % U+0698 ARABIC LETTER JEH; afi57508  
19677 \DeclareTextCommand{\jeh}{PU}{\86\230}% U+0698  
19678 % U+06A9 ARABIC LETTER KEHEH  
19679 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% U+06A9  
19680 % U+06AF ARABIC LETTER GAF; afi57509  
19681 \DeclareTextCommand{\gaf}{PU}{\86\257}% U+06AF  
19682 % U+06CC ARABIC LETTER FARSI YEH  
19683 \DeclareTextCommand{\farsiya}{PU}{\86\314}% U+06CC  
  
19684 % U+200C ZERO WIDTH NON-JOINER; afi61664  
19685 \DeclareTextCommand{\ZWJ}{PU}{\9040\014}% U+200C  
19686 % U+200D ZERO WIDTH JOINER; afi301  
19687 \DeclareTextCommand{\textEncodingNoboundary}{PU}{\9040\015}% U+200D  
  
19688 </puarenc>  
19689 <\*psdextra>  
19690 \Hy@VersionCheck{psdextra.def}  
19691 \DeclareTextCommand{\textGamma}{PU}{\83\223}%\* U+0393  
19692 \DeclareTextCommand{\textDelta}{PU}{\83\224}%\* U+0394  
19693 \DeclareTextCommand{\textTheta}{PU}{\83\230}%\* U+0398  
19694 \DeclareTextCommand{\textLambda}{PU}{\83\233}%\* U+039B  
19695 \DeclareTextCommand{\textXi}{PU}{\83\236}%\* U+039E  
19696 \DeclareTextCommand{\textPi}{PU}{\83\240}%\* U+03A0  
19697 \DeclareTextCommand{\textSigma}{PU}{\83\243}%\* U+03A3  
19698 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}%\* U+03A5  
19699 \DeclareTextCommand{\textPhi}{PU}{\83\246}%\* U+03A6  
19700 \DeclareTextCommand{\textChi}{PU}{\83\247}%\* U+03A7  
19701 \DeclareTextCommand{\textPsi}{PU}{\83\250}%\* U+03A8  
19702 \DeclareTextCommand{\textOmega}{PU}{\83\251}%\* U+03A9  
19703 \DeclareTextCommand{\textalpha}{PU}{\83\261}%\* U+03B1  
19704 \DeclareTextCommand{\textbeta}{PU}{\83\262}%\* U+03B2  
19705 \DeclareTextCommand{\textgamma}{PU}{\83\263}%\* U+03B3  
19706 \DeclareTextCommand{\textdelta}{PU}{\83\264}%\* U+03B4  
19707 \DeclareTextCommand{\textepsilon}{PU}{\83\265}%\* U+03B5  
19708 \DeclareTextCommand{\textzeta}{PU}{\83\266}%\* U+03B6  
19709 \DeclareTextCommand{\texteta}{PU}{\83\267}%\* U+03B7  
19710 \DeclareTextCommand{\texttheta}{PU}{\83\270}%\* U+03B8  
19711 \DeclareTextCommand{\textiota}{PU}{\83\271}%\* U+03B9  
19712 \DeclareTextCommand{\textkappa}{PU}{\83\272}%\* U+03BA  
19713 \DeclareTextCommand{\textlambda}{PU}{\83\273}%\* U+03BB  
19714 \DeclareTextCommand{\textmugreek}{PU}{\83\274}%\* U+03BC  
19715 \DeclareTextCommand{\textnu}{PU}{\83\275}%\* U+03BD  
19716 \DeclareTextCommand{\textxi}{PU}{\83\276}%\* U+03BE  
19717 \DeclareTextCommand{\textpi}{PU}{\83\300}%\* U+03C0  
19718 \DeclareTextCommand{\textrho}{PU}{\83\301}%\* U+03C1  
19719 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}%\* U+03C2

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19720 \DeclareTextCommand{\textsigma}{PU}{\83\303}%* U+03C3
19721 \DeclareTextCommand{\texttau}{PU}{\83\304}%* U+03C4
19722 \DeclareTextCommand{\textupsilon}{PU}{\83\305}%* U+03C5
19723 \DeclareTextCommand{\textphi}{PU}{\83\306}%* U+03C6
19724 \DeclareTextCommand{\textchi}{PU}{\83\307}%* U+03C7
19725 \DeclareTextCommand{\textpsi}{PU}{\83\310}%* U+03C8
19726 \DeclareTextCommand{\textomega}{PU}{\83\311}%* U+03C9
19727 \newcommand*{\psdmapshortnames}{%
19728   \let\MVPlus\textMVPlus
19729   \let\MVComma\textMVComma
19730   \let\MVMinus\textMVMinus
19731   \let\MVPeriod\textMVPeriod
19732   \let\MVDivision\textMVDivision
19733   \let\MVZero\textMVZero
19734   \let\MVOne\textMVOne
19735   \let\MVTwo\textMVTwo
19736   \let\MVThree\textMVThree
19737   \let\MVFour\textMVFour
19738   \let\MVFive\textMVFive
19739   \let\MVSix\textMVSix
19740   \let\MVSeven\textMVSeven
19741   \let\MVEight\textMVEight
19742   \let\MVNine\textMVNine
19743   \let\MVAt\textMVAAt
19744   \let\copyright\textcopyright
19745   \let\twosuperior\texttwosuperior
19746   \let\threesuperior\textthreesuperior
19747   \let\onesuperior\textonesuperior
19748   \let\Thorn\textThorn
19749   \let\thorn\textthorn
19750   \let\hbar\texthbar
19751   \let\hausA\texthausA
19752   \let\hausD\texthausD
19753   \let\hausK\texthausK
19754   \let\bar\textbar
19755   \let\inve\textinve
19756   \let\slashc\textslashc
19757   \let\scripta\textscripta
19758   \let\openo\textopeno
19759   \let\rtaild\textrtaild
19760   \let\reve\textreve
19761   \let\schwa\textschwa
19762   \let\niepsilon\textniepsilon
19763   \let\repsilon\textrepsilon
19764   \let\rhookrepsilon\texthookrepsilon
19765   \let\scriptg\textscriptg
19766   \let\scg\textscg
19767   \let\ipagamma\textipagamma
19768   \let\babygamma\textbabygamma
19769   \let\bari\textbari
19770   \let\niiota\textniiota
19771   \let\sci\textsci
19772   \let\scn\textscn
19773   \let\niphi\textniphi

```

19774 `\let\longlegr\textlonglegr`  
19775 `\let\scr\textscr`  
19776 `\let\invscr\textinvscr`  
19777 `\let\esh\textesh`  
19778 `\let\baru\textbaru`  
19779 `\let\niupsilon\textniupsilon`  
19780 `\let\scriptv\textscriptv`  
19781 `\let\turnv\textturnv`  
19782 `\let\turnw\textturnw`  
19783 `\let\turny\textturny`  
19784 `\let\scy\textscy`  
19785 `\let\yogh\textyogh`  
19786 `\let\glotstop\textglotstop`  
19787 `\let\revglotstop\textrevglotstop`  
19788 `\let\invglotstop\textinvglotstop`  
19789 `\let\Gamma\textGamma`  
19790 `\let\Delta\textDelta`  
19791 `\let\Theta\textTheta`  
19792 `\let\Lambda\textLambda`  
19793 `\let\Xi\textXi`  
19794 `\let\Pi\textPi`  
19795 `\let\Sigma\textSigma`  
19796 `\let\Upsilon\textUpsilon`  
19797 `\let\Phi\textPhi`  
19798 `\let\Psi\textPsi`  
19799 `\let\Omega\textOmega`  
19800 `\let\alpha\textalpha`  
19801 `\let\beta\textbeta`  
19802 `\let\gamma\textgamma`  
19803 `\let\delta\textdelta`  
19804 `\let\epsilon\textepsilon`  
19805 `\let\zeta\textzeta`  
19806 `\let\eta\texteta`  
19807 `\let\theta\texttheta`  
19808 `\let\iota\textiota`  
19809 `\let\kappa\textkappa`  
19810 `\let\lambda\textlambda`  
19811 `\let\mu\textmu`  
19812 `\let\mugreek\textmugreek`  
19813 `\let\nu\textnu`  
19814 `\let\xi\textxi`  
19815 `\let\pi\textpi`  
19816 `\let\rho\textrho`  
19817 `\let\varsigma\textvarsigma`  
19818 `\let\sigma\textsigma`  
19819 `\let\tau\texttau`  
19820 `\let\upsilon\textupsilon`  
19821 `\let\phi\textphi`  
19822 `\let\chi\textchi`  
19823 `\let\psi\textpsi`  
19824 `\let\omega\textomega`  
19825 `\let\scd\textscd`  
19826 `\let\scu\textscu`  
19827 `\let\iinferior\textiinferior`

19828 `\let\rinferior\textrinferior`  
19829 `\let\uinferior\textuinferior`  
19830 `\let\vinferior\textvinferior`  
19831 `\let\betainferior\textbetainferior`  
19832 `\let\gammainferior\textgammainferior`  
19833 `\let\rhoinferior\textrhoinferior`  
19834 `\let\phiinferior\textphiinferior`  
19835 `\let\chiinferior\textchiinferior`  
19836 `\let\barsci\textbarsci`  
19837 `\let\barp\textbarp`  
19838 `\let\barscu\textbarscu`  
19839 `\let\htrtaild\texthtrtaild`  
19840 `\let\dagger\textdagger`  
19841 `\let\bullet\textbullet`  
19842 `\let\hdotfor\texthdotfor`  
19843 `\let\prime\textprime`  
19844 `\let\second\textsecond`  
19845 `\let\third\textthird`  
19846 `\let\backprime\textbackprime`  
19847 `\let\lefttherefore\textlefttherefore`  
19848 `\let\fourth\textfourth`  
19849 `\let\diamonddots\textdiamonddots`  
19850 `\let\zerosuperior\textzerosuperior`  
19851 `\let\isuperior\textisuperior`  
19852 `\let\foursuperior\textfoursuperior`  
19853 `\let\fivesuperior\textfivesuperior`  
19854 `\let\sixsuperior\textsixsuperior`  
19855 `\let\sevensuperior\textsevensuperior`  
19856 `\let\eightsuperior\texteightsuperior`  
19857 `\let\ninesuperior\textninesuperior`  
19858 `\let\plussuperior\textplussuperior`  
19859 `\let\minussuperior\textminussuperior`  
19860 `\let\equalsuperior\textequalsuperior`  
19861 `\let\parenleftsuperior\textparenleftsuperior`  
19862 `\let\parenrightsuperior\textparenrightsuperior`  
19863 `\let\nsuperior\textnsuperior`  
19864 `\let\zeroinferior\textzeroinferior`  
19865 `\let\oneinferior\textoneinferior`  
19866 `\let\twoinferior\texttwoinferior`  
19867 `\let\threeinferior\textthreeinferior`  
19868 `\let\fourinferior\textfourinferior`  
19869 `\let\fiveinferior\textfiveinferior`  
19870 `\let\sixinferior\textsixinferior`  
19871 `\let\seveninferior\textseveninferior`  
19872 `\let\eightinferior\texteightinferior`  
19873 `\let\nineinferior\textnineinferior`  
19874 `\let\plusinferior\textplusinferior`  
19875 `\let\minusinferior\textminusinferior`  
19876 `\let\equalsinferior\textequalsinferior`  
19877 `\let\parenleftinferior\textparenleftinferior`  
19878 `\let\parenrightinferior\textparenrightinferior`  
19879 `\let\ainferior\textainferior`  
19880 `\let\einferior\texteinferior`  
19881 `\let\oinferior\textoinferior`

19882 \let\xinferior\textxinferior  
19883 \let\schwainferior\textschwainferior  
19884 \let\hinferior\texthinferior  
19885 \let\kinferior\textkinferior  
19886 \let\linferior\textlinferior  
19887 \let\minferior\textminferior  
19888 \let\ninferior\textninferior  
19889 \let\pinferior\textpinferior  
19890 \let\sinferior\textsinferior  
19891 \let\tinferior\texttinferior  
19892 \let\Deleatur\textDeleatur  
19893 \let\hslash\texthslash  
19894 \let\Im\textIm  
19895 \let\ell\textell  
19896 \let\wp\textwp  
19897 \let\Re\textRe  
19898 \let\mho\textmho  
19899 \let\riota\textriota  
19900 \let\Finv\textFinv  
19901 \let\aleph\textaleph  
19902 \let\beth\textbeth  
19903 \let\gimel\textgimel  
19904 \let\daleth\textdaleth  
19905 \let\xfax\textfax  
19906 \let\Game\textGame  
19907 \let\leftarrow\textleftarrow  
19908 \let\uparrow\textuparrow  
19909 \let\rightarrow\textrightarrow  
19910 \let\downarrow\textdownarrow  
19911 \let\leftrightarrow\textleftrightarrow  
19912 \let\updownarrow\textupdownarrow  
19913 \let\nwarrow\textnwarrow  
19914 \let\nearrow\textnearrow  
19915 \let\searrow\textsearrow  
19916 \let\swarrow\textswarrow  
19917 \let\nleftarrow\textnleftarrow  
19918 \let\nrightarrow\textnrightarrow  
19919 \let\twoheadleftarrow\texttwoheadleftarrow  
19920 \let\ntwoheadleftarrow\textntwoheadleftarrow  
19921 \let\twoheaduparrow\texttwoheaduparrow  
19922 \let\twoheadrightarrow\texttwoheadrightarrow  
19923 \let\ntwoheadrightarrow\textntwoheadrightarrow  
19924 \let\twoheaddownarrow\texttwoheaddownarrow  
19925 \let\leftarrowtail\textleftarrowtail  
19926 \let\rightarrowtail\textrightarrowtail  
19927 \let\mapsto\textmapsto  
19928 \let\hookleftarrow\texthookleftarrow  
19929 \let\hookrightarrow\texthookrightarrow  
19930 \let\looparrowleft\textlooparrowleft  
19931 \let\looparrowright\textlooparrowright  
19932 \let\nleftarrow\textnleftarrow  
19933 \let\lightning\textlightning  
19934 \let\dLsh\textdLsh  
19935 \let\curvearrowleft\textcurvearrowleft

19936 `\let\curvearrowright\textcurvearrowright`  
19937 `\let\leftharpoonup\textleftharpoonup`  
19938 `\let\leftharpoondown\textleftharpoondown`  
19939 `\let\upharpoonright\textupharpoonright`  
19940 `\let\upharpoonleft\textupharpoonleft`  
19941 `\let\rightharpoonup\extrightharpoonup`  
19942 `\let\rightharpoondown\extrightharpoondown`  
19943 `\let\downharpoonright\textdownharpoonright`  
19944 `\let\downharpoonleft\textdownharpoonleft`  
19945 `\let\rightleftarrows\textrightleftarrows`  
19946 `\let\updownarrows\textupdownarrows`  
19947 `\let\leftrightarrows\textleftrightarrows`  
19948 `\let\leftleftarrows\textleftleftarrows`  
19949 `\let\upuparrows\textupuparrows`  
19950 `\let\righttrightarrows\textrighttrightarrows`  
19951 `\let\downdownarrows\textdowndownarrows`  
19952 `\let\leftrightharpoons\textleftrightharpoons`  
19953 `\let\rightleftharpoons\textrightleftharpoons`  
19954 `\let\nLeftarrow\textnLeftarrow`  
19955 `\let\nLeftrightarrow\textnLeftrightarrow`  
19956 `\let\nRrightarrow\textnRrightarrow`  
19957 `\let\Leftarrow\textLeftarrow`  
19958 `\let\Uparrow\textUparrow`  
19959 `\let\Rrightarrow\textRrightarrow`  
19960 `\let\Downarrow\textDownarrow`  
19961 `\let\Leftrightarrow\textLeftrightarrow`  
19962 `\let\Updownarrow\textUpdownarrow`  
19963 `\let\Nwarrow\textNwarrow`  
19964 `\let\Nearrow\textNearrow`  
19965 `\let\Searrow\textSearrow`  
19966 `\let\Swarrow\textSwarrow`  
19967 `\let\Lleftarrow\textLleftarrow`  
19968 `\let\Rrightarrow\textRrightarrow`  
19969 `\let\leftsquigarrow\textleftsquigarrow`  
19970 `\let\rightsquigarrow\textrightsquigarrow`  
19971 `\let\dashleftarrow\textdashleftarrow`  
19972 `\let\dasheduparrow\textdasheduparrow`  
19973 `\let\dashrightarrow\textdashrightarrow`  
19974 `\let\dasheddownarrow\textdasheddownarrow`  
19975 `\let\pointer\textpointer`  
19976 `\let\downuparrows\textdownuparrows`  
19977 `\let\leftarrowtriangle\textleftarrowtriangle`  
19978 `\let\rightarrowtriangle\textrightarrowtriangle`  
19979 `\let\leftrightarrowtriangle\textleftrightarrowtriangle`  
19980 `\let\forall\textforall`  
19981 `\let\complement\textcomplement`  
19982 `\let\partial\textpartial`  
19983 `\let\exists\textexists`  
19984 `\let\nexists\textnexists`  
19985 `\let\emptyset\textemptyset`  
19986 `\let\triangle\texttriangle`  
19987 `\let\nabla\textnabla`  
19988 `\let\in\textin`  
19989 `\let\notin\textnotin`



19990 \let\smallin\textsmallin  
19991 \let\ni\textni  
19992 \let\notowner\textnotowner  
19993 \let\smallowns\textsmallowns  
19994 \let\prod\textprod  
19995 \let\amalg\textamalg  
19996 \let\sum\textsum  
19997 \let\mp\textmp  
19998 \let\dotplus\textdotplus  
19999 \let\Divides\textDivides  
20000 \let\DividesNot\textDividesNot  
20001 \let\setminus\textsetminus  
20002 \let\ast\textast  
20003 \let\circ\textcirc  
20004 \let\surd\textsurd  
20005 \let\propto\textpropto  
20006 \let\infty\textinfty  
20007 \let\angle\textangle  
20008 \let\measuredangle\textmeasuredangle  
20009 \let\sphericalangle\textsphericalangle  
20010 \let\mid\textmid  
20011 \let\nmid\textnmid  
20012 \let\parallel\textparallel  
20013 \let\nparallel\textnparallel  
20014 \let\wedge\textwedge  
20015 \let\owedge\textowedge  
20016 \let\vee\textvee  
20017 \let\ovee\textovee  
20018 \let\cap\textcap  
20019 \let\cup\textcup  
20020 \let\int\textint  
20021 \let\iint\textiint  
20022 \let\iiint\textiiint  
20023 \let\oint\textoint  
20024 \let\oiint\textoiint  
20025 \let\ointclockwise\textointclockwise  
20026 \let\ointctrlockwise\textointctrlockwise  
20027 \let\therefore\texttherefore  
20028 \let\because\textbecause  
20029 \let\vdotdot\textvdotdot  
20030 \let\squaredots\textsquaredots  
20031 \let\dotminus\textdotminus  
20032 \let\eqcolon\texteqcolon  
20033 \let\sim\textsim  
20034 \let\backsim\textbacksim  
20035 \let\nbacksim\textnbacksim  
20036 \let\wr\textwr  
20037 \let\sim\textsim  
20038 \let\eqsim\texteqsim  
20039 \let\neqsim\textneqsim  
20040 \let\simeq\textsimeq  
20041 \let\nsimeq\textnsimeq  
20042 \let\cong\textcong  
20043 \let\ncong\textncong

20044 \let\approx\textapprox  
 20045 \let\napprox\textnapprox  
 20046 \let\approxeq\textapproxeq  
 20047 \let\napproxeq\textnapproxeq  
 20048 \let\triplesim\texttriplesim  
 20049 \let\ntriplesim\textntriplesim  
 20050 \let\backcong\textbackcong  
 20051 \let\nbackcong\textnbackcong  
 20052 \let\asymp\textasymp  
 20053 \let\nasymp\textnasymp  
 20054 \let\Bumpeq\textBumpeq  
 20055 \let\nBumpeq\textnBumpeq  
 20056 \let\bumpeq\textbumpeq  
 20057 \let\nbumpeq\textnbumpeq  
 20058 \let\doteq\textdoteq  
 20059 \let\ndoteq\textndoteq  
 20060 \let\doteqdot\textdoteqdot  
 20061 \let\ndoteqdot\textndoteqdot  
 20062 \let\fallingdoteq\textfallingdoteq  
 20063 \let\nfallingdoteq\textnfallingdoteq  
 20064 \let\risingdoteq\textrisingdoteq  
 20065 \let\nrisingdoteq\textnrisingdoteq  
 20066 \let\colonequals\textcolonequals  
 20067 \let\equalscolon\textequalscolon  
 20068 \let\eqcirc\texteqcirc  
 20069 \let\neqcirc\textneqcirc  
 20070 \let\circeq\textcirceq  
 20071 \let\ncirceq\textncirceq  
 20072 \let\hateq\texthateq  
 20073 \let\nhateq\textnhateq  
 20074 \let\triangleeq\texttriangleeq  
 20075 \let\neq\textneq  
 20076 \let\ne\textne  
 20077 \let\equiv\textequiv  
 20078 \let\nequiv\textnequiv  
 20079 \let\leq\textleq  
 20080 \let\le\textle  
 20081 \let\geq\textgeq  
 20082 \let\ge\textge  
 20083 \let\leqq\textleqq  
 20084 \let\nleqq\textnleqq  
 20085 \let\geqq\textgeqq  
 20086 \let\ngeqq\textngeqq  
 20087 \let\lneqq\textlneqq  
 20088 \let\gneqq\textgneqq  
 20089 \let\ll\textll  
 20090 \let\nll\textnll  
 20091 \let\gg\textgg  
 20092 \let\ngg\textngg  
 20093 \let\between\textbetween  
 20094 \let\nless\textnless  
 20095 \let\ngtr\textngtr  
 20096 \let\nleq\textnleq  
 20097 \let\ngeq\textngeq

20098 \let\lessim\textlessim  
 20099 \let\gtrsim\textgtrsim  
 20100 \let\nlessim\textnlessim  
 20101 \let\ngtrsim\textngtrsim  
 20102 \let\lessgtr\textlessgtr  
 20103 \let\gtrless\textgtrless  
 20104 \let\ngtrless\textngtrless  
 20105 \let\nlessgtr\textnlessgtr  
 20106 \let\prec\textprec  
 20107 \let\succ\textsucc  
 20108 \let\preccurlyeq\textpreccurlyeq  
 20109 \let\succcurlyeq\textsucccurlyeq  
 20110 \let\precsim\textprecsim  
 20111 \let\nprecsim\textnprecsim  
 20112 \let\succsim\textsuccsim  
 20113 \let\nsuccsim\textnsuccsim  
 20114 \let\nprec\textnprec  
 20115 \let\nsucc\textnsucc  
 20116 \let\subset\textsubset  
 20117 \let\supset\textsupset  
 20118 \let\nsubset\textnssubset  
 20119 \let\nsupset\textnsupset  
 20120 \let\subseteq\textsubseteq  
 20121 \let\supseteq\textsupseteq  
 20122 \let\nsubseteq\textnssubseteq  
 20123 \let\nsupseteq\textnsupseteq  
 20124 \let\subsetneq\textsubsetneq  
 20125 \let\supsetneq\textsupsetneq  
 20126 \let\cupdot\textcupdot  
 20127 \let\cupplus\textcupplus  
 20128 \let\sqsubset\textsqsubset  
 20129 \let\nsqsubset\textnsqsubset  
 20130 \let\sqsupset\textsqsupset  
 20131 \let\nsqsupset\textnsqsupset  
 20132 \let\sqsubseteq\textsqsubseteq  
 20133 \let\nsqsubseteq\textnsqsubseteq  
 20134 \let\sqsupseteq\textsqsupseteq  
 20135 \let\nsqsupseteq\textnsqsupseteq  
 20136 \let\sqcap\textsqcap  
 20137 \let\sqcup\textsqcup  
 20138 \let\oplus\textoplus  
 20139 \let\ominus\textominus  
 20140 \let\otimes\textotimes  
 20141 \let\oslash\textoslash  
 20142 \let\odot\textodot  
 20143 \let\circledcirc\textcircledcirc  
 20144 \let\circledast\textcircledast  
 20145 \let\circleddash\textcircleddash  
 20146 \let\boxplus\textboxplus  
 20147 \let\boxminus\textboxminus  
 20148 \let\boxtimes\textboxtimes  
 20149 \let\boxdot\textboxdot  
 20150 \let\vdash\textvdash  
 20151 \let\dashv\textdashv

20152 `\let\ndashv\textndashv`  
 20153 `\let\top\texttop`  
 20154 `\let\ndownvdash\textndownvdash`  
 20155 `\let\bot\textbot`  
 20156 `\let\nupvdash\textnupvdash`  
 20157 `\let\vDash\textvDash`  
 20158 `\let\Vdash\textVdash`  
 20159 `\let\Vvdash\textVvdash`  
 20160 `\let\NVdash\textNVdash`  
 20161 `\let\VDash\textVDash`  
 20162 `\let\Nvdash\textNvdash`  
 20163 `\let\NVdash\textNVdash`  
 20164 `\let\Nvdash\textNvdash`  
 20165 `\let\NVDash\textNVDash`  
 20166 `\let\lhd\textlhd`  
 20167 `\let\rhd\textrhd`  
 20168 `\let\unlhd\textunlhd`  
 20169 `\let\unrhd\textunrhd`  
 20170 `\let\multimapdotbothA\textmultimapdotbothA`  
 20171 `\let\multimapdotbothB\textmultimapdotbothB`  
 20172 `\let\multimap\textmultimap`  
 20173 `\let\veebar\textveebar`  
 20174 `\let\barwedge\textbarwedge`  
 20175 `\let\star\textstar`  
 20176 `\let\divideontimes\textdivideontimes`  
 20177 `\let\bowtie\textbowtie`  
 20178 `\let\ltimes\textltimes`  
 20179 `\let\rtimes\textrtimes`  
 20180 `\let\leftthreetimes\textleftthreetimes`  
 20181 `\let\rightthreetimes\textrightthreetimes`  
 20182 `\let\backsimeq\textbacksimeq`  
 20183 `\let\Nbacksimeq\textNbacksimeq`  
 20184 `\let\curlyvee\textcurlyvee`  
 20185 `\let\curlywedge\textcurlywedge`  
 20186 `\let\Subset\textSubset`  
 20187 `\let\NSubset\textNSubset`  
 20188 `\let\Supset\textSupset`  
 20189 `\let\NSupset\textNSupset`  
 20190 `\let\Cap\textCap`  
 20191 `\let\Cup\textCup`  
 20192 `\let\pitchfork\textpitchfork`  
 20193 `\let\lessdot\textlessdot`  
 20194 `\let\gtrdot\textgtrdot`  
 20195 `\let\lll\textlll`  
 20196 `\let\ggg\textggg`  
 20197 `\let\lesseqgtr\textlesseqgtr`  
 20198 `\let\gtreqless\textgtreqless`  
 20199 `\let\curlyeqprec\textcurlyeqprec`  
 20200 `\let\Ncurlyeqprec\textNcurlyeqprec`  
 20201 `\let\curlyeqsucc\textcurlyeqsucc`  
 20202 `\let\Ncurlyeqsucc\textNcurlyeqsucc`  
 20203 `\let\preccurlyeq\textpreccurlyeq`  
 20204 `\let\nsucccurlyeq\textnsucccurlyeq`  
 20205 `\let\Nqsubseteq\textNqsubseteq`

20206 \let\nqsupseteq\textnqsupseteq  
20207 \let\sqsubsetneq\textsqssubsetneq  
20208 \let\sqsupsetneq\textsqsupsetneq  
20209 \let\lnsim\textlnsim  
20210 \let\gnsim\textgnsim  
20211 \let\precnsim\textprecnsim  
20212 \let\succnsim\textsuccnsim  
20213 \let\ntriangleleft\textntriangleleft  
20214 \let\ntriangleright\textntriangleright  
20215 \let\ntrianglelefteq\textntrianglelefteq  
20216 \let\ntrianglerighteq\textntrianglerighteq  
20217 \let\vdots\textvdots  
20218 \let\cdots\textcdots  
20219 \let\udots\textudots  
20220 \let\ddots\textddots  
20221 \let\barin\textbarin  
20222 \let\diameter\textdiameter  
20223 \let\backneg\textbackneg  
20224 \let\wasylozenge\textwasylozenge  
20225 \let\invbackneg\textinvbackneg  
20226 \let\clock\textclock  
20227 \let\ulcorner\textulcorner  
20228 \let\urcorner\texturcorner  
20229 \let\llcorner\textllcorner  
20230 \let\lrcorner\textlrcorner  
20231 \let\frown\textfrown  
20232 \let\smile\textsmile  
20233 \let\Keyboard\textKeyboard  
20234 \let\langle\textlangle  
20235 \let\rangle\textrangle  
20236 \let\APLin\textAPLin  
20237 \let\Tumbler\textTumbler  
20238 \let\notslash\textnotslash  
20239 \let\notbackslash\textnotbackslash  
20240 \let\boxbackslash\textboxbackslash  
20241 \let\APLleftarrowbox\textAPLleftarrowbox  
20242 \let\APLrightarrowbox\textAPLrightarrowbox  
20243 \let\APLuparrowbox\textAPLuparrowbox  
20244 \let\APLdownarrowbox\textAPLdownarrowbox  
20245 \let\APLinput\textAPLinput  
20246 \let\Request\textRequest  
20247 \let\Beam\textBeam  
20248 \let\hexagon\texthexagon  
20249 \let\APLbox\textAPLbox  
20250 \let\ForwardToIndex\textForwardToIndex  
20251 \let\RewindToIndex\textRewindToIndex  
20252 \let\bbslash\textbbslash  
20253 \let\CircledA\textCircledA  
20254 \let\CleaningF\textCleaningF  
20255 \let\CleaningFF\textCleaningFF  
20256 \let\CleaningP\textCleaningP  
20257 \let\CleaningPP\textCleaningPP  
20258 \let\CuttingLine\textCuttingLine  
20259 \let\UParrow\textUParrow

20260 \let\bigtriangleup\textbigtriangleup  
20261 \let\Forward\textForward  
20262 \let\triangleright\texttriangleright  
20263 \let\RHD\textRHD  
20264 \let\DOWNarrow\textDOWNarrow  
20265 \let\bigtriangledown\textbigtriangledown  
20266 \let\Rewind\textRewind  
20267 \let\triangleleft\texttriangleleft  
20268 \let\LHD\textLHD  
20269 \let\diamond\textdiamond  
20270 \let\lozenge\textlozenge  
20271 \let\LEFTCIRCLE\textLEFTCIRCLE  
20272 \let\RIGHTCIRCLE\textRIGHTCIRCLE  
20273 \let\openbullet\textopenbullet  
20274 \let\boxbar\textboxbar  
20275 \let\bigcirc\textbigcirc  
20276 \let\Cloud\textCloud  
20277 \let\FiveStar\textFiveStar  
20278 \let\FiveStarOpen\textFiveStarOpen  
20279 \let\Phone\textPhone  
20280 \let\boxempty\textboxempty  
20281 \let\Checkedbox\textCheckedbox  
20282 \let\Crossedbox\textCrossedbox  
20283 \let\Coffeecup\textCoffeecup  
20284 \let\HandCuffLeft\textHandCuffLeft  
20285 \let\HandCuffRight\textHandCuffRight  
20286 \let\HandLeft\textHandLeft  
20287 \let\HandRight\textHandRight  
20288 \let\Radioactivity\textRadioactivity  
20289 \let\Biohazard\textBiohazard  
20290 \let\Ankh\textAnkh  
20291 \let\YinYang\textYinYang  
20292 \let\frownie\textfrownie  
20293 \let\smiley\textsmiley  
20294 \let\blacksmiley\textblacksmiley  
20295 \let\sun\textsun  
20296 \let\leftmoon\textleftmoon  
20297 \let\rightmoon\textrightmoon  
20298 \let\mercury\textmercury  
20299 \let\earth\textearth  
20300 \let\male\textmale  
20301 \let\jupiter\textjupiter  
20302 \let\saturn\textsaturn  
20303 \let\uranus\texturanus  
20304 \let\neptune\textneptune  
20305 \let\pluto\textpluto  
20306 \let\aries\textaries  
20307 \let\taurus\texttaurus  
20308 \let\gemini\textgemini  
20309 \let\cancer\textcancer  
20310 \let\leo\textleo  
20311 \let\virgo\textvirgo  
20312 \let\libra\textlibra  
20313 \let\scorpio\textscorpio

20314 \let\sagittarius\textsagittarius  
20315 \let\capricornus\textcapricornus  
20316 \let\aquarius\textaquarius  
20317 \let\pisces\textpisces  
20318 \let\quarternote\textquarternote  
20319 \let\twonotes\texttwonotes  
20320 \let\sixteenthnote\textsixteenthnote  
20321 \let\flat\textflat  
20322 \let\natural\textnatural  
20323 \let\sharp\textsharp  
20324 \let\recycle\textrecycle  
20325 \let\Wheelchair\textWheelchair  
20326 \let\Flag\textFlag  
20327 \let\MineSign\textMineSign  
20328 \let\dsmilitary\textdsmilitary  
20329 \let\dsmedical\textdsmedical  
20330 \let\dsjuridical\textdsjuridical  
20331 \let\dschemical\textdschemical  
20332 \let\dsbiological\textdsbiological  
20333 \let\dscommercial\textdscommercial  
20334 \let\manstar\textmanstar  
20335 \let\danger\textdanger  
20336 \let\FemaleFemale\textFemaleFemale  
20337 \let\MaleMale\textMaleMale  
20338 \let\FemaleMale\textFemaleMale  
20339 \let\Hermaphrodite\textHermaphrodite  
20340 \let\Neutral\textNeutral  
20341 \let\hexstar\texthexstar  
20342 \let\SunCload\textSunCload  
20343 \let\Rain\textRain  
20344 \let\noway\textnoway  
20345 \let\Mountain\textMountain  
20346 \let\Tent\textTent  
20347 \let\ScissorRight\textScissorRight  
20348 \let\ScissorRightBrokenTop\textScissorRightBrokenTop  
20349 \let\ScissorHollowRight\textScissorHollowRight  
20350 \let\PhoneHandset\textPhoneHandset  
20351 \let\Tape\textTape  
20352 \let\Plane\textPlane  
20353 \let\Envelope\textEnvelope  
20354 \let\Peace\textPeace  
20355 \let\WritingHand\textWritingHand  
20356 \let\PencilRightDown\textPencilRightDown  
20357 \let\PencilRight\textPencilRight  
20358 \let\PencilRightUp\textPencilRightUp  
20359 \let\NibRight\textNibRight  
20360 \let\NibSolidRight\textNibSolidRight  
20361 \let\Checkmark\textCheckmark  
20362 \let\CheckmarkBold\textCheckmarkBold  
20363 \let\XSolid\textXSolid  
20364 \let\XSolidBold\textXSolidBold  
20365 \let\XSolidBrush\textXSolidBrush  
20366 \let\PlusOutline\textPlusOutline  
20367 \let\Plus\textPlus

20368 \let\PlusThinCenterOpen\textPlusThinCenterOpen  
20369 \let\PlusCenterOpen\textPlusCenterOpen  
20370 \let\Cross\textCross  
20371 \let\CrossOpenShadow\textCrossOpenShadow  
20372 \let\CrossOutline\textCrossOutline  
20373 \let\CrossMaltese\textCrossMaltese  
20374 \let\DavidStar\textDavidStar  
20375 \let\FourAsterisk\textFourAsterisk  
20376 \let\JackStar\textJackStar  
20377 \let\JackStarBold\textJackStarBold  
20378 \let\CloverTips\textCloverTips  
20379 \let\FourStar\textFourStar  
20380 \let\FourStarOpen\textFourStarOpen  
20381 \let\FiveStarOpenCircled\textFiveStarOpenCircled  
20382 \let\FiveStarCenterOpen\textFiveStarCenterOpen  
20383 \let\FiveStarOpenDotted\textFiveStarOpenDotted  
20384 \let\FiveStarOutline\textFiveStarOutline  
20385 \let\FiveStarOutlineHeavy\textFiveStarOutlineHeavy  
20386 \let\FiveStarConvex\textFiveStarConvex  
20387 \let\FiveStarShadow\textFiveStarShadow  
20388 \let\AsteriskBold\textAsteriskBold  
20389 \let\AsteriskCenterOpen\textAsteriskCenterOpen  
20390 \let\EightStarTaper\textEightStarTaper  
20391 \let\EightStarConvex\textEightStarConvex  
20392 \let\SixStar\textSixStar  
20393 \let\EightStar\textEightStar  
20394 \let\EightStarBold\textEightStarBold  
20395 \let\TwelveStar\textTwelveStar  
20396 \let\SixteenStarLight\textSixteenStarLight  
20397 \let\SixFlowerPetalRemoved\textSixFlowerPetalRemoved  
20398 \let\SixFlowerOpenCenter\textSixFlowerOpenCenter  
20399 \let\Asterisk\textAsterisk  
20400 \let\SixFlowerAlternate\textSixFlowerAlternate  
20401 \let\FiveFlowerPetal\textFiveFlowerPetal  
20402 \let\FiveFlowerOpen\textFiveFlowerOpen  
20403 \let\EightFlowerPetal\textEightFlowerPetal  
20404 \let\SunshineOpenCircled\textSunshineOpenCircled  
20405 \let\SixFlowerAltPetal\textSixFlowerAltPetal  
20406 \let\SnowflakeChevron\textSnowflakeChevron  
20407 \let\Snowflake\textSnowflake  
20408 \let\SnowflakeChevronBold\textSnowflakeChevronBold  
20409 \let\Sparkle\textSparkle  
20410 \let\SparkleBold\textSparkleBold  
20411 \let\AsteriskRoundedEnds\textAsteriskRoundedEnds  
20412 \let\EightFlowerPetalRemoved\textEightFlowerPetalRemoved  
20413 \let\EightAsterisk\textEightAsterisk  
20414 \let\CircleShadow\textCircleShadow  
20415 \let\SquareShadowBottomRight\textSquareShadowBottomRight  
20416 \let\SquareTopRight\textSquareTopRight  
20417 \let\SquareCastShadowBottomRight\textSquareCastShadowBottomRight  
20418 \let\SquareCastShadowTopRight\textSquareCastShadowTopRight  
20419 \let\DiamondSolid\textDiamondSolid  
20420 \let\RectangleThin\textRectangleThin  
20421 \let\Rectangle\textRectangle



20422 `\let\RectangleBold\textRectangleBold`  
20423 `\let\perp\textperp`  
20424 `\let\notperp\textnotperp`  
20425 `\let\veedot\textveedot`  
20426 `\let\wedgedot\textwedgedot`  
20427 `\let\leftspoon\textleftspoon`  
20428 `\let\lbrackdbl\textlbrackdbl`  
20429 `\let\rbrackdbl\textrbrackdbl`  
20430 `\let\circlearrowleft\textcirclearrowleft`  
20431 `\let\circlearrowright\textcirclearrowright`  
20432 `\let\longleftarrow\textlongleftarrow`  
20433 `\let\longrightarrow\textlongrightarrow`  
20434 `\let\longleftarrow\textLongleftarrow`  
20435 `\let\Longleftarrow\textLongleftarrow`  
20436 `\let\Longrightarrow\textLongrightarrow`  
20437 `\let\Longleftarrow\textLongleftarrow`  
20438 `\let\longmapsto\textlongmapsto`  
20439 `\let\Longmapsfrom\textLongmapsfrom`  
20440 `\let\Longmapsto\textLongmapsto`  
20441 `\let\nwsearrow\textnwsearrow`  
20442 `\let\neswarrow\textneswarrow`  
20443 `\let\lhooknarrow\textlhooknarrow`  
20444 `\let\rhooknarrow\textrhooknarrow`  
20445 `\let\lhooksearrow\textlhooksearrow`  
20446 `\let\rhooksearrow\textrhooksearrow`  
20447 `\let\leadsto\textleadsto`  
20448 `\let\rcurvearrowne\textrcurvearrowne`  
20449 `\let\lcurvearrowse\textlcurvearrowse`  
20450 `\let\lcurvearrowsw\textlcurvearrowsw`  
20451 `\let\rcurvearrowse\textrcurvearrowse`  
20452 `\let\lcurvearrowdown\textlcurvearrowdown`  
20453 `\let\rcurvearrowdown\textrcurvearrowdown`  
20454 `\let\rcurvearrowleft\textrcurvearrowleft`  
20455 `\let\rcurvearrowright\textrcurvearrowright`  
20456 `\let\leftrightharpoon\textleftrightharpoon`  
20457 `\let\rightleftharpoon\textrightleftharpoon`  
20458 `\let\updownharpoonrightleft\textupdownharpoonrightleft`  
20459 `\let\updownharpoonleftright\textupdownharpoonleftright`  
20460 `\let\leftleftharpoons\textleftleftharpoons`  
20461 `\let\upupharpoons\textupupharpoons`  
20462 `\let\righttrightharpoons\textrighttrightharpoons`  
20463 `\let\downdownharpoons\textdowndownharpoons`  
20464 `\let\leftbarharpoon\textleftbarharpoon`  
20465 `\let\barleftharpoon\textbarleftharpoon`  
20466 `\let\rightbarharpoon\textrightbarharpoon`  
20467 `\let\barrightharpoon\textbarrightharpoon`  
20468 `\let\updownharpoons\textupdownharpoons`  
20469 `\let\downupharpoons\textdownupharpoons`  
20470 `\let\moo\textmoo`  
20471 `\let\llparenthesis\textllparenthesis`  
20472 `\let\rrparenthesis\textrrparenthesis`  
20473 `\let\invdiameter\textinvdiameter`  
20474 `\let\obar\textobar`  
20475 `\let\obslash\textobslash`

20476 \let\obot\textobot  
 20477 \let\NoChemicalCleaning\textNoChemicalCleaning  
 20478 \let\olessthan\textolessthan  
 20479 \let\ogreaterthan\textogreaterthan  
 20480 \let\boxslash\textboxslash  
 20481 \let\boxbslash\textboxbslash  
 20482 \let\boxast\textboxast  
 20483 \let\boxcircle\textboxcircle  
 20484 \let\boxbox\textboxbox  
 20485 \let\Valve\textValve  
 20486 \let\multimapboth\textmultimapboth  
 20487 \let\shuffle\textshuffle  
 20488 \let\uplus\textuplus  
 20489 \let\bigdoublewedge\textbigdoublewedge  
 20490 \let\bigdoublevee\textbigdoublevee  
 20491 \let\Join\textJoin  
 20492 \let\fatsemi\textfatsemi  
 20493 \let\circplus\textcircplus  
 20494 \let\minusdot\textminusdot  
 20495 \let\dottimes\textdottimes  
 20496 \let\dtimes\textdtimes  
 20497 \let\odiv\textodiv  
 20498 \let\invneg\textinvneg  
 20499 \let\sqdoublecap\textsqdoublecap  
 20500 \let\capdot\textcapdot  
 20501 \let\sqdoublecup\textsqdoublecup  
 20502 \let\doublewedge\textdoublewedge  
 20503 \let\doublevee\textdoublevee  
 20504 \let\doublebarwedge\textdoublebarwedge  
 20505 \let\veedoublebar\textveedoublebar  
 20506 \let\eqdot\texteqdot  
 20507 \let\neqdot\textneqdot  
 20508 \let\coloncolonequals\textcoloncolonequals  
 20509 \let\leqslant\textleqslant  
 20510 \let\leqslant\textleqslant  
 20511 \let\geqslant\textgeqslant  
 20512 \let\geqslant\textgeqslant  
 20513 \let\lessapprox\textlessapprox  
 20514 \let\lessapprox\textlessapprox  
 20515 \let\gtrapprox\textgtrapprox  
 20516 \let\gtrapprox\textgtrapprox  
 20517 \let\lneq\textlneq  
 20518 \let\gneq\textgneq  
 20519 \let\lnapprox\textlnapprox  
 20520 \let\gnapprox\textgnapprox  
 20521 \let\lesseqgtr\textlesseqgtr  
 20522 \let\gtreqless\textgtreqless  
 20523 \let\eqslantless\texteqslantless  
 20524 \let\eqslantgtr\texteqslantgtr  
 20525 \let\leftslice\textleftslice  
 20526 \let\rightslice\textrightslice  
 20527 \let\preceq\textpreceq  
 20528 \let\preceq\textpreceq  
 20529 \let\succeq\textsucceq

20530 `\let\nsucceq\textnsucceq`  
 20531 `\let\precneq\textprecneq`  
 20532 `\let\sucneq\textsucneq`  
 20533 `\let\preceqq\textpreceqq`  
 20534 `\let\npreceqq\textnpreceqq`  
 20535 `\let\succeqq\textsucceqq`  
 20536 `\let\nsucceqq\textnsucceqq`  
 20537 `\let\precneqq\textprecneqq`  
 20538 `\let\sucneqq\textsucneqq`  
 20539 `\let\precapprox\textprecapprox`  
 20540 `\let\nprecapprox\textnprecapprox`  
 20541 `\let\succapprox\textsuccapprox`  
 20542 `\let\nsuccapprox\textnsuccapprox`  
 20543 `\let\precnapprox\textprecnapprox`  
 20544 `\let\succnapprox\textsuccnapprox`  
 20545 `\let\subseteqq\textsubseteqq`  
 20546 `\let\nsubseteqq\textnsubseteqq`  
 20547 `\let\supseteqq\textsupseteqq`  
 20548 `\let\nsupseteqq\textnsupseteqq`  
 20549 `\let\dashV\textdashV`  
 20550 `\let\ndashV\textndashV`  
 20551 `\let\Dashv\textDashv`  
 20552 `\let\nDashv\textnDashv`  
 20553 `\let\DashV\textDashV`  
 20554 `\let\nDashV\textnDashV`  
 20555 `\let\downmodels\textdownmodels`  
 20556 `\let\ndownmodels\textndownmodels`  
 20557 `\let\upmodels\textupmodels`  
 20558 `\let\nupmodels\textnupmodels`  
 20559 `\let\upspoon\textupspoon`  
 20560 `\let\interleave\textinterleave`  
 20561 `\let\sslash\textsslash`  
 20562 `\let\pentagon\textpentagon`  
 20563 `\let\varhexagon\textvarhexagon`  
 20564 `\let\jinferior\textjinferior`  
 20565 `\let\slashdiv\textslashdiv`  
 20566 `\let\fivedots\textfivedots`  
 20567 `\let\oo\textoo`  
 20568 `\let\GaPa\textGaPa`  
 20569 `\let\HaPa\textHaPa`  
 20570 `\let\ViPa\textViPa`  
 20571 `\let\AcPa\textAcPa`  
 20572 `\let\SePa\textSePa`  
 20573 `\let\ZwPa\textZwPa`  
 20574 `\let\fullnote\textfullnote`  
 20575 `\let\halfnote\texthalfnote`  
 20576 `\let\Vier\textVier`  
 20577 `\let\Acht\textAcht`  
 20578 `\let\Sech\textSech`  
 20579 `\let\Zwdr\textZwdr`  
 20580 `\let\Mundus\textMundus`  
 20581 `\let\Moon\textMoon`  
 20582 `\let\ManFace\textManFace`  
 20583 `\let\WomanFace\textWomanFace`

20584 \let\Fax\textFax  
20585 \let\Fire\textFire  
20586 \let\Bicycle\textBicycle  
20587 \let\Gentsroom\textGentsroom  
20588 \let\Ladiesroom\textLadiesroom  
20589 \let\ccnc\textccnc  
20590 \let\ccsa\textccsa  
20591 \let\Info\textInfo  
20592 \let\CESign\textCESign  
20593 \let\neg\textneg  
20594 \let\times\texttimes  
20595 \let\div\textdiv  
20596 \let\pm\textpm  
20597 \let\cdot\textcdot  
20598 }% \psdmapshortnames  
20599 \newcommand\*{\psdaliasnames}{%  
20600 \let\epsdice\HyPsd@DieFace  
20601 \let\fdice\HyPsd@DieFace  
20602 \let\MoonPha\HyPsd@MoonPha  
20603 \let\mathdollar\textdollar  
20604 \let\EyesDollar\textdollar  
20605 \let\binampersand\textampersand  
20606 \let\with\textampersand  
20607 \let\mathunderscore\textunderscore  
20608 \let\textvertline\textbar  
20609 \let\mathsterling\textsterling  
20610 \let\pounds\textsterling  
20611 \let\brokenvert\textbrokenbar  
20612 \let\mathsection\textsection  
20613 \let\S\textsection  
20614 \let\mathparagraph\textparagraph  
20615 \let\MultiplicationDot\textperiodcentered  
20616 \let\Squaredot\textperiodcentered  
20617 \let\vartimes\textmultiply  
20618 \let\MVMultiplication\textmultiply  
20619 \let\eth\dh  
20620 \let\crossd\textcrd  
20621 \let\textbard\textcrd  
20622 \let\bard\textcrd  
20623 \let\textcrh\texthbar  
20624 \let\crossh\texthbar  
20625 \let\planck\texthbar  
20626 \let\eng\ng  
20627 \let\engma\ng  
20628 \let\crossb\textcrb  
20629 \let\textbarb\textcrb  
20630 \let\barb\textcrb  
20631 \let\Florin\textflorin  
20632 \let\hv\texthvlig  
20633 \let\hausak\textthk  
20634 \let\crossnilambda\textcrlambda  
20635 \let\barlambda\textcrlambda  
20636 \let\lambdabar\textcrlambda  
20637 \let\lambdash\textcrlambda

20638 \let\textnrleg\textPUnrleg  
20639 \let\textpipevar\textpipe  
20640 \let\textdoublepipevar\textdoublepipe  
20641 \let\textdoublebarpipevar\textdoublebarpipe  
20642 \let\textcrg\textgslash  
20643 \let\textdblig\textPUdblig  
20644 \let\textqplig\textPUqplig  
20645 \let\textcentoldstyle\textslashc  
20646 \let\textbarc\textslashc  
20647 \let\inva\textturna  
20648 \let\vara\textscripta  
20649 \let\invscripta\textturnscripta  
20650 \let\rotvara\textturnscripta  
20651 \let\hookb\texthtb  
20652 \let\hausab\texthtb  
20653 \let\varopeno\textopeno  
20654 \let\curlyc\textctc  
20655 \let\taild\textrtaild  
20656 \let\hookd\texthtd  
20657 \let\hausad\texthtd  
20658 \let\er\textrhookschwa  
20659 \let\epsi\textniepsilon  
20660 \let\hookrepsilon\texthookrepsilon  
20661 \let\closedrepsilon\textcloserepsilon  
20662 \let\barj\textbardotlessj  
20663 \let\hookg\texthtg  
20664 \let\varg\textscriptg  
20665 \let\vod\textipagamma  
20666 \let\invh\textturnh  
20667 \let\udesc\textturnh  
20668 \let\hookh\texthth  
20669 \let\voicedh\texthth  
20670 \let\hookheng\texththeng  
20671 \let\ibar\textbari  
20672 \let\vari\textniota  
20673 \let\tildel\texttilde  
20674 \let\latfric\textbeltl  
20675 \let\tail\textrtail  
20676 \let\lz\textlyoghlig  
20677 \let\invm\textturnm  
20678 \let\rotm\textturnm  
20679 \let\legm\textturnmleg  
20680 \let\labdentalnas\textltailm  
20681 \let\emgma\textltailm  
20682 \let\nj\textltailn  
20683 \let\enya\textltailn  
20684 \let\tailn\textrtailn  
20685 \let\closedniomega\textcloseomega  
20686 \let\varomega\textcloseomega  
20687 \let\invr\textturnr  
20688 \let\rotr\textturnr  
20689 \let\invlegr\textturnlonglegr  
20690 \let\tailinvr\textturnrrtail  
20691 \let\legr\textlonglegr

20692 \let\tailr\textrtailr  
20693 \let\flapr\textfishhookr  
20694 \let\flap\textfishhookr  
20695 \let\tails\textrtails  
20696 \let\curlyesh\textctesh  
20697 \let\clickt\textturnt  
20698 \let\tailt\textrtailt  
20699 \let\ubar\textbaru  
20700 \let\rotOmega\textniupsilon  
20701 \let\invv\textturnv  
20702 \let\pwedge\textturnv  
20703 \let\invw\textturnw  
20704 \let\rotw\textturnw  
20705 \let\invy\textturny  
20706 \let\roty\textturny  
20707 \let\tailz\textrtailz  
20708 \let\curlyz\textctz  
20709 \let\curlyyogh\textctyogh  
20710 \let\ejective\textglotstop  
20711 \let\glottal\textglotstop  
20712 \let\reject\textrevglotstop  
20713 \let\clickc\textstretchc  
20714 \let\textstretchcvar\textstretchc  
20715 \let\clickb\textbullseye  
20716 \let\textObullseye\textbullseye  
20717 \let\textctjvar\textctj  
20718 \let\textturnsck\textturnk  
20719 \let\dz\textdzlig  
20720 \let\tesh\textteshlig  
20721 \let\digamma\textdigammagreek  
20722 \let\hardsign\cyrhrdsn  
20723 \let\softsign\cyrsoftsn  
20724 \let\hebsin\hebshin  
20725 \let\textsck\textPUscck  
20726 \let\textscm\textPUscm  
20727 \let\textscp\textPUscp  
20728 \let\textrevscr\textPUrevscr  
20729 \let\textrhoaka\textPURhooka  
20730 \let\textrhooke\textPURhooke  
20731 \let\textrhookepsilon\textPURhookepsilon  
20732 \let\textrhookopeno\textPURhookopeno  
20733 \let\textdoublevertline\textbardbl  
20734 \let\dag\textdagger  
20735 \let\ddagger\textdaggerdbl  
20736 \let\ddag\textdaggerdbl  
20737 \let\mathellipsis\textellipsis  
20738 \let\EurDig\texteuuro  
20739 \let\EURdig\texteuuro  
20740 \let\EurHv\texteuuro  
20741 \let\EURhv\texteuuro  
20742 \let\EurCr\texteuuro  
20743 \let\EURcr\texteuuro  
20744 \let\EurTm\texteuuro  
20745 \let\EURtm\texteuuro

20746 `\let\Eur\texteuro`  
20747 `\let\Denarius\textDeleatur`  
20748 `\let\agemO\textmho`  
20749 `\let\EstimatedSign\textestimated`  
20750 `\let\Ecommerce\textestimated`  
20751 `\let\bindnasrepma\textinvamp`  
20752 `\let\parr\textinvamp`  
20753 `\let\MVRightArrow\textrightarrow`  
20754 `\let\MVRightarrow\textrightarrow`  
20755 `\let\MVArrowDown\textdownarrow`  
20756 `\let\Force\textdownarrow`  
20757 `\let\textglobrise\textnearrow`  
20758 `\let\textglobfall\textsearrow`  
20759 `\let\Lightning\textlightning`  
20760 `\let\Conclusion\textrightarrow`  
20761 `\let\dashedleftarrow\textdashleftarrow`  
20762 `\let\dashedrightarrow\textdashrightarrow`  
20763 `\let\varnothing\textemptyset`  
20764 `\let\owns\textni`  
20765 `\let\notni\textnotowner`  
20766 `\let\varprop\textpropto`  
20767 `\let\varangle\textsphericalangle`  
20768 `\let\Anglesign\textsphericalangle`  
20769 `\let\AngleSign\textsphericalangle`  
20770 `\let\notdivides\textnmid`  
20771 `\let\varowedge\textowedge`  
20772 `\let\varovee\textovee`  
20773 `\let\varint\textint`  
20774 `\let\varoint\textoint`  
20775 `\let\downtherefore\textbecause`  
20776 `\let\textdotdiv\textdotminus`  
20777 `\let\AC\textsim`  
20778 `\let\wreath\textwr`  
20779 `\let\nthickapprox\textnapprox`  
20780 `\let\VHF\texttriplesim`  
20781 `\let\notasymp\textnasymp`  
20782 `\let\Doteq\textdoteqdot`  
20783 `\let\corresponds\texthateq`  
20784 `\let\Corresponds\texthateq`  
20785 `\let\nequal\textneq`  
20786 `\let\Congruent\textequiv`  
20787 `\let\NotCongruent\textnequiv`  
20788 `\let\notequiv\textnequiv`  
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20790 `\let\LargerOrEqual\textgeq`  
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20792 `\let\apprge\textgtrsim`  
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20794 `\let\varominus\textominus`  
20795 `\let\varotimes\textotimes`  
20796 `\let\varoslash\textoslash`  
20797 `\let\varodot\textodot`  
20798 `\let\ocirc\textcircledcirc`  
20799 `\let\varocircle\textcircledcirc`

20800 \let\varoast\textcircledast  
20801 \let\oasterisk\textcircledast  
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20803 \let\leftvdash\textdashv  
20804 \let\leftvdash\textndashv  
20805 \let\downvdash\texttop  
20806 \let\upvdash\textbot  
20807 \let\nperp\textnupvdash  
20808 \let\models\textvDash  
20809 \let\rightmodels\textvDash  
20810 \let\rightVdash\textVdash  
20811 \let\rightModels\textVDash  
20812 \let\rightvdash\textnvdash  
20813 \let\rightmodels\textnvDash  
20814 \let\nmodels\textnvDash  
20815 \let\rightVdash\textnVdash  
20816 \let\rightModels\textnVDash  
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20818 \let\gtrclosed\textrhd  
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20832 \let\Clocklogo\textclock  
20833 \let\ClockLogo\textclock  
20834 \let\baro\textstmaryrdbaro  
20835 \let\varparallelinv\textbbslash  
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20838 \let\CutLine\textCuttingLine  
20839 \let\Cutline\textCuttingLine  
20840 \let\MoveUp\textUParrow  
20841 \let\APLup\textbigtriangleup  
20842 \let\Bleech\textbigtriangleup  
20843 \let\MoveDown\textDOWNarrow  
20844 \let\APLdown\textbigtriangledown  
20845 \let\Diamond\textdiamond  
20846 \let\varbigcirc\textbigcircle  
20847 \let\Telefon\textPhone  
20848 \let\Box\textboxempty  
20849 \let\CheckedBox\textCheckedbox  
20850 \let\XBox\textCrossedbox  
20851 \let\CrossedBox\textCrossedbox  
20852 \let\rightpointleft\textHandLeft  
20853 \let\leftpointright\textHandRight



20854 \let\PointingHand\textHandRight  
20855 \let\Pointinghand\textHandRight  
20856 \let\Radiation\textRadioactivity  
20857 \let\Yinyang\textYinYang  
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20859 \let\Yingyang\textYinYang  
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20861 \let\Smiley\textsmiley  
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20865 \let\female\textPUfemale  
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20880 \let\Gemini\textgemini  
20881 \let\Cancer\textcancer  
20882 \let\Leo\textleo  
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20885 \let\Scorpio\textscorpio  
20886 \let\Sagittarius\textsagittarius  
20887 \let\Capricorn\textcapricornus  
20888 \let\Aquarius\textaquarius  
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20890 \let\spadesuit\textspadesuitblack  
20891 \let\Heart\textheartsuitwhite  
20892 \let\heartsuit\textheartsuitwhite  
20893 \let\diamondsuit\textdiamondsuitwhite  
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20895 \let\eighthnote\textmusicalnote  
20896 \let\Recycling\textrecycle  
20897 \let\VarFlag\textFlag  
20898 \let\textxswup\textdsmilitary  
20899 \let\textuncrfemale\textPUuncrfemale  
20900 \let\Football\textSoccerBall  
20901 \let\CutLeft\textScissorRightBrokenBottom  
20902 \let\Cutright\textScissorRightBrokenBottom  
20903 \let\RightScissors\textScissorRight  
20904 \let\Leftscissors\textScissorRight  
20905 \let\Letter\textEnvelope  
20906 \let\Writinghand\textWritingHand  
20907 \let\checkmark\textCheckmark

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20908 \let\DavidStar\textDavidStar
20909 \let\llbracket\textlbrackdbl
20910 \let\rrbracket\textrbrackdbl
20911 \let\RightTorque\textlcurvearrowdown
20912 \let\Righttorque\textlcurvearrowdown
20913 \let\LeftTorque\textrcurvearrowdown
20914 \let\Lefttorque\textrcurvearrowdown
20915 \let\textvarobar\textobar
20916 \let\circledbslash\textobslash
20917 \let\obackslash\textobslash
20918 \let\varobslash\textobslash
20919 \let\odplus\textobot
20920 \let\varolessthan\textolessthan
20921 \let\varogreaterthan\textogreaterthan
20922 \let\divdot\textminusdot
20923 \let\doublesqcap\textsqdoublecap
20924 \let\doublesqcup\textsqdoublecup
20925 \let\merge\textdoublevee
20926 \let\leftVdash\textdashV
20927 \let\nleftVdash\textndashV
20928 \let\leftmodels\textDashv
20929 \let\nleftmodels\textnDashv
20930 \let\leftModels\textDashV
20931 \let\nleftModels\textnDashV
20932 \let\varparallel\textsslash
20933 \let\textheng\textPUheng
20934 \let\textlhookfour\textPUhookfour
20935 \let\textscf\textPUscf
20936 \let\textaolig\textPUaolig
20937 \let\Ganz\textfullnote
20938 \let\Halb\texthalfnote
20939 \let\Womanface\textWomanFace
20940 \let\Faxmachine\textFax
20941 \let\CEsign\textCESign
20942 }% \psdaliasnames
20943 </psdextra>

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20944 (*check)
20945 \typeout{}
20946 \begin{document}
20947 \end{document}
20948 </check>

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| <code>\kvsetkeys</code> 2607, 2672, 2812, 3673,<br>3779, 4251, 4505, 4524,<br>4647, 5785, 8703, 11207,<br>12490, 12792, 12805, 12854,<br>12897, 12918, 13048, 13429 | <code>\leavevmode</code> .. 636, 2207, 4237,<br>4255, 4295, 5061, 5093,<br>5168, 6327, 7392, 7553,<br>8523, 8924, 8992, 9027,<br>9061, 9320, 9408, 9488,<br>9525, 9565, 9916, 9958,<br>9996, 10029, 10262, 10271,<br>10325, 10484, 10509, 10539,<br>10572, 10944, 11271, 11524,<br>11551, 11582, 11944, 12226,<br>12545, 12671, 12679, 12718,<br>12751, 13148, 13234, 13256,<br>13276, 13283, 13304, 13324,<br>13355, 13501, 13593, 13622,<br>13645, 13654, 13678, 13697,<br>13736, 14535   | <code>\Lefttorque</code> ..... 19078, 20914            |
| <b>L</b>  | <code>\lcurvearrowdown</code> 19070, 20452  | <code>\leftVdash</code> ..... 19303, 20926             |
| <code>\L</code> ..... 14795, 15622  | <code>\lcurvearrowsw</code> .. 19065, 20450   | <code>\leftvdash</code> ..... 18148, 20803             |
| <code>\l</code> ... 6880, 6902, 14808, 15624  | <code>\ldots</code> ..... 528   | <code>\legacy</code> . 6881, 6883, 6898, 6903,<br>6905 |
| <code>\labdentals</code> ... 16094, 20680   | <code>\le</code> ..... 17988, 20080   | <code>\legm</code> ..... 16091, 20679                  |
| <code>\label</code> ..... 627, 7993   | <code>\leadsto</code> ..... 19056, 20447  | <code>\legr</code> ..... 16134, 20691                  |
| <code>\label@hyperref</code> ... 4976, 4978   | <code>\leavevmode</code> .. 636, 2207, 4237,<br>4255, 4295, 5061, 5093,<br>5168, 6327, 7392, 7553,<br>8523, 8924, 8992, 9027,<br>9061, 9320, 9408, 9488,<br>9525, 9565, 9916, 9958,<br>9996, 10029, 10262, 10271,<br>10325, 10484, 10509, 10539,<br>10572, 10944, 11271, 11524,<br>11551, 11582, 11944, 12226,<br>12545, 12671, 12679, 12718,<br>12751, 13148, 13234, 13256,<br>13276, 13283, 13304, 13324,<br>13355, 13501, 13593, 13622,<br>13645, 13654, 13678, 13697,<br>13736, 14535   | <code>\leo</code> ..... 18717, 20310                   |
| <code>\label@hook</code> ..... 5336   | <code>\lcurvearrowdown</code> 19070, 20452  | <code>\leq</code> ..... 17988, 20079                   |
| <code>\label@hyperdef</code> ... 4961, 4992   | <code>\lcurvearrowsw</code> .. 19065, 20450   | <code>\leqclosed</code> ..... 18199, 20819             |
| <code>\label@hyperref</code> ... 4941, 4975   | <code>\ldots</code> ..... 528   | <code>\leqq</code> ..... 17997, 20083                  |
| <code>\label@name</code> .. 5301, 5311, 5337  | <code>\le</code> ..... 17988, 20080   | <code>\leqslant</code> ..... 19218, 20509              |
| <code>\labelsep</code> ..... 7828   | <code>\leadsto</code> ..... 19056, 20447  | <code>\lessapprox</code> ..... 19226, 20513            |
| <code>\labelwidth</code> ..... 7827   | <code>\leavevmode</code> .. 636, 2207, 4237,<br>4255, 4295, 5061, 5093,<br>5168, 6327, 7392, 7553,<br>8523, 8924, 8992, 9027,<br>9061, 9320, 9408, 9488,<br>9525, 9565, 9916, 9958,<br>9996, 10029, 10262, 10271,<br>10325, 10484, 10509, 10539,<br>10572, 10944, 11271, 11524,<br>11551, 11582, 11944, 12226,<br>12545, 12671, 12679, 12718,<br>12751, 13148, 13234, 13256,<br>13276, 13283, 13304, 13324,<br>13355, 13501, 13593, 13622,<br>13645, 13654, 13678, 13697,<br>13736, 14535   | <code>\lessclosed</code> ..... 18193, 20817            |
| <code>\Ladiesroom</code> .... 19417, 20588  | <code>\lcurvearrowdown</code> 19070, 20452  | <code>\lessdot</code> ..... 18257, 20193               |
| <code>\lam</code> ..... 19643   | <code>\lcurvearrowsw</code> .. 19065, 20450   | <code>\lesseqgtr</code> ..... 18266, 20197             |
| <code>\Lambda</code> ..... 19792  | <code>\ldots</code> ..... 528   | <code>\lesseqqgtr</code> ..... 19244, 20521            |
| <code>\lambda</code> ..... 19810  | <code>\le</code> ..... 17988, 20080   | <code>\lessgtr</code> ..... 18038, 20102               |
| <code>\lambdabar</code> ..... 15784, 20636  | <code>\leadsto</code> ..... 19056, 20447  | <code>\LessOrEqual</code> ... 17991, 20789             |
| <code>\lambdaslash</code> .... 15785, 20637   | <code>\leavevmode</code> .. 636, 2207, 4237,<br>4255, 4295, 5061, 5093,<br>5168, 6327, 7392, 7553,<br>8523, 8924, 8992, 9027,<br>9061, 9320, 9408, 9488,<br>9525, 9565, 9916, 9958,<br>9996, 10029, 10262, 10271,<br>10325, 10484, 10509, 10539,<br>10572, 10944, 11271, 11524,<br>11551, 11582, 11944, 12226,<br>12545, 12671, 12679, 12718,<br>12751, 13148, 13234, 13256,<br>13276, 13283, 13304, 13324,<br>13355, 13501, 13593, 13622,<br>13645, 13654, 13678, 13697,<br>13736, 14535   | <code>\lesssim</code> ..... 18028, 20098               |
| <code>\langle</code> ..... 18350, 20234   | <code>\lcurvearrowdown</code> 19070, 20452  | <code>\Letter</code> ..... 18856, 20905                |
| <code>\language@group</code> ..... 611  | <code>\lcurvearrowsw</code> .. 19065, 20450   | <code>\LHD</code> ..... 18592, 20268                   |
|   | <code>\ldots</code> ..... 528   | <code>\lhd</code> ..... 18191, 20166                   |
|   | <code>\le</code> ..... 17988, 20080   | <code>\lhooknwarrow</code> .. 19048, 20443             |
|   | <code>\leadsto</code> ..... 19056, 20447  | <code>\lhooksearrow</code> ... 19052, 20445            |
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|   | <code>\lcurvearrowdown</code> 19070, 20452  | <code>\libra</code> ..... 18723, 20312                 |
|   | <code>\lcurvearrowsw</code> .. 19065, 20450   | <code>\Lightning</code> ..... 17635, 20759             |
|   | <code>\ldots</code> ..... 528   | <code>\lightning</code> ..... 17633, 19933             |
|   | <code>\le</code> ..... 17988, 20080   | <code>\limits</code> ..... 4781                        |
|   | <code>\leadsto</code> ..... 19056, 20447  |  |
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|   | <code>\lcurvearrowdown</code> 19070, 20452  |  |
|   | <code>\lcurvearrowsw</code> .. 19065, 20450   |  |
|   | <code>\ldots</code> ..... 528   |  |
|   | <code>\le</code> ..... 17988, 20080   |  |
|   | <code>\leadsto</code> ..... 19056, 20447  |  |
|   | <code>\leavevmode</code> .. 636, 2207, 4237,<br>4255, 4295, 5061, 5093,<br>5168, 6327, 7392, 7553,<br>8523, 8924, 8992, 9027,<br>9061, 9320, 9408, 9488,<br>9525, 9565, 9916, 9958,<br>9996, 10029, 10262, 10271,<br>10325, 10484, 10509, 10539,<br>10572, 10944, 11271, 11524,<br>11551, 11582, 11944, 12226,<br>12545, 12671, 12679, 12718,<br>12751, 13148, 13234, 13256,<br>13276, 13283, 13304, 13324,<br>13355, 13501, 13593, 13622,<br>13645, 13654, 13678, 13697,<br>13736, 14535   |  |
|   | <code>\lcurvearrowdown</code> 19070, 20452  |  |
|   | <code>\lcurvearrowsw</code> .. 19065, 20450   |  |
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|   | <code>\le</code> ..... 17988, 20080   |  |
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|   | <code>\lcurvearrowsw</code> .. 19065, 20450   |  |
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|   | <code>\lcurvearrowdown</code> 19070, 20452  |  |
|   | <code>\lcurvearrowsw</code> .. 19065, 20450   |  |
|   | <code>\ldots</code> ..... 528   |  |
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|   | <code>\leadsto</code> ..... 19056, 20447  |  |
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|   | <code>\lcurvearrowdown</code> 19070, 20452  |  |
|   | <code>\lcurvearrowsw</code> .. 19065, 20450   |  |
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|   | <code>\lcurvearrowdown</code> 19070, 20452  |  |
|   | <code>\lcurvearrowsw</code> .. 19065, 20450   |  |
|   | <code>\ldots</code> ..... 528   |  |
|   | <code>\le</code> ..... 17988, 20080   |  |
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|-----------------------------------|---|---|---|-------------------------------------|--|
| <code>\linferior</code> .....     | 19886   | <code>\mag</code>   | 9288, 10222, 10366, 11680   | <code>\meaning</code> .....         | 62,  |
| <code>\literals@out</code>        | 2205, 10867, 10872,<br>10924, 10930, 10956, 10962,<br>11218, 11234, 11268, 11269,<br>11297, 11299, 11311, 11313,<br>11611, 11708, 11717, 11775,<br>11788, 11869, 11993, 12153 | <code>\make@df@tag@</code>                                  | 8136, 8138  |                                     | 153, 159, 2183, 6402, 7064,<br>7248, 14456, 14464, 14479   |
| <code>\ll</code> .....            | 18009, 20089  | <code>\make@df@tag@@</code>                                 | 8137, 8139  | <code>\measuredangle</code> ..      | 17818, 20008   |
| <code>\llap</code> .....          | 5066  | <code>\make@stripped@name</code> ..                         | 7241  | <code>\measuring@false</code> ..... | 6920   |
| <code>\llbracket</code> .....     | 19017, 20909  | <code>\makeatletter</code> .....                            | 3, 851, 907   | <code>\mediaheight</code>           | 10369, 10374, 10383  |
| <code>\llcorner</code> .....      | 18340, 20229  | <code>\MakeButtonField</code> ..                            | 6178, 12672,<br>12681, 12703, 12723, 12729,<br>13277, 13287, 13312, 13329,<br>13336, 13646, 13649, 13677,<br>13702, 13706 | <code>\mediawidth</code>            | 10370, 10375, 10384  |
| <code>\lleftarrow</code> .....    | 17724, 19967  | <code>\MakeCheckField</code> ..                             | 6175, 12753,<br>13359, 13732  | <code>\meem</code> .....            | 19645  |
| <code>\lll</code> .....           | 18261, 20195  | <code>\MakeChoiceField</code> ..                            | 6177, 12653,<br>13260, 13620  | <code>\Mercury</code> .....         | 18674, 20863   |
| <code>\llparenthesis</code> ..... | 19126, 20471  | <code>\MakeFieldObject</code>                               | 12936, 13083,<br>13093, 13096   | <code>\mercury</code> .....         | 18672, 20298   |
| <code>\lnaprox</code> .....       | 19239, 20519  | <code>\MakeLinkTarget</code> ...                            | 7283, 7299  | <code>\merge</code> .....           | 19205, 20925   |
| <code>\lneq</code> .....          | 19234, 20517  | <code>\MakeLowercase</code> .....                           | 599   | <code>\MessageBreak</code> .....    | 258,<br>264, 281, 282, 287, 288, 330,<br>331, 1651, 1672, 1685, 1708,<br>1713, 1715, 2360, 2361,<br>2376, 2398, 2401, 2403,<br>2481, 2482, 2505, 2506,<br>2554, 2555, 2556, 2591,<br>2592, 2612, 2664, 2690,<br>2706, 2741, 2780, 2787,<br>2798, 2804, 2828, 2837,<br>2842, 2862, 2875, 2913,<br>3372, 3495, 3496, 3556,<br>3557, 3575, 3576, 3670,<br>3759, 3814, 3815, 3935,<br>3936, 4058, 4059, 4060,<br>4081, 4083, 4091, 4092,<br>4099, 4149, 4389, 4390,<br>4398, 4399, 4415, 4416,<br>4431, 4432, 4446, 4447,<br>4455, 4456, 4650, 4870,<br>4871, 4895, 4896, 4912,<br>4913, 5413, 5418, 5427,<br>5470, 5516, 5640, 5753,<br>5825, 5836, 5868, 5869,<br>5888, 5980, 5981, 5982,<br>5983, 6476, 6710, 6725,<br>6726, 7997, 8027, 8028,<br>8029, 8030, 8031, 8713,<br>8731, 8751, 8753, 8759,<br>8761, 8764, 8772, 8928,<br>9921, 10460, 10543, 10831,<br>10837, 11051, 12950, 12952,<br>14196, 14214, 14326 |
| <code>\lneqq</code> .....         | 18005, 20087  | <code>\MakeLowercaseUnsupportedInPdfStrings</code><br>..... | 478, 599  | <code>\MF</code> .....              | 545, 12304   |
| <code>\lnsim</code> .....         | 18293, 20209  | <code>\MakeRadioField</code> ..                             | 6174, 12636,<br>13246, 13586  | <code>\mho</code> .....             | 19898  |
| <code>\Lrightarrow</code> ..      | 19032, 20435  | <code>\maketag@@@</code> .....                              | 8125  | <code>\mid</code> .....             | 17825, 20010   |
| <code>\longleftarrow</code> ...   | 19026, 20432  | <code>\MakeTextField</code> ...                             | 6176, 12547,<br>13152, 13497  | <code>\MineSign</code> .....        | 18785, 20327   |
| <code>\Lrightarrow</code>         | 19036, 20437  | <code>\maketitle</code> .....                               | 7502, 7503  | <code>\minferior</code> .....       | 19887  |
| <code>\longleftarrow</code>       | 19030, 20434  | <code>\MakeUppercase</code> ....                            | 598, 8459   | <code>\minusdot</code> .....        | 19181, 20494   |
| <code>\longlegr</code> .....      | 19774   | <code>\MakeUppercaseUnsupportedInPdfStrings</code><br>..... | 478, 598  | <code>\minusinferior</code> .....   | 19875  |
| <code>\Longmapsfrom</code> ..     | 19040, 20439  | <code>\Male</code> .....                                    | 18689, 20872  | <code>\minussuperior</code> .....   | 19859  |
| <code>\Longmapsto</code> ....     | 19042, 20440  | <code>\male</code> .....                                    | 18685, 20300  | <code>\models</code> .....          | 18165, 20808   |
| <code>\longmapsto</code> ....     | 19038, 20438  | <code>\MaleMale</code> .....                                | 18806, 20337  | <code>\moo</code> .....             | 20470  |
| <code>\Longrightarrow</code> .    | 19034, 20436  | <code>\ManFace</code> .....                                 | 19403, 20582  |                                     |  |
| <code>\longrightarrow</code> ..   | 19028, 20433  | <code>\manstar</code> .....                                 | 18800, 20334  |                                     |  |
| <code>\looparrowleft</code> ...   | 17627, 19930  | <code>\mapsto</code> .....                                  | 17621, 19927  |                                     |  |
| <code>\looparrowright</code> ..   | 17629, 19931  | <code>\Mars</code> .....                                    | 18688, 20871  |                                     |  |
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| <code>\textHandLeft</code> . . . . .  | 18638, 18639,<br>20286, 20852                                | <code>\textiiint</code> . . . . .  | 17855, 20022  | <code>\textlcurvearrowse</code>                          | 19063, 20449    |
| <code>\textHandRight</code> . . . . .   | 18641, 18642,<br>18643, 18644, 20287, 20853,<br>20854, 20855 | <code>\textiinferior</code> . . . . .                                      | 16956, 19827  | <code>\textlcurvearrowsw</code>                          | 19066, 20450    |
| <code>\textHaPa</code> . . . . .  | 19376, 20569   | <code>\textiint</code> . . . . .   | 17853, 20021  | <code>\textle</code> . . . . .                           | 17990, 20080    |
| <code>\texthateq</code> 17970, 17971, 17972,<br>20072, 20783, 20784                   |  | <code>\textIm</code> . . . . .   | 17491, 19894  | <code>\textleadsto</code> . . . . .                      | 19057, 20447    |
| <code>\texthausaB</code> . . . . .  | 15756, 19751   | <code>\textin</code> . . . . .   | 17772, 19988  | <code>\textLeftarrow</code> . . . . .                    | 17701, 19957    |
| <code>\texthausaD</code> . . . . .  | 15760, 19752   | <code>\textInfo</code> . . . . .   | 19429, 20591  | <code>\textleftarrow</code> . . . . .                    | 17575, 19907    |
| <code>\texthausaK</code> . . . . .  | 15771, 19753   | <code>\textinfty</code> . . . . .  | 17815, 20006  | <code>\textleftarrowtail</code> . . . . .                | 17618, 19925    |
| <code>\texthbar</code> . 15562, 15563, 15564,<br>15565, 19750, 20623, 20624,<br>20625 |  | <code>\textint</code> . . 17850, 17851, 20020,<br>20773                    |   | <code>\textleftarrowtriangle</code> . .                  | 17749,<br>19977 |
| <code>\texthdotfor</code> . . . . .   | 17334, 19842   | <code>\textinterleave</code> . . . . .                                     | 19332, 20560  | <code>\textleftbarharpoon</code>                         | 19108, 20464    |
| <code>\textheartsuitblack</code>  | 2167, 18757  | <code>\textinterrobang</code> . . . . .                                    | 17357   | <code>\textLEFTCIRCLE</code>                             | 18600, 20271    |
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| <code>\textheng</code> . 19353, 19355, 20933  |  | <code>\textinvamp</code> 17537, 17538, 17539,<br>20751, 20752              |   | <code>\textleftharpoonup</code>                          | 17646, 19937    |
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| <code>\texthinferior</code> . . . . .   | 17441, 19884   | <code>\textinve</code> . . . . .   | 15837, 19755  | <code>\textLeftrightarrow</code>                         | 17712, 19961    |
| <code>\texthookleftarrow</code>   | 17624, 19928   | <code>\textinvglotstop</code> . . . . .                                    | 16221, 16222,<br>19788  | <code>\textleftrightharpoon</code> . . . . .             | 19085,<br>20456 |
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| <code>\textlhd</code> . . .                      | 18192, 18193, 20166,<br>20817               | <code>\textltimes</code> . . . . .           | 18223, 20178  | <code>\textMVFour</code> . . . . .       | 15229, 19737                  |
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| <code>\textngg</code>                   | 18016, 20092                             | <code>\textnqsupsetq</code>          | 18286, 20206                               | <code>\textobar</code>            | 19133, 19134, 20474, 20915                             |
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