

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

Sebastian Rahtz (deceased)  
Heiko Oberdiek (inactive)  
The L<sup>A</sup>T<sub>E</sub>X Project  
<https://github.com/latex3/hyperref/issues>

2022-02-21 v7.00n

## 1 Documentation overview for hyperref

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


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

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

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

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

Source code documentation:

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

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

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

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### 3 File hycheck.tex

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

```

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

\checklatex Optional argument: release date of LATEX.
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  $\text{\LaTeX}$  definition and compares this definition with the current meaning of that command.

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```



```

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

```

\HyC@noValue

```

85 \def\HyC@noValue{NoValue}

```

\HyC@newcommand The code for \newcommand.

```

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

```

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

```

90 \newtoks\HyC@Toks

```

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

```

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

```

\HyC@nc@opt This macro scans the first optional argument of a L<sup>A</sup>T<sub>E</sub>X definition (number of arguments).

```

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

```

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

```

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

```

\HyC@DeclareRobustCommand \DeclareRobustCommand{\cmd} makes the command \cmd robust, that then calls \cmd<sub>␣</sub> 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

```

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

```

```

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

```

## 4.2 Version check

\Hy@VersionChecked

```

256 \chardef\Hy@VersionChecked=0 %

```

\Hy@VersionCheck

```

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

```

```

293     }\@ehd
294     \fi
295     \fi
296   }%
297 }%
298 \endgroup
299 \chardef\Hy@VersionChecked=1 %
300 }

```

\Hy@@VersionCheck

```

301 \def\Hy@@VersionCheck #1#2 #3 #4\@nil{%
302   \def#1{#2 #3}%
303 }

```

### 4.3 Checks with regular expressions

```

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

```

## 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`.

```
340 \@ifundefined{AfterBeginDocument}{%
341   \def\AfterBeginDocument{\AtBeginDocument}%
342 }{}%
```

`\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.

```
343 \def\Hy@AtBeginDocument{%
344   \ltx@LocalAppendToMacro\Hy@AtBeginDocumentHook
345 }
```

`\Hy@AtEndOfPackage`

```
346 \def\Hy@AtEndOfPackage{%
347   \ltx@LocalAppendToMacro\Hy@AtEndOfPackageHook
348 }
```

`\Hy@AtBeginDocumentHook`

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

`\Hy@AtEndOfPackageHook`

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

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

```
351 \AtEndOfPackage{%
352   \Hy@AtEndOfPackageHook
353   \let\Hy@AtEndOfPackageHook\@undefined
354   \AfterBeginDocument{%
355     \Hy@AtBeginDocumentHook}%
356   \let\Hy@AtBeginDocumentHook\@undefined
357 }%
```

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

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

## 4.5 Switches

```
360 \newif\ifHy@stoppearly
361 \newif\ifHy@typexml
362 \newif\ifHy@activeanchor
363 \newif\ifHy@backref
364 \newif\ifHy@bookmarks
```

```

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

```

Defaults for the switches are now set.

```

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

```



```

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

```

## 5 Common help macros

\Hy@StepCount

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

\Hy@GlobalStepCount

```

455 \def\Hy@GlobalStepCount#1{\global\advance#1 by 1 }%
456 \newdimen\@linkdim
457 \let\Hy@driver\ltx@empty
458 \let\MaybeStopEarly\relax
459 \newcount\Hy@linkcounter
460 \newcount\Hy@pagecounter
461 \Hy@linkcounter0
462 \Hy@pagecounter0

```

### 5.1 Macros for recursions

```

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

```

## 5.2 Babel's protection of shorthand characters

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

```

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

```

## 5.3 Coordinate transformations

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

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

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

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

Example (TeX):

```

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

```

`\hypercalcbp`

```

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

```

# 6 Dealing with PDF strings

The PDF string stuff done by Heiko Oberdiek.

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

## 6.1 Description of PDF strings

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

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

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

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

## 6.2 Definition of `\pdfstringdef`

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

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

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

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

`\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  $\text{\TeX}$ , because the tokens have only cat-codes 10 until 12.

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

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

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

```
473 \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.

```
474 \escapechar`\\%
```

From the view of  $\TeX$  a 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.

```
475 \edef\0{\string\0}%
476 \edef\1{\string\1}%
477 \edef\2{\string\2}%
478 \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.

```
479 \ifHy@unicode
480 \edef\8{\string\8}%
481 \edef\9{\string\9}%
482 \fontencoding{PU}%
483 \HyPsd@UTFviii
484 \def\ifpdfstringunicode###1##2{##1}%
485 \else
486 \fontencoding{PD1}%
487 \def\ifpdfstringunicode###1##2{##2}%
488 \fi
489 \let\utf@viii@undeferr\HyPsd@utf@viii@undeferr
490 \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).

```
491 \@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).

```
492 \let\@inmathwarn\HyPsd@inmathwarn
```

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

```
493 \let\add@accent\HyPsd@add@accent
```

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

```
494 \let\{\textbraceleft
495 \let\}\textbraceright
496 \let\\\textbackslash
497 \let\#\textnumbersign
498 \let\$\textdollar
499 \let\%\textpercent
500 \let\&\textampersand
501 % \let\~\textasciitilde
502 \let\_ \textunderscore
503 \let\P\textparagraph
504 \let\ldots\textellipsis
505 \let\dots\textellipsis
506 \ltx@ifundefined{textEncodingNoboundary}%
507 {}{\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.

```
508 \def\{\pdfstringdefWarn\\}%
509 \def\newline{\pdfstringdefWarn\newline}%
```

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

```
510 \def\TeX{\TeX}%
511 \def\LaTeX{La\TeX}%
512 \def\LaTeXe{%
513   \LaTeX2%
514   \ifHy@unicode\83\265\else e\fi
515 }%
516 \def\eTeX{%
```

```

517 \ifHy@unicode\83\265\else e\fi
518 -\TeX%
519 }%
520 \def\SliTeX{\Sli\TeX}%
521 \def\MF{Metafont}%
522 \def\MP{Metapost}%

```

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

```

523 \let\fontencoding\@gobble
524 \let\fontfamily\@gobble
525 \let\fontseries\@gobble
526 \let\fontshape\@gobble
527 \let\fontsize\@gobbletwo
528 \let\selectfont\@empty
529 \let\usefont\@gobblefour
530 \let\emph\@firstofone
531 \let\textnormal\@firstofone
532 \let\textrm\@firstofone
533 \let\textsf\@firstofone
534 \let\texttt\@firstofone
535 \let\textbf\@firstofone
536 \let\textmd\@firstofone
537 \let\textit\@firstofone
538 \let\textsc\@firstofone
539 \let\textsl\@firstofone
540 \let\textup\@firstofone
541 \let\normalfont\@empty
542 \let\rmfamily\@empty
543 \let\sffamily\@empty
544 \let\ttfamily\@empty
545 \let\bfseries\@empty
546 \let\mdseries\@empty
547 \let\itshape\@empty
548 \let\scshape\@empty
549 \let\slshape\@empty
550 \let\upshape\@empty
551 \let\em\@empty
552 \let\rm\@empty
553 \let\Huge\@empty
554 \let\LARGE\@empty
555 \let\Large\@empty
556 \let\footnotesize\@empty
557 \let\huge\@empty
558 \let\large\@empty
559 \let\normalsize\@empty
560 \let\scriptsize\@empty
561 \let\small\@empty
562 \let\tiny\@empty
563 \let\mathversion\@gobble
564 \let\phantom\@gobble
565 \let\vphantom\@gobble
566 \let\hphantom\@gobble

```

### Package pifont.

```
567 \let\ding\HyPsd@ding
568 \let\Cube\HyPsd@DieFace
569 %* \HyPsd@DieFace -> \epsdice (epsdice)
570 %* \HyPsd@DieFace -> \fcdice (hhcount)
```

### Environments.

```
571 \def\begin##1{\csname##1\endcsname}%
572 \def\end##1{\csname end##1\endcsname}%
```

### Package color.

```
573 \def\textcolor##1##{\@secondoftwo}%
```

### Upper- and lowercase.

```
574 \def\MakeUppercase{\MakeUppercaseUnsupportedInPdfStrings}%
575 \def\MakeLowercase{\MakeLowercaseUnsupportedInPdfStrings}%
```

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

```
576 \ifHy@psdextra
577 \ifHy@unicode
578 \csname psdmapshortnames\endcsname
579 \csname psdaliasnames\endcsname
580 \fi
581 \fi
```

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

```
582 \let\foreignlanguage\@secondoftwo
583 \let\textlatin\@firstofone
584 \ltx@ifundefined{language@group}{-}{%
585 \let\bbl@info\@gobble
586 \csname HyPsd@babel@\language@group\endcsname
587 }%
588 \let\@safe@activetrue\relax
589 \let\@safe@activesfalse\relax
```

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

```
590 \let\cyr\relax
```

### Package german.

```
591 \let\glqq\textglqq
592 \let\grqq\textgrqq
593 \let\glq\textglq
594 \let\grq\textgrq
595 \let\flqq\textflqq
596 \let\frqq\textfrqq
597 \let\flq\textflq
598 \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}
```

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

**AMS classes.**

```
600 \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.

```
601 \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.

```
602 \let\label\@gobble
603 \let\index\@gobble
604 \let\glossary\@gobble
605 \let\href\HyPsd@href
606 \let\@mkboth\@gobbletwo
```

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

```
607 \let\ref\HyPsd@ref
608 \let\pageref\HyPsd@pageref
609 \let\nameref\HyPsd@nameref
610 \let\autoref\HyPsd@autoref
```

**Miscellaneous commands.**

```
611 \let\leavevmode\@empty
612 \let\mbox\@empty
```

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

```
613 \def\halign{\pdfstringdef\Warn\halign\@gobble}%
614 \let\ignorespaces\HyPsd@ignorespaces
615 \let\Hy@SectionAnchorHref\@gobble
616 \let\ensuremath\@firstofone
```

**Patch for cjk bookmarks.**

```
617 \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  $\TeX$ '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@testopt`, and `\@ifnextchar` for `\renewcommand`).

```
618 \Hy@pdfstringtrue
619 \pdfstringdefPreHook
```

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

```
620 \HyPsd@LetUnexpandableSpace\space
621 \HyPsd@LetUnexpandableSpace\ %
622 \HyPsd@LetUnexpandableSpace~%
623 \HyPsd@LetUnexpandableSpace\nobreakspace
```

**Package `xspace`.**

```
624 \ltx@ifundefined{@xspace}{%
625 \let\xspace\HyPsd@ITALCORR
626 }{%
627 \let\xspace\HyPsd@XSPACE
628 }%
629 \let\/\HyPsd@ITALCORR
630 \let\bgroup\/%
631 \let\egroup\/%
```

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

```
632 \let\discretionary\@gobbletwo
\@ifstar is defined in  $\LaTeX$  as follows:
```

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

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

A mimicry of `\@ifnextchar` only with expandable 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:

```
633 \def\@ifnextchar{\HyPsd@ifnextchar\@ifnextchar}%
634 \def\kernel@ifnextchar{\HyPsd@ifnextchar\kernel@ifnextchar}%
635 \def\new@ifnextchar{\HyPsd@ifnextchar\new@ifnextchar}%
636 \let\@protected@testopt\HyPsd@protected@testopt
```

Support for package 'xargs':

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

### 6.2.2 Expansion

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

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

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

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

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

```
638 \begingroup
639 \let\GenericError\@gobblefour
640 \let\GenericWarning\@gobbletwo
641 \let\GenericInfo\@gobbletwo
```

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

```
642 \ifx\nofrenchguillemets\undefined
643 \else
644 \nofrenchguillemets
645 \fi
```

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

```

646 \let\Hy@temp\xdef
647 \let\def\HyPsd@DefCommand
648 \let\gdef\HyPsd@DefCommand
649 \let\edef\HyPsd@DefCommand
650 \let\xdef\HyPsd@DefCommand
651 \let\futurelet\HyPsd@LetCommand
652 \let\let\HyPsd@LetCommand
653 \Hy@temp#1{#2}%
654 \endgroup

```

### 6.2.3 Postprocessing

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

```

655 \ifx#1\@empty
656 \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 take the following into account, that makes things a little more complicated:

- `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 found 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 a marker for the xspace support.
- `TEX` silently removes the outermost 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.

```

657 \HyPsd@ProtectSpaces#1%
658 \let\HyPsd@String\@empty
659 \expandafter\HyPsd@RemoveBraces\expandafter{#1|}%
660 \global\let#1\HyPsd@String

```

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

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

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

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

```

661 \let\HyPsd@SPACEOPTI\relax
662 {%
663   \let\HyPsd@String\@empty
664   \expandafter\HyPsd@CheckCatcodes#1\HyPsd@end
665   \global\let#1\HyPsd@String
666 }%
667 \expandafter\HyPsd@RemoveMask\expandafter
668 |\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.

```

669 \expandafter
670 \HyPsd@Subst\expandafter{\HyPsd@GLYPHERR}{\relax}#1%
671 \let\HyPsd@String\@empty
672 \expandafter\HyPsd@GlyphProcess#1\relax\@empty
673 \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.

```
674 \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.ldb` can produce an additional space before `\guillemotright`, because `\lastskip` and `\unskip` do not work. Therefore it is removed here.

```

675 \ifHy@unicode
676 \expandafter\HyPsd@StringSubst\csname 80\040\endcsname
677 \HyPsd@SPACEOPTI#1%
678 \edef\Hy@temp@A{\HyPsd@SPACEOPTI\HyPsd@SPACEOPTI\80\273}%
679 \expandafter\HyPsd@Subst\expandafter{\Hy@temp@A}%
680 {\HyPsd@SPACEOPTI\80\273}#1%
681 \else
682 \HyPsd@StringSubst{\040}\HyPsd@SPACEOPTI#1%
683 \expandafter\HyPsd@Subst\expandafter{%
684 \expandafter\HyPsd@SPACEOPTI\expandafter\HyPsd@SPACEOPTI
685 \string\273}\HyPsd@SPACEOPTI\273}#1%
686 \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.

```

687 \ifHy@unicode
688 \HyPsd@StringSubst{\}){\80\051}#1%
689 \HyPsd@Subst){\80\051}#1%
690 \let\HyPsd@empty\relax
691 \expandafter\HyPsd@StringSubst\csname 80\051\endcsname
692 {\HyPsd@empty\80\051}#1%
693 \else
694 \HyPsd@StringSubst{\}){\051}#1%
695 \HyPsd@Subst){\051}#1%
696 \let\HyPsd@empty\relax
697 \HyPsd@StringSubst{\051}{\HyPsd@empty\string\)}#1%
698 \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`.

```

699 \expandafter\HyPsd@Subst\expandafter{\//}\HyPsd@empty#1%
700 \ltx@ifundefined{@xspace}{%
701 }{%
702 \let\HyPsd@xspace\relax
703 \expandafter\HyPsd@Subst\expandafter

```

```

704      {\HyPsd@XSPACE}\HyPsd@xspace#1%
705      \let\HyPsd@xspace\HyPsd@doxspace
706    }%
707    \xdef#1{#1\HyPsd@empty}%

```

**Ligatures.** T<sub>E</sub>X forms ligatures in its stomach, but the PDF strings are treated only by T<sub>E</sub>X'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.

```

708    \HyPsd@Subst{---}\textemdash#1%
709    \HyPsd@Subst{--}\textendash#1%
710 %    \HyPsd@Subst{fi}\textfi#1%
711 %    \HyPsd@Subst{fl}\textfl#1%
712    \HyPsd@Subst{!~}\textexclamdown#1%
713    \HyPsd@Subst{?~}\textquestiondown#1%

```

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

```

714    \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 T<sub>E</sub>X memory and time.

```

715    \ifHy@unicode
716      \HyPsd@StringSubst{\textparenleft#1%
717      \HyPsd@Subst{\textparenleft#1%
718    \else
719      \HyPsd@StringSubst{\{050\}#1%
720      \HyPsd@Subst{\{050\}#1%
721      \HyPsd@StringSubst{\050\}\string\}\#1%
722    \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.

```

723    \ifHy@unicode
724      \edef\HyPsd@SPACEOPTI{\80\040}%
725    \else
726      \let\HyPsd@SPACEOPTI\HyPsd@spaceopti
727    \fi

```

```

728 \xdef#1{#1\@empty}%
729 \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.

```

730 \endgroup
731 \begingroup
732 \ifHy@unicode
733 \HyPsd@ConvertToUnicode#1%

```

**Try conversion back to PDFDocEncoding.**

```

734 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
735 \ltx@ifUndefined{StringEncodingConvertTest}{%
736 }{%
737 \EdefUnescapeString\HyPsd@temp#1%
738 \iftutex
739 \let\HyPsd@UnescapedString\HyPsd@temp
740 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
741 {utf16be}{ascii-print}{%
742 \EdefEscapeString\HyPsd@temp\HyPsd@temp
743 \global\let#1\HyPsd@temp
744 \HyPsd@EscapeTeX#1%
745 \Hy@unicodedefalse
746 }{%
747 \HyPsd@EscapeTeX#1%
748 }%
749 \else
750 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
751 {utf16be}{pdfdoc}{%
752 \EdefEscapeString\HyPsd@temp\HyPsd@temp
753 \global\let#1\HyPsd@temp
754 \HyPsd@EscapeTeX#1%
755 \Hy@unicodedefalse
756 }{}%
757 \fi
758 }%
759 \fi
760 \fi

```

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

```

761 \pdfstringdefPostHook#1%
762 \endgroup
763 }

```

\Hy@pdfstringdef

```

764 \def\Hy@pdfstringdef#1#2{%
765 \pdfstringdef\Hy@gtemp{#2}%
766 \let#1\Hy@gtemp
767 }

```

## 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

```
768 \@ifpackageloaded{linguex}{%
769   \let\HyLinguex@OrgB\b
770   \let\HyLinguex@OrgC\c
771   \let\HyLinguex@OrgD\d
772   \def\HyLinguex@Restore{%
773     \let\b\HyLinguex@OrgB
774     \let\c\HyLinguex@OrgC
775     \let\d\HyLinguex@OrgD
776   }%
777   \Hy@AtEndOfPackage{%
778     \pdfstringdefDisableCommands{%
779       \ltx@ifundefined{oldb}{\let\b\oldb}%
780       \ltx@ifundefined{oldc}{\let\c\oldc}%
781       \ltx@ifundefined{oldd}{\let\d\oldd}%
782     }%
783   }%
784 }{%
785   \let\HyLinguex@Restore\relax
786 }%
```

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

\Hy@SaveCatcodeSettings

```
787 \def\Hy@SaveCatcodeSettings#1{%
788   \expandafter\edef\csname Hy@cat@#1\endcsname{%
789     \endlinechar=\the\endlinechar\relax
790     \catcode32 \the\catcode32\relax % (space)
791     \catcode34 \the\catcode34\relax % "
792     \catcode35 \the\catcode35\relax % #
793     \catcode37 \the\catcode37\relax % (percent)
794     \catcode40 \the\catcode40\relax % (
795     \catcode41 \the\catcode41\relax % )
796     \catcode42 \the\catcode42\relax % *
797     \catcode46 \the\catcode46\relax % .
798     \catcode58 \the\catcode58\relax % :
799     \catcode60 \the\catcode60\relax % <
800     \catcode61 \the\catcode61\relax % =
801     \catcode62 \the\catcode62\relax % >
802     \catcode64 \the\catcode64\relax % @
803     \catcode91 \the\catcode91\relax % [
804     \catcode92 \the\catcode92\relax % (backslash)
805     \catcode93 \the\catcode93\relax % ]
806     \catcode123 \the\catcode123\relax % {
807     \catcode124 \the\catcode124\relax % |
808     \catcode125 \the\catcode125\relax % }
809   }%
```



```

810 \endlinechar=-1 %
811 \catcode32 10 % (space)
812 \catcode34 12 % "
813 \catcode35 6 % #
814 \catcode37 14 % (percent)
815 \catcode40 12 % (
816 \catcode41 12 % )
817 \catcode42 12 % *
818 \catcode46 12 % .
819 \catcode58 12 % :
820 \catcode60 12 % <
821 \catcode61 12 % =
822 \catcode62 12 % >
823 \catcode91 12 % [
824 \catcode92 0 % (backslash)
825 \catcode93 12 % ]
826 \catcode123 1 % {
827 \catcode124 12 % |
828 \catcode125 2 % }
829 \makeatletter
830 }

```

\Hy@RestoreCatcodeSettings

```

831 \def\Hy@RestoreCatcodeSettings#1{%
832 \csname Hy@cat@#1\endcsname
833 \expandafter\let\csname Hy@cat@#1\endcsname\relax
834 }

```

### 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.

```

835 \@ifundefined{T@PD1}{%
836 \Hy@SaveCatcodeSettings{pd1}%
837 \input{pd1enc.def}%
838 \Hy@RestoreCatcodeSettings{pd1}%
839 \HyLinguex@Restore
840 }{}
841 \DeclareFontFamily{PD1}{pdf}{}
842 \DeclareFontShape{PD1}{pdf}{m}{n}{<-> cmr10 }{}
843 \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`.

```

844 \def\HyPsd@LoadUnicode{%
845   \@ifundefined{T@PU}{%
846     \Hy@SaveCatcodeSettings{pu}%
847     \input{puenc.def}%
848     \Hy@RestoreCatcodeSettings{pu}%
849     \HyLinguex@Restore
850   }{}%
851   \DeclareFontFamily{PU}{pdf}{}%
852   \DeclareFontShape{PU}{pdf}{m}{n}{<-> cmr10 }{}%
853   \DeclareFontSubstitution{PU}{pdf}{m}{n}%
854   \HyPsd@LoadExtra
855   \let\HyPsd@LoadUnicode\relax
856 }

```

`\HyPsd@LoadExtra`

```

857 \def\HyPsd@LoadExtra{%
858   \ifHy@psdextra
859     \ltx@iffileloaded{puenc.def}{%
860       \ltx@iffileloaded{puenc-greekbasic.def}{}{%
861         \Hy@SaveCatcodeSettings{pu}%
862         \input{puenc-greekbasic.def}%
863         \Hy@RestoreCatcodeSettings{pu}}%
864       \Hy@SaveCatcodeSettings{psdextra}%
865       \input{psdextra.def}%
866       \Hy@RestoreCatcodeSettings{psdextra}%
867       \let\HyPsd@LoadExtra\relax
868     }{}%
869   \fi
870 }

```

## 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  $\mathrm{T}_{\mathrm{E}}\mathrm{X}$ 's stomach, the second contains the replacement for PDF strings.

```

871 \def\texorpdfstring{%
872   \ifHy@pdfstring
873     \expandafter\@secondoftwo
874   \else
875     \expandafter\@firstoftwo
876   \fi
877 }

```

## 6.4.2 Hooks for `\pdfstringdef`

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

```
878 \@ifundefined{pdfstringdefPreHook}{%
879   \let\pdfstringdefPreHook\@empty
880 }{}
881 \@ifundefined{pdfstringdefPostHook}{%
882   \let\pdfstringdefPostHook\@gobble
883 }{}
```

`\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`.

```
884 \def\pdfstringdefDisableCommands{%
885   \begingroup
886     \makeatletter
887     \HyPsd@DisableCommands
888 }
```

`\HyPsd@DisableCommands`

```
889 \long\def\HyPsd@DisableCommands#1{%
890   \ltx@GlobalAppendToMacro\pdfstringdefPreHook{#1}%
891   \endgroup
892 }
```

`\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`.

```
893 \def\pdfstringdefWarn#1{%
894   \expandafter\noexpand\csname<>-string#1\endcsname
895 }
```

## 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.

```
896 \begingroup
897 \catcode0=12 %
898 \def\x{\endgroup
899 \def\HyPsd@ignorespaces{%
900 \romannumeral\expandafter`\expandafter^^@%
901 \romannumeral^^^@%
902 }%
903 }%
904 \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.

```
905 \newif\ifHy@next
906 \</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.

```
907 \*package>
```

### 6.5.3 CJK patch

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

`\HyPsd@CJKhook`

```
909 \def\HyPsd@CJKhook{%
```

```

910 \ltx@ifpackageloaded{CJK}{%
911   \let\CJK@kern\relax
912   \let\CJKkern\relax
913   \let\CJK@CJK\relax
914   \ifHy@CJKbookmarks
915     \HyPsd@CJKhook@bookmarks
916   \fi
917   \HyPsd@CJKhook@unicode
918 }{}%
919 }

```

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

```

920 \begingroup
921   \catcode"7F=\active
922   \toks@{%
923     \let\CJK@ignorespaces\empty
924     \def\CJK@char#1{\@gobbletwo}%
925     \let\CJK@charx\@gobblefour
926     \let\CJK@punctchar\@gobblefour
927     \def\CJK@punctcharx#1{\@gobblefour}%
928     \catcode"7F=\active
929     \def^^7f#1^^7f#2^^7f{%
930       \string #1\HyPsd@DecimalToOctal{#2}%
931     }%
932     % ... ?
933     \ifHy@unicode
934       \def\Hy@cjku{\80}%
935     \else
936       \let\Hy@cjku\@empty
937     \fi
938     \HyPsd@CJKActiveChars
939   }%
940   \count@=127 %
941   \@whilenum\count@<255 \do{%
942     \advance\count@ by 1 %
943     \lccode`\~=\count@
944     \lowercase{%
945       \toks@\expandafter{\the\toks@ ~}%
946     }%
947   }%
948   \toks@\expandafter{\the\toks@ !}%
949   \xdef\HyPsd@CJKhook@bookmarks{%
950     \the\toks@

```

```

951 }%
952 \endgroup

```

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

```

953 \def\HyPsd@CJKActiveChars#1{%
954   \ifx#1!%
955     \let\HyPsd@CJKActiveChars\relax
956   \else
957     \edef#1{\noexpand\Hy@cjkpu\string#1}%
958   \fi
959   \HyPsd@CJKActiveChars
960 }

```

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

```

961 \def\HyPsd@DecimalToOctal#1{%
962   \ifcase #1 %
963     \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
964     \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
965     \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
966     \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
967     \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
968     \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
969     \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
970     \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
971     \or @\or A\or B\or C\or D\or E\or F\or G%
972     \or H\or I\or J\or K\or L\or M\or N\or O%
973     \or P\or Q\or R\or S\or T\or U\or V\or W%
974     \or X\or Y\or Z\or \133\or \134\or \135\or \136\or \137%
975     \or \140\or a\or b\or c\or d\or e\or f\or g%
976     \or h\or i\or j\or k\or l\or m\or n\or o%
977     \or p\or q\or r\or s\or t\or u\or v\or w%
978     \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
979     \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
980     \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
981     \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
982     \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
983     \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
984     \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
985     \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
986     \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
987     \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
988     \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
989     \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
990     \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
991     \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
992     \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
993     \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
994     \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
995   \fi
996 }

```

## 6.5.5 CJK unicode

\HyPsd@CJKhook@unicode

```

997 \def\HyPsd@CJKhook@unicode{%
998   \let\Unicode\HyPsd@CJK@Unicode
999   \let\CJKnumber\HyPsd@CJKnumber
1000   \let\CJKdigits\HyPsd@CJKdigits
1001 }
```

\HyPsd@CJK@Unicode

```

1002 \def\HyPsd@CJK@Unicode#1#2{%
1003   \ifnum#1<256 %
1004     \HyPsd@DecimalToOctalFirst{#1}%
1005     \HyPsd@DecimalToOctalSecond{#2}%
1006   \else
1007     \933%
1008     \expandafter\expandafter\expandafter\HyPsd@HighA
1009     \intcalcDiv{#1}{4}!%
1010     \933%
1011     \ifcase\intcalcMod{#1}{4} %
1012       4\or 5\or 6\or 7%
1013     \fi
1014     \HyPsd@DecimalToOctalSecond{#2}%
1015   \fi
1016 }

1017 \def\HyPsd@HighA#1!{%
1018   \expandafter\expandafter\expandafter\HyPsd@HighB
1019   \IntCalcDiv#1!64!!%
1020   \expandafter\expandafter\expandafter\HyPsd@HighD
1021   \IntCalcMod#1!64!!%
1022 }
1023 \def\HyPsd@HighB#1!{%
1024   \expandafter\expandafter\expandafter\HyPsd@HighC
1025   \IntCalcDec#1!!%
1026 }
1027 \def\HyPsd@HighC#1!{%
1028   \IntCalcDiv#1!4!%
1029   \@backslashchar
1030   \IntCalcMod#1!4!%
1031 }
1032 \def\HyPsd@HighD#1!{%
1033   \ifcase\IntCalcDiv#1!8! %
1034     0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1035   \fi
1036   \ifcase\IntCalcMod#1!8! %
1037     0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1038   \fi
1039 }
1040 \def\HyPsd@DecimalToOctalFirst#1{%
1041   \9%
1042   \ifcase#1 %
1043     000\or 001\or 002\or 003\or 004\or 005\or 006\or 007%
1044     \or 010\or 011\or 012\or 013\or 014\or 015\or 016\or 017%
```

```

1045 \or 020\or 021\or 022\or 023\or 024\or 025\or 026\or 027%
1046 \or 030\or 031\or 032\or 033\or 034\or 035\or 036\or 037%
1047 \or 040\or 041\or 042\or 043\or 044\or 045\or 046\or 047%
1048 \or 050\or 051\or 052\or 053\or 054\or 055\or 056\or 057%
1049 \or 060\or 061\or 062\or 063\or 064\or 065\or 066\or 067%
1050 \or 070\or 071\or 072\or 073\or 074\or 075\or 076\or 077%
1051 \or 100\or 101\or 102\or 103\or 104\or 105\or 106\or 107%
1052 \or 120\or 111\or 112\or 113\or 114\or 115\or 116\or 117%
1053 \or 120\or 121\or 122\or 123\or 124\or 125\or 126\or 127%
1054 \or 130\or 131\or 132\or 133\or 134\or 135\or 136\or 137%
1055 \or 140\or 141\or 142\or 143\or 144\or 145\or 146\or 147%
1056 \or 150\or 151\or 152\or 153\or 154\or 155\or 156\or 157%
1057 \or 160\or 161\or 162\or 163\or 164\or 165\or 166\or 167%
1058 \or 170\or 171\or 172\or 173\or 174\or 175\or 176\or 177%
1059 \or 200\or 201\or 202\or 203\or 204\or 205\or 206\or 207%
1060 \or 210\or 211\or 212\or 213\or 214\or 215\or 216\or 217%
1061 \or 220\or 221\or 222\or 223\or 224\or 225\or 226\or 227%
1062 \or 230\or 231\or 232\or 233\or 234\or 235\or 236\or 237%
1063 \or 240\or 241\or 242\or 243\or 244\or 245\or 246\or 247%
1064 \or 250\or 251\or 252\or 253\or 254\or 255\or 256\or 257%
1065 \or 260\or 261\or 262\or 263\or 264\or 265\or 266\or 267%
1066 \or 270\or 271\or 272\or 273\or 274\or 275\or 276\or 277%
1067 \or 300\or 301\or 302\or 303\or 304\or 305\or 306\or 307%
1068 \or 310\or 311\or 312\or 313\or 314\or 315\or 316\or 317%
1069 \or 320\or 321\or 322\or 323\or 324\or 325\or 326\or 327%
1070 \or 330\or 331\or 332\or 333\or 334\or 335\or 336\or 337%
1071 \or 340\or 341\or 342\or 343\or 344\or 345\or 346\or 347%
1072 \or 350\or 351\or 352\or 353\or 354\or 355\or 356\or 357%
1073 \or 360\or 361\or 362\or 363\or 364\or 365\or 366\or 367%
1074 \or 370\or 371\or 372\or 373\or 374\or 375\or 376\or 377%
1075 \fi
1076 }
1077 \def\HyPsd@DecimalToOctalSecond#1{%
1078 \ifcase #1 %
1079 \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
1080 \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
1081 \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
1082 \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
1083 \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
1084 \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
1085 \or \060\or \061\or \062\or \063\or \064\or \065\or \066\or \067%
1086 \or \070\or \071\or \072\or \073\or \074\or \075\or \076\or \077%
1087 \or \100\or \101\or \102\or \103\or \104\or \105\or \106\or \107%
1088 \or \110\or \111\or \112\or \113\or \114\or \115\or \116\or \117%
1089 \or \120\or \121\or \122\or \123\or \124\or \125\or \126\or \127%
1090 \or \130\or \131\or \132\or \133\or \134\or \135\or \136\or \137%
1091 \or \140\or \141\or \142\or \143\or \144\or \145\or \146\or \147%
1092 \or \150\or \151\or \152\or \153\or \154\or \155\or \156\or \157%
1093 \or \160\or \161\or \162\or \163\or \164\or \165\or \166\or \167%
1094 \or \170\or \171\or \172\or \173\or \174\or \175\or \176\or \177%
1095 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
1096 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
1097 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1098 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%

```



```

1099 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1100 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1101 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1102 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1103 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1104 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1105 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1106 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1107 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1108 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1109 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1110 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1111 \fi
1112 }

1113 \def\HyPsd@CJKnumber#1{%
1114 \ifnum#1<\z@
1115 \CJK@minus
1116 \expandafter\HyPsd@@CJKnumber\expandafter{\number-\number#1}%
1117 \else
1118 \expandafter\HyPsd@@CJKnumber\expandafter{\number#1}%
1119 \fi
1120 }

1121 \def\HyPsd@@CJKnumber#1{%
1122 \ifcase#1 %
1123 \CJK@zero\or\CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1124 \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine\or
1125 \CJK@ten\or\CJK@ten\CJK@one\or\CJK@ten\CJK@two\or
1126 \CJK@ten\CJK@three\or\CJK@ten\CJK@four\or\CJK@ten\CJK@five\or
1127 \CJK@ten\CJK@six\or\CJK@ten\CJK@seven\or\CJK@ten\CJK@eight\or
1128 \CJK@ten\CJK@nine
1129 \else
1130 \ifnum#1<10000 %
1131 \HyPsd@CJKnumberFour#1!\@empty{20}%
1132 \@empty
1133 \else
1134 \ifnum#1<100000000 %
1135 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1136 \IntCalcDiv#1!10000!%
1137 !\{20}%
1138 \CJK@tenthousand
1139 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1140 \IntCalcMod#1!10000!%
1141 !\CJK@zero{10}%
1142 \@empty
1143 \else
1144 \expandafter\HyPsd@CJKnumberLarge
1145 \number\IntCalcDiv#1!100000000!\expandafter!%
1146 \number\IntCalcMod#1!100000000!!%
1147 \fi
1148 \fi
1149 \fi
1150 }

1151 \def\HyPsd@CJKnumberLarge#1!#2!{%
1152 \HyPsd@CJKnumberFour#1!\{20}%

```

```

1153 \CJK@hundredmillion
1154 \ifnum#2=\z@
1155 \else
1156 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1157 \IntCalcDiv#2!10000!%
1158 !\CJK@zero{10}%
1159 \CJK@tenthousand
1160 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1161 \IntCalcMod#2!10000!%
1162 !\CJK@zero{10}%
1163 \@empty
1164 \fi
1165 }
1166 \def\HyPsd@CJKnumberFour#1!#2#3{%
1167 \ifnum#1=\z@
1168 \expandafter\@gobble
1169 \else
1170 \ifnum#1<1000 %
1171 #2%
1172 \HyPsd@CJKnumberThree#1!#{#3}%
1173 \else
1174 \HyPsd@@CJKnumber{\IntCalcDiv#1!1000!}%
1175 \CJK@thousand
1176 \expandafter\expandafter\expandafter\HyPsd@CJKnumberThree
1177 \IntCalcMod#1!1000!%
1178 !\CJK@zero{10}%
1179 \fi
1180 \fi
1181 }
1182 \def\HyPsd@CJKnumberThree#1!#2#3{%
1183 \ifnum#1=\z@
1184 \else
1185 \ifnum#1<100 %
1186 #2%
1187 \HyPsd@CJKnumberTwo#1!#{#3}%
1188 \else
1189 \HyPsd@@CJKnumber{\IntCalcDiv#1!100!}%
1190 \CJK@hundred
1191 \expandafter\expandafter\expandafter\HyPsd@CJKnumberTwo
1192 \IntCalcMod#1!100!%
1193 !\CJK@zero{10}%
1194 \fi
1195 \fi
1196 }
1197 \def\HyPsd@CJKnumberTwo#1!#2#3{%
1198 \ifnum#1=\z@
1199 \else
1200 \ifnum#1<#3 %
1201 #2%
1202 \HyPsd@@CJKnumber{#1}%
1203 \else
1204 \HyPsd@@CJKnumber{\IntCalcDiv#1!10!}%
1205 \CJK@ten
1206 \ifnum\IntCalcMod#1!10!=\z@

```

```

1207     \else
1208         \HyPsd@@CJKnumber{\IntCalcMod#1!10!}%
1209     \fi
1210 \fi
1211 \fi
1212 }

1213 \def\HyPsd@CJKdigits#1{%
1214     \ifx*#1\relax
1215         \expandafter\HyPsd@@CJKdigits\expandafter\CJK@zero
1216     \else
1217         \HyPsd@@CJKdigits\CJK@null{#1}%
1218     \fi
1219 }

1220 \def\HyPsd@@CJKdigits#1#2{%
1221     \ifx\#2\%
1222     \else
1223         \HyPsd@@@CJKdigits#1#2\@nil
1224     \fi
1225 }%
1226 \def\HyPsd@@@CJKdigits#1#2#3\@nil{%
1227     \HyPsd@CJKdigit#1{#2}%
1228     \ifx\#3\%
1229         \expandafter\@gobble
1230     \else
1231         \expandafter\@firstofone
1232     \fi
1233 }%
1234     \HyPsd@@@CJKdigits#1#3\@nil
1235 }%
1236 }

1237 \def\HyPsd@CJKdigit#1#2{%
1238     \ifcase#2 %
1239         #1\or
1240         \CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1241         \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine
1242     \fi
1243 }

```

### 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 L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> versions [1998/06/01] and [1998/12/01]. I expect that versions below [1995/12/01] don't work.

To understand the patch easier, the original code of `\@current@cmd` and `\@changed@cmd` follows (L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> release [1998/12/01]). In the normal case `\pdfstringdef` is executed in a context where `\protect` has the meaning of `\@typesetprotect` (`=\relax`).

```

\def\@current@cmd#1{%
    \ifx\protect\@typeset@protect
        \@inmathwarn#1%

```

```

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

1244 \def\HyPsd@inmathwarn#1#2{%
1245   \ifx#2\expandafter
1246     \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
1247       \HyPsd@GLYPHERR
1248       \expandafter\@gobble\string#1%
1249       >%
1250       \expandafter\expandafter\expandafter\HyPsd@EndWithElse
1251     \else
1252       \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
1253     \fi
1254   \else
1255     \expandafter#2%
1256   \fi
1257 }
1258 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
1259 \def\HyPsd@EndWithElse#1\else\else{}

\HyPsd@add@accent

1260 \def\HyPsd@add@accent#1#2{%
1261   \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
1262   #2%
1263 }%

```

### 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`.

```
1264 \def\HyPsd@LetUnexpandableSpace#1{%
1265   \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
1266 }
```

`\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.

```
1267 \HyPsd@LetUnexpandableSpace\HyPsd@UnexpandableSpace
```

### 6.5.8 Marker for commands

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

```
1268 \edef\HyPsd@XSPACE{\string#\string X}
1269 \edef\HyPsd@ITALCORR{\string#\string I}
1270 \edef\HyPsd@GLYPHERR{\string#\string G}
```

### 6.5.9 `\hspace` fix

`\HyPsd@hspace`

```
1271 \def\HyPsd@hspace#1{\HyPsd@@hspace#1*\END}
```

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

```
1272 \def\HyPsd@@hspace#1*#2\END{%
1273   \ifx\#2\%
1274     \HyPsd@hspacetest{#1}%
1275   \else
1276     \expandafter\HyPsd@hspacetest
1277   \fi
1278 }
```

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

```
1279 \def\HyPsd@hspacetest#1{\ifdim\dimexpr#1\relax>\z@\space\fi}
```

### 6.5.10 Fix for AMS classes

```
1280 \ltx@ifundefined{tocsection}{%
1281   \let\HyPsd@AMSclassfix\relax
1282 }{%
1283   \def\HyPsd@AMSclassfix{%
```

```

1284 \let\tocpart\HyPsd@tocsection
1285 \let\tocchapter\HyPsd@tocsection
1286 \let\tocappendix\HyPsd@tocsection
1287 \let\tocsection\HyPsd@tocsection
1288 \let\tocsubsection\HyPsd@tocsection
1289 \let\tocsubsubsection\HyPsd@tocsection
1290 \let\tocparagraph\HyPsd@tocsection
1291 }%
1292 \def\HyPsd@tocsection#1#2#3{%
1293 \if @#2@\else\if @#1@\else#1 \fi#2. \fi
1294 #3%
1295 }%
1296 }

```

### 6.5.11 Reference commands

`\HyPsd@href`

```

1297 \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.

```

1298 \def\HyPsd@ref#1{\HyPsd@@ref#1*\END}%

```

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

```

1299 \def\HyPsd@@ref#1*#2\END{%
1300 \ifx\#2\%
1301 \HyPsd@@@ref{#1}%
1302 \else
1303 \expandafter\HyPsd@@@ref
1304 \fi
1305 }%

```

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

```

1306 \def\HyPsd@@@ref#1{%
1307 \expandafter\ifx\csname r@#1\endcsname\relax
1308 ??%
1309 \else
1310 \expandafter\expandafter\expandafter
1311 \@car\csname r@#1\endcsname\@nil
1312 \fi
1313 }

```

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

```

1314 \def\HyPsd@pageref#1{\HyPsd@@pageref#1*\END}

```

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

```

1315 \def\HyPsd@@pageref#1*#2\END{%
1316 \ifx\#2\%
1317 \HyPsd@@@pageref{#1}%
1318 \else
1319 \expandafter\HyPsd@@@pageref
1320 \fi
1321 }

```

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

```

1322 \def\HyPsd@@@pageref#1{%
1323   \expandafter\ifx\csname r@#1\endcsname\relax
1324     ??%
1325   \else
1326     \expandafter\expandafter\expandafter\expandafter
1327     \expandafter\expandafter\expandafter\@car
1328     \expandafter\expandafter\expandafter\@gobble
1329     \csname r@#1\endcsname{}\@nil
1330   \fi
1331 }
```

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

```

1332 \def\HyPsd@nameref#1{\HyPsd@@nameref#1*\END}
```

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

```

1333 \def\HyPsd@@nameref#1*#2\END{%
1334   \ifx\#2\%
1335     \HyPsd@@@nameref{#1}%
1336   \else
1337     \expandafter\HyPsd@@@nameref
1338   \fi
1339 }
```

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

```

1340 \def\HyPsd@@@nameref#1{%
1341   \expandafter\ifx\csname r@#1\endcsname\relax
1342     ??%
1343   \else
1344     \expandafter\expandafter\expandafter\expandafter
1345     \expandafter\expandafter\expandafter\@car
1346     \expandafter\expandafter\expandafter\@gobbletwo
1347     \csname r@#1\endcsname{}\@nil
1348   \fi
1349 }
```

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

```

1350 \def\HyPsd@autoref#1{\HyPsd@@autoref#1*\END}
```

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

```

1351 \def\HyPsd@@autoref#1*#2\END{%
1352   \ifx\#2\%
1353     \HyPsd@@@autoref{#1}%
1354   \else
1355     \expandafter\HyPsd@@@autoref
1356   \fi
1357 }
```

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

```

1358 \def\HyPsd@@@autoref#1{%
1359   \expandafter\ifx\csname r@#1\endcsname\relax
```

```

1360  ??%
1361  \else
1362    \expandafter\expandafter\expandafter\HyPsd@autorefname
1363      \csname r@#1\endcsname\}\}\}\@nil
1364    \expandafter\expandafter\expandafter
1365      \@car\csname r@#1\endcsname\@nil
1366  \fi
1367 }

```

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

```

1368 \def\HyPsd@autorefname#1#2#3#4#5\@nil{%
1369   \ifx\#4\%
1370   \else
1371     \HyPsd@@autorefname#4.\@nil
1372   \fi
1373 }

```

`\HyPsd@@autorefname`

```

1374 \def\HyPsd@@autorefname#1.#2\@nil{%
1375   \ltx@ifundefined{#1autorefname}{%
1376     \ltx@ifundefined{#1name}{%
1377       }{%
1378         \csname#1name\endcsname\space
1379       }%
1380     }{%
1381       \csname#1autorefname\endcsname\space
1382     }%
1383 }

```

### 6.5.12 Redefining the defining commands

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

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

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

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



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

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

```

\HyPsd@DefCommand
\HyPsd@LetCommand 1384 \begingroup
1385 \def\x#1#2{%
1386 \endgroup
1387 \let#1\def
1388 \def\HyPsd@DefCommand##1##2###{%
1389 #1%
1390 \expandafter\noexpand
1391 \csname\expandafter\@gobble\string##1\@empty\endcsname
1392 \@gobble
1393 }%
1394 \let#2\let
1395 \def\HyPsd@@LetCommand##1{%
1396 \expandafter\ifx\csname##1\expandafter\endcsname
1397 \csname iftrue\endcsname
1398 \pdfstringdefWarn\let
1399 \expandafter\@gobble
1400 \else
1401 \expandafter\ifx\csname##1\expandafter\endcsname
1402 \csname iffalse\endcsname
1403 \pdfstringdefWarn\let
1404 \expandafter\expandafter\expandafter\@gobble
1405 \else
1406 #2%
1407 \expandafter\noexpand
1408 \csname##1\expandafter\expandafter\expandafter\endcsname
1409 \fi
1410 \fi
1411 }%
1412 }%
1413 \expandafter\x\csname <def>-command\expandafter\endcsname
1414 \csname <let>-command\endcsname
1415 \def\HyPsd@LetCommand#1{%
1416 \expandafter\expandafter\expandafter\HyPsd@@LetCommand
1417 \expandafter\expandafter\expandafter{%
1418 \expandafter\@gobble\string#1\@empty
1419 }%
1420 }

```

### 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).

```

1421 \def\HyPsd@ifnextchar#1{%
1422   \pdfstringdefWarn#1%
1423   \expandafter\@gobbletwo\@gobble
1424 }
```

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

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

```

1425 \def\HyPsd@protected@testopt#1{%
1426   \pdfstringdefWarn#1%
1427   \@gobbletwo
1428 }
```

## 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:

```

1429 \def\HyPsd@Warning#1{%
1430   \begingroup
1431   \let\space\ltx@space
1432   \Hy@Warning{#1}%
1433   \endgroup
1434 }
```

### 6.6.2 Protecting spaces

```

1435 \RequirePackage{etexcmds}[2007/09/09]
1436 \ifetex@unexpanded
1437   \expandafter\@secondoftwo
1438 \else
1439   \expandafter\@firstoftwo
1440 \fi
1441 {%
```

`\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`.

```

1442 \def\HyPsd@ProtectSpaces#1{%
1443   \iftrue
```

```

1444 \expandafter\HyPsd@@ProtectSpacesFi
1445 \expandafter|\expandafter\@empty#1| \HyPsd@End#1%
1446 \fi
1447 }%

```

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

```

1448 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@End#3\fi{%
1449 \fi
1450 \ifx\scrollmode#2\scrollmode
1451 \HyPsd@RemoveMask#1\HyPsd@End#3%
1452 \else
1453 \gdef#3{#1\HyPsd@UnexpandableSpace#2}%
1454 \expandafter\HyPsd@@ProtectSpacesFi#3\HyPsd@End#3%
1455 \fi
1456 }%

```

### 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.

```

1457 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1458 \toks@ \expandafter{#1}%
1459 \xdef#2{\the\toks@}%
1460 }%

1461 }{%
1462 \let\HyPsd@fi\fi
1463 \def\HyPsd@ProtectSpaces#1{%
1464 \xdef#1{%
1465 \iftrue
1466 \expandafter\HyPsd@@ProtectSpacesFi
1467 \expandafter|\expandafter\@empty#1| %
1468 \HyPsd@fi
1469 }%
1470 \expandafter\HyPsd@RemoveMask#1\HyPsd@End#1%
1471 }%
1472 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@fi{%
1473 \fi
1474 \etex@unexpanded{#1}%
1475 \ifx\scrollmode#2\scrollmode
1476 \else
1477 \HyPsd@@ProtectSpacesFi\HyPsd@UnexpandableSpace#2%
1478 \HyPsd@fi
1479 }%
1480 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1481 \xdef#2{\etex@unexpanded\expandafter{#1}}%
1482 }%
1483 }

```

### 6.6.3 Remove grouping braces

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

```
1484 \def\HyPsd@RemoveBraces#1{%
1485   \ifx\scrollmode#1\scrollmode
1486   \else
1487     \HyPsd@@RemoveBracesFi#1\HyPsd@End{#1}%
1488   \fi
1489 }
```

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

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

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

```
1490 \def\HyPsd@@RemoveBracesFi#1#2\HyPsd@End#3\fi{%
1491   \fi
1492   \def\Hy@temp@A{#1#2}%
1493   \def\Hy@temp@B{#3}%
1494   \ifx\Hy@temp@A\Hy@temp@B
1495     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1496       \HyPsd@String#1%
1497     }%
1498     \ifx\scrollmode#2\scrollmode
1499     \else
1500       \Hy@ReturnAfterFiFiEnd{%
1501         \HyPsd@RemoveBraces{#2}%
1502       }%
1503     \fi
1504   \else
1505     \def\Hy@temp@A{#1}%
1506     \HyPsd@AppendItalcorr\HyPsd@String
1507     \ifx\Hy@temp@A\@empty
1508       \Hy@ReturnAfterElseFiFiEnd{%
1509         \HyPsd@RemoveBraces{#2}%
1510       }%
1511     \else
1512       \HyPsd@ProtectSpaces\Hy@temp@A
1513       \HyPsd@AppendItalcorr\Hy@temp@A
1514       \Hy@ReturnAfterFiFiEnd{%
1515         \expandafter\HyPsd@RemoveBraces\expandafter
1516           {\Hy@temp@A#2}%
1517       }%
1518     \fi
1519   \fi
1520   \Hy@ReturnEnd
1521 }
```

`\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`.

```

1522 \def\HyPsd@AppendItalcorr#1{%
1523   \expandafter\HyPsd@@AppendItalcorr\expandafter{\/}#1%
1524 }
1525 \def\HyPsd@@AppendItalcorr#1#2{%
1526   \expandafter\def\expandafter#2\expandafter{#2#1}%
1527 }
```

#### 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>.

```

1528 \ltx@ifundefined{directlua}{%
1529 }{%
1530   \expandafter\ifx\csname\endcsname\relax\fi
1531 }
```

#### 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`.

```

1532 \begingroup
1533   \catcode`\Q=\active
1534   \let Q\ltx@empty
1535   \gdef\HyPsd@CheckCatcodes#1#2\HyPsd@end{%
1536     \global\let\HyPsd@Rest\relax
1537     \ifcat\relax\noexpand#1\relax
1538       \ifx#1\protect
1539       \else
1540         \ifx#1\penalty
1541           \setbox\z@=\hbox{%
1542             \afterassignment\HyPsd@AfterCountRemove
1543             \count@=#2\HyPsd@end
1544           }%
1545         \else
1546           \ifx#1\kern
1547             \setbox\z@=\hbox{%
1548               \afterassignment\HyPsd@AfterDimenRemove
1549               \dimen@=#2\HyPsd@end
1550             }%

```

```

1551     \else
1552     \ifx#1\hskip
1553     \setbox\z@=\hbox{%
1554     \afterassignment\HyPsd@AfterSkipRemove
1555     \skip@=#2\HyPsd@end
1556     }%
1557     \else
1558     \HyPsd@CatcodeWarning{#1}%
1559     \fi
1560   \fi
1561 \fi
1562 \fi
1563 \else
1564 \ifcat\noexpand#1\noexpandQ% active character
1565 \expandafter\expandafter\expandafter\def
1566 \expandafter\expandafter\expandafter\HyPsd@String
1567 \expandafter\expandafter\expandafter{%
1568 \expandafter\HyPsd@String\string#1%
1569 }%
1570 \else
1571 \ifcat#1A% letter
1572 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1573 \HyPsd@String#1%
1574 }%
1575 \else
1576 \ifcat#1 % SPACE
1577 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1578 \HyPsd@String\HyPsd@SPACEOPTI
1579 }%
1580 \else
1581 \ifcat$#1%
1582 \HyPsd@CatcodeWarning{math shift}%
1583 \else
1584 \ifcat&#1%
1585 \HyPsd@CatcodeWarning{alignment tab}%
1586 \else
1587 \ifcat^#1%
1588 \HyPsd@CatcodeWarning{superscript}%
1589 \else
1590 \ifcat_#1%
1591 \HyPsd@CatcodeWarning{subscript}%
1592 \else
1593 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1594 \HyPsd@String#1%
1595 }%
1596 \fi
1597 \fi
1598 \fi
1599 \fi
1600 \fi
1601 \fi
1602 \fi
1603 \fi
1604 \ifx\HyPsd@Rest\relax

```

```

1605 \ifx\scrollmode#2\scrollmode
1606 \else
1607 \Hy@ReturnAfterFiFiEnd{%
1608 \HyPsd@CheckCatcodes#2\HyPsd@End
1609 }%
1610 \fi
1611 \else
1612 \ifx\HyPsd@Rest\@empty
1613 \else
1614 \Hy@ReturnAfterFiFiEnd{%
1615 \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@End
1616 }%
1617 \fi
1618 \fi
1619 \Hy@ReturnEnd
1620 }%
1621 \endgroup

```

### Remove counts, dimens, skips.

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

```

1622 \def\HyPsd@AfterCountRemove#1\HyPsd@End{%
1623 \gdef\HyPsd@Rest{#1}%
1624 }

```

`\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.

```

1625 \def\HyPsd@AfterDimenRemove#1\HyPsd@End{%
1626 \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@>1ex %
1627 \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1628 \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1629 \else
1630 \ifdim\dimen@=\z@
1631 \else
1632 \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1633 \fi
1634 \gdef\HyPsd@Rest{#1}%
1635 \fi
1636 }

```

`\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).

```

1637 \def\HyPsd@AfterSkipRemove#1\HyPsd@End{%
1638 \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@>1ex %
1639 \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1640 \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1641 \else
1642 \ifdim\skip@=\z@
1643 \else
1644 \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1645 \fi

```

```

1646 \gdef\HyPsd@Rest{#1}%
1647 \fi
1648 }

```

### Catcode warnings.

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

```

1649 \def\HyPsd@CatcodeWarning#1{%
1650 \HyPsd@Warning{%
1651   Token not allowed in a PDF string (%)
1652   \ifHy@unicode
1653     Unicode%
1654   \else
1655     PDFDocEncoding%
1656   \fi
1657   }:%
1658   \MessageBreak removing `\'HyPsd@RemoveCmdPrefix#1'%
1659 }%
1660 }
1661 \begingroup
1662 \catcode`\|=0 %
1663 \catcode`\|=12 %
1664 |gdef|HyPsd@RemoveCmdPrefix#1{%
1665   |expandafter|HyPsd@@RemoveCmdPrefix
1666   |string#1|@empty\<>-|@empty|@empty
1667 }%
1668 |gdef|HyPsd@@RemoveCmdPrefix#1\<>-#2|@empty#3|@empty{#1#2}%
1669 |endgroup

```

\HyPsd@RemoveSpaceWarning

```

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

```

\HyPsd@ReplaceSpaceWarning

```

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

```



```

1692 \MessageBreak #1\MessageBreak
1693 replaced by space%
1694 }%
1695 }

```

### 6.6.5 Check for wrong glyphs

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

```

1696 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
1697 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1698 \HyPsd@String#1%
1699 }%
1700 \ifx\\#2\\%
1701 \else
1702 \ltx@ReturnAfterFi{%
1703 \HyPsd@GlyphProcessWarning#2\@empty
1704 }%
1705 \fi
1706 }
1707 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
1708 \HyPsd@@@GlyphProcessWarning#1++>%
1709 \HyPsd@GlyphProcess#2\@empty
1710 }
1711 \def\HyPsd@@@GlyphProcessWarning#1+#2+#3>{%
1712 \ifx\\#2\\%
1713 \HyPsd@Warning{%
1714 Glyph not defined in %
1715 P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
1716 removing ` \@backslashchar#1'%
1717 }%
1718 \else
1719 \HyPsd@Warning{%
1720 Composite letter ` \@backslashchar#1+#2'\MessageBreak
1721 not defined in P\ifHy@unicode U\else D1\fi\space encoding,%
1722 \MessageBreak
1723 removing ` \@backslashchar#1'%
1724 }%
1725 \fi
1726 }

```

### 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`.

```

1727 \def\HyPsd@spaceopti#1{ % first space
1728 \ifx\HyPsd@spaceopti#1%
1729 \040%
1730 \else
1731 #1%
1732 \fi

```

```
1733 }%
```

### 6.6.6 Replacing tokens

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

```
#1 Exact the tokens that should be replaced.
#2 The replacement (don't need to be expanded).
#3 Command with the string.
1734 \def\HyPsd@Subst#1#2#3{%
1735   \def\HyPsd@@ReplaceFi##1#1##2\END\fi{%
1736     \fi
1737     ##1%
1738     \ifx\scrollmode##2\scrollmode
1739     \else
1740     #2%
1741     \HyPsd@@ReplaceFi##2\END
1742     \fi
1743   }%
1744   \xdef#3{%
1745     \iftrue
1746       \expandafter\HyPsd@@ReplaceFi#3#1\END
1747     \fi
1748   }%
1749 }
```

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

```
1750 \def\HyPsd@StringSubst#1{%
1751   \expandafter\HyPsd@Subst\expandafter{\string#1}%
1752 }
```

`\HyPsd@EscapeTeX`

```
1753 \begingroup
1754 \lccode`\!=`\\%%
1755 \lccode`\|=`\\%%
1756 \lccode`\(=`\{%
1757 \lccode`\)=`\}%
1758 \lccode`0=\ltx@zero
1759 \lccode`1=\ltx@zero
1760 \lccode`3=\ltx@zero
1761 \lccode`4=\ltx@zero
1762 \lccode`5=\ltx@zero
1763 \lccode`7=\ltx@zero
1764 \lowercase{\endgroup
1765   \def\HyPsd@EscapeTeX#1{%
1766     \HyPsd@Subst!{|045}#1%
1767     \HyPsd@Subst({|173}#1%
1768     \HyPsd@Subst){|175}#1%
1769   }%
1770 }
```

### 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.

```

1771 \def\HyPsd@doxspace#1{%
1772   \ifx#1\relax\else
1773     \ifx#1.\else
1774       \ifx#1:\else
1775         \ifx#1,\else
1776           \ifx#1;\else
1777             \ifx#1!\else
1778               \ifx#1?\else
1779                 \ifx#1/\else
1780                   \ifx#1-\else
1781                     \ifx#1'\else
1782                       \HyPsd@SPACEOPTI
1783                     \fi
1784                   \fi
1785                 \fi
1786               \fi
1787             \fi
1788           \fi
1789         \fi
1790       \fi
1791     \fi
1792   \fi
1793   #1%
1794 }%
```

### 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.

```

1795 \begingroup
1796   \catcode`\|=0 %
1797   \catcode`\|=12 %
```

`\HyPsd@ConvertToUnicode`

```

1798 |gdef|HyPsd@ConvertToUnicode#1{%
1799   |xdef#1{%
1800     |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
1801   }%
1802   |ifx#1|@empty
1803   |else
1804     |xdef#1{%
1805       \376\377%
1806       #1%
1807     }%
1808   |fi
1809 }%
```

\HyPsd@DoConvert

```

1810 |gdef|HyPsd@DoConvert#1{%
1811 |ifx#1|@empty
1812 |else
1813 |ltx@ReturnAfterFi{%
1814 |ifx#1\%%
1815 \%%
1816 |expandafter|HyPsd@DoEscape
1817 |else
1818 |HyPsd@Char{#1}%
1819 |expandafter|HyPsd@DoConvert
1820 |fi
1821 }%
1822 |fi
1823 }%

```

\HyPsd@DoEscape

```

1824 |gdef|HyPsd@DoEscape#1{%
1825 |ifx#19%
1826 |expandafter|HyPsd@GetTwoBytes
1827 |else
1828 |ltx@ReturnAfterFi{%
1829 |ifx#18%
1830 00%
1831 |expandafter|HyPsd@GetTwoBytes
1832 |else
1833 #1%
1834 |expandafter|HyPsd@GetOneByte
1835 |fi
1836 }%
1837 |fi
1838 }%

```

\HyPsd@GetTwoBytes

```

1839 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
1840 #1\#2#3#4%
1841 |HyPsd@DoConvert
1842 }%

```

\HyPsd@GetOneByte

```

1843 |gdef|HyPsd@GetOneByte#1#2{%
1844 #1#2%
1845 |HyPsd@DoConvert
1846 }%
1847 |endgroup

```

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

```

1848 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
1849 \xdef#4{#4#1#2}%
1850 \HyPsd@@ConvertToUnicode#3\END#4%
1851 }

```

\HyPsd@Char

```
1852 \begingroup
1853 \catcode0=9 %
1854 \catcode`\^=7 %
1855 \catcode`\^^=12 %
1856 \def\x{~~~~0000}%
1857 \expandafter\endgroup
1858 \ifx\x\@empty
1859 \def\HyPsd@Char#1{%
1860 \ifnum`#1<128 %
1861 \@backslashchar 000#1%
1862 \else
1863 \ifnum`#1<65536 %
1864 \expandafter\HyPsd@CharTwoByte\number`#1!%
1865 \else
1866 \expandafter\expandafter\expandafter\HyPsd@CharSurrogate
1867 \intcalcSub{`#1}{65536}!%
1868 \fi
1869 \fi
1870 }%
1871 \def\HyPsd@CharTwoByte#1!{%
1872 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1873 \IntCalcDiv#1!256!!%
1874 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1875 \IntCalcMod#1!256!!%
1876 }%
1877 \def\HyPsd@CharOctByte#1!{%
1878 \@backslashchar
1879 \IntCalcDiv#1!64!%
1880 \intcalcDiv{\IntCalcMod#1!64!}{8}%
1881 \IntCalcMod#1!8!%
1882 }%
1883 \def\HyPsd@CharSurrogate#1!{%
1884 \@backslashchar 33%
1885 \IntCalcDiv#1!262144!%
1886 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1887 \intcalcDiv{\IntCalcMod#1!262144!}{1024}!%
1888 \@backslashchar 33%
1889 \expandafter\expandafter\expandafter\IntCalcAdd
1890 \intcalcDiv{\IntCalcMod#1!1024!}{256}!4!%
1891 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1892 \IntCalcMod#1!256!!%
1893 }%
1894 \else
1895 \def\HyPsd@Char#1{%
1896 \@backslashchar 000#1%
1897 }%
1898 \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.

```
1899 \ifcsname UTFviii@loop\endcsname
1900 \def\HyPsd@expand@utfvii{%
```

```

1901 \count@"C2
1902 \@tempcnta"F5
1903 \def\UTFviii@tmp{\expandafter\def\expandafter~\expandafter{~}}%
1904 \UTFviii@loop
1905 }
1906 \else
1907 \def\HyPsd@expand@utfvii{}
1908 \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`

```

1909 \begingroup
1910 \lccode`~=`^^f4\relax
1911 \lowercase{\endgroup
1912 \def\HyPsd@UTFviii{%
1913 \HyPsd@expand@utfvii
1914 \let\UTFviii@two@octets\HyPsd@UTFviii@two
1915 \let\UTFviii@three@octets\HyPsd@UTFviii@three
1916 \let\UTFviii@four@octets\HyPsd@UTFviii@four
1917 \ifx~\HyPsd@UTFviii@cccxiv@undef
1918 \let~\HyPsd@UTFviii@cccxiv@def
1919 \fi
1920 \let\unichar\HyPsd@unichar
1921 }%
1922 }%
1923 \def\HyPsd@UTFviii@cccxiv@undef{\@inpenc@undefined@{utf8}}%
1924 \edef\HyPsd@UTFviii@cccxiv@def{%
1925 \noexpand\UTFviii@four@octets\string ^^f4%
1926 }%

```

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

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

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

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

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

$$(5)$$

```

1927 \def\HyPsd@UTFviii@two#1#2{%
1928 \expandafter\HyPsd@UTFviii@@two

```

```

1929 \number\dimexpr.25\dimexpr`#1sp\expandafter\relax\expandafter| %
1930 \number`#1\expandafter| %
1931 \number\dimexpr.125\dimexpr`#2sp\expandafter\relax\expandafter| %
1932 \number`#2 \@nil
1933 }%
1934 \def\HyPsd@UTFviii@@two#1|#2|#3|#4\@nil{%
1935 \expandafter\8%
1936 \number\numexpr #1-48\expandafter\relax
1937 \csname\number\numexpr #2-4*#1\relax\expandafter\endcsname
1938 \number\numexpr #3-8*%
1939 \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
1940 \number\numexpr #4-8*#3\relax
1941 }%

```

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

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

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

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

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

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

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

$$(12)$$

```

1942 \def\HyPsd@UTFviii@three#1#2#3{%
1943 \expandafter\HyPsd@UTFviii@@three
1944 \number\dimexpr.25\dimexpr`#1sp\expandafter\relax\expandafter| %
1945 \number`#1\expandafter| %
1946 \number\ifnum\numexpr`#2-128\relax <32 0\else 1\fi\expandafter| %
1947 \number\dimexpr.25\dimexpr`#2sp\expandafter\relax\expandafter| %
1948 \number`#2\expandafter| %
1949 \number\dimexpr.125\dimexpr`#3sp\expandafter\relax\expandafter| %
1950 \number`#3 \@nil
1951 }%
1952 \def\HyPsd@UTFviii@@three#1|#2|#3|#4|#5|#6|#7\@nil{%
1953 \expandafter\9%
1954 \number\numexpr #1-56\expandafter\relax
1955 \number\numexpr 2*(#2-4*#1)+#3\expandafter\relax
1956 \number\numexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax
1957 \csname\number\numexpr #5-4*#4\relax\expandafter\endcsname
1958 \number\numexpr #6-16\expandafter\relax
1959 \number\numexpr #7-8*#6\relax
1960 }%

```

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

```

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

```

```

1961 \def\HyPsd@UTFviii@four#1#2{%

```

```

1962 \expandafter\HyPsd@@UTFviii@four\number
1963 \numexpr-1+(\`#1-240)*4+\dimexpr.0625\dimexpr`#2sp-128sp%
1964 \expandafter|\number
1965 \numexpr`#2-16*\dimexpr.0625\dimexpr`#2sp| %
1966 }%
1967 \def\HyPsd@@UTFviii@four#1|#2|#3{%
1968 \933\number\dimexpr.25\dimexpr#1sp\relax\relax
1969 \csname\number\numexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1970 \ifodd#2 %
1971 \number\numexpr(#2-1)/2\relax
1972 \else
1973 \number\numexpr#2/2\relax
1974 \fi
1975 \number\numexpr\ifodd#2 4+\fi
1976 \dimexpr.0625\dimexpr`#3sp-128sp\relax\relax\relax
1977 \933%
1978 \expandafter\HyPsd@@@UTFviii@four\number
1979 \numexpr`#3-16*\dimexpr.0625\dimexpr`#3sp| %
1980 }%
1981 \def\HyPsd@@@UTFviii@four#1|#2{%
1982 \number\numexpr4+\dimexpr.25\dimexpr#1sp\relax\relax\relax
1983 \csname\number\numexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1984 \number\dimexpr.125\dimexpr`#2sp-128sp\relax\relax
1985 \number\numexpr`#2-8*\dimexpr.125\dimexpr`#2sp\relax\relax\relax
1986 }%

```

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

```

1987 \def\HyPsd@unichar#1{%
1988 \ifHy@unicode
1989 \ifnum#1>"10FFFF %
1990 \HyPsd@UnicodeReplacementCharacter % illegal
1991 \else
1992 \ifnum#1>"FFFF %

```

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

```

1993 \expandafter\HyPsd@unichar\expandafter{%
1994 \number\numexpr 55296+%
1995 \dimexpr.0009765625\dimexpr\number#1sp-\p@
1996 \relax\relax\relax
1997 }%

```

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

```

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

```



```

2010      \else
2011      \8%
2012      \number\dimexpr.00390625\dimexpr\number#1sp\relax\relax
2013      \fi
2014      \expandafter\HyPsd@unichar@second@byte\expandafter{%
2015      \number
2016      \numexpr#1-256*\number
2017      \dimexpr.00390625\dimexpr\number#1sp\relax\relax\relax
2018      }%
2019      \fi
2020      \fi
2021      \else
2022      .% unsupported (Unicode -> PDF Doc Encoding)
2023      \fi
2024      }%
2025      \def\HyPsd@UnicodeReplacementCharacter{\9377\375}%
2026      \def\HyPsd@unichar@first@byte#1{%
2027      \number\dimexpr.015625\dimexpr#1sp\relax\relax
2028      \expandafter\HyPsd@unichar@octtwo\expandafter{%
2029      \number
2030      \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2031      \relax\relax\relax
2032      }%
2033      }%
2034      \def\HyPsd@unichar@second@byte#1{%
2035      \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
2036      \expandafter\HyPsd@unichar@octtwo\expandafter{%
2037      \number
2038      \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2039      \relax\relax\relax
2040      }%
2041      }%
2042      \def\HyPsd@unichar@octtwo#1{%
2043      \number\dimexpr.125\dimexpr#1sp\relax\relax
2044      \number\numexpr#1-8*\number\dimexpr.125\dimexpr#1sp%
2045      \relax\relax\relax
2046      }%

```

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

```

2047 \def\HyPsd@utf@viii@undeferr#1#2#3#4#5#6{%
2048 \ifx\@gobble#1%
2049 \else
2050 [Please insert \textbackslash PrerenderUnicode%
2051 \textbraceleft#1\textbraceright\space
2052 into preamble]%
2053 \fi
2054 }%

```

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

\HyPsd@DieFace Die faces are provided by

Package	Macro
ifsym	\Cube
epsdice	\epsdice
hhcount	\fcdice

\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.

```

2055 \def\HyPsd@DieFace#1{%
2056   \ifHy@unicode
2057     \ifnum#1<1 %
2058       \HyPsd@UnicodeReplacementCharacter
2059     \else
2060       \ifnum#1>6 %
2061         \9046\205%
2062         \expandafter\expandafter\expandafter
2063         \HyPsd@DieFaceLarge\intcalcSub{#1}{6}!%
2064       \else
2065         \9046\20\intcalcDec{#1}%
2066       \fi
2067     \fi
2068   \else
2069     .% Die faces are not part of PDFDocEncoding
2070   \fi
2071 }
```

\HyPsd@DieFaceLarge

```

2072 \def\HyPsd@DieFaceLarge#1!{%
2073   \ifnum#1>6 %
2074     \expandafter\ltx@firstoftwo
2075   \else
2076     \expandafter\ltx@secondoftwo
2077   \fi
2078   {%
2079     \9046\205%
2080     \expandafter\expandafter\expandafter
2081     \HyPsd@DieFaceLarge\IntCalcSub#1!6!!%
2082   }{%
2083     \9046\20\IntCalcDec#1!%
2084   }%
2085 }
```

#### 6.6.11 Support for moon phases of package china2e

```

2086 \def\HyPsd@MoonPha#1{%
2087   \ifcase\intcalcNum{#1} %
2088     \HyPsd@UnicodeReplacementCharacter
2089   \or % 1
2090   % U+1F31A NEW MOON WITH FACE; \MoonPha{1} (china2e)
2091   \9330\074\9337\032%
2092   \or % 2
2093   \HyPsd@UnicodeReplacementCharacter
2094   \or % 3
2095   % U+1F31D FULL MOON WITH FACE; \MoonPha{3} (china2e)
```

```

2096 \9330\074\9337\035%
2097 \or % 4
2098 % U+1F31C LAST QUARTER MOON WITH FACE; \MoonPha{4} (china2e)
2099 \9330\074\9337\034%
2100 \else
2101 \HyPsd@UnicodeReplacementCharacter
2102 \fi
2103 }
2104 %* \HyPsd@MoonPha -> \MoonPha

```

### 6.6.12 Support for package pifont

\HyPsd@ding

```

2105 \def\HyPsd@ding#1{%
2106 \ifHy@unicode
2107 \ifnum#1<32 %
2108 \HyPsd@UnicodeReplacementCharacter
2109 \else
2110 \ifnum#1>254 %
2111 \HyPsd@UnicodeReplacementCharacter
2112 \else
2113 \ifnum#1<127 %
2114 \expandafter\expandafter\expandafter
2115 \HyPsd@@ding\intcalcNum{#1}!%
2116 \else
2117 \ifnum#1>160 %
2118 \expandafter\expandafter\expandafter
2119 \HyPsd@@ding\intcalcNum{#1}!%
2120 \else
2121 \HyPsd@UnicodeReplacementCharacter
2122 \fi
2123 \fi
2124 \fi
2125 \fi
2126 \else
2127 .% Dingbats are not part of PDFDocEncoding
2128 \fi
2129 }

```

\HyPsd@@ding

```

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

```

```

2145     \fi
2146     \fi
2147   }{%
2148     \csname HyPsd@ding@#1\endcsname
2149   }%
2150 }

2151 \@namedef{HyPsd@ding@32}{\space}
2152 % U+260E BLACK TELEPHONE
2153 \@namedef{HyPsd@ding@37}{\9046\016}% U+260E
2154 % U+261B BLACK RIGHT POINTING INDEX
2155 \@namedef{HyPsd@ding@42}{\9046\033}% U+261B
2156 % U+261E WHITE RIGHT POINTING INDEX
2157 \@namedef{HyPsd@ding@43}{\9046\036}% U+261E
2158 % U+2605 BLACK STAR
2159 \@namedef{HyPsd@ding@72}{\9046\005}% U+2605
2160 % U+25CF BLACK CIRCLE
2161 \@namedef{HyPsd@ding@108}{\9045\317}% U+25CF
2162 % U+25A0 BLACK SQUARE
2163 \@namedef{HyPsd@ding@110}{\9045\240}% U+25A0
2164 % U+25B2 BLACK UP-POINTING TRIANGLE
2165 \@namedef{HyPsd@ding@115}{\9045\262}% U+25B2
2166 % U+25BC BLACK DOWN-POINTING TRIANGLE
2167 \@namedef{HyPsd@ding@116}{\9045\274}% U+25BC
2168 % U+25C6 BLACK DIAMOND
2169 \@namedef{HyPsd@ding@117}{\9045\306}% U+25C6
2170 % U+25D7 RIGHT HALF BLACK CIRCLE
2171 \@namedef{HyPsd@ding@119}{\9045\327}% U+25D7
2172 \@namedef{HyPsd@ding@168}{\textclubsuitblack}%
2173 \@namedef{HyPsd@ding@169}{\textdiamondsuitblack}%
2174 \@namedef{HyPsd@ding@170}{\textheartsuitblack}%
2175 \@namedef{HyPsd@ding@171}{\textspadesuitblack}%
2176 \@namedef{HyPsd@ding@213}{\textrightarrow}%
2177 \@namedef{HyPsd@ding@214}{\textleftarrow}%
2178 \@namedef{HyPsd@ding@215}{\textupdownarrow}%
2179 \@namedef{HyPsd@ding@240}{\HyPsd@UnicodeReplacementCharacter}

```

## 7 Support of other packages

### 7.1 Class memoir

```

2180 \@ifclassloaded{memoir}{%
2181   \Hy@AtEndOfPackage{\RequirePackage{memhfixc}}%
2182 }{}

```

### 7.2 Package subfigure

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

```

2183 \@ifpackageloaded{subfigure}{%
2184   \ltx@ifundefined{sub@label}{%
2185     \Hy@hypertextnamesfalse
2186   }{%
2187     \renewcommand*{\sub@label}[1]{%
2188       \@bsphack

```

```

2189 \subfig@oldlabel{#1}%
2190 \if@filesw
2191 \begingroup
2192 \edef\@currentlabstr{%
2193 \expandafter\strip@prefix\meaning\@currentlabelname
2194 }%
2195 \protected@write\@auxout{}\{%
2196 \string\newlabel{sub@#1}\{%
2197 {\@nameuse{\@thesub\@capttype}}%
2198 {\thepage}%
2199 {%
2200 \expandafter\strip@period\@currentlabstr
2201 \relax.\relax\@@@%
2202 }%
2203 {\@currentHref}%
2204 {}%
2205 }%
2206 }%
2207 \endgroup
2208 \fi
2209 \@esphack
2210 }%
2211 \@ifpackagelater{subfigure}{2002/03/26}\{\}%
2212 \providecommand*\@toclevel@subfigure{1}%
2213 \providecommand*\@toclevel@subtable{1}%
2214 }%
2215 }%
2216 {}

```

### 7.3 Package xr and xr-hyper

The beta version of xr that supports `\XR@addURL` is called `xr-hyper`. Therefore we test for the macro itself and not for the package name:

```

2217 \ltx@ifundefined{XR@addURL}\%
2218 {}%

```

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.

```

2219 \def\xr@addURL#1{\xr@dURL#1\{\}\{\}\%
2220 \def\xr@dURL#1#2#3#4#5\{\%
2221 {#1}\{#2}%
2222 \if!#4!%
2223 \else
2224 {#3}\{#4}\{xr@URL}%
2225 \fi
2226 }%
2227 }

2228 \def\Hy@true{true}
2229 \def\Hy@false{false}

```

Providing dummy definitions.

```

2230 \let\literalps@out\@gobble
2231 \newcommand\pdfbookmark[3]{}
2232 \def\Acrobatmenu#1#2{\leavevmode#2}

```

```
2233 \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

```
2234 \let\HyperRaiseLinkHook\@empty
2235 \def\HyperRaiseLinkDefault{\baselineskip}
```

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

```
2236 \newcount\Hy@SavedSpaceFactor
2237 \def\Hy@SaveSpaceFactor{%
2238   \global\Hy@SavedSpaceFactor=\ifhmode\spacefactor\else\z@\fi
2239 }
2240 \def\Hy@RestoreSpaceFactor{%
2241   \relax
2242   \ifhmode
2243     \ifnum\Hy@SavedSpaceFactor>\z@
2244       \spacefactor=\Hy@SavedSpaceFactor
2245     \fi
2246   \fi
2247 }
2248 \def\Hy@SaveSavedSpaceFactor{%
2249   \edef\Hy@RestoreSavedSpaceFactor{%
2250     \global\Hy@SavedSpaceFactor=\the\Hy@SavedSpaceFactor\relax
2251   }%
2252 }
2253 \def\Hy@raisedlink#1{%
2254   \ifvmode
2255     #1%
2256   \else
2257     \Hy@SaveSpaceFactor
2258     \penalty\@M
2259     \smash{%
2260       \begingroup
2261         \let\HyperRaiseLinkLength\@tempdima
2262         \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
2263         \HyperRaiseLinkHook
2264       \expandafter\endgroup
2265       \expandafter\raise\the\HyperRaiseLinkLength\hbox{%
2266         \Hy@RestoreSpaceFactor
2267         #1%
2268       \Hy@SaveSpaceFactor
```

```

2269 }%
2270 }%
2271 \Hy@RestoreSpaceFactor
2272 \fi
2273 }

```

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

```

2274 \def\Hy@SaveLastskip{%
2275   \let\Hy@RestoreLastskip\relax
2276   \ifvmode
2277     \ifdim\lastskip=\z@
2278       \ifnum\lastnodetype=1 %
2279         \let\Hy@RestoreLastskip\relax
2280       \else
2281         \let\Hy@RestoreLastskip\nobreak
2282       \fi
2283     \else
2284       \begingroup
2285         \skip@=-\lastskip
2286         \edef\x{%
2287           \endgroup
2288           \def\noexpand\Hy@RestoreLastskip{%
2289             \noexpand\ifvmode
2290               \noexpand\nobreak
2291               \vskip\the\skip@
2292               \vskip\the\lastskip\relax
2293             \noexpand\fi
2294           }%
2295         }%
2296       \x
2297     \fi
2298   \else
2299     \ifhmode
2300       \ifdim\lastskip=\z@
2301         \let\Hy@RestoreLastskip\nobreak
2302       \else
2303         \begingroup
2304           \skip@=-\lastskip
2305           \edef\x{%
2306             \endgroup
2307             \def\noexpand\Hy@RestoreLastskip{%
2308               \noexpand\ifhmode
2309                 \noexpand\nobreak
2310                 \hskip\the\skip@
2311                 \hskip\the\lastskip\relax
2312               \noexpand\fi
2313             }%
2314           }%
2315         \x
2316       \fi
2317     \fi
2318   \fi
2319 }%

```

## 9 Options

```

2320 \SetupKeyvalOptions{%
2321   family=Hyp,%
2322   prefix=HyOpt%
2323 }

```

### 9.1 Help macros

\IfHyperBooleanExists

```

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

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

```

\IfHyperBoolean

```

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

```

\Hy@boolkey

```

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

```

\Hy@WarnOptionValue



```

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

```

\Hy@DisableOption

```

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

```

\Hy@WarnOptionDisabled

```

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

```

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

```

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

```

```

2407     Unknown value `\'x'%
2408   }%
2409   \fi
2410 \endgroup
2411 }

```

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

```

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

```

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

```

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

```

`\Hy@UseNameKey`

```

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

```

## 9.2 Defining the options

```

2431 \define@key{Hyp}{implicit}[true]{%
2432   \Hy@boolkey{implicit}{#1}%
2433 }
2434 \define@key{Hyp}{draft}[true]{%
2435   \Hy@boolkey{draft}{#1}%
2436 }
2437 \define@key{Hyp}{final}[true]{%
2438   \Hy@boolkey{final}{#1}%
2439 }
2440 \let\KV@Hyp@nolinks\KV@Hyp@draft
2441 \def\Hy@ObsoletePaperOption#1{%
2442   \Hy@WarningNoLine{%
2443     Option `#1' is no longer used%
2444   }%
2445   \define@key{Hyp}{#1}[true]{}%
2446 }

```

```

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

2458 \define@key{Hyp}{setpagesize}[true]{%
2459   \Hy@boolkey{setpagesize}{#1}%
2460 }
2461 \define@key{Hyp}{debug}[true]{%
2462   \Hy@boolkey{debug}{#1}%
2463 }
2464 \define@key{Hyp}{linktocpage}[true]{%
2465   \Hy@boolkey{linktocpage}{#1}%
2466   \ifHy@linktocpage
2467     \let\Hy@linktoc\Hy@linktoc@page
2468   \else
2469     \let\Hy@linktoc\Hy@linktoc@section
2470   \fi
2471 }
2472 \chardef\Hy@linktoc@none=0 %
2473 \chardef\Hy@linktoc@section=1 %
2474 \chardef\Hy@linktoc@page=2 %
2475 \chardef\Hy@linktoc@all=3 %
2476 \ifHy@linktocpage
2477   \let\Hy@linktoc\Hy@linktoc@page
2478 \else
2479   \let\Hy@linktoc\Hy@linktoc@section
2480 \fi
2481 \define@key{Hyp}{linktoc}{%
2482   \@ifundefined{Hy@linktoc@#1}{%
2483     \Hy@Warning{%
2484       Unexpected value `#1' of\MessageBreak
2485       option `linktoc' instead of `none',\MessageBreak
2486       `section', `page' or `all'%
2487     }%
2488   }{%
2489     \expandafter\let\expandafter\Hy@linktoc
2490       \csname Hy@linktoc@#1\endcsname
2491   }%
2492 }
2493 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
2494 \let\XR@ext\relax
2495 \define@key{Hyp}{verbose}[true]{%
2496   \Hy@boolkey{verbose}{#1}%
2497 }
2498 \define@key{Hyp}{typexml}[true]{%
2499   \Hy@boolkey{typexml}{#1}%
2500 }

```

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.

```
2501 \define@key{Hyp}{raiselinks}[true]{%
2502   \Hy@boolkey{raiselinks}{#1}%
2503 }
```

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

```
2504 \def\Hy@setbreaklinks#1{%
2505   \csname breaklinks#1\endcsname
2506 }

2507 \def\Hy@breaklinks@unsupported{%
2508   \ifx\Hy@setbreaklinks\@gobble
2509     \ifHy@breaklinks
2510       \Hy@WarningNoLine{%
2511         You have enabled option `breaklinks'.\MessageBreak
2512         But driver `Hy@driver.def' does not support this.\MessageBreak
2513         Expect trouble with the link areas of broken links%
2514       }%
2515     \fi
2516   \fi
2517 }

2518 \define@key{Hyp}{breaklinks}[true]{%
2519   \Hy@boolkey{breaklinks}{#1}%
2520   \let\Hy@setbreaklinks\@gobble
2521 }

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

Determines whether an automatic anchor is put on each page

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

Are the page links done as plain arabic numbers, or do they follow the formatting of the package? The latter loses if you put in typesetting like `\textbf` or the like.

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

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

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

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

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

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

```

2537 \define@key{Hyp}{nesting}[true]{%
2538   \Hy@boolkey{nesting}{#1}%
2539 }
2540 \define@key{Hyp}{destlabel}[true]{%
2541   \Hy@boolkey{destlabel}{#1}%
2542 }
2543 \define@key{Hyp}{unicode}[true]{%
2544   \Hy@boolkey{unicode}{#1}%
2545   \ifHy@unicode
2546     \def\HyPsd@pdfencoding{unicode}%
2547     \HyPsd@LoadUnicode
2548   \else
2549     \def\HyPsd@pdfencoding{pdfdoc}%
2550   \fi
2551 }
2552 \Hy@AtBeginDocument{%
2553   \ifx\HyPsd@LoadUnicode\relax
2554   \else
2555     \def\HyPsd@LoadUnicode{%
2556       \Hy@Error{%
2557         Unicode support for bookmarks is not available.\MessageBreak
2558         Activate unicode support by using one of the options\MessageBreak
2559         `unicode', `pdfencoding=unicode', `pdfencoding=auto'\MessageBreak
2560         in the preamble%
2561       } \@ehc
2562       \global\let\HyPsd@LoadUnicode\relax
2563       \global\Hy@unicodetrue
2564       \global\let\Hy@unicodetrue\Hy@unicodetrue
2565     }%
2566   \fi
2567 }
2568 \define@key{Hyp}{pdfencoding}{%
2569   \edef\HyPsd@temp{#1}%
2570   \ifx\HyPsd@temp\HyPsd@pdfencoding@pdfdoc
2571     \let\HyPsd@pdfencoding\HyPsd@temp
2572   \Hy@unicodetrue
2573   \else
2574     \ifcase\ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
2575       \z@
2576     \else
2577       \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
2578       \z@
2579     \else
2580       \@ne
2581     \fi
2582   \fi
2583   \let\HyPsd@pdfencoding\HyPsd@temp
2584   \hypersetup{unicode}%
2585   \ifHy@unicode
2586     \def\HyPsd@pdfencoding{#1}%
2587     \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
2588       \HyPsd@LoadStringEncoding
2589     \fi

```

```

2590 \else
2591 \Hy@Warning{Cannot switch to unicode bookmarks}%
2592 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
2593 \fi
2594 \else
2595 \@onelevel@sanitize\HyPsd@temp
2596 \Hy@Warning{%
2597   Values of option `pdfencoding':\MessageBreak
2598   `pdfdoc', `unicode', `auto'.\MessageBreak
2599   Ignoring unknown value `\HyPsd@temp'%
2600 }%
2601 \fi
2602 \fi
2603 }
2604 \def\HyPsd@pdfencoding@auto{auto}
2605 \def\HyPsd@pdfencoding@pdfdoc{pdfdoc}
2606 \def\HyPsd@pdfencoding@unicode{unicode}

```

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

```

2607 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
2608 \HyPsd@LoadUnicode
2609 \def\HyPsd@LoadStringEnc{%
2610 \RequirePackage{stringenc}[2009/12/15]%
2611 \let\HyPsd@LoadStringEnc\relax
2612 }
2613 \Hy@AtBeginDocument{%
2614 \@ifpackageloaded{stringenc}{%
2615 \let\HyPsd@LoadStringEnc\relax
2616 }{%
2617 \def\HyPsd@LoadStringEnc{%
2618 \Hy@WarningNoLine{%
2619   Missing package `stringenc'. Use `pdfencoding=auto'\MessageBreak
2620   in the preamble or load the package there%
2621 }%
2622 }%
2623 }%
2624 }
2625 \define@key{Hyp}{psdextra}[true]{%
2626 \Hy@boolkey{psdextra}{#1}%
2627 \HyPsd@LoadExtra
2628 }
2629 \def\hypersetup{\kvsetkeys{Hyp}}
2630 \newif\ifHy@setpdfversion
2631 \define@key{Hyp}{pdfversion}{%
2632 \@ifundefined{Hy@pdfversion@#1}{%
2633 \PackageWarning{hyperref}{%
2634   Unsupported PDF version `#1'.\MessageBreak
2635   Valid values: 1.2-1.7, 2.0%
2636 }%
2637 }{%
2638 \Hy@setpdfversiontrue
2639 \@nameuse{Hy@pdfversion@#1}%
2640 }%
2641 }

```

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

```

2642 \@namedef{Hy@pdfversion@1.2}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
    norversion{2}}%
2643 \@namedef{Hy@pdfversion@1.3}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
    norversion{3}}%
2644 \@namedef{Hy@pdfversion@1.4}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
    norversion{4}}%
2645 \@namedef{Hy@pdfversion@1.5}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
    norversion{5}}%
2646 \@namedef{Hy@pdfversion@1.6}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
    norversion{6}}%
2647 \@namedef{Hy@pdfversion@1.7}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
    norversion{7}}%
2648 \@namedef{Hy@pdfversion@2.0}{\def\Hy@pdf@majorversion{2}\def\Hy@pdf@mi-
    norversion{0}}%
2649 \def\Hy@pdf@majorversion{1}\def\Hy@pdf@minorversion{5}

```

Legacy name, earlier releases assumed 1.x

```

2650 \let\Hy@pdfversion\Hy@pdf@minorversion
2651 \def\Hy@pdf@majorminor@version{\numexpr100*\Hy@pdf@majorversion+\Hy@pdf@mi-
    norversion\relax}
2652 \def\Hy@pdfmajorminor@version{\numexpr100*\Hy@pdfmajorversion+\Hy@pdfmi-
    norversion\relax}

```

if `pdfminorversion` is defined, make sure `pdfmajorversion` is too.

```

2653 \@ifundefined{pdfminorversion}{}{%
2654 \@ifundefined{pdfmajorversion}{}{%
2655 \newcount\pdfmajorversion
2656 \pdfmajorversion=1
2657 }{}%
2658 }
2659 \ifx\pdfmajorversion\@undefined\else
2660 \def\Hy@pdfmajorminor@version{\pdfmajorversion}
2661 \fi

```

## 10 Options for different drivers

```

2662 \newif\ifHy@DviMode
2663 \let\Hy@DviErrMsg\ltx@empty
2664 \ifpdf
2665 \def\Hy@DviErrMsg{pdfTeX or LuaTeX is running in PDF mode}%
2666 \else
2667 \ifxetex
2668 \def\Hy@DviErrMsg{XeTeX is running}%
2669 \else
2670 \ifvtex
2671 \ifnum\OpMode=\z@
2672 \Hy@DviModetrue
2673 \else
2674 \def\Hy@DviErrMsg{VTeX is running, but not in DVI mode}%
2675 \fi
2676 \else
2677 \Hy@DviModetrue
2678 \fi
2679 \fi

```

```

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

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

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

2717 \DeclareVoidOption{luatex}{%
2718   \ifpdf
2719     \ifx\pdfextension\@undefined
2720       \def\Hy@driver{hpdftex}%
2721       \PassOptionsToPackage{pdftex}{color}%
2722     \else
2723       \def\Hy@driver{hluatex}%
2724       \PassOptionsToPackage{luatex}{color}%
2725     \fi
2726   \else
2727     \Hy@Error{%
2728       Wrong driver option `luatex',\MessageBreak
2729       because luaTeX in PDF mode is not detected%
2730     }\@ehc
2731   \fi
2732 }

2733 \DeclareVoidOption{nativepdf}{%

```



```

2734 \HyOpt@CheckDvi{nativepdf}{%
2735   \def\Hy@driver{hdvips}%
2736   \PassOptionsToPackage{dvips}{color}%
2737 }%
2738 }
2739 \DeclareVoidOption{dvipdfm}{%
2740   \HyOpt@CheckDvi{dvipdfm}{%
2741     \def\Hy@driver{hdvipdfm}%
2742   }%
2743 }
2744 \DeclareVoidOption{dvipdfmx}{%
2745   \HyOpt@CheckDvi{dvipdfmx}{%
2746     \def\Hy@driver{hdvipdfm}%
2747     \PassOptionsToPackage{dvipdfmx}{color}%
2748   }%
2749 }
2750 \define@key{Hyp}{dvipdfmx-outline-open}[true]{%
2751   \expandafter\ifx\csname if#1\expandafter\endcsname
2752     \csname iftrue\endcsname
2753   \chardef\SpecialDvipdfmxOutlineOpen\@ne
2754   \else
2755     \chardef\SpecialDvipdfmxOutlineOpen\z@
2756   \fi
2757 }
2758 \DeclareVoidOption{xetex}{%
2759   \ifxetex
2760     \def\Hy@driver{hxetex}%
2761   \else
2762     \Hy@Error{%
2763       Wrong driver option `xetex',\MessageBreak
2764       because XeTeX is not detected%
2765     }\@ehc
2766   \fi
2767 }
2768 \DeclareVoidOption{pdfmark}{%
2769   \HyOpt@CheckDvi{pdfmark}{%
2770     \def\Hy@driver{hdvips}%
2771   }%
2772 }
2773 \DeclareVoidOption{dvips}{%
2774   \HyOpt@CheckDvi{dvips}{%
2775     \def\Hy@driver{hdvips}%
2776     \PassOptionsToPackage{dvips}{color}%
2777   }%
2778 }
2779 \DeclareVoidOption{hypertex}{%
2780   \HyOpt@CheckDvi{hypertex}{%
2781     \def\Hy@driver{hypertex}%
2782   }%
2783 }
2784 \let\Hy@MaybeStopNow\relax
2785 \DeclareVoidOption{vtex}{%
2786   \ifvtex
2787     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %

```

```

2788 \def\Hy@driver{hvtex}%
2789 \else
2790 \ifnum\OpMode=10\relax
2791 \def\Hy@driver{hvtexhtm}%
2792 \def\MaybeStopEarly{%
2793 \Hy@Message{Stopped early}%
2794 \Hy@AtBeginDocument{%
2795 \PDF@FinishDoc
2796 \gdef\PDF@FinishDoc{}}%
2797 }%
2798 \endinput
2799 }%
2800 \else
2801 \Hy@Error{%
2802 Wrong driver option `vtex',\MessageBreak
2803 because of wrong OpMode (\the\OpMode)%
2804 }\@ehc
2805 \fi
2806 \fi
2807 \else
2808 \Hy@Error{%
2809 Wrong driver option `vtex',\MessageBreak
2810 because VTeX is not running%
2811 }\@ehc
2812 \fi
2813 }
2814 \DeclareVoidOption{vtexpdfmark}{%
2815 \ifvtex
2816 \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2817 \def\Hy@driver{hvtexmrk}%
2818 \else
2819 \Hy@Error{%
2820 Wrong driver option `vtexpdfmark',\MessageBreak
2821 because of wrong OpMode (\the\OpMode)%
2822 }\@ehc
2823 \fi
2824 \else
2825 \Hy@Error{%
2826 Wrong driver option `vtexpdfmark,\MessageBreak
2827 because VTeX is not running%
2828 }\@ehc
2829 \fi
2830 }
2831 \DeclareVoidOption{dviwindo}{%
2832 \HyOpt@CheckDvi{dviwindo}{%
2833 \def\Hy@driver{hdviwind}%
2834 \kvsetkeys{Hyp}{colorlinks}%
2835 \PassOptionsToPackage{dviwindo}{color}%
2836 }%
2837 }
2838 \DeclareVoidOption{dvipsone}{%
2839 \HyOpt@CheckDvi{dvipsone}{%
2840 \def\Hy@driver{hdvipson}%
2841 \PassOptionsToPackage{dvipsone}{color}%

```

```

2842 }%
2843 }
2844 \DeclareVoidOption{textures}{%
2845   \HyOpt@CheckDvi{textures}{%
2846     \def\Hy@driver{htexture}%
2847   }%
2848 }
2849 \DeclareVoidOption{latex2html}{%
2850   \Hy@Warning{Option `latex2html` is obsolete. \MessageBreak
2851     A current html.sty will do all necessary (re)definitions%
2852 }%
2853 }

No more special treatment for ps2pdf. Let it sink or swim.
2854 \DeclareVoidOption{ps2pdf}{%
2855   \HyOpt@CheckDvi{ps2pdf}{%
2856     \def\Hy@driver{hdvips}%
2857     \PassOptionsToPackage{dvips}{color}%
2858   }%
2859 }

2860 \let\HyOpt@DriverFallback\ltx@empty
2861 \define@key{Hyp}{driverfallback}{%
2862   \ifHy@DviMode
2863     \def\HyOpt@DriverFallback{#1}%
2864     \Hy@Match\HyOpt@DriverFallback{}{%
2865       ^(|dvipdfm|dvipdfmx|dvips|dvipsone|dviwindo|hypertex|ps2pdf|
2866       latex2html|tex4ht)$%
2867     }{}{%
2868       \Hy@Warning{%
2869         Invalid driver `#1' for option\MessageBreak
2870         `driverfallback'%
2871       }%
2872       \let\HyOpt@DriverFallback\ltx@empty
2873     }%
2874   \fi
2875 }

2876 \let\HyOpt@CustomDriver\ltx@empty
2877 \define@key{Hyp}{customdriver}{%
2878   \IfFileExists{#1.def}{%
2879     \def\HyOpt@CustomDriver{#1}%
2880   }{%
2881     \Hy@Warning{%
2882       Missing driver file `#1.def',\MessageBreak
2883       ignoring custom driver%
2884     }%
2885   }%
2886 }

```

## 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.

```

2887 \define@key{Hyp}{hyperfigures}[true]{%
2888   \Hy@boolkey{hyperfigures}{#1}%

```

2889 }

The automatic footnote linking can be disabled by option hyperfootnotes.

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

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

```
2893 \def\back@none{none}
2894 \def\back@section{section}
2895 \def\back@page{page}
2896 \def\back@slide{slide}
2897 \define@key{Hyp}{backref}[section]{%
2898   \lowercase{\def\Hy@tempa{#1}}%
2899   \ifx\Hy@tempa\@empty
2900     \let\Hy@tempa\back@section
2901   \fi
2902   \ifx\Hy@tempa\Hy@false
2903     \let\Hy@tempa\back@none
2904   \fi
2905   \ifx\Hy@tempa\back@slide
2906     \let\Hy@tempa\back@section
2907   \fi
2908   \ifx\Hy@tempa\back@page
2909     \PassOptionsToPackage{hyperpageref}{backref}%
2910     \Hy@backreftrue
2911   \else
2912     \ifx\Hy@tempa\back@section
2913       \PassOptionsToPackage{hyperref}{backref}%
2914       \Hy@backreftrue
2915     \else
2916       \ifx\Hy@tempa\back@none
2917         \Hy@backreffalse
2918       \else
2919         \Hy@WarnOptionValue{#1}{backref}{%
2920           `section', `slide', `page', `none',\MessageBreak
2921           or `false'}%
2922       \fi
2923     \fi
2924   \fi
2925 }
2926 \define@key{Hyp}{pagebackref}[true]{%
2927   \edef\Hy@tempa{#1}%
2928   \lowercase\expandafter{%
2929     \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
2930   }%
2931   \ifx\Hy@tempa\@empty
2932     \let\Hy@tempa\Hy@true
2933   \fi
2934   \ifx\Hy@tempa\Hy@true
2935     \PassOptionsToPackage{hyperpageref}{backref}%
2936     \Hy@backreftrue
2937   \else
2938     \ifx\Hy@tempa\Hy@false
2939       \Hy@backreffalse
```

```

2940 \else
2941 \Hy@WarnOptionValue{#1}{pagebackref}{`true' or `false'}%
2942 \fi
2943 \fi
2944 }

```

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

```

2945 \define@key{Hyp}{hyperindex}[true]{%
2946 \Hy@boolkey{hyperindex}{#1}%
2947 }

```

Configuration of encap char.

```

2948 \define@key{Hyp}{encap}[\|]{%
2949 \def\HyInd@EncapChar{#1}%
2950 }

```

## 12 Language options

The `\autoref` feature depends on the language.

```

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

```

```

2985 \def\pageautorefname{page}%
2986 }
2987 \def\HyLang@french{%
2988 \def\equationautorefname{'equation}%
2989 \def\footnoteautorefname{note}%
2990 \def\itemautorefname{item}%
2991 \def\figureautorefname{figure}%
2992 \def\tableautorefname{tableau}%
2993 \def\partautorefname{partie}%
2994 \def\appendixautorefname{annexe}%
2995 \def\chapterautorefname{chapitre}%
2996 \def\sectionautorefname{section}%
2997 \def\subsectionautorefname{sous-section}%
2998 \def\subsubsectionautorefname{sous-sous-section}%
2999 \def\paragraphautorefname{paragraphe}%
3000 \def\subparagraphautorefname{sous-paragraphe}%
3001 \def\FancyVerbLineautorefname{ligne}%
3002 \def\theoremautorefname{th'eor'eme}%
3003 \def\pageautorefname{page}%
3004 }
3005 \def\HyLang@german{%
3006 \def\equationautorefname{Gleichung}%
3007 \def\footnoteautorefname{Fu'ss note}%
3008 \def\itemautorefname{Punkt}%
3009 \def\figureautorefname{Abbildung}%
3010 \def\tableautorefname{Tabelle}%
3011 \def\partautorefname{Teil}%
3012 \def\appendixautorefname{Anhang}%
3013 \def\chapterautorefname{Kapitel}%
3014 \def\sectionautorefname{Abschnitt}%
3015 \def\subsectionautorefname{Unterabschnitt}%
3016 \def\subsubsectionautorefname{Unterunterabschnitt}%
3017 \def\paragraphautorefname{Absatz}%
3018 \def\subparagraphautorefname{Unterabsatz}%
3019 \def\FancyVerbLineautorefname{Zeile}%
3020 \def\theoremautorefname{Theorem}%
3021 \def\pageautorefname{Seite}%
3022 }
3023 \def\HyLang@italian{%
3024 \def\equationautorefname{Equazione}%
3025 \def\footnoteautorefname{nota}%
3026 \def\itemautorefname{punto}%
3027 \def\figureautorefname{Figura}%
3028 \def\tableautorefname{Tabella}%
3029 \def\partautorefname{Parte}%
3030 \def\appendixautorefname{Appendice}%
3031 \def\chapterautorefname{Capitolo}%
3032 \def\sectionautorefname{sezione}%
3033 \def\subsectionautorefname{sottosezione}%
3034 \def\subsubsectionautorefname{sottosottosezione}%
3035 \def\paragraphautorefname{paragrafo}%
3036 \def\subparagraphautorefname{sottoparagrafo}%
3037 \def\FancyVerbLineautorefname{linea}%
3038 \def\theoremautorefname{Teorema}%

```

```

3039 \def\pageautorefname{Pag.\@}%
3040 }
3041 \def\HyLang@magyar{%
3042 \def\equationautorefname{Egyenlet}%
3043 \def\footnoteautorefname{l\abjegyzet}%
3044 \def\itemautorefname{Elem}%
3045 \def\figureautorefname{\Abra}%
3046 \def\tableautorefname{T\abl\azat}%
3047 \def\partautorefname{R\esz}%
3048 \def\appendixautorefname{F\uggel\ek}%
3049 \def\chapterautorefname{fejezet}%
3050 \def\sectionautorefname{szakasz}%
3051 \def\subsectionautorefname{alszakasz}%
3052 \def\subsubsectionautorefname{alalszakasz}%
3053 \def\paragraphautorefname{bekezd\es}%
3054 \def\subparagraphautorefname{albekezd\es}%
3055 \def\FancyVerbLineautorefname{sor}%
3056 \def\theoremautorefname{T\etel}%
3057 \def\pageautorefname{oldal}%
3058 }
3059 \def\HyLang@portuges{%
3060 \def\equationautorefname{Equa\c c\~ao}%
3061 \def\footnoteautorefname{Nota de rodap\e}%
3062 \def\itemautorefname{Item}%
3063 \def\figureautorefname{Figura}%
3064 \def\tableautorefname{Tabela}%
3065 \def\partautorefname{Parte}%
3066 \def\appendixautorefname{Ap\~endice}%
3067 \def\chapterautorefname{Cap\itulo}%
3068 \def\sectionautorefname{Se\c c\~ao}%
3069 \def\subsectionautorefname{Subse\c c\~ao}%
3070 \def\subsubsectionautorefname{Subsubse\c c\~ao}%
3071 \def\paragraphautorefname{par\agrafo}%
3072 \def\subparagraphautorefname{subpar\agrafo}%
3073 \def\FancyVerbLineautorefname{linha}%
3074 \def\theoremautorefname{Teorema}%
3075 \def\pageautorefname{P\agina}%
3076 }

```

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`.

```

3077 \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`?

```

3078 \def\equationautorefname{\cyr\cyrv\cyrry\cyrr.}%

```

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

must follow full name of the `\theoremautorefname`.

```
3079 % \def\equationautorefname{%
3080 %   \cyr\cyrv\cyrery\cyrr\cyra\cyrzh\cyre\cyrn\cyri\cyre
3081 % }%
```

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

```
3082 \def\footnoteautorefname{%
3083   \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr.\ \cyrp\cyrr\cyri\cyrm.%
3084 }%
```

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}`”

```
3085 % \def\footnoteautorefname{%
3086 %   \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr\cyro\cyrch\cyrn\cyro\cyre\ %
3087 %   \cyrp\cyrr\cyri\cyrm\cyre\cyrch\cyra\cyrn\cyri\cyre
3088 % }%
```

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

```
3089 % \def\Nomfootnoteautorefname{\cyr\cyrs\cyrn\cyro\cyrs\cyrk\cyra}%
3090 % \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.

```
3091 \def\itemautorefname{\cyr\cyrp.}%
3092 % \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.

```
3093 \def\figureautorefname{\cyr\cyrr\cyri\cyrs.}%
3094 \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.

```
3095 \def\partautorefname{\cyr\cyrch.}%
3096 \def\chapterautorefname{\cyr\cyrg\cyrl.}%
3097 \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.

```
3098 \def\appendixautorefname{\cyr\cyrp\cyrr\cyri\cyrl.}%
3099 % \def\appendixautorefname{%
3100 %   \cyr\cyrp\cyrr\cyri\cyrl\cyro\cyrzh\cyre\cyrn\cyri\cyre
3101 % }%
```

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.

```
3102 \def\subsectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
3103 \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.

```
3104 \def\paragraphautorefname{\cyr\cyrp.}%
3105 \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.

```
3106 % \def\paragraphautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyrt}%
3107 % \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.

```
3108 \def\FancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr.}%
```

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

```
3109 % \def\NomFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyra}%
3110 % \def\AccFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyru}%
```

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

```
3111 % \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 ...

```
3112 \def\theoremautorefname{\cyr\cyrt\cyre\cyro\cyrr.}%
```

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

```
3113 % \def\Nomtheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyra}%
3114 % \def\Acctheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyru}%
```

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

```
3115 \def\pageautorefname{\cyr\cyrs.}%
3116 }
```

```
3117 \def\HyLang@spanish{%
3118 \def\equationautorefname{Ecuaci'on}%
3119 \def\footnoteautorefname{Nota a pie de p'agina}%
3120 \def\itemautorefname{Elemento}%
3121 \def\figureautorefname{Figura}%
3122 \def\tableautorefname{Tabla}%
3123 \def\partautorefname{Parte}%
3124 \def\appendixautorefname{Ap'endice}%
3125 \def\chapterautorefname{Cap'itulo}%
3126 \def\sectionautorefname{Secci'on}%
3127 \def\subsectionautorefname{Subsecci'on}%
3128 \def\subsubsectionautorefname{Subsubsecci'on}%
3129 \def\paragraphautorefname{P'arrafo}%
3130 \def\subparagraphautorefname{Subp'arrafo}%
3131 \def\FancyVerbLineautorefname{L'inea}%
3132 \def\theoremautorefname{Teorema}%
```

```

3133 \def\pageautorefname{P\'agina}%
3134 }

3135 \def\HyLang@catalan{%
3136 \def\equationautorefname{Equaci\'o}%
3137 \def\footnoteautorefname{Nota al peu de p\'agina}%
3138 \def\itemautorefname{Element}%
3139 \def\figureautorefname{Figura}%
3140 \def\tableautorefname{Taula}%
3141 \def\partautorefname{Part}%
3142 \def\appendixautorefname{Ap\'endix}%
3143 \def\chapterautorefname{Cap\'itol}%
3144 \def\sectionautorefname{Secci\'o}%
3145 \def\subsectionautorefname{Subsecci\'o}%
3146 \def\subsubsectionautorefname{Subsubsecci\'o}%
3147 \def\paragraphautorefname{Par\'agraf}%
3148 \def\subparagraphautorefname{Subpar\'agraf}%
3149 \def\FancyVerbLineautorefname{L\'inia}%
3150 \def\theoremautorefname{Teorema}%
3151 \def\pageautorefname{P\'agina}%
3152 }

3153 \def\HyLang@vietnamese{%
3154 \def\equationautorefname{Ph\`uhorn{}\`ohorn{}ng tr\`inh}%
3155 \def\footnoteautorefname{Ch\`u th\`ich}%
3156 \def\itemautorefname{m\`d{u}c}%
3157 \def\figureautorefname{H\`inh}%
3158 \def\tableautorefname{B\`h{a}ng}%
3159 \def\partautorefname{Ph\`acircumflex{}n}%
3160 \def\appendixautorefname{Ph\`d{u} l\`d{u}c}%
3161 \def\chapterautorefname{ch\`uhorn{}\`ohorn{}ng}%
3162 \def\sectionautorefname{m\`d{u}c}%
3163 \def\subsectionautorefname{m\`d{u}c}%
3164 \def\subsubsectionautorefname{m\`d{u}c}%
3165 \def\paragraphautorefname{\`dj{}o\`d{a}n}%
3166 \def\subparagraphautorefname{\`dj{}o\`d{a}n}%
3167 \def\FancyVerbLineautorefname{d\`ong}%
3168 \def\theoremautorefname{D\`J{}\`d{i}nh l\`y}%
3169 \def\pageautorefname{Trang}%
3170 }

```

Greek, see github issue 52

```

3171 \def\HyLang@greek{%
3172 \def\equationautorefname{\textEpsilon\textxi\acconos\textiota\textsigma\textomega\textsigma\texteta}%
3173 \def\footnoteautorefname{\textupsilon\textpi\textomicron\textsigma\texteta\textmu\textepsilon\acconos\textiota\textomega\textsigma\texteta}%
3174 \def\itemautorefname{\textalpha\textnu\texttau\textiota\textkappa\textepsilon\acconos\textiota\textmu\textepsilon\textnu\textomicron}%
3175 \def\figureautorefname{\textSigma\textchi\acconos\texteta\textmu\textalpha}%
3176 \def\tableautorefname{\textPi\acconos\textiota\textnu\textalpha\textkappa\textalpha}%
3177 \def\partautorefname{\textMu\acconos\textepsilon\textrho\textomicron\textvarsigma}%

```

```

3178 \def\appendixautorefname{\textPi\textalpha\textrho\acctonos\textalpha\textrho\texttau\texteta\textmu\textalpha}%
3179 \def\chapterautorefname{\textkappa\textepsilon\textphi\acctonos\textalpha\textlambda\textalpha\textiota\textomicron}%
3180 \def\sectionautorefname{\textepsilon\textnu\acctonos\textomicron\texttau\texteta\texttau\textalpha}%
3181 \def\subsectionautorefname{\textupsilon\textpi\textomicron\textepsilon\textnu\acctonos\textomicron\texttau\texteta\texttau\textalpha}%
3182 \def\subsubsectionautorefname{\textupsilon\textpi\textomicron-\textupsilon\textpi\textomicron\textepsilon\textnu\acctonos\textomicron\texttau\texteta\texttau\textalpha}%
3183 \def\paragraphautorefname{\textpi\textalpha\textrho\acctonos\textalpha\textgamma\textrho\textalpha\textphi\textomicron\textvarsigma}%
3184 \def\subparagraphautorefname{\textupsilon\textpi\textomicron\textpi\textalpha\textrho\acctonos\textalpha\textgamma\textrho\textalpha\textphi\textomicron\textvarsigma}%
3185 \def\FancyVerbLineautorefname{\textgamma\textrho\textalpha\textmu\textmu\acctonos\texteta}%
3186 \def\theoremautorefname{\textTheta\textepsilon\acctonos\textomega\textrho\texteta\textmu\textalpha}%
3187 \def\pageautorefname{\textsigma\textepsilon\textlambda\acctonos\textiota\textdelta\textalpha}%
3188 }

3189 \def\HyLang@dutch{%
3190 \def\equationautorefname{Vergelijking}%
3191 \def\footnoteautorefname{voetnoot}%
3192 \def\itemautorefname{punt}%
3193 \def\figureautorefname{Figuur}%
3194 \def\tableautorefname{Tabel}%
3195 \def\partautorefname{Deel}%
3196 \def\appendixautorefname{Bijlage}%
3197 \def\chapterautorefname{hoofdstuk}%
3198 \def\sectionautorefname{paragraaf}%
3199 \def\subsectionautorefname{deelparagraaf}%
3200 \def\subsubsectionautorefname{deel-deelparagraaf}%
3201 \def\paragraphautorefname{alinea}%
3202 \def\subparagraphautorefname{deelalinea}%
3203 \def\FancyVerbLineautorefname{regel}%
3204 \def\theoremautorefname{Stelling}%
3205 \def\pageautorefname{pagina}%
3206 }

3207 \def\HyLang@norsk{%
3208 \def\equationautorefname{Ligning}%
3209 \def\footnoteautorefname{fotnote}%
3210 \def\itemautorefname{element}%
3211 \def\figureautorefname{Figur}%
3212 \def\tableautorefname{Tabell}%
3213 \def\partautorefname{Del}%
3214 \def\appendixautorefname{Tillegg}%
3215 \def\chapterautorefname{kapittel}%
3216 \def\sectionautorefname{seksjon}%
3217 \def\subsectionautorefname{underseksjon}%
3218 \def\subsubsectionautorefname{under-underseksjon}%
3219 \def\paragraphautorefname{avsnitt}%
3220 \def\subparagraphautorefname{underavsnitt}%
3221 \def\FancyVerbLineautorefname{Linje}%

```

```

3222 \def\theoremautorefname{Teorem}%
3223 \def\pageautorefname{side}%
3224 }
3225 \def\HyLang@danish{%
3226 \def\equationautorefname{Ligning}%
3227 \def\footnoteautorefname{fodnote}%
3228 \def\itemautorefname{element}%
3229 \def\figureautorefname{Figur}%
3230 \def\tableautorefname{Tabel}%
3231 \def\partautorefname{Del}%
3232 \def\appendixautorefname{Bilag}%
3233 \def\chapterautorefname{kapitel}%
3234 \def\sectionautorefname{sektion}%
3235 \def\subsectionautorefname{under-sektion}%
3236 \def\subsubsectionautorefname{under-under-sektion}%
3237 \def\paragraphautorefname{afsnit}%
3238 \def\subparagraphautorefname{underafsnit}%
3239 \def\FancyVerbLineautorefname{linje}%
3240 \def\theoremautorefname{Teorem}%
3241 \def\pageautorefname{side}%
3242 }

```

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

```

3243 \def\HyLang@addto#1#2{%
3244   #2%
3245   \@temptokena{#2}%
3246   \ifx#1\relax
3247     \let#1\@empty
3248   \fi
3249   \ifx#1\@undefined
3250     \edef#1{\the\@temptokena}%
3251   \else
3252     \toks@\expandafter{#1}%
3253     \edef#1{\the\toks@\the\@temptokena}%
3254   \fi
3255   \@temptokena{}\toks@\@temptokena
3256 }
3257 \def\HyLang@DeclareLang#1#2#3{%
3258 \ifpackagewith{babel}{#1}{%
3259   \expandafter\HyLang@addto
3260     \csname extras#1\expandafter\endcsname
3261     \csname HyLang@#2\endcsname
3262   \begingroup
3263     \edef\x{\endgroup
3264       #3%
3265     }%
3266     \x
3267   \@namedef{HyLang@#1@done}{}%
3268 }{}%
3269 \begingroup
3270 \edef\x##1##2{%
3271   \noexpand\ifx##2\relax
3272     \errmessage{No definitions for language #2' found!}%

```

```

3273 \noexpand\fi
3274 \endgroup
3275 \noexpand\define@key{Hyp}{#1}[]{}%
3276 \noexpand\@ifundefined{HyLang@#1@done}{}%
3277 \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
3278 #3%
3279 \noexpand\@namedef{HyLang@#1@done}{}%
3280 }{}%
3281 }%
3282 }%
3283 \expandafter\x\csname extras#1\expandafter\endcsname
3284 \csname HyLang@#2\endcsname
3285 }
3286 \HyLang@DeclareLang{english}{english}{}
3287 \HyLang@DeclareLang{UKenglish}{english}{}
3288 \HyLang@DeclareLang{british}{english}{}
3289 \HyLang@DeclareLang{USenglish}{english}{}
3290 \HyLang@DeclareLang{american}{english}{}
3291 \HyLang@DeclareLang{german}{german}{}
3292 \HyLang@DeclareLang{austrian}{german}{}
3293 \HyLang@DeclareLang{ngerman}{german}{}
3294 \HyLang@DeclareLang{naustrian}{german}{}
3295 \HyLang@DeclareLang{russian}{russian}{\noexpand\hypersetup{unicode}}
3296 \HyLang@DeclareLang{brazil}{portuges}{}
3297 \HyLang@DeclareLang{brazilian}{portuges}{}
3298 \HyLang@DeclareLang{portuguese}{portuges}{}
3299 \HyLang@DeclareLang{spanish}{spanish}{}
3300 \HyLang@DeclareLang{catalan}{catalan}{}
3301 \HyLang@DeclareLang{afrikaans}{afrikaans}{}
3302 \HyLang@DeclareLang{french}{french}{}
3303 \HyLang@DeclareLang{frenchb}{french}{}
3304 \HyLang@DeclareLang{francais}{french}{}
3305 \HyLang@DeclareLang{acadian}{french}{}
3306 \HyLang@DeclareLang{canadien}{french}{}
3307 \HyLang@DeclareLang{italian}{italian}{}
3308 \HyLang@DeclareLang{magyar}{magyar}{}
3309 \HyLang@DeclareLang{hungarian}{magyar}{}
3310 \HyLang@DeclareLang{greek}{greek}{}
3311 \HyLang@DeclareLang{dutch}{dutch}{}
3312 \HyLang@DeclareLang{norsk}{norsk}{}
3313 \HyLang@DeclareLang{norwegian}{norsk}{}
3314 \HyLang@DeclareLang{danish}{danish}{}

```

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

```

3315 \DeclareVoidOption{vietnamese}{}%
3316 \HyLang@addto\extrasvietnamese\HyLang@vietnamese
3317 \Hy@AtEndOfPackage{%
3318 \@ifundefined{T@PU}{}{}%
3319 \input{puvnenc.def}%
3320 }%
3321 }%
3322 }
3323 \DeclareVoidOption{vietnam}{}%
3324 \HyLang@addto\extrasvietnam\HyLang@vietnamese

```

```

3325 \Hy@AtEndOfPackage{%
3326   \@ifundefined{T@PU}{-}{%
3327     \input{puvnenc.def}%
3328   }%
3329 }%
3330 }

```

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

```

3331 \DeclareVoidOption{arabic}{%
3332   \Hy@AtEndOfPackage{%
3333     \@ifundefined{T@PU}{-}{%
3334       \input{puarenc.def}%
3335     }%
3336   }%
3337 }

```

## 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.

```

3338 \define@key{Hyp}{colorlinks}[true]{%
3339   \Hy@boolkey{colorlinks}{#1}%
3340 }
3341 \DeclareVoidOption{hidelinks}{%
3342   \Hy@colorlinksfalse
3343   \Hy@ocgcolorlinksfalse
3344   \Hy@frenchlinksfalse
3345   \def\Hy@colorlink##1{\begingroup}%
3346   \def\Hy@endcolorlink{\endgroup}%
3347   \def\@pdfborder{0 0 0}%
3348   \let\@pdfborderstyle\ltx@empty
3349 }
3350 \define@key{Hyp}{ocgcolorlinks}[true]{%
3351   \Hy@boolkey{ocgcolorlinks}{#1}%
3352 }
3353 \Hy@AtBeginDocument{%
3354   \begingroup
3355   \@ifundefined{OBJ@OCG@view}{%
3356     \ifHy@ocgcolorlinks
3357       \Hy@Warning{%
3358         Driver does not support `ocgcolorlinks',\MessageBreak
3359         using `colorlinks' instead%
3360       }%
3361     \fi
3362   }{}%
3363   \endgroup
3364 }
3365 \define@key{Hyp}{frenchlinks}[true]{%
3366   \Hy@boolkey{frenchlinks}{#1}%
3367 }

```

## 14 Bookmarking

```

3368 \begingroup\expandafter\expandafter\expandafter\endgroup
3369 \expandafter\ifx\csname chapter\endcsname\relax
3370 \def\toclevel@part{0}%
3371 \else
3372 \def\toclevel@part{-1}%
3373 \fi
3374 \def\toclevel@chapter{0}
3375 \def\toclevel@section{1}
3376 \def\toclevel@subsection{2}
3377 \def\toclevel@subsubsection{3}
3378 \def\toclevel@paragraph{4}
3379 \def\toclevel@subparagraph{5}
3380 \def\toclevel@figure{0}
3381 \def\toclevel@table{0}

3382 \define@key{Hyp}{bookmarks}[true]{%
3383 \Hy@boolkey{bookmarks}{#1}%
3384 }

3385 \define@key{Hyp}{bookmarksopen}[true]{%
3386 \Hy@boolkey{bookmarksopen}{#1}%
3387 }

```

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.

```

3388 \let\Hy@bookmarksdepth\c@tocdepth
3389 \define@key{Hyp}{bookmarksdepth}[]{%
3390 \begingroup
3391 \edef\x{#1}%
3392 \ifx\x\empty
3393 \global\let\Hy@bookmarksdepth\c@tocdepth
3394 \else
3395 \@ifundefined{toclevel@\x}{%
3396 \onelevel@sanitize\x
3397 \edef\y{\expandafter\@car\x\@nil}%
3398 \ifcase 0\expandafter\ifx\y-1\fi
3399 \expandafter\ifnum\expandafter`\y>47 %
3400 \expandafter\ifnum\expandafter`\y<58 1\fi\fi\relax
3401 \Hy@Warning{Unknown document division name (\x)}%
3402 \else
3403 \setbox\z@=\hbox{%
3404 \count@=\x
3405 \xdef\Hy@bookmarksdepth{\the\count@}%
3406 }%
3407 \fi
3408 }{%
3409 \setbox\z@=\hbox{%

```

```

3410      \count@=\csname toplevel@\x\endcsname
3411      \xdef\Hy@bookmarksdepth{\the\count@}%
3412      }%
3413      }%
3414      \fi
3415      \endgroup
3416      }

```

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

```

3417 \define@key{Hyp}{bookmarksopenlevel}{%
3418   \def\@bookmarksopenlevel{#1}%
3419 }
3420 \def\@bookmarksopenlevel{\maxdimen}
3421 % `bookmarkstype' to specify which `toc' file to mimic
3422 \define@key{Hyp}{bookmarkstype}{%
3423   \def\Hy@bookmarkstype{#1}%
3424 }
3425 \def\Hy@bookmarkstype{toc}

```

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

```

3426 \define@key{Hyp}{bookmarksnumbered}[true]{%
3427   \Hy@boolkey{bookmarksnumbered}{#1}%
3428 }

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

3429 \define@key{Hyp}{CJKbookmarks}[true]{%
3430   \Hy@boolkey{CJKbookmarks}{#1}%
3431 }
3432 \def\Hy@temp#1{%
3433   \expandafter\Hy@@temp\csname @#1color\endcsname{#1}%
3434 }
3435 \def\Hy@@temp#1#2#3{%
3436   \define@key{Hyp}{#2color}{%
3437     \HyColor@HyperrefColor{##1}{#1}%
3438   }%
3439   \def##1{#3}%
3440 }
3441 \Hy@temp{link}{red}
3442 \Hy@temp{anchor}{black}
3443 \Hy@temp{cite}{green}
3444 \Hy@temp{file}{cyan}
3445 \Hy@temp{url}{magenta}
3446 \Hy@temp{menu}{red}
3447 \Hy@temp{run}{\@filecolor}
3448 \define@key{Hyp}{pagecolor}{%
3449   \Hy@WarningPageColor
3450 }
3451 \def\Hy@WarningPageColor{%
3452   \Hy@WarningNoLine{Option `pagecolor' is not available anymore}%
3453   \global\let\Hy@WarningPageColor\relax
3454 }
3455 \define@key{Hyp}{allcolors}{%
3456   \HyColor@HyperrefColor{#1}\@linkcolor
3457   \HyColor@HyperrefColor{#1}\@anchorcolor

```



```

3458 \HyColor@HyperrefColor{#1}\@citecolor
3459 \HyColor@HyperrefColor{#1}\@filecolor
3460 \HyColor@HyperrefColor{#1}\@urlcolor
3461 \HyColor@HyperrefColor{#1}\@menucolor
3462 \HyColor@HyperrefColor{#1}\@runcolor
3463 }

3464 \def\hyperbaseurl#1{\def\@baseurl{#1}}
3465 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
3466 \let\@baseurl\@empty
3467 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
3468 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
3469 \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.

```

3470 \let\@pdfpagetransition\relax
3471 \define@key{Hyp}{pdfpagetransition}{%
3472   \def\@pdfpagetransition{#1}%
3473 }

```

`\@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.

```

3474 \let\@pdfpageduration\relax
3475 \define@key{Hyp}{pdfpageduration}{%
3476   \def\@pdfpageduration{#1}%
3477   \Hy@Match\@pdfpageduration{}{%
3478     ^([0-9]+\.[0-9]*|[0-9]*\.[0-9]+)$%
3479   }{%
3480     \Hy@Warning{%
3481       Invalid value '\@pdfpageduration'\MessageBreak
3482       of option `pdfpageduration'\MessageBreak
3483       is replaced by an empty value%
3484     }%
3485     \let\@pdfpageduration\ltx@empty
3486   }%
3487 }

```

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).

```

3488 \def\Hy@ColorList{cite,file,link,menu,run,url}
3489 \@for\Hy@temp:=\Hy@ColorList\do{%

```

```

3490 \edef\Hy@temp{%
3491   \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
3492     \noexpand\HyColor@HyperrefBorderColor
3493       {##1}%
3494     \expandafter\noexpand\csname @\Hy@temp bordercolor\endcsname
3495       {hyperref}%
3496     {\Hy@temp bordercolor}%
3497   }%
3498 }%
3499 \Hy@temp
3500 }
3501 \define@key{Hyp}{pagebordercolor}{%
3502   \Hy@WarningPageBorderColor
3503 }
3504 \def\Hy@WarningPageBorderColor{%
3505   \Hy@WarningNoLine{Option `pagebordercolor' is not available anymore}%
3506   \global\let\Hy@WarningPageBorderColor\relax
3507 }
3508 \define@key{Hyp}{allbordercolors}{%
3509   \def\Hy@temp##1##2{%
3510     \HyColor@HyperrefBorderColor{#1}##1{hyperref}{##2bordercolor}%
3511   }%
3512   \Hy@temp\@citebordercolor{cite}%
3513   \Hy@temp\@filebordercolor{file}%
3514   \Hy@temp\@linkbordercolor{link}%
3515   \Hy@temp\@menubordercolor{menu}%
3516   \Hy@temp\@runbordercolor{run}%
3517   \Hy@temp\@urlbordercolor{url}%
3518 }
3519 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{#1}}
3520 \Hy@DefNameKey{pdfhighlight}{%
3521   \do{/I}{Invert}%
3522   \do{/N}{None}%
3523   \do{/O}{Outline}%
3524   \do{/P}{Push}%
3525 }
3526 \def\Hy@setpdfhighlight{%
3527   \ifx\@pdfhighlight\@empty
3528   \else
3529     /H\@pdfhighlight
3530   \fi
3531 }
3532 \define@key{Hyp}{pdfborder}{%
3533   \let\Hy@temp\@pdfborder
3534   \def\@pdfborder{#1}%
3535   \Hy@Match\@pdfborder{}{%
3536     ~\HyPat@NonNegativeReal/ %
3537     \HyPat@NonNegativeReal/ %
3538     \HyPat@NonNegativeReal/%
3539     ( ?[\HyPat@NonNegativeReal/( \HyPat@NonNegativeReal/)*])?%%
3540   }{}{%
3541     \Hy@Warning{%
3542       Invalid value `'\@pdfborder'\MessageBreak
3543       for option `pdfborder'.\MessageBreak

```

```

3544     Option setting is ignored%
3545 }%
3546 \let\@pdfborder\Hy@temp
3547 }%
3548 }
3549 \define@key{Hyp}{pdfborderstyle}{%
3550 \let\Hy@temp\@pdfborderstyle
3551 \def\@pdfborderstyle{#1}%
3552 \Hy@Match\@pdfborderstyle}{%
3553 ~%
3554 ( */Type */Border%
3555 | */W +\HyPat@NonNegativeReal/%
3556 | */S */[SDBIU]%
3557 | */D *\[ *(\HyPat@NonNegativeReal/( \HyPat@NonNegativeReal/)?)?]%
3558 )* *$%
3559 }{}{%
3560 \Hy@Warning{%
3561     Invalid value `'\@pdfborderstyle'\MessageBreak
3562     for option `pdfborderstyle'.\MessageBreak
3563     Option setting is ignored%
3564 }%
3565 \let\@pdfborderstyle\Hy@temp
3566 }%
3567 }
3568 \def\Hy@setpdfborder{%
3569 \ifx\@pdfborder\@empty
3570 \else
3571 /Border[\@pdfborder]%
3572 \fi
3573 \ifx\@pdfborderstyle\@empty
3574 \else
3575 /BS<<\@pdfborderstyle>>%
3576 \fi
3577 }
3578 \Hy@DefNameKey{pdfpagemode}{%
3579 \do{UseNone}{}%
3580 \do{UseOutlines}{}%
3581 \do{UseThumbs}{}%
3582 \do{FullScreen}{}%
3583 \do{UseOC}{PDF 1.5}%
3584 \do{UseAttachments}{PDF 1.6}%
3585 }
3586 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
3587 \do{UseNone}{}%
3588 \do{UseOutlines}{}%
3589 \do{UseThumbs}{}%
3590 \do{FullScreen}{}%
3591 \do{UseOC}{PDF 1.5}%
3592 \do{UseAttachments}{PDF 1.6}%
3593 }
3594 \Hy@DefNameKey{pdfdirection}{%
3595 \do{L2R}{Left to right}%
3596 \do{R2L}{Right to left}%
3597 }

```

```

3598 \Hy@DefNameKey{pdfviewarea}{%
3599   \do{MediaBox}{}%
3600   \do{CropBox}{}%
3601   \do{BleedBox}{}%
3602   \do{TrimBox}{}%
3603   \do{ArtBox}{}%
3604 }
3605 \Hy@DefNameKey{pdfviewclip}{%
3606   \do{MediaBox}{}%
3607   \do{CropBox}{}%
3608   \do{BleedBox}{}%
3609   \do{TrimBox}{}%
3610   \do{ArtBox}{}%
3611 }
3612 \Hy@DefNameKey{pdfprintarea}{%
3613   \do{MediaBox}{}%
3614   \do{CropBox}{}%
3615   \do{BleedBox}{}%
3616   \do{TrimBox}{}%
3617   \do{ArtBox}{}%
3618 }
3619 \Hy@DefNameKey{pdfprintclip}{%
3620   \do{MediaBox}{}%
3621   \do{CropBox}{}%
3622   \do{BleedBox}{}%
3623   \do{TrimBox}{}%
3624   \do{ArtBox}{}%
3625 }
3626 \Hy@DefNameKey{pdfprintscaling}{%
3627   \do{AppDefault}{}%
3628   \do{None}{}%
3629 }
3630 \Hy@DefNameKey{pdfduplex}{%
3631   \do{Simplex}{}%
3632   \do{DuplexFlipShortEdge}{}%
3633   \do{DuplexFlipLongEdge}{}%
3634 }
3635 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
3636   \do{true}{}%
3637   \do{false}{}%
3638 }
3639 \define@key{Hyp}{pdfprintpagerange}{%
3640   \def\@pdfprintpagerange{#1}%
3641 }
3642 \Hy@DefNameKey{pdfnumcopies}{%
3643   \do{2}{two copies}%
3644   \do{3}{three copies}%
3645   \do{4}{four copies}%
3646   \do{5}{five copies}%
3647 }
3648 \define@key{Hyp}{pdfusetitle}[true]{%
3649   \Hy@boolkey{pdfusetitle}{#1}%
3650 }
3651 \def\HyXeTeX@CheckUnicode{%

```

```

3652 \ifxetex
3653   \ifHy@unicode
3654   \else
3655     \Hy@WarningNoLine{%
3656       XeTeX driver only supports unicode.\MessageBreak
3657       Enabling option `unicode'%
3658     }%
3659     \kvsetkeys{Hyp}{unicode}%
3660   \fi
3661 \else
3662   \let\HyXeTeX@CheckUnicode\relax
3663 \fi
3664 }
3665 \def\HyPsd@PrerenderUnicode#1{%
3666   \begingroup
3667   \expandafter\ifx\csname PrerenderUnicode\endcsname\relax
3668   \else
3669     \sbox0{%
3670       \let\GenericInfo\@gobbletwo
3671       \let\GenericWarning\@gobbletwo
3672       \let\GenericError\@gobblefour
3673       \PrerenderUnicode{#1}%
3674     }%
3675   \fi
3676   \endgroup
3677 }
3678 \define@key{Hyp}{pdftitle}{%
3679   \HyXeTeX@CheckUnicode
3680   \HyPsd@PrerenderUnicode{#1}%
3681   \pdfstringdef\@pdftitle{#1}%
3682 }
3683 \define@key{Hyp}{pdfauthor}{%
3684   \HyXeTeX@CheckUnicode
3685   \HyPsd@PrerenderUnicode{#1}%
3686   \pdfstringdef\@pdfauthor{#1}%
3687 }
3688 \define@key{Hyp}{pdfproducer}{%
3689   \HyXeTeX@CheckUnicode
3690   \HyPsd@PrerenderUnicode{#1}%
3691   \pdfstringdef\@pdfproducer{#1}%
3692 }
3693 \define@key{Hyp}{pdfcreator}{%
3694   \HyXeTeX@CheckUnicode
3695   \HyPsd@PrerenderUnicode{#1}%
3696   \pdfstringdef\@pdfcreator{#1}%
3697 }
3698 \define@key{Hyp}{addtopdfcreator}{%
3699   \HyXeTeX@CheckUnicode
3700   \HyPsd@PrerenderUnicode{#1}%
3701   \pdfstringdef\@pdfcreator{\@pdfcreator, #1}%
3702 }
3703 \define@key{Hyp}{pdfcreationdate}{%
3704   \begingroup
3705   \Hy@unicodedefalse

```

```

3706 \pdfstringdef\@pdfcreationdate{#1}%
3707 \endgroup
3708 }
3709 \define@key{Hyp}{pdfmoddate}{%
3710 \begingroup
3711 \Hy@unicodefalse
3712 \pdfstringdef\@pdfmoddate{#1}%
3713 \endgroup
3714 }
3715 \define@key{Hyp}{pdfsubject}{%
3716 \HyXeTeX@CheckUnicode
3717 \HyPsd@PrerenderUnicode{#1}%
3718 \pdfstringdef\@pdfsubject{#1}%
3719 }
3720 \define@key{Hyp}{pdfkeywords}{%
3721 \HyXeTeX@CheckUnicode
3722 \HyPsd@PrerenderUnicode{#1}%
3723 \pdfstringdef\@pdfkeywords{#1}%
3724 }
3725 \define@key{Hyp}{pdftrapped}{%
3726 \lowercase{\edef\Hy@temp{#1}}%
3727 \ifx\Hy@temp\HyInfo@trapped@true
3728 \def\@pdftrapped{True}%
3729 \else
3730 \ifx\Hy@temp\HyInfo@trapped@false
3731 \def\@pdftrapped{False}%
3732 \else
3733 \ifx\Hy@temp\HyInfo@trapped@unknown
3734 \def\@pdftrapped{Unknown}%
3735 \else
3736 \ifx\Hy@temp\@empty
3737 \else
3738 \Hy@Warning{%
3739 Unsupported value `#1'\MessageBreak
3740 for option `pdftrapped'%
3741 }%
3742 \fi
3743 \def\@pdftrapped{}%
3744 \fi
3745 \fi
3746 \fi
3747 }
3748 \def\HyInfo@trapped@true{true}
3749 \def\HyInfo@trapped@false{false}
3750 \def\HyInfo@trapped@unknown{unknown}
3751 \def\HyInfo@TrappedUnsupported{%
3752 \ifx\@pdftrapped\@empty
3753 \else
3754 \Hy@WarningNoLine{`pdftrapped' is not supported by this driver}%
3755 \gdef\HyInfo@TrappedUnsupported{}%
3756 \fi
3757 }
3758 \define@key{Hyp}{pdfinfo}{%
3759 \kvsetkeys{pdfinfo}{#1}%

```

```

3760 }
3761 \def\Hy@temp#1{%
3762   \lowercase{\Hy@temp@A{#1}}{#1}%
3763 }
3764 \def\Hy@temp@A#1#2{%
3765   \define@key{pdfinfo}{#2}{%
3766     \hypersetup{pdf#1={#1}}}%
3767   }%
3768 }
3769 \Hy@temp{Title}
3770 \Hy@temp{Author}
3771 \Hy@temp{Keywords}
3772 \Hy@temp{Subject}
3773 \Hy@temp{Creator}
3774 \Hy@temp{Producer}
3775 \Hy@temp{CreationDate}
3776 \Hy@temp{ModDate}
3777 \Hy@temp{Trapped}
3778 \newif\ifHyInfo@AddonUnsupported
3779 \kv@set@family@handler{pdfinfo}{%
3780   \HyInfo@AddonHandler{#1}{#2}%
3781 }
3782 \let\HyInfo@do\relax
3783 \def\HyInfo@AddonHandler#1#2{%
3784   \ifx\kv@value\relax
3785     \Hy@Warning{%
3786       Option `pdfinfo': ignoring key `kv@key' without value%
3787     }%
3788   \else
3789     \EdefEscapeName\HyInfo@KeyEscaped{\kv@key}%
3790     \EdefUnescapeName\HyInfo@Key{\HyInfo@KeyEscaped}%
3791     \expandafter\ifx\csname KV@pdfinfo@\HyInfo@Key\endcsname\relax
3792       \ifHyInfo@AddonUnsupported
3793         \Hy@Warning{%
3794           This driver does not support additional\MessageBreak
3795           information entries, therefore\MessageBreak
3796           `kv@key' is ignored%
3797         }%
3798       \else
3799         \def\HyInfo@tmp###1{%
3800           \kv@define@key{pdfinfo}{##1}{%
3801             \HyXeTeX@CheckUnicode
3802             \HyPsd@PrerenderUnicode{####1}%
3803             \pdfstringdef\HyInfo@Value{####1}%
3804             \global\expandafter
3805             \let\csname HyInfo@Value@##1\endcsname
3806               \HyInfo@Value
3807           }%
3808         }%
3809         \expandafter\HyInfo@tmp\expandafter{\HyInfo@Key}%
3810         \global\expandafter
3811         \let\csname KV@pdfinfo@\HyInfo@Key\endcsname
3812           \csname KV@pdfinfo@\HyInfo@Key\endcsname
3813         \xdef\HyInfo@AddonList{%

```

```

3814     \HyInfo@AddonList
3815     \HyInfo@do{\HyInfo@Key}%
3816   }%
3817   \kv@parse@normalized{%
3818     \HyInfo@Key={#2}%
3819   }{%
3820     \kv@processor@default{pdfinfo}%
3821   }%
3822   \fi
3823 \else
3824   \kv@parse@normalized{%
3825     \HyInfo@Key={#2}%
3826   }{%
3827     \kv@processor@default{pdfinfo}%
3828   }%
3829   \fi
3830 \fi
3831 }
3832 \def\HyInfo@GenerateAddons{%
3833   \ifHyInfo@AddonUnsupported
3834     \def\HyInfo@Addons{}%
3835   \else
3836     \begingroup
3837     \toks@{}%
3838     \def\HyInfo@do##1{%
3839       \EdefEscapeName\HyInfo@Key{##1}%
3840       \edef\x{%
3841         \toks@{%
3842           \the\toks@
3843           /\HyInfo@Key(\csname HyInfo@Value@##1\endcsname)%
3844         }%
3845       }%
3846       \x
3847     }%
3848     \HyInfo@AddonList
3849     \edef\x{\endgroup
3850       \def\noexpand\HyInfo@Addons{\the\toks@}%
3851     }%
3852     \x
3853   \fi
3854 }
3855 \global\let\HyInfo@AddonList\ltx@empty
3856 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \}
3857 \define@key{Hyp}{pdfinkmargin}{\setpdfinkmargin{#1}}
3858 \let\setpdfinkmargin\@gobble
3859 \def\calculate@pdfview#1 #2\{%
3860   \def\@pdfview{#1}%
3861   \ifx\#2\%
3862     \def\@pdfviewparams{-32768}%
3863   \else
3864     \def\@pdfviewparams{ #2}%
3865   \fi
3866 }
3867 \def\Hy@number#1{%

```



```

3868 \the\numexpr#1\relax
3869 }%
3870 \define@key{Hyp}{pdfstartpage}{%
3871 \ifx\#1\%
3872 \let\@pdfstartpage\ltx@empty
3873 \else
3874 \edef\@pdfstartpage{\Hy@number{#1}}%
3875 \fi
3876 }%
3877 \define@key{Hyp}{pdfstartview}{%
3878 \ifx\#1\%
3879 \let\@pdfstartview\ltx@empty
3880 \else
3881 \def\@pdfstartview{/#1}%
3882 \fi
3883 }
3884 \def\HyPat@NonNegativeReal/{%
3885 \ *([0-9]+\.[0-9]*|[0-9]*\.[0-9]+) *%
3886 }
3887 \define@key{Hyp}{pdfremotestartview}{%
3888 \ifx\#1\%
3889 \def\@pdfremotestartview{/Fit}%
3890 \else
3891 \edef\@pdfremotestartview{#1}%
3892 \Hy@Match\@pdfremotestartview{}{%
3893 ^{XYZ(%
3894 ()| %
3895 (null|-?\HyPat@NonNegativeReal/) %
3896 (null|-?\HyPat@NonNegativeReal/) %
3897 (null|\HyPat@NonNegativeReal/)%
3898 )| % end of "XYZ"
3899 Fit(%
3900 ()| %
3901 B| %
3902 (H|V|BH|BV)(%
3903 ()| %
3904 (null|\HyPat@NonNegativeReal/)%
3905 )| %
3906 R %
3907 \HyPat@NonNegativeReal/ %
3908 \HyPat@NonNegativeReal/ %
3909 \HyPat@NonNegativeReal/ %
3910 \HyPat@NonNegativeReal/ %
3911 ) % end of "Fit"
3912 )$%
3913 }{}{%
3914 \Hy@Warning{%
3915 Invalid value ``\@pdfremotestartview'\MessageBreak
3916 of `pdfremotestartview'\MessageBreak
3917 is replaced by `Fit'%
3918 }%
3919 \let\@pdfremotestartview\@empty
3920 }%
3921 \ifx\@pdfremotestartview\@empty

```

```

3922 \def\@pdfremotestartview{/Fit}%
3923 \else
3924 \edef\@pdfremotestartview{/ \@pdfremotestartview}%
3925 \fi
3926 \fi
3927 }
3928 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
3929 \define@key{Hyp}{pdftoolbar}[true]{%
3930 \Hy@boolkey{pdftoolbar}{#1}%
3931 }
3932 \define@key{Hyp}{pdfmenubar}[true]{%
3933 \Hy@boolkey{pdfmenubar}{#1}%
3934 }
3935 \define@key{Hyp}{pdfwindowui}[true]{%
3936 \Hy@boolkey{pdfwindowui}{#1}%
3937 }
3938 \define@key{Hyp}{pdffitwindow}[true]{%
3939 \Hy@boolkey{pdffitwindow}{#1}%
3940 }
3941 \define@key{Hyp}{pdfcenterwindow}[true]{%
3942 \Hy@boolkey{pdfcenterwindow}{#1}%
3943 }
3944 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
3945 \Hy@boolkey{pdfdisplaydoctitle}{#1}%
3946 }
3947 \define@key{Hyp}{pdfa}[true]{%
3948 \Hy@boolkey{pdfa}{#1}%
3949 }
3950 \define@key{Hyp}{pdfnewwindow}[true]{%
3951 \def\Hy@temp{#1}%
3952 \ifx\Hy@temp\@empty
3953 \Hy@pdfnewwindowsetfalse
3954 \else
3955 \Hy@pdfnewwindowsettrue
3956 \Hy@boolkey{pdfnewwindow}{#1}%
3957 \fi
3958 }
3959 \def\Hy@SetNewWindow{%
3960 \ifHy@pdfnewwindowset
3961 /NewWindow %
3962 \ifHy@pdfnewwindow true\else false\fi
3963 \fi
3964 }
3965 \Hy@DefNameKey{pdfpagelayout}{%
3966 \do{SinglePage}{}%
3967 \do{OneColumn}{}%
3968 \do{TwoColumnLeft}{}%
3969 \do{TwoColumnRight}{}%
3970 \do{TwoPageLeft}{PDF 1.5}%
3971 \do{TwoPageRight}{PDF 1.5}%
3972 }
3973 \define@key{Hyp}{pdflang}{%
3974 \edef\@pdflang{#1}%
3975 \def\Hy@temp{\relax}%

```

```

3976 \ifx\@pdflang\Hy@temp
3977 \let\@pdflang\relax
3978 \fi
3979 \ifx\@pdflang\relax
3980 \else
3981 \ifx\@pdflang\ltx@empty
3982 \else

```

Test according to ABNF of RFC 3066.

```

3983 \Hy@Match\@pdflang{icase}{%
3984 ~%
3985 [a-z]{1,8}%
3986 (-[a-z0-9]{1,8})*%
3987 $%
3988 }{%

```

Test according to ABNF of RFC 5646.

```

3989 \Hy@Match\@pdflang{icase}{%
3990 ~%
3991 (%
3992 % langtag
3993 (% language
3994 [a-z]{2,3}%
3995 ([a-z]{3}(-[a-z]{3}){0,2})?% extlang
3996 |[a-z]{4}% reserved for future use
3997 |[a-z]{5,8}% registered language subtag
3998 )%
3999 (-[a-z]{4})?% script
4000 (-([a-z]{2}|[0-9]{3}))?% region
4001 (-([a-z]{5,8}|[0-9][a-z0-9]{3}))?% variant
4002 (-[0-9a-wyz](-[a-z0-9]{2,8})+)*% extension
4003 (-x(-[a-z0-9]{1,8})+)?% privateuse
4004 % privateuse
4005 |x(-[a-z0-9]{1,8})+%
4006 % grandfathered/irregular
4007 |en-GB-oed%
4008 |i-(ami|bnn|default|enochian|hak|klinton|lux|
4009 mingo|navajo|pwn|tao|tay|tsu)%
4010 |sgn-(BE-FR|BE-NL|CH-DE)%
4011 % grandfathered/regular
4012 |art-lojban%
4013 |cel-gaulish%
4014 |no-(bok|nyn)%
4015 |zh-(guoyu|hakka|min|min-nan|xiang)%
4016 )%
4017 $%
4018 }{%

```

Test for unique extensions.

```

4019 \Hy@Match{-\@pdflang}{icase}{-[a-wyz0-9]-}{%
4020 \Hy@Match\@pdflang{icase}{~x-}{%
4021 % remove privateuse
4022 \edef\Hy@temp{-\@pdflang}%
4023 \Hy@Match\Hy@temp{icase}{%
4024 ~%

```

```

4025      (%)
4026      (-[a-wyz0-9]|-[a-z0-9]{2,8})*%
4027      )%
4028      -x-%
4029      }{%
4030      \edef\Hy@temp{%
4031      \expandafter\strip@prefix\pdfastmatch1%
4032      }%
4033      }{}%
4034      \Hy@Match\Hy@temp{icase}{%
4035      (-[a-wyz0-9]-).*\ltx@backslashchar1%
4036      }{%
4037      \Hy@Warning{%
4038      Invalid language identifier `#1'\MessageBreak
4039      for option `pdfang', because it violates\MessageBreak
4040      well-formedness defined in RFC 4646\MessageBreak
4041      by duplicate singleton subtags%
4042      }%
4043      \let\@pdfang\relax
4044      }{}%
4045      }%
4046      }{}%

```

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

```

4047      \ifx\@pdfang\relax
4048      \else
4049      \Hy@Match\@pdfang{icase}{%
4050      ~%
4051      [a-zA-Z]{2}-%
4052      (%
4053      aa|AA|%
4054      [qQ][m-zA-Z]|%
4055      [xX][a-zA-Z]|%
4056      zz|ZZ%
4057      )%
4058      (-|%)%
4059      }{%
4060      \Hy@Warning{%
4061      Invalid language identifier `#1'\MessageBreak
4062      for option `pdfang' because of invalid country code%
4063      \MessageBreak
4064      in second subtag (RFC 3066)%
4065      }%
4066      \let\@pdfang\relax
4067      }{}%
4068      \fi
4069      }{%
4070      \Hy@Warning{%
4071      Invalid language identifier `#1'\MessageBreak
4072      for option `pdfang', because it violates\MessageBreak
4073      well-formedness defined in RFC 5646%
4074      }%
4075      \let\@pdfang\relax
4076      }%
4077      }{%

```

```

4078 \Hy@Warning{%
4079   Invalid language identifier `#1'\MessageBreak
4080   for option `pdflang' (RFC 3066)%
4081 }%
4082 \let\@pdflang\relax
4083 }%
4084 \fi
4085 \fi
4086 }
4087 \define@key{Hyp}{pdfpagelabels}[true]{%
4088 \Hy@boolkey{pdfpagelabels}{#1}%
4089 }
4090 \define@key{Hyp}{pdfescapeform}[true]{%
4091 \Hy@boolkey{pdfescapeform}{#1}%
4092 }

```

Default values:

```

4093 \def\@linkbordercolor{1 0 0}
4094 \def\@urlbordercolor{0 1 1}
4095 \def\@menubordercolor{1 0 0}
4096 \def\@filebordercolor{0 .5 .5}
4097 \def\@runbordercolor{0 .7 .7}
4098 \def\@citebordercolor{0 1 0}
4099 \def\@pdfhighlight{/I}
4100 \let\@pdftitle\ltx@empty
4101 \let\@pdfauthor\ltx@empty
4102 \let\@pdfproducer\relax
4103 \def\@pdfcreator{LaTeX with hyperref}
4104 \let\@pdfcreationdate\ltx@empty
4105 \let\@pdfmoddate\ltx@empty
4106 \let\@pdfsubject\ltx@empty
4107 \let\@pdfkeywords\ltx@empty
4108 \let\@pdftrapped\ltx@empty
4109 \let\@pdfpagescrop\ltx@empty
4110 \def\@pdfstartview{/Fit}
4111 \def\@pdfremotestartview{/Fit}
4112 \def\@pdfstartpage{1}
4113 \let\@pdfprintpagerange\ltx@empty
4114 \let\@pdflang\relax
4115 \let\PDF@SetupDoc\@empty
4116 \let\PDF@FinishDoc\@empty
4117 \let\phantomsection\@empty
4118 \let\special@paper\@empty
4119 \def\HyperDestNameFilter#1{#1}
4120 \Hy@AtBeginDocument{%
4121 \begingroup
4122 \edef\x{\@ifundefined{stockheight}\paperheight\stockheight}%
4123 \dimen@=\x\relax
4124 \ifdim\dimen@>\z@
4125 \else
4126 \dimen@=11in\relax
4127 \Hy@WarningNoLine{%
4128   Height of page (\expandafter\string\x) %
4129   is invalid (\the\x),\MessageBreak
4130   using 11in%

```

```

4131 }%
4132 \fi
4133 \dimen@=0.99626401\dimen@
4134 \xdef\Hy@pageheight{\strip@pt\dimen@}%
4135 \endgroup
4136 }
4137 \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.

```

4138 \let\hyper@normalise\ExecuteOptions
4139 \let\ExecuteOptions\hypersetup
4140 \Hy@RestoreCatcodes
4141 \InputIfFileExists{hyperref.cfg}{-}{-}
4142 \Hy@SetCatcodes
4143 \let\ExecuteOptions\hyper@normalise
4144 \ifx\Hy@MaybeStopNow\relax
4145 \else
4146 \Hy@stoppedearlytrue
4147 \expandafter\Hy@MaybeStopNow
4148 \fi
4149 \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.

```

4150 \SetupKeyvalOptions{family=Hyp}
4151 \DeclareLocalOptions{%
4152 a4paper,a5paper,b5paper,letterpaper,legalpaper,executivepaper%
4153 }

```

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

```

4154 \@ifpackagewith{hyperref}{tex4ht}{%
4155 }{%
4156 \@ifpackageloaded{tex4ht}{%
4157 \PassOptionsToPackage{tex4ht}{hyperref}%
4158 }{%
4159 \ltx@ifundefined{HCode}{%
4160 }{%
4161 \begingroup
4162 \def\Hy@pkg{tex4ht}%
4163 \def\Hy@temp@A#1\RequirePackage[#2]#3#4\Hy@NIL{%
4164 \def\Hy@param{#2#3}%
4165 \ifx\Hy@param\ltx@empty
4166 \expandafter\ltx@gobble
4167 \else
4168 \def\Hy@param{#3}%
4169 \ifx\Hy@param\Hy@pkg
4170 \PassOptionsToPackage{#2}{tex4ht}%
4171 \expandafter\expandafter\expandafter\@gobble
4172 \else
4173 \expandafter\expandafter\expandafter\ltx@firstofone
4174 \fi
4175 \fi
4176 {\Hy@temp@A#4\Hy@NIL}%

```

```

4177     }%
4178     \expandafter
4179     \Hy@temp@A\@documentclasshook\RequirePackage[]{}\Hy@NIL
4180     \endgroup
4181     \PassOptionsToPackage{tex4ht}{hyperref}%
4182   }%
4183 }%
4184 }

4185 \let\ReadBookmarks\relax
4186 \ProcessKeyvalOptions{Hyp}

```

After processing options.

## 15.1 Package xspace support

```

4187 \def\Hy@xspace@end{%
4188 \ltx@ifundefined{xspaceaddexceptions}{%
4189   \Hy@AtBeginDocument{%
4190     \ltx@ifundefined{xspaceaddexceptions}{%
4191       }{%
4192         \def\Hy@xspace@end{%
4193           \ltx@gobble{end for xspace}%
4194         }%
4195         \xspaceaddexceptions{%
4196           \Hy@xspace@end,\hyper@linkend,\hyper@anchorend
4197         }%
4198       }%
4199     }%
4200   }{%
4201     \def\Hy@xspace@end{%
4202       \ltx@gobble{end for xspace}%
4203     }%
4204     \xspaceaddexceptions{\Hy@xspace@end,\hyper@linkend,\hyper@anchorend}%
4205   }

```

## 15.2 Option draft

```

4206 \Hy@AtBeginDocument{%
4207   \ifHy@draft
4208     \let\hyper@@anchor\@gobble
4209     \gdef\hyper@link#1#2#3{#3\Hy@xspace@end}%
4210     \def\hyper@anchorstart#1#2{#2\Hy@xspace@end}%
4211     \def\hyper@anchorend{\Hy@xspace@end}%
4212     \let\hyper@linkstart\@gobbletwo
4213     \def\hyper@linkend{\Hy@xspace@end}%
4214     \def\hyper@linkurl#1#2{#1\Hy@xspace@end}%
4215     \def\hyper@linkfile#1#2#3{#1\Hy@xspace@end}%
4216     \def\hyper@link@[#1]#2#3#4{#4\Hy@xspace@end}%
4217     \def\Acrobatmenu#1#2{\leavevmode#2\Hy@xspace@end}%
4218     \let\PDF@SetupDoc\@empty
4219     \let\PDF@FinishDoc\@empty
4220     \let\@fifthoffive\@secondoftwo
4221     \let\@secondoffive\@secondoftwo
4222     \let\ReadBookmarks\relax
4223     \let\WriteBookmarks\relax

```

```

4224 \Hy@WarningNoLine{Draft mode on}%
4225 \fi
4226 \Hy@DisableOption{draft}%
4227 \Hy@DisableOption{nolinks}%
4228 \Hy@DisableOption{final}%
4229 }

```

### 15.3 PDF/A

```

4230 \Hy@DisableOption{pdfa}
4231 \ifHy@pdfa
4232 \ifnum \Hy@pdf@major@minor@version < 104
4233 \kvsetkeys{Hyp}{pdfversion=1.4}%
4234 \fi
4235 \Hy@DisableOption{pdfversion}%
4236 \def\Hy@Acrobatmenu#1#2{%
4237 \leavevmode
4238 \begingroup
4239 \edef\x{#1}%
4240 \@onelevel@sanitize\x
4241 \ifx\x\Hy@NextPage
4242 \let\y=Y%
4243 \else
4244 \ifx\x\Hy@PrevPage
4245 \let\y=Y%
4246 \else
4247 \ifx\x\Hy@FirstPage
4248 \let\y=Y%
4249 \else
4250 \ifx\x\Hy@LastPage
4251 \let\y=Y%
4252 \else
4253 \let\y=N%
4254 \fi
4255 \fi
4256 \fi
4257 \fi
4258 \expandafter\endgroup
4259 \ifx\y Y%
4260 \else
4261 \Hy@Error{%
4262 PDF/A: Named action `#1' is not permitted%
4263 }\@ehc
4264 {#2}%
4265 \expandafter\@gobble
4266 \fi
4267 }%
4268 \def\Hy@temp#1{%
4269 \expandafter\def\csname Hy@#1\endcsname{#1}%
4270 \expandafter\@onelevel@sanitize\csname Hy@#1\endcsname
4271 }%
4272 \Hy@temp{NextPage}%
4273 \Hy@temp{PrevPage}%
4274 \Hy@temp{FirstPage}%
4275 \Hy@temp{LastPage}%

```



```

4276 \else
4277 \def\Hy@Acrobatmenu#1#2{\leavevmode}%
4278 \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.

```

4279 \def\Hy@wrapper@babel#1#2{%
4280 \begingroup
4281 \Hy@safe@activestru
4282 \set@display@protect
4283 \edef\x{#2}%
4284 \@onelevel@sanitize\x
4285 \toks@{#1}%
4286 \edef\x{\endgroup\the\toks@{\x}}%
4287 \x
4288 }
4289 \def\Hy@WrapperDef#1{%
4290 \begingroup
4291 \escapechar=\m@ne
4292 \xdef\Hy@gtemp{%
4293 \expandafter\noexpand\csname HyWrap@string#1\endcsname
4294 }%
4295 \endgroup
4296 \edef#1{%
4297 \noexpand\Hy@wrapper@babel
4298 \expandafter\noexpand\Hy@gtemp
4299 }%
4300 \expandafter\def\Hy@gtemp
4301 }
4302 \ifHy@hyperfigures
4303 \Hy@Info{Hyper figures ON}%
4304 \else
4305 \Hy@Info{Hyper figures OFF}%
4306 \fi
4307 \ifHy@nesting
4308 \Hy@Info{Link nesting ON}%
4309 \else
4310 \Hy@Info{Link nesting OFF}%
4311 \fi
4312 \ifHy@hyperindex
4313 \Hy@Info{Hyper index ON}%
4314 \else
4315 \Hy@Info{Hyper index OFF}%
4316 \fi
4317 \ifHy@plainpages
4318 \Hy@Info{Plain pages ON}%
4319 \else
4320 \Hy@Info{Plain pages OFF}%
4321 \fi

```

```

4322 \ifHy@backref
4323   \Hy@Info{Backreferencing ON}%
4324 \else
4325   \Hy@Info{Backreferencing OFF}%
4326 \fi
4327 \ifHy@typexml
4328   \Hy@AtEndOfPackage{%
4329     \RequirePackage{color}%
4330     \RequirePackage{nameref}[2012/07/28]%
4331   }%
4332 \fi
4333 \Hy@DisableOption{typexml}
4334 \ifHy@implicit
4335   \Hy@InfoNoLine{Implicit mode ON; LaTeX internals redefined}%
4336 \else
4337   \Hy@InfoNoLine{Implicit mode OFF; no redefinition of LaTeX internals}%
4338   \def\MaybeStopEarly{%
4339     \Hy@Message{Stopped early}}%
4340   \Hy@AtBeginDocument{%
4341     \PDF@FinishDoc
4342     \gdef\PDF@FinishDoc{}%
4343   }%
4344   \endinput
4345 }%
4346 \Hy@AtBeginDocument{%
4347   \let\autoref\ref
4348   \let\autopageref\pageref
4349   \ifx\@pdfpagemode\@empty
4350     \gdef\@pdfpagemode{UseNone}%
4351   \fi
4352   \global\Hy@backreffalse
4353 }%
4354 \Hy@AtEndOfPackage{%
4355   \global\let\ReadBookmarks\relax
4356   \global\let\WriteBookmarks\relax
4357 }%
4358 \fi
4359 \Hy@DisableOption{implicit}

```

#### 15.4.1 Driver loading

```

4360 \Hy@AtEndOfPackage{%
4361   \ifpackageloaded{tex4ht}{%
4362     \def\Hy@driver{htex4ht}%
4363     \Hy@texhttrue
4364   }{}%

```

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.

```

4365   \ifx\Hy@driver\@empty
4366   \else
4367     \ifx\pdfextension\@undefined
4368       \def\Hy@temp{hpdfTEX}%
4369     \else
4370       \def\Hy@temp{hluatex}%

```

```

4371 \fi
4372 \ifpdf
4373 \ifx\Hy@driver\Hy@temp
4374 \else
4375 \Hy@WarningNoLine{%
4376 Wrong driver ``\Hy@driver.def';\MessageBreak
4377 pdfTeX is running in PDF mode.\MessageBreak
4378 Forcing driver ``\Hy@temp.def'%
4379 }%
4380 \let\Hy@driver\Hy@temp
4381 \fi
4382 \else
4383 \ifx\Hy@driver\Hy@temp
4384 \Hy@WarningNoLine{%
4385 Wrong driver ``\Hy@driver.def';\MessageBreak
4386 pdfTeX is not running in PDF mode.\MessageBreak
4387 Using default driver%
4388 }%
4389 \let\Hy@driver\@empty
4390 \fi
4391 \fi
4392 \fi
4393 \ifHy@texht
4394 \else
4395 \ifx\Hy@driver\@empty
4396 \else
4397 \def\Hy@temp{hxtex}%
4398 \ifxetex
4399 \ifx\Hy@driver\Hy@temp
4400 \else
4401 \Hy@WarningNoLine{%
4402 Wrong driver ``\Hy@driver.def';\MessageBreak
4403 XeTeX is running.\MessageBreak
4404 Forcing driver ``\Hy@temp.def' for XeTeX%
4405 }%
4406 \let\Hy@driver\Hy@temp
4407 \fi
4408 \fi
4409 \fi
4410 \fi
4411 \ifx\Hy@driver\@empty
4412 \else
4413 \def\Hy@temp{hvtexhtm}%
4414 \ifnum\ifvtex\OpMode\else\m@ne\fi=10 %
4415 \ifx\Hy@driver\Hy@temp
4416 \else
4417 \Hy@WarningNoLine{%
4418 Wrong driver ``\Hy@driver.def';\MessageBreak
4419 VTeX is running in HTML mode.\MessageBreak
4420 Forcing driver ``\Hy@temp.def'%
4421 }%
4422 \let\Hy@driver\Hy@temp
4423 \fi
4424 \else

```

```

4425 \ifx\Hy@driver\Hy@temp
4426 \Hy@WarningNoLine{%
4427   Wrong driver ``\Hy@driver.def';\MessageBreak
4428   VTeX is not running in HTML mode.\MessageBreak
4429   Using default driver%
4430 }%
4431 \let\Hy@driver\@empty
4432 \fi
4433 \fi
4434 \fi

```

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

```

4435 \let\HyOpt@DriverType\ltx@empty
4436 \ifx\HyOpt@CustomDriver\ltx@empty
4437 \ifx\Hy@driver\@empty
4438 \def\HyOpt@DriverType{ (autodetected)}%
4439 \providecommand*{\Hy@defaultdriver}{hdvips}%
4440 \ifpdf
4441 \ifx\pdfextension\@undefined
4442 \def\Hy@driver{hpdftex}%
4443 \else
4444 \def\Hy@driver{hluatex}%
4445 \fi
4446 \else
4447 \ifxetex
4448 \def\Hy@driver{hxetex}%
4449 \else
4450 \ifnum\ifvtex\OpMode\else\m@ne\fi=10 %
4451 \def\Hy@driver{hvtexhtm}%
4452 \def\MaybeStopEarly{%
4453 \Hy@Message{Stopped early}%
4454 \Hy@AtBeginDocument{%
4455 \PDF@FinishDoc
4456 \gdef\PDF@FinishDoc{}}%
4457 }%
4458 \endinput
4459 }%
4460 \else
4461 \ifnum\ifvtex\OpMode\else\m@ne\fi=\@ne
4462 \def\Hy@driver{hvtex}%
4463 \else
4464 \ifnum\ifvtex\OpMode\else\m@ne\fi=\tw@
4465 \def\Hy@driver{hvtex}%
4466 \else
4467 \ifx\HyOpt@DriverFallback\ltx@empty
4468 \let\Hy@driver\Hy@defaultdriver
4469 \def\HyOpt@DriverType{ (default)}%
4470 \else
4471 \begingroup
4472 \toks@{\expandafter{\HyOpt@DriverFallback}%
4473 \edef\x{\endgroup
4474 \noexpand\kvsetkeys{Hyp}{\the\toks@}%
4475 }%
4476 \x
4477 \ifx\Hy@driver\ltx@empty

```

```

4478         \let\Hy@driver\Hy@defaultdriver
4479         \def\HyOpt@DriverType{ (default)}%
4480     \else
4481         \def\HyOpt@DriverType{ (fallback)}%
4482     \fi
4483 \fi
4484 \fi
4485 \fi
4486 \fi
4487 \fi
4488 \fi
4489 \ifx\Hy@driver\Hy@defaultdriver
4490     \def\Hy@temp{hdvwind}%
4491     \ifx\Hy@temp\Hy@driver
4492         \kvsetkeys{Hyp}{colorlinks}%
4493         \PassOptionsToPackage{dviwindo}{color}%
4494     \fi
4495 \fi
4496 \fi
4497 \else
4498     \def\HyOpt@DriverType{ (custom)}%
4499     \let\Hy@driver\HyOpt@CustomDriver
4500 \fi
4501 \Hy@InfoNoLine{Driver\HyOpt@DriverType: \Hy@driver}%
4502 \chardef\Hy@VersionChecked=0 %
4503 \input{\Hy@driver.def}%
4504 \ifcase\Hy@VersionChecked
4505     \Hy@VersionCheck{\Hy@driver.def}%
4506 \fi
4507 \let\@unprocessedoptions\relax
4508 \Hy@RestoreCatcodes
4509 \Hy@DisableOption{tex4ht}%
4510 \Hy@DisableOption{pdftex}%
4511 \Hy@DisableOption{nativepdf}%
4512 \Hy@DisableOption{dvipdfm}%
4513 \Hy@DisableOption{dvipdfmx}%
4514 \Hy@DisableOption{dvipdfmx-outline-open}%
4515 \Hy@DisableOption{pdfmark}%
4516 \Hy@DisableOption{dvips}%
4517 \Hy@DisableOption{hypertex}%
4518 \Hy@DisableOption{vtex}%
4519 \Hy@DisableOption{vtexpdfmark}%
4520 \Hy@DisableOption{dviwindo}%
4521 \Hy@DisableOption{dvipsone}%
4522 \Hy@DisableOption{textures}%
4523 \Hy@DisableOption{latex2html}%
4524 \Hy@DisableOption{ps2pdf}%
4525 \Hy@DisableOption{xetex}%
4526 \Hy@DisableOption{driverfallback}%
4527 \Hy@DisableOption{customdriver}%
4528 \Hy@DisableOption{pdfversion}%
4529 }

```

Support for open outlines is enabled for XeTeX >= 0.9995. I don't know, if older versions also support this. AFAIK older dvipdfmx versions will break, thus the

switch cannot be turned on by default.

```

4530 \newif\ifHy@DvipdfmxOutlineOpen
4531 \ifxetex
4532 \ifdim\number\XeTeXversion\XeTeXrevision in<0.9995in %
4533 \else
4534 \chardef\SpecialDvipdfmxOutlineOpen\@ne
4535 \Hy@DvipdfmxOutlineOpenttrue
4536 \fi
4537 \fi
4538 \begingroup\expandafter\expandafter\expandafter\endgroup
4539 \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax
4540 \else
4541 \ifnum\SpecialDvipdfmxOutlineOpen>\z@
4542 \Hy@DvipdfmxOutlineOpenttrue
4543 \fi
4544 \fi

```

### 15.4.2 Bookmarks

```

4545 \def\WriteBookmarks{0}
4546 \def\@bookmarkopenstatus#1{%
4547 \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:

```

4548 \ifnum#1<\expandafter\@firstofone\expandafter
4549 \{\number\@bookmarkopenlevel\} % explicit space
4550 \else
4551 -%
4552 \fi
4553 \else
4554 -%
4555 \fi
4556 }
4557 \ifHy@bookmarks
4558 \Hy@Info{Bookmarks ON}%
4559 \ifx\@pdfpagemode\@empty
4560 \def\@pdfpagemode{UseOutlines}%
4561 \fi
4562 \else
4563 \let\@bookmarkopenstatus\ltx@gobble
4564 \Hy@Info{Bookmarks OFF}%
4565 \Hy@AtEndOfPackage{%
4566 \global\let\ReadBookmarks\relax
4567 \global\let\WriteBookmarks\relax
4568 }%
4569 \ifx\@pdfpagemode\@empty
4570 \def\@pdfpagemode{UseNone}%
4571 \fi
4572 \fi
4573 \Hy@DisableOption{bookmarks}

```

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

```

4574 \def\Hy@CatcodeWrapper#1{%
4575 \let\Hy@endWrap\ltx@empty
4576 \def\TMP@EnsureCode##1##2{%

```

```

4577 \edef\Hy@EndWrap{%
4578   \Hy@EndWrap
4579   \catcode##1 \the\catcode##1\relax
4580 }%
4581 \catcode##1 ##2\relax
4582 }%
4583 \TMP@EnsureCode{10}{12}% ^^J
4584 \TMP@EnsureCode{33}{12}% !
4585 \TMP@EnsureCode{34}{12}% "
4586 \TMP@EnsureCode{36}{3}% $ (math)
4587 \TMP@EnsureCode{38}{4}% & (alignment)
4588 \TMP@EnsureCode{39}{12}% '
4589 \TMP@EnsureCode{40}{12}% (
4590 \TMP@EnsureCode{41}{12}% )
4591 \TMP@EnsureCode{42}{12}% *
4592 \TMP@EnsureCode{43}{12}% +
4593 \TMP@EnsureCode{44}{12}% ,
4594 \TMP@EnsureCode{45}{12}% -
4595 \TMP@EnsureCode{46}{12}% .
4596 \TMP@EnsureCode{47}{12}% /
4597 \TMP@EnsureCode{58}{12}% :
4598 \TMP@EnsureCode{59}{12}% ;
4599 \TMP@EnsureCode{60}{12}% <
4600 \TMP@EnsureCode{61}{12}% =
4601 \TMP@EnsureCode{62}{12}% >
4602 \TMP@EnsureCode{63}{12}% ?
4603 \TMP@EnsureCode{91}{12}% [
4604 \TMP@EnsureCode{93}{12}% ]
4605 \TMP@EnsureCode{94}{7}% ^ (superscript)
4606 \TMP@EnsureCode{95}{8}% _ (subscript)
4607 \TMP@EnsureCode{96}{12}% `
4608 \TMP@EnsureCode{124}{12}% |
4609 \TMP@EnsureCode{126}{13}% ~ (active)
4610 ##1\relax
4611 \Hy@EndWrap
4612 }

```

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

```

4613 \Hy@AtBeginDocument{%
4614   \ifHy@ocgcolorlinks
4615     \kvsetkeys{Hyp}{colorlinks}%
4616     \ifHy@pdfa
4617       \Hy@Warning{%
4618         PDF/A: Optional Content Groups are prohibited,\MessageBreak
4619         using `colorlinks' instead of `ocgcolorlinks'%
4620       }%
4621       \Hy@ocgcolorlinksfalse
4622     \fi
4623   \fi
4624   \ifHy@ocgcolorlinks
4625   \else
4626     \Hy@DisableOption{ocgcolorlinks}%
4627   \fi
4628   \ifHy@colorlinks

```

```

4629 \def\@pdfborder{0 0 0}%
4630 \let\@pdfborderstyle\@empty
4631 \ifHy@typexml
4632 \else
4633 \Hy@CatcodeWrapper{%
4634 \RequirePackage{color}%
4635 }%
4636 \fi
4637 \def\Hy@colorlink#1{%
4638 \begingroup
4639 \HyColor@UseColor#1%
4640 }%
4641 \def\Hy@endcolorlink{\endgroup}%
4642 \Hy@Info{Link coloring ON}%
4643 \else
4644 \ifHy@frenchlinks
4645 \def\Hy@colorlink#1{\begingroup\fontshape{\scdefault}\selectfont}%
4646 \def\Hy@endcolorlink{\endgroup}%
4647 \Hy@Info{French linking ON}%
4648 \else
for grouping consistency:
4649 \def\Hy@colorlink#1{\begingroup}%
4650 \def\Hy@endcolorlink{\endgroup}%
4651 \Hy@Info{Link coloring OFF}%
4652 \fi
4653 \fi
4654 \Hy@DisableOption{colorlinks}%
4655 \Hy@DisableOption{frenchlinks}%
4656 \ifHy@texht
4657 \long\def\@firstoffive#1#2#3#4#5{#1}%
4658 \long\def\@secondoffive#1#2#3#4#5{#2}%
4659 \long\def\@thirdoffive#1#2#3#4#5{#3}%
4660 \long\def\@fourthoffive#1#2#3#4#5{#4}%
4661 \long\def\@fifthoffive#1#2#3#4#5{#5}%
4662 \providecommand*\@safe@activetrue{}%
4663 \providecommand*\@safe@activesfalse{}%
4664 \def\T@ref#1{%
4665 \Hy@safe@activetrue
4666 \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
4667 \Hy@safe@activesfalse
4668 }%
4669 \def\T@pageref#1{%
4670 \Hy@safe@activetrue
4671 \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
4672 \Hy@safe@activesfalse
4673 }%
4674 \else
4675 \ifHy@typexml
4676 \else
4677 \Hy@CatcodeWrapper{%
4678 \RequirePackage{nameref}[2012/07/28]%
4679 }%
4680 \fi
4681 \fi

```



```

4682 \DeclareRobustCommand\ref{%
4683   \@ifstar\@refstar\T@ref
4684 }%
4685 \DeclareRobustCommand\pageref{%
4686   \@ifstar\@pagerefstar\T@pageref
4687 }%
4688 % \ifclassloaded{memoir}{%
4689 %   \ltx@ifundefined{@mem@titlerefno link}\ltx@secondoftwo{%
4690 %     \ltx@ifundefined{@mem@titleref}\ltx@secondoftwo\ltx@firstoftwo
4691 %   }%
4692 % } \ltx@secondoftwo
4693 % {%
4694 %   \DeclareRobustCommand*{\nameref}{%
4695 %     \@ifstar\@mem@titlerefno link\@mem@titleref
4696 %   }%
4697 % }{%
4698 %   \DeclareRobustCommand*{\nameref}{%
4699 %     \@ifstar\@namerefstar\T@nameref
4700 %   }%
4701 % }%
4702 \ifHy@implicit
4703 \else
4704   \let \@pagerefstar\T@pageref
4705   \let \@refstar\T@ref
4706   \let \@namerefstar\T@nameref
4707 \fi
4708 }
4709 \Hy@AtBeginDocument{%
4710   \ifHy@texht
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`.

```

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

```

```

4779   #1^^A
4780   \ifx\limits#2\limits
4781   \else
4782     \ltx@ReturnAfterFi{^^A
4783     \Hy@RemovePercentCr #2\@nil
4784   }^^A
4785   \fi
4786 }^^A
4787 \endgroup
4788 \providecommand*\hyper@chars{%
4789   \let\#\hyper@hash
4790   \let\%\@percentchar
4791   \Hy@safe@activestrue
4792 }

4793 \def\hyperlink#1#2{%
4794   \hyper@@link{}\{#1\}\{#2\}%
4795 }

4796 \def\Hy@VerboseLinkStart#1#2{%
4797   \ifHy@verbose
4798     \begingroup
4799     \Hy@safe@activestrue
4800     \xdef\Hy@VerboseGlobalTemp{(#1) `#2'}%
4801     \Hy@Info{Reference \Hy@VerboseGlobalTemp}%
4802     \xdef\Hy@VerboseGlobalTemp{%
4803       \Hy@VerboseGlobalTemp, %
4804       line \the\inputlineno
4805     }%
4806   \endgroup
4807   \let\Hy@VerboseLinkInfo\Hy@VerboseGlobalTemp
4808   \@onelevel@sanitize\Hy@VerboseLinkInfo
4809   \fi
4810 }

4811 \def\Hy@VerboseLinkInfo{<VerboseLinkInfo>}
4812 \def\Hy@VerboseLinkStop{%
4813   \ifHy@verbose
4814     \begingroup
4815     \edef\x{\endgroup
4816       \write\m@ne{%
4817         Package `hyperref' Info: %
4818         End of reference \Hy@VerboseLinkInfo.%
4819       }%
4820     }%
4821     \x
4822   \fi
4823 }

4824 \def\Hy@VerboseAnchor#1{%
4825   \ifHy@verbose
4826     \begingroup
4827     \Hy@safe@activestrue
4828     \Hy@Info{Anchor ``HyperDestNameFilter{#1}''}%
4829   \endgroup
4830   \fi
4831 }

```

```

4832 \def\Hy@AllowHyphens{%
4833   \relax
4834   \ifhmode
4835     \penalty\@M
4836     \hskip\z@skip
4837   \fi
4838 }

4839 \DeclareRobustCommand*\href{[1][]{%
4840   \begingroup
4841     \setkeys{href}{#1}%
4842     \@ifnextchar\bgroup\Hy@href{\hyper@normalise\href@}%
4843 }
4844 \def\Hy@href#{%
4845   \hyper@normalise\href@
4846 }
4847 \begingroup
4848   \catcode`\$=6 %
4849   \catcode`\#=12 %
4850   \gdef\href@\$1{\expandafter\href@split$1##\}%
4851   \gdef\href@split$1##$2##$3\\$4{%
4852     \hyper@@link{$1}{$2}{$3}{$4}%
4853   \endgroup
4854 }%
4855 \endgroup

```

Option ‘page’.

```

4856 \define@key{href}{page}{%
4857   \def\Hy@href@page{#1}%
4858 }
4859 \let\Hy@href@page\@empty
4860 \newcount\c@Hy@tempcnt
4861 \def\theHy@tempcnt{\the\c@Hy@tempcnt}
4862 \def\Hy@MakeRemoteAction{%
4863   \ifx\Hy@href@page\@empty
4864     \def\Hy@href@page{0}%
4865   \else
4866     \setcounter{Hy@tempcnt}{\Hy@href@page}%
4867     \ifnum\c@Hy@tempcnt<\@ne
4868       \Hy@Warning{%
4869         Invalid page number (\theHy@tempcnt)\MessageBreak
4870         for remote PDF file.\MessageBreak
4871         Using page 1%
4872       }%
4873     \def\Hy@href@page{0}%
4874   \else
4875     \global\advance\c@Hy@tempcnt\m@ne
4876     \edef\Hy@href@page{\theHy@tempcnt}%
4877   \fi
4878 }

```

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.

```

4879 \ifx\Hy@href@nextactionraw\@empty
4880 \else

```

```

4881 \Hy@pdfnewwindowsettrue
4882 \Hy@pdfnewwindowtrue
4883 \fi
4884 }

```

Option ‘pdfremotestartview’.

```

4885 \define@key{href}{pdfremotestartview}{%
4886 \setkeys{Hyp}{pdfremotestartview={#1}}}%
4887 }

```

Option ‘pdfnewwindow’.

```

4888 \let\KV@href@pdfnewwindow\KV@Hyp@pdfnewwindow
4889 \let\KV@href@pdfnewwindow@default\KV@Hyp@pdfnewwindow@default

```

Option ‘ismap’.

```

4890 \newif\ifHy@href@ismap
4891 \define@key{href}{ismap}[true]{%
4892 \ltx@ifundefined{Hy@href@ismap#1}{%
4893 \Hy@Error{%
4894 Invalid value (#1) for key `ismap'.\MessageBreak
4895 Permitted values are `true' or `false'.\MessageBreak
4896 Ignoring `ismap'%
4897 } \@ehc
4898 }{%
4899 \csname Hy@href@ismap#1\endcsname
4900 }%
4901 }

```

Option ‘nextactionraw’.

```

4902 \let\Hy@href@nextactionraw\@empty
4903 \define@key{href}{nextactionraw}{%
4904 \edef\Hy@href@nextactionraw{#1}%
4905 \ifx\Hy@href@nextactionraw\@empty
4906 \else
4907 \Hy@Match\Hy@href@nextactionraw{%
4908 ~(\HyPat@ObjRef/|<<.*[/S[ /.+>>|
4909 \[( ?\HyPat@ObjRef/|<<.*[/S[ /.+>>)+ ?])$%
4910 }%}{%
4911 \Hy@Warning{Invalid value for `nextactionraw':\MessageBreak
4912 \Hy@href@nextactionraw\MessageBreak
4913 The action is discarded%
4914 }%
4915 }%
4916 \ifx\Hy@href@nextactionraw\@empty
4917 \else
4918 \edef\Hy@href@nextactionraw{/Next \Hy@href@nextactionraw}%
4919 \fi
4920 \fi
4921 }
4922 \def\HyPat@ObjRef/{.+}

```

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

```

4923 \RequirePackage{url}
4924 \let\HyOrg@url\url
4925 \def\Hurl{\begingroup \Url}
4926 \DeclareRobustCommand*{\nolinkurl}{\hyper@normalise\nolinkurl@}

```

```

4927 \def\nolinkurl@#1{\Hurl{#1}}
4928 \DeclareRobustCommand*{\url}{\hyper@normalise\url@}
4929 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}

4930 \DeclareRobustCommand*{\hyperimage}{\hyper@normalise\hyper@image}
4931 \providecommand\hyper@image[2]{#2}

4932 \def\hypertarget#1#2{%
4933   \ifHy@nesting
4934     \hyper@@anchor{#1}{#2}%
4935   \else
4936     \hyper@@anchor{#1}{\relax}#2%
4937   \fi
4938 }

```

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

```

4939 \DeclareRobustCommand*{\hyperref}{%
4940   \ifnextchar[{\Hy@babelnormalise\label@hyperref}\@hyperref
4941 }
4942 \def\Hy@babelnormalise#1[#2]{%
4943   \begingroup
4944     \Hy@safe@activestrue
4945     \let\protect\@unexpandable@protect
4946     \edef\Hy@tempa{%
4947       \endgroup
4948       \noexpand#1[#2]}%
4949   }%
4950   \Hy@tempa
4951 }
4952 \def\@hyperref{\hyper@normalise\@hyperref}
4953 \def\@hyperref#1#2#3{%
4954   \edef\ref@one{\ifx\#2\#2\else\#2.\fi#3}%
4955   \expandafter\tryhyper@link\ref@one\{#1}%
4956 }
4957 \def\tryhyper@link#1\#2{%
4958   \hyper@@link{#2}{#1}%
4959 }

4960 \def\hyperdef{\ifnextchar[{\label@hyperdef}\@hyperdef}}
4961 \def\@hyperdef#1#2#3{%, category, name, text
4962   \ifx\#1\%
4963     \def\Hy@AnchorName{#2}%
4964   \else
4965     \def\Hy@AnchorName{#1.#2}%
4966   \fi
4967   \ifHy@nesting
4968     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#3}%
4969   \else
4970     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#3%
4971   \fi

```

4972 }

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.

```

4973 \let\hyperrefundefinedlink\@firstofone
4974 \def\label@hyperref[#1]{%
4975   \expandafter\label@@hyperref\csname r@#1\endcsname{#1}%
4976 }%
4977 \def\label@@hyperref#1#2#3{%
4978   \ifx#1\relax
4979     \protect\G@refundefinedtrue
4980     \@latex@warning{%
4981       Hyper reference `#2' on page \thepage \space undefined%
4982     }%
4983     \begingroup
4984       \hyperrefundefinedlink{#3}%
4985     \endgroup
4986   \else
4987     \hyper@@link{\expandafter\@fifthoffive#1}%
4988     {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
4989   \fi
4990 }
4991 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
4992                               % anchor text
4993   \@bsphack
4994   \ifx\#2\%
4995     \def\Hy@AnchorName{#3}%
4996   \else
4997     \def\Hy@AnchorName{#2.#3}%
4998   \fi
4999   \if@filesw
5000     \protected@write\@auxout{}{%
5001       \string\newlabel{#1}{\{\}\}\{\Hy@AnchorName\}\}%
5002     }%
5003   \fi
5004   \@esphack
5005   \ifHy@nesting
5006     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#4}%
5007   \else
5008     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}{#4}%
5009   \fi
5010 }
```

`\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`

```

5011 \ExplSyntaxOn
5012 \cs_new:Npn \hyperget #1 #2
5013 {
```

```

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

```

## 16.1 Link box support for XeTeX

```

5048 \newdimen\XeTeXLinkMargin
5049 \setlength{\XeTeXLinkMargin}{2pt}
5050 \ifxetex
5051   \font\XeTeXLink@font=pzdr at 1sp\relax
5052   \newcommand*{\XeTeXLink@space}{%
5053     \begingroup
5054       \XeTeXLink@font
5055       \@xxxii
5056     \endgroup
5057   }%
5058   \newcommand{\XeTeXLinkBox}[1]{%
5059     \begingroup
5060       \leavevmode
5061       \sbox\z@{#1}%
5062     \begingroup
5063       \dimen@=\dp\z@
5064       \advance\dimen@\XeTeXLinkMargin

```



```

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

```

5098 \def\hyper@link{\let\Hy@reserved@a\relax
5099 \@ifnextchar{\hyper@link@}{\hyper@link@[link]}%
5100 }
5101 % #1: type
5102 % #2: URL
5103 % #3: destination name
5104 % #4: text
5105 \def\hyper@link@[#1]#2#3#4{%
5106 \ltx@ifempty{#4}{% link text
5107 \Hy@Warning{Suppressing empty link}%
5108 }{%
5109 \begingroup
5110 \protected@edef\Hy@tempa{#2}%
5111 \edef\Hy@tempb{#3}%

```

```

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

```

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.

```

5139 \def\hyper@readexternallink#1\{#2#3#4{%
5140 \begingroup
5141 \let\\\relax
5142 \expandafter\endgroup
5143 \expandafter\@hyper@@readexternallink#1\{#2}{#3}{#4}%
5144 }
5145 \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.

```

5146 \@hyper@readexternallink{#2}{#3}{#4}#1::\{#1}%
5147 }

```

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

```
5148 \def\@pdftempwordfile{file}%
5149 \def\@pdftempwordrun{run}%
5150 \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:

```
5151 \ifx\\#6\\%
5152 \@hyper@linkfile file:#7\\{#3}{#2}{#7}%
5153 \else
5154 \ifx\\#4\\%
5155 \@hyper@linkfile file:#7\\{#3}{#2}{#7}%
5156 \else
```

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

```
5157 \def\@pdftempa{#4}%
5158 \ifx\@pdftempa\@pdftempwordfile
5159 \@hyper@linkfile#7\\{#3}{#2}{#7}%
5160 \else
```

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

```
5161 \ifx\@pdftempa\@pdftempwordrun
5162 \ifHy@pdfa
5163 \Hy@Error{%
5164 PDF/A: Launch action is prohibited%
5165 }\@ehc
5166 \begingroup
5167 \leavevmode
5168 #2%
5169 \endgroup
5170 \else
5171 \@hyper@launch#7\\{#3}{#2}%
5172 \fi
5173 \else
```

otherwise its a URL

```
5174 \hyper@linkurl{#3}{#7\ifx\\#2\\%}\else\hyper@hash#2\fi}%
5175 \fi
5176 \fi
5177 \fi
5178 \fi
5179 }
```

By default, turn run: into file:

```
5180 \def\@hyper@launch run:#1\\#2#3{% filename, anchor text, linkname
5181 \hyper@linkurl{#2}{%
5182 \Hy@linkfileprefix
5183 #1%
5184 \ifx\\#3\\%
5185 \else
5186 \hyper@hash
```

```

5187     #3%
5188     \fi
5189 }%
5190 }

```

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

```

5191 \def\@hyper@linkfile file:#1\|#2#3#4{%
5192     %file url,link string, name, original uri
5193     \filename@parse{#1}%
5194     \ifx\filename@ext\relax
5195         \edef\filename@ext{\XR@ext}%
5196     \fi
5197     \def\use@file{\filename@area\filename@base.\filename@ext}%
5198     \Hy@IfStringEndsWith\filename@ext\XR@ext{%
5199         \hyper@linkfile{#2}{\use@file}{#3}%
5200     }{%
5201         \ifx\@baseurl\@empty
5202             \hyper@linkurl{#2}{%
5203                 #4\ifx\|#3\\\else\hyper@hash#3\fi
5204             }%
5205         \else
5206             \hyper@linkurl{#2}{\use@file\ifx\|#3\\\else\hyper@hash#3\fi}%
5207         \fi
5208     }%
5209 }

5210 \def\Hy@IfStringEndsWith#1#2{%
5211     \begingroup
5212     \edef\x{#1}%
5213     \@onelevel@sanitize\x
5214     \edef\x{.\x}%
5215     \edef\y{#2}%
5216     \@onelevel@sanitize\y
5217     \edef\y{.\y}%
5218     \expandafter\def\expandafter\z\expandafter##\expandafter1\y##2\@nil{%
5219         \endgroup
5220         \ifx\relax##2\relax
5221             \expandafter\ltx@secondoftwo
5222         \else
5223             \expandafter\ltx@firstoftwo
5224         \fi
5225     }%
5226     \expandafter\expandafter\expandafter\z\expandafter\x\y\@nil
5227 }

5228 \def\Hy@StringLocalhost{localhost}
5229 \@onelevel@sanitize\Hy@StringLocalhost
5230 \def\Hy@CleanupFile#1{%
5231     \edef#1{#1}%
5232     \expandafter\Hy@@CleanupFile#1\hbox{//\hbox\@nil{#1}%
5233 }
5234 \def\Hy@@CleanupFile#1//#2/#3\hbox#4\@nil#5{%
5235     \begingroup
5236     \toks@{\endgroup}%
5237     \def\x{#1}%

```

```

5238 \ifx\x\@empty
5239 \def\x{#2}%
5240 \ifx\x\@empty
5241 \toks@{\endgroup\def#5{/#3}}%
5242 \else
5243 \@onelevel@sanitize\x
5244 \ifx\x\Hy@StringLocalhost
5245 \toks@{\endgroup\def#5{/#3}}%
5246 \fi
5247 \fi
5248 \fi
5249 \the\toks@
5250 }

```

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.

```

5251 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
5252 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
5253 \ifx\#1\%
5254 #2\Hy@Warning{Ignoring empty anchor}%
5255 \else
5256 \def\anchor@spot{#2#3}%
5257 \let\put@me@back\@empty
5258 \ifx\relax#2\relax
5259 \else
5260 \ifHy@nesting
5261 \else
5262 \ifcat a\noexpand#2\relax
5263 \else
5264 \ifcat 0\noexpand#2 \relax
5265 \else
5266 % \typeout{Anchor start is not alphanumeric %
5267 % on input line\the\inputlineno%
5268 % }%
5269 \let\anchor@spot\@empty
5270 \def\put@me@back{#2#3}%
5271 \fi
5272 \fi
5273 \fi
5274 \fi
5275 \ifHy@activeanchor
5276 \anchor@spot
5277 \else
5278 \hyper@anchor{#1}%
5279 \fi
5280 \expandafter\put@me@back
5281 \fi
5282 \let\anchor@spot\@empty
5283 }

```

```
5284 \let\anchor@spot\ltx@empty
```

## 18 Option ‘destlabel’

```
5285 \ifHy@destlabel
```

```
\hyper@newdestlabel
```

```
5286 \def\hyper@newdestlabel#1#2{%
5287   \begingroup
5288   \Hy@safe@activetrue
5289   \edef\x{\endgroup
5290     \noexpand\@newl@bel{HyDL}{#1}{#2}%
5291   }%
5292   \x
5293 }%
```

```
\hyper@destlabel@hook
```

```
5294 \providecommand*\hyper@destlabel@hook{}%
```

```
\Hy@DestRename
```

```
5295 \newcommand*\Hy@DestRename}[2]{%
5296   \ltx@ifundefined{HyDL!#1}{%
5297     \begingroup
5298     \Hy@safe@activetrue
5299     \edef\dest@name{#1}%
5300     \edef\label@name{#2}%
5301     \hyper@destlabel@hook
5302     \Hy@IsNotEmpty{dest@name}{%
5303       \Hy@IsNotEmpty{label@name}{%
5304         \global\expandafter
5305         \let\csname HyDL!#1\endcsname\ltx@empty
5306         \if@files
5307           \protected@write\@auxout{}{%
5308             \string\hyper@newdestlabel
5309             {#1}%
5310             {\label@name}%
5311           }%
5312         \fi
5313       }%
5314     }%
5315   \endgroup
5316 }{}%
5317 }%
```

```
\HyperDestRename
```

```
5318 \newcommand*\HyperDestRename}[2]{%
5319   \AtBeginDocument{%
5320     \Hy@DestRename{#1}{#2}%
5321   }%
5322 }%
5323 \AtBeginDocument{%
5324   \let\HyperDestRename\Hy@DestRename
5325 }%
```

`\Hy@IsNotEmpty`

```
5326 \def\Hy@IsNotEmpty#1{%
5327   \ltx@ifundefined{#1}\ltx@gobble{%
5328     \expandafter\ifx\csname#1\endcsname\ltx@empty
5329     \expandafter\ltx@gobble
5330   \else
5331     \expandafter\ltx@firstofone
5332   \fi
5333 }%
5334 }%

5335 \ltx@GlobalAppendToMacro\label@hook{%
5336   \HyperDestRename\@currentHref\label@name
5337 }%
```

`\HyperDestLabelReplace`

```
5338 \def\HyperDestLabelReplace#1{%
5339   \ltx@ifundefined{HyDL@#1}{%
5340     #1%
5341   }{%
5342     \csname HyDL@#1\endcsname
5343   }%
5344 }%
```

`\HyperDestNameFilter`

```
5345 \let\HyperDestNameFilter\HyperDestLabelReplace

5346 \else
```

`\hyper@newdestlabel`

```
5347 \let\hyper@newdestlabel\ltx@gobbletwo
```

`\HyperDestLabelReplace`

```
5348 \let\HyperDestLabelReplace\ltx@firstofone
```

`\HyperDestRename`

```
@gobbletwo
```

```
5349 \fi
```

```
5350 \Hy@DisableOption{destlabel}
```

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

```
5351 \AddLineBeginAux{%
```

```
5352   \string\providecommand\string\hyper@newdestlabel[2]{}%
```

```
5353 }
```

## 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.

```
5354 \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

```
5355 \def\HyField@NewFlag#1#2{%
5356   \lowercase{\HyField@NewOption{#2}}%
5357   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5358 }
```

\HyField@NewFlagOnly

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

\HyField@NewOption #1: option name

```
5362 \def\HyField@NewOption#1{%
5363   \expandafter\newif\csname ifFld@#1\endcsname
5364   \define@key{Field}{#1}[true]{%
5365     \lowercase{\Field@boolkey{##1}}{#1}%
5366   }%
5367 }
```

\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

```
5368 \def\HyField@NewBitsetFlag#1#2#3#4{%
5369   \begingroup
5370     \count@=#4\relax
5371     \advance\count@\m@ne
5372     \def\x##1{%
5373       \endgroup
5374       \expandafter\def\csname ifFld@#3@#1\endcsname{##1}%
5375       \expandafter\ifx\csname ifFld@#3@#1\endcsname\relax
5376         \expandafter\edef\csname ifFld@#3@#1\endcsname{%
5377           (\number#4) #2%
5378         }%
5379       \else
5380         \expandafter\edef\csname ifFld@#3@#1\endcsname{%
5381           \csname ifFld@#3@#1\endcsname
5382           /#2%
5383         }%
5384     \fi
```



```

5385 }%
5386 \expandafter\x\expandafter{\the\count@}%
5387 }

\HyField@UseFlag The bit set is HyField@#1
5388 \def\HyField@UseFlag#1#2{%
5389 \lowercase{\HyField@@UseFlag{#2}}{#1}%
5390 }

\HyField@@UseFlag
5391 \def\HyField@@UseFlag#1#2{%
5392 \bitsetSetValue{HyField@#2}{%
5393 \csname HyField@#2@#1\endcsname
5394 }{%
5395 \csname ifFld@#1\endcsname 1\else 0\fi
5396 }%
5397 }

\HyField@SetFlag The bit set is HyField@#1
5398 \def\HyField@SetFlag#1#2{%
5399 \lowercase{\HyField@@SetFlag{#2}}{#1}%
5400 }

\HyField@@SetFlag
5401 \def\HyField@@SetFlag#1#2{%
5402 \bitsetSetValue{HyField@#2}{%
5403 \csname HyField@#2@#1\endcsname
5404 }{1}%
5405 }

\HyField@PrintFlags
5406 \def\HyField@PrintFlags#1#2{%
5407 \ifHy@verbose
5408 \begingroup
5409 \let\Hy@temp\@empty
5410 \let\MessageBreak\relax
5411 \expandafter\@for\expandafter\x\expandafter:\expandafter=%
5412 \bitsetGetSetBitList{HyField@#1}\do{%
5413 \edef\Hy@temp{%
5414 \Hy@temp
5415 \csname HyField@#1@\x\endcsname\MessageBreak
5416 }%
5417 }%
5418 \edef\x{\endgroup
5419 \noexpand\Hy@Info{%
5420 Field flags: %
5421 \expandafter\ifx\@car#1\@nil S\else/\fi
5422 #1 %
5423 \bitsetGetDec{HyField@#1} %
5424 (0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
5425 \Hy@temp
5426 for #2%
5427 }%

```

```

5428 } \x
5429 \fi
5430 }

```

### 19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```

5431 \HyField@NewFlag{Ff}{ReadOnly}{1}
5432 \HyField@NewFlag{Ff}{Required}{2}
5433 \HyField@NewFlag{Ff}{NoExport}{3}

```

“Table 8.75 Field flags specific to button fields”

```

5434 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
5435 \HyField@NewFlag{Ff}{Radio}{16}
5436 \HyField@NewFlag{Ff}{Pushbutton}{17}
5437 \HyField@NewFlag{Ff}{RadiosInUnison}{26}

```

“Table 8.77 Field flags specific to text fields”

```

5438 \HyField@NewFlag{Ff}{Multiline}{13}
5439 \HyField@NewFlag{Ff}{Password}{14}
5440 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
5441 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5442 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4
5443 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4
5444 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5

```

“Table 8.79 field flags specific to choice fields”

```

5445 \HyField@NewFlag{Ff}{Combo}{18}
5446 \HyField@NewFlag{Ff}{Edit}{19}
5447 \HyField@NewFlag{Ff}{Sort}{20}
5448 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4
5449 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5450 \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.

```

5451 \newif\ifFld@popdown
5452 \define@key{Field}{popdown}[true]{%
5453 \lowercase{\Field@boolkey{#1}}{popdown}%
5454 }

```

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.

```

5455 \HyField@NewFlag{F}{Invisible}{1}
5456 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2
5457 \HyField@NewFlag{F}{Print}{3}% PDF 1.2
5458 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2
5459 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3
5460 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3
5461 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4
5462 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5
5463 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7

```

```

5464 \ifHy@pdfa
5465 \def\HyField@PDFAFflagWarning#1#2{%
5466   \Hy@Warning{%
5467     PDF/A: Annotation flag `#1' must\MessageBreak
5468     be set to `#2'%
5469   }%
5470 }%
5471 \Fld@invisiblefalse
5472 \def\Fld@invisibletrue{%
5473   \HyField@PDFAFflagWarning{invisible}{false}%
5474 }%
5475 \Fld@hiddenfalse
5476 \def\Fld@hiddenttrue{%
5477   \HyField@PDFAFflagWarning{hidden}{false}%
5478 }%
5479 \Fld@printtrue
5480 \def\Fld@printfalse{%
5481   \HyField@PDFAFflagWarning{print}{true}%
5482 }%
5483 \Fld@nozoomtrue
5484 \def\Fld@nozoomfalse{%
5485   \HyField@PDFAFflagWarning{nozoom}{true}%
5486 }%
5487 \Fld@norotatetrue
5488 \def\Fld@norotatefalse{%
5489   \HyField@PDFAFflagWarning{norotate}{true}%
5490 }%
5491 \Fld@noviewfalse
5492 \def\Fld@noviewtrue{%
5493   \HyField@PDFAFflagWarning{noview}{false}%
5494 }%
5495 \fi

```

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

```

5496 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
5497 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
5498 \HyField@NewFlag{Submit}{GetMethod}{4}
5499 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
5500 \HyField@NewFlagOnly{Submit}{XFDF}{6}
5501 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}
5502 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
5503 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}
5504 \HyField@NewFlag{Submit}{CanonicalFormat}{10}
5505 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
5506 \HyField@NewFlag{Submit}{ExclFKey}{12}
5507 \HyField@NewFlag{Submit}{EmbedForm}{14}

5508 \define@key{Field}{export}{%
5509   \lowercase{\def\Hy@temp{#1}}%
5510   \@ifundefined{Fld@export@\Hy@temp}{%
5511     \@onelevel@sanitize\Hy@temp
5512     \Hy@Error{%
5513       Unknown export format ` \Hy@temp'.\MessageBreak
5514       Known formats are `FDF', `HTML', `XFDF', and `PDF'%

```

```

5515 } \@ehc
5516 } {%
5517 \let\Fld@export\Hy@temp
5518 } %
5519 }
5520 \def\Fld@export{fdf}
5521 \@namedef{Fld@export@fdf}{0}%
5522 \@namedef{Fld@export@html}{1}%
5523 \@namedef{Fld@export@xpdf}{2}%
5524 \@namedef{Fld@export@pdf}{3}%

```

### 19.1.2 Set submit flags

\HyField@FlagsSubmit

```

5525 \def\HyField@FlagsSubmit{%
5526 \bitsetReset{HyField@Submit}%
5527 \ifcase\@nameuse{Fld@export@\Fld@export} %
5528 % FDF
5529 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5530 \HyField@UseFlag{Submit}{SubmitCoordinates}%
5531 \HyField@UseFlag{Submit}{IncludeAppendSaves}%
5532 \HyField@UseFlag{Submit}{IncludeAnnotations}%
5533 \HyField@UseFlag{Submit}{CanonicalFormat}%
5534 \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
5535 \HyField@UseFlag{Submit}{ExclFKey}%
5536 \HyField@UseFlag{Submit}{EmbedForm}%
5537 \or % HTML
5538 \HyField@SetFlag{Submit}{ExportFormat}%
5539 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5540 \HyField@UseFlag{Submit}{GetMethod}%
5541 \HyField@UseFlag{Submit}{SubmitCoordinates}%
5542 \HyField@UseFlag{Submit}{CanonicalFormat}%
5543 \or % XFDF
5544 \HyField@SetFlag{Submit}{XFDF}%
5545 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5546 \HyField@UseFlag{Submit}{SubmitCoordinates}%
5547 \HyField@UseFlag{Submit}{CanonicalFormat}%
5548 \or % PDF
5549 \HyField@SetFlag{Submit}{SubmitPDF}%
5550 \HyField@UseFlag{Submit}{GetMethod}%
5551 \fi
5552 \HyField@PrintFlags{Submit}{submit button field}%
5553 \bitsetIsEmpty{HyField@Submit}{%
5554 \let\Fld@submitflags\ltx@empty
5555 } {%
5556 \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}%
5557 } %
5558 }

```

### 19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

5559 \def\HyField@FlagsAnnot#1{%

```

```

5560 \bitsetReset{HyField@F}%
5561 \HyField@UseFlag{F}{Invisible}%
5562 \HyField@UseFlag{F}{Hidden}%
5563 \HyField@UseFlag{F}{Print}%
5564 \HyField@UseFlag{F}{NoZoom}%
5565 \HyField@UseFlag{F}{NoRotate}%
5566 \HyField@UseFlag{F}{NoView}%
5567 \HyField@UseFlag{F}{Locked}%
5568 \HyField@UseFlag{F}{ToggleNoView}%
5569 \HyField@UseFlag{F}{LockedContents}%
5570 \HyField@PrintFlags{F}{#1}%
5571 \bitsetIsEmpty{HyField@F}%
5572 \let\Fld@annotflags\ltx@empty
5573 }{%
5574 \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}%
5575 }%
5576 }

```

#### 19.1.4 Pushbutton field

\HyField@FlagsPushButton

```

5577 \def\HyField@FlagsPushButton{%
5578 \HyField@FlagsAnnot{push button field}%
5579 \bitsetReset{HyField@Ff}%
5580 \HyField@UseFlag{Ff}{ReadOnly}%
5581 \HyField@UseFlag{Ff}{Required}%
5582 \HyField@UseFlag{Ff}{NoExport}%
5583 \HyField@SetFlag{Ff}{PushButton}%
5584 \HyField@PrintFlags{Ff}{push button field}%
5585 \bitsetIsEmpty{HyField@Ff}%
5586 \let\Fld@flags\ltx@empty
5587 }{%
5588 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5589 }%
5590 }

```

#### 19.1.5 Check box field

\HyField@FlagsCheckBox

```

5591 \def\HyField@FlagsCheckBox{%
5592 \HyField@FlagsAnnot{check box field}%
5593 \bitsetReset{HyField@Ff}%
5594 \HyField@UseFlag{Ff}{ReadOnly}%
5595 \HyField@UseFlag{Ff}{Required}%
5596 \HyField@UseFlag{Ff}{NoExport}%
5597 \HyField@PrintFlags{Ff}{check box field}%
5598 \bitsetIsEmpty{HyField@Ff}%
5599 \let\Fld@flags\ltx@empty
5600 }{%
5601 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5602 }%
5603 }

```

### 19.1.6 Radio button field

\HyField@FlagsRadioButton

```
5604 \def\HyField@FlagsRadioButton{%
5605   \HyField@FlagsAnnot{radio button field}%
5606   \bitsetReset{HyField@Ff}%
5607   \HyField@UseFlag{Ff}{ReadOnly}%
5608   \HyField@UseFlag{Ff}{Required}%
5609   \HyField@UseFlag{Ff}{NoExport}%
5610   \HyField@UseFlag{Ff}{NoToggleToOff}%
5611   \HyField@SetFlag{Ff}{Radio}%
5612   \HyField@UseFlag{Ff}{RadiosInUnison}%
5613   \HyField@PrintFlags{Ff}{radio button field}%
5614   \bitsetIsEmpty{HyField@Ff}{%
5615     \let\Fld@flags\ltx@empty
5616   }{%
5617     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5618   }%
5619 }
```

### 19.1.7 Text fields

\HyField@FlagsText

```
5620 \def\HyField@FlagsText{%
5621   \HyField@FlagsAnnot{text field}%
5622   \bitsetReset{HyField@Ff}%
5623   \HyField@UseFlag{Ff}{ReadOnly}%
5624   \HyField@UseFlag{Ff}{Required}%
5625   \HyField@UseFlag{Ff}{NoExport}%
5626   \HyField@UseFlag{Ff}{Multiline}%
5627   \HyField@UseFlag{Ff}{Password}%
5628   \HyField@UseFlag{Ff}{FileSelect}%
5629   \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5630   \HyField@UseFlag{Ff}{DoNotScroll}%
5631   \ifFld@comb
5632     \ifcase0\ifFld@multiline
5633       \else\ifFld@password
5634       \else\ifFld@fileselect
5635       \else 1\fi\fi\fi\relax
5636     \Hy@Error{%
5637       Field option `comb' cannot used together with\MessageBreak
5638       `multiline', `password', or `fileselect'%
5639     }\@ehc
5640   \else
5641     \HyField@UseFlag{Ff}{Comb}%
5642   \fi
5643 \fi
5644 \HyField@UseFlag{Ff}{RichText}%
5645 \HyField@PrintFlags{Ff}{text field}%
5646 \bitsetIsEmpty{HyField@Ff}{%
5647   \let\Fld@flags\ltx@empty
5648 }{%
5649   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5650 }
```

5651 }

### 19.1.8 Choice fields

\HyField@FlagsChoice

```

5652 \def\HyField@FlagsChoice{%
5653   \HyField@FlagsAnnot{choice field}%
5654   \bitsetReset{HyField@Ff}%
5655   \HyField@UseFlag{Ff}{ReadOnly}%
5656   \HyField@UseFlag{Ff}{Required}%
5657   \HyField@UseFlag{Ff}{NoExport}%
5658   \HyField@UseFlag{Ff}{Combo}%
5659   \ifFld@combo
5660     \HyField@UseFlag{Ff}{Edit}%
5661   \fi
5662   \HyField@UseFlag{Ff}{Sort}%
5663   \HyField@UseFlag{Ff}{MultiSelect}%
5664   \ifFld@combo
5665     \ifFld@edit
5666       \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5667     \fi
5668   \fi
5669   \HyField@UseFlag{Ff}{CommitOnSelChange}%
5670   \HyField@PrintFlags{Ff}{choice field}%
5671   \bitsetIsEmpty{HyField@Ff}{%
5672     \let\Fld@flags\ltx@empty
5673   }{%
5674     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5675   }%
5676 }
```

## 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.

```

5677 \def\HyField@PDFChoices#1{%
5678   \begingroup
5679   \global\let\Fld@choices\ltx@empty
5680   \let\HyTmp@optlist\ltx@empty
5681   \let\HyTmp@optitem\relax
5682   \count@=0 %
5683   \kv@parse{#1}{%
5684     \Hy@pdfstringdef\kv@key\kv@key
5685     \ifx\kv@value\relax
5686       \ifnum\Hy@pdf@majorminor@version<103 % implementation note 122, PDF spec 1.7
5687         \xdef\Fld@choices{\Fld@choices(\kv@key)(\kv@key)}%
5688       \else
5689         \xdef\Fld@choices{\Fld@choices(\kv@key)}%
5690       \fi
5691     \else
5692       \Hy@pdfstringdef\kv@value\kv@value
```

```

5693     \xdef\Fld@choices{\Fld@choices(\kv@value)(\kv@key)}}%
5694     \fi
5695     \edef\HyTmp@optlist{%
5696       \HyTmp@optlist
5697       \HyTmp@optitem{\the\count@}{\kv@key}0%
5698     }%
5699     \advance\count@ by 1 %
5700     \@gobbletwo
5701   }%
5702   \xdef\Fld@choices{/Opt[\Fld@choices]}%
5703   \ifFld@multiselect
5704     \HyField@@PDFChoices{DV}\Fld@default
5705     \HyField@@PDFChoices{V}\Fld@value
5706   \else
5707     \ifx\Fld@default\relax
5708     \else
5709       \pdfstringdef\Hy@gtemp\Fld@default
5710       \xdef\Fld@choices{\Fld@choices/DV(\Hy@gtemp)}%
5711     \fi
5712     \ifx\Fld@value\relax
5713     \else
5714       \pdfstringdef\Hy@gtemp\Fld@value
5715       \xdef\Fld@choices{\Fld@choices/V(\Hy@gtemp)}%
5716     \fi
5717   \fi
5718   \endgroup
5719 }

```

\HyField@@PDFChoices

```

5720 \def\HyField@@PDFChoices#1#2{%
5721   \ifx#2\relax
5722   \else
5723     \count@=0 %
5724     \def\HyTmp@optitem##1##2##3{%
5725       \def\HyTmp@key{##2}%
5726       \ifx\HyTmp@key\Hy@gtemp
5727         \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5728           \HyTmp@optlist
5729           \HyTmp@optitem{##1}{##2}1%
5730         }%
5731       \let\HyTmp@found=Y%
5732     \else
5733       \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5734         \HyTmp@optlist
5735         \HyTmp@optitem{##1}{##2}##3%
5736       }%
5737     \fi
5738   }%
5739   \expandafter\comma@parse\expandafter{#2}%
5740   \pdfstringdef\Hy@gtemp\comma@entry
5741   \let\HyTmp@found=N %
5742   \expandafter\let\expandafter\HyTmp@optlist\expandafter\@empty
5743   \HyTmp@optlist
5744   \ifx\HyTmp@found Y%

```



```

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

```

### 19.3 Forms

\HyField@SetKeys

```

5781 \def\HyField@SetKeys{%
5782   \kvsetkeys{Field}%
5783 }

5784 \newif\ifFld@checked
5785 \newif\ifFld@disabled
5786 \Fld@checkedfalse
5787 \Fld@disabledfalse
5788 \newcount\Fld@menulength
5789 \newdimen\Fld@Width
5790 \newdimen\Fld@charsize
5791 \Fld@charsize=10\p@
5792 \def\Fld@maxlen{0}
5793 \def\Fld@align{0}

```

```

5794 \def\Fld@color{0 0 0 rg}
5795 \def\Fld@bcolor{1 1 1}
5796 \def\Fld@bordercolor{1 0 0}
5797 \def\Fld@bordersep{1\p@}
5798 \def\Fld@borderwidth{1}
5799 \def\Fld@borderstyle{S}
5800 \def\Fld@cbsymbol{4}
5801 \def\Fld@radiosymbol{H}
5802 \def\Fld@rotation{0}
5803 \def\Fld@Form{\@ifnextchar{\@Form}{\@Form[]}}
5804 \def\endForm{\@endForm}
5805 \newif\ifForm@html
5806 \Form@htmlfalse
5807 \def\Fld@boolkey#1#2{%
5808   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5809 }
5810 \define@key{Form}{action}{%
5811   \hyper@normalise\Hy@DefFormAction{#1}%
5812 }
5813 \def\Hy@DefFormAction{\def\Fld@action}
5814 \def\enc@html{html}
5815 \define@key{Form}{encoding}{%
5816   \def\Hy@tempa{#1}%
5817   \ifx\Hy@tempa\enc@html
5818     \Form@htmltrue
5819   \def\Fld@export{html}%
5820   \else
5821     \Hy@Warning{%
5822       Form `encoding' key with \MessageBreak
5823       unknown value `#1'%
5824     }%
5825     \Form@htmlfalse
5826   \fi
5827 }
5828 \define@key{Form}{method}{%
5829   \lowercase{\def\Hy@temp{#1}}%
5830   \@ifundefined{Form@method@\Hy@temp}{%
5831     \@onelevel@sanitize\Hy@temp
5832     \Hy@Error{%
5833       Unknown method `~\Hy@temp'.\MessageBreak
5834       Known values are `post' and `get'%
5835     }~\@ehc
5836   }{%
5837     \let\Fld@method\Hy@temp
5838     \ifcase\@nameuse{Form@method@\Hy@temp} %
5839       \Fld@getmethodfalse
5840     \else
5841       \Fld@getmethodtrue
5842     \fi
5843   }%
5844 }
5845 \def\Fld@method{}
5846 \@namedef{Form@method@post}{0}
5847 \@namedef{Form@method@get}{1}

```

```

5848 \newif\ifHyField@NeedAppearances
5849 \def\HyField@NeedAppearancesfalse{%
5850   \global\let\ifHyField@NeedAppearances\iffalse
5851 }
5852 \def\HyField@NeedAppearancetrue{%
5853   \global\let\ifHyField@NeedAppearances\iftrue
5854 }
5855 \HyField@NeedAppearancetrue
5856 \define@key{Form}{NeedAppearances}[true]{%
5857   \edef\Hy@tempa{#1}%
5858   \ifx\Hy@tempa\Hy@true
5859     \HyField@NeedAppearancetrue
5860   \else
5861     \ifx\Hy@tempa\Hy@false
5862       \HyField@NeedAppearancesfalse
5863     \else
5864       \Hy@Error{%
5865         Unexpected value ``\Hy@tempa'\MessageBreak
5866         of option `NeedAppearances' instead of\MessageBreak
5867         `true' or `false'%
5868       }\@ehc
5869     \fi
5870   \fi
5871 }
5872 \def\Field@boolkey#1#2{%
5873   \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5874 }
5875 \ifHy@texht
5876   \newtoks\Field@toks
5877   \Field@toks={ }%
5878   \def\Field@addtoks#1#2{%
5879     \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}%
5880     \@processme
5881   }%
5882 \else
5883   \def\Hy@WarnHTMLFieldOption#1{%
5884     \Hy@Warning{%
5885       HTML field option `#1'\MessageBreak
5886       is ignored%
5887     }%
5888   }%
5889 \fi
5890 \def\Fld@checkequals#1=#2=#3\\{%
5891   \def\@currDisplay{#1}%
5892   \ifx\\#2\\%
5893     \def\@currValue{#1}%
5894   \else
5895     \def\@currValue{#2}%
5896   \fi
5897   \expandafter\Hy@pdfstringdef\expandafter\@currValue\expandafter{\@currValue}%
5898 }
5899 \define@key{Field}{loc}{%
5900   \def\Fld@loc{#1}%
5901 }

```

```

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

```

```

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

```

```

6010 \expandafter\def\expandafter\Fld@temp\expandafter{%
6011   \Fld@temp
6012   #1%
6013 }%
6014 \ifx\|#3\|%
6015   \expandafter\@gobble
6016 \else
6017   \begingroup
6018     \lccode`0=#2\relax
6019   \lowercase{\endgroup
6020     \expandafter\def\expandafter\Fld@temp\expandafter{%
6021       \Fld@temp
6022       0%
6023     }%
6024   }%
6025   \expandafter\@firstofone
6026 \fi
6027 {%
6028   \Fld@@DingDef#3\@nil
6029 }%
6030 }

6031 \define@key{Field}{rotation}{%
6032   \def\Fld@rotation{#1}%
6033 }

6034 \define@key{Field}{backgroundcolor}{%
6035   \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
6036 }
6037 \define@key{Field}{bordercolor}{%
6038   \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
6039 }
6040 \define@key{Field}{color}{%
6041   \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
6042 }

6043 \let\Fld@onclick@code\ltx@empty
6044 \let\Fld@format@code\ltx@empty
6045 \let\Fld@validate@code\ltx@empty
6046 \let\Fld@calculate@code\ltx@empty
6047 \let\Fld@keystroke@code\ltx@empty
6048 \let\Fld@onfocus@code\ltx@empty
6049 \let\Fld@onblur@code\ltx@empty
6050 \let\Fld@onmousedown@code\ltx@empty
6051 \let\Fld@onmouseup@code\ltx@empty
6052 \let\Fld@onenter@code\ltx@empty
6053 \let\Fld@onexit@code\ltx@empty
6054 \def\Hy@temp#1{%
6055   \expandafter\Hy@@temp\csname Fld@#1@code\endcsname{#1}%
6056 }
6057 \def\Hy@@temp#1#2{%
6058   \ifHy@pdfa
6059     \define@key{Field}{#2}{%
6060       \Hy@Error{%
6061         PDF/A: Additional action `#2' is prohibited%
6062       }%

```

```

6063 }%
6064 \else
6065   \define@key{Field}{#2}{%
6066     \def#1{##1}%
6067   }%
6068 \fi
6069 }
6070 \Hy@temp{keystroke}
6071 \Hy@temp{format}
6072 \Hy@temp{validate}
6073 \Hy@temp{calculate}
6074 \Hy@temp{onfocus}
6075 \Hy@temp{onblur}
6076 \Hy@temp{onenter}
6077 \Hy@temp{onexit}

6078 \let\Fld@calculate@sortkey\ltx@empty
6079 \define@key{Field}{calculatesortkey}[1]{%
6080   \def\Fld@calculate@sortkey{#1}%
6081 }

6082 \ifHy@texht
6083   \def\Hy@temp#1{%
6084     \define@key{Field}{#1}{%
6085       \Field@addtoks{#1}{##1}%
6086     }%
6087   }%
6088 \else
6089   \def\Hy@temp#1{%
6090     \define@key{Field}{#1}{%
6091       \Hy@WarnHTMLFieldOption{#1}%
6092     }%
6093   }%
6094 \fi
6095 \Hy@temp{ondblclick}
6096 \Hy@temp{onmousedown}
6097 \Hy@temp{onmouseup}
6098 \Hy@temp{onmouseover}
6099 \Hy@temp{onmousemove}
6100 \Hy@temp{onmouseout}
6101 \Hy@temp{onkeydown}
6102 \Hy@temp{onkeyup}
6103 \Hy@temp{onselect}
6104 \Hy@temp{onchange}
6105 \Hy@temp{onkeypress}
6106 \ifHy@texht
6107   \define@key{Field}{onclick}{%
6108     \Field@addtoks{onclick}{#1}%
6109   }%
6110 \else
6111   \ifHy@pdfa
6112     \define@key{Field}{onclick}{%
6113       \Hy@Error{%
6114         PDF/A: Action `onclick' is prohibited%
6115       }\@ehc

```

```

6116 }%
6117 \else
6118 \define@key{Field}{onclick}{%
6119 \def\Fld@onclick@code{#1}%
6120 }%
6121 \fi
6122 \fi

6123 \DeclareRobustCommand\TextField{%
6124 \@ifnextchar[{\@TextField}{\@TextField[]}%
6125 }
6126 \DeclareRobustCommand\ChoiceMenu{%
6127 \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
6128 }
6129 \DeclareRobustCommand\CheckBox{%
6130 \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
6131 }
6132 \DeclareRobustCommand\PushButton{%
6133 \@ifnextchar[{\@PushButton}{\@PushButton[]}%
6134 }
6135 \DeclareRobustCommand\Gauge{%
6136 \@ifnextchar[{\@Gauge}{\@Gauge[]}%
6137 }
6138 \DeclareRobustCommand\Submit{%
6139 \@ifnextchar[{\@Submit}{\@Submit[]}%
6140 }
6141 \DeclareRobustCommand\Reset{%
6142 \@ifnextchar[{\@Reset}{\@Reset[]}%
6143 }
6144 \def\LayoutTextField#1#2{% label, field
6145 \def\Hy@temp{#1}%
6146 \ifx\Hy@temp\@empty
6147 #2%
6148 \else
6149 #1 #2%
6150 \fi
6151 }
6152 \def\LayoutChoiceField#1#2{% label, field
6153 \def\Hy@temp{#1}%
6154 \ifx\Hy@temp\@empty
6155 #2%
6156 \else
6157 #1 #2%
6158 \fi
6159 }
6160 \def\LayoutCheckField#1#2{% label, field
6161 \def\Hy@temp{#1}%
6162 \ifx\Hy@temp\@empty
6163 #2%
6164 \else
6165 #1 #2%
6166 \fi
6167 }
6168 \def\LayoutPushButtonField#1{% button
6169 #1%

```



```

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

Default options for the types of \ChoiceMenu.
6205 \def\DefaultOptionsofListBox{print}
6206 \def\DefaultOptionsofComboBox{print,edit,sort}
6207 \def\DefaultOptionsofPopdownBox{print}
6208 \def\DefaultOptionsofRadio{print,notoggletooff}

```

## 20 Setup

```

6209 \ifHy@hyperfigures
6210   \Hy@Info{Hyper figures ON}%
6211 \else
6212   \Hy@Info{Hyper figures OFF}%
6213 \fi
6214 \ifHy@nesting
6215   \Hy@Info{Link nesting ON}%
6216 \else
6217   \Hy@Info{Link nesting OFF}%

```

```

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

```

## 21 Low-level utility macros

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

```

6244 \edef\hyper@hash{\string#}
6245 \edef\hyper@tilde{\string~}
6246 \edef\hyper@quote{\string"}

```

Support \label before \begin{document}.

```

6247 \def\@currentHref{Doc-Start}
6248 \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.

```

6249 \Hy@AtBeginDocument{%
6250 \Hy@pdfstringtrue
6251 \PDF@SetupDoc
6252 \let\PDF@SetupDoc\@empty
6253 \Hy@DisableOption{pdfpagescrop}%
6254 \Hy@DisableOption{pdfpagemode}%
6255 \Hy@DisableOption{pdfnonfullscreenpagemode}%
6256 \Hy@DisableOption{pdfdirection}%
6257 \Hy@DisableOption{pdfviewarea}%
6258 \Hy@DisableOption{pdfviewclip}%
6259 \Hy@DisableOption{pdfprintarea}%
6260 \Hy@DisableOption{pdfprintclip}%
6261 \Hy@DisableOption{pdfprintscaling}%

```

```

6262 \Hy@DisableOption{pdfduplex}%
6263 \Hy@DisableOption{pdfpicktraybypdfsize}%
6264 \Hy@DisableOption{pdfprintpagerange}%
6265 \Hy@DisableOption{pdfnumcopies}%
6266 \Hy@DisableOption{pdfstartview}%
6267 \Hy@DisableOption{pdfstartpage}%
6268 \Hy@DisableOption{pdftoolbar}%
6269 \Hy@DisableOption{pdfmenubar}%
6270 \Hy@DisableOption{pdfwindowui}%
6271 \Hy@DisableOption{pdfitwindow}%
6272 \Hy@DisableOption{pdfcenterwindow}%
6273 \Hy@DisableOption{pdfdisplaydoctitle}%
6274 \Hy@DisableOption{pdfpagelayout}%
6275 \Hy@DisableOption{pdflang}%
6276 \Hy@DisableOption{baseurl}%
6277 \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
6278 \Hy@pdfstringfalse
6279 }

Ignore star from referencing macros:
6280 \LetLtxMacro\NoHy@OrgRef\ref
6281 \DeclareRobustCommand*{\ref}{%
6282 \@ifstar\NoHy@OrgRef\NoHy@OrgRef
6283 }
6284 \LetLtxMacro\NoHy@OrgPageRef\pageref
6285 \DeclareRobustCommand*{\pageref}{%
6286 \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
6287 }

```

## 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.

```

6288 \def\NoHyper{%
6289 \def\hyper@link@[##1]##2##3##4{##4\Hy@xspace@end}%
6290 \def\hyper@@anchor##1##2{##2\Hy@xspace@end}%
6291 \global\let\hyper@livelink\hyper@link
6292 \gdef\hyper@link##1##2##3{##3\Hy@xspace@end}%
6293 \let\hyper@anchor\ltx@gobble
6294 \let\hyper@anchorstart\ltx@gobble
6295 \def\hyper@anchorend{\Hy@xspace@end}%
6296 \let\hyper@linkstart\ltx@gobbletwo
6297 \def\hyper@linkend{\Hy@xspace@end}%
6298 \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%
6299 \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
6300 \let\Hy@backout\@gobble
6301 }
6302 \def\stop@hyper{%
6303 \def\hyper@link@[##1]##2##3##4{##4\Hy@xspace@end}%
6304 \let\Hy@backout\@gobble
6305 \let\hyper@@anchor\ltx@gobble

```

```

6306 \def\hyper@link##1##2##3{##3\Hy@xspace@end}%
6307 \let\hyper@anchor\ltx@gobble
6308 \let\hyper@anchorstart\ltx@gobble
6309 \def\hyper@anchorend{\Hy@xspace@end}%
6310 \let\hyper@linkstart\ltx@gobbletwo
6311 \def\hyper@linkend{\Hy@xspace@end}%
6312 \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%
6313 \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
6314 }
6315 \def\endNoHyper{%
6316 \global\let\hyper@link\hyper@livelink
6317 }
6318 \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:

```

6319 \*nohyperref
6320 \RequirePackage{letltxmacro}[2008/06/13]
6321 \let\hyper@@anchor\@gobble
6322 \def\hyper@link#1#2#3{#3}%
6323 \let\hyper@anchorstart\@gobble
6324 \let\hyper@anchorend\@empty
6325 \let\hyper@linkstart\@gobbletwo
6326 \let\hyper@linkend\@empty
6327 \def\hyper@linkurl#1#2{#1}%
6328 \def\hyper@linkfile#1#2#3{#1}%
6329 \def\hyper@link@{#1}#2#3{#1}%
6330 \let\PDF@SetupDoc\@empty
6331 \let\PDF@FinishDoc\@empty
6332 \def\nohyperpage#1{#1}

```

Some top-level commands:

```

6333 \def\Acrobatmenu#1#2{\leavevmode#2}
6334 \let\pdfstringdefDisableCommands\@gobbletwo
6335 \let\texorpdfstring\@firstoftwo
6336 \let\pdfbookmark\@undefined
6337 \newcommand\pdfbookmark[3]{}
6338 \let\phantomsection\@empty
6339 \let\hypersetup\@gobble
6340 \let\hyperbaseurl\@gobble
6341 \newcommand*{\href}[3]{}
6342 \let\hyperdef\@gobbletwo
6343 \let\hyperlink\@gobble
6344 \let\hypertarget\@gobble
6345 \def\hyperref{%
6346 \ifnextchar\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
6347 }

```

```

6348 \long\def\@gobbleopt[#1]{ }
6349 \let\hyperpage\@empty
Ignore star from referencing macros:
6350 \LetLtxMacro\NoHy@OrgRef\ref
6351 \DeclareRobustCommand*{\ref}{%
6352   \@ifstar\NoHy@OrgRef\NoHy@OrgRef
6353 }
6354 \LetLtxMacro\NoHy@OrgPageRef\pageref
6355 \DeclareRobustCommand*{\pageref}{%
6356   \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
6357 }
6358 \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}`

```

6359 \*package
6360 \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 `\contentsline` and `\newlabel` are defined to cope with the extra arguments.

```

6361 \if@filesw
6362   \ifHy@typexml
6363     \immediate\closeout\@mainaux
6364     \immediate\openout\@mainaux\jobname.aux\relax
6365     \immediate\write\@auxout{<relaxxml>\relax}%
6366   \fi
6367   \immediate\write\@auxout{%
6368     \string\providecommand\string\HyperFirstAtBeginDocument{%
6369       \string\AtBeginDocument}^^J%
6370     \string\HyperFirstAtBeginDocument{%
6371       \string\ifx\string\hyper@anchor\string\@undefined^^J%
6372       \string\global\string\let\string\oldcontentsline\string\contentsline^^J%
6373       \string\gdef\string\contentsline%
6374         \string#1\string#2\string#3\string#4{%
6375         \string\oldcontentsline%
6376         {\string#1}{\string#2}{\string#3}}^^J%
6377       \string\global\string\let\string\oldnewlabel\string\newlabel^^J%
6378       \string\gdef\string\newlabel\string#1\string#2{%
6379       \string\newlabelxx{\string#1}\string#2}^^J%
6380       \string\gdef\string\newlabelxx%
6381         \string#1\string#2\string#3\string#4\string#5\string#6{%
6382         \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.

```

6383     \string\AtEndDocument{%
6384       \string\ifx\string\hyper@anchor\string\@undefined^^J%
6385       \string\let\string\contentsline\string\oldcontentsline^^J%
6386       \string\let\string\newlabel\string\oldnewlabel^^J%

```

```

6387      \string\fi%
6388      }^^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.

```

6389      \string\fi%
6390      }^^J%
6391      \string\global\string\let\string\hyper@last\relax^^J%
6392      \string\gdef\string\HyperFirstAtBeginDocument\string#1{\string#1}%
6393      }%
6394      \fi
6395      \let\HyperFirstAtBeginDocument\ltx@firstofone

```

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

If hyperref was used last time, do nothing. If it was not used, or an old version of hyperref was used, don't use that TOC at all but generate a warning. Not ideal, but better than failing with pre-5.0 hyperref TOCs.

```

6396      \ifx\hyper@last\@undefined
6397      \def\@starttoc#1{%
6398      \begingroup
6399      \makeatletter
6400      \ltx@ifpackageloaded{parskip}{\parskip\z@}{}%
6401      \IfFileExists{\jobname.#1}{%
6402      \Hy@WarningNoLine{%
6403      old #1 file detected, not used; run LaTeX again%
6404      }%
6405      }{}%
6406      \if@filesw
6407      \expandafter\newwrite\csname tf@#1\endcsname
6408      \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
6409      \fi
6410      \@nobreakfalse
6411      \endgroup
6412      }%
6413      \def\newlabel#1#2{\@newl@bel r{#1}{#2}{}}{}%
6414      \fi
6415      }

```

## 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.

```

6416 \ifHy@pdfusetitle
6417 \let\HyOrg@title\title
6418 \let\HyOrg@author\author
6419 \def\title{\@ifnextchar{\Hy@scanopttitle}{\Hy@scantitle}}%
6420 \def\Hy@scanopttitle[#1]{%
6421 \gdef\Hy@title{#1}%
6422 \HyOrg@title{#1}%
6423 }%
6424 \def\Hy@scantitle#1{%
6425 \gdef\Hy@title{#1}%

```

```

6426 \HyOrg@title{#1}%
6427 }%
6428 \def\author{\@ifnextchar{\Hy@scanoptauthor}{\Hy@scanauthor}}%
6429 \def\Hy@scanoptauthor[#1]{%
6430 \gdef\Hy@author{#1}%
6431 \HyOrg@author[{#1}]%
6432 }%
6433 \def\Hy@scanauthor#1{%
6434 \gdef\Hy@author{#1}%
6435 \HyOrg@author{#1}%
6436 }%

```

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.

```

6437 \begingroup
6438 \def\process@me#1\@nil#2{%
6439 \expandafter\let\expandafter\x\csname @#2\endcsname
6440 \edef\y{\expandafter\strip@prefix\meaning\x}%
6441 \def\c##1##2\@nil{%
6442 \ifx\\##1\\%
6443 \else
6444 \expandafter\gdef\csname Hy@#2\expandafter\endcsname
6445 \expandafter{\x}%
6446 \fi
6447 }%
6448 \expandafter\c\y\relax#1\@nil
6449 }%
6450 \expandafter\process@me\string\@latex@\@nil{title}%
6451 \expandafter\process@me\string\@latex@\@nil{author}%
6452 \endgroup
6453 \fi
6454 \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.

```

6455 \def\Hy@UseMaketitleString#1{%
6456 \ltx@ifundefined{Hy@#1}{}%
6457 \begingroup
6458 \let\Hy@saved@hook\pdfstringdefPreHook
6459 \pdfstringdefDisableCommands{%
6460 \expandafter\let\expandafter\\ \csname Hy@newline@#1\endcsname
6461 \let\newline\\%
6462 \def\and{; }%
6463 \let\thanks\@gobble%
6464 }%

```

```

6465 \expandafter\ifx\csname @pdf#1\endcsname\@empty
6466 \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
6467 \csname Hy@#1\endcsname\@empty
6468 }%
6469 \fi
6470 \global\let\pdfstringdefPreHook\Hy@saved@hook
6471 \endgroup
6472 }%
6473 }
6474 \def\Hy@newline@title#1{ #1}
6475 \def\Hy@newline@author#1{, #1}
6476 \def\Hy@UseMaketitleInfos{%
6477 \Hy@UseMaketitleString{title}%
6478 \Hy@UseMaketitleString{author}%
6479 }

```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.

## 27 Every page

```

6480 \RequirePackage{atbegshi}[2007/09/09]
6481 \let\Hy@EveryPageHook\ltx@empty
6482 \let\Hy@EveryPageBoxHook\ltx@empty
6483 \let\Hy@FirstPageHook\ltx@empty
6484 \AtBeginShipout{%
6485 \Hy@EveryPageHook
6486 \ifx\Hy@EveryPageBoxHook\ltx@empty
6487 \else
6488 \setbox\AtBeginShipoutBox=\vbox{%
6489 \offinterlineskip
6490 \Hy@EveryPageBoxHook
6491 \box\AtBeginShipoutBox
6492 }%
6493 \fi
6494 }
6495 \ltx@iffileloaded{hpdftex.def}{%
6496 \AtBeginShipout{%
6497 \Hy@FirstPageHook
6498 \global\let\Hy@FirstPageHook\ltx@empty
6499 }%
6500 }{%
6501 \AtBeginShipoutFirst{%
6502 \Hy@FirstPageHook
6503 }%
6504 }
6505 \g@addto@macro\Hy@FirstPageHook{%
6506 \PDF@FinishDoc
6507 \global\let\PDF@FinishDoc\ltx@empty
6508 }

```



## 27.1 PDF /PageLabels

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

```

6509 \ifHy@pdfpagelabels
6510 \begingroup\expandafter\expandafter\expandafter\endgroup
6511 \expandafter\ifx\csname thepage\endcsname\relax
6512   \Hy@pdfpagelabelsfalse
6513   \Hy@WarningNoLine{%
6514     Option `pdfpagelabels' is turned off\MessageBreak
6515     because \string\thepage\space is undefined%
6516   }%
6517   \csname fi\endcsname
6518   \csname iffalse\expandafter\endcsname
6519   \fi

```

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

```

6520 \def\thispdfpagelabel#1{%
6521   \gdef\HyPL@thisLabel{#1}%
6522 }%
6523 \global\let\HyPL@thisLabel\relax

```

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

```

6524 \let\HyPL@Labels\ltx@empty

```

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

```

6525 \newcount\Hy@abspage
6526 \Hy@abspage=0 %

```

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

```

6527 \def\HyPL@LastType{init}%
6528 \def\HyPL@LastNumber{0}%
6529 \let\HyPL@LastPrefix\ltx@empty

```

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

```

6530 \def\HyPL@arabic{D}%
6531 \def\HyPL@Roman{R}%
6532 \def\HyPL@roman{r}%
6533 \def\HyPL@Alph{A}%
6534 \def\HyPL@alph{a}%

6535 \let\HyPL@SlidesSetPage\ltx@empty
6536 \ltx@ifclassloaded{slides}{%
6537   \def\HyPL@SlidesSetPage{%
6538     \advance\c@page\ltx@one
6539     \ifnum\value{page}>\ltx@one
6540       \protected@edef\HyPL@SlidesOptionalPage{%
6541         \Hy@SlidesFormatOptionalPage{\thepage}%
6542       }%
6543     \else
6544       \let\HyPL@SlidesOptionalPage\ltx@empty
6545     \fi
6546     \advance\c@page-\ltx@one

```

```

6547 \def\HyPL@page{%
6548 \csname the\Hy@SlidesPage\endcsname
6549 \HyPL@SlidesOptionalPage
6550 }%
6551 }%
6552 }{}%

```

`\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.

```

6553 \def\HyPL@EveryPage{%
6554 \begingroup
6555 \ifx\HyPL@thisLabel\relax
6556 \let\HyPL@page\thepage
6557 \HyPL@SlidesSetPage
6558 \else
6559 \let\HyPL@page\HyPL@thisLabel
6560 \global\let\HyPL@thisLabel\relax
6561 \fi
6562 \let\HyPL@Type\relax
6563 \ifnum\c@page>0 %
6564 \ifx\HyPL@SlidesSetPage\ltx@empty
6565 \expandafter\HyPL@CheckThePage\HyPL@page\@nil
6566 \fi
6567 \fi
6568 \let\Hy@temp Y%
6569 \ifx\HyPL@Type\HyPL@LastType
6570 \else
6571 \let\Hy@temp N%
6572 \fi
6573 \ifx\HyPL@Type\relax
6574 \pdfstringdef\HyPL@Prefix{\HyPL@page}%
6575 \else
6576 \pdfstringdef\HyPL@Prefix\HyPL@Prefix
6577 \fi
6578 \ifx\HyPL@Prefix\HyPL@LastPrefix
6579 \else
6580 \let\Hy@temp N%
6581 \fi
6582 \if Y\Hy@temp
6583 \advance\c@page by -1 %
6584 \ifnum\HyPL@LastNumber=\the\c@page\relax
6585 \else
6586 \let\Hy@temp N%
6587 \fi
6588 \Hy@StepCount\c@page
6589 \fi
6590 \if N\Hy@temp
6591 \ifx\HyPL@Type\relax
6592 \HyPL@StorePageLabel{/P(\HyPL@Prefix)}%
6593 \else
6594 \HyPL@StorePageLabel{%
6595 \ifx\HyPL@Prefix\@empty
6596 \else
6597 /P(\HyPL@Prefix)%

```

```

6598         \fi
6599         /S/\csname HyPL\HyPL@Type\endcsname
6600         \ifnum\the\c@page=1 %
6601         \else
6602         \space/St \the\c@page
6603         \fi
6604     }%
6605     \fi
6606     \fi
6607     \xdef\HyPL@LastNumber{\the\c@page}%
6608     \global\let\HyPL@LastType\HyPL@Type
6609     \global\let\HyPL@LastPrefix\HyPL@Prefix
6610 \endgroup
6611 \Hy@GlobalStepCount\Hy@abspage
6612 }%

```

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

```

6613 \def\HyPL@CheckThePage#1\@nil{%
6614   \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
6615 }%

```

`\HyPL@@CheckThePage` The first check is, is `\thepage` is defined such as in L<sup>A</sup>T<sub>E</sub>X, e.g.: `\csname @arabic\endcsname\c@page`. In the current implementation the check fails, if there is another `\csname` before.

The second check tries to detect `\arabic{page}` at the end of the definition text of `\thepage`.

```

6616 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
6617   \def\Hy@tempa{#4}%
6618   \def\Hy@tempb{\csname\endcsname\c@page}%
6619   \ifx\Hy@tempa\Hy@tempb
6620     \expandafter\ifx\csname HyPL#3\endcsname\relax
6621     \else
6622       \def\HyPL@Type{#3}%
6623       \def\HyPL@Prefix{#2}%
6624     \fi
6625   \else
6626     \begingroup
6627     \let\Hy@next\endgroup
6628     \let\HyPL@found\@undefined
6629     \def\arabic{\HyPL@Format{arabic}}%
6630     \def\Roman{\HyPL@Format{Roman}}%
6631     \def\roman{\HyPL@Format{roman}}%
6632     \def\Alph{\HyPL@Format{Alph}}%
6633     \def\alph{\HyPL@Format{alph}}%
6634     \protected@edef\Hy@temp{#1}%
6635     \ifx\HyPL@found\relax
6636       \toks@{\expandafter{\Hy@temp}}%
6637       \edef\Hy@next{\endgroup
6638         \noexpand\HyPL@@@CheckThePage\the\toks@
6639         \noexpand\HyPL@found\relax\noexpand\@nil
6640       }%
6641     \fi
6642     \Hy@next
6643   \fi

```

6644 }%

**\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**.

```
6645 \def\HyPL@Format#1#2{%
6646   \ifx\HyPL@found\@undefined
6647     \expandafter\ifx\csname c@#2\endcsname\c@page
6648       \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
6649     \else
6650       \expandafter\noexpand\csname#1\endcsname{#2}%
6651     \fi
6652   \else
6653     \expandafter\noexpand\csname#1\endcsname{#2}%
6654   \fi
6655 }%
```

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

```
6656 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
6657   \def\Hy@tempa{#3}%
6658   \def\Hy@tempb{\HyPL@found\relax}%
6659   \ifx\Hy@tempa\Hy@tempb
6660     \def\HyPL@Type{#2}%
6661     \def\HyPL@Prefix{#1}%
6662   \fi
6663 }%
```

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

```
6664 \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**.

```
6665 \def\HyPL@Useless{0<</S/D>>}%
6666 \@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.

```
6667 \def\HyPL@SetPageLabels{%
6668   \@onelevel@sanitize\HyPL@Labels
6669   \ifx\HyPL@Labels\@empty
6670   \else
6671     \ifx\HyPL@Labels\HyPL@Useless
6672     \else
6673       \Hy@PutCatalog{/PageLabels<</Nums[\HyPL@Labels]>>}%
6674     \fi
6675   \fi
6676 }%

6677 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
6678 \fi
```

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

```
6679 \Hy@DisableOption{pdfpagelabels}
6680 \end{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`

```
6681 (*pdfTeX)
6682 \pdf@ifdraftmode{%
6683   \let\Hy@PutCatalog\ltx@gobble
6684 }{%
6685   \let\Hy@PutCatalog\pdfcatalog
6686 }
6687 \end{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.

```
6688 (*vTeX)
6689 \providecommand*\XR@ext}{pdf}
6690 \edef\Hy@VTeXversion{%
6691   \ifx\VTeXversion\@undefined
6692     \z@
6693   \else
6694     \ifx\VTeXversion\relax
6695       \z@
6696     \else
6697       \VTeXversion
6698     \fi
6699   \fi
6700 }
6701 \begingroup
6702   \ifnum\Hy@VTeXversion<660 %
6703     \gdef\Hy@PutCatalog#1{%
6704       \Hy@WarningNoLine{%
6705         VTeX 6.59g or above required for pdfpagelabels%
6706       }%
6707     }%
6708   \else
6709     \gdef\Hy@PutCatalog#1{%
6710       \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
6711     }%
6712     \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
6713       \ifx\#2\%
6714         \else
6715           \immediate\special{!pdfpagelabels #2}%
6716         \fi
6717       }%
6718     }%
6719   \fi
6720 \endgroup
```

```

6718 \fi
6719 \endgroup
6720 </vtex>

6721 (*pdfTeX | vtex)

```

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

```

6722 \ifHy@pdfpagelabels
6723 \def\HyPL@StorePageLabel#1{%
6724 \toks@{\expandafter{\HyPL@Labels}}%
6725 \xdef\HyPL@Labels{%
6726 \the\toks@
6727 \the\Hy@abspage<<#1>>%
6728 }%
6729 }%

```

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.

```

6730 \RequirePackage{atveryend}[2009/12/07]%
6731 \AtVeryEndDocument{%
6732 \HyPL@SetPageLabels
6733 }%

6734 \fi
6735 </pdfTeX | vtex>

```

### 27.1.2 xetex

```

6736 (*xetex)
6737 \HyPsd@LoadUnicode
6738 \Hy@unicodetrue
6739 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
6740 \else
6741 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
6742 \fi
6743 \HyPsd@LoadStringEncoding
6744 \define@key{Hyp}{unicode}{true}{%
6745 \Hy@boolkey{unicode}{#1}}%
6746 \ifHy@unicode
6747 \else
6748 \Hy@Warning{%
6749 XeTeX driver only supports `unicode=true'. Ignoring\MessageBreak
6750 option setting `unicode=false'%
6751 }%
6752 \Hy@unicodetrue
6753 \fi
6754 }
6755 \define@key{Hyp}{pdfencoding}{%
6756 \edef\HyPsd@temp{#1}}%
6757 \ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
6758 \let\HyPsd@pdfencoding\HyPsd@temp
6759 \else
6760 \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
6761 \let\HyPsd@pdfencoding\HyPsd@temp

```

```

6762 \else
6763 \Hy@Warning{%
6764 XeTeX driver only supports\MessageBreak
6765 `pdfencoding=unicode|auto'. Ignoring option\MessageBreak
6766 setting `pdfencoding=\HyPsd@temp'%
6767 }%
6768 \fi
6769 \fi
6770 }
6771 \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:

```

6772 \def\setpdfinkmargin#1{%
6773 \begingroup
6774 \setlength{\dimen@}{#1}%
6775 \special{dvipdfmx:config g \strip@pt\dimen@}%
6776 \endgroup}
6777 \</xetex>

```

set the pdf version

```

6778 \<dvipdfm|xetex>
6779 \special{pdf:majorversion \Hy@pdf@majorversion}
6780 \special{pdf:minorversion \Hy@pdf@minorversion}
6781 \</dvipdfm|xetex>

```

### 27.1.3 pdfmarkbase, dvipdfm, xetex

```

6782 \<pdfmarkbase>
6783 \begingroup
6784 \@ifundefined{headerps@out}{-}{%
6785 \toks@{\expandafter{\Hy@FirstPageHook}%
6786 \xdef\Hy@FirstPageHook{%
6787 \noexpand\headerps@out{%
6788 systemdict /pdfmark known%
6789 {%
6790 userdict /?pdfmark systemdict /exec get put%
6791 }{%
6792 userdict /?pdfmark systemdict /pop get put %
6793 userdict /pdfmark systemdict /cleartomark get put%
6794 }%
6795 ifelse%
6796 }%
6797 \the\toks@
6798 }%
6799 }%
6800 \endgroup
6801 \</pdfmarkbase>

```

\Hy@PutCatalog

```

6802 \<dvipdfm|xetex>\def\Hy@PutCatalog#1{\@pdfm@mark{docview <<#1>>}}
6803 \<pdfmarkbase>
6804 \def\Hy@PutCatalog#1{%
6805 \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} <<#1>>}}%
6806 }
6807 \</pdfmarkbase>

```

```

6808 <*pdfmarkbase | dvipdfm | xetex>
6809 \ifHy@pdfpagelabels

```

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

```

6810 \def\HyPL@StorePageLabel#1{%
6811   \if@filesw
6812     \begingroup
6813     \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
6814     \immediate\write\@mainaux{%
6815       \string\HyPL@Entry{\Hy@tempa}%
6816     }%
6817   \endgroup
6818 \fi
6819 }%

```

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.

```

6820 \Hy@AtBeginDocument{%
6821   \if@filesw
6822     \immediate\write\@mainaux{%
6823       \string\providecommand\string*\string\HyPL@Entry[1]{}%
6824     }%
6825   \fi
6826   \ifx\HyPL@Labels\@empty
6827     \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
6828   \else
6829     \HyPL@SetPageLabels
6830   \fi
6831   \let\HyPL@Entry\@gobble
6832 }%

```

`\HyPL@Entry`

```

6833 \def\HyPL@Entry#1{%
6834   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
6835     \HyPL@Labels
6836     #1%
6837   }%
6838 }%

6839 \fi
6840 </pdfmarkbase | dvipdfm | xetex>
6841 <*package>

6842 \ifx\MaybeStopEarly\relax
6843 \else
6844   \Hy@stoppedearlytrue
6845   \expandafter\MaybeStopEarly
6846 \fi
6847 \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

```

6848 \def\Hy@CounterExists#1{%
6849   \begingroup\expandafter\expandafter\expandafter\endgroup
6850   \expandafter\ifx\csname c@#1\endcsname\relax
6851     \expandafter\@gobble
6852   \else
6853     \begingroup\expandafter\expandafter\expandafter\endgroup
6854     \expandafter\ifx\csname the#1\endcsname\relax
6855       \expandafter\expandafter\expandafter\@gobble
6856     \else
6857       \expandafter\expandafter\expandafter\@firstofone
6858     \fi
6859   \fi
6860 }
6861 \Hy@CounterExists{section}{%
6862   \providecommand\theHequation{\theHsection.\arabic{equation}}}%
6863 }
6864 \Hy@CounterExists{part}{%
6865   \providecommand\theHpart{\arabic{part}}}%
6866 }
6867 \ltx@ifundefined{thechapter}{%
6868   \providecommand\theHsection   {\arabic{section}}}%
6869   \providecommand\theHfigure    {\arabic{figure}}}%
6870   \providecommand\theHtable     {\arabic{table}}}%
6871 }{%
6872   \providecommand\theHchapter   {\arabic{chapter}}}%
6873   \providecommand\theHfigure    {\theHchapter.\arabic{figure}}}%
6874   \providecommand\theHtable     {\theHchapter.\arabic{table}}}%
6875   \providecommand\theHsection   {\theHchapter.\arabic{section}}}%
6876 }
6877 \providecommand\theHsubsection {\theHsection.\arabic{subsection}}
6878 \providecommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
6879 \providecommand\theHparagraph  {\theHsubsubsection.\arabic{paragraph}}

```

```

6880 \providecommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
6881 \providecommand\theHtheorem      {\theHsection.\arabic{theorem}}
6882 \providecommand\theHthm          {\theHsection.\arabic{thm}}

```

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

```

6883 \let\H@item\item
6884 \newcounter{Item}
6885 \def\theHItem{\arabic{Item}}
6886 \def\item{%
6887   \@hyper@itemfalse
6888   \if@nmbrlist\@hyper@itemtrue\fi
6889   \H@item
6890 }

6891 \providecommand\theHenumi   {\theHItem}
6892 \providecommand\theHenumii  {\theHItem}
6893 \providecommand\theHenumiii {\theHItem}
6894 \providecommand\theHenumiv  {\theHItem}
6895 \providecommand\theHHfootnote {\arabic{Hfootnote}}
6896 \providecommand\theHmpfootnote{\arabic{mpfootnote}}
6897 \@ifundefined{theHHmpfootnote}{%
6898   \let\theHHmpfootnote\theHHfootnote
6899 }{}

```

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.

```

6900 \let\H@refstepcounter\refstepcounter
6901 \edef\name@of@eq{equation}%
6902 \edef\name@of@slide{slide}%

```

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.

```

6903 \newif\if@hyper@item
6904 \newif\if@skiphyperref
6905 \@hyper@itemfalse
6906 \@skiphyperreffalse
6907 \def\refstepcounter#1{%
6908   \ifHy@pdfstring
6909   \else
6910     \H@refstepcounter{#1}%
6911     \edef\This@name{#1}%
6912     \ifx\This@name\name@of@slide
6913       \else
6914         \if@skiphyperref
6915         \else
6916           \if@hyper@item
6917             \stepcounter{Item}%
6918             \hyper@refstepcounter{Item}%
6919           \@hyper@itemfalse
6920         \else
6921           \hyper@refstepcounter{#1}%

```

```

6922 \fi
6923 \fi
6924 \fi
6925 \fi
6926 }
6927 \let\Hy@saved@refstepcounter\refstepcounter

```

AMS $\text{\LaTeX}$  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.

```

6928 \@ifpackageloaded{amsmath}{\newif\ifmeasuring@\measuring@false}

```

`\hyper@refstepcounter`

```

6929 \def\hyper@refstepcounter#1{%
6930 \edef\This@name{#1}%
6931 \ifx\This@name\name@of@eq
6932 \@ifundefined{theHequation}{%
6933 \make@stripped@name{\theequation}%
6934 \let\theHequation\newname
6935 }{}%
6936 \fi
6937 \HyCnt@ProvideTheHCounter{#1}%
6938 \hyper@makecurrent{#1}%
6939 \ifmeasuring@
6940 \else
6941 \Hy@raisedlink{%
6942 \hyper@anchorstart{\@currentHref}\hyper@anchorend
6943 }%
6944 \fi
6945 }

```

`\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`,  $\text{\LaTeX}$  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  $\text{\LaTeX}$ , substring search `\in@` can be used.

```

6946 \def\HyCnt@ProvideTheHCounter#1{%
6947 \@ifundefined{theH#1}{%
6948 \expandafter\def\csname theH#1\endcsname{}%
6949 \def\Hy@temp{\@elt{#1}}%
6950 \ltx@onelevel@sanitize\Hy@temp
6951 \let\HyOrg@elt\@elt
6952 \edef\@elt{%
6953 \noexpand\HyCnt@LookForParentCounter
6954 \expandafter\noexpand\csname theH#1\endcsname
6955 }%
6956 \cl@@ckpt
6957 \let\@elt\HyOrg@elt
6958 \expandafter
6959 \ltx@LocalAppendToMacro\csname theH#1\endcsname\expandafter\endcsname
6960 \expandafter{%
6961 \expandafter\@arabic\csname c@#1\endcsname

```

```

6962 }%
6963 }{}%
6964 }

```

`\Hy@LookForParentCounter`

```

6965 \def\HyCnt@LookForParentCounter#1#2{%
6966   \expandafter\let\expandafter\Hy@temp@A\csname cl@#2\endcsname
6967   \ltx@ifundefined{cl@#2}{%
6968     }{%
6969     \ltx@onelevel@sanitize\Hy@temp@A
6970     \edef\Hy@temp@A{%
6971       \noexpand\in@{\Hy@temp}{\Hy@temp@A}%
6972     }\Hy@temp@A
6973     \ifin@
6974       \ltx@ifundefined{theH#2}{%
6975         \expandafter\ltx@LocalAppendToMacro\expandafter#1%
6976         \expandafter{%
6977           \expandafter\@arabic\csname c@#2\endcsname.%
6978         }%
6979       }{%
6980         \expandafter\ltx@LocalAppendToMacro\expandafter#1%
6981         \expandafter{%
6982           \csname theH#2\endcsname.%
6983         }%
6984       }%
6985     }\fi
6986   }%
6987 }

```

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`.

```

6988 \begingroup\expandafter\expandafter\expandafter\endgroup
6989 \expandafter\ifx\csname chapter\endcsname\relax
6990   \def\Hy@chapterstring{section}%
6991 \else
6992   \def\Hy@chapterstring{chapter}%
6993 \fi
6994 \def\Hy@appendixstring{appendix}
6995 \def\Hy@chapapp{\Hy@chapterstring}
6996 \ltx@ifundefined{appendix}{%
6997   }{%
6998   \let\HyOrg@appendix\appendix
6999   \def\Hy@AlphNoErr#1{%
7000     \ifnum\value{#1}>26 %
7001       Alph\number\value{#1}%
7002     \else
7003       \ifnum\value{#1}<1 %
7004         Alph\number\value{#1}%
7005       \else
7006         \Alph{#1}%

```

```

7007   \fi
7008   \fi
7009 }%
7010 \def\appendix{%
7011   \ltx@ifundefined{chapter}{%
7012     \gdef\theHsection{\Hy@AlphNoErr{section}}}%
7013   }{%
7014     \gdef\theHchapter{\Hy@AlphNoErr{chapter}}}%
7015   }%
7016   \xdef\Hy@chapapp{\Hy@appendixstring}%
7017   \HyOrg@appendix
7018 }%
7019 }

```

\Hy@Test@alph

```

7020 \def\Hy@Test@alph#1{%
7021   \ifcase#1\or
7022     a\or b\or c\or d\or e\or f\or g\or h\or i\or j\or
7023     k\or l\or m\or n\or o\or p\or q\or r\or s\or t\or
7024     u\or v\or w\or x\or y\or z%
7025   \else
7026     \@ctrerr
7027   \fi
7028 }

```

\Hy@Test@Alph

```

7029 \def\Hy@Test@Alph#1{%
7030   \ifcase#1\or
7031     A\or B\or C\or D\or E\or F\or G\or H\or I\or J\or
7032     K\or L\or M\or N\or O\or P\or Q\or R\or S\or T\or
7033     U\or V\or W\or X\or Y\or Z%
7034   \else
7035     \@ctrerr
7036   \fi
7037 }

```

\hyper@hook@dest@make We define a hook to allow to overwrite the next destination name.

```

7038 \@if@t@r\fmtversion{2020-10-01}
7039 {%
7040   \NewHook{__hyp/dest/make }
7041   \def\hyper@hook@dest@make
7042     {\UseHook{__hyp/dest/make}}
7043   \define@key{Hyp}{next-anchor}{%
7044     \AddToHookNext{__hyp/dest/make}%
7045     {\Hy@MakeCurrentHref{#1}}}%
7046   }
7047 }
7048 {
7049   \def\hyper@hook@dest@make{}
7050 }

```

\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.

```

7051 \def\hyper@makecurrent#1{%
7052   \begingroup
7053   \Hy@safe@activetrue
7054   \edef\Hy@param{#1}%
7055   \ifx\Hy@param\Hy@chapterstring
7056     \let\Hy@param\Hy@chapapp
7057   \fi
7058   \ifHy@hypertextnames
7059     \let\@number\@firstofone
7060     \def\@fnsymbol##1{fnsymbol\number##1}%
7061     \def\@arabic##1{\number##1}%
7062     \ifx\@alph\Hy@Test@alph
7063       \else
7064         \def\@alph{alph\number}%
7065       \fi
7066     \ifx\@Alph\Hy@Test@Alph
7067       \else
7068         \def\@Alph{Alph\number}%
7069       \fi
7070     \ifHy@naturalnames
7071       \let\textlatin\@firstofone
7072       \xdef\HyperGlobalCurrentHref{\csname the#1\endcsname}%
7073     \else
7074       \xdef\HyperGlobalCurrentHref{%
7075         \csname
7076           the%
7077           \expandafter\ifx\csname theH#1\endcsname\relax\else H\fi
7078           #1%
7079         \endcsname
7080       }%
7081     \fi
7082     \xdef\HyperGlobalCurrentHref{%
7083       \Hy@param.\expandafter\strip@prefix\meaning\HyperGlobalCurrentHref
7084     }%
7085   \else
7086     \Hy@GlobalStepCount\Hy@linkcounter
7087     \xdef\HyperGlobalCurrentHref{\Hy@param.\the\Hy@linkcounter}%
7088   \fi
7089 \endgroup
7090 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
7091 \ifHy@localanchorname
7092   \let\@currentHref\HyperLocalCurrentHref
7093 \else
7094   \global\let\@currentHref\HyperGlobalCurrentHref
7095 \fi
7096 \hyper@hook@dest@make
7097 }

```

\Hy@MakeCurrentHref

```

7098 \def\Hy@MakeCurrentHref#1{%
7099   \edef\HyperLocalCurrentHref{#1}%
7100   \@onelevel@sanitize\HyperLocalCurrentHref
7101   \global\let\HyperGlobalCurrentHref\HyperLocalCurrentHref
7102   \let\HyperLocalCurrentHref\HyperGlobalCurrentHref

```

```

7103 \ifHy@localanchorname
7104   \let\@currentHref\HyperLocalCurrentHref
7105 \else
7106   \global\let\@currentHref\HyperGlobalCurrentHref
7107 \fi
7108 }

```

`\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.

```

7109 \def\Hy@MakeCurrentHrefAuto#1{%
7110   \Hy@GlobalStepCount\Hy@linkcounter
7111   \Hy@MakeCurrentHref{#1.\the\Hy@linkcounter}%
7112   \hyper@hook@dest@make}

```

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

```

7113 \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.

```

7114 \def\hypergetref#1{\getrefbykeydefault{#1}{}{??}}
7115 \def\hypergetpageref#1{\getrefbykeydefault{#1}{page}{0}}

```

## 30 Package titlesec and titletoc support

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

Package titlesec support:

```

7116 \@ifpackageloaded{titlesec}{%
7117   \def\ttl@Hy@steplink#1{%
7118     \Hy@MakeCurrentHrefAuto{#1*}%
7119     \edef\ttl@Hy@saveanchor{%
7120       \noexpand\Hy@raisedlink{%
7121         \noexpand\hyper@anchorstart{\@currentHref}%
7122         \noexpand\hyper@anchorend
7123       \def\noexpand\ttl@Hy@SavedCurrentHref{\@currentHref}%
7124       \noexpand\ttl@Hy@PatchSaveWrite
7125     }%
7126   }%
7127 }%
7128 \def\ttl@Hy@PatchSaveWrite{%
7129   \begingroup
7130   \toks@\expandafter{\ttl@savewrite}%
7131   \edef\x{\endgroup
7132     \def\noexpand\ttl@savewrite{%
7133       \let\noexpand\@currentHref
7134       \noexpand\ttl@Hy@SavedCurrentHref
7135       \the\toks@
7136     }%

```

```

7137 }%
7138 \x
7139 }%
7140 \def\ttl@Hy@refstepcounter#1{%
7141 \let\ttl@b\Hy@raisedlink
7142 \def\Hy@raisedlink##1{%
7143 \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
7144 }%
7145 \refstepcounter{#1}%
7146 \let\Hy@raisedlink\ttl@b
7147 }%
7148 }{}

```

## 31 Package varioref support

Package nameref uses five arguments for the ref system. Fix provided by Felix Neubauer ([felix.neubauer@gmx.net](mailto:felix.neubauer@gmx.net)). This fix will no longer be needed with latex 2021-11-15.

```

7149 \AtBeginDocument{%
7150 \def\Hy@varioref@undefined{???}{??}{}}{}
7151 \@ifpackageloaded{varioref}{%
7152 \def\vref@pagenum#1#2{%
7153 \@ifundefined{r@#2}{%
7154 \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
7155 }{}%
7156 \edef#1{\getpagerefnumber{#2}}%
7157 }%
7158 }{}
7159 }

```

## 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

```

7160 \@ifpackageloaded{longtable}{%
7161 \begingroup
7162 \def\y{\LT@array}%
7163 \@ifundefined{scr@LT@array}{%
7164 \@ifundefined{adl@LT@array}{\def\y{\adl@LT@array}}%
7165 }{\def\y{\scr@LT@array}}%
7166 \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
7167 \expandafter\endgroup
7168 \expandafter\def\y[##1]##2{%
7169 \H@refstepcounter{#1}%
7170 \hyper@makecurrent{table}%
7171 \let\Hy@LT@currentHref\@currentHref
7172 #2\@sharp###4%
7173 }%

```



```

7174 }%
7175 \expandafter\expandafter\expandafter\x\y[{#1}]{#2}\@nil
Patch of \LT@start: add anchor before first line after \vskip\LTpre
7176 \begingroup
7177 \def\x#1\ifvoid\LT@foot#2\fi#3\@nil{%
7178 \endgroup
7179 \def\LT@start{%
7180 #1%
7181 \ifvoid\LT@foot#2\fi
7182 \let\@currentHref\Hy@LT@currentHref
7183 \Hy@raisedlink{%
7184 \hyper@anchorstart{\@currentHref}\hyper@anchorend
7185 }%
7186 #3%
7187 }%
7188 }%
7189 \expandafter\x\LT@start\@nil
7190 }{}

```

### 33 Equations

We want to make the whole equation a target anchor. Overload equation, temporarily reverting to original `\refstepcounter`. If, however, it is in AMS math, we do not do anything, as the tag mechanism is used there (see section 40). The exception is that we move the equation incrementation inside the math environment to avoid specials outside and a wrong vertical spacing of equation environments.

```

7191 \let\new@refstepcounter\refstepcounter
7192 \let\H@equation\equation
7193 \let\H@endequation\endequation
7194 \@ifpackageloaded{amsmath}{%
7195 \long\def\Hy@temp{%
7196 \incr@eqnum
7197 \mathdisplay@push
7198 \st@rredfalse \global\@eqnswtrue
7199 \mathdisplay{equation}%
7200 }%
7201 \ifx\Hy@temp\equation
7202 \expandafter\ifx\csname if@fleqn\expandafter\endcsname
7203 \csname iftrue\endcsname
7204 \else
7205 \long\def\equation{%
7206 \mathdisplay@push
7207 \st@rredfalse \global\@eqnswtrue
7208 \mathdisplay{equation}%
7209 \incr@eqnum
7210 }%
7211 \fi
7212 \fi
7213 }{}%
7214 \def\equation{%
7215 \let\refstepcounter\H@refstepcounter

```

```

7216 \H@equation
7217 \@ifundefined{theHequation}{%
7218 \make@stripped@name{\theequation}%
7219 \let\theHequation\newname
7220 }{}%
7221 \hyper@makecurrent{equation}%

```

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

```

7222 \mathopen{%
7223 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}}%
7224 }%
7225 \let\refstepcounter\new@refstepcounter
7226 }%
7227 \def\endequation{%
7228 \ifx\Hy@raisedlink\ltx@empty
7229 \hyper@anchorend
7230 \else
7231 \mathclose{\Hy@raisedlink{\hyper@anchorend}}}%
7232 \fi
7233 \H@endequation
7234 }%
7235 }

```

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.

```

7236 \newif\if@eqnstar
7237 \@eqnstarfalse
7238 \let\H@eqnarray\eqnarray
7239 \let\H@endeqnarray\endeqnarray
7240 \def\eqnarray{%
7241 \let\Hy@reserved@a\relax
7242 \def\@currentHref{}%
7243 \H@eqnarray
7244 \if@eqnstar
7245 \else
7246 \ifx\\\@currentHref\\%
7247 \else
7248 \@ifundefined{theHequation}{%
7249 \make@stripped@name{\theequation}%
7250 \let\theHequation\newname
7251 }{}%
7252 \hyper@makecurrent{equation}%
7253 \mathopen{%
7254 \Hy@raisedlink{%
7255 \hyper@anchorstart{\@currentHref}\hyper@anchorend
7256 }%
7257 }%
7258 \fi
7259 \fi
7260 }
7261 \def\endeqnarray{%

```

```

7262 \H@endeqnarray
7263 }

```

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.

```

7264 \@namedef{eqnarray*}{%
7265   \def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
7266 }
7267 \@namedef{endeqnarray*}{%
7268   \nonumber\endeqnarray\@eqnstarfalse
7269 }

```

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

```

7270 \ltx@ifundefined{subeqnarray}{}{%
7271   \let\H@subeqnarray\subeqnarray
7272   \let\H@endsubeqnarray\endsubeqnarray
7273   \def\subeqnarray{%
7274     \let\Hy@reserved@a\relax
7275     \H@subeqnarray
7276     \@ifundefined{theHequation}{%
7277       \make@stripped@name{\theequation}%
7278       \let\theHequation\newname
7279     }{}%
7280     \hyper@makecurrent{equation}%
7281     \hyper@anchorstart{\@currentHref}{\hyper@anchorend
7282   }%
7283   \def\endsubeqnarray{%
7284     \H@endsubeqnarray
7285   }%
7286   \providecommand\theHsubequation{\theHequation\alph{subequation}}%
7287 }

```

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

```

7288 \def\make@stripped@name#1{%
7289   \begingroup
7290   \escapechar\m@ne
7291   \global\let\newname\@empty
7292   \protected@edef\Hy@tempa{#1}%
7293   \edef\@tempb{%
7294     \noexpand\@tfor\noexpand\Hy@tempa:=%
7295     \expandafter\strip@prefix\meaning\Hy@tempa
7296   }%
7297   \@tempb\do{%
7298     \if{\Hy@tempa\else
7299     \if}\Hy@tempa\else
7300     \xdef\newname{\newname\Hy@tempa}%
7301     \fi
7302   }%
7303   \endgroup
7304 }

```

Support for amsmath's subequations:

```

7306 \begingroup\expandafter\expandafter\expandafter\endgroup
7307 \expandafter\ifx\csname subequations\endcsname\relax
7308 \else
7309   \let\HyOrg@subequations\subequations
7310   \def\subequations{%
7311     \stepcounter{equation}%
7312     \protected@edef\theHparentequation{%
7313       \@ifundefined{theHequation}\theequation\theHequation
7314     }%
7315     \addtocounter{equation}{-1}%
7316     \HyOrg@subequations
7317     \def\theHequation{\theHparentequation\alph{equation}}%
7318     \ignorespaces
7319   }%
7320 \fi

```

Support for package amsthm (Daniel Müllner): also cleveref.

```

7321 \Hy@AtBeginDocument{%
7322   \@ifpackageloaded{cleveref}{%
7323     \let\Hy@savedthm\@thm
7324     \def\@thm{\ifhmode\unskip\fi\Hy@savedthm}%
7325   }{%
7326     \@ifpackageloaded{amsthm}{%

```

Class amsbook uses a different definition of `\@thm`, where two lines are added (thanks to Dan Luecking for his analysis):

```

    \let\thm@indent\indent % indent
    \thm@headfont{\scshape}% heading font small caps

7327 \def\Hy@temp#1#2#3{%
7328   \ifhmode\unskip\unskip\par\fi
7329   \normalfont
7330   \trivlist
7331   \let\thmheadnl\relax
7332   \let\thm@swap\@gobble
7333   \let\thm@indent\indent % indent
7334   \thm@headfont{\scshape}% heading font small caps
7335   \thm@notefont{\fontseries\mddefault\upshape}%
7336   \thm@headpunct{.}% add period after heading
7337   \thm@headsep 5\p@ plus\p@ minus\p@\relax
7338   \thm@space@setup
7339   #1% style overrides
7340   \@topsep \thm@preskip % used by thm head
7341   \@topsepadd \thm@postskip % used by \@endparenv
7342   \def\@tempa{#2}\ifx\@empty\@tempa
7343     \def\@tempa{\@oparg{\@begintheorem{#3}{}}{}}%
7344   \else
7345     \refstepcounter{#2}%
7346     \def\@tempa{%
7347       \@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}{}}%
7348     }%
7349   \fi
7350   \@tempa
7351 }%

```

```

7352 \ifx\Hy@temp\@thm
7353 \def\@thm#1#2#3{%
7354 \ifhmode
7355 \unskip\unskip\par
7356 \fi
7357 \normalfont
7358 \trivlist
7359 \let\thmheadnl\relax
7360 \let\thm@swap\@gobble
7361 \let\thm@indent\indent % indent
7362 \thm@headfont{\scshape}% heading font small caps
7363 \thm@notefont{\fontseries\mddefault\upshape}%
7364 \thm@headpunct{.}% add period after heading
7365 \thm@headsep 5\p@ plus\p@ minus\p@\relax
7366 \thm@space@setup
7367 #1% style overrides
7368 \@topsep \thm@preskip % used by thm head
7369 \@topsepadd \thm@postskip % used by \@endparenv
7370 \def\dth@counter{#2}%
7371 \ifx\@empty\dth@counter
7372 \def\@tempa{%
7373 \@oparg{\@begintheorem{#3}{}}{}%
7374 }%
7375 \else
7376 \H@refstepcounter{#2}%
7377 \hyper@makecurrent{#2}%
7378 \let\Hy@dth@currentHref\@currentHref
7379 \def\@tempa{%
7380 \@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}{}%
7381 }%
7382 \fi
7383 \@tempa
7384 }%
7385 \else
7386 \def\@thm#1#2#3{%
7387 \ifhmode
7388 \unskip\unskip\par
7389 \fi
7390 \normalfont
7391 \trivlist
7392 \let\thmheadnl\relax
7393 \let\thm@swap\@gobble
7394 \thm@notefont{\fontseries\mddefault\upshape}%
7395 \thm@headpunct{.}% add period after heading
7396 \thm@headsep 5\p@ plus\p@ minus\p@\relax
7397 \thm@space@setup
7398 #1% style overrides
7399 \@topsep \thm@preskip % used by thm head
7400 \@topsepadd \thm@postskip % used by \@endparenv
7401 \def\dth@counter{#2}%
7402 \ifx\@empty\dth@counter
7403 \def\@tempa{%
7404 \@oparg{\@begintheorem{#3}{}}{}%
7405 }%

```

```

7406 \else
7407 \H@refstepcounter{#2}%
7408 \hyper@makecurrent{#2}%
7409 \let\Hy@dth@currentHref\@currentHref
7410 \def\@tempa{%
7411 \@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}{}%
7412 }%
7413 \fi
7414 \@tempa
7415 }%
7416 \fi
7417 \dth@everypar={%
7418 \@minipagefalse
7419 \global\@newlistfalse
7420 \@noparitemfalse
7421 \if@inlabel
7422 \global\@inlabelfalse
7423 \begingroup
7424 \setbox\z@\lastbox
7425 \ifvoid\z@
7426 \kern-\itemindent
7427 \fi
7428 \endgroup
7429 \ifx\@empty\dth@counter
7430 \else
7431 \Hy@raisedlink{%
7432 \hyper@anchorstart{%
7433 \ltx@ifundefined{Hy@dth@currentHref}%
7434 \@currentHref\Hy@dth@currentHref
7435 }\hyper@anchorend
7436 }%
7437 \fi
7438 \unhbox\@labels
7439 \fi
7440 \if@nobreak
7441 \@nobreakfalse \clubpenalty\@M
7442 \else
7443 \clubpenalty\@clubpenalty \everypar{}%
7444 \fi
7445 }%
7446 }%

```

non **amsthm** case, remove final space on line before a theorem for githib issue 11.

```

7447 {%
7448 \let\Hy@savethm\@thm
7449 \def\@thm{\ifhmode\unskip\fi\Hy@savethm}%
7450 }%
7451 }%
7452 }

```

## 34 Footnotes

The footnote mark is a hypertext link, and the text is a target. We separately number the footnotes sequentially through the text, separately from whatever labels the text assigns. Too hard to keep track of markers otherwise. If the raw forms `\footnotemark` and `\footnotetext` are used, force them to use un-hyper original.

```

7453 \ifHy@hyperfootnotes
7454   \newcounter{Hfootnote}%
7455   \let\H@@@footnotetext\@footnotetext
7456   \let\H@@@footnotemark\@footnotemark
7457   \def\@xfootnotenext[#1]{%
7458     \begingroup
7459       \csname c@\@mpfn\endcsname #1\relax
7460       \unrestored@protected@xdef\@thefnmark{\thempfn}%
7461     \endgroup
7462     \ifx\@footnotetext\@mpfootnotetext
7463       \expandafter\H@@@mpfootnotetext
7464     \else
7465       \expandafter\H@@@footnotetext
7466     \fi
7467   }%
7468   \def\@xfootnotemark[#1]{%
7469     \begingroup
7470       \c@footnote #1\relax
7471       \unrestored@protected@xdef\@thefnmark{\thefnmark}%
7472     \endgroup
7473     \H@@@footnotemark
7474   }%
7475   \let\H@@@mpfootnotetext\@mpfootnotetext
7476   \long\def\@mpfootnotetext#1{%
7477     \H@@@mpfootnotetext{%
7478       \ifHy@nesting
7479         \expandafter\ltx@firsttwo
7480       \else
7481         \expandafter\ltx@secondtwo
7482       \fi
7483     }%
7484     \expandafter\hyper@@@anchor\expandafter{%
7485       \Hy@footnote@currentHref
7486     }\ignorespaces #1}%
7487   }{%
7488     \Hy@raisedlink{%
7489       \expandafter\hyper@@@anchor\expandafter{%
7490         \Hy@footnote@currentHref
7491       }\relax}%
7492     }\ignorespaces #1%
7493   }%
7494   }%
7495 }%
7496 \long\def\@footnotetext#1{%
7497   \H@@@footnotetext{%
7498     \ifHy@nesting

```

```

7499     \expandafter\ltx@firstoftwo
7500     \else
7501     \expandafter\ltx@secondoftwo
7502     \fi
7503     {%
7504     \expandafter\hyper@@anchor\expandafter{%
7505     \Hy@footnote@currentHref
7506     }\ignorespaces #1}%
7507     }{%
7508     \Hy@raisedlink{%
7509     \expandafter\hyper@@anchor\expandafter{%
7510     \Hy@footnote@currentHref
7511     }\relax}%
7512     }%
7513     \let\@currentHref\Hy@footnote@currentHref
7514     \let\@currentlabelname\@empty
7515     \ignorespaces #1%
7516     }%
7517     }%
7518     }%

```

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.

```

7519     \def\@footnotemark{%
7520     \leavevmode
7521     \ifhmode\edef\x@sf{\the\spacefactor}\nobreak\fi
7522     \stepcounter{Hfootnote}%
7523     \global\let\Hy@saved@currentHref\@currentHref
7524     \hyper@makecurrent{Hfootnote}%
7525     \global\let\Hy@footnote@currentHref\@currentHref
7526     \global\let\@currentHref\Hy@saved@currentHref
7527     \hyper@linkstart{link}{\Hy@footnote@currentHref}%
7528     \@makefnmark
7529     \hyper@linkend
7530     \ifhmode\spacefactor\x@sf\fi
7531     \relax
7532     }%

```

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

```

7533     \ifpackageloaded{tabularx}{%
7534     \let\HyOrg@TX@endtabularx\TX@endtabularx
7535     \def\Hy@tabularx@hook{%
7536     \let\@footnotetext\H@@footnotetext
7537     \let\@footnotemark\H@@footnotemark
7538     \let\@mpfootnotetext\H@@mpfootnotetext
7539     }%
7540     \begingroup
7541     \toks@\expandafter{\TX@endtabularx}%
7542     \xdef\Hy@gtemp{%
7543     \noexpand\Hy@tabularx@hook

```



```

7544     \the\toks@
7545   }%
7546 \endgroup
7547 \let\TX@endtabularx\Hy@gtemp
7548 }{}%

```

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

```

7549 \@ifpackageloaded{longtable}{%
7550   \CheckCommand{\LT@p@ftntext}[1]{%
7551     \edef\@tempa{%
7552       \the\LT@p@ftn
7553       \noexpand\footnotetext[\the\c@footnote]%
7554     }%
7555     \global\LT@p@ftn\expandafter{\@tempa{#1}}%
7556   }%
7557   \long\def\LT@p@ftntext#1{%
7558     \edef\@tempa{%
7559       \the\LT@p@ftn
7560       \begingroup
7561         \noexpand\c@footnote=\the\c@footnote\relax
7562         \noexpand\protected@xdef\noexpand\@thefnmark{%
7563           \noexpand\thempfn
7564         }%
7565         \noexpand\Hy@LT@footnotetext{%
7566           \Hy@footnote@currentHref
7567         }%
7568       }%
7569       \global\LT@p@ftn\expandafter{%
7570         \@tempa{#1}%
7571       }%
7572     }%
7573   }%
7574   \long\def\Hy@LT@footnotetext#1#2{%
7575     \H@@@footnotetext{%
7576       \ifHy@nesting
7577         \hyper@@anchor{#1}{#2}%
7578       \else
7579         \Hy@raisedlink{%
7580           \hyper@@anchor{#1}{\relax}%
7581         }%
7582       \def\@currentHref{#1}%
7583       \let\@currentlabelname\@empty
7584       #2%
7585     }%
7586   }%
7587 }{}%
7588 }{}%

```

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

```

7589 \@ifpackageloaded{fancyvrb}{%
7590   \def\V@@@footnotetext{%
7591     \insert\footins\bgroup

```

```

7592 \csname reset@font\endcsname
7593 \footnotesize
7594 \interlinepenalty\interfootnotelinepenalty
7595 \splittopskip\footnotesep
7596 \splitmaxdepth\dp\strutbox
7597 \floatingpenalty \@MM
7598 \hsize\columnwidth
7599 \@parboxrestore
7600 \def\@currentcounter{footnote}%
7601 \protected@edef\@currentlabel{\csname p@footnote\endcsname\@thefn-
mark}%
7602 \@makefn-text{}%
7603 \rule{\z@}{\footnotesep}%
7604 \bgroup
7605 \aftergroup\V@@@footnotetext
7606 \Hy@raisedlink{%
7607 \expandafter\hyper@@anchor\expandafter{%
7608 \Hy@footnote@currentHref
7609 }\relax}%
7610 }%
7611 \let\@currentHref\Hy@footnote@currentHref
7612 \let\@currentlabelname\@empty
7613 \ignorespaces
7614 }%
7615 }{}%

```

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

```

7616 \def\Hy@temp#1{%
7617 \begingroup
7618 \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7619 \endgroup
7620 \@footnotemark
7621 }%
7622 \ifx\Hy@temp\footref
7623 \def\footref#1{%
7624 \begingroup
7625 \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7626 \endgroup
7627 \H@@@footnotemark
7628 }%
7629 \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.

```

7630 \let\HyOrg@maketitle\maketitle
7631 \def\maketitle{%
7632 \let\Hy@saved@footnotemark\@footnotemark
7633 \let\Hy@saved@footnotetext\@footnotetext
7634 \let\@footnotemark\H@@@footnotemark
7635 \let\@footnotetext\H@@@footnotetext
7636 \@ifnextchar[\Hy@maketitle@optarg{% ]
7637 \HyOrg@maketitle
7638 \Hy@maketitle@end

```

```

7639 }%
7640 }%
7641 \def\Hy@maketitle@optarg[#1]{%
7642   \HyOrg@maketitle[#{#1}]%
7643   \Hy@maketitle@end
7644 }%
7645 \def\Hy@maketitle@end{%
7646   \ifx\@footnotemark\H@@footnotemark
7647     \let\@footnotemark\Hy@saved@footnotemark
7648   \fi
7649   \ifx\@footnotetext\H@@footnotetext
7650     \let\@footnotetext\Hy@saved@footnotetext
7651   \fi
7652 }%

```

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

```

7653 \def\realfootnote{%
7654   \@ifnextchar[\@xfootnote{%
7655     \stepcounter{\@mpfn}%
7656     \protected@xdef\@thefnmark{\thempfn}%
7657     \H@@@footnotemark\H@@@footnotetext
7658   }%
7659 }%

7660 \fi
7661 \Hy@DisableOption{hyperfootnotes}

7662 \</package>
7663 \< *check>
7664 \checklatex
7665 \checkcommand\def\@xfootnotenext[#1]{%
7666   \begingroup
7667     \csname c@\@mpfn\endcsname #1\relax
7668     \unrestored@protected@xdef\@thefnmark{\thempfn}%
7669   \endgroup
7670   \@footnotetext
7671 }
7672 \checkcommand\def\@xfootnotemark[#1]{%
7673   \begingroup
7674     \c@footnote #1\relax
7675     \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7676   \endgroup
7677   \@footnotemark
7678 }
7679 \checkcommand\def\@footnotemark{%
7680   \leavevmode
7681   \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7682   \@makefnmark
7683   \ifhmode\spacefactor\@x@sf\fi
7684   \relax
7685 }
7686 \</check>
7687 \< *package>

```

## 35 Float captions

Make the float caption the hypertext anchor; curiously enough, we can't just copy the definition of `\@caption`. Its all to do with expansion. It screws up. Sigh.

```

7688 \def\caption{%
7689   \ifx\@cuptype\@undefined
7690     \@latex@error{\noexpand\caption outside float}\@ehd
7691     \expandafter\@gobble
7692   \else
7693     \H@refstepcounter\@cuptype
7694     \let\Hy@tempa\@caption
7695     \@ifundefined{float@caption}{%
7696       }{%
7697         \expandafter\ifx\csname @float@cc@\@cuptype\endcsname
7698           \float@caption
7699         \let\Hy@tempa\Hy@float@caption
7700       \fi
7701     }%
7702     \expandafter\@firstofone
7703   \fi
7704   {\@dblarg{\Hy@tempa\@cuptype}}}%
7705 }
7706 \long\def\@caption#1[#2]#3{%
7707   \expandafter\ifx\csname if@capstart\expandafter\endcsname
7708     \csname iftrue\endcsname
7709     \global\let\@currentHref\hc@currentHref
7710   \else
7711     \hyper@makecurrent{\@cuptype}%
7712   \fi
7713   \@ifundefined{NR@getttitle}{%
7714     \def\@currentlabelname{#2}%
7715   }{%
7716     \NR@getttitle{#2}%
7717   }%
7718   \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
7719     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7720   }%
7721   \begingroup
7722     \@parboxrestore
7723     \if@minipage
7724       \@setminipage
7725     \fi
7726     \normalsize
7727     \expandafter\ifx\csname if@capstart\expandafter\endcsname
7728       \csname iftrue\endcsname
7729     \global\@capstartfalse
7730     \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
7731   \else
7732     \@makecaption{\csname fnum@#1\endcsname}{%
7733       \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

7734     \ifHy@nesting
7735       \expandafter\hyper@@anchor\expandafter{\@currentHref}{#3}%

```

```

7736     \else
7737     \Hy@raisedlink{%
7738     \expandafter\hyper@@anchor\expandafter{%
7739     \@currentHref
7740     }{\relax}%
7741     }%
7742     #3%
7743     \fi
7744     }%
7745     \fi
7746     \par
7747 \endgroup
7748 }

```

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’.

```

7749 \let\Hy@float@caption\@caption
7750 \newcommand{\HyNew@float@makebox}[1]{%
7751 \HyOrg@float@makebox{%
7752 #1\relax
7753 \ifx\Hy@float@currentHref\@undefined
7754 \else
7755 \expandafter\hyper@@anchor\expandafter{%
7756 \Hy@float@currentHref
7757 }{\relax}%
7758 \global\let\Hy@float@currentHref\@undefined
7759 \fi
7760 }%
7761 }%
7762 \@ifpackageloaded{float}{%
7763 \def\Hy@float@caption{%
7764 \ifx\Hy@float@currentHref\@undefined
7765 \hyper@makecurrent{\@capttype}%
7766 \global\let\Hy@float@currentHref\@currentHref
7767 \else
7768 \let\@currentHref\Hy@float@currentHref
7769 \fi
7770 \float@caption
7771 }%
7772 \let\HyOrg@float@makebox\float@makebox
7773 \let\float@makebox\HyNew@float@makebox
7774 }{}

7775 \</package>
7776 \< *check>
7777 \checklatex[1999/06/01 - 2000/06/01]
7778 \checkcommand\def\caption{%
7779 \ifx\@capttype\@undefined
7780 \< latex@error{\noexpand\caption outside float}\@ehd
7781 \expandafter\< gobble
7782 \else
7783 \refstepcounter\@capttype

```

```

7784 \expandafter\@firstofone
7785 \fi
7786 {\@dblarg{\@caption\@capytype}}}%
7787 }
7788 \checkcommand\long\def\@caption#1[#2]#3{%
7789 \par
7790 \addcontentsline{\csname ext@#1\endcsname}{#1}{%
7791 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7792 }%
7793 \begingroup
7794 \@parboxrestore
7795 \ifminipage
7796 \@setminipage
7797 \fi
7798 \normalsize
7799 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
7800 \endgroup
7801 }
7802 \</check>
7803 \<package>

```

## 36 Bibliographic references

This is not very robust, since many styles redefine these things. The package used to redefine `\@citex` and the like; then we tried adding the `hyperref` call explicitly into the `.aux` file. Now we redefine `\bibtex`; this still breaks some citation packages so we have to work around them. But this remains extremely dangerous. Any or all of *achemso* and *drftcite* may break.

However, lets make an attempt to get *natbib* right, because thats 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.

```

7804 \def\hyper@natlinkstart#1{%
7805 \Hy@backout{#1}%
7806 \hyper@linkstart{cite}{cite.#1}%
7807 \def\hyper@nat@current{#1}%
7808 }
7809 \def\hyper@natlinkend{%
7810 \hyper@linkend
7811 }
7812 \def\hyper@natlinkbreak#1#2{%
7813 \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
7814 }
7815 \def\hyper@natanchorstart#1{%
7816 \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
7817 }
7818 \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.

```

7819 \ltx@ifundefined{NAT@parse}{%

```

```

7820 \providecommand*\@extra@binfo{}%
7821 \providecommand*\@extra@b@citeb{}%
7822 \def\bibcite#1#2{%
7823   \@newl@bel{b}{#1\@extra@binfo}{%
7824     \hyper@@link[cite]{#1\@extra@b@citeb}{#2}%
7825   }%
7826 }%
7827 \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.”.

```

7828 \let\Hy@bibcite\bibcite
7829 \begingroup
7830   \@ifundefined{bbl@cite@choice}{}{%
7831     \g@addto@macro\bbl@cite@choice{%
7832       \let\bibcite\Hy@bibcite
7833     }%
7834   }%
7835 \endgroup

```

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

```

7836 \providecommand*\@BIBLABEL{\@biblabel}%
7837 \def\@bibitem[#1]#2{%
7838   \@skiphyperrreftrue
7839   \H@item[%
7840     \ifx\Hy@raisedlink\@empty
7841       \hyper@anchorstart{cite.#2\@extra@b@citeb}%
7842       \@BIBLABEL{#1}%
7843       \hyper@anchorend
7844     \else
7845       \Hy@raisedlink{%
7846         \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
7847       }%
7848       \@BIBLABEL{#1}%
7849     \fi
7850     \hfill
7851   ]%
7852   \@skiphyperrreffalse
7853   \if@filesw
7854     \begingroup
7855       \let\protect\noexpand
7856       \immediate\write\@auxout{%
7857         \string\bibcite{#2}{#1}%
7858       }%
7859     \endgroup
7860   \fi
7861   \ignorespaces
7862 }%

```

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

```

7863 \def\@bibitem#1{%
7864   \@skiphyperrreftrue\H@item\@skiphyperrreffalse
7865   \Hy@raisedlink{%
7866     \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend

```

```

7867 }%
7868 \if@filesw
7869 \begingroup
7870 \let\protect\noexpand
7871 \immediate\write\@auxout{%
7872 \string\bibcite{#1}{\the\value{\@listctr}}}%
7873 }%
7874 \endgroup
7875 \fi
7876 \ignorespaces
7877 }%
7878 }{}

7879 </package>
7880 <*check>
7881 \checklatex
7882 \checkcommand\def\@bibitem[#1]#2{%
7883 \item[\@biblabel{#1}\hfill]%
7884 \if@filesw
7885 {%
7886 \let\protect\noexpand
7887 \immediate\write\@auxout{%
7888 \string\bibcite{#2}{#1}%
7889 }%
7890 }%
7891 \fi
7892 \ignorespaces
7893 }
7894 \checkcommand\def\@bibitem#1{%
7895 \item
7896 \if@filesw
7897 \immediate\write\@auxout{%
7898 \string\bibcite{#1}{\the\value{\@listctr}}}%
7899 }%
7900 \fi
7901 \ignorespaces
7902 }
7903 </check>
7904 <*package>

```

## 36.1 Package harvard

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

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

```

7905 \@ifpackageloaded{harvard}{%
7906 \Hy@AtBeginDocument{%
7907 \Hy@Info{*** compatibility with harvard **** }%
7908 \Hy@raiselinksfalse
7909 \def\harvardcite#1#2#3#4{%

```



```

7910 \global\@namedef{HAR@fn@#1}{\hyper@@link[cite]{#1}{#2}}%
7911 \global\@namedef{HAR@an@#1}{\hyper@@link[cite]{#1}{#3}}%
7912 \global\@namedef{HAR@yr@#1}{\hyper@@link[cite]{#1}{#4}}%
7913 \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
7914 }%
7915 \def\HAR@citetoaux#1{%
7916 \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
7917 \ifHy@backref
7918 \ifx\@empty\@currentlabel
7919 \else
7920 \@bsphack
7921 \if@filesw
7922 \protected@write\@auxout{}{%
7923 \string\@writefile{brf}{%
7924 \string\backcite{#1}{%
7925 {\thepage}{\@currentlabel}{\@currentHref}%
7926 }%
7927 }%
7928 }%
7929 \fi
7930 \@esphack
7931 \fi
7932 \fi
7933 }%
7934 \def\harvarditem{%
7935 \ifnextchar[{\@harvarditem}{\@harvarditem[\nulll]}%
7936 }%
7937 \def\@harvarditem[#1]#2#3#4#5\par{%
7938 \item[]%
7939 \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
7940 \if@filesw
7941 \begingroup
7942 \def\protect##1{\string ##1\space}%
7943 \ifthenelse{\equal{#1}{\nulll}}%
7944 {\def\next{{#4}{#2}{#2}{#3}}}%
7945 {\def\next{{#4}{#2}{#1}{#3}}}%
7946 \immediate\write\@auxout{\string\harvardcite\codeof\next}%
7947 \endgroup
7948 \fi
7949 \protect\hspace*{-\labelwidth}%
7950 \protect\hspace*{-\labelsep}%
7951 \ignorespaces
7952 #5%
7953 \ifHy@backref
7954 \newblock
7955 \backref{\csname br@#4\endcsname}%
7956 \fi
7957 \par
7958 }%

```

\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:

```

7959 \long\def\HAR@checkcitations#1#2#3#4{%

```

```

7960 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%
7961 \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
7962 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#3}}%
7963 \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
7964 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#4}}%
7965 \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
7966 \else
7967 \@tempswatrue
7968 \fi
7969 \else
7970 \@tempswatrue
7971 \fi
7972 \else
7973 \@tempswatrue
7974 \fi
7975 }%
7976 }%

7977 }{}

```

## 36.2 Package chicago

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

```

7978 \@ifpackageloaded{chicago}{%

```

`\citeN`

```

7979 \def\citeN{%
7980 \def\@citesep{-1000}%
7981 \def\@cite##1##2{##1}%
7982 \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
7983 \@citedata@opt
7984 }%

```

`\shortciteN`

```

7985 \def\shortciteN{%
7986 \def\@citesep{-1000}%
7987 \def\@cite##1##2{##1}%
7988 \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
7989 \@citedata@opt
7990 }%

```

`\@citedata@opt`

```

7991 \def\@citedata@opt{%
7992 \let\@cite@opt\@empty
7993 \@ifnextchar [{%
7994 \@tempswatrue
7995 \@citedatax@opt
7996 }{%
7997 \@tempswafalse
7998 \@citedatax[]%
7999 }%
8000 }%

```

\@citedatax@opt

```

8001 \def\@citedatax@opt[#1]{%
8002 \def\@cite@opt{, #1}%
8003 \@citedatax[{#1}]%
8004 }%

8005 }{}

```

## 37 Page numbers

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

This where we supply a destination for each page.

```

8006 \ltx@ifclassloaded{slides}{%
8007 \def\Hy@SlidesFormatOptionalPage#1{(#1)}%
8008 \def\Hy@PageAnchorSlidesPlain{%
8009 \advance\c@page\ltx@one
8010 \edef\Hy@TempPageAnchor{%
8011 \noexpand\hyper@@anchor{%
8012 page.\the\c@slide.\the\c@overlay.\the\c@note%
8013 \ifnum\c@page=\ltx@one
8014 \else
8015 .\the\c@page
8016 \fi
8017 }%
8018 }%
8019 \advance\c@page-\ltx@one
8020 }%
8021 \def\Hy@PageAnchorSlide{%
8022 \advance\c@page\ltx@one
8023 \ifnum\c@page>\ltx@one
8024 \ltx@ifundefined{theHpage}{%
8025 \protected@edef\Hy@TheSlideOptionalPage{%
8026 \Hy@SlidesFormatOptionalPage{\theHpage}%
8027 }%
8028 }{%
8029 \protected@edef\Hy@TheSlideOptionalPage{%
8030 \Hy@SlidesFormatOptionalPage{\theHpage}%
8031 }%
8032 }%
8033 \else
8034 \def\Hy@TheSlideOptionalPage{}%
8035 \fi
8036 \advance\c@page-\ltx@one
8037 \pdfstringdef\@the@H@page{%
8038 \csname
8039 the%
8040 \ltx@ifundefined{theH\Hy@SlidesPage}{H}%
8041 \Hy@SlidesPage

```

```

8042 \endcsname
8043 \Hy@TheSlideOptionalPage
8044 }%
8045 \ltx@gobblethree
8046 }%
8047 \def\Hy@SlidesPage{slide}%
8048 \g@addto@macro\slide{%
8049 \def\Hy@SlidesPage{slide}%
8050 }%
8051 \g@addto@macro\overlay{%
8052 \def\Hy@SlidesPage{overlay}%
8053 }%
8054 \g@addto@macro\note{%
8055 \def\Hy@SlidesPage{note}%
8056 }%
8057 }{%
8058 \def\Hy@PageAnchorSlidesPlain{}%
8059 \def\Hy@PageAnchorSlide{}%
8060 }
8061 \def\Hy@EveryPageAnchor{%
8062 \Hy@DistillerDestFix
8063 \ifHy@pageanchor
8064 \ifHy@hypertextnames
8065 \ifHy@plainpages
8066 \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
8067 \Hy@PageAnchorSlidesPlain
8068 \else
8069 \begingroup
8070 \let\@number\@firstofone
8071 \Hy@unicodedefalse
8072 \Hy@PageAnchorSlide
8073 \pdfstringdef\@the@H@page{\thepage}%
8074 \endgroup
8075 \EdefUnescapeString\@the@H@page{\@the@H@page}%
8076 \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
8077 \fi
8078 \else
8079 \Hy@GlobalStepCount\Hy@pagecounter
8080 \def\Hy@TempPageAnchor{%
8081 \hyper@@anchor{page.\the\Hy@pagecounter}%
8082 }%
8083 \fi
8084 \vbox to 0pt{%
8085 \kern\voffset
8086 \kern\topmargin
8087 \kern-1bp\relax
8088 \hbox to 0pt{%
8089 \kern\hoffset
8090 \kern\ifodd\value{page}%
8091 \oddsidemargin
8092 \else
8093 \evensidemargin
8094 \fi
8095 \kern-1bp\relax

```

```

8096     \Hy@TempPageAnchor\relax
8097     \hss
8098   }%
8099   \vss
8100 }%
8101 \fi
8102 }
8103 \g@addto@macro\Hy@EveryPageBoxHook{%
8104   \Hy@EveryPageAnchor
8105 }

```

## 38 Table of contents

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

```

8106 \providecommand\protected@file@percent{}
8107 \def\addcontentsline#1#2#3{% toc extension, type, tag
8108   \begingroup
8109     \let\label\@gobble
8110     \ifx\@currentHref\@empty
8111       \Hy@Warning{%
8112         No destination for bookmark of \string\addcontentsline,%
8113         \MessageBreak destination is added%
8114       }%
8115     \phantomsection
8116   \fi
8117   \expandafter\ifx\csname toplevel@#2\endcsname\relax
8118     \begingroup
8119       \def\Hy@tempa{#1}%
8120       \ifx\Hy@tempa\Hy@bookmarkstype
8121         \Hy@WarningNoLine{%
8122           bookmark level for unknown #2 defaults to 0%
8123         }%
8124       \else
8125         \Hy@Info{bookmark level for unknown #2 defaults to 0}%
8126       \fi
8127     \endgroup
8128     \expandafter\gdef\csname toplevel@#2\endcsname{0}%
8129   \fi
8130   \edef\Hy@toclevel{\csname toplevel@#2\endcsname}%
8131   \Hy@writebookmark{\csname the#2\endcsname}%
8132     {#3}%
8133     {\@currentHref}%
8134     {\Hy@toclevel}%
8135     {#1}%
8136   \ifHy@verbose
8137     \begingroup
8138       \def\Hy@tempa{#3}%
8139       \@onelevel@sanitize\Hy@tempa

```

```

8140 \let\temp@online\on@line
8141 \let\on@line\@empty
8142 \Hy@Info{%
8143   bookmark\temp@online:\MessageBreak
8144   thecounter {\csname the#2\endcsname}\MessageBreak
8145   text {\Hy@tempa}\MessageBreak
8146   reference {\@currentHref}\MessageBreak
8147   toplevel {\Hy@toclevel}\MessageBreak
8148   type {#1}%
8149 }%
8150 \endgroup
8151 \fi
8152 \addtocontents{#1}{%
8153 \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}\protected@file@per-
cent
8154 }%
8155 \endgroup
8156 }

```

\contentsline The page number might be empty. In this case the link for the page number is suppressed to avoid little link boxes.

```

8157 \def\contentsline#1#2#3#4{%
8158 \begingroup
8159 \Hy@safe@activestrue
8160 \edef\x{\endgroup
8161 \def\noexpand\Hy@tocdestname{#4}%
8162 }\x
8163 \ifx\Hy@tocdestname\ltx@empty
8164 \csname l@#1\endcsname{#2}{#3}%
8165 \else
8166 \ifcase\Hy@linktoc % none
8167 \csname l@#1\endcsname{#2}{#3}%
8168 \or % section
8169 \csname l@#1\endcsname{%
8170 \hyper@linkstart{link}{\Hy@tocdestname}{#2}\hyper@linkend
8171 }{#3}%
8172 \or % page
8173 \def\Hy@temp{#3}%
8174 \ifx\Hy@temp\ltx@empty
8175 \csname l@#1\endcsname{#2}{#3}%
8176 \else
8177 \csname l@#1\endcsname{{#2}}{%
8178 \hyper@linkstart{link}{\Hy@tocdestname}{#3}\hyper@linkend
8179 }%
8180 \fi
8181 \else % all
8182 \def\Hy@temp{#3}%
8183 \ifx\Hy@temp\ltx@empty
8184 \csname l@#1\endcsname{%
8185 \hyper@linkstart{link}{\Hy@tocdestname}{#2}\hyper@linkend
8186 }{}%
8187 \else
8188 \csname l@#1\endcsname{%
8189 \hyper@linkstart{link}{\Hy@tocdestname}{#2}\hyper@linkend

```

```

8190     }{%
8191       \hyper@linkstart{link}{\Hy@tocdestname}{#3}\hyper@linkend
8192     }%
8193   \fi
8194 \fi
8195 \fi
8196 }

8197 \</package>
8198 \<check>
8199 \checklatex
8200 \checkcommand\def\addcontentsline#1#2#3{%
8201   \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}}%
8202 }
8203 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
8204 \</check>
8205 \<package>

```

## 39 New counters

The whole theorem business makes up new counters on the fly; we are going to intercept this. Sigh. Do it at the level where new counters are defined.

```

8206 \let\H@definecounter\@definecounter
8207 \def\@definecounter#1{%
8208   \H@definecounter{#1}%
8209   \expandafter\gdef\csname theH#1\endcsname{\arabic{#1}}%
8210 }

```

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.

```

8211 \let\H@newctr\@newctr
8212 \def\@newctr#1[#2]{%
8213   \H@newctr#1[{#2}]%
8214   \expandafter\gdef\csname theH#1\endcsname{%
8215     \csname the\@ifundefined{theH#2}{H}{H}#2\endcsname.\arabic{#1}%
8216   }%
8217 }

```

## 40 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.

```

8218 \@ifpackageloaded{amsmath}{%
8219   \def\Hy@make@anchor{%
8220     \Hy@MakeCurrentHrefAuto{AMS}%
8221     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}}%
8222 }%
8223 \def\Hy@make@df@tag@@#1{%

```

```

8224 \gdef\df@tag{%
8225 \maketag@@@{\Hy@make@anchor#1}%
8226 \def\@currentlabel{#1}%
8227 }%
8228 }%
8229 \def\Hy@make@df@tag@@@#1{%
8230 \gdef\df@tag{%
8231 \tagform@{\Hy@make@anchor#1}%
8232 \toks@{\exp{\p@equation{#1}}}%
8233 \edef\@currentlabel{\the\toks@}%
8234 }%
8235 }%
8236 \let\HyOrg@make@df@tag@@\make@df@tag@@
8237 \let\HyOrg@make@df@tag@@@\make@df@tag@@@
8238 \let\make@df@tag@@\Hy@make@df@tag@@
8239 \let\make@df@tag@@@\Hy@make@df@tag@@@
8240 }{}

```

Only play with `\seteqlebal` if we are using pdftex. Other drivers cause problems; requested by Michael Downes (AMS).

```

8241 \ifpackagewith{hyperref}{pdfTeX}{%
8242 \let\H@seteqlabel\@seteqlabel
8243 \def\@seteqlabel#1{%
8244 \H@seteqlabel{#1}%
8245 \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
8246 \Hy@raisedlink{%
8247 \hyper@anchorstart{\@currentHref}\hyper@anchorend
8248 }%
8249 }%
8250 }{}

```

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

```

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

```

#### 40.1 `\@addtoreset` and `\numberwithin` patches

`\@addtoreset` puts a counter to the reset list of another counter. After a reset the counter starts again with perhaps already used values. Therefore the `hyperref` version of the counter print command `\theHcounter` is redefined in order to add the parent counter.

```

8251 \let\HyOrg@addtoreset\@addtoreset
8252 \def\@addtoreset#1#2{%
8253 \HyOrg@addtoreset{#1}{#2}%
8254 \expandafter\xdef\csname theH#1\endcsname{%
8255 \expandafter\noexpand
8256 \csname the\@ifundefined{theH#2}{}H#2\endcsname
8257 .\noexpand\the\noexpand\value{#1}%
8258 }%

```



8259 }

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

```

8260 \</package>
8261 \*check>
8262 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
8263 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
8264   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
8265     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
8266       \@addtoreset{#2}{#3}%
8267       \@xp\xdef\csname the#2\endcsname{%
8268         \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8269       }%
8270     }%
8271   }%
8272 }%
8273 \</check>
8274 \*package>
8275 \@ifpackageloaded{amsmath}{%
8276   \@ifpackagelater{amsmath}{1999/12/14}{%
8277     \renewcommand*\numberwithin[3][\arabic]{%
8278       \@ifundefined{c@#2}{\@nocounterr{#2}}{%
8279         \@ifundefined{c@#3}{\@nocnterr{#3}}{%
8280           \HyOrg@addtoreset{#2}{#3}%
8281           \@xp\xdef\csname the#2\endcsname{%
8282             \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8283           }%
8284           \@xp\xdef\csname theH#2\endcsname{%
8285             \@xp\@nx
8286             \csname the\@ifundefined{theH#3}{}H#3\endcsname
8287             .\@nx#1{#2}%
8288           }%
8289         }%
8290       }%
8291     }%
8292   }%
8293   \Hy@WarningNoLine{%
8294     \string\numberwithin\space of package `amsmath' %
8295     only fixed\MessageBreak
8296     for version 2000/06/06 v2.12 or newer%
8297   }%
8298 }%
8299 }{}

```

## 41 Included figures

Simply intercept the low level graphics package macro.

```

8300 \ifHy@hyperfigures
8301   \let\Hy@Gin@setfile\Gin@setfile
8302   \def\Gin@setfile#1#2#3{%
8303     \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
8304   }%

```

```

8305 \fi
8306 \Hy@DisableOption{hyperfigures}

```

## 42 hyperindex entries

Internal command names are prefixed with `\HyInd@`.

Hyper-indexing works crudely, by forcing code onto the end of the index entry with the `|` feature; this puts a hyperlink around the printed page numbers. It will not proceed if the author has already used the `|` specifier for something like boldening entries. That would make `Makeindex` fail (cannot have two `|` specifiers). The solution is for the author to use generic coding, and put in the requisite `\hyperpage` in his/her own macros along with the boldness.

This section is poor stuff; it's open to all sorts of abuse. Sensible large projects will design their own indexing macros any bypass this.

```

8307 \ifHy@hyperindex
8308   \def\HyInd@ParenLeft{({}%
8309   \def\HyInd@ParenRight{)}}%
8310   \def\hyperindexformat#1#2{%
8311     \let\HyOrg@hyperpage\hyperpage
8312     \let\hyperpage\@firstofone
8313     #1{\HyOrg@hyperpage{#2}}}%
8314   \let\hyperpage\HyOrg@hyperpage
8315 }%
8316 \Hy@nextfalse
8317 \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
8318 \@ifpackageloaded{index}{\Hy@nexttrue}{}%
8319 \@ifpackageloaded{amsmidx}{\Hy@nexttrue}{}%
8320 \begingroup
8321   \lccode`\|=\expandafter\HyInd@EncapChar\relax
8322   \lccode`\/=``\relax
8323 \lowercase{\endgroup
8324   \ifHy@next
8325     \let\HyInd@org@wrindex\@wrindex
8326     \def\@wrindex#1#2{\HyInd@@wrindex{#1}#2||}%
8327     \def\HyInd@@wrindex#1#2|#3|#4\{%
8328       \ifx\|#3\%
8329         \HyInd@org@wrindex{#1}{#2|hyperpage}%
8330       \else
8331         \HyInd@@@wrindex{#1}{#2}#3\%
8332       \fi
8333     }%
8334     \def\HyInd@@@wrindex#1#2#3#4\{%
8335       \def\Hy@temp@A{#3}%
8336       \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8337         \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8338       \relax
8339       \HyInd@org@wrindex{#1}{%
8340         #2|hyperindexformat{/#3#4}%
8341       }%
8342     \else
8343       \ifx\|#4\%
8344         \ifx\Hy@temp@A\HyInd@ParenRight

```

```

8345         \HyInd@org@wrindex{#1}{#2|#3}%
8346     \else
8347         \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
8348     \fi
8349 \else
8350     \HyInd@org@wrindex{#1}{%
8351         #2|#3hyperindexformat{/#4}%
8352     }%
8353 \fi
8354 \fi
8355 }%
8356 \else
8357     \def\@wrindex#1{\@wrindex#1||\}%
8358     \def\@wrindex#1|#2|#3\{\%
8359     \if@filesw
8360         \ifx\|#2\%
8361             \protected@write\@indexfile{\%
8362                 \string\indexentry{#1|hyperpage}{\thepage}%
8363             }%
8364         \else
8365             \HyInd@@@wrindex{#1}#2\%
8366         \fi
8367     \fi
8368     \endgroup
8369     \@esphack
8370 }%
8371 \def\HyInd@@@wrindex#1#2#3\{\%
8372     \def\Hy@temp@A{#2}%
8373     \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8374         \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8375         \relax
8376     \protected@write\@indexfile{\%
8377         \string\indexentry{%
8378             #1|hyperindexformat{/#2#3}%
8379         }\thepage}%
8380     }%
8381 \else
8382     \ifx\|#3\%
8383         \ifx\Hy@temp@A\HyInd@ParenRight
8384             \HyInd@DefKey{#1}%
8385             \ltx@ifundefined{HyInd@(\HyInd@key)}{\%
8386                 \let\Hy@temp\ltx@empty
8387             }{%
8388                 \expandafter\let\expandafter\Hy@temp
8389                 \csname HyInd@(\HyInd@key)\endcsname
8390             }%
8391             \protected@write\@indexfile{\%
8392                 \string\indexentry{#1|#2\Hy@temp}{\thepage}%
8393             }%
8394         \else
8395             \protected@write\@indexfile{\%
8396                 \string\indexentry{#1|#2hyperpage}{\thepage}%
8397             }%
8398             \HyInd@DefKey{#1}%

```

```

8399         \expandafter
8400         \gdef\csname HyInd@(\HyInd@key)\endcsname{%
8401             hyperpage%
8402         }%
8403     \fi
8404 \else
8405     \protected@write\@indexfile{}\{
8406         \string\indexentry{
8407             #1|#2hyperindexformat{/#3}%
8408         }\thepage}%
8409     }%
8410     \ifx\Hy@temp@A\HyInd@ParenLeft
8411         \HyInd@DefKey{#1}%
8412     \expandafter
8413     \gdef\csname HyInd@(\HyInd@key)\endcsname{%
8414         hyperindexformat{/#3}%
8415     }%
8416 \fi
8417 \fi
8418 \fi
8419 }%
8420 \def\HyInd@DefKey#1{%
8421     \begingroup
8422     \let\protect\@unexpandable@protect
8423     \edef\Hy@temp{#1}%
8424     \ltx@onelevel@sanitize\Hy@temp
8425     \global\let\HyInd@key\Hy@temp
8426 \endgroup
8427 }%
8428 \fi
8429 }%
8430 \fi
8431 \Hy@DisableOption{hyperindex}
8432 \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.

```

8433 \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.

```

8434 \def\hyperpage#1{%
8435     \HyInd@hyperpage#1\nohyperpage{}\@nil
8436 }
8437 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{%
8438     \HyInd@@hyperpage{#1}%
8439     #2%
8440     \def\Hy@temp{#3}%
8441     \ifx\Hy@temp\@empty
8442     \else
8443         \ltx@ReturnAfterFi{
8444             \HyInd@hyperpage#3\@nil
8445         }%
8446     \fi

```

```

8447 }
8448 \def\HyInd@@hyperpage#1{\@hyperpage#1---\}
8449 \def\@hyperpage#1--#2--#3\{\%
8450 \ifx\#2\%
8451 \commahyperpage{#1}%
8452 \else
8453 \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
8454 \fi
8455 }
8456 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
8457 \def\@commahyperpage#1, #2,#3\{\%
8458 \ifx\#2\%
8459 \HyInd@pagelink{#1}%
8460 \else
8461 \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
8462 \fi
8463 }

```

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

```

8464 \def\HyInd@pagelink#1{\%
8465 \begingroup
8466 \toks@={}%
8467 \HyInd@removespaces#1 \@nil
8468 \endgroup
8469 }
8470 \def\HyInd@removespaces#1 #2\@nil{\%
8471 \toks@=\expandafter{\the\toks@#1}%
8472 \ifx\#2\%
8473 \edef\x{\the\toks@}%
8474 \ifx\x\@empty
8475 \else
8476 \hyperlink{page.\the\toks@}{\the\toks@}%
8477 \fi
8478 \else
8479 \ltx@ReturnAfterFi{%
8480 \HyInd@removespaces#2\@nil
8481 }%
8482 \fi
8483 }

```

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.)

```

8484 \ifHy@texht
8485 \expandafter\endinput
8486 \fi
8487 \let\real@setref\@setref
8488 \def\@setref#1#2#3{\% csize, extract group, refname
8489 \ifx#1\relax
8490 \protect\G@refundefinedtrue
8491 \nfss@text{\reset@font\bfseries ??}%
8492 \@latex@warning{\%
8493 Reference `#3' on page \thepage \space undefined%
8494 }%

```

```

8495 \else
8496   \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
8497 \fi
8498 }

```

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

```

8499 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
8500   \begingroup
8501     \toks0={\hyper@@link{#5}{#4}}%
8502     \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
8503     \edef\x{\endgroup
8504       \the\toks0 {\the\toks1 }%
8505     }%
8506   \x
8507 }

8508 \def\@pagesetref#1#2#3{% csname, extract macro, ref
8509   \ifx#1\relax
8510     \protect\G@refundefinedtrue
8511     \nfss@text{\reset@font\bfseries ??}%
8512     \@latex@warning{%
8513       Reference `#3' on page \thepage \space undefined%
8514     }%
8515   \else
8516     \protect\hyper@@link
8517     {\expandafter\@fifthoffive#1}%
8518     {page.\expandafter\@secondoffive#1}%
8519     {\expandafter\@secondoffive#1}%
8520   \fi
8521 }

8522 \</package>
8523 \<check>
8524 \checklatex
8525 \checkcommand\def\@setref#1#2#3{%
8526   \ifx#1\relax
8527     \protect\G@refundefinedtrue
8528     \nfss@text{\reset@font\bfseries ??}%
8529     \@latex@warning{%
8530       Reference `#3' on page \thepage\space undefined%
8531     }%
8532   \else
8533     \expandafter#2#1\null
8534   \fi
8535 }
8536 \</check>
8537 \<package>

```

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

```

8538 \def\HyRef@StarSetRef#1{%
8539   \begingroup
8540   \Hy@safe@activetrue
8541   \let\protect\@unexpandable@protect
8542   \edef\x{#1}%

```

```

8543 \@onelevel@sanitize\x
8544 \edef\x{\endgroup
8545 \noexpand\HyRef@@StarSetRef
8546 \expandafter\noexpand\csname r@\x\endcsname{\x}%
8547 }%
8548 \x
8549 }
8550 \def\HyRef@@StarSetRef#1#2#3{%
8551 \ifx#1\@undefined
8552 \let#1\relax
8553 \fi
8554 \real@setref#1#3{#2}%
8555 }
8556 \def\@refstar#1{%
8557 \HyRef@StarSetRef{#1}\@firstoffive
8558 }
8559 \def\@pagerefstar#1{%
8560 \HyRef@StarSetRef{#1}\@secondoffive
8561 }
8562 \def\@namerefstar#1{%
8563 \HyRef@StarSetRef{#1}\@thirdoffive
8564 }
8565
8566 \Hy@AtBeginDocument{%
8567 \@ifpackageloaded{varioref}{%
8568 \def\@Refstar#1{%
8569 \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
8570 }%
8571 \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
8572 \MakeUppercase#1%
8573 }%
8574 \DeclareRobustCommand*\Ref*{%
8575 \@ifstar\@Refstar\HyRef@Ref
8576 }%
8577 \def\HyRef@Ref#1{%
8578 \hyperref[{#1}]{\Ref*{#1}}%
8579 }%

```

Test if we are running new 2019 varioref or old one:

```

8580 %Fmi
8581 \ifdefined\vp@gerefstar
8582 \renewcommand\Vref@star[2][]{%
8583 \begingroup
8584 \let\T@pageref\@pagerefstar
8585 \Ref*{#2}
8586 \vpageref[#1]{#2}%
8587 \endgroup
8588 }%
8589 \renewcommand\Vr@f[2][]{%
8590 \begingroup
8591 \let\T@pageref\@pagerefstar
8592 \hyperref[{#2}]{%
8593 \Ref*{#2}
8594 \vpageref[#1]{#2}%
8595 }%

```

```

8596 \endgroup
8597 }%
8598 \renewcommand\vr@f[2][]{%
8599 \begingroup
8600 \let\T@pageref\@pagerefstar
8601 \hyperref[#2]{%
8602 \ref*{#2}
8603 \vpageref[#1]{#2}%
8604 }%
8605 \endgroup
8606 }%
8607 \renewcommand\vref@star[2][]{%
8608 \begingroup
8609 \let\T@pageref\@pagerefstar
8610 \ref*{#2}
8611 \vpageref[#1]{#2}%
8612 \endgroup
8613 }%
old varioref:
8614 \else
8615 \def\Vr@f#1{%
8616 \leavevmode\unskip\vref@space
8617 \hyperref[#1]{%
8618 \Ref*{#1}%
8619 \let\vref@space\nobreakspace
8620 \@vpageref[\unskip]{#1}%
8621 }%
8622 }%
8623 \def\vr@f#1{%
8624 \leavevmode\unskip\vref@space
8625 \begingroup
8626 \let\T@pageref\@pagerefstar
8627 \hyperref[#1]{%
8628 \ref*{#1}%
8629 \vpageref[\unskip]{#1}%
8630 }%
8631 \endgroup
8632 }%
8633 \fi
8634 %FMi -end mod
8635 }{}%
8636 }
8637
8638 \DeclareRobustCommand*\autopageref{%
8639 \ifstar{%
8640 \HyRef@autopagerefname\pageref*%
8641 }\HyRef@autopageref
8642 }
8643 \def\HyRef@autopageref#1{%
8644 \hyperref[#1]{\HyRef@autopagerefname\pageref*{#1}}%
8645 }
8646 \def\HyRef@autopagerefname{%
8647 \ltx@ifundefined{pageautorefname}{%
8648 \ltx@ifundefined{pagename}{%

```



```

8649 \Hy@Warning{No autoref name for `page'}%
8650 }{%
8651 \pagename\nobreakspace
8652 }%
8653 }{%
8654 \pageautorefname\nobreakspace
8655 }%
8656 }

```

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

```

8657 \DeclareRobustCommand*{\autoref}{%
8658 \leavevmode
8659 \@ifstar{\HyRef@autoref@gobbletwo}{\HyRef@autoref\hyper@@link}%
8660 }
8661 \def\HyRef@autoref#1#2{%
8662 \begingroup
8663 \Hy@safe@activestrue
8664 \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
8665 \endgroup
8666 }
8667 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
8668 \HyRef@ShowKeysRef{#2}%
8669 \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
8670 \edef\HyRef@thisref{%
8671 \expandafter\@fourthoffive#1\@empty\@empty\@empty
8672 }%
8673 \expandafter\HyRef@testreftype\HyRef@thisref.\.%
8674 \Hy@safe@activesfalse
8675 #3{%
8676 \expandafter\@fifthoffive#1\@empty\@empty\@empty
8677 }{%
8678 \expandafter\@fourthoffive#1\@empty\@empty\@empty
8679 }{%
8680 \HyRef@currentHtag
8681 \expandafter\@firstoffive#1\@empty\@empty\@empty
8682 \null
8683 }%
8684 \else
8685 \protect\G@refundefinedtrue
8686 \nfss@text{\reset@font\bfseries ??}%
8687 \@latex@warning{%
8688 Reference `#2' on page \thepage\space undefined%
8689 }%
8690 \fi
8691 }
8692 \def\HyRef@testreftype#1.#2\{\%
8693 \ltx@ifundefined{#1autorefname}{%
8694 \ltx@ifundefined{#1name}{%
8695 \HyRef@StripStar#1\*\@nil{#1}%
8696 \ltx@ifundefined{\HyRef@name autorefname}{%
8697 \ltx@ifundefined{\HyRef@name name}{%
8698 \def\HyRef@currentHtag{}%
8699 \Hy@Warning{No autoref name for `#1'}%

```

```

8700     }{%
8701         \edef\HyRef@currentHtag{%
8702             \expandafter\noexpand\csname\HyRef@name name\endcsname
8703             \noexpand~%
8704         }%
8705     }%
8706     }{%
8707         \edef\HyRef@currentHtag{%
8708             \expandafter\noexpand
8709             \csname\HyRef@name autorefname\endcsname
8710             \noexpand~%
8711         }%
8712     }%
8713     }{%
8714         \edef\HyRef@currentHtag{%
8715             \expandafter\noexpand\csname#1name\endcsname
8716             \noexpand~%
8717         }%
8718     }%
8719     }{%
8720         \edef\HyRef@currentHtag{%
8721             \expandafter\noexpand\csname#1autorefname\endcsname
8722             \noexpand~%
8723         }%
8724     }%
8725 }
8726 \def\HyRef@StripStar#1*\#2\@nil#3{%
8727 \def\HyRef@name{#2}%
8728 \ifx\HyRef@name\HyRef@CaseStar
8729 \def\HyRef@name{#1}%
8730 \else
8731 \def\HyRef@name{#3}%
8732 \fi
8733 }
8734 \def\HyRef@CaseStar{*\\}
8735 \def\HyRef@currentHtag{}

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

8736 \let\HyRef@ShowKeysRef\@gobble
8737 \def\HyRef@ShowKeysInit{%
8738 \begingroup\expandafter\expandafter\expandafter\endgroup
8739 \expandafter\ifx\csname SK@@label\endcsname\relax
8740 \else
8741 \ifx\SK@ref\@empty
8742 \else
8743 \def\HyRef@ShowKeysRef{%
8744 \SK@\SK@@ref
8745 }%
8746 \fi
8747 \fi
8748 }
8749 \@ifpackageloaded{showkeys}{%
8750 \HyRef@ShowKeysInit

```

```

8751 }{%
8752   \Hy@AtBeginDocument{%
8753     \@ifpackageloaded{showkeys}{%
8754       \HyRef@ShowKeysInit
8755     }{}%
8756   }%
8757 }

Defaults for the names that \autoref uses.

8758 \providecommand*\AMSautorefname{\equationautorefname}
8759 \providecommand*\Hfootnoteautorefname{\footnoteautorefname}
8760 \providecommand*\Itemautorefname{\itemautorefname}
8761 \providecommand*\itemautorefname{item}
8762 \providecommand*\equationautorefname{Equation}
8763 \providecommand*\footnoteautorefname{footnote}
8764 \providecommand*\itemautorefname{item}
8765 \providecommand*\figureautorefname{Figure}
8766 \providecommand*\tableautorefname{Table}
8767 \providecommand*\partautorefname{Part}
8768 \providecommand*\appendixautorefname{Appendix}
8769 \providecommand*\chapterautorefname{chapter}
8770 \providecommand*\sectionautorefname{section}
8771 \providecommand*\subsectionautorefname{subsection}
8772 \providecommand*\subsubsectionautorefname{subsubsection}
8773 \providecommand*\paragraphautorefname{paragraph}
8774 \providecommand*\subparagraphautorefname{subparagraph}
8775 \providecommand*\FancyVerbLineautorefname{line}
8776 \providecommand*\theoremautorefname{Theorem}
8777 \providecommand*\pageautorefname{page}
8778 </package>

```

## 43 Configuration files

### 43.1 PS/PDF strings

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

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

```

8779 <*pdfTEX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>
8780 \begingroup\expandafter\expandafter\expandafter\endgroup
8781 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
8782   \begingroup
8783     \catcode`\|=0 %
8784     \@makeother\|%
8785     |@firstofone{|endgroup
8786     |def|Hy@pstringdef#1#2{%
8787       |begingroup
8788       |edef~{|string~}%

```

```

8789     |xdef|Hy@gtemp{#2}%
8790 |endgroup
8791 |let#1|Hy@gtemp
8792 |@onelevel@sanitize#1%
8793 |edef#1{|expandafter|Hy@ExchangeBackslash#1|@nil}%
8794 |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1|@nil}%
8795 |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1|@nil}%
8796 }%
8797 |def|Hy@ExchangeBackslash#1\#2|@nil{%
8798   #1%
8799   |ifx|\#2|\%%
8800   |else
8801     \\\%
8802     |ltx@ReturnAfterFi{%
8803       |Hy@ExchangeBackslash#2|@nil
8804     }%
8805   |fi
8806 }%
8807 }%
8808 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
8809   #1%
8810   \ifx\#2\%%
8811   \else
8812     \@backslashchar(%
8813     \ltx@ReturnAfterFi{%
8814       \Hy@ExchangeLeftParenthesis#2\@nil
8815     }%
8816   \fi
8817 }%
8818 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
8819   #1%
8820   \ifx\#2\%%
8821   \else
8822     \@backslashchar)%
8823     \ltx@ReturnAfterFi{%
8824       \Hy@ExchangeRightParenthesis#2\@nil
8825     }%
8826   \fi
8827 }%
8828 \else
8829 \def\Hy@pstringdef#1#2{%
8830   \begingroup
8831   \edef~{\string~}%
8832   \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
8833   \endgroup
8834   \let#1\Hy@gtemp
8835 }%
8836 \fi
8837 </pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>

```

## 43.2 pdfTeX

```

8838 <*pdfTeX>
8839 \providecommand*\XR@ext}{pdf}

```

```

8840 \Hy@setbreaklinks{true}
8841 \def\HyPat@ObjRef{%
8842   [0-9]*[1-9][0-9]* 0 R%
8843 }

```

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

```

8844 \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
8845 \def\Hy@pdfminorversion{\pdfminorversion}%
8846 \ifHy@ocgcolorlinks
8847   \ifnum\Hy@pdfmajorminor@version<105 %
8848     \kvsetkeys{Hyp}{pdfversion=1.5}%
8849   \fi
8850 \fi
8851 \ifHy@setpdfversion
8852   \ifnum\Hy@pdf@majorminor@version<105 %
8853     \ltx@ifundefined{pdfobjcompresslevel}{%
8854       {%
8855         \ifHy@verbose
8856           \Hy@InfoNoLine{%
8857             PDF object streams are disabled, because they are%
8858             \MessageBreak
8859             not supported in requested PDF version %
8860             \Hy@pdf@majorversion.\Hy@pdf@minorversion
8861           }%
8862         \fi
8863         \pdfobjcompresslevel=\ltx@zero
8864       }%
8865     \fi
8866     \ifnum\Hy@pdfmajorminor@version=\Hy@pdf@majorminor@version\relax
8867     \else
8868       \let\Hy@temp\ltx@empty
8869       \def\Hy@temp@A#1#2{%
8870         \ifnum#1>\ltx@zero
8871           \edef\Hy@temp{%
8872             \Hy@temp
8873             \space\space
8874             \the#1\space #2%
8875             \ifnum#1=\ltx@one\else s\fi
8876             \MessageBreak
8877           }%
8878         \fi
8879       }%
8880       \Hy@temp@A\pdflastobj{PDF object}%
8881       \Hy@temp@A\pdflastxform{formXObject}%
8882       \Hy@temp@A\pdflastximage{imageXObject}%
8883       \Hy@temp@A\pdflastannot{annotation}%
8884       \ltx@ifundefined{pdflastlink}{%
8885         {%

```

```

8886 \Hy@temp@A\pdfastlink{link}%
8887 }%
8888 \ifx\Hy@temp\ltx@empty
8889 \Hy@pdfmajorversion=\Hy@pdf@majorversion\relax
8890 \Hy@pdfminorversion=\Hy@pdf@minorversion\relax
8891 \else
8892 \let\Hy@temp@A\ltx@empty
8893 \ifnum\Hy@pdf@majorminor@version=104 %
8894 \IfFileExists{pdf14.sty}{%
8895 \def\Hy@temp@A{%
8896 \MessageBreak
8897 Or \string\RequirePackage{pdf14} can be used%
8898 \MessageBreak
8899 before \string\documentclass\space as shortcut%
8900 }%
8901 }{}%
8902 \fi
8903 \Hy@WarningNoLine{%
8904 The PDF version number could not be set,\MessageBreak
8905 because some PDF objects are already written:%
8906 \MessageBreak
8907 \Hy@temp
8908 The version should be set as early as possible:%
8909 \MessageBreak
8910 \space\space
8911 \expandafter\string\Hy@pdfmajorversion=\Hy@pdf@majorversion, %
8912 \expandafter\string\Hy@pdfminorversion=\Hy@pdf@minorversion
8913 \string\relax
8914 \ifnum\Hy@pdf@majorminor@version<105 %
8915 \ltx@ifundefined{pdfobjcompresslevel}{%
8916 }{%
8917 \MessageBreak
8918 \space\space
8919 \string\pdfobjcompresslevel=0\string\relax
8920 }%
8921 \fi
8922 \Hy@temp@A
8923 }%
8924 \fi
8925 \fi
8926 \PackageInfo{hyperref}{%
8927 \expandafter\string\Hy@pdfmajorversion.%
8928 \expandafter\string\Hy@pdfminorversion
8929 :=\number\Hy@pdf@majorversion.\number\Hy@pdf@minorversion\space
8930 }%
8931 \fi
8932 \edef\Hy@pdf@majorversion{\number\Hy@pdfmajorversion}%
8933 \edef\Hy@pdf@minorversion{\number\Hy@pdfminorversion}%
8934 \Hy@DisableOption{pdfversion}%
8935 \ifHy@ocgcolorlinks
8936 \pdf@ifdraftmode{}{%
8937 \immediate\pdfobj{%
8938 <<%
8939 /Type/OCG%

```

```

8940     /Name(View)%
8941     /Usage<<%
8942     /Print<<%
8943         /PrintState/OFF%
8944     >>%
8945     /View<<%
8946         /ViewState/ON%
8947     >>%
8948     >>%
8949     >>%
8950 }%
8951 \edef\OBJ@OCG@view{\the\pdffastobj\space 0 R}%
8952 \immediate\pdfobj{%
8953     <<%
8954         /Type/OCG%
8955         /Name(Print)%
8956         /Usage<<%
8957             /Print<<%
8958                 /PrintState/ON%
8959             >>%
8960             /View<<%
8961                 /ViewState/OFF%
8962             >>%
8963             >>%
8964         >>%
8965     }%
8966 \edef\OBJ@OCG@print{\the\pdffastobj\space 0 R}%
8967 \immediate\pdfobj{%
8968     [%
8969         \OBJ@OCG@view\space\OBJ@OCG@print
8970     ]%
8971 }%
8972 \edef\OBJ@OCGs{\the\pdffastobj\space 0 R}%
8973 \pdfcatalog{%
8974     /OCProperties<<%
8975         /OCGs \OBJ@OCGs
8976         /D<<%
8977             /OFF[\OBJ@OCG@print]%
8978             /AS[%
8979                 <<%
8980                     /Event/View%
8981                     /OCGs \OBJ@OCGs
8982                     /Category[/View]%
8983                 >>%
8984                 <<%
8985                     /Event/Print%
8986                     /OCGs \OBJ@OCGs
8987                     /Category[/Print]%
8988                 >>%
8989                 <<%
8990                     /Event/Export%
8991                     /OCGs \OBJ@OCGs
8992                     /Category[/Print]%
8993                 >>%

```

```

8994     ]%
8995     >>%
8996     >>%
8997     }%
8998     \begingroup
8999     \edef\x{\endgroup
9000     \pdfpageresources{%
9001     \the\pdfpageresources
9002     /Properties<<%
9003     /OCView \OBJ@OCG@view
9004     /OCPrint \OBJ@OCG@print
9005     >>%
9006     }%
9007     }%
9008     \x
9009 }%
9010 \Hy@AtBeginDocument{%
9011 \def\Hy@colorlink#1{%
9012 \begingroup
9013 \ifHy@ocgcolorlinks
9014 \def\Hy@ocgcolor{#1}%
9015 \setbox0=\hbox\bgroup\color@begingroup
9016 \else
9017 \HyColor@UseColor#1%
9018 \fi
9019 }%
9020 \def\Hy@endcolorlink{%
9021 \ifHy@ocgcolorlinks
9022 \color@endgroup\egroup
9023 \mbox{%
9024 \pdfliteral page{/OC/OCPrint BDC}%
9025 \rlap{\copy0}%
9026 \pdfliteral page{EMC/OC/OCView BDC}%
9027 \begingroup
9028 \expandafter\HyColor@UseColor\Hy@ocgcolor
9029 \box0 %
9030 \endgroup
9031 \pdfliteral page{EMC}%
9032 }%
9033 \fi
9034 \endgroup
9035 }%
9036 }%
9037 \else
9038 \Hy@DisableOption{ocgcolorlinks}%
9039 \fi

```

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

```

9040 \def\setpdfinkmargin#1{%
9041 \begingroup
9042 \setlength{\dimen@}{#1}%
9043 \expandafter\endgroup
9044 \expandafter\pdfinkmargin\the\dimen@\relax
9045 }

```



```

9046 \ifx\pdfstartlink\@undefined% less than version 14
9047 \let\pdfstartlink\pdfannotlink
9048 \let\pdfinkmargin\@tempdima
9049 \let\pdfxform\pdfform
9050 \let\pdflastxform\pdfastform
9051 \let\pdfrefxform\pdfrefform
9052 \else
9053 \pdfinkmargin1pt %
9054 \fi

```

First set up the default linking

```
9055 \providecommand*\@pdfview{XYZ}
```

First define the anchors:

```

9056 \Hy@WrapperDef\new@pdfink#1{%
9057 \ifhmode
9058 \@savsf\spacefactor
9059 \fi
9060 \Hy@SaveLastskip
9061 \Hy@VerboseAnchor{#1}%
9062 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9063 \Hy@DestName\Hy@pstringDest\@pdfview
9064 \Hy@RestoreLastskip
9065 \ifhmode
9066 \spacefactor\@savsf
9067 \fi
9068 }
9069 \let\pdf@endanchor\@empty

```

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

```

9070 \def\Hy@DestName#1#2{%
9071 \pdfdest name{#1}#2\relax
9072 }

```

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.

```

9073 \providecommand*\@pdfborder{0 0 1}
9074 \providecommand*\@pdfborderstyle{}
9075 \def\Hy@undefinedname{UNDEFINED}
9076 \def\find@pdfink#1#2{%
9077 \leavevmode
9078 \protected@edef\Hy@testname{#2}%
9079 \ifx\Hy@testname\@empty
9080 \Hy@Warning{%
9081 Empty destination name,\MessageBreak
9082 using '\Hy@undefinedname'%
9083 }%
9084 \let\Hy@testname\Hy@undefinedname
9085 \else
9086 \Hy@pstringdef\Hy@testname{%
9087 \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%

```

```

9088 }%
9089 \fi
9090 \Hy@StartlinkName{%
9091 \ifHy@pdfa /F 4\fi
9092 \Hy@setpdfborder
9093 \Hy@setpdfhighlight
9094 \ifx\CurrentBorderColor\relax
9095 \else
9096 /C[\CurrentBorderColor]%
9097 \fi
9098 }\Hy@testname
9099 \expandafter\Hy@colorlink\csname @#1color\endcsname
9100 }
9101 \def\Hy@StartlinkName#1#2{%
9102 \pdfstartlink attr{#1}goto name{#2}\relax
9103 }
9104 \def\close@pdfink{%
9105 \Hy@endcolorlink
9106 \Hy@VerboseLinkStop
9107 \pdfendlink
9108 }
9109 \def\hyper@anchor#1{%
9110 \new@pdfink{#1}\anchor@spot\pdf@endanchor
9111 }
9112 \def\hyper@anchorstart#1{%
9113 \new@pdfink{#1}%
9114 \Hy@activeanchortrue
9115 }
9116 \def\hyper@anchorend{%
9117 \pdf@endanchor
9118 \Hy@activeanchorfalse
9119 }
9120 \def\hyper@linkstart#1#2{%
9121 \Hy@VerboseLinkStart{#1}{#2}%
9122 \ltx@ifundefined{@#1bordercolor}{%
9123 \let\CurrentBorderColor\relax
9124 }{%
9125 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
9126 }%
9127 \find@pdfink{#1}{#2}%
9128 }
9129 \def\hyper@linkend{\close@pdfink}
9130 \def\hyper@link#1#2#3{%
9131 \Hy@VerboseLinkStart{#1}{#2}%
9132 \ltx@ifundefined{@#1bordercolor}{%
9133 \let\CurrentBorderColor\relax
9134 }{%
9135 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
9136 }%
9137 \find@pdfink{#1}{#2}#3\Hy@xspace@end
9138 \close@pdfink
9139 }
9140 \let\CurrentBorderColor\@linkbordercolor
9141 \def\hyper@linkurl#1#2{%

```

```

9142 \begingroup
9143 \Hy@pstringdef\Hy@pstringURI{#2}%
9144 \hyper@chars
9145 \leavevmode
9146 \pdfstartlink
9147 attr{%
9148   \Hy@setpdfborder
9149   \Hy@setpdfhighlight
9150   \ifx\@urlbordercolor\relax
9151   \else
9152     /C[\@urlbordercolor]%
9153   \fi
9154 }%
9155 user{%
9156   /Subtype/Link%
9157   \ifHy@pdfa /F 4\fi
9158   /A<<%
9159   /Type/Action%
9160   /S/URI%
9161   /URI(\Hy@pstringURI)%
9162   \ifHy@href@ismap
9163     /IsMap true%
9164   \fi
9165   \Hy@href@nextactionraw
9166   >>%
9167 }%
9168 \relax
9169 \Hy@colorlink\@urlcolor#1\Hy@xspace@end
9170 \close@pdfink
9171 \endgroup
9172 }
9173 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
9174 \begingroup
9175 \def\Hy@pstringF{#2}%
9176 \Hy@CleanupFile\Hy@pstringF
9177 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
9178 \Hy@pstringdef\Hy@pstringD{#3}%
9179 \Hy@MakeRemoteAction
9180 \leavevmode
9181 \pdfstartlink
9182 attr{%
9183   \Hy@setpdfborder
9184   \Hy@setpdfhighlight
9185   \ifx\@filebordercolor\relax
9186   \else
9187     /C[\@filebordercolor]%
9188   \fi
9189 }%
9190 user {%
9191   /Subtype/Link%
9192   \ifHy@pdfa /F 4\fi
9193   /A<<%
9194   /F(\Hy@pstringF)%
9195   /S/GoToR%

```

```

9196      \Hy@SetNewWindow
If #3 is empty, page 0; if its a number, Page number, otherwise a named destina-
tion.

\afterassignment\xxx\count@=0\foo!%

\def\xxx#1!{%
  \ifx\xxx#1\xxx
    foo was an integer
  \else
    it wasnt
  \fi}

9197      \ifx\#3\%
9198      /D[\Hy@href@page\@pdfremotestartview]%
9199      \else
9200      /D(\Hy@pstringD)%
9201      \fi
9202      \Hy@href@nextactionraw
9203      >>%
9204      }%
9205      \relax
9206      \Hy@colorlink\@filecolor#1\Hy@xspace@end
9207      \close@pdflink
9208      \endgroup
9209      }
9210 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
9211 \begingroup
9212 \Hy@pstringdef\Hy@pstringF{#1}%
9213 \Hy@pstringdef\Hy@pstringP{#3}%
9214 \leavevmode
9215 \pdfstartlink
9216 attr{%
9217 \Hy@setpdfborder
9218 \Hy@setpdfhighlight
9219 \ifx\@runbordercolor\relax
9220 \else
9221 /C[\@runbordercolor]%
9222 \fi
9223 }%
9224 user {%
9225 /Subtype/Link%
9226 \ifHy@pdfa /F 4\fi
9227 /A<<%
9228 /F(\Hy@pstringF)%
9229 /S/Launch%
9230 \Hy@SetNewWindow
9231 \ifx\#3\%
9232 \else
9233 /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
9234 \fi
9235 \Hy@href@nextactionraw
9236 >>%
9237 }%

```

```

9238 \relax
9239 \Hy@colorlink\@runcolor#2\Hy@xspace@end
9240 \close@pdflink
9241 \endgroup
9242 }

```

# \PDF@SetupDox

```

9243 \def\PDF@SetupDoc{%
9244 \ifx\@pdfpagescrop\@empty
9245 \else
9246 \edef\process@me{%
9247 \pdfpagesattr={%
9248 /CropBox[\@pdfpagescrop]%
9249 \expandafter\ifx\expandafter\\the\pdfpagesattr\\%
9250 \else
9251 ^^J\the\pdfpagesattr
9252 \fi
9253 }%
9254 }%
9255 \process@me
9256 \fi
9257 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9258 \pdfcatalog{%
9259 /PageMode/\@pdfpagemode
9260 \ifx\@baseurl\@empty
9261 \else
9262 /URI<</Base(\Hy@pstringB)>>%
9263 \fi
9264 }%
9265 \ifx\@pdfstartpage\@empty
9266 \else
9267 \ifx\@pdfstartview\@empty
9268 \else
9269 openaction goto page\@pdfstartpage{\@pdfstartview}%
9270 \fi
9271 \fi
9272 \edef\Hy@temp{%
9273 \ifHy@pdftoolbar\else /HideToolbar true\fi
9274 \ifHy@pdfmenubar\else /HideMenubar true\fi
9275 \ifHy@pdfwindowui\else /HideWindowUI true\fi
9276 \ifHy@pdffitwindow /FitWindow true\fi
9277 \ifHy@pdfcenterwindow /CenterWindow true\fi
9278 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9279 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9280 \Hy@UseNameKey{Direction}\@pdfdirection
9281 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9282 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9283 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9284 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9285 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9286 \Hy@UseNameKey{Duplex}\@pdfduplex
9287 \ifx\@pdfpicktraybypdfsize\@empty
9288 \else
9289 /PickTrayByPDFSize \@pdfpicktraybypdfsize

```

```

9290 \fi
9291 \ifx\@pdfprintpagerange\@empty
9292 \else
9293 /PrintPageRange[\@pdfprintpagerange]%
9294 \fi
9295 \ifx\@pdfnumcopies\@empty
9296 \else
9297 /NumCopies \@pdfnumcopies
9298 \fi
9299 }%
9300 \pdfcatalog{%
9301 \ifx\Hy@temp\@empty
9302 \else
9303 /ViewerPreferences<<\Hy@temp>>%
9304 \fi
9305 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9306 \ifx\@pdflang\relax
9307 \else
9308 /Lang(\@pdflang)%
9309 \fi
9310 }%
9311 }

```

\PDF@FinishDoc

```

9312 \def\PDF@FinishDoc{%
9313 \pdf@ifdraftmode{ }{%
9314 \Hy@UseMaketitleInfos
9315 \HyInfo@GenerateAddons
9316 \pdfinfo{%
9317 /Author(\@pdfauthor)%
9318 /Title(\@pdftitle)%
9319 /Subject(\@pdfsubject)%
9320 /Creator(\@pdfcreator)%
9321 \ifx\@pdfcreationdate\@empty
9322 \else
9323 /CreationDate(\@pdfcreationdate)%
9324 \fi
9325 \ifx\@pdfmoddate\@empty
9326 \else
9327 /ModDate(\@pdfmoddate)%
9328 \fi
9329 \ifx\@pdfproducer\relax
9330 \else
9331 /Producer(\@pdfproducer)%
9332 \fi
9333 /Keywords(\@pdfkeywords)%
9334 \ifx\@pdftrapped\@empty
9335 \else
9336 /Trapped/\@pdftrapped
9337 \fi
9338 \HyInfo@Addons
9339 }%
9340 }%
9341 \Hy@DisableOption{pdfauthor}%

```

```

9342 \Hy@DisableOption{pdftitle}%
9343 \Hy@DisableOption{pdfsubject}%
9344 \Hy@DisableOption{pdfcreator}%
9345 \Hy@DisableOption{addtopdfcreator}%
9346 \Hy@DisableOption{pdfcreationdate}%
9347 \Hy@DisableOption{pdfmoddate}%
9348 \Hy@DisableOption{pdfproducer}%
9349 \Hy@DisableOption{pdfkeywords}%
9350 \Hy@DisableOption{pdftrapped}%
9351 \Hy@DisableOption{pdfinfo}%
9352 }

```

`\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`.

```

9353 \def\hyper@pagetransition{%
9354   \ifx\@pdfpagetransition\relax
9355   \else
9356     \expandafter\Hy@RemoveTransPageAttr
9357     \the\pdfpageattr^^J/Trans{}>>\END
9358     \ifx\@pdfpagetransition\@empty
9359     \else
9360       \edef\@processme{%
9361         \global\pdfpageattr{%
9362           \the\pdfpageattr
9363           ^^J/Trans << /S /\@pdfpagetransition\space >>%
9364         }%
9365       }%
9366       \@processme
9367     \fi
9368   \fi
9369 }

```

`\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.

```

9370 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
9371   \ifx\#2\%
9372     \global\pdfpageattr{#1}%
9373   \else
9374     \Hy@RemoveTransPageAttr#1#4\END
9375   \fi
9376 }

```

`\hyper@pageduration` `\@pdfpageduration` is initialized with `\relax`. So it indicates, if option `pdfpageduration` is used. First previous `/Dur` entries are removed. If a new `/Dur` key exists, it is appended to `\pdfpageattr`.

```

9377 \def\hyper@pageduration{%
9378   \ifx\@pdfpageduration\relax
9379   \else
9380     \expandafter

```

```

9381 \Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
9382 \ifx\@pdfpageduration\@empty
9383 \else
9384 \edef\@processme{%
9385 \global\pdfpageattr{%
9386 \the\pdfpageattr
9387 ^^J/Dur \@pdfpageduration\space
9388 }%
9389 }%
9390 \@processme
9391 \fi
9392 \fi
9393 }

```

\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.

```

9394 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
9395 \ifx\#2\%
9396 \global\pdfpageattr{#1}%
9397 \else
9398 \Hy@RemoveDurPageAttr#1#4\END
9399 \fi
9400 }

9401 \pdf@ifdraftmode{}{%
9402 \g@addto@macro\Hy@EveryPageHook{%
9403 \hyper@pagetransition
9404 \hyper@pageduration
9405 }%
9406 }

```

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

```

9407 </pdfTeX>
9408 <*pdfTeX | xetex>
9409 \Hy@AtBeginDocument{%
9410 \ifHy@setpagesize
9411 \expandafter\@firstofone
9412 \else
9413 \expandafter\@gobble
9414 \fi
9415 {%
9416 \@ifclassloaded{seminar}{%
9417 <*pdfTeX>
9418 \setlength{\pdfhorigin}{1truein}%
9419 \setlength{\pdfvorigin}{1truein}%
9420 </pdfTeX>
9421 \ifportrait
9422 \ifdim\paperwidth=\z@
9423 \else
9424 \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
9425 \fi

```



```

9426     \ifdim\paperheight=\z@
9427     \else
9428         \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
9429     \fi
9430 \else
9431     \ifdim\paperheight=\z@
9432     \else
9433         \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
9434     \fi
9435     \ifdim\paperwidth=\z@
9436     \else
9437         \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
9438     \fi
9439 \fi
9440 }{%
9441     \ltx@ifundefined{stockwidth}{%
9442         \ifdim\paperwidth>\z@
9443             \setlength{\pdfpagewidth}{\paperwidth}%
9444         \fi
9445         \ifdim\paperheight>\z@
9446             \setlength{\pdfpageheight}{\paperheight}%
9447         \fi
9448     }{%
9449         \ifdim\stockwidth>\z@
9450             \setlength{\pdfpagewidth}{\stockwidth}%
9451         \fi
9452         \ifdim\stockheight>\z@
9453             \setlength{\pdfpageheight}{\stockheight}%
9454         \fi
9455     }%
9456 }%
9457 }%
9458 \Hy@DisableOption{setpagesize}%
9459 }
9460 </pdfTeX | xetex>
9461 <*pdfTeX>
9462 \def\Acrobatmenu#1#2{%
9463     \Hy@Acrobatmenu{#1}{#2}{%
9464         \leavevmode
9465         \EdefEscapeName\Hy@temp@menu{#1}%
9466         \pdfstartlink
9467         attr{%
9468             \Hy@setpdfborder
9469             \Hy@setpdfhighlight
9470             \ifx\@menubordercolor\relax
9471             \else
9472                 /C[\@menubordercolor]%
9473             \fi
9474         }%
9475         user{%
9476             /Subtype/Link%
9477             \ifHy@pdfa /F 4\fi
9478             /A<<%
9479             /S/Named%

```

```

9480      /N/\Hy@temp@menu
9481      \Hy@href@nextactionraw
9482      >>%
9483      }%
9484      \relax
9485      \Hy@colorlink\@menucolor#2%
9486      \close@pdflink
9487      }%
9488      }

```

### 43.2.1 Fix for problem with different nesting levels

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

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

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

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

```

9489 </pdfTeX>

```

## 43.3 hypertex

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

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

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

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

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

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

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

The *href* and *name* commands must be paired with an *end* command later in the TeX file — the TeX commands between the two ends of a pair form an *anchor* in the document. In the case of an *href* command, the *anchor* is to be highlighted in the *dvi* viewer, and when clicked on will cause the scene to shift to the destination specified by *href\_string*. The *anchor* associated with a *name* command represents a possible location to which other hypertext links may refer, either as local references (of the form `href="#name_string` with the

*name\_string* identical to the one in the name command) or as part of a URL (of the form *URL#name\_string*). Here *href\_string* is a valid URL or local identifier, while *name\_string* could be any string at all: the only caveat is that “” characters should be escaped with a backslash (\), and if it looks like a URL name it may cause problems.

```

9490 \*hypertext
9491 \providecommand*\XR@ext}{dvi}
9492 \let\PDF@FinishDoc\ltx@empty
9493 \def\PDF@SetupDoc{%
9494   \ifx\@baseurl\@empty
9495     \else
9496       \special{html:<base href="\@baseurl">}%
9497   \fi
9498 }
9499 \Hy@WrapperDef\hyper@anchor#1{%
9500   \Hy@SaveLastskip
9501   \Hy@VerboseAnchor{#1}%
9502   \begingroup
9503     \let\protect=\string
9504     \hyper@chars
9505     \special{html:<a name=%
9506       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9507   \endgroup
9508   \Hy@Activeanchortrue
9509   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9510   \special{html:</a>}%
9511   \Hy@activeanchorfalse
9512   \Hy@RestoreLastskip
9513 }
9514 \Hy@WrapperDef\hyper@anchorstart#1{%
9515   \Hy@SaveLastskip
9516   \Hy@VerboseAnchor{#1}%
9517   \begingroup
9518     \hyper@chars
9519     \special{html:<a name=%
9520       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9521   \endgroup
9522   \Hy@Activeanchortrue
9523 }
9524 \def\hyper@anchorend{%
9525   \special{html:</a>}%
9526   \Hy@activeanchorfalse
9527   \Hy@RestoreLastskip
9528 }
9529 \def\@urltype{url}
9530 \def\hyper@linkstart#1#2{%
9531   \Hy@VerboseLinkStart{#1}{#2}%
9532   \expandafter\Hy@colorlink\csname @#1color\endcsname
9533   \def\Hy@tempa{#1}%
9534   \ifx\Hy@tempa\@urltype
9535     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9536   \else
9537     \begingroup

```

```

9538 \hyper@chars
9539 \special{html:<a href=%
9540 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
9541 \endgroup
9542 \fi
9543 }
9544 \def\hyper@linkend{%
9545 \special{html:</a>}}%
9546 \Hy@endcolorlink
9547 }
9548 \def\hyper@linkfile#1#2#3{%
9549 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\#3\fi}%
9550 }
9551 \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.

```

9552 \leavevmode
9553 \ifHy@raiselinks
9554 \Hy@SaveSpaceFactor
9555 \Hy@SaveSavedSpaceFactor
9556 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9557 \Hy@RestoreSavedSpaceFactor
9558 \@linkdim\dp\@tempboxa
9559 \lower\@linkdim\hbox{%
9560 \hyper@chars
9561 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
9562 }%
9563 \Hy@colorlink\@urlcolor
9564 \Hy@RestoreSpaceFactor
9565 #1%
9566 \Hy@SaveSpaceFactor
9567 \@linkdim\ht\@tempboxa

```

Because of the interaction with the dvihps processor, we have to subtract a little from the height. This is not clean, or checked. Check with Mark Doyle about what gives here. It may not be needed with the new dvips (Jan 1997).

```

9568 \advance\@linkdim by -6.5\p@
9569 \raise\@linkdim\hbox{\special{html:</a>}}%
9570 \Hy@endcolorlink
9571 \Hy@RestoreSpaceFactor
9572 \else
9573 \begingroup
9574 \hyper@chars
9575 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
9576 \Hy@colorlink\@urlcolor#1\Hy@xspace@end
9577 \special{html:</a>}}%
9578 \Hy@endcolorlink
9579 \endgroup
9580 \fi
9581 }

```

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

```

9582 \def\hyper@link#1#2#3{%

```

```

9583 \Hy@VerboseLinkStart{#1}{#2}%
9584 \hyper@linkurl{#3}{\# \HyperDestNameFilter{#2}}%
9585 }

9586 \def\hyper@image#1#2{%
9587 \begingroup
9588 \hyper@chars
9589 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
9590 \endgroup
9591 }
9592 </hypertex>
9593 <*dviwindo>

```

## 43.4 dviwindo

[This was developed by David Carlisle]. Within a file dviwindo hyperlinking is used, for external URL's a call to `\wwwbrowser` is made. (You can define this command before or after loading the hyperref package if the default `c:/netscape/netscape` is not suitable) Dviwindo could in fact handle external links to dvi files on the same machine without calling a web browser, but that would mean parsing the URL to recognise such, and this is currently not done.

This was more or less blindly copied from the hypertex cfg. For dviwindo,  $\LaTeX$  must specify the size of the active area for links. For some hooks this information is available but for some, the start and end of the link are specified separately in which case a fixed size area of 10000000sp wide by `\baselineskip` high is used.

```

9594 \providecommand*\XR@ext}{dvi}
9595 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
9596 \Hy@WrapperDef\hyper@anchor#1{%
9597 \Hy@SaveLastskip
9598 \Hy@VerboseAnchor{#1}%
9599 \begingroup
9600 \let\protect=\string
9601 \special{mark: #1}%
9602 \endgroup
9603 \Hy@activeanchortrue
9604 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9605 \Hy@activeanchorfalse
9606 \Hy@RestoreLastskip
9607 }
9608 \Hy@WrapperDef\hyper@anchorstart#1{%
9609 \Hy@SaveLastskip
9610 \Hy@VerboseAnchor{#1}%
9611 \special{mark: #1}%
9612 \Hy@activeanchortrue
9613 }
9614 \def\hyper@anchorend{%
9615 \Hy@activeanchorfalse
9616 \Hy@RestoreLastskip
9617 }
9618 \def\hyper@linkstart#1#2{%
9619 \Hy@VerboseLinkStart{#1}{#2}%
9620 \expandafter\Hy@colorlink\csname @#1color\endcsname

```

```

9621 \special{button: %
9622 10000000 %
9623 \number\baselineskip\space
9624 #2%
9625 }%
9626 }
9627 \def\hyper@linkend{%
9628 \Hy@endcolorlink
9629 }
9630 \def\hyper@link#1#2#3{%
9631 \Hy@VerboseLinkStart{#1}{#2}%
9632 \leavevmode
9633 \ifHy@raiselinks
9634 \Hy@SaveSpaceFactor
9635 \Hy@SaveSavedSpaceFactor
9636 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#3}%
9637 \Hy@RestoreSavedSpaceFactor
9638 \@linkdim\dp\@tempboxa
9639 \lower\@linkdim\hbox{%
9640 \special{button: %
9641 \number\wd\@tempboxa\space
9642 \number\ht\@tempboxa\space
9643 #2%
9644 }%
9645 \expandafter\Hy@colorlink\csname @#1color\endcsname
9646 \Hy@RestoreSpaceFactor
9647 #3\Hy@xspace@end
9648 \Hy@SaveSpaceFactor
9649 \Hy@endcolorlink
9650 }%
9651 \@linkdim\ht\@tempboxa
9652 \advance\@linkdim by -6.5\p@
9653 \raise\@linkdim\hbox{}}%
9654 \Hy@RestoreSpaceFactor
9655 \else
9656 \special{button: %
9657 \number\wd\@tempboxa\space
9658 \number\ht\@tempboxa\space
9659 #2%
9660 }%
9661 \expandafter\Hy@colorlink\csname @#1color\endcsname
9662 #3\Hy@xspace@end
9663 \Hy@endcolorlink
9664 \fi
9665 }
9666 \def\hyper@linkurl#1#2{%
9667 \begingroup
9668 \hyper@chars
9669 \leavevmode
9670 \ifHy@raiselinks
9671 \Hy@SaveSpaceFactor
9672 \Hy@SaveSavedSpaceFactor
9673 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9674 \Hy@RestoreSavedSpaceFactor

```

```

9675 \@linkdim\dp\@tempboxa
9676 \lower\@linkdim\hbox{%
9677 \special{button: %
9678 \number\wd\@tempboxa\space
9679 \number\ht\@tempboxa\space
9680 launch: \wwwbrowser\space
9681 #2%
9682 }%
9683 \Hy@colorlink\@urlcolor
9684 \Hy@RestoreSpaceFactor
9685 #1\Hy@xspace@end
9686 \Hy@SaveSpaceFactor
9687 \Hy@endcolorlink
9688 }%
9689 \@linkdim\ht\@tempboxa
9690 \advance\@linkdim by -6.5\p@
9691 \raise\@linkdim\hbox{}%
9692 \Hy@RestoreSpaceFactor
9693 \else
9694 \special{button: %
9695 \number\wd\@tempboxa\space
9696 \number\ht\@tempboxa\space
9697 launch: \wwwbrowser\space
9698 #2%
9699 }%
9700 \Hy@colorlink\@urlcolor
9701 #1\Hy@xspace@end
9702 \Hy@endcolorlink
9703 \fi
9704 \endgroup
9705 }
9706 \def\hyper@linkfile#1#2#3{%
9707 \begingroup
9708 \hyper@chars
9709 \leavevmode
9710 \ifHy@raiselinks
9711 \Hy@SaveSpaceFactor
9712 \Hy@SaveSavedSpaceFactor
9713 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9714 \Hy@RestoreSavedSpaceFactor
9715 \@linkdim\dp\@tempboxa
9716 \lower\@linkdim\hbox{%
9717 \special{button: %
9718 \number\wd\@tempboxa\space
9719 \number\ht\@tempboxa\space
9720 #3,%
9721 file: #2%
9722 }%
9723 \Hy@colorlink\@filecolor
9724 \Hy@RestoreSpaceFactor
9725 #1\Hy@xspace@end
9726 \Hy@SaveSpaceFactor
9727 \Hy@endcolorlink
9728 }%

```

```

9729 \@linkdim\ht\@tempboxa
9730 \advance\@linkdim by -6.5\p@
9731 \raise\@linkdim\hbox{}%
9732 \Hy@RestoreSpaceFactor
9733 \else
9734 \special{button: %
9735 \number\wd\@tempboxa\space
9736 \number\ht\@tempboxa\space
9737 #3,%
9738 file: #2%
9739 }%
9740 \Hy@colorlink\@filecolor
9741 #1\Hy@xspace@end
9742 \Hy@endcolorlink
9743 \fi
9744 \endgroup
9745 }
9746 \HyInfo@AddonUnsupportedtrue
9747 \def\PDF@FinishDoc{%
9748 \Hy@UseMaketitleInfos
9749 \HyInfo@TrappedUnsupported
9750 \special{PDF: Keywords \@pdfkeywords}%
9751 \special{PDF: Title \@pdftitle}%
9752 \special{PDF: Creator \@pdfcreator}%
9753 \ifx\@pdfcreationdate\@empty
9754 \else
9755 \special{PDF: CreationDate \@pdfcreationdate}%
9756 \fi
9757 \ifx\@pdfmoddate\@empty
9758 \else
9759 \special{PDF: ModDate \@pdfmoddate}%
9760 \fi
9761 \special{PDF: Author \@pdfauthor}%
9762 \ifx\@pdfproducer\relax
9763 \else
9764 \special{PDF: Producer \@pdfproducer}%
9765 \fi
9766 \special{PDF: Subject \@pdfsubject}%
9767 \Hy@DisableOption{pdfauthor}%
9768 \Hy@DisableOption{pdftitle}%
9769 \Hy@DisableOption{pdfsubject}%
9770 \Hy@DisableOption{pdfcreator}%
9771 \Hy@DisableOption{addtopdfcreator}%
9772 \Hy@DisableOption{pdfcreationdate}%
9773 \Hy@DisableOption{pdfcreationdate}%
9774 \Hy@DisableOption{pdfmoddate}%
9775 \Hy@DisableOption{pdfproducer}%
9776 \Hy@DisableOption{pdfkeywords}%
9777 \Hy@DisableOption{pdftrapped}%
9778 \Hy@DisableOption{pdfinfo}%
9779 }
9780 \def\PDF@SetupDoc{%
9781 \ifx\@baseurl\@empty
9782 \else

```



```

9783 \special{PDF: Base \@baseurl}%
9784 \fi
9785 \ifx\@pdfpagescrop\@empty\else
9786 \special{PDF: BBox \@pdfpagescrop}%
9787 \fi
9788 \def\Hy@temp{}%
9789 \ifx\@pdfstartpage\@empty
9790 \else
9791 \ifx\@pdfstartview\@empty
9792 \else
9793 \edef\Hy@temp{%
9794     ,Page=\@pdfstartpage
9795     ,View=\@pdfstartview
9796 }%
9797 \fi
9798 \fi
9799 \edef\Hy@temp{%
9800     \noexpand\pdfmark{%
9801         pdfmark=/DOCVIEW,%
9802         PageMode=/\@pdfpagemode
9803     }\Hy@temp
9804 }%
9805 }%
9806 \Hy@temp
9807 \ifx\@pdfpagescrop\@empty
9808 \else
9809 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9810 \fi
9811 \edef\Hy@temp{%
9812     \ifHy@pdftoolbar\else /HideToolbar true\fi
9813     \ifHy@pdfmenubar\else /HideMenubar true\fi
9814     \ifHy@pdfwindowui\else /HideWindowUI true\fi
9815     \ifHy@pdfwindow /FitWindow true\fi
9816     \ifHy@pdfcenterwindow /CenterWindow true\fi
9817     \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9818     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9819     \Hy@UseNameKey{Direction}\@pdfdirection
9820     \Hy@UseNameKey{ViewArea}\@pdfviewarea
9821     \Hy@UseNameKey{ViewClip}\@pdfviewclip
9822     \Hy@UseNameKey{PrintArea}\@pdfprintarea
9823     \Hy@UseNameKey{PrintClip}\@pdfprintclip
9824     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9825     \Hy@UseNameKey{Duplex}\@pdfduplex
9826     \ifx\@pdfpicktraybypdfsize\@empty
9827     \else
9828         /PickTrayByPDFSize \@pdfpicktraybypdfsize
9829     \fi
9830     \ifx\@pdfprintpagerange\@empty
9831     \else
9832         /PrintPageRange[\@pdfprintpagerange]%
9833     \fi
9834     \ifx\@pdfnumcopies\@empty
9835     \else
9836         /NumCopies \@pdfnumcopies

```

```

9837 \fi
9838 }%
9839 \pdfmark{pdfmark=/PUT,%
9840 Raw={%
9841 \string{Catalog\string}<<%
9842 \ifx\Hy@temp\@empty
9843 \else
9844 /ViewerPreferences<<\Hy@temp>>%
9845 \fi
9846 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9847 \ifx\@pdflang\relax
9848 \else
9849 /Lang(\@pdflang)%
9850 \fi
9851 >>%
9852 }%
9853 }%
9854 }
9855 </dviwindo>
9856 <*\dvipdfm|xetex>

```

### 43.5 dvipdfm/xetex dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

(x)dvipdfmx replaces destination names by numbers. This makes it impossible to link from an external document with xr-hyper, so from version 7.00j on this is suppressed with a config special.

```

9857 \special{dvipdfmx:config C 0x0010}
9858 \providecommand*{\XR@ext}{pdf}
9859 \Hy@setbreaklinks{true}
9860 \def\HyPat@ObjRef{%
9861 @[\ ]+}%
9862 }
9863 \newsavebox{\pdfm@box}
9864 \def\@pdfm@mark#1{\special{pdf:#1}}
9865 \Hy@WrapperDef\@pdfm@dest#1{%
9866 \Hy@SaveLastskip
9867 \Hy@VerboseAnchor{#1}%
9868 \begingroup
9869 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9870 \def\x{XYZ}%
9871 \ifx\x\@pdfview
9872 \def\x{XYZ @xpos @ypos null}%
9873 \else
9874 \def\x{FitH}%
9875 \ifx\x\@pdfview
9876 \def\x{FitH @ypos}%
9877 \else
9878 \def\x{FitBH}%
9879 \ifx\x\@pdfview
9880 \def\x{FitBH @ypos}%
9881 \else
9882 \def\x{FitV}%

```

```

9883 \ifx\x\@pdfview
9884 \def\x{FitV @xpos}%
9885 \else
9886 \def\x{FitBV}%
9887 \ifx\x\@pdfview
9888 \def\x{FitBV @xpos}%
9889 \else
9890 \def\x{Fit}%
9891 \ifx\x\@pdfview
9892 \let\x\@pdfview
9893 \else
9894 \def\x{FitB}%
9895 \ifx\x\@pdfview
9896 \let\x\@pdfview
9897 \else
9898 \def\x{FitR}%
9899 \ifx\x\@pdfview
9900 \Hy@Warning{'pdfview=FitR' is not supported}%
9901 \def\x{XYZ @xpos @ypos null}%
9902 \else
9903 \@onelevel@sanitize\@pdfview
9904 \Hy@Warning{%
9905 Unknown value '\@pdfview' for pdfview%
9906 }%
9907 \def\x{XYZ @xpos @ypos null}%
9908 \fi
9909 \fi
9910 \fi
9911 \fi
9912 \fi
9913 \fi
9914 \fi
9915 \fi
9916 \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
9917 \endgroup
9918 \Hy@RestoreLastskip
9919 }
9920 \providecommand*\@pdfview{XYZ}
9921 \providecommand*\@pdfborder{0 0 1}
9922 \providecommand*\@pdfborderstyle{}
9923 \def\hyper@anchor#1{%
9924 \@pdfm@dest{#1}%
9925 }
9926 \def\hyper@anchorstart#1{%
9927 \Hy@activeanchortrue
9928 \@pdfm@dest{#1}%
9929 }
9930 \def\hyper@anchorend{%
9931 \Hy@activeanchorfalse
9932 }
9933 \newcounter{Hy@AnnotLevel}
9934 \ifHy@ocgcolorlinks
9935 \def\OBJ@OCG@view{@OCG@view}%

```

```

9936 \@pdfm@mark{%
9937   obj \OBJ@OCG@view <<%
9938     /Type/OCG%
9939     /Name(View)%
9940     /Usage<<%
9941     /Print<<%
9942     /PrintState/OFF%
9943     >>%
9944     /View<<%
9945     /ViewState/ON%
9946     >>%
9947   >>%
9948 >>%
9949 }%
9950 \@pdfm@mark{close \OBJ@OCG@view}%
9951 \def\OBJ@OCG@print{@OCG@print}%
9952 \@pdfm@mark{%
9953   obj \OBJ@OCG@print <<%
9954     /Type/OCG%
9955     /Name(Print)%
9956     /Usage<<%
9957     /Print<<%
9958     /PrintState/ON%
9959     >>%
9960     /View<<%
9961     /ViewState/OFF%
9962     >>%
9963   >>%
9964 >>%
9965 }%
9966 \@pdfm@mark{close \OBJ@OCG@print}%
9967 \def\OBJ@OCGs{@OCGs}%
9968 \@pdfm@mark{%
9969   obj \OBJ@OCGs [%
9970     \OBJ@OCG@view\space\OBJ@OCG@print
9971   ]%
9972 }%
9973 \@pdfm@mark{close \OBJ@OCGs}%
9974 \@pdfm@mark{%
9975   put @catalog <<%
9976     /OCProperties<<%
9977     /OCGs \OBJ@OCGs
9978     /D<<%
9979     /OFF[\OBJ@OCG@print]%
9980     /AS[%
9981       <<%
9982         /Event/View%
9983         /OCGs \OBJ@OCGs
9984         /Category[/View]%
9985       >>%
9986     <<%
9987     /Event/Print%
9988     /OCGs \OBJ@OCGs
9989     /Category[/Print]%

```

```

9990      >>%
9991      <<%
9992      /Event/Export%
9993      /OCGs \OBJ@OCGs
9994      /Category[/Print]%
9995      >>%
9996      ]%
9997      >>%
9998      >>%
9999      >>%
10000 }%
10001  \AtBeginShipout{%
10002  \setbox\AtBeginShipoutBox=\hbox{%
10003  \copy\AtBeginShipoutBox
10004  \@pdfm@mark{%
10005  put @resources <<%
10006  /Properties<<%
10007  /OCView \OBJ@OCG@view
10008  /OCPrint \OBJ@OCG@print
10009  >>%
10010  >>%
10011  }%
10012  }%
10013  }%
10014  \Hy@AtBeginDocument{%
10015  \def\Hy@colorlink#1{%
10016  \begingroup
10017  \ifHy@ocgcolorlinks
10018  \def\Hy@ocgcolor{#1}%
10019  \setbox0=\hbox\bgroup\color@begingroup
10020  \else
10021  \HyColor@UseColor#1%
10022  \fi
10023  }%
10024  \def\Hy@endcolorlink{%
10025  \ifHy@ocgcolorlinks
10026  \color@endgroup\egroup
10027  \mbox{%
10028  \@pdfm@mark{content /OC/OCPrint BDC}%
10029  \rlap{\copy0}%
10030  \@pdfm@mark{content EMC/OC/OCView BDC}%
10031  \begingroup
10032  \expandafter\HyColor@UseColor\Hy@ocgcolor
10033  \box0 %
10034  \endgroup
10035  \@pdfm@mark{content EMC}%
10036  }%
10037  \fi
10038  \endgroup
10039  }%
10040  }%
10041  \else
10042  \Hy@DisableOption{ocgcolorlinks}%
10043  \fi

```

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

```

10044 \def\Hy@BeginAnnot#1{%
10045   \global\advance\c@Hy@AnnotLevel\@ne
10046   \ifnum\c@Hy@AnnotLevel=\@ne
10047     #1%
10048   \fi
10049 }
10050 \def\Hy@endAnnot{%
10051   \ifnum\value{Hy@AnnotLevel}=\@ne
10052     \Hy@endcolorlink
10053     \@pdfm@mark{eann}%
10054   \fi
10055   \global\advance\c@Hy@AnnotLevel\m@ne
10056 }

10057 \def\Hy@undefinedname{UNDEFINED}
10058 \def\hyper@linkstart#1#2{%
10059   \Hy@VerboseLinkStart{#1}{#2}%
10060   \leavevmode
10061   \Hy@BeginAnnot{%
10062     \protected@edef\Hy@testname{#2}%
10063     \ifx\Hy@testname\@empty
10064       \Hy@Warning{%
10065         Empty destination name,\MessageBreak
10066         using ``\Hy@undefinedname'%
10067       }%
10068       \let\Hy@testname\Hy@undefinedname
10069     \else
10070       \Hy@pstringdef\Hy@testname{%
10071         \expandafter\HyperDestNameFilter\expandafter{%
10072           \Hy@testname
10073         }%
10074       }%
10075     \fi
10076     \@pdfm@mark{%
10077       bann<<%
10078       /Type/Annot%
10079       /Subtype/Link%
10080       \ifHy@pdfa /F 4\fi
10081       \Hy@setpdfborder
10082       \Hy@setpdfhighlight
10083       \expandafter\ifx\csname @#1bordercolor\endcsname\relax
10084       \else
10085         /C[\csname @#1bordercolor\endcsname]%
10086       \fi
10087       /A<<%
10088       /S/GoTo%
10089       /D(\Hy@testname)%
10090       \Hy@href@nextactionraw
10091       >>%
10092       >>%
10093     }%
10094     \expandafter\Hy@colorlink\csname @#1color\endcsname

```

```

10095 }%
10096 }
10097 \def\hyper@linkend{\Hy@EndAnnot}%
10098 \def\hyper@link#1#2#3{%
10099   \hyper@linkstart{#1}{#2}#3\Hy@xspace@end\hyper@linkend
10100 }
10101 \def\hyper@linkfile#1#2#3{%
10102   \leavevmode
10103   \Hy@BeginAnnot{%
10104     \def\Hy@pstringF{#2}%
10105     \Hy@CleanupFile\Hy@pstringF
10106     \Hy@pstringdef\Hy@pstringF\Hy@pstringF
10107     \Hy@pstringdef\Hy@pstringD{#3}%
10108     \Hy@MakeRemoteAction
10109     \@pdfm@mark{%
10110       bann<<%
10111       /Type/Annot%
10112       /Subtype/Link%
10113       \ifHy@pdfa /F 4\fi
10114       \Hy@setpdfborder
10115       \Hy@setpdfhighlight
10116       \ifx\@filebordercolor\relax
10117         \else
10118           /C[\@filebordercolor]%
10119         \fi
10120       /A<<%
10121       /S/GoToR%
10122       /F(\Hy@pstringF)%
10123       /D%
10124       \ifx\#3\%
10125         [\Hy@href@page\@pdfremotestartview]%
10126       \else
10127         (\Hy@pstringD)%
10128       \fi
10129       \Hy@SetNewWindow
10130       \Hy@href@nextactionraw
10131       >>%
10132     >>%
10133   }%
10134   \Hy@colorlink\@filecolor
10135 }%
10136 #1\Hy@xspace@end
10137 \Hy@EndAnnot
10138 }
10139 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
10140   \leavevmode
10141   \Hy@BeginAnnot{%
10142     \Hy@pstringdef\Hy@pstringF{#1}%
10143     \Hy@pstringdef\Hy@pstringP{#3}%
10144     \@pdfm@mark{%
10145       bann<<%
10146       /Type/Annot%
10147       /Subtype/Link%
10148       \ifHy@pdfa /F 4\fi

```

```

10149 \Hy@setpdfborder
10150 \Hy@setpdfhighlight
10151 \ifx\@runbordercolor\relax
10152 \else
10153 /C[\@runbordercolor]%
10154 \fi
10155 /A<<%
10156 /F(\Hy@pstringF)%
10157 /S/Launch%
10158 \Hy@SetNewWindow
10159 \ifx\#3\%
10160 \else
10161 /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
10162 \fi
10163 \Hy@href@nextactionraw
10164 >>%
10165 >>%
10166 }%
10167 \Hy@colorlink\@runcolor
10168 }%
10169 #2\Hy@xspace@end
10170 \Hy@EndAnnot
10171 }
10172 \def\hyper@linkurl#1#2{%
10173 \leavevmode
10174 \Hy@BeginAnnot{%
10175 \Hy@pstringdef\Hy@pstringURI{#2}%
10176 \@pdfm@mark{%
10177 bann<<%
10178 /Type/Annot%
10179 /Subtype/Link%
10180 \ifHy@pdfa /F 4\fi
10181 \Hy@setpdfborder
10182 \Hy@setpdfhighlight
10183 \ifx\@urlbordercolor\relax
10184 \else
10185 /C[\@urlbordercolor]%
10186 \fi
10187 /A<<%
10188 /S/URI%
10189 /URI(\Hy@pstringURI)%
10190 \ifHy@href@ismap
10191 /IsMap true%
10192 \fi
10193 \Hy@href@nextactionraw
10194 >>%
10195 >>%
10196 }%
10197 \Hy@colorlink\@urlcolor
10198 }%
10199 #1\Hy@xspace@end
10200 \Hy@EndAnnot
10201 }
10202 \def\Acrobatmenu#1#2{%

```



```

10203 \Hy@Acrobatmenu{#1}{#2}{%
10204 \Hy@BeginAnnot{%
10205 \EdefEscapeName\Hy@temp@menu{#1}%
10206 \@pdfm@mark{%
10207   bann<<%
10208   /Type/Annot%
10209   /Subtype/Link%
10210   \ifHy@pdfa /F 4\fi
10211   \Hy@setpdfborder
10212   \Hy@setpdfhighlight
10213   \ifx\@menubordercolor\relax
10214   \else
10215     /C[\@menubordercolor]%
10216   \fi
10217   /A<<%
10218   /S/Named%
10219   /N/\Hy@temp@menu
10220   \Hy@href@nextactionraw
10221   >>%
10222   >>%
10223   }%
10224   \Hy@colorlink\@menucolor
10225   }%
10226   #2\Hy@xspace@end
10227   \Hy@endAnnot
10228   }%
10229 }
10230
10231 \def\PDF@FinishDoc{%
10232 \Hy@UseMaketitleInfos
10233 \HyInfo@GenerateAddons
10234 \@pdfm@mark{%
10235   docinfo<<%
10236   /Title(\@pdftitle)%
10237   /Subject(\@pdfsubject)%
10238   /Creator(\@pdfcreator)%
10239   \ifx\@pdfcreationdate\empty
10240   \else
10241     /CreationDate(\@pdfcreationdate)%
10242   \fi
10243   \ifx\@pdfmoddate\empty
10244   \else
10245     /ModDate(\@pdfmoddate)%
10246   \fi
10247   /Author(\@pdfauthor)%
10248   \ifx\@pdfproducer\relax
10249   \else
10250     /Producer(\@pdfproducer)%
10251   \fi
10252   /Keywords(\@pdfkeywords)%
10253   \ifx\@pdftrapped\empty
10254   \else
10255     /Trapped/\@pdftrapped
10256   \fi

```

```

10257     \HyInfo@Addons
10258     >>%
10259 }%
10260 \Hy@DisableOption{pdfauthor}%
10261 \Hy@DisableOption{pdftitle}%
10262 \Hy@DisableOption{pdfsubject}%
10263 \Hy@DisableOption{pdfcreator}%
10264 \Hy@DisableOption{addtopdfcreator}%
10265 \Hy@DisableOption{pdfcreationdate}%
10266 \Hy@DisableOption{pdfcreationdate}%
10267 \Hy@DisableOption{pdfmoddate}%
10268 \Hy@DisableOption{pdfproducer}%
10269 \Hy@DisableOption{pdfkeywords}%
10270 \Hy@DisableOption{pdftrapped}%
10271 \Hy@DisableOption{pdfinfo}%
10272 }

10273 \def\PDF@SetupDoc{%
10274   \edef\Hy@temp{%
10275     \ifHy@pdftoolbar\else /HideToolbar true\fi
10276     \ifHy@pdfmenubar\else /HideMenubar true\fi
10277     \ifHy@pdfwindowui\else /HideWindowUI true\fi
10278     \ifHy@pdfwindow /FitWindow true\fi
10279     \ifHy@pdfcenterwindow /CenterWindow true\fi
10280     \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10281     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10282     \Hy@UseNameKey{Direction}\@pdfdirection
10283     \Hy@UseNameKey{ViewArea}\@pdfviewarea
10284     \Hy@UseNameKey{ViewClip}\@pdfviewclip
10285     \Hy@UseNameKey{PrintArea}\@pdfprintarea
10286     \Hy@UseNameKey{PrintClip}\@pdfprintclip
10287     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10288     \Hy@UseNameKey{Duplex}\@pdfduplex
10289     \ifx\@pdfpicktraybypdfsize\@empty
10290     \else
10291       /PickTrayByPDFSize \@pdfpicktraybypdfsize
10292     \fi
10293     \ifx\@pdfprintpagerange\@empty
10294     \else
10295       /PrintPageRange[\@pdfprintpagerange]%
10296     \fi
10297     \ifx\@pdfnumcopies\@empty
10298     \else
10299       /NumCopies \@pdfnumcopies
10300     \fi
10301   }%
10302   \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10303   \@pdfm@mark{%
10304     docview<<%
10305     \ifx\@pdfstartpage\@empty
10306     \else
10307       \ifx\@pdfstartview\@empty
10308       \else
10309         /OpenAction[@page\@pdfstartpage\@pdfstartview]%
10310       \fi

```

```

10311 \fi
10312 \ifx\@baseurl\@empty
10313 \else
10314 /URI<</Base(\Hy@pstringB)>>%
10315 \fi
10316 /PageMode/\@pdfpagemode
10317 \ifx\Hy@temp\@empty
10318 \else
10319 /ViewerPreferences<<\Hy@temp>>%
10320 \fi
10321 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10322 \ifx\@pdflang\relax
10323 \else
10324 /Lang(\@pdflang)%
10325 \fi
10326 >>%
10327 }%
10328 \ifx\@pdfpagescrop\@empty
10329 \else
10330 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}}%
10331 \fi
10332 }
10333 </dvipdfm | xetex>
10334 < *dvipdfm | xetex>

```

\hyper@pagetransition

```

10335 \def\hyper@pagetransition{%
10336 \ifx\@pdfpagetransition\relax
10337 \else
10338 \ifx\@pdfpagetransition\@empty
10339 \else
10340 \special{pdf:put @thispage %
10341 <</Trans<</S/\@pdfpagetransition>>>>%
10342 }%
10343 \fi
10344 \fi
10345 }

```

\hyper@pageduration

```

10346 \def\hyper@pageduration{%
10347 \ifx\@pdfpageduration\relax
10348 \else
10349 \ifx\@pdfpageduration\@empty
10350 \else
10351 \special{pdf:put @thispage %
10352 <</Dur \@pdfpageduration>>>>%
10353 }%
10354 \fi
10355 \fi
10356 }

10357 \g@addto@macro\Hy@EveryPageBoxHook{%
10358 \hyper@pagetransition
10359 \hyper@pageduration

```

```

10360 }
10361 </dvipdfm | xetex>

XeTeX uses pdfTeX's method \pdfpagewidth and \pdfpageheight for setting
the paper size.
10362 <*dvipdfm>
10363 \AtBeginShipoutFirst{%
10364   \ifHy@setpagesize
10365     \begingroup
10366     \ifundefined{stockwidth}{%
10367       \ifdim\paperwidth>\z@
10368       \ifdim\paperheight>\z@
10369         \special{papersize=\the\paperwidth,\the\paperheight}%
10370       \fi
10371     \fi
10372   }{%
10373     \ifdim\stockwidth>\z@
10374     \ifdim\stockheight>\z@
10375       \special{papersize=\the\stockwidth,\the\stockheight}%
10376     \fi
10377   \fi
10378 }%
10379 \endgroup
10380 \fi
10381 \Hy@DisableOption{setpagesize}%
10382 }
10383 </dvipdfm>

```

## 43.6 VTeX typesetting system

Provided by MicroPress, May 1998. They require VTeX version 6.02 or newer; see <http://www.micropress-inc.com/> for details.

```

10384 <*vtexhtml>
10385 \providecommand*\XR@ext}{htm}
10386 \RequirePackage{vtexhtml}
10387 \newif\if@Localurl
10388 \let\PDF@FinishDoc\ltx@empty
10389 \def\PDF@SetupDoc{%
10390   \ifx\@baseurl\@empty
10391     \else
10392     \special{!direct <base href="\@baseurl">}%
10393   \fi
10394 }
10395 \def\@urltype{url}
10396 \def\hyper@link#1#2#3{%
10397   \Hy@VerboseLinkStart{#1}{#2}%
10398   \leavevmode
10399   \special{!direct <a href=%
10400     \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
10401   #3\Hy@xspace@end
10402   \special{!direct </a>}%
10403 }
10404 \def\hyper@linkurl#1#2{%

```

```

10405 \begingroup
10406 \hyper@chars
10407 \leavevmode
10408 \MathBSuppress=1\relax
10409 \special{!direct <a href=%
10410 \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}}%
10411 #1\Hy@xspace@end
10412 \MathBSuppress=0\relax
10413 \special{!direct </a>}}%
10414 \endgroup
10415 }
10416 \def\hyper@linkfile#1#2#3{%
10417 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
10418 }
10419 \def\hyper@linkstart#1#2{%
10420 \Hy@VerboseLinkStart{#1}{#2}%
10421 \def\Hy@tempa{#1}\ifx\Hy@tempa\@urlltype
10422 \@Localurltrue
10423 \special{!direct <a href=\hyper@quote#2\hyper@quote>}}%
10424 \else
10425 \@Localurlfalse
10426 \begingroup
10427 \hyper@chars
10428 \special{!aref \HyperDestNameFilter{#2}}}%
10429 \endgroup
10430 \fi
10431 }
10432 \def\hyper@linkend{%
10433 \if@Localurl
10434 \special{!endaref}}%
10435 \else
10436 \special{!direct </a>}}%
10437 \fi
10438 }
10439 \Hy@WrapperDef\hyper@anchorstart#1{%
10440 \Hy@SaveLastskip
10441 \Hy@VerboseAnchor{#1}%
10442 \begingroup
10443 \hyper@chars
10444 \special{!aname #1}%
10445 \special{!direct <a name=%
10446 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}}%
10447 \endgroup
10448 \Hy@activeanchortrue
10449 }
10450 \def\hyper@anchorend{%
10451 \special{!direct </a>}}%
10452 \Hy@activeanchorfalse
10453 \Hy@RestoreLastskip
10454 }
10455 \Hy@WrapperDef\hyper@anchor#1{%
10456 \Hy@SaveLastskip
10457 \Hy@VerboseAnchor{#1}%
10458 \begingroup

```

```

10459 \let\protect=\string
10460 \hyper@chars
10461 \leavevmode
10462 \special{!aname #1}%
10463 \special{!direct <a name=%
10464     \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10465 \endgroup
10466 \Hy@activeanchortrue
10467 \bgroup\anchor@spot\egroup
10468 \special{!direct </a>}%
10469 \Hy@activeanchorfalse
10470 \Hy@RestoreLastskip
10471 }
10472 \def\@Form[#1]{%
10473 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10474 }
10475 \let\@endForm\ltx@empty
10476 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10477 \Hy@Message{Sorry, TeXpider does not yet support FORM gauges}%
10478 }
10479 \def\@TextField[#1]#2{% parameters, label
10480 \Hy@Message{Sorry, TeXpider does not yet support FORM text fields}%
10481 }
10482 \def\@CheckBox[#1]#2{% parameters, label
10483 \Hy@Message{Sorry, TeXpider does not yet support FORM checkboxes}%
10484 }
10485 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10486 \Hy@Message{Sorry, TeXpider does not yet support FORM choice menus}%
10487 }
10488 \def\@PushButton[#1]#2{% parameters, label
10489 \Hy@Message{Sorry, TeXpider does not yet support FORM pushbuttons}%
10490 }
10491 \def\@Reset[#1]#2{%
10492 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10493 }
10494 \def\@Submit[#1]#2{%
10495 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10496 }
10497 </vtexhtml>
10498 <*vtex>

```

VTeX version 6.68 supports `\mediawidth` and `\mediaheight`. The `\ifx` construct is better than a `\csname`, because it avoids the definition and the hash table entry of a previous undefined macro.

```

10499 \ifx\mediaheight\@undefined
10500 \else
10501 \ifx\mediaheight\relax
10502 \else
10503 \ifHy@setpagesize
10504 \providecommand*\VTeXInitMediaSize{%
10505 \ltx@ifundefined{stockwidth}{%
10506 \ifdim\paperheight>0pt %
10507 \setlength\mediaheight\paperheight
10508 \fi

```

```

10509         \ifdim\paperheight>0pt %
10510             \setlength\mediawidth\paperwidth
10511         \fi
10512     }{%
10513         \ifdim\stockheight>0pt %
10514             \setlength\mediaheight\stockheight
10515         \fi
10516         \ifdim\stockwidth>0pt %
10517             \setlength\mediawidth\stockwidth
10518         \fi
10519     }%
10520 }%
10521 \Hy@AtBeginDocument{\VTeXInitMediaSize}%
10522 \fi
10523 \Hy@DisableOption{setpagesize}%
10524 \fi
10525 \fi

Older versions of VTeX require xyz in lower case.

10526 \providecommand*\@pdfview{xyz}
10527 \providecommand*\@pdfborder{0 0 1}
10528 \providecommand*\@pdfborderstyle{}
10529 \let\CurrentBorderColor\@linkbordercolor
10530 \Hy@WrapperDef\hyper@anchor#1{%
10531     \Hy@SaveLastskip
10532     \Hy@VerboseAnchor{#1}%
10533     \begingroup
10534         \let\protect=\string
10535         \hyper@chars
10536         \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10537     \endgroup
10538     \Hy@activeanchortrue
10539     \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
10540     \Hy@activeanchorfalse
10541     \Hy@RestoreLastskip
10542 }
10543 \Hy@WrapperDef\hyper@anchorstart#1{%
10544     \Hy@SaveLastskip
10545     \Hy@VerboseAnchor{#1}%
10546     \begingroup
10547         \hyper@chars
10548         \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10549     \endgroup
10550     \Hy@activeanchortrue
10551 }
10552 \def\hyper@anchorend{%
10553     \Hy@activeanchorfalse
10554     \Hy@RestoreLastskip
10555 }
10556 \def\@urltype{url}
10557 \def\Hy@undefinedname{UNDEFINED}
10558 \def\hyper@linkstart#1#2{%
10559     \Hy@VerboseLinkStart{#1}{#2}%
10560     \Hy@pstringdef\Hy@pstringURI{#2}%
10561     \expandafter\Hy@colorlink\csname @#1color\endcsname

```

```

10562 \ltx@ifundefined{@#1bordercolor}{%
10563   \let\CurrentBorderColor\relax
10564 }{%
10565   \edef\CurrentBorderColor{%
10566     \csname @#1bordercolor\endcsname
10567   }%
10568 }%
10569 \def\Hy@tempa{#1}%
10570 \ifx\Hy@tempa\@urltype
10571   \special{!%
10572     aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10573     \ifHy@href@ismap
10574       /IsMap true%
10575     \fi
10576     \Hy@href@nextactionraw
10577     >;%
10578     a=<%
10579     \ifHy@pdfa /F 4\fi
10580     \Hy@setpdfborder
10581     \ifx\CurrentBorderColor\relax
10582       \else
10583         /C [\CurrentBorderColor]%
10584       \fi
10585     >%
10586   }%
10587 \else
10588   \protected@edef\Hy@testname{#2}%
10589   \ifx\Hy@testname\@empty
10590     \Hy@Warning{%
10591       Empty destination name,\MessageBreak
10592       using ``\Hy@undefinedname'%
10593     }%
10594     \let\Hy@testname\Hy@undefinedname
10595   \fi
10596   \special{!%
10597     aref \expandafter\HyperDestNameFilter
10598         \expandafter{\Hy@testname};%
10599     a=<%
10600     \ifHy@pdfa /F 4\fi
10601     \Hy@setpdfborder
10602     \ifx\CurrentBorderColor\relax
10603       \else
10604         /C [\CurrentBorderColor]%
10605       \fi
10606     >%
10607   }%
10608 \fi
10609 }
10610 \def\hyper@linkend{%
10611   \special{!endaref}%
10612   \Hy@endcolorlink
10613 }
10614 \def\hyper@linkfile#1#2#3{%
10615   \leavevmode

```



```

10616 \def\Hy@pstringF{#2}%
10617 \Hy@CleanupFile\Hy@pstringF
10618 \special{!%
10619   aref <%
10620     \ifnum\Hy@VTeXversion>753 \ifHy@pdfnewwindow n\fi\fi
10621     f=\Hy@pstringF>#3;%
10622     a=<%
10623       \ifHy@pdfa /F 4\fi
10624       \Hy@setpdfborder
10625       \ifx\@filebordercolor\relax
10626       \else
10627         /C [\@filebordercolor]%
10628       \fi
10629     >%
10630   }%
10631 \Hy@colorlink\@filecolor
10632 #1\Hy@xspace@end
10633 \Hy@endcolorlink
10634 \special{!endaref}%
10635 }
10636 \def\hyper@linkurl#1#2{%
10637   \begingroup
10638     \Hy@pstringdef\Hy@pstringURI{#2}%
10639     \hyper@chars
10640     \leavevmode
10641     \special{!%
10642       aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10643         \ifHy@href@ismap
10644           /IsMap true%
10645         \fi
10646         \Hy@href@nextactionraw
10647       >,%
10648       a=<%
10649         \ifHy@pdfa /F 4\fi
10650         \Hy@setpdfborder
10651         \ifx\@urlbordercolor\relax
10652         \else
10653           /C [\@urlbordercolor]%
10654         \fi
10655       >%
10656     }%
10657 \Hy@colorlink\@urlcolor
10658 #1\Hy@xspace@end
10659 \Hy@endcolorlink
10660 \special{!endaref}%
10661 \endgroup
10662 }
10663 \def\hyper@link#1#2#3{%
10664   \Hy@VerboseLinkStart{#1}{#2}%
10665   \ltx@ifundefined{@#1bordercolor}{%
10666     \let\CurrentBorderColor\relax
10667   }{%
10668     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
10669   }%

```

```

10670 \leavevmode
10671 \protected@edef\Hy@testname{#2}%
10672 \ifx\Hy@testname\@empty
10673   \Hy@Warning{%
10674     Empty destination name,\MessageBreak
10675     using `\'Hy@undefinedname'%
10676   }%
10677   \let\Hy@testname\Hy@undefinedname
10678 \fi
10679 \special{!%
10680   aref \expandafter\HyperDestNameFilter
10681     \expandafter{\Hy@testname};%
10682   a=<%
10683     \ifHy@pdfa /F 4\fi
10684     \Hy@setpdfborder
10685     \ifx\CurrentBorderColor\relax
10686     \else
10687       /C [\CurrentBorderColor]%
10688     \fi
10689   >%
10690 }%
10691 \expandafter
10692 \Hy@colorlink\csname @#1color\endcsname
10693   #3\Hy@xspace@end
10694 \Hy@endcolorlink
10695 \special{!endaref}%
10696 }
10697 \def\hyper@image#1#2{%
10698   \hyper@linkurl{#2}{#1}%
10699 }
10700 \def\@hyper@launch run:#1\#2#3{%
10701   \Hy@pstringdef\Hy@pstringF{#1}%
10702   \Hy@pstringdef\Hy@pstringP{#3}%
10703   \leavevmode
10704   \special{!aref %
10705     <u=%
10706       /Type/Action%
10707       /S/Launch%
10708       /F(\Hy@pstringF)%
10709       \Hy@SetNewWindow
10710       \ifx\#3\%
10711       \else
10712         /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>%
10713       \fi
10714       \Hy@href@nextactionraw
10715     >,%
10716     a=<%
10717       \ifHy@pdfa /F 4\fi
10718       \Hy@setpdfborder
10719       \ifx\@runbordercolor\relax
10720       \else
10721         /C[\@runbordercolor]%
10722       \fi
10723     >%

```

```

10724 }%
10725 \Hy@colorlink\@runcolor
10726 #2\Hy@xspace@end
10727 \Hy@endcolorlink
10728 \special{!endaref}%
10729 }
10730 \def\Acrobatmenu#1#2{%
10731 \EdefEscapeName\Hy@temp@menu{#1}%
10732 \Hy@Acrobatmenu{#1}{#2}{%
10733 \special{!%
10734 aref <u=/S /Named /N /\Hy@temp@menu>;%
10735 a=<%
10736 \ifHy@pdfa /F 4\fi
10737 \Hy@setpdfborder
10738 \ifx\@menubordercolor\relax
10739 \else
10740 /C[\@menubordercolor]%
10741 \fi
10742 >%
10743 }%
10744 \Hy@colorlink\@menucolor
10745 #2\Hy@xspace@end
10746 \Hy@endcolorlink
10747 \special{!endaref}%
10748 }%
10749 }

```

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

The code below makes sense for VTeX 7.02 or later.

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

```

10750 \ifnum\Hy@VTeXversion<702 %
10751 \else
10752 \def\hyper@pagetransition{%
10753 \ifx\@pdfpagetransition\relax
10754 \else
10755 \ifx\@pdfpagetransition\@empty

```

Standard incantation.

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

```

10756 \else
10757 \hvtex@parse@trans\@pdfpagetransition
10758 \fi
10759 \fi
10760 }%

```

I have to write an “honest” parser to convert raw PDF code into VTeX `\special`.  
(AVK)

Syntax of VTeX `\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:

```

10761 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
10762 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
10763 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
10764 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
10765 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
10766 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
10767 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%

```

Optional parameters:

```

10768 \def\hvtex@par@dimension{/Dm}%
10769 \def\hvtex@par@direction{/Di}%
10770 \def\hvtex@par@duration{/D}%
10771 \def\hvtex@par@motion{/M}%

```

Tokenizer:

```

10772 \def\hvtex@gettoken{%
10773   \expandafter\hvtex@gettoken@\hvtex@buffer\@nil
10774 }%

```

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

```

10775 \def\hvtex@gettoken@#1 #2\@nil{%
10776   \edef\hvtex@token{#1}%
10777   \edef\hvtex@buffer{#2}%
10778 }%
10779 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

10780 \let\hvtex@trans@code\@empty
10781 \let\hvtex@param@dimension\@empty
10782 \let\hvtex@param@direction\@empty
10783 \let\hvtex@param@duration\@empty
10784 \let\hvtex@param@motion\@empty
10785 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

10786 \hvtex@gettoken
10787 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

10788   \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

10789   \else
10790     \hvtex@gettoken
10791   \fi
10792 \fi
10793 \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```
10794 \hvtex@trans@params
10795 }%
```

Reentrant macro to parse optional parameters.

```
10796 \def\hvtex@trans@params{%
10797   \ifx\hvtex@buffer\@empty
10798   \else
10799     \hvtex@gettoken
10800     \let\hvtex@trans@par\hvtex@token
10801     \ifx\hvtex@buffer\@empty
10802     \else
10803       \hvtex@gettoken
10804       \ifx\hvtex@trans@par\hvtex@par@duration
```

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

```
10805       \let\hvtex@param@duration\hvtex@token
10806       \else \ifx\hvtex@trans@par\hvtex@par@motion
```

/M can be either /I or /O

```
10807       \expandafter\edef\expandafter\hvtex@param@motion
10808       \expandafter{\expandafter\@gobble\hvtex@token}%
10809       \else \ifx\hvtex@trans@par\hvtex@par@dimension
```

/Dm can be either /H or /V

```
10810       \expandafter\edef\expandafter\hvtex@param@dimension
10811       \expandafter{\expandafter\@gobble\hvtex@token}%
10812       \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).

```
10813       \let\hvtex@param@direction\hvtex@token
10814       \fi\fi\fi\fi
10815       \fi
10816       \fi
10817       \ifx\hvtex@buffer\@empty
10818       \let\next\hvtex@produce@trans
10819       \else
10820       \let\next\hvtex@trans@params
10821       \fi
10822       \next
10823 }%
```

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

```
10824 \def\hvtex@produce@trans{%
10825   \let\vtex@trans@special\@empty
10826   \if S\hvtex@trans@code
10827     \edef\vtex@trans@special{\hvtex@trans@code
10828       \hvtex@param@dimension\hvtex@param@motion}%
10829   \else\if B\hvtex@trans@code
10830     \edef\vtex@trans@special{%
10831       \hvtex@trans@code\hvtex@param@dimension
10832     }%
10833   \else\if X\hvtex@trans@code
10834     \edef\vtex@trans@special{%
```

```

10835     \hvtex@trans@code\hvtex@param@motion
10836   }%
10837 \else\if W\hvtex@trans@code
10838   \edef\vtex@trans@special{%
10839     \hvtex@trans@code\hvtex@param@direction
10840   }%
10841 \else\if D\hvtex@trans@code
10842   \let\vtex@trans@special\hvtex@trans@code
10843 \else\if R\hvtex@trans@code
10844   \let\vtex@trans@special\hvtex@trans@code
10845 \else\if G\hvtex@trans@code
10846   \edef\vtex@trans@special{%
10847     \hvtex@trans@code\hvtex@param@direction
10848   }%
10849 \fi\fi\fi\fi\fi\fi
10850 \ifx\vtex@trans@special\@empty
10851 \else
10852   \ifx\hvtex@param@duration\@empty
10853   \else
10854     \setlength{\dimen@}{\hvtex@param@duration\p@}%

```

I'm not guilty of possible overflow.

```

10855   \multiply\dimen@\@m
10856   \edef\vtex@trans@special{%
10857     \vtex@trans@special,\strip@pt\dimen@
10858   }%
10859 \fi

```

And all the mess is just for this.

```

10860   \special{!trans \vtex@trans@special}%
10861 \fi
10862 }%

10863 \def\hyper@pageduration{%
10864   \ifx\@pdfpageduration\relax
10865   \else
10866     \ifx\@pdfpageduration\@empty
10867       \special{!duration-}%
10868     \else
10869       \special{!duration \@pdfpageduration}%
10870     \fi
10871   \fi
10872 }%
10873 \g@addto@macro\Hy@EveryPageBoxHook{%
10874   \hyper@pagetransition
10875   \hyper@pageduration
10876 }%
10877 \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
10878 \ifx\@pdfproducer\relax
10879 \def\@pdfproducer{VTeX}%
10880 \ifnum\Hy@VTeXversion>\z@
10881 \count@\VTeXversion
10882 \divide\count@ 100 %
10883 \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
10884 \multiply\count@ -100 %
10885 \advance\count@\VTeXversion
10886 \edef\@pdfproducer{%
10887 \@pdfproducer
10888 .\ifnum\count@<10 0\fi\the\count@
10889 \ifx\VTeXOS\@undefined\else
10890 \ifnum\VTeXOS>0 %
10891 \ifnum\VTeXOS<6 %
10892 \space%
10893 \ifcase\VTeXOS
10894 \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
10895 \fi
10896 )%
10897 \fi
10898 \fi
10899 \fi
10900 ,\space
10901 \ifnum\OpMode=\@ne PDF\else PS\fi
10902 \space backend%
10903 \ifx\gexmode\@undefined\else
10904 \ifnum\gexmode>\z@\space with GeX\fi
10905 \fi
10906 }%
10907 \fi
10908 \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).

```

10909 \def\PDF@SetupDoc{%
10910 \ifx\@pdfpagescrop\@empty

```

```

10911 \else
10912   \special{!pdffinfo b=<\@pdfpagescrop>}%
10913 \fi
10914 \ifx\@pdfstartpage\@empty
10915 \else
10916   \ifx\@pdfstartview\@empty
10917   \else
10918     \special{!onopen Page\@pdfstartpage}%
10919   \fi
10920 \fi
10921 \special{!pdffinfo p=<\/\@pdfpagemode>}%
10922 \ifx\@baseurl\@empty
10923 \else
10924   \special{!pdffinfo u=<<<\/Base (\@baseurl)>>>}%
10925 \fi
10926 \special{!pdffinfo v=<<<%
10927   \ifHy@pdftoolbar\else /HideToolbar true\fi
10928   \ifHy@pdfmenubar\else /HideMenubar true\fi
10929   \ifHy@pdfwindowui\else /HideWindowUI true\fi
10930   \ifHy@pdfwindow /FitWindow true\fi
10931   \ifHy@pdfcenterwindow /CenterWindow true\fi
10932   \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10933   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10934   \Hy@UseNameKey{Direction}\@pdfdirection
10935   \Hy@UseNameKey{ViewArea}\@pdfviewarea
10936   \Hy@UseNameKey{ViewClip}\@pdfviewclip
10937   \Hy@UseNameKey{PrintArea}\@pdfprintarea
10938   \Hy@UseNameKey{PrintClip}\@pdfprintclip
10939   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10940   \Hy@UseNameKey{Duplex}\@pdfduplex
10941   \ifx\@pdfpicktraybypdfsize\@empty
10942   \else
10943     /PickTrayByPDFSize \@pdfpicktraybypdfsize
10944   \fi
10945   \ifx\@pdfprintpagerange\@empty
10946   \else
10947     /PrintPageRange[\@pdfprintpagerange]%
10948   \fi
10949   \ifx\@pdfnumcopies\@empty
10950   \else
10951     /NumCopies \@pdfnumcopies
10952   \fi
10953 >>>}%
10954 \ifx\@pdfpagelayout\@empty
10955 \else
10956   \special{!pdffinfo l=<\/\@pdfpagelayout\space>}%
10957 \fi
10958 }%
10959 \HyInfo@AddonUnsupportedtrue
10960 \define@key{Hyp}{pdfcreationdate}{%
10961   \Hy@Warning{%
10962     VTeX does not support pdfcreationdate.\MessageBreak
10963     Therefore its setting is ignored%
10964   }%

```



```

10965 }
10966 \define@key{Hyp}{pdfmoddate}{%
10967   \Hy@Warning{%
10968     VTeX does not support pdfmoddate.\MessageBreak
10969     Therefore its setting is ignored%
10970   }%
10971 }
10972 \def\PDF@FinishDoc{%
10973   \Hy@UseMaketitleInfos
10974   \HyInfo@TrappedUnsupported
10975   \special{!pdfinfo a=<\@pdfauthor>}%
10976   \special{!pdfinfo t=<\@pdftitle>}%
10977   \special{!pdfinfo s=<\@pdfsubject>}%
10978   \special{!pdfinfo c=<\@pdfcreator>}%
10979   \ifx\@pdfproducer\relax
10980   \else
10981     \special{!pdfinfo r=<\@pdfproducer>}%
10982   \fi
10983   \special{!pdfinfo k=<\@pdfkeywords>}%
10984   \Hy@DisableOption{pdfauthor}%
10985   \Hy@DisableOption{pdftitle}%
10986   \Hy@DisableOption{pdfsubject}%
10987   \Hy@DisableOption{pdfcreator}%
10988   \Hy@DisableOption{addtopdfcreator}%
10989   \Hy@DisableOption{pdfcreationdate}%
10990   \Hy@DisableOption{pdfcreationdate}%
10991   \Hy@DisableOption{pdfmoddate}%
10992   \Hy@DisableOption{pdfproducer}%
10993   \Hy@DisableOption{pdfkeywords}%
10994   \Hy@DisableOption{pdftrapped}%
10995   \Hy@DisableOption{pdfinfo}%
10996 }
10997 </vtex>

```

### 43.7 Fix for Adobe bug number 466320

If a destination occurs at the very begin of a page, the destination is moved to the previous page by Adobe Distiller 5. As workaround Adobe suggests:

```

/showpage {
  //showpage
  clippath stroke erasepage
} bind def

```

But unfortunately this fix generates an empty page at the end of the document. Therefore another fix is used by writing some clipped text.

```

10998 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
10999 <package>\providecommand*{\Hy@DistillerDestFix}{}
11000 <*pdfmark | dviwindo>
11001 \def\Hy@DistillerDestFix{%
11002   \begingroup
11003     \let\x\literalps@out

```

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

```

11004 \ifnum \@ifundefined{OpMode}{0}{%
11005     \@ifundefined{gexmode}{0}{%
11006         \ifnum\gexmode>0 \OpMode\else 0\fi
11007     }>1 %
11008     \def\x##1{%
11009         \immediate\special{!=##1}%
11010     }%
11011 \fi
11012 \x{%
11013     /product where{%
11014         pop %
11015         product(Distiller)search{%
11016             pop pop pop %
11017             version(.)search{%
11018                 exch pop exch pop%
11019                 (3011)eq{%
11020                     gsave %
11021                     newpath 0 0 moveto closepath clip%
11022                     /Courier findfont 10 scalefont setfont %
11023                     72 72 moveto(.).show %
11024                     grestore%
11025                 }if%
11026             }{pop}ifelse%
11027         }{pop}ifelse%
11028     }if%
11029 }%
11030 \endgroup
11031 }
11032 </pdfmark | dviwindo>

```

### 43.8 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

```

```

11033 <*pdfmark>
11034 \Hy@breaklinks@unsupported
11035 \def\HyPat@ObjRef{%
11036     \[~{}]+\}%
11037 }
11038 \Hy@WrapperDef\hyper@anchor#1{%
11039     \Hy@SaveLastskip
11040     \Hy@VerboseAnchor{#1}%
11041     \begingroup

```

```

11042 \pdfmark[\anchor@spot]{%
11043 pdfmark=/DEST,%
11044 linktype=anchor,%
11045 View=/\@pdfview \@pdfviewparams,%
11046 DestAnchor={#1}%
11047 }%
11048 \endgroup
11049 \Hy@RestoreLastskip
11050 }
11051 \ltx@ifundefined{hyper@anchorstart}{\endinput}
11052 \Hy@WrapperDef\hyper@anchorstart#1{%
11053 \Hy@SaveLastskip
11054 \Hy@VerboseAnchor{#1}%
11055 \literalps@out{H.S}%
11056 \Hy@AllowHyphens
11057 \xdef\hyper@currentanchor{#1}%
11058 \Hy@activeanchortrue
11059 }
11060 \def\hyper@anchorend{%
11061 \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
11062 \pdfmark{%
11063 pdfmark=/DEST,%
11064 linktype=anchor,%
11065 View=/\@pdfview \@pdfviewparams,%
11066 DestAnchor=\hyper@currentanchor,%
11067 }%
11068 \Hy@activeanchorfalse
11069 \Hy@RestoreLastskip
11070 }
11071 \def\hyper@linkstart#1#2{%
11072 \Hy@VerboseLinkStart{#1}{#2}%
11073 \ifHy@breaklinks
11074 \else
11075 \leavevmode
11076 \ifmmode
11077 \def\Hy@LinkMath{$}%
11078 \else
11079 \let\Hy@LinkMath\ltx@empty
11080 \fi
11081 \Hy@SaveSpaceFactor
11082 \hbox\bgroup
11083 \Hy@RestoreSpaceFactor
11084 \Hy@LinkMath
11085 \fi
11086 \expandafter\Hy@colorlink\csname @#1color\endcsname
11087 \literalps@out{H.S}%
11088 \Hy@AllowHyphens
11089 \xdef\hyper@currentanchor{#2}%
11090 \gdef\hyper@currentlinktype{#1}%
11091 }
11092 \def\hyper@linkend{%
11093 \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
11094 \ltx@ifundefined{@\hyper@currentlinktype bordercolor}{%
11095 \let\Hy@tempcolor\relax

```

```

11096 }{%
11097   \edef\Hy@tempcolor{%
11098     \csname @\hyper@currentlinktype bordercolor\endcsname
11099   }%
11100 }%
11101 \pdfmark{%
11102   pdfmark=/ANN,%
11103   linktype=link,%
11104   Subtype=/Link,%
11105   PDFAFlags=4,%
11106   Dest=\hyper@currentanchor,%
11107   AcroHighlight=\@pdfhighlight,%
11108   Border=\@pdfborder,%
11109   BorderStyle=\@pdfborderstyle,%
11110   Color=\Hy@tempcolor,%
11111   Raw=H.B%
11112 }%
11113 \Hy@endcolorlink
11114 \ifHy@breaklinks
11115 \else
11116   \Hy@LinkMath
11117   \Hy@SaveSpaceFactor
11118 \egroup
11119 \Hy@RestoreSpaceFactor
11120 \fi
11121 }

```

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.

```

11122 \begingroup
11123 \catcode`P=12 %
11124 \catcode`T=12 %
11125 \lowercase{\endgroup
11126 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
11127 }
11128 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

`\hyper@pagetransition`

```

11129 \def\hyper@pagetransition{%
11130   \ifx\@pdfpagetransition\relax
11131   \else
11132     \ifx\@pdfpagetransition\@empty
11133       % 1. Does an old entry have to be deleted?
11134       % 2. If 1=yes, how to delete?
11135     \else
11136       \pdfmark{%
11137         pdfmark=/PUT,%
11138         Raw={%
11139           \string{ThisPage\string}%
11140           <</Trans << /S /\@pdfpagetransition\space >> >>%
11141         }%
11142       }%
11143     \fi

```

```

11144 \fi
11145 }

\hyper@pageduration
11146 \def\hyper@pageduration{%
11147 \ifx\@pdfpageduration\relax
11148 \else
11149 \ifx\@pdfpageduration\@empty
11150 % 1. Does an old entry have to be deleted?
11151 % 2. If 1=yes, how to delete?
11152 \else
11153 \pdfmark{%
11154 pdfmark=/PUT,%
11155 Raw={%
11156 \string{ThisPage\string}%
11157 <</Dur \@pdfpageduration>>%
11158 }%
11159 }%
11160 \fi
11161 \fi
11162 }

11163 \g@addto@macro\Hy@EveryPageBoxHook{%
11164 \hyper@pagetransition
11165 \hyper@pageduration
11166 }

11167 \def\hyper@image#1#2{%
11168 \hyper@linkurl{#2}{#1}%
11169 }
11170 \def\Hy@undefinedname{UNDEFINED}
11171 \def\hyper@link#1#2#3{%
11172 \Hy@VerboseLinkStart{#1}{#2}%
11173 \ltx@ifundefined{#1bordercolor}{%
11174 \let\Hy@tempcolor\relax
11175 }{%
11176 \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
11177 }%
11178 \begingroup
11179 \protected@edef\Hy@testname{#2}%
11180 \ifx\Hy@testname\@empty
11181 \Hy@Warning{%
11182 Empty destination name,\MessageBreak
11183 using ``\Hy@undefinedname'%
11184 }%
11185 \let\Hy@testname\Hy@undefinedname
11186 \fi
11187 \pdfmark[{#3}]{%
11188 Color=\Hy@tempcolor,%
11189 linktype={#1},%
11190 AcroHighlight=\@pdfhighlight,%
11191 Border=\@pdfborder,%
11192 BorderStyle=\@pdfborderstyle,%
11193 pdfmark=/ANN,%
11194 Subtype=/Link,%

```

```

11195     PDFAFlags=4,%
11196     Dest=\Hy@testname
11197 }%
11198 \endgroup
11199 }
11200 \newtoks\pdf@docset
11201 \def\PDF@FinishDoc{%
11202   \Hy@UseMaketitleInfos
11203   \HyInfo@GenerateAddons
11204   \let\Hy@temp\@empty
11205   \ifx\@pdfcreationdate\@empty
11206   \else
11207     \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
11208   \fi
11209   \ifx\@pdfmoddate\@empty
11210   \else
11211     \expandafter\def\expandafter\Hy@temp\expandafter{%
11212       \Hy@temp
11213       ModDate=\@pdfmoddate,%
11214     }%
11215   \fi
11216   \ifx\@pdfproducer\relax
11217   \else
11218     \expandafter\def\expandafter\Hy@temp\expandafter{%
11219       \Hy@temp
11220       Producer=\@pdfproducer,%
11221     }%
11222   \fi
11223   \expandafter
11224   \pdfmark\expandafter{%
11225     \Hy@temp
11226     pdfmark=/DOCINFO,%
11227     Title=\@pdftitle,%
11228     Subject=\@pdfsubject,%
11229     Creator=\@pdfcreator,%
11230     Author=\@pdfauthor,%
11231     Keywords=\@pdfkeywords,%
11232     Trapped=\@pdftrapped
11233   }%
11234   \ifx\HyInfo@Addons\@empty
11235   \else
11236     \pdfmark{%
11237       pdfmark=/DOCINFO,%
11238       Raw={\HyInfo@Addons}%
11239     }%
11240   \fi
11241   \Hy@DisableOption{pdfauthor}%
11242   \Hy@DisableOption{pdftitle}%
11243   \Hy@DisableOption{pdfsubject}%
11244   \Hy@DisableOption{pdfcreator}%
11245   \Hy@DisableOption{addtopdfcreator}%
11246   \Hy@DisableOption{pdfcreationdate}%
11247   \Hy@DisableOption{pdfcreationdate}%
11248   \Hy@DisableOption{pdfmoddate}%

```

```

11249 \Hy@DisableOption{pdfproducer}%
11250 \Hy@DisableOption{pdfkeywords}%
11251 \Hy@DisableOption{pdftrapped}%
11252 \Hy@DisableOption{pdfinfo}%
11253 }
11254 \def\PDF@SetupDoc{%
11255 \def\Hy@temp{}%
11256 \ifx\@pdfstartpage\@empty
11257 \else
11258 \ifx\@pdfstartview\@empty
11259 \else
11260 \edef\Hy@temp{%
11261 ,Page=\@pdfstartpage
11262 ,View=\@pdfstartview
11263 }%
11264 \fi
11265 \fi
11266 \edef\Hy@temp{%
11267 \noexpand\pdfmark{%
11268 pdfmark=/DOCVIEW,%
11269 PageMode=/\@pdfpagemode
11270 \Hy@temp
11271 }%
11272 }%
11273 \Hy@temp
11274 \ifx\@pdfpagescrop\@empty
11275 \else
11276 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
11277 \fi
11278 \edef\Hy@temp{%
11279 \ifHy@pdftoolbar\else /HideToolbar true\fi
11280 \ifHy@pdfmenubar\else /HideMenubar true\fi
11281 \ifHy@pdfwindowui\else /HideWindowUI true\fi
11282 \ifHy@pdffitwindow /FitWindow true\fi
11283 \ifHy@pdfcenterwindow /CenterWindow true\fi
11284 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
11285 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
11286 \Hy@UseNameKey{Direction}\@pdfdirection
11287 \Hy@UseNameKey{ViewArea}\@pdfviewarea
11288 \Hy@UseNameKey{ViewClip}\@pdfviewclip
11289 \Hy@UseNameKey{PrintArea}\@pdfprintarea
11290 \Hy@UseNameKey{PrintClip}\@pdfprintclip
11291 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
11292 \Hy@UseNameKey{Duplex}\@pdfduplex
11293 \ifx\@pdfpicktraybypdfsize\@empty
11294 \else
11295 /PickTrayByPDFSize \@pdfpicktraybypdfsize
11296 \fi
11297 \ifx\@pdfprintpagerange\@empty
11298 \else
11299 /PrintPageRange[\@pdfprintpagerange]%
11300 \fi
11301 \ifx\@pdfnumcopies\@empty
11302 \else

```

```

11303 /NumCopies \@pdfnumcopies
11304 \fi
11305 }%
11306 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
11307 \pdfmark{%
11308 pdfmark=/PUT,%
11309 Raw={%
11310 \string{Catalog\string}<<%
11311 \ifx\Hy@temp\@empty
11312 \else
11313 /ViewerPreferences<<\Hy@temp>>%
11314 \fi
11315 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
11316 \ifx\@pdflang\relax
11317 \else
11318 /Lang(\@pdflang)%
11319 \fi
11320 \ifx\@baseurl\@empty
11321 \else
11322 /URI<</Base(\Hy@pstringB)>>%
11323 \fi
11324 >>%
11325 }%
11326 }%
11327 }
11328 \</pdfmark>
11329 \<*/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.

```

11330 \newif\ifHy@pdfmarkerror
11331 \def\pdfmark{\@ifnextchar{\pdfmark@}{\pdfmark@[]}}
11332 \def\pdfmark@[#1]#2{%
11333 \Hy@pdfmarkerrorfalse
11334 \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
11335 \@processme
11336 \let\pdf@type\relax
11337 \let\pdf@objdef\ltx@empty
11338 \kvsetkeys{PDF}{#2}%
11339 \ifHy@pdfmarkerror
11340 \else
11341 \ifx\pdf@type\relax
11342 \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
11343 \ifx\#1\%
11344 \else
11345 \pdf@rect{#1}%
11346 \fi
11347 \else
11348 \ifx\#1\%
11349 \literalps@out{%

```



```

11350 [%
11351 \ifx\pdf@objdef\ltx@empty
11352 \else
11353 /_objdef\string{\pdf@objdef\string}%
11354 \fi
11355 \the\pdf@toks\space\pdf@type\space pdfmark%
11356 }%
11357 \else
11358 \ltx@ifundefined{@\pdf@linktype color}{%
11359 \Hy@colorlink\@linkcolor
11360 }{%
11361 \expandafter\Hy@colorlink
11362 \csname @\pdf@linktype color\endcsname
11363 }%
11364 \pdf@rect{#1}%
11365 \literalps@out{%
11366 [%
11367 \ifx\pdf@objdef\ltx@empty
11368 \else
11369 /_objdef\string{\pdf@objdef\string}%
11370 \fi
11371 \the\pdf@toks\space\pdf@type\space pdfmark%
11372 }%
11373 \Hy@endcolorlink
11374 \fi
11375 \fi
11376 \fi
11377 }

```

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

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

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

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

```

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

```

```

11378 \newsavebox{\pdf@box}
11379 \providecommand*{\Hy@setouterhbox}{\sbox}
11380 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
11381 \def\Hy@DEST{/DEST}
11382 \def\pdf@rect#1{%
11383 \begingroup
11384 \chardef\x=1 %
11385 \def\Hy@temp{#1}%
11386 \ifx\Hy@temp\ltx@empty
11387 \chardef\x=0 %
11388 \else
11389 \def\y{\anchor@spot}%

```

```

11390 \ifx\Hy@temp\y
11391 \def\y{\relax}%
11392 \ifx\anchor@spot\y
11393 \chardef\x=0 %
11394 \fi
11395 \fi
11396 \fi
11397 \expandafter\endgroup
11398 \ifcase\x
11399 \literalps@out{H.S}%
11400 \literalps@out{H.R}%
11401 \else
11402 \leavevmode
11403 \Hy@SaveSpaceFactor
11404 \ifmmode
11405 \def\Hy@LinkMath{$}%
11406 \else
11407 \let\Hy@LinkMath\ltx@empty
11408 \fi
11409 \ifHy@breaklinks
11410 \Hy@setouterhbox\pdf@box{%
11411 \Hy@RestoreSpaceFactor
11412 \Hy@LinkMath
11413 \Hy@AllowHyphens#1\Hy@xspace@end
11414 \Hy@LinkMath
11415 \Hy@SaveSpaceFactor
11416 }%
11417 \else
11418 \sbox\pdf@box{%
11419 \Hy@RestoreSpaceFactor
11420 \Hy@LinkMath
11421 #1\Hy@xspace@end
11422 \Hy@LinkMath
11423 \Hy@SaveSpaceFactor
11424 }%
11425 \fi
11426 \dimen@ht\pdf@box
11427 \ifdim\dp\pdf@box=\z@
11428 \literalps@out{H.S}%
11429 \else
11430 \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
11431 \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...).

```

11432 \ifHy@breaklinks
11433 \ifhmode
11434 \Hy@breaklinksunhbox\pdf@box
11435 \else
11436 \box\pdf@box
11437 \fi
11438 \else
11439 \expandafter\box\pdf@box
11440 \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

11441 \ifdim\dimen@=\z@
11442 \literalps@out{H.R}%
11443 \else
11444 \raise\dimen@\hbox{\literalps@out{H.R}}%
11445 \fi
11446 \Hy@RestoreSpaceFactor
11447 \fi
11448 \ifx\pdf@type\Hy@DEST
11449 \else
11450 \pdf@addtoksx{H.B}%
11451 \fi
11452 }

```

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.

```

11453 \newtoks\pdf@toks
11454 \newtoks\pdf@defaulttoks
11455 \pdf@defaulttoks={}%
11456 \def\pdf@addtoks#1#2{%
11457 \edef\@processme{\pdf@toks{\the\pdf@toks/#2 #1}}%
11458 \@processme
11459 }
11460 \def\pdf@addtoksx#1{%
11461 \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
11462 \@processme
11463 }
11464 \def\PDFdefaults#1{%
11465 \pdf@defaulttoks={#1}%
11466 }

```

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

```

11467 % what is the type of pdfmark?
11468 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
11469 % what is the link type?
11470 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
11471 \def\pdf@linktype{link}
11472 % named object?
11473 \define@key{PDF}{objdef}{\edef\pdf@objdef{#1}}
11474 \let\pdf@objdef\ltx@empty
11475 % parameter is a stream of PDF
11476 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
11477 % parameter is a name
11478 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
11479 % parameter is a array
11480 \define@key{PDF}{Border}{%
11481 \edef\Hy@temp{#1}%
11482 \ifx\Hy@temp\@empty
11483 \else

```

```

11484 \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
11485 \fi
11486 }
11487 \let\Hy@BorderArrayPatch\@empty
11488 % parameter is a dictionary
11489 \define@key{PDF}{BorderStyle}{%
11490 \edef\Hy@temp{#1}%
11491 \ifx\Hy@temp\@empty
11492 \else
11493 \pdf@addtoks{<<#1>>}{BS}%
11494 \fi
11495 }
11496 % parameter is a array
11497 \define@key{PDF}{Color}{%
11498 \ifx\relax#1\relax
11499 \else
11500 \pdf@addtoks{[#1]}{Color}% hash-ok
11501 \fi
11502 }
11503 % parameter is a string
11504 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
11505 % parameter is a integer
11506 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
11507 % parameter is a array
11508 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
11509 % parameter is a string
11510 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
11511 % parameter is a string or file
11512 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
11513 % parameter is a destination
11514 \define@key{PDF}{Dest}{%
11515 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11516 \ifx\Hy@pstringDest\@empty
11517 \Hy@pdfmarkerrortrue
11518 \Hy@Warning{Destination with empty name ignored}%
11519 \else
11520 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11521 \fi
11522 }
11523 \define@key{PDF}{DestAnchor}{%
11524 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11525 \ifx\Hy@pstringDest\@empty
11526 \Hy@pdfmarkerrortrue
11527 \Hy@Warning{Destination with empty name ignored}%
11528 \else
11529 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11530 \fi
11531 }
11532 % parameter is a string
11533 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
11534 % parameter is a string
11535 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
11536 % parameter is a int
11537 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}

```

```

11538 \define@key{PDF}{PDFAFlags}{%
11539   \ifHy@pdfa
11540     \pdf@addtoks{#1}{F}%
11541   \fi
11542 }
11543 % parameter is a name
11544 \define@key{PDF}{AcroHighlight}{%
11545   \begingroup
11546     \edef\x{#1}%
11547     \expandafter\endgroup\ifx\x\@empty
11548     \else
11549       \pdf@addtoks{#1}{H}%
11550     \fi
11551 }
11552 % parameter is a string
11553 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
11554 % parameter is a string
11555 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
11556 % parameter is a string
11557 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11558 % parameter is a string
11559 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
11560 % parameter is a Boolean
11561 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
11562 % parameter is a integer or name
11563 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
11564 % parameter is a name
11565 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
11566 % parameter is a string
11567 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
11568 % parameter is a array
11569 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
11570 % parameter is a integer
11571 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
11572 % parameter is a name
11573 \define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
11574 % parameter is a string
11575 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
11576 % parameter is a string
11577 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
11578 % parameter is a string
11579 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
11580 % parameter is an array
11581 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
11582 % parameter is a string
11583 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

11584 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
11585 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
11586 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
11587 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11588 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
11589 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
11590 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}

```

```

11591 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11592 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
11593 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}
11594 \define@key{PDF}{Trapped}{%
11595   \edef\Hy@temp{#1}%
11596   \ifx\Hy@temp\@empty
11597   \else
11598     \pdf@addtoks{/#1}{Trapped}%
11599   \fi
11600 }
11601
11602 </pdfmarkbase>
11603 <*pdfmark>
11604 \def\Acrobatmenu#1#2{%
11605   \EdefEscapeName\Hy@temp@menu{#1}%
11606   \Hy@Acrobatmenu{#1}{#2}{%
11607     \pdfmark[{#2}]{%
11608       linktype=menu,%
11609       pdfmark=/ANN,%
11610       AcroHighlight=\@pdfhighlight,%
11611       Border=\@pdfborder,%
11612       BorderStyle=\@pdfborderstyle,%
11613       Color=\@menubordercolor,%
11614       Action={<</Subtype/Named/N/\Hy@temp@menu>>},%
11615       Subtype=/Link,%
11616       PDFAFlags=4%
11617     }%
11618   }%
11619 }

```

And now for some useful examples:

```

11620 \def\PDFNextPage{\@ifnextchar{\PDFNextPage@}{\PDFNextPage@[]}}
11621 \def\PDFNextPage@[#1]#2{%
11622   \pdfmark[{#2}]{%
11623     #1,%
11624     Border=\@pdfborder,%
11625     BorderStyle=\@pdfborderstyle,%
11626     Color=.2 .1 .5,%
11627     pdfmark=/ANN,%
11628     Subtype=/Link,%
11629     PDFAFlags=4,%
11630     Page=/Next%
11631   }%
11632 }
11633 \def\PDFPreviousPage{%
11634   \@ifnextchar{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
11635 }
11636 \def\PDFPreviousPage@[#1]#2{%
11637   \pdfmark[{#2}]{%
11638     #1,%
11639     Border=\@pdfborder,%
11640     BorderStyle=\@pdfborderstyle,%
11641     Color=.4 .4 .1,%
11642     pdfmark=/ANN,%
11643     Subtype=/Link,%

```

```

11644   PDFAFlags=4,%
11645   Page=/Prev%
11646 }%
11647 }
11648 \def\PDFOpen#1{%
11649   \pdfmark{#1,pdfmark=/DOCVIEW}%
11650 }

```

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

```

11651 \def\hyper@linkurl#1#2{%
11652   \begingroup
11653     \Hy@pstringdef\Hy@pstringURI{#2}%
11654     \hyper@chars
11655     \leavevmode
11656     \pdfmark[{#1}]{%
11657       pdfmark=/ANN,%
11658       linktype=url,%
11659       AcroHighlight=\@pdfhighlight,%
11660       Border=\@pdfborder,%
11661       BorderStyle=\@pdfborderstyle,%
11662       Color=\@urlbordercolor,%
11663       Action={<<%
11664         /Subtype/URI%
11665         /URI(\Hy@pstringURI)%
11666         \ifHy@href@ismap
11667           /IsMap true%
11668         \fi
11669       >>},%
11670       Subtype=/Link,%
11671       PDFAFlags=4%
11672     }%
11673   \endgroup
11674 }
11675 \def\hyper@linkfile#1#2#3{%
11676   \begingroup
11677     \def\Hy@pstringF{#2}%
11678     \Hy@CleanupFile\Hy@pstringF
11679     \Hy@pstringdef\Hy@pstringF\Hy@pstringF
11680     \Hy@pstringdef\Hy@pstringD{#3}%
11681     \Hy@MakeRemoteAction
11682     \leavevmode
11683     \pdfmark[{#1}]{%
11684       pdfmark=/ANN,%
11685       Subtype=/Link,%
11686       PDFAFlags=4,%
11687       AcroHighlight=\@pdfhighlight,%
11688       Border=\@pdfborder,%
11689       BorderStyle=\@pdfborderstyle,%
11690       linktype=file,%
11691       Color=\@filebordercolor,%
11692       Action={%
11693         <<%
11694         /S/GoToR%
11695         \Hy@SetNewWindow
11696         /F(\Hy@pstringF)%

```

```

11697      /D%
11698      \ifx\\#3\\%
11699          [\Hy@href@page\@pdfremotestartview]%
11700      \else
11701          (\Hy@pstringD)cvn%
11702      \fi
11703      \Hy@href@nextactionraw
11704      >>%
11705  }%
11706 }%
11707 \endgroup
11708 }
11709 \def\@hyper@launch run:#1\\#2#3{%
11710 \begingroup
11711   \Hy@pstringdef\Hy@pstringF{#1}%
11712   \Hy@pstringdef\Hy@pstringP{#3}%
11713   \leavevmode
11714   \pdfmark[{#2}]{%
11715     pdfmark=/ANN,%
11716     Subtype=/Link,%
11717     PDFAFlags=4,%
11718     AcroHighlight=\@pdfhighlight,%
11719     Border=\@pdfborder,%
11720     BorderStyle=\@pdfborderstyle,%
11721     linktype=run,%
11722     Color=\@runbordercolor,%
11723     Action={%
11724       <<%
11725       /S/Launch%
11726       \Hy@SetNewWindow
11727       /F(\Hy@pstringF)%
11728       \ifx\\#3\\%
11729       \else
11730         /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
11731       \fi
11732       \Hy@href@nextactionraw
11733       >>%
11734     }%
11735   }%
11736 \endgroup
11737 }
11738 \pdfmark

```

Unfortunately, some parts of the `pdfmark` PostScript code depend on vagaries of the dvi driver. We isolate here all the problems.

### 43.9 Rokicki's dvips

dvips thinks in 10ths of a big point, its coordinate space is resolution dependent, and its *y* axis starts at the top of the page. Other drivers can and will be different!

The work is done in `SDict`, because we add in some header definitions in a moment.

```

11739 \<dvips>
11740 \providecommand*\XR@ext\{pdf}

```



```

11741 \let\Hy@raisedlink\ltx@empty
11742 \def\literalps@out#1{\special{ps:SDict begin #1 end}}}%
11743 \def\headerps@out#1{\special{! #1}}}%
11744 \input{pdfmark.def}%
11745 \ifx\@pdfproducer\relax
11746 \def\@pdfproducer{dvips + Distiller}%
11747 \fi
11748 \providecommand*\@pdfborder{0 0 1}
11749 \providecommand*\@pdfborderstyle{}
11750 \providecommand*\@pdfview{XYZ}
11751 \providecommand*\@pdfviewparams{ H.V}
11752 \def\Hy@BorderArrayPatch{BorderArrayPatch}
11753 \g@addto@macro\Hy@FirstPageHook{%
11754 \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.

```

11755 /DvipsToPDF{72.27 mul Resolution div} def%
11756 /PDFToDvips{72.27 div Resolution mul} def%
11757 /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.

```

11758 product (Ghostscript) search {pop pop pop revision 927 gt}%
11759 {pop false} ifelse%
11760 {%
11761 /BorderArrayPatch{} def%
11762 }%
11763 {%
11764 /BorderArrayPatch{%
11765 [exch{%
11766 dup dup type/integertype eq exch type/realtype eq or%
11767 {BPToDvips}if%
11768 }forall]%
11769 }def%
11770 } 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.

```

11771 /HyperBorder {1 PDFToDvips} def%
11772 /H.V {pdf@hoff pdf@voff null} def%
11773 /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

```

11774 /H.S {%
11775   currentpoint %
11776   HyperBorder add /pdf@lly exch def %
11777   dup DvipsToPDF 72 add /pdf@hoff exch def %
11778   HyperBorder sub /pdf@llx exch def%
11779 } def%

```

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

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

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

```

11780 /H.L {%
11781   2 sub dup%
11782   /HyperBasePt exch def %
11783   PDFToDvips /HyperBaseDvips exch def %
11784   currentpoint %
11785   HyperBaseDvips sub /pdf@ury exch def%
11786   /pdf@urx exch def%
11787 } def%
11788 /H.A {%
11789   H.L %
11790 % |pdf@voff| = the distance from the top of the page to a point
11791 % |baselineskip| above the current point in PDF coordinates
11792   currentpoint exch pop %
11793   vsize 72 sub exch DvipsToPDF %
11794   HyperBasePt sub % baseline skip
11795   sub /pdf@voff exch def%
11796 } def%
11797 /H.R {%
11798   currentpoint %
11799   HyperBorder sub /pdf@ury exch def %
11800   HyperBorder add /pdf@urx exch def %
11801 % |pdf@voff| = the distance from the top of the page to the current point, in
11802 % PDF coordinates
11803   currentpoint exch pop vsize 72 sub %
11804   exch DvipsToPDF sub /pdf@voff exch def%
11805 } def%
11806 }%
11807 }
11808 \AtBeginShipoutFirst{%
11809   \ifHy@setpagesize
11810     \begingroup
11811     \@ifundefined{stockwidth}{%
11812       \ifdim\paperwidth>\z@
11813       \ifdim\paperheight>\z@

```

```

11814     \special{papersize=\the\paperwidth,\the\paperheight}%
11815     \fi
11816     \fi
11817   }{%
11818     \ifdim\stockwidth>\z@
11819     \ifdim\stockheight>\z@
11820       \special{papersize=\the\stockwidth,\the\stockheight}%
11821     \fi
11822   \fi
11823 }%
11824 \endgroup
11825 \fi
11826 \Hy@DisableOption{setpagesize}%
11827 }
11828 \def\setpdfinkmargin#1{%
11829   \begingroup
11830     \setlength{\dimen@}{#1}%
11831     \literalps@out{%
11832       /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
11833     }%
11834   \endgroup
11835 }
11836 </dvips>

```

### 43.10 VTeX's vtexpdfmark driver

This part is derived from the dvips (many names reflect this).

The origin seems to be the same as TeX's origin, 1 in from the left and 1 in downwards from the top. The direction of the  $y$  axis is downwards, the opposite of the dvips case. Units seems to be pt or bp.

```

11837 (*vtexpdfmark)
11838 \providecommand*\XR@ext}{pdf}
11839 \let\Hy@raisedlink\ltx@empty
11840 \def\literalps@out#1{\special{pS:#1}}%
11841 \def\headerps@out#1{\immediate\special{pS:#1}}%
11842 \input{pdfmark.def}%
11843 \ifx\@pdfproducer\relax
11844   \ifnum\OpMode=\@ne
11845     \def\@pdfproducer{VTeX}%
11846   \else
11847     \def\@pdfproducer{VTeX + Distiller}%
11848   \fi
11849 \fi
11850 \providecommand*\@pdfborder{0 0 1}
11851 \providecommand*\@pdfborderstyle{}
11852 \providecommand*\@pdfview{XYZ}
11853 \providecommand*\@pdfviewparams{ H.V}
11854 \g@addto@macro\Hy@FirstPageHook{%
11855   \headerps@out{%
11856     /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.

```

11857 /HyperBorder {1} def%
11858 /H.V {pdf@hoff pdf@voff null} def%
11859 /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:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

11860 /H.S {%
11861   currentpoint %
11862   HyperBorder sub%
11863   /pdf@lly exch def %
11864   dup 72 add /pdf@hoff exch def %
11865   HyperBorder sub%
11866   /pdf@llx exch def%
11867 } def%

```

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

```

11868 /H.L {%
11869   2 sub%
11870   /HyperBasePt exch def %
11871   currentpoint %
11872   HyperBasePt add HyperBorder add%
11873   /pdf@ury exch def %
11874   HyperBorder add%
11875   /pdf@urx exch def%
11876 } def%
11877 /H.A {%
11878   H.L %
11879   currentpoint exch pop %
11880   vsize 72 sub exch %
11881   HyperBasePt add add%
11882   /pdf@voff exch def%
11883 } def%

```

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

```

11884 /H.R {%
11885   currentpoint %
11886   HyperBorder add%
11887   /pdf@ury exch def %
11888   HyperBorder add%
11889   /pdf@urx exch def %
11890   currentpoint exch pop vsize 72 sub add%
11891   /pdf@voff exch def%
11892 } def%
11893 }%
11894 }

```

```

11895 \def\setpdfinkmargin#1{%
11896   \begingroup
11897   \setlength{\dimen@}{#1}%
11898   \literalps@out{%
11899     /HyperBorder{\strip@pt\dimen@}def%
11900   }%
11901   \endgroup
11902 }

```

11903 `</vtxpdfmark>`

## 43.11 Textures

11904 `<*textures>`

11905 `\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.

11906 `\begingroup`

11907 `\obeylines %`

11908 `\gdef\Hy@ps@CR{\noexpand`

11909 `}%`

11910 `\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`.

11911 `\def\literalps@out#1{%`

11912 `\special{postscript 0 0 transform}%`

11913 `\special{rawpostscript itransform moveto\Hy@ps@CR #1}%`

11914 `}%`

11915 `%`

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.

11916 `\def\headerps@out#1{%`

11917 `\special{%`

11918 `prepostscript TeXdict begin\Hy@ps@CR`

11919 `#1\Hy@ps@CR`

11920 `end%`

11921 `}%`

11922 `}%`

11923 `%`

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.

```

11924 \g@addto@macro\Hy@FirstPageHook{%
11925   \headerps@out{%
11926     /betterpdfmark {%
11927       systemdict begin %
11928         dup /BP eq%
11929         {cleartomark gsave nulldevice []}%
11930         {dup /EP eq%
11931           {cleartomark cleartomark grestore}%
11932           {cleartomark}%
11933         }ifelse%
11934       }ifelse %
11935     end%
11936   }def\Hy@ps@CR
11937   ___pdfmark___ not{/pdfmark /betterpdfmark load def}if%
11938 }% end of \headerps@out
11939 }% end of \AtBeginShipoutFirst
11940 %
11941 \input{pdfmark.def}%
11942 %
11943 \ifx\@pdfproducer\relax
11944   \def\@pdfproducer{Textures + Distiller}%
11945 \fi
11946 \providecommand*\@pdfborder{0 0 1}
11947 \providecommand*\@pdfborderstyle{}
11948 \providecommand*\@pdfview{XYZ}
11949 \providecommand*\@pdfviewparams{ H.V}
11950 %

```

These are called at the start and end of unboxed links; their job is to leave available PS variables called `pdf@llx pdf@lly pdf@urx pdf@ury`, which are the coordinates of the bounding rectangle of the link, and `pdf@hoff pdf@voff` which are the PDF page offsets. The `Rect` pair are called at the LL and UR corners of a box known to  $\text{\TeX}$ .

```

11951 \Hy@AtBeginDocument{%
11952   \headerps@out{%

```

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

```

11953   /vsize {\Hy@pageheight} def%
11954   /DvipsToPDF {} def%
11955   /PDFToDvips {} def%
11956   /BPToDvips {} def%
11957   /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
11958   /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
11959   /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
11960   /H.S {%
11961     currentpoint %
11962     HyperBorder add /pdf@lly exch def %
11963     dup DvipsToPDF 72 add /pdf@hoff exch def %
11964     HyperBorder sub /pdf@llx exch def%
11965   } def\Hy@ps@CR
11966   /H.L {%
11967     2 sub %
11968     PDFToDvips /HyperBase exch def %

```

```

11969     currentpoint %
11970     HyperBase sub /pdf@ury exch def%
11971     /pdf@urx exch def%
11972   } def\Hy@ps@CR
11973   /H.A {%
11974     H.L %
11975     currentpoint exch pop %
11976     vsize 72 sub exch DvipsToPDF %
11977     HyperBase sub % baseline skip
11978     sub /pdf@voff exch def%
11979   } def\Hy@ps@CR
11980   /H.R {%
11981     currentpoint %
11982     HyperBorder sub /pdf@ury exch def %
11983     HyperBorder add /pdf@urx exch def %
11984     currentpoint exch pop vsize 72 sub %
11985     exch DvipsToPDF sub /pdf@voff exch def%
11986   } def\Hy@ps@CR
11987 }%
11988 }

11989 \def\setpdfinkmargin#1{%
11990   \begingroup
11991     \setlength{\dimen@}{#1}%
11992     \literalps@out{%
11993       /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
11994     }%
11995   \endgroup
11996 }

11997 \Hy@AtBeginDocument{%
11998   \ifHy@colorlinks
11999     \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
12000   \fi
12001 }

```

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.

```

12002 \expandafter\let\expandafter\keepPDF@SetupDoc
12003   \csname PDF@SetupDoc\endcsname
12004 \def\PDF@SetupDoc{%
12005   \ifx\@baseurl\@empty
12006     \else
12007     \special{html:<base href="\@baseurl">}%
12008   \fi
12009   \keepPDF@SetupDoc
12010 }

12011 \Hy@WrapperDef\hyper@anchor#1{%
12012   \Hy@SaveLastskip
12013   \Hy@VerboseAnchor{#1}%
12014   \begingroup
12015     \let\protect=\string
12016     \special{html:<a name=%
12017       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%

```

```

12018 \endgroup
12019 \Hy@activeanchortrue
12020 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
12021 \special{html:</a>}%
12022 \Hy@activeanchorfalse
12023 \Hy@RestoreLastskip
12024 }
12025 \Hy@WrapperDef\hyper@anchorstart#1{%
12026 \Hy@SaveLastskip
12027 \Hy@VerboseAnchor{#1}%
12028 \begingroup
12029 \hyper@chars
12030 \special{html:<a name=%
12031 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12032 \endgroup
12033 \Hy@activeanchortrue
12034 }
12035 \def\hyper@anchorend{%
12036 \special{html:</a>}%
12037 \Hy@activeanchorfalse
12038 \Hy@RestoreLastskip
12039 }
12040 \def\@urltype{url}
12041 \def\hyper@linkstart#1#2{%
12042 \Hy@VerboseLinkStart{#1}{#2}%
12043 \expandafter\Hy@colorlink\csname @#1color\endcsname
12044 \def\Hy@tempa{#1}%
12045 \ifx\Hy@tempa\@urltype
12046 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
12047 \else
12048 \begingroup
12049 \hyper@chars
12050 \special{%
12051 html:<a href=%
12052 \hyper@quote\# \HyperDestNameFilter{#2}\hyper@quote>%
12053 }%
12054 \endgroup
12055 \fi
12056 }
12057 \def\hyper@linkend{%
12058 \special{html:</a>}%
12059 \Hy@endcolorlink
12060 }
12061 \def\hyper@linkfile#1#2#3{%
12062 \hyper@linkurl{#1}{%
12063 \Hy@linkfileprefix#2\ifx\#3\\ \else\#3\fi
12064 }%
12065 }
12066 \def\hyper@linkurl#1#2{%
12067 \leavevmode
12068 \ifHy@raiselinks
12069 \Hy@SaveSpaceFactor
12070 \Hy@SaveSavedSpaceFactor
12071 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%

```



```

12072 \Hy@RestoreSavedSpaceFactor
12073 \@linkdim\dp\@tempboxa
12074 \lower\@linkdim\hbox{%
12075   \hyper@chars
12076   \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
12077 }%
12078 \Hy@colorlink\@urlcolor
12079 \Hy@RestoreSpaceFactor
12080 #1\Hy@xspace@end
12081 \Hy@SaveSpaceFactor
12082 \@linkdim\ht\@tempboxa
12083 \advance\@linkdim by -6.5\p@
12084 \raise\@linkdim\hbox{\special{html:</a>}}%
12085 \Hy@endcolorlink
12086 \Hy@RestoreSpaceFactor
12087 \else
12088 \begingroup
12089   \hyper@chars
12090   \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
12091   \Hy@colorlink\@urlcolor#1\Hy@xspace@end
12092   \special{html:</a>}}%
12093   \Hy@endcolorlink
12094 \endgroup
12095 \fi
12096 }

```

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

```

12097 \def\hyper@link#1#2#3{%
12098   \Hy@VerboseLinkStart{#1}{#2}%
12099   \hyper@linkurl{#3}{\# \Hy@DestNameFilter{#2}}%
12100 }
12101 \def\hyper@image#1#2{%
12102   \begingroup
12103     \hyper@chars
12104     \special{html:<img src=\hyper@quote#1\hyper@quote>}}%
12105   \endgroup
12106 }
12107 </textures>

```

### 43.12 dvipsone

```

12108 % \subsection{dvipsone driver}
12109 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
12110 % |\special| commands.
12111 (*dvipsone)
12112 \providecommand*\XR@ext{pdf}
12113 \let\Hy@raisedlink\ltx@empty
12114 \providecommand*\@pdfborder{0 0 1}
12115 \providecommand*\@pdfborderstyle{}
12116 \def\literalps@out#1{\special{ps:#1}}%
12117 \def\headerps@out#1{\special{headertext=#1}}%
12118 \input{pdfmark.def}%
12119 \HyInfo@AddonUnsupportedtrue
12120 \def\PDF@FinishDoc{%

```

```

12121 \Hy@UseMaketitleInfos
12122 \HyInfo@TrappedUnsupported
12123 \special{PDF: Keywords \@pdfkeywords}%
12124 \special{PDF: Title \@pdftitle}%
12125 \special{PDF: Creator \@pdfcreator}%
12126 \ifx\@pdfcreationdate\@empty
12127 \else
12128 \special{PDF: CreationDate \@pdfcreationdate}%
12129 \fi
12130 \ifx\@pdfmoddate\@empty
12131 \else
12132 \special{PDF: ModDate \@pdfmoddate}%
12133 \fi
12134 \special{PDF: Author \@pdfauthor}%
12135 \ifx\@pdfproducer\relax
12136 \else
12137 \special{PDF: Producer \@pdfproducer}%
12138 \fi
12139 \special{PDF: Subject \@pdfsubject}%
12140 \Hy@DisableOption{pdfauthor}%
12141 \Hy@DisableOption{pdftitle}%
12142 \Hy@DisableOption{pdfsubject}%
12143 \Hy@DisableOption{pdfcreator}%
12144 \Hy@DisableOption{addtopdfcreator}%
12145 \Hy@DisableOption{pdfcreationdate}%
12146 \Hy@DisableOption{pdfcreationdate}%
12147 \Hy@DisableOption{pdfmoddate}%
12148 \Hy@DisableOption{pdfproducer}%
12149 \Hy@DisableOption{pdfkeywords}%
12150 \Hy@DisableOption{pdftrapped}%
12151 \Hy@DisableOption{pdfinfo}%
12152 }
12153 \def\PDF@SetupDoc{%
12154 \def\Hy@temp{}%
12155 \ifx\@pdfstartpage\@empty
12156 \else
12157 \ifx\@pdfstartview\@empty
12158 \else
12159 \edef\Hy@temp{%
12160 ,Page=\@pdfstartpage
12161 ,View=\@pdfstartview
12162 }%
12163 \fi
12164 \fi
12165 \edef\Hy@temp{%
12166 \noexpand\pdfmark{%
12167 pdfmark=/DOCVIEW,%
12168 PageMode=/\@pdfpagemode
12169 \Hy@temp
12170 }%
12171 }%
12172 \Hy@temp
12173 \ifx\@pdfpagescrop\@empty
12174 \else

```

```

12175 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
12176 \fi
12177 \edef\Hy@temp{%
12178 \ifHy@pdftoolbar\else /HideToolbar true\fi
12179 \ifHy@pdfmenubar\else /HideMenubar true\fi
12180 \ifHy@pdfwindowui\else /HideWindowUI true\fi
12181 \ifHy@pdfwindow /FitWindow true\fi
12182 \ifHy@pdfcenterwindow /CenterWindow true\fi
12183 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
12184 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
12185 \Hy@UseNameKey{Direction}\@pdfdirection
12186 \Hy@UseNameKey{ViewArea}\@pdfviewarea
12187 \Hy@UseNameKey{ViewClip}\@pdfviewclip
12188 \Hy@UseNameKey{PrintArea}\@pdfprintarea
12189 \Hy@UseNameKey{PrintClip}\@pdfprintclip
12190 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
12191 \Hy@UseNameKey{Duplex}\@pdfduplex
12192 \ifx\@pdfpicktraybypdfsize\@empty
12193 \else
12194 /PickTrayByPDFSize \@pdfpicktraybypdfsize
12195 \fi
12196 \ifx\@pdfprintpagerange\@empty
12197 \else
12198 /PrintPageRange[\@pdfprintpagerange]%
12199 \fi
12200 \ifx\@pdfnumcopies\@empty
12201 \else
12202 /NumCopies \@pdfnumcopies
12203 \fi
12204 }%
12205 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
12206 \pdfmark{%
12207 pdfmark=/PUT,%
12208 Raw={%
12209 \string{Catalog\string}<<%
12210 \ifx\Hy@temp\@empty
12211 \else
12212 /ViewerPreferences<<\Hy@temp>>%
12213 \fi
12214 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
12215 \ifx\@pdflang\relax
12216 \else
12217 /Lang(\@pdflang)%
12218 \fi
12219 \ifx\@baseurl\@empty
12220 \else
12221 /URI<</Base(\Hy@pstringB)>>%
12222 \fi
12223 >>%
12224 }%
12225 }%
12226 }
12227 \providecommand*\@pdfview{XYZ}
12228 \providecommand*\@pdfviewparams{ %

```

```

12229 gsave revscl currentpoint grestore %
12230 72 add exch pop null exch null%
12231 }
12232 \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.

```

12233 \g@addto@macro\Hy@FirstPageHook{%
12234 \headerps@out{%

```

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

```

12235 /DvipsToPDF { 65781 div } def%
12236 /PDFToDvips { 65781 mul } def%
12237 /BPToDvips{65781 mul}def%
12238 /HyperBorder { 1 PDFToDvips } def%
12239 /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.

```

12240 /BorderArrayPatch{%
12241 [exch{%
12242 dup dup type/integertype eq exch type/realtype eq or%
12243 {BPToDvips}if%
12244 }forall]%
12245 }def%
12246 /H.S {%
12247 currentpoint %
12248 HyperBorder add /pdf@lly exch def %
12249 dup DvipsToPDF 72 add /pdf@hoff exch def %
12250 HyperBorder sub /pdf@llx exch def%
12251 } def%
12252 /H.L {%
12253 2 sub %
12254 PDFToDvips /HyperBase exch def %
12255 currentpoint %
12256 HyperBase sub /pdf@ury exch def%
12257 /pdf@urx exch def%
12258 } def%
12259 /H.A {%
12260 H.L %
12261 currentpoint exch pop %
12262 HyperBase sub % baseline skip
12263 DvipsToPDF /pdf@voff exch def%
12264 } def%
12265 /H.R {%
12266 currentpoint %
12267 HyperBorder sub /pdf@ury exch def %
12268 HyperBorder add /pdf@urx exch def %
12269 currentpoint exch pop DvipsToPDF /pdf@voff exch def%
12270 } def%
12271 }%

```

```

12272 }
12273 \def\setpdfinkmargin#1{%
12274   \begingroup
12275     \setlength{\dimen@}{#1}%
12276     \literalps@out{%
12277       /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
12278     }%
12279   \endgroup
12280 }
12281 </dvipsone>

```

### 43.13 TeX4ht

```

12282 (*tex4ht)
12283 \providecommand*\XR@ext}{html}
12284 \let\Hy@raisedlink\ltx@empty
12285 \@ifpackageloaded{tex4ht}{%
12286   \Hy@InfoNoLine{tex4ht is already loaded}%
12287 }{%
12288   \RequirePackage[hTeX4ht]{tex4ht}%
12289 }
12290 \hyperlinkfileprefix{}
12291 \let\PDF@FinishDoc\ltx@empty
12292 \def\PDF@SetupDoc{%
12293   \ifx\@baseurl\@empty
12294     \else
12295       \special{t4ht=<base href="\@baseurl">}%
12296     \fi
12297 }
12298 \Hy@WrapperDef\hyper@anchor#1{%
12299   \Hy@SaveLastskip
12300   \Hy@VerboseAnchor{#1}%
12301   \begingroup
12302     \let\protect=\string
12303     \special{t4ht=<a name=%
12304       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12305   \endgroup
12306   \Hy@activeanchortrue
12307   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
12308   \special{t4ht=</a>}%
12309   \Hy@activeanchorfalse
12310   \Hy@RestoreLastskip
12311 }
12312 \Hy@WrapperDef\hyper@anchorstart#1{%
12313   \Hy@SaveLastskip
12314   \Hy@VerboseAnchor{#1}%
12315   \begingroup
12316     \hyper@chars\special{t4ht=<a name=%
12317       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12318   \endgroup
12319   \Hy@activeanchortrue
12320 }
12321 \def\hyper@anchorend{%
12322   \special{t4ht=</a>}%

```

```

12323 \Hy@activeanchorfalse
12324 \Hy@RestoreLastskip
12325 }
12326 \def\@urltype{url}
12327 \def\hyper@linkstart#1#2{%
12328 \Hy@VerboseLinkStart{#1}{#2}%
12329 \expandafter\Hy@colorlink\csname @#1color\endcsname
12330 \def\Hy@tempa{#1}%
12331 \ifx\Hy@tempa\@urltype
12332 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12333 \else
12334 \begingroup
12335 \hyper@chars
12336 \special{t4ht=<a href=%
12337 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
12338 \endgroup
12339 \fi
12340 }
12341 \def\hyper@linkend{%
12342 \special{t4ht=</a>}%
12343 \Hy@endcolorlink
12344 }
12345 \def\hyper@linkfile#1#2#3{%
12346 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%
12347 }
12348 \def\hyper@linkurl#1#2{%
12349 \leavevmode
12350 \ifHy@raiselinks
12351 \Hy@SaveSpaceFactor
12352 \Hy@SaveSavedSpaceFactor
12353 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
12354 \Hy@RestoreSavedSpaceFactor
12355 \@linkdim\dp\@tempboxa
12356 \lower\@linkdim\hbox{%
12357 \begingroup
12358 \hyper@chars
12359 \special{%
12360 t4ht=<a href=\hyper@quote#2\hyper@quote>%
12361 }%
12362 \endgroup
12363 }%
12364 \Hy@colorlink\@urlcolor
12365 \Hy@RestoreSpaceFactor
12366 #1\Hy@xspace@end
12367 \Hy@SaveSpaceFactor
12368 \Hy@endcolorlink
12369 \@linkdim\ht\@tempboxa
12370 \advance\@linkdim by -6.5\p@
12371 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
12372 \Hy@RestoreSpaceFactor
12373 \else
12374 \begingroup
12375 \hyper@chars
12376 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%

```

```

12377 \Hy@colorlink\@urlcolor
12378 #1\Hy@xspace@end
12379 \Hy@endcolorlink
12380 \special{t4ht=</a>}%
12381 \endgroup
12382 \fi
12383 }

```

Poor implementation of \hyper@link without considering #1.

```

12384 \def\hyper@link#1#2#3{%
12385 \Hy@VerboseLinkStart{#1}{#2}%
12386 \hyper@linkurl{#3}{\#\HyperDestNameFilter{#2}}}%
12387 }
12388 \def\hyper@image#1#2{%
12389 \begingroup
12390 \hyper@chars
12391 \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
12392 \endgroup
12393 }
12394 \let\autoref\ref
12395 \ifx \rEfLiNK \UnDef
12396 \def\rEfLiNK #1#2{#2}%
12397 \fi
12398 \let\backref\ltx@gobble

```

Fix for tex4ht.

```

12399 \AtBeginDocument{%
12400 \expandafter
12401 \let\expandafter\Hy@OrgMakeLabel\csname Make:Label\endcsname
12402 \expandafter\def\csname Make:Label\endcsname#1#2{%
12403 \ifhmode
12404 \Hy@SaveSpaceFactor
12405 \else
12406 \global\Hy@SavedSpaceFactor=1000 %
12407 \fi
12408 \Hy@OrgMakeLabel{#1}{%
12409 \Hy@RestoreSpaceFactor
12410 #2\Hy@xspace@end%
12411 \Hy@SaveSpaceFactor
12412 }%
12413 \Hy@RestoreSpaceFactor
12414 }%
12415 }
12416 </tex4ht>
12417 <*tex4htcfg>
12418 \IfFileExists{jobname.cfg}{\endinput}{}
12419 \Preamble{html}
12420 \begin{document}%
12421 \EndPreamble
12422 \def\TeX{TeX}
12423 \def\OMEGA{Omega}
12424 \def\LaTeX{LaTeX}
12425 \def\LaTeXe{\LaTeX2e}
12426 \def\eTeX{e-TeX}
12427 \def\MF{Metafont}

```

```

12428 \def\MP{MetaPost}
12429 </tex4htcfg>

```

## 44 Driver-specific form support

### 44.1 pdfmarks

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

```

12430 <*pdfmark>
12431 \long\def\@Form[#1]{%
12432 \g@addto@macro\Hy@FirstPageHook{%
12433 \headerps@out{%
12434 [%
12435 /__objdef{pdfDocEncoding}%
12436 /type/dict%
12437 /OBJ pdfmark%
12438 [%
12439 {pdfDocEncoding}%
12440 <<%
12441 /Type/Encoding%
12442 /Differences[%
12443 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
12444 /tilde %
12445 39/quotesingle %
12446 96/grave %
12447 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
12448 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
12449 /quotedblbase/quotedblleft/quotedblright/quoteleft%
12450 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%
12451 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
12452 160/Euro %
12453 164/currency %
12454 166/brokenbar %
12455 168/dieresis/copyright/ordfeminine %
12456 172/logicalnot/.notdef/registered/macron/degree/plusminus%
12457 /twosuperior/threesuperior/acute/mu %
12458 183/periodcentered/cedilla/onesuperior/ordmasculine %
12459 188/onequarter/onehalf/threequarters %
12460 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
12461 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
12462 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
12463 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
12464 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
12465 /agrave/aacute/acircumflex/tilde/adieresis/aring/ae%
12466 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
12467 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
12468 /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%
12469 /ucircumflex/udieresis/yacute/thorn/ydieresis%
12470 ]%
12471 >>%
12472 /PUT pdfmark%
12473 [%
12474 /__objdef{ZaDb}%
12475 /type/dict%

```



```

12476 /OBJ pdfmark%
12477 [%
12478   {ZaDb}%
12479   <<%
12480     /Type/Font%
12481     /Subtype/Type1%
12482     /Name/ZaDb%
12483     /BaseFont/ZapfDingbats%
12484   >>%
12485 /PUT pdfmark%
12486 [%
12487   /__objdef{Helv}%
12488   /type/dict%
12489 /OBJ pdfmark%
12490 [%
12491   {Helv}%
12492   <<%
12493     /Type/Font%
12494     /Subtype/Type1%
12495     /Name/Helv%
12496     /BaseFont/Helvetica%
12497     /Encoding{pdfDocEncoding}%
12498   >>%
12499 /PUT pdfmark%
12500 [%
12501   /__objdef{aform}%
12502   /type/dict%
12503 /OBJ pdfmark%
12504 [%
12505   /__objdef{afields}%
12506   /type/array%
12507 /OBJ pdfmark%
12508 [%
12509   /__objdef{corder}%
12510   /type/array%
12511 /OBJ pdfmark%
12512 {%
12513   [%
12514     /BBox[0 0 100 100]%
12515     /__objdef{Check}%
12516 /BP pdfmark %
12517 1 0 0 setrgbcolor%
12518 /ZapfDingbats 80 selectfont %
12519 20 20 moveto%
12520 (4)show%
12521 [/EP pdfmark%
12522 [%
12523   /BBox[0 0 100 100]%
12524   /__objdef{Cross}%
12525 /BP pdfmark %
12526 1 0 0 setrgbcolor%
12527 /ZapfDingbats 80 selectfont %
12528 20 20 moveto%
12529 (8)show%

```

```

12530 [/EP pdfmark%
12531 [%
12532   /BBox[0 0 250 100]%
12533   /_objdef{Submit}%
12534 /BP pdfmark %
12535 0.6 setgray %
12536 0 0 250 100 rectfill %
12537 1 setgray %
12538 2 2 moveto %
12539 2 98 lineto %
12540 248 98 lineto %
12541 246 96 lineto %
12542 4 96 lineto %
12543 4 4 lineto %
12544 fill %
12545 0.34 setgray %
12546 248 98 moveto %
12547 248 2 lineto %
12548 2 2 lineto %
12549 4 4 lineto %
12550 246 4 lineto %
12551 246 96 lineto %
12552 fill%
12553 /Helvetica 76 selectfont %
12554 0 setgray %
12555 8 22.5 moveto%
12556 (Submit)show%
12557 [/EP pdfmark%
12558 [%
12559   /BBox[0 0 250 100]%
12560   /_objdef{SubmitP}%
12561 /BP pdfmark %
12562 0.6 setgray %
12563 0 0 250 100 rectfill %
12564 0.34 setgray %
12565 2 2 moveto %
12566 2 98 lineto %
12567 248 98 lineto %
12568 246 96 lineto %
12569 4 96 lineto %
12570 4 4 lineto %
12571 fill %
12572 1 setgray %
12573 248 98 moveto %
12574 248 2 lineto %
12575 2 2 lineto %
12576 4 4 lineto %
12577 246 4 lineto %
12578 246 96 lineto %
12579 fill%
12580 /Helvetica 76 selectfont %
12581 0 setgray %
12582 10 20.5 moveto%
12583 (Submit)show%

```

```

12584 [/EP pdfmark%
12585 } ?pdfmark%
12586 [%
12587 {aform}%
12588 <<%
12589 /Fields{afields}%
12590 /DR<<%
12591 /Font<<%
12592 /ZaDb{ZaDb}%
12593 /Helv{Helv}%
12594 >>%
12595 >>%
12596 /DA(/Helv 10 Tf 0 g)%
12597 /CO{corder}%
12598 \ifHy@pdfa
12599 \else
12600 \ifHyField@NeedAppearances
12601 /NeedAppearances true%
12602 \fi
12603 \fi
12604 >>%
12605 /PUT pdfmark%
12606 [%
12607 {Catalog}%
12608 <<%
12609 /AcroForm{aform}%
12610 >>%
12611 /PUT pdfmark%
12612 }}%
12613 \kvsetkeys{Form}{#1}%
12614 }
12615 \let\@endForm\ltx@empty
12616 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12617 \Hy@Message{Sorry, pdfmark drivers do not support FORM gauges}%
12618 }

12619 \newcount\HyField@AnnotCount
12620 \HyField@AnnotCount=\z@
12621 \def\HyField@AdvanceAnnotCount{%
12622 \global\advance\HyField@AnnotCount\@ne
12623 }
12624 \def\HyField@TheAnnotCount{%
12625 \the\HyField@AnnotCount
12626 }

12627 \edef\Fld@pageobjref{/P\string{ThisPage\string}}
12628 \def\HyField@AddToFields#1{%
12629 \pdfmark{%
12630 pdfmark=/APPEND,%
12631 Raw={%
12632 \string{afields\string}%
12633 \string{#1\HyField@TheAnnotCount\string}%
12634 }%
12635 }%
12636 \ifx\Fld@calculate@code\ltx@empty

```

```

12637 \else
12638 \pdfmark{%
12639 pdfmark=/APPEND,%
12640 Raw={%
12641 \string{corder\string}%
12642 \string{#1\HyField@TheAnnotCount\string}%
12643 }%
12644 }%
12645 \fi
12646 }

12647 \def\@TextField[#1]#2{% parameters, label
12648 \def\Fld@name{#2}%
12649 \let\Fld@default\ltx@empty
12650 \let\Fld@value\@empty
12651 \def\Fld@width{\DefaultWidthofText}%
12652 \def\Fld@height{%
12653 \ifFld@multiline
12654 \DefaultHeightofTextMultiline
12655 \else
12656 \DefaultHeightofText
12657 \fi
12658 }%
12659 \begingroup
12660 \expandafter\HyField@SetKeys\expandafter{%
12661 \DefaultOptionsofText,#1%
12662 }%
12663 \HyField@FlagsText
12664 \ifFld@hidden\def\Fld@width{1sp}\fi
12665 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12666 \HyField@AdvanceAnnotCount
12667 \LayoutTextField{#2}{%
12668 \leavevmode
12669 \Hy@escapeform\PDFForm@Text
12670 \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
12671 pdfmark=/ANN,%
12672 objdef=text\HyField@TheAnnotCount,%
12673 Raw={\PDFForm@Text}%
12674 }%
12675 }%
12676 \HyField@AddToFields{text}%
12677 \endgroup
12678 }

12679 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12680 \def\Fld@name{#2}%
12681 \let\Fld@default\relax
12682 \let\Fld@value\relax
12683 \def\Fld@width{\DefaultWidthofChoiceMenu}%
12684 \def\Fld@height{\DefaultHeightofChoiceMenu}%
12685 \begingroup
12686 \Fld@menulength=0 %
12687 \@tempdima\z@
12688 \@for\@curropt:=#3\do{%
12689 \expandafter\Fld@checkequals\@curropt==\%
12690 \Hy@StepCount\Fld@menulength

```

```

12691 \settowidth{\@tempdimb}{\@currDisplay}%
12692 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12693 }%
12694 \advance\@tempdima by 15\p@
12695 \begingroup
12696 \HyField@SetKeys{#1}%
12697 \edef\x{\endgroup
12698 \noexpand\expandafter
12699 \noexpand\HyField@SetKeys
12700 \noexpand\expandafter{%
12701 \expandafter\noexpand\csname DefaultOptionsof%
12702 \ifFld@radio
12703 Radio%
12704 \else
12705 \ifFld@combo
12706 \ifFld@popdown
12707 PopdownBox%
12708 \else
12709 ComboBox%
12710 \fi
12711 \else
12712 ListBox%
12713 \fi
12714 \fi
12715 \endcsname
12716 }%
12717 }\x
12718 \HyField@SetKeys{#1}%
12719 \ifFld@hidden\def\Fld@width{1sp}\fi
12720 \ifx\Fld@value\relax
12721 \let\Fld@value\Fld@default
12722 \fi
12723 \LayoutChoiceField{#2}{%
12724 \ifFld@radio
12725 \HyField@FlagsRadioButton
12726 \@@Radio{#3}%
12727 \else
12728 \begingroup
12729 \HyField@FlagsChoice
12730 \ifdim\Fld@width<\@tempdima
12731 \ifdim\@tempdima<1cm\@tempdima1cm\fi
12732 \edef\Fld@width{\the\@tempdima}%
12733 \fi
12734 \ifFld@combo
12735 \else
12736 \@tempdima=\the\Fld@menulength\Fld@charsize
12737 \advance\@tempdima by \Fld@borderwidth bp %
12738 \advance\@tempdima by \Fld@borderwidth bp %
12739 \edef\Fld@height{\the\@tempdima}%
12740 \fi
12741 \@@ListBox{#3}%
12742 \endgroup
12743 \fi
12744 }%

```

```

12745 \endgroup
12746 }
12747 \def\@@Radio#1{%
12748 \Fld@listcount=0 %
12749 \EdefEscapeName\Fld@default{\Fld@default}%
12750 \@for\@curropt:=#1\do{%
12751 \expandafter\Fld@checkequals\@curropt==\%%
12752 \EdefEscapeName\@currValue{\@currValue}%
12753 \Hy@StepCount\Fld@listcount
12754 \@currDisplay\space
12755 \Hy@escapeform\PDFForm@Radio
12756 \ifnum\Fld@listcount=1 %
12757 \HyField@AdvanceAnnotCount
12758 \fi
12759 \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
12760 pdfmark=/ANN,%
12761 objdef=\ifnum\Fld@listcount=1 radio\HyField@TheAnnotCount\fi,%
12762 Raw={%
12763 \PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>%
12764 }%
12765 } % deliberate space between radio buttons
12766 \ifnum\Fld@listcount=1 %
12767 \HyField@AddToFields{radio}%
12768 \fi
12769 }%
12770 }
12771 \newcount\Fld@listcount
12772 \def\@@Listbox#1{%
12773 \HyField@PDFChoices{#1}%
12774 \Hy@escapeform\PDFForm@List
12775 \HyField@AdvanceAnnotCount
12776 \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
12777 pdfmark=/ANN,%
12778 objdef=list\HyField@TheAnnotCount,%
12779 Raw={\PDFForm@List}%
12780 }%
12781 \HyField@AddToFields{list}%
12782 }
12783 \def\@PushButton[#1]#2{% parameters, label
12784 \def\Fld@name{#2}%
12785 \beginingroup
12786 \expandafter\HyField@SetKeys\expandafter{%
12787 \DefaultOptionsofPushButton,#1%
12788 }%
12789 \ifHy@pdfa
12790 \Hy@Error{%
12791 PDF/A: Push button with JavaScript is prohibited%
12792 }\@ehc
12793 \LayoutPushButtonField{%
12794 \leavevmode
12795 \MakeButtonField{#2}%
12796 }%
12797 \else
12798 \HyField@FlagsPushButton

```

```

12799 \ifFld@hidden\def\Fld@width{1sp}\fi
12800 \HyField@AdvanceAnnotCount
12801 \LayoutPushButtonField{%
12802 \leavevmode
12803 \Hy@escapeform\PDFForm@Push
12804 \pdfmark[\MakeButtonField{#2}]{%
12805 pdfmark=/ANN,%
12806 objdef=push\HyField@TheAnnotCount,%
12807 Raw={\PDFForm@Push}%
12808 }%
12809 }%
12810 \HyField@AddToFields{push}%
12811 \fi
12812 \endgroup
12813 }
12814 \def\@Submit[#1]#2{%
12815 \def\Fld@width{\DefaultWidthofSubmit}%
12816 \def\Fld@height{\DefaultHeightofSubmit}%
12817 \begingroup
12818 \expandafter\HyField@SetKeys\expandafter{%
12819 \DefaultOptionsofSubmit,#1%
12820 }%
12821 \HyField@FlagsPushButton
12822 \HyField@FlagsSubmit
12823 \ifFld@hidden\def\Fld@width{1sp}\fi
12824 \Hy@escapeform\PDFForm@Submit
12825 \HyField@AdvanceAnnotCount
12826 \pdfmark[\MakeButtonField{#2}]{%
12827 pdfmark=/ANN,%
12828 objdef=submit\HyField@TheAnnotCount,%
12829 Raw={\PDFForm@Submit /AP<</N{Submit}/D{SubmitP}>>}%
12830 }%
12831 \HyField@AddToFields{submit}%
12832 \endgroup
12833 }
12834 \def\@Reset[#1]#2{%
12835 \def\Fld@width{\DefaultWidthofReset}%
12836 \def\Fld@height{\DefaultHeightofReset}%
12837 \begingroup
12838 \expandafter\HyField@SetKeys\expandafter{%
12839 \DefaultOptionsofReset,#1%
12840 }%
12841 \leavevmode
12842 \ifHy@pdfa
12843 \Hy@Error{%
12844 PDF/A: Reset action is prohibited%
12845 }\@ehc
12846 \MakeButtonField{#2}%
12847 \else
12848 \HyField@FlagsPushButton
12849 \ifFld@hidden\def\Fld@width{1sp}\fi
12850 \Hy@escapeform\PDFForm@Reset
12851 \HyField@AdvanceAnnotCount
12852 \pdfmark[\MakeButtonField{#2}]{%

```

```

12853     pdfmark=/ANN,%
12854     objdef=reset\HyField@TheAnnotCount,%
12855     Raw={\PDFForm@Reset}%
12856 }%
12857 \HyField@AddToFields{reset}%
12858 \fi
12859 \endgroup
12860 }%
12861 \def\@CheckBox[#1]#2{% parameters, label
12862 \def\Fld@name{#2}%
12863 \def\Fld@default{0}%
12864 \begingroup
12865 \def\Fld@width{\DefaultWidthofCheckBox}%
12866 \def\Fld@height{\DefaultHeightofCheckBox}%
12867 \expandafter\HyField@SetKeys\expandafter{%
12868 \DefaultOptionsofCheckBox,#1%
12869 }%
12870 \HyField@FlagsCheckBox
12871 \ifFld@hidden\def\Fld@width{1sp}\fi
12872 \HyField@AdvanceAnnotCount
12873 \LayoutCheckField{#2}{%
12874 \leavevmode
12875 \Hy@escapeform\PDFForm@Check
12876 \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
12877 pdfmark=/ANN,%
12878 objdef=check\HyField@TheAnnotCount,%
12879 Raw={\PDFForm@Check}%
12880 }%
12881 }%
12882 \HyField@AddToFields{check}%
12883 \endgroup
12884 }
12885 \pdfmark>

```

## 44.2 HyperTeX

```

12886 (*hypertex)
12887 \def\@Form[#1]{%
12888 \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12889 }
12890 \let\@endForm\ltx@empty
12891 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12892 \Hy@Message{Sorry, HyperTeX does not support FORM gauges}%
12893 }
12894 \def\@TextField[#1]#2{% parameters, label
12895 \Hy@Message{Sorry, HyperTeX does not support FORM text fields}%
12896 }
12897 \def\@CheckBox[#1]#2{% parameters, label
12898 \Hy@Message{Sorry, HyperTeX does not support FORM checkboxes}%
12899 }
12900 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12901 \Hy@Message{Sorry, HyperTeX does not support FORM choice menus}%
12902 }
12903 \def\@PushButton[#1]#2{% parameters, label

```



```

12904 \Hy@Message{Sorry, HyperTeX does not support FORM pushbuttons}%
12905 }
12906 \def\@Reset[#1]#2{%
12907 \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12908 }
12909 \def\@Submit[#1]#2{%
12910 \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12911 }
12912 \</hypertex>

```

### 44.3 TeX4ht

```

12913 \<{*tex4ht}
12914 \def\@Form[#1]{%
12915 \kvsetkeys{Form}{#1}%
12916 \HCode{<form action="\Form@action" method="\Form@method">}%
12917 }
12918 \def\@endForm{\HCode{</form>}}
12919 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12920 \Hy@Message{Sorry, TeX4ht does not support gauges}%
12921 }
12922 \def\@TextField[#1]#2{% parameters, label
12923 \let\Hy@reserved@a\@empty
12924 \def\Fld@name{#2}%
12925 \let\Fld@default\ltx@empty
12926 \bgroup
12927 \Field@toks={ }%
12928 \kvsetkeys{Field}{#1}%
12929 \HCode{<label for="\Fld@name">#2</label>}%
12930 \ifFld@password
12931 \@@PasswordField
12932 \else
12933 \@@TextField
12934 \fi
12935 \egroup
12936 }
12937 \def\@@PasswordField{%
12938 \HCode{%
12939 <input type="password" %
12940 id="\Fld@name" %
12941 name="\Fld@name" %
12942 \ifFld@hidden type="hidden" \fi
12943 value="\Fld@default" %
12944 \the\Field@toks
12945 >%
12946 }%
12947 }
12948 \def\@@TextField{%
12949 \ifFld@multiline
12950 \HCode{<textarea %
12951 \ifFld@readonly readonly \fi
12952 id="\Fld@name" %
12953 name="\Fld@name" %
12954 \ifFld@hidden type="hidden" \fi
12955 \the\Field@toks>%

```

```

12956 }%
12957 \Fld@default
12958 \HCode{</textarea>}%
12959 \else
12960 \HCode{<input type="textbox" %
12961 \ifFld@readonly readonly \fi
12962 id="\Fld@name" %
12963 name="\Fld@name" %
12964 \ifFld@hidden type="hidden" \fi
12965 value="\Fld@default" %
12966 \the\Field@toks>%
12967 }%
12968 \fi
12969 }
12970 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12971 \def\Fld@name{#2}%
12972 \let\Fld@default\ltx@empty
12973 \let\Hy@reserved@a\relax
12974 \begingroup
12975 \expandafter\Fld@findlength#3\\%
12976 \Field@toks={ }%
12977 \kvsetkeys{Field}{#1}%
12978 #2%
12979 \ifFld@radio
12980 \expandafter\@@Radio#3\\%
12981 \else
12982 \expandafter\@@Menu#3\\%
12983 \fi
12984 \endgroup
12985 }
12986 \def\Fld@findlength#1\\{%
12987 \Fld@menulength=0 %
12988 \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
12989 }
12990 \def\@@Menu#1\\{%
12991 \HCode{<select size="\the\Fld@menulength" %
12992 name="\Fld@name" %
12993 \the\Field@toks>%
12994 }%
12995 \@for\@curropt:=#1\do{%
12996 \expandafter\Fld@checkequals\@curropt==\\%
12997 \HCode{<option %
12998 \ifx\@curropt\Fld@default selected \fi
12999 value="\@currValue">\@currDisplay</option>%
13000 }%
13001 }%
13002 \HCode{</select>}%
13003 }
13004 \def\@@Radio#1\\{%
13005 \@for\@curropt:=#1\do{%
13006 \expandafter\Fld@checkequals\@curropt==\\%
13007 \HCode{<input type="radio" %
13008 \ifx\@curropt\Fld@default checked \fi
13009 name="\Fld@name" %

```

```

13010     value="\@currValue" %
13011     \the\Field@toks>%
13012 }%
13013 \@currDisplay
13014 }%
13015 }
13016 \def\@PushButton[#1]#2{% parameters, label
13017 \def\Fld@name{#2}%
13018 \bgroup
13019 \Field@toks={ }%
13020 \kvsetkeys{Field}{#1}%
13021 \HCode{<input type="button" %
13022     name="\Fld@name" %
13023     value="#2" %
13024     \the\Field@toks>%
13025 }%
13026 \HCode{</button>}%
13027 \egroup
13028 }
13029 \def\@Submit[#1]#2{%
13030 \HCode{<button type="submit">#2</button>}%
13031 }
13032 \def\@Reset[#1]#2{%
13033 \HCode{<button type="reset">#2</button>}%
13034 }
13035 \def\@CheckBox[#1]#2{% parameters, label
13036 \let\Hy@reserved@a\@empty
13037 \def\Fld@name{#2}%
13038 \def\Fld@default{0}%
13039 \bgroup
13040 \Field@toks={ }%
13041 \kvsetkeys{Field}{#1}%
13042 \HCode{<input type="checkbox" %
13043     \ifFld@checked checked \fi
13044     \ifFld@disabled disabled \fi
13045     \ifFld@readonly readonly \fi
13046     name="\Fld@name" %
13047     \ifFld@hidden type="hidden" \fi
13048     value="\Fld@default" %
13049     \the\Field@toks>%
13050     #2%
13051 }%
13052 \egroup
13053 }
13054 </tex4ht>

```

## 44.4 pdfTeX

```

13055 <*pdfTeX>
13056 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
13057 \Hy@Message{Sorry, pdfTeX does not support FORM gauges}%
13058 }
13059 \def\MakeFieldObject#1#2{\sbox0{#1}%
13060 \immediate\pdfxform0 %
13061 \expandafter\edef\csname #2Object\endcsname{%

```

```

13062 \the\pdflastxform\space 0 R%
13063 }%
13064 % \hbox to Opt{\hskip-\maxdimen{\pdfrefxform \the\pdflastxform}}}%
13065 }%
13066 \let\HyField@afields\ltx@empty
13067 \let\HyField@cofields\ltx@empty
13068 \@ifundefined{pdflastlink}
13069 {%
13070 \let\HyField@AddToFields\relax
13071 \PackageInfo{hyperref}{%
13072 You need pdfTeX 1.40.0 for setting the /Fields entry.%
13073 \MessageBreak
13074 Adobe Reader/Acrobat accepts an empty /Field array,%
13075 \MessageBreak
13076 but other PDF viewers might complain%
13077 }}%
13078 {%
13079 \let\HyField@AuxAddToFields\ltx@gobble
13080 \let\HyField@AuxAddToCoFields\ltx@gobbletwo
13081 \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.

```

13082 \def\HyField@ABD@AuxAddToCoFields#1#2{%
13083 \begingroup
13084 \Hy@safe@activestrue
13085 \let\ltx@secondoftwo\relax
13086 \ifx\HyField@cofields\ltx@empty
13087 \xdef\HyField@cofields{%
13088 \ltx@secondoftwo{#1}{ #2 0 R}%
13089 }%
13090 \else
13091 \let\ltx@secondoftwo\relax
13092 \def\HyField@AddCoField##1##2##3{%
13093 \ifx##1\ltx@empty
13094 \ltx@secondoftwo{#1}{ #2 0 R}%
13095 \expandafter\ltx@gobble
13096 \else
13097 \ifnum\pdfstrcmp{##2}{#1}>\ltx@zero
13098 \ltx@secondoftwo{#1}{ #2 0 R}%
13099 \ltx@secondoftwo{##2}{##3}%
13100 \expandafter\expandafter\expandafter\ltx@gobble
13101 \else
13102 \ltx@secondoftwo{##2}{##3}%
13103 \fi
13104 \fi
13105 \HyField@AddCoField
13106 }%
13107 \xdef\HyField@cofields{%
13108 \expandafter\HyField@AddCoField
13109 \HyField@cofields\ltx@empty\ltx@empty\ltx@empty
13110 }%
13111 \fi
13112 \endgroup
13113 }%

```

```

13114 \Hy@AtBeginDocument{%
13115   \if@filesw
13116     \immediate\write\@mainaux{%
13117       \string\providecommand\string\HyField@AuxAddToFields[1]{}%
13118     }%
13119     \immediate\write\@mainaux{%
13120       \string\providecommand\string\HyField@AuxAddToCoFields[2]{}%
13121     }%
13122   \fi
13123   \let\HyField@AfterAuxOpen\@firstofone
13124   \def\HyField@AuxAddToFields#1{%
13125     \xdef\HyField@afields{%
13126       \ifx\HyField@afields\@empty
13127         \else
13128           \HyField@afields
13129           \space
13130         \fi
13131       #1 0 R%
13132     }%
13133   }%
13134   \let\HyField@AuxAddToCoFields\HyField@ABD@AuxAddToCoFields
13135 }%
13136 \def\HyField@AddToFields{%
13137   \expandafter\HyField@@AddToFields\expandafter{%
13138     \the\pdfastlink
13139   }%
13140   \ifx\Fld@calculate@code\ltx@empty
13141   \else
13142     \begingroup
13143     \Hy@safe@activetrue
13144     \edef\Hy@temp{%
13145       \endgroup
13146       \if@filesw
13147         \write\@mainaux{%
13148           \string\HyField@AuxAddToCoFields{%
13149             \Fld@calculate@sortkey
13150           }{%
13151             \the\pdfastlink
13152           }%
13153         }%
13154       \fi
13155     }%
13156     \Hy@temp
13157   \fi
13158 }%
13159 \def\HyField@@AddToFields#1{%
13160   \HyField@AfterAuxOpen{%
13161     \if@filesw
13162       \write\@mainaux{%
13163         \string\HyField@AuxAddToFields{#1}%
13164       }%
13165     \fi
13166   }%
13167 }%

```

```

13168 }
13169 \def\@Form[#1]{%
13170   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13171   \kvsetkeys{Form}{#1}%
13172   \pdf@ifdraftmode{}{%
13173     \Hy@FormObjects
13174     \ifnum\pdfTeXversion>13 %
13175       \pdfrefobj\OBJ@pdfdocencoding
13176       \pdfrefobj\OBJ@ZaDb
13177       \pdfrefobj\OBJ@Helv
13178     \fi
13179     \AtVeryEndDocument{%
13180       \immediate\pdfobj{%
13181         <<%
13182         /Fields[\HyField@afields]%
13183         \ifx\HyField@cofields\ltx@empty
13184         \else
13185           /CO[\romannumeral-`\Q\HyField@cofields]%
13186         \fi
13187         /DR<<%
13188         /Font<<%
13189         /ZaDb \OBJ@ZaDb\space 0 R%
13190         /Helv \OBJ@Helv\space 0 R%
13191         >>%
13192         >>%
13193         /DA[/Helv 10 Tf 0 g]%
13194         \ifHy@pdfa
13195         \else
13196           \ifHyField@NeedAppearances
13197             /NeedAppearances true%
13198           \fi
13199         \fi
13200         >>%
13201       }%
13202       \edef\OBJ@acroform{\the\pdflastobj}%
13203       \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
13204     }%
13205   }%
13206   \MakeFieldObject{%
Same as \ding{123} of package pifont.
13207     \begingroup
13208       \fontfamily{pzd}%
13209       \fontencoding{U}%
13210       \fontseries{m}%
13211       \fontshape{n}%
13212       \selectfont
13213       \char123 %
13214     \endgroup
13215   }{Ding}%
13216   \MakeFieldObject{%
13217     \fbox{\textcolor{yellow}{\textsf{Submit}}}%
13218   }{Submit}%
13219   \MakeFieldObject{%
13220     \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%

```

```

13221 }{SubmitP}%
13222 }
13223 \let\@endForm\ltx@empty
13224 \let\HyAnn@AbsPageLabel\ltx@empty
13225 \let\Fld@pageobjref\ltx@empty
13226 \ltx@ifundefined{pdfpageref}{%
13227 }{%
13228 \ltx@ifpackageloaded{zref-abspage}{%
13229 \newcount\HyAnn@Count
13230 \HyAnn@Count=\ltx@zero
13231 \def\HyAnn@AbsPageLabel{%
13232 \global\advance\HyAnn@Count by\ltx@one
13233 \zref@labelbyprops{HyAnn@\the\HyAnn@Count}{abspage}%
13234 \zref@refused{HyAnn@\the\HyAnn@Count}%
13235 }%
13236 \def\Fld@pageobjref{%
13237 \zref@ifrefundefined{HyAnn@\the\HyAnn@Count}{%
13238 }{%
13239 \zref@ifrefcontainsprop{HyAnn@\the\HyAnn@Count}{abspage}{%
13240 /P \pdfpageref
13241 \zref@extractdefault{HyAnn@\the\HyAnn@Count}{abspage}{1} %
13242 \space 0 R%
13243 }{%
13244 }%
13245 }%
13246 }%
13247 }{%
13248 }%
13249 }
13250 \def\@TextField[#1]#2{% parameters, label
13251 \def\Fld@name{#2}%
13252 \let\Fld@default\ltx@empty
13253 \let\Fld@value\@empty
13254 \def\Fld@width{\DefaultWidthofText}%
13255 \def\Fld@height{%
13256 \ifFld@multiline
13257 \DefaultHeightofTextMultiline
13258 \else
13259 \DefaultHeightofText
13260 \fi
13261 }%
13262 \begingroup
13263 \expandafter\HyField@SetKeys\expandafter{%
13264 \DefaultOptionsofText,#1%
13265 }%
13266 \PDFForm@Name
13267 \HyField@FlagsText
13268 \ifFld@hidden\def\Fld@width{1sp}\fi
13269 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13270 \LayoutTextField{#2}{%
13271 \leavevmode
13272 \HyAnn@AbsPageLabel
13273 \Hy@escapeform\PDFForm@Text
13274 \pdfstartlink user {\PDFForm@Text}\relax

```

```

13275     \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
13276     \HyField@AddToFields
13277 }%
13278 \endgroup
13279 }
13280 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13281 \def\Fld@name{#2}%
13282 \let\Fld@default\relax
13283 \let\Fld@value\relax
13284 \def\Fld@width{\DefaultWidthofChoiceMenu}%
13285 \def\Fld@height{\DefaultHeightofChoiceMenu}%
13286 \begingroup
13287 \Fld@menulength=0 %
13288 \@tempdima\z@
13289 \@for\@curropt:=#3\do{%
13290 \expandafter\Fld@checkequals\@curropt==\\%
13291 \Hy@StepCount\Fld@menulength
13292 \settowidth{\@tempdimb}{\@currDisplay}%
13293 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13294 }%
13295 \advance\@tempdima by 15\p@
13296 \begingroup
13297 \HyField@SetKeys{#1}%
13298 \edef\x{\endgroup
13299 \noexpand\expandafter
13300 \noexpand\HyField@SetKeys
13301 \noexpand\expandafter{%
13302 \expandafter\noexpand\csname DefaultOptionsof%
13303 \ifFld@radio
13304 Radio%
13305 \else
13306 \ifFld@combo
13307 \ifFld@popdown
13308 PopdownBox%
13309 \else
13310 ComboBox%
13311 \fi
13312 \else
13313 ListBox%
13314 \fi
13315 \fi
13316 \endcsname
13317 }%
13318 }\x
13319 \HyField@SetKeys{#1}%
13320 \PDFForm@Name
13321 \ifFld@hidden\def\Fld@width{1sp}\fi
13322 \ifx\Fld@value\relax
13323 \let\Fld@value\Fld@default
13324 \fi
13325 \LayoutChoiceField{#2}{%
13326 \ifFld@radio
13327 \HyField@FlagsRadioButton
13328 \@@Radio{#3}%

```



```

13329 \else
13330 \begingroup
13331 \HyField@FlagsChoice
13332 \ifdim\Fld@width<\@tempdima
13333 \ifdim\@tempdima<1cm\@tempdima1cm\fi
13334 \edef\Fld@width{\the\@tempdima}%
13335 \fi
13336 \ifFld@combo
13337 \else
13338 \@tempdima=\the\Fld@menulength\Fld@charsize
13339 \advance\@tempdima by \Fld@borderwidth bp %
13340 \advance\@tempdima by \Fld@borderwidth bp %
13341 \edef\Fld@height{\the\@tempdima}%
13342 \fi
13343 \@@ListBox{#3}%
13344 \endgroup
13345 \fi
13346 }%
13347 \endgroup
13348 }
13349 \def\@@Radio#1{%
13350 \Fld@listcount=0 %
13351 \EdefEscapeName\Fld@default{\Fld@default}%
13352 \@for\@curropt:=#1\do{%
13353 \expandafter\Fld@checkequals\@curropt==\%
13354 \EdefEscapeName\@currValue{\@currValue}%
13355 \Hy@StepCount\Fld@listcount
13356 \@currDisplay\space
13357 \leavevmode
13358 \HyAnn@AbsPageLabel
13359 \Hy@escapeform\PDFForm@Radio
13360 \pdfstartlink user {%
13361 \PDFForm@Radio
13362 /AP<<%
13363 /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.

```

13364 /\@currValue\space \DingObject
13365 >>%
13366 >>%
13367 }%
13368 \relax
13369 \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
13370 \ifnum\Fld@listcount=1 %
13371 \HyField@AddToFields
13372 \fi
13373 \space % deliberate space between radio buttons
13374 }%
13375 }
13376 \newcount\Fld@listcount
13377 \def\@@ListBox#1{%
13378 \HyField@PDFChoices{#1}%

```

```

13379 \leavevmode
13380 \HyAnn@AbsPageLabel
13381 \Hy@escapeform\PDFForm@List
13382 \pdfstartlink user {\PDFForm@List}\relax
13383 \MakeChoiceField{\Fld@width}{\Fld@height}%
13384 \pdfendlink
13385 \HyField@AddToFields
13386 }
13387 \def\@PushButton[#1]#2{% parameters, label
13388 \def\Fld@name{#2}%
13389 \beginngroup
13390 \expandafter\HyField@SetKeys\expandafter{%
13391 \DefaultOptionsofPushButton,#1%
13392 }%
13393 \PDFForm@Name
13394 \ifHy@pdfa
13395 \Hy@Error{%
13396 PDF/A: Push button with JavaScript is prohibited%
13397 }\@ehc
13398 \LayoutPushButtonField{%
13399 \leavevmode
13400 \MakeButtonField{#2}%
13401 }%
13402 \else
13403 \HyField@FlagsPushButton
13404 \ifFld@hidden\def\Fld@width{1sp}\fi
13405 \LayoutPushButtonField{%
13406 \leavevmode
13407 \HyAnn@AbsPageLabel
13408 \Hy@escapeform\PDFForm@Push
13409 \pdfstartlink user {\PDFForm@Push}\relax
13410 \MakeButtonField{#2}%
13411 \pdfendlink
13412 \HyField@AddToFields
13413 }%
13414 \fi
13415 \endgroup
13416 }
13417 \def\@Submit[#1]#2{%
13418 \def\Fld@width{\DefaultWidthofSubmit}%
13419 \def\Fld@height{\DefaultHeightofSubmit}%
13420 \beginngroup
13421 \expandafter\HyField@SetKeys\expandafter{%
13422 \DefaultOptionsofSubmit,#1%
13423 }%
13424 \HyField@FlagsPushButton
13425 \HyField@FlagsSubmit
13426 \ifFld@hidden\def\Fld@width{1sp}\fi
13427 \leavevmode
13428 \HyAnn@AbsPageLabel
13429 \Hy@escapeform\PDFForm@Submit
13430 \pdfstartlink user {%
13431 \PDFForm@Submit
13432 /AP<</N \SubmitObject/D \SubmitPObject>>%

```

```

13433 }%
13434 \relax
13435 \MakeButtonField{#2}%
13436 \pdfendlink
13437 \HyField@AddToFields
13438 \endgroup
13439 }
13440 \def\@Reset[#1]#2{%
13441 \def\Fld@width{\DefaultWidthofReset}%
13442 \def\Fld@height{\DefaultHeightofReset}%
13443 \begingroup
13444 \expandafter\HyField@SetKeys\expandafter{%
13445 \DefaultOptionsofReset,#1%
13446 }%
13447 \leavevmode
13448 \ifHy@pdfa
13449 \Hy@Error{%
13450 PDF/A: Reset action is prohibited%
13451 }\@ehc
13452 \MakeButtonField{#2}%
13453 \else
13454 \HyField@FlagsPushButton
13455 \ifFld@hidden\def\Fld@width{1sp}\fi
13456 \HyAnn@AbsPageLabel
13457 \Hy@escapeform\PDFForm@Reset
13458 \pdfstartlink user {\PDFForm@Reset}\relax
13459 \MakeButtonField{#2}%
13460 \pdfendlink
13461 \HyField@AddToFields
13462 \fi
13463 \endgroup
13464 }
13465 \def\@CheckBox[#1]#2{% parameters, label
13466 \def\Fld@name{#2}%
13467 \def\Fld@default{0}%
13468 \begingroup
13469 \def\Fld@width{\DefaultWidthofCheckBox}%
13470 \def\Fld@height{\DefaultHeightofCheckBox}%
13471 \expandafter\HyField@SetKeys\expandafter{%
13472 \DefaultOptionsofCheckBox,#1%
13473 }%
13474 \PDFForm@Name
13475 \HyField@FlagsCheckBox
13476 \ifFld@hidden\def\Fld@width{1sp}\fi
13477 \LayoutCheckField{#2}{%
13478 \leavevmode
13479 \HyAnn@AbsPageLabel
13480 \Hy@escapeform\PDFForm@Check
13481 \pdfstartlink user {\PDFForm@Check}\relax
13482 \MakeCheckField{\Fld@width}{\Fld@height}%
13483 \pdfendlink
13484 \HyField@AddToFields
13485 }%
13486 \endgroup

```

```

13487 }
13488 \def\Hy@FormObjects{%
13489 \pdfobj {%
13490 <<%
13491 /Type/Encoding%
13492 /Differences[%
13493 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
13494 /ring/tilde %
13495 39/quotesingle %
13496 96/grave %
13497 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13498 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
13499 /quotedblbase/quotedblleft/quotedblright/quoteleft%
13500 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
13501 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13502 160/Euro %
13503 164/currency %
13504 166/brokenbar %
13505 168/dieresis/copyright/ordfeminine %
13506 172/logicalnot/.notdef/registered/macron/degree/plusminus%
13507 /twosuperior/threesuperior/acute/mu %
13508 183/periodcentered/cedilla/onesuperior/ordmasculine %
13509 188/onequarter/onehalf/threequarters %
13510 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13511 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
13512 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
13513 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
13514 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
13515 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
13516 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
13517 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
13518 /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
13519 /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
13520 ]%
13521 >>%
13522 }%
13523 \xdef\OBJ@pdfdocencoding{\the\pdfastobj}%
13524 \pdfobj{%
13525 <<%
13526 /Type/Font%
13527 /Subtype/Type1%
13528 /Name/ZaDb%
13529 /BaseFont/ZapfDingbats%
13530 >>%
13531 }%
13532 \xdef\OBJ@ZaDb{\the\pdfastobj}%
13533 \pdfobj{%
13534 <<%
13535 /Type/Font%
13536 /Subtype/Type1%
13537 /Name/Helv%
13538 /BaseFont/Helvetica%
13539 /Encoding \OBJ@pdfdocencoding\space 0 R%
13540 >>%

```

```

13541 }%
13542 \xdef\OBJ@Helv{\the\pdfastobj}%
13543 \global\let\Hy@FormObjects\relax
13544 }
13545 \</pdfTeX>

```

## 44.5 dvipdfm, xetex

D. P. Story adapted the pdfTeX forms part for dvipdfm, of which version 0.12.7b or higher is required because of a bug.

```

13546 \<*dvipdfm | xetex>

```

\@Gauge

```

13547 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
13548 \Hy@Message{Sorry, dvipdfm/XeTeX does not support FORM gauges}%
13549 }

```

\@Form

```

13550 \def\@Form[#1]{%
13551 \ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13552 \kvsetkeys{Form}{#1}%
13553 \Hy@FormObjects
13554 \@pdfm@mark{obj @afields []}%
13555 \@pdfm@mark{obj @corder []}%
13556 \@pdfm@mark{%
13557 obj @aform <<%
13558 /Fields @afields%
13559 /DR<<%
13560 /Font<<%
13561 /ZaDb @OBJZaDb%
13562 /Helv @OBJHelv%
13563 >>%
13564 >>%
13565 /DA(/Helv 10 Tf 0 g)%
13566 /CO @corder%
13567 \ifHy@pdfa
13568 \else
13569 \ifHyField@NeedAppearances
13570 /NeedAppearances true%
13571 \fi
13572 \fi
13573 >>%
13574 }%
13575 \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
13576 }

```

\@endForm

```

13577 \let\@endForm\ltx@empty

```

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

```

13578 \def\dvipdfm@setdim{%
13579 height \the\ht\pdfm@box\space
13580 width \the\wd\pdfm@box\space
13581 depth \the\dp\pdfm@box\space
13582 }

```

\HyField@AnnotCount

```
13583 \newcount\HyField@AnnotCount
13584 \HyField@AnnotCount=\z@
```

\HyField@AdvanceAnnotCount

```
13585 \def\HyField@AdvanceAnnotCount{%
13586   \global\advance\HyField@AnnotCount\@ne
13587 }
```

\HyField@TheAnnotCount

```
13588 \def\HyField@TheAnnotCount{%
13589   \the\HyField@AnnotCount
13590 }
```

\Fld@pageobjref

```
13591 \def\Fld@pageobjref{/P @thispage}%
```

\HyField@AddToFields

```
13592 \def\HyField@AddToFields#1{%
13593   \@pdfm@mark{put @afields @#1\HyField@TheAnnotCount}%
13594   \ifx\Fld@calculate@code\ltx@empty
13595   \else
13596     \@pdfm@mark{put @corder @#1\HyField@TheAnnotCount}%
13597   \fi
13598 }
```

\@TextField

```
13599 \def\@TextField[#1]#2{% parameters, label
13600   \def\Fld@name{#2}%
13601   \let\Fld@default\ltx@empty
13602   \let\Fld@value\@empty
13603   \def\Fld@width{\DefaultWidthofText}%
13604   \def\Fld@height{%
13605     \ifFld@multiline
13606       \DefaultHeightofTextMultiline
13607     \else
13608       \DefaultHeightofText
13609     \fi
13610   }%
13611   \begingroup
13612     \expandafter\HyField@SetKeys\expandafter{%
13613       \DefaultOptionsofText,#1%
13614     }%
13615     \PDFForm@Name
13616     \HyField@FlagsText
13617     \ifFld@hidden\def\Fld@width{1sp}\fi
13618     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13619     \setbox\pdfm@box=\hbox{%
13620       \MakeTextField{\Fld@width}{\Fld@height}%
13621     }%
13622     \HyField@AdvanceAnnotCount
13623     \LayoutTextField{#2}{%
13624       \leavevmode
```

```

13625 \Hy@escapeform\PDFForm@Text
13626 \@pdfm@mark{%
13627   ann @text\HyField@TheAnnotCount\space
13628   \dvipdfm@setdim << \PDFForm@Text >>%
13629 }%
13630 }%
13631 \unhbox\pdfm@box
13632 \HyField@AddToFields{text}%
13633 % record in @afields array
13634 \endgroup
13635 }

```

\@ChoiceMenu

```

13636 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13637 \def\Fld@name{#2}%
13638 \let\Fld@default\relax
13639 \let\Fld@value\relax
13640 \def\Fld@width{\DefaultWidthofChoiceMenu}%
13641 \def\Fld@height{\DefaultHeightofChoiceMenu}%
13642 \begingroup
13643 \Fld@menulength=0 %
13644 \@tempdima\z@
13645 \@for\@curropt:=#3\do{%
13646 \expandafter\Fld@checkequals\@curropt==\%
13647 \Hy@StepCount\Fld@menulength
13648 \settowidth{\@tempdimb}{\@currDisplay}%
13649 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13650 }%
13651 \advance\@tempdima by 15\p@
13652 \begingroup
13653 \HyField@SetKeys{#1}%
13654 \edef\x{\endgroup
13655 \noexpand\expandafter
13656 \noexpand\HyField@SetKeys
13657 \noexpand\expandafter{%
13658 \expandafter\noexpand\curname DefaultOptionsof%
13659 \ifFld@radio
13660 Radio%
13661 \else
13662 \ifFld@combo
13663 \ifFld@popdown
13664 PopdownBox%
13665 \else
13666 ComboBox%
13667 \fi
13668 \else
13669 ListBox%
13670 \fi
13671 \fi
13672 \endcurname
13673 }%
13674 }\x
13675 \HyField@SetKeys{#1}%
13676 \PDFForm@Name

```

```

13677 \ifFld@hidden\def\Fld@width{1sp}\fi
13678 \ifx\Fld@value\relax
13679 \let\Fld@value\Fld@default
13680 \fi
13681 \LayoutChoiceField{#2}{%
13682 \ifFld@radio
13683 \HyField@FlagsRadioButton
13684 \@@Radio{#3}%
13685 \else
13686 \begingroup
13687 \HyField@FlagsChoice
13688 \ifdim\Fld@width<\@tempdima
13689 \ifdim\@tempdima<1cm\@tempdima1cm\fi
13690 \edef\Fld@width{\the\@tempdima}%
13691 \fi
13692 \ifFld@combo
13693 \else
13694 \@tempdima=\the\Fld@menulength\Fld@charsize
13695 \advance\@tempdima by \Fld@borderwidth bp %
13696 \advance\@tempdima by \Fld@borderwidth bp %
13697 \edef\Fld@height{\the\@tempdima}%
13698 \fi
13699 \@@ListBox{#3}%
13700 \endgroup
13701 \fi
13702 }%
13703 \endgroup
13704 }

```

#### \@@Radio

```

13705 \def\@@Radio#1{%
13706 \Fld@listcount=0 %
13707 \EdefEscapeName\Fld@default{\Fld@default}%
13708 \setbox\pdfm@box=\hbox{%
13709 \MakeRadioField{\Fld@width}{\Fld@height}%
13710 }%
13711 \@for\@curropt:=#1\do{%
13712 \expandafter\Fld@checkequals\@curropt==\%
13713 \EdefEscapeName\@currValue{\@currValue}%
13714 \Hy@StepCount\Fld@listcount
13715 \@currDisplay\space
13716 \leavevmode
13717 \Hy@escapeform\PDFForm@Radio
13718 \ifnum\Fld@listcount=1 %
13719 \HyField@AdvanceAnnotCount
13720 \fi
13721 \@pdfm@mark{%
13722 ann %
13723 \ifnum\Fld@listcount=1 %
13724 @radio\HyField@TheAnnotCount%
13725 \space
13726 \fi
13727 \dvipdfm@setdim
13728 <<%

```



```

13729     \PDFForm@Radio
13730     /AP<</N<</\@currValue /null>>>>%
13731     >>%
13732 }%
13733 \unhcopy\pdfm@box\space% deliberate space between radio buttons
13734 \ifnum\Fld@listcount=1 %
13735     \HyField@AddToFields{radio}%
13736 \fi
13737 }%
13738 }

\Fld@listcount

13739 \newcount\Fld@listcount

@@@Listbox

13740 \def\@@Listbox#1{%
13741     \HyField@PDFChoices{#1}%
13742     \setbox\pdfm@box=\hbox{%
13743         \MakeChoiceField{\Fld@width}{\Fld@height}%
13744     }%
13745     \leavevmode
13746     \Hy@escapeform\PDFForm@List
13747     \HyField@AdvanceAnnotCount
13748     \@pdfm@mark{%
13749         ann @list\HyField@TheAnnotCount\space
13750         \dvipdfm@setdim
13751         <<\PDFForm@List>>%
13752     }%
13753     \unhbox\pdfm@box
13754     \HyField@AddToFields{list}%
13755 }

\@PushButton

13756 \def\@PushButton[#1]#2{% parameters, label
13757     \def\Fld@name{#2}%
13758     \begingroup
13759     \expandafter\HyField@SetKeys\expandafter{%
13760         \DefaultOptionsofPushButton,#1%
13761     }%
13762     \PDFForm@Name
13763     \ifHy@pdfa
13764         \Hy@Error{%
13765             PDF/A: Push button with JavaScript is prohibited%
13766         }\@ehc
13767         \LayoutPushButtonField{%
13768             \leavevmode
13769             \MakeButtonField{#2}%
13770         }%
13771     \else
13772         \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13773         \HyField@FlagsPushButton
13774         \ifFld@hidden\def\Fld@width{1sp}\fi
13775         \HyField@AdvanceAnnotCount
13776         \LayoutPushButtonField{%

```

```

13777 \leavevmode
13778 \Hy@escapeform\PDFForm@Push
13779 \@pdfm@mark{%
13780   ann @push\HyField@TheAnnotCount\space
13781   \dvipdfm@setdim
13782   <<\PDFForm@Push>>%
13783 }%
13784 }%
13785 \unhbox\pdfm@box
13786 \HyField@AddToFields{push}%
13787 \fi
13788 \endgroup
13789 }

\@Submit
13790 \def\@Submit[#1]#2{%
13791   \def\Fld@width{\DefaultWidthofSubmit}%
13792   \def\Fld@height{\DefaultHeightofSubmit}%
13793   \begingroup
13794     \expandafter\HyField@SetKeys\expandafter{%
13795       \DefaultOptionsofSubmit,#1%
13796     }%
13797     \HyField@FlagsPushButton
13798     \HyField@FlagsSubmit
13799     \ifFld@hidden\def\Fld@width{1sp}\fi
13800     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13801     \leavevmode
13802     \Hy@escapeform\PDFForm@Submit
13803     \HyField@AdvanceAnnotCount
13804     \@pdfm@mark{%
13805       ann @submit\HyField@TheAnnotCount\space
13806       \dvipdfm@setdim
13807       <<\PDFForm@Submit>>%
13808     }%
13809     \unhbox\pdfm@box%
13810     \HyField@AddToFields{submit}%
13811   \endgroup
13812 }

\@Reset
13813 \def\@Reset[#1]#2{%
13814   \def\Fld@width{\DefaultWidthofReset}%
13815   \def\Fld@height{\DefaultHeightofReset}%
13816   \begingroup
13817     \expandafter\HyField@SetKeys\expandafter{%
13818       \DefaultOptionsofReset,#1%
13819     }%
13820     \leavevmode
13821     \ifHy@pdfa
13822       \Hy@Error{%
13823         PDF/A: Reset action is prohibited%
13824       }\@ehc
13825       \MakeButtonField{#2}%
13826     \else

```

```

13827 \HyField@FlagsPushButton
13828 \ifFld@hidden\def\Fld@width{1sp}\fi
13829 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13830 \Hy@escapeform\PDFForm@Reset
13831 \HyField@AdvanceAnnotCount
13832 \@pdfm@mark{%
13833   ann @reset\HyField@TheAnnotCount\space
13834   \dvipdfm@setdim
13835   <<\PDFForm@Reset>>%
13836 }%
13837 \unhbox\pdfm@box
13838 \HyField@AddToFields{reset}%
13839 \fi
13840 \endgroup
13841 }

```

\@CheckBox

```

13842 \def\@CheckBox[#1]#2{% parameters, label
13843 \def\Fld@name{#2}%
13844 \def\Fld@default{0}%
13845 \begingroup
13846 \def\Fld@width{\DefaultWidthofCheckBox}%
13847 \def\Fld@height{\DefaultHeightofCheckBox}%
13848 \expandafter\HyField@SetKeys\expandafter{%
13849   \DefaultOptionsofCheckBox,#1%
13850 }%
13851 \PDFForm@Name
13852 \HyField@FlagsCheckBox
13853 \ifFld@hidden\def\Fld@width{1sp}\fi
13854 \setbox\pdfm@box=\hbox{%
13855   \MakeCheckField{\Fld@width}{\Fld@height}%
13856 }%
13857 \HyField@AdvanceAnnotCount
13858 \LayoutCheckField{#2}{%
13859   \leavevmode
13860   \Hy@escapeform\PDFForm@Check
13861   \@pdfm@mark{%
13862     ann @check\HyField@TheAnnotCount\space
13863     \dvipdfm@setdim
13864     <<\PDFForm@Check>>%
13865   }%
13866   \unhbox\pdfm@box
13867   \HyField@AddToFields{check}%
13868 }%
13869 \endgroup
13870 }

13871 \def\Hy@FormObjects{%
13872 \@pdfm@mark{obj @OBJpdfdocencoding%
13873 <<%
13874 /Type/Encoding%
13875 /Differences[
13876   24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
13877   39/quotesingle %

```

13878 96/grave %  
13879 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%  
13880 /fraction/guilsinglleft/guilsinglright/minus/perthousand%  
13881 /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%  
13882 /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%  
13883 /Zcaron/dotlessi/lslash/oe/scaron/zcaron %  
13884 160/Euro %  
13885 164/currency %  
13886 166/brokenbar %  
13887 168/dieresis/copyright/ordfeminine %  
13888 172/logicalnot/.notdef/registered/macron/degree/plusminus%  
13889 /twosuperior/threesuperior/acute/mu %  
13890 183/periodcentered/cedilla/onesuperior/ordmasculine %  
13891 188/onequarter/onehalf/threequarters %  
13892 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%  
13893 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%  
13894 /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%  
13895 /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%  
13896 /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%  
13897 /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%  
13898 /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%  
13899 /eth/ntilde/ograde/oacute/ocircumflex/otilde/odieresis%  
13900 /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%  
13901 /thorn/ydieresis%  
13902 ]%  
13903 >>%  
13904 }%  
13905 \@pdfm@mark{obj @OBJZaDb%  
13906 <<%  
13907 /Type/Font%  
13908 /Subtype/Type1%  
13909 /Name/ZaDb%  
13910 /BaseFont/ZapfDingbats%  
13911 >>%  
13912 }%  
13913 \@pdfm@mark{obj @OBJHelv%  
13914 <<%  
13915 /Type/Font%  
13916 /Subtype/Type1%  
13917 /Name/Helv%  
13918 /BaseFont/Helvetica%  
13919 /Encoding @OBJpdfdocencoding%  
13920 >>%  
13921 }%  
13922 \global\let\Hy@FormObjects\relax  
13923 }  
13924 </dvipdfm | xetex>

## 44.6 Common forms part

13925 (\*pdfform)  
\Fld@pageobjref  
13926 \providecommand\*{\Fld@pageobjref}{}

\Hy@escapestring

```
13927 \@ifundefined{pdf@escapestring}
13928 {%
13929   \let\Hy@escapestring\@firstofone
13930   \def\Hy@escapeform#1{%
13931     \ifHy@pdfescapeform
13932       \def\Hy@escapestring##1{%
13933         \noexpand\Hy@escapestring{\noexpand##1}%
13934       }%
13935       \edef\Hy@temp{#1}%
13936       \expandafter\Hy@@@escapeform\Hy@temp\Hy@escapestring{}\@nil
13937     \def\Hy@escapestring##1{%
13938       \@ifundefined{Hy@esc@\string##1}{%
13939         ##1%
13940         \ThisShouldNotHappen
13941       }{%
13942         \csname Hy@esc@\string##1\endcsname
13943       }%
13944     }%
13945   \else
13946     \let\Hy@escapestring\@firstofone
13947   \fi
13948 }%
13949 \def\Hy@@@escapeform#1\Hy@escapestring#2#3\@nil{%
13950   \ifx\#3\%
13951   \else
13952     \expandafter
13953     \Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
13954     \ltx@ReturnAfterFi{%
13955       \Hy@@@escapeform#3\@nil
13956     }%
13957   \fi
13958 }%
13959 }{%
13960   \def\Hy@escapeform#1{%
13961     \ifHy@pdfescapeform
13962       \let\Hy@escapestring\pdfescapestring
13963     \else
13964       \let\Hy@escapestring\@firstofone
13965     \fi
13966   }%
13967   \Hy@escapeform{}%
13968 }
```

\PDFForm@Name

```
13969 \def\PDFForm@Name{%
13970   \PDFForm@@Name\Fld@name
13971   \ifx\Fld@altname\relax
13972   \else
13973     \PDFForm@@Name\Fld@altname
13974   \fi
13975   \ifx\Fld@mappingname\relax
13976   \else
13977     \PDFForm@@Name\Fld@mappingname
```

```
13978 \fi
13979 }
```

#### \PDFForm@@Name

```
13980 \def\PDFForm@@Name#1{%
13981 \begingroup
13982 \ifnum\Hy@pdf@major@minor@version<105 % implementation note 117, PDF spec 1.7
13983 \ifHy@unicode
13984 \Hy@unicodedefalse
13985 \fi
13986 \fi
13987 \pdfstringdef\Hy@gtemp#1%
13988 \endgroup
13989 \let#1\Hy@gtemp
13990 }
```

#### \Fld@additionalactions

```
13991 \def\Fld@@@additionalactions{%
K input (keystroke) format
13992 \ifx\Fld@keystroke@code\@empty
13993 \else
13994 /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
13995 \fi
F display format
13996 \ifx\Fld@format@code\@empty
13997 \else
13998 /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
13999 \fi
V validation
14000 \ifx\Fld@validate@code\@empty
14001 \else
14002 /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
14003 \fi
C calculation
14004 \ifx\Fld@calculate@code\@empty
14005 \else
14006 /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
14007 \fi
Fo receiving the input focus
14008 \ifx\Fld@onfocus@code\@empty
14009 \else
14010 /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
14011 \fi
Bl loosing the input focus (blurred)
14012 \ifx\Fld@onblur@code\@empty
14013 \else
14014 /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
14015 \fi
```

D pressing the mouse button (down)

```
14016 \ifx\Fld@onmousedown@code\@empty
14017 \else
14018 /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
14019 \fi
```

U releasing the mouse button (up)

```
14020 \ifx\Fld@onmouseup@code\@empty
14021 \else
14022 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
14023 \fi
```

E cursor enters the annotation's active area.

```
14024 \ifx\Fld@onenter@code\@empty
14025 \else
14026 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
14027 \fi
```

X cursor exits the annotation's active area.

```
14028 \ifx\Fld@onexit@code\@empty
14029 \else
14030 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
14031 \fi
14032 }
14033 \def\Fld@additionalactions{%
14034 \if\Fld@@additionalactions-%
14035 \else
14036 \ifHy@pdfa
14037 \else
14038 /AA<<\Fld@@additionalactions>>%
14039 \fi
14040 \fi
14041 }
```

\Fld@annotnames

```
14042 \def\Fld@annotnames{%
14043 /T(\Fld@name)%
14044 \ifx\Fld@altname\relax
14045 \else
14046 /TU(\Fld@altname)%
14047 \fi
14048 \ifx\Fld@mappingname\relax
14049 \else
14050 /TM(\Fld@mappingname)%
14051 \fi
14052 }
```

\PDFForm@Check

```
14053 \def\PDFForm@Check{%
14054 /Subtype/Widget%
14055 \Fld@annotflags
14056 \Fld@pageobjref
14057 \Fld@annotnames
14058 /FT/Btn%
14059 \Fld@flags
```

```

14060 /Q \Fld@align
14061 /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
14062 /AP<< /N <</Yes<<>>>> >> %new string /Yes is from below
14063 /MK<<%
14064 \ifnum\Fld@rotation=\z@
14065 \else
14066 /R \Fld@rotation
14067 \fi
14068 \ifx\Fld@bordercolor\relax
14069 \else
14070 /BC[\Fld@bordercolor]%
14071 \fi
14072 \ifx\Fld@bcolor\relax
14073 \else
14074 /BG[\Fld@bcolor]%
14075 \fi
14076 /CA(\Hy@escapestring{\Fld@cbsymbol})%
14077 >>%
14078 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
14079 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14080 /H/P%
14081 \ifFld@checked /V/Yes/AS/Yes\else /V/Off/AS/Off\fi
14082 \Fld@additionalactions
14083 }

```

\PDFForm@Push

```

14084 \ifHy@pdfa
14085 \else
14086 \def\PDFForm@Push{%
14087 /Subtype/Widget%
14088 \Fld@annotflags
14089 \Fld@pageobjref
14090 \Fld@annotnames
14091 /FT/Btn%
14092 \Fld@flags
14093 /H/P%
14094 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14095 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14096 \ifx\Fld@bordercolor\relax\else 1\fi
14097 \space
14098 \else
14099 /MK<<%
14100 \ifnum\Fld@rotation=\z@
14101 \else
14102 /R \Fld@rotation
14103 \fi
14104 \ifx\Fld@bordercolor\relax
14105 \else
14106 /BC[\Fld@bordercolor]%
14107 \fi
14108 >>%
14109 \fi
14110 /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick@code})>>%
14111 \Fld@additionalactions

```



```
14112 }%
14113 \fi
```

#### \PDFForm@List

```
14114 \def\PDFForm@List{%
14115   /Subtype/Widget%
14116   \Fld@annotflags
14117   \Fld@pageobjref
14118   \Fld@annotnames
14119   /FT/Ch%
14120   \Fld@flags
14121   /Q \Fld@align
14122   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14123   \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14124     \ifx\Fld@bordercolor\relax\else 1\fi
14125     \ifx\Fld@bcolor\relax \else 1\fi
14126     \space
14127   \else
14128     /MK<<%
14129     \ifnum\Fld@rotation=\z@
14130     \else
14131       /R \Fld@rotation
14132     \fi
14133     \ifx\Fld@bordercolor\relax
14134     \else
14135       /BC[\Fld@bordercolor]%
14136     \fi
14137     \ifx\Fld@bcolor\relax
14138     \else
14139       /BG[\Fld@bcolor]%
14140     \fi
14141     >>%
14142   \fi
14143   /DA(/Helv \strip@pt\Fld@charsize\space Tf%
14144     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14145   \Fld@choices
14146   \Fld@additionalactions
14147 }
```

#### \PDFForm@Radio

```
14148 \def\PDFForm@Radio{%
14149   /Subtype/Widget%
14150   \Fld@annotflags
14151   \Fld@pageobjref
14152   \Fld@annotnames
14153   /FT/Btn%
14154   \Fld@flags
14155   /H/P%
14156   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14157   /MK<<%
14158     \ifnum\Fld@rotation=\z@
14159     \else
14160       /R \Fld@rotation
14161     \fi
```

```

14162 \ifx\Fld@bordercolor\relax
14163 \else
14164 /BC[\Fld@bordercolor]%
14165 \fi
14166 \ifx\Fld@bcolor\relax
14167 \else
14168 /BG[\Fld@bcolor]%
14169 \fi
14170 /CA(\Hy@escapestring{\Fld@radiosymbol})%
14171 >>%
14172 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
14173 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%

```

New code, the default value is used for all buttons

```

14174 \ifx\Fld@default\@empty
14175 /V/Off%
14176 /DV/Off%
14177 \else
14178 /V/\Fld@default
14179 /DV/\Fld@default
14180 \fi
14181 \Fld@additionalactions
14182 }

```

\PDFForm@Text

```

14183 \def\PDFForm@Text{%
14184 /Subtype/Widget%
14185 \Fld@annotflags
14186 \Fld@pageobjref
14187 \Fld@annotnames
14188 /FT/Tx%
14189 \Fld@flags
14190 /Q \Fld@align
14191 /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
14192 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14193 \ifx\Fld@bordercolor\relax\else 1\fi
14194 \ifx\Fld@bcolor\relax \else 1\fi
14195 \space
14196 \else
14197 /MK<<%
14198 \ifnum\Fld@rotation=\z@
14199 \else
14200 /R \Fld@rotation
14201 \fi
14202 \ifx\Fld@bordercolor\relax
14203 \else
14204 /BC[\Fld@bordercolor]%
14205 \fi
14206 \ifx\Fld@bcolor\relax
14207 \else
14208 /BG[\Fld@bcolor]%
14209 \fi
14210 >>%
14211 \fi

```

```

14212 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
14213 \ifx\Fld@color\@empty\else\space\Fld@ccolor\fi)%
14214 /DV(\Hy@escapestring{\Fld@default})%
14215 /V(\Hy@escapestring{\Fld@value})%
14216 \Fld@additionalactions
14217 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
14218 }

```

#### \PDFForm@Submit

```

14219 \def\PDFForm@Submit{%
14220 /Subtype/Widget%
14221 \Fld@annotflags
14222 \Fld@pageobjref
14223 \Fld@annotnames
14224 /FT/Btn%
14225 \Fld@flags
14226 /H/P%
14227 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14228 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14229 \ifx\Fld@bordercolor\relax\else 1\fi
14230 \space
14231 \else
14232 /MK<<%
14233 \ifnum\Fld@rotation=\z@
14234 \else
14235 /R \Fld@rotation
14236 \fi
14237 \ifx\Fld@bordercolor\relax
14238 \else
14239 /BC[\Fld@bordercolor]%
14240 \fi
14241 >>%
14242 \fi
14243 /A<<%
14244 /S/SubmitForm%
14245 /F<<%
14246 /FS/URL%
14247 /F(\Hy@escapestring{\Form@action})%
14248 >>%
14249 \Fld@submitflags
14250 >>%
14251 \Fld@additionalactions
14252 }

```

#### \PDFForm@Reset

```

14253 \ifHy@pdfa
14254 \else
14255 \def\PDFForm@Reset{%
14256 /Subtype/Widget%
14257 \Fld@annotflags
14258 \Fld@pageobjref
14259 \Fld@annotnames
14260 /FT/Btn%
14261 \Fld@flags

```

```

14262 /H/P%
14263 /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
14264 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14265 \ifx\Fld@bordercolor\relax\else 1\fi
14266 \space
14267 \else
14268 /MK<<%
14269 \ifnum\Fld@rotation=\z@
14270 \else
14271 /R \Fld@rotation
14272 \fi
14273 \ifx\Fld@bordercolor\relax
14274 \else
14275 /BC[\Fld@bordercolor]%
14276 \fi
14277 % /CA (Clear)
14278 % /AC (Done)
14279 >>%
14280 \fi
14281 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14282 /A<</S/ResetForm>>%
14283 \Fld@additionalactions
14284 }%
14285 \fi

14286 </pdfform>
14287 <*package>

```

## 45 Bookmarks in the PDF file

This was originally developed by Yannis Haralambous (it was the separate `reper.sty`); it needed the `reper` or `makebook.pl` post-processor to work properly. Now redundant, as it is done entirely in  $\text{\LaTeX}$  macros.

To write out the current section title, and its rationalized number, we have to intercept the `\@sect` command, which is rather dangerous. But how else to see the information we need? We do the *same* for `\@ssect`, giving anchors to unnumbered sections. This allows things like bibliographies to get bookmarks when used with a manual `\addcontentsline`

```

14288 \def\phantomsection{%
14289 \Hy@MakeCurrentHrefAuto{section*}%
14290 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
14291 }
14292 </package>

```

### 45.1 Bookmarks

```
14293 <*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.

```

14294 \def\Hy@writebookmark#1#2#3#4#5{%
14295   % section number, text, label, level, file
14296   \ifx\WriteBookmarks\relax%
14297   \else
14298     \ifnum#4>\Hy@bookmarksdepth\relax
14299     \else
14300       \@@writetorep{#1}{#2}{#3}{#4}{#5}%
14301       \fi
14302     \fi
14303 }
14304 \def\Hy@currentbookmarklevel{0}
14305 \def\Hy@numberline#1{#1 }
14306 \def\@@writetorep#1#2#3#4#5{%
14307   \begingroup
14308     \edef\Hy@tempa{#5}%
14309     \ifx\Hy@tempa\Hy@bookmarkstype
14310       \edef\Hy@level{#4}%
14311       \ifx\Hy@levelcheck Y%
14312         \@tempcnta\Hy@level\relax
14313         \advance\@tempcnta by -1 %
14314         \ifnum\Hy@currentbookmarklevel<\@tempcnta
14315           \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
14316           \advance\@tempcnta by 1 %
14317           \Hy@Warning{%
14318             Difference (\the\@tempcnta) between bookmark levels is %
14319             greater \MessageBreak than one, level fixed%
14320           }%
14321           \@tempcnta\Hy@currentbookmarklevel
14322           \advance\@tempcnta by 1 %
14323           \edef\Hy@level{\the\@tempcnta}%
14324         \fi
14325       \else
14326         \global\let\Hy@levelcheck Y%
14327       \fi
14328       \global\let\Hy@currentbookmarklevel\Hy@level
14329       \@tempcnta\Hy@level\relax
14330       \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
14331       \advance\@tempcnta by -1 %
14332       \edef\Hy@tempa{#3}%
14333       \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
14334       \ifx\Hy@tempa\Hy@tempb

```

```

14335 \Hy@Warning{%
14336     The anchor of a bookmark and its parent's must not%
14337     \MessageBreak be the same. Added a new anchor%
14338 }%
14339 \phantomsection
14340 \fi
14341 \ifHy@bookmarksnumbered
14342 \let\numberline\Hy@numberline
14343 \let\booknumberline\Hy@numberline
14344 \let\partnumberline\Hy@numberline
14345 \let\chapternumberline\Hy@numberline
14346 \else
14347 \let\numberline\@gobble
14348 \let\booknumberline\@gobble
14349 \let\partnumberline\@gobble
14350 \let\chapternumberline\@gobble
14351 \fi
14352 \pdfstringdef\Hy@tempa{#2}%
14353 \HyPsd@SanitizeForOutFile\Hy@tempa
14354 \if@filesw
14355 \stepcounter{bookmark@seq@number}%
14356 \@ifundefined{@outlinefile}{%
14357 }{%
14358 \protected@write\@outlinefile}{%
14359 \protect\BOOKMARK
14360 [\Hy@level][\@bookmarkopenstatus{\Hy@level}]{#3}%
14361 {\Hy@tempa}{\Hy@tempb}%
14362 \@percentchar\space\thebookmark@seq@number
14363 }%
14364 }%
14365 \fi
14366 \fi
14367 \endgroup
14368 }
14369 \newcounter{bookmark@seq@number}

14370 \begingroup
14371 \lccode`=(`{%
14372 \lccode`=)`}%
14373 \lccode`1=\z@
14374 \lccode`2=\z@
14375 \lccode`3=\z@
14376 \lccode`5=\z@
14377 \lccode`7=\z@
14378 \lccode`\#=\z@
14379 \lccode``=\z@
14380 \lccode`\{=\z@
14381 \lccode`\}= \z@
14382 \lowercase{%
14383 \endgroup
14384 \def\HyPsd@SanitizeForOutFile#1{%
14385 \@onelevel@sanitize\Hy@tempa
14386 \escapechar`\\%
14387 \edef\Hy@tempa{%
14388 \expandafter\HyPsd@SanitizeOut@BraceLeft\Hy@tempa(\@nil

```

```

14389 }%
14390 \edef\Hy@tempa{%
14391   \expandafter\HyPsd@SanitizeOut@BraceRight\Hy@tempa)\@nil
14392 }%
14393 }%
14394 \def\HyPsd@SanitizeOut@BraceLeft#1(#2\@nil{%
14395   #1%
14396   \ifx\#2\%
14397     \expandafter\ltx@gobble
14398   \else
14399     \expandafter\ltx@firstofone
14400   \fi
14401   {%
14402     \string\173%
14403     \HyPsd@SanitizeOut@BraceLeft#2\@nil
14404   }%
14405 }%
14406 \def\HyPsd@SanitizeOut@BraceRight#1)#2\@nil{%
14407   #1%
14408   \ifx\#2\%
14409     \expandafter\ltx@gobble
14410   \else
14411     \expandafter\ltx@firstofone
14412   \fi
14413   {%
14414     \string\175%
14415     \HyPsd@SanitizeOut@BraceRight#2\@nil
14416   }%
14417 }%
14418 }

```

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

```

14419 \newcommand{\currentpdfbookmark}{%
14420   \pdfbookmark[\Hy@currentbookmarklevel]%
14421 }
14422 \newcommand{\subpdfbookmark}{%
14423   \@tempcnta\Hy@currentbookmarklevel
14424   \Hy@StepCount\@tempcnta
14425   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
14426 }
14427 \newcommand{\belowpdfbookmark}[2]{%
14428   \@tempcnta\Hy@currentbookmarklevel
14429   \Hy@StepCount\@tempcnta
14430   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
14431   \advance\@tempcnta by -1 %
14432   \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
14433 }

```

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.

```

14434 \renewcommand\pdfbookmark[3][0]{%
14435   \Hy@writebookmark}{#2}{#3.#1}{#1}{toc}%

```

```

14436 \hyper@anchorstart{#3.#1}\hyper@anchorend
14437 }
14438 \def\BOOKMARK{%
14439 \ifnextchar{\@BOOKMARK}{\@@BOOKMARK[1][-]}%
14440 }
14441 \def\@BOOKMARK[#1]{%
14442 \@ifnextchar{\@@BOOKMARK[#1]}{\@@BOOKMARK[#1][-]}%
14443 }

```

The macros for calculating structure of outlines are derived from those by Petr Olsak used in the texinfo.pdf macros.

#### 45.1.1 Rerun warning

\Hy@OutlineRerunCheck

```

14444 \RequirePackage{rerunfilecheck}[2009/12/10]
14445 \def\Hy@OutlineRerunCheck{%
14446 \RerunFileCheck{\jobname.out}{%
14447 \immediate\closeout\@outlinefile
14448 }{%
14449 Rerun to get outlines right\MessageBreak
14450 or use package `bookmark'%
14451 }%
14452 }

```

#### 45.1.2 Driver stuff

The VTEX section was written originally by VTEX, but then amended by Denis Girou ([denis.girou@idris.fr](mailto:denis.girou@idris.fr)), then by Taco Hoekwater ([taco.hoekwater@wkap.nl](mailto:taco.hoekwater@wkap.nl)). The problem is that VTEX, with its close integration of the PDF backend, does look at the contents of bookmarks, escaping \ and the like.

```

14453 (*vtex)
14454 \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.

```

14455 \begingroup
14456 \catcode`\'=12 %
14457 \ifnum\Hy@VTeXversion<650 %
14458 \catcode`\=12 %
14459 \gdef\hv@pdf@char#1#2#3{%
14460 \char
14461 \ifcase'#1#2#3 %
14462 "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
14463 \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
14464 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
14465 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
14466 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
14467 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
14468 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
14469 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
14470 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
14471 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%

```



```

14472 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
14473 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
14474 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
14475 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
14476 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
14477 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
14478 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
14479 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
14480 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
14481 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
14482 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
14483 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
14484 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
14485 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
14486 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
14487 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
14488 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
14489 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
14490 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
14491 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
14492 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
14493 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
14494 \fi
14495 }%
14496 \else
14497 \gdef\hv@pdf@char{\char'}%
14498 \fi
14499 \endgroup

```

\@@BOOKMARK

```

14500 \def\@@BOOKMARK[#1][#2]#3#4#5{%
14501 \expandafter\edef\csname @count@#3\endcsname{%
14502 \the\@serial@counter
14503 }%
14504 \edef\@mycount{\the\@serial@counter}%
14505 \Hy@StepCount\@serial@counter
14506 \edef\@parcount{%
14507 \expandafter\ifx\csname @count@#5\endcsname\relax
14508 0%
14509 \else
14510 \csname @count@#5\endcsname
14511 \fi
14512 }%
14513 \immediate\special{%
14514 !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
14515 s=\ifx#2-c\else o\fi,t=#4%
14516 }%
14517 }%

```

\ReadBookmarks

```

14518 \def\ReadBookmarks{%
14519 \begingroup
14520 \def\0{\hv@pdf@char 0}%
14521 \def\1{\hv@pdf@char 1}%

```

```

14522 \def\2{\hv@pdf@char 2}%
14523 \def\3{\hv@pdf@char 3}%
14524 \def\{(){}%
14525 \def\}{}%
14526 \def\do##1{%
14527   \ifnum\catcode`##1=\active
14528     \@makeother##1%
14529   \else
14530     \ifnum\catcode`##1=6 %
14531       \@makeother##1%
14532     \fi
14533   \fi
14534 }%
14535 \dospecials
14536 \Hy@safe@activetrue
14537 \InputIfFileExists{\jobname.out}{-}{-}%
14538 \endgroup
14539 \ifx\WriteBookmarks\relax
14540 \else
14541   \if@filesw
14542     \newwrite\@outlinefile
14543     \Hy@OutlineRerunCheck
14544     \immediate\openout\@outlinefile=\jobname.out\relax
14545     \ifHy@typexml
14546       \immediate\write\@outlinefile{<relaxxml>\relax}%
14547     \fi
14548   \fi
14549 \fi
14550 }

14551 </vtex>
14552 <*\vtex>
14553 \def\ReadBookmarks{%
14554   \pdf@ifdraftmode{-}%
14555   \begingroup
14556     \def\do##1{%
14557       \ifnum\catcode`##1=\active
14558         \@makeother##1%
14559       \else
14560         \ifnum\catcode`##1=6 %
14561           \@makeother##1%
14562         \fi
14563       \fi
14564     }%
14565     \dospecials
14566     \Hy@safe@activetrue
14567     \escapechar=`\%
14568     \def\@BOOKMARK[##1][##2]##3##4##5{%
14569       \calc@bm@number{##5}%
14570     }%
14571     \InputIfFileExists{\jobname.out}{-}{-}%
14572     \ifx\WriteBookmarks\relax
14573       \global\let\WriteBookmarks\relax
14574     \fi

```

```

14575 \def\@@BOOKMARK[##1][##2]##3##4##5{%
14576 \def\Hy@temp{##4}%
14577 (*pdfTeX)
14578 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14579 \Hy@OutlineName{}\Hy@pstringName{%
14580 ##2\check@bm@number{##3}%
14581 }{%
14582 \expandafter\strip@prefix\meaning\Hy@temp
14583 }%
14584 \pdfTeX)
14585 (*pdfmark)
14586 \pdfmark{%
14587 pdfmark=/OUT,%
14588 Count={##2\check@bm@number{##3}},%
14589 Dest={##3},%
14590 Title=\expandafter\strip@prefix\meaning\Hy@temp
14591 }%
14592 \pdfmark)
14593 (*dvipdfm|xetex)
14594 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14595 \pdfmark@mark{%
14596 outline \ifHy@DvipdfmxOutlineOpen
14597 [%
14598 \ifnum##21>\z@
14599 \else
14600 -%
14601 \fi
14602 ] %
14603 \fi
14604 ##1<<%
14605 /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
14606 /A<<%
14607 /S/GoTo%
14608 /D(\Hy@pstringName)%
14609 >>%
14610 >>%
14611 }%
14612 \dvipdfm|xetex)
14613 }%
14614 \begingroup
14615 \def\WriteBookmarks{0}%
14616 \InputIfFileExists{jobname.out}{-}{-}%
14617 \endgroup
14618 {%\escapechar\m@ne\InputIfFileExists{jobname.out}{-}{-}}%
14619 \endgroup
14620 }%
14621 \ifx\WriteBookmarks\relax
14622 \else
14623 \if@files
14624 \newwrite\@outlinefile
14625 \Hy@OutlineRerunCheck
14626 \immediate\openout\@outlinefile=jobname.out\relax
14627 \ifHy@typexml
14628 \immediate\write\@outlinefile{<relaxxml>\relax}%

```

```

14629 \fi
14630 \fi
14631 \fi
14632 }
14633 (*pdfTeX)
14634 \def\Hy@OutlineName#1#2#3#4{%
14635 \pdfoutline goto name{#2}count#3{#4}%
14636 }
14637 \pdfTeX
14638 \def\check@bm@number#1{%
14639 \expandafter\ifx\csname B_#1\endcsname\relax
14640 0%
14641 \else
14642 \csname B_#1\endcsname
14643 \fi
14644 }
14645 \def\calc@bm@number#1{%
14646 \@tempcnta=\check@bm@number{#1}\relax
14647 \advance\@tempcnta by 1 %
14648 \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
14649 }
14650 \!vTeX
14651 \ifHy@implicit
14652 \else
14653 \expandafter\endinput
14654 \fi
14655 \outlines
14656 (*outlines | hypertex)
14657 \newlength\Hy@SectionHShift
14658 \def\Hy@SectionAnchorHref#1{%
14659 \ifx\protect\@typeset@protect
14660 \Hy@@SectionAnchor{#1}%
14661 \fi
14662 }
14663 \DeclareRobustCommand*{\Hy@@SectionAnchor}[1]{%
14664 \leavevmode
14665 \hbox to 0pt{%
14666 \kern-\Hy@SectionHShift
14667 \Hy@raisedlink{%
14668 \hyper@anchorstart{#1}\hyper@anchorend
14669 }%
14670 \hss
14671 }%
14672 }
14673 \let\H@old@ssect\@ssect
14674 \def\@ssect#1#2#3#4#5{%
14675 \Hy@MakeCurrentHrefAuto{section*}%
14676 \setlength{\Hy@SectionHShift}{#1}%
14677 \begingroup
14678 \toks@{\H@old@ssect{#1}{#2}{#3}{#4}}%
14679 \toks\tw@\expandafter{%
14680 \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14681 #5%

```

```

14682 }%
14683 \edef\x{\endgroup
14684   \the\toks@{\the\toks\tw@}%
14685 }\x
14686 }
14687 \let\H@old@schapter\@schapter
14688 \def\@schapter#1{%
14689   \begingroup
14690     \let\@mkboth\@gobbletwo
14691     \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14692     \Hy@raisedlink{%
14693       \hyper@anchorstart{\@currentHref}\hyper@anchorend
14694     }%
14695   \endgroup
14696   \H@old@schapter{#1}%
14697 }

```

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:

```

14698 \ltx@ifundefined{@chapter}{-}{%
14699   \let\Hy@org@chapter\@chapter
14700   \def\@chapter{%
14701     \def\Hy@next{%
14702       \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14703       \Hy@raisedlink{%
14704         \hyper@anchorstart{\@currentHref}\hyper@anchorend
14705       }%
14706     }%
14707     \ifnum\c@secnumdepth>\m@ne
14708       \ltx@ifundefined{if@mainmatter}%
14709       \iftrue{\csname if@mainmatter\endcsname}%
14710       \let\Hy@next\relax
14711     \fi
14712     \fi
14713     \Hy@next
14714     \Hy@org@chapter
14715   }%
14716 }

14717 \let\H@old@part\@part
14718 \@ifundefined{chapter}
14719   {\let\Hy@secnum@part\z@}
14720   {\let\Hy@secnum@part\m@ne}
14721 \def\@part{%
14722   \ifnum\Hy@secnum@part>\c@secnumdepth
14723     \phantomsection
14724   \fi
14725   \H@old@part
14726 }

14727 \let\H@old@spart\@spart
14728 \def\@spart#1{%
14729   \Hy@MakeCurrentHrefAuto{part*}%
14730   \Hy@raisedlink{%

```

```

14731 \hyper@anchorstart{\@currentHref}\hyper@anchorend
14732 }%
14733 \H@old@spart{#1}%
14734 }
14735 \let\H@old@sect\@sect
14736 \def\@sect#1#2#3#4#5#6[#7]#8{%
14737 \ifnum #2>\c@secnumdepth
14738 \expandafter\@firstoftwo
14739 \else
14740 \expandafter\@secondoftwo
14741 \fi
14742 {%
14743 \Hy@MakeCurrentHrefAuto{section*}%
14744 \setlength{\Hy@SectionHShift}{#3}%
14745 \begingroup
14746 \toks@{\H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}}%
14747 \toks\tw@\expandafter{%
14748 \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14749 #8%
14750 }%
14751 \edef\x{\endgroup
14752 \the\toks@\the\toks\tw@}%
14753 }\x
14754 }{%
14755 \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}{#8}%
14756 }%
14757 }

14758 </outlines | hypertex>
14759 <*outlines>

14760 \expandafter\def\csname Parent-4\endcsname{}
14761 \expandafter\def\csname Parent-3\endcsname{}
14762 \expandafter\def\csname Parent-2\endcsname{}
14763 \expandafter\def\csname Parent-1\endcsname{}
14764 \expandafter\def\csname Parent0\endcsname{}
14765 \expandafter\def\csname Parent1\endcsname{}
14766 \expandafter\def\csname Parent2\endcsname{}
14767 \expandafter\def\csname Parent3\endcsname{}
14768 \expandafter\def\csname Parent4\endcsname{}

14769 </outlines>

```

## 46 Compatibility with koma-script classes

```
14770 <*outlines | hypertex>
```

Hard-wire in an unpleasant over-ride of komascript ‘scrbook’ class for Tobias Isenberg (Tobias.Isenberg@gmx.de). With version 6.71b the hack is also applied to ‘scrreprt’ class and is removed for koma-script versions since 2001/01/01, because Markus Kohm supports hyperref in komascript.

```

14771 \def\Hy@tempa{%
14772 \def\@addchap[##1]##2{%
14773 \typeout{##2}%
14774 \if@twoside

```

```

14775 \mkboth{##1}{}%
14776 \else
14777 \mkboth{}{##1}%
14778 \fi
14779 \addtocontents{lof}{\protect\addvspace{10\p@}}%
14780 \addtocontents{lot}{\protect\addvspace{10\p@}}%
14781 \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14782 \Hy@raisedlink{%
14783 \hyper@anchorstart{\@currentHref}\hyper@anchorend
14784 }%
14785 \if@twocolumn
14786 \topnewpage\@makeschapterhead{##2}%
14787 \else
14788 \makeschapterhead{##2}%
14789 \afterheading
14790 \fi
14791 \addcontentsline{toc}{chapter}{##1}%
14792 }%
14793 }
14794 \ifclassloaded{scrbook}{%
14795 \ifclasslater{scrbook}{2001/01/01}{%
14796 \let\Hy@tempa\@empty
14797 }{}%
14798 }{%
14799 \ifclassloaded{scrreprt}{%
14800 \ifclasslater{scrreprt}{2001/01/01}{%
14801 \let\Hy@tempa\@empty
14802 }{}%
14803 }{%
14804 \let\Hy@tempa\@empty
14805 }%
14806 }%
14807 \Hy@tempa
14808 </outlines | hypertex>

```

## 47 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek.

### 47.1 PD1 encoding

```

14809 <*pd1enc>
14810 \DeclareFontEncoding{PD1}{}{}

Accents
14811 \DeclareTextAccent{\`}{PD1}{\textasciigrave}
14812 \DeclareTextAccent{\'}{PD1}{\textacute}
14813 \DeclareTextAccent{\^}{PD1}{\textasciicircum}
14814 \DeclareTextAccent{\~}{PD1}{\texttilde}
14815 \DeclareTextAccent{\"}{PD1}{\textasciidieresis}
14816 \DeclareTextAccent{\r}{PD1}{\textring}
14817 \DeclareTextAccent{\v}{PD1}{\textasciicaron}
14818 \DeclareTextAccent{\.}{PD1}{\textdotaccent}

```

```

14819 \DeclareTextAccent{\c}{PD1}{\textcedilla}
14820 \DeclareTextAccent{\=}{PD1}{\textasciimacron}
14821 \DeclareTextAccent{\b}{PD1}{\textmacronbelow}
14822 \DeclareTextAccent{\d}{PD1}{\textdotbelow}
14823 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textasciigrave}
14824 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
14825 \DeclareTextCompositeCommand{\^}{PD1}{\@empty}{\textasciicircum}
14826 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
14827 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textasciidieresis}
14828 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textstring}
14829 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textasciicaron}
14830 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
14831 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
14832 \DeclareTextCompositeCommand{\=}{PD1}{\@empty}{\textasciimacron}
14833 \DeclareTextCompositeCommand{\b}{PD1}{\@empty}{\textmacronbelow}
14834 \DeclareTextCompositeCommand{\d}{PD1}{\@empty}{\textdotbelow}
14835 \DeclareTextCompositeCommand{\`}{PD1}{\ }{\textasciigrave}
14836 \DeclareTextCompositeCommand{\'}{PD1}{\ }{\textacute}
14837 \DeclareTextCompositeCommand{\^}{PD1}{\ }{\textasciicircum}
14838 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\texttilde}
14839 \DeclareTextCompositeCommand{\"}{PD1}{\ }{\textasciidieresis}
14840 \DeclareTextCompositeCommand{\r}{PD1}{\ }{\textstring}
14841 \DeclareTextCompositeCommand{\v}{PD1}{\ }{\textasciicaron}
14842 \DeclareTextCompositeCommand{\.}{PD1}{\ }{\textdotaccent}
14843 \DeclareTextCompositeCommand{\c}{PD1}{\ }{\textcedilla}
14844 \DeclareTextCompositeCommand{\=}{PD1}{\ }{\textasciimacron}
14845 \DeclareTextCompositeCommand{\b}{PD1}{\ }{\textmacronbelow}
14846 \DeclareTextCompositeCommand{\d}{PD1}{\ }{\textdotbelow}
14847 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}
14848 \DeclareTextCommand{\t}{PD1}[1]{\TextSymbolUnavailable{\t{#1}}#1}
14849 \DeclareTextCommand{\newtie}{PD1}[1]{%
14850 \TextSymbolUnavailable{\newtie{#1}}#1%
14851 }

```

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

```

14852 % U+0009 (CHARACTER TABULATION)
14853 \DeclareTextCommand{\textHT}{PD1}{\011}% U+0009
14854 % U+000A (LINE FEED)
14855 \DeclareTextCommand{\textLF}{PD1}{\012}% U+000A
14856 % U+000D (CARRIAGE RETURN)
14857 \DeclareTextCommand{\textCR}{PD1}{\015}% U+000D

```

Accent glyph names

```

14858 % U+02D8 BREVE; breve
14859 \DeclareTextCommand{\textasciibreve}{PD1}{\030}% U+02D8
14860 % U+02C7 CARON; caron
14861 \DeclareTextCommand{\textasciicaron}{PD1}{\031}% U+02C7
14862 % U+02C6 MODIFIER LETTER CIRCUMFLEX ACCENT; circumflex
14863 \DeclareTextCommand{\textcircumflex}{PD1}{\032}% U+02C6
14864 % U+02D9 DOT ABOVE; dotaccent
14865 \DeclareTextCommand{\textdotaccent}{PD1}{\033}% U+02D9
14866 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut
14867 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034}% U+02DD
14868 % U+02DB OGONEK; ogonek

```



14869 \DeclareTextCommand{\textogonek}{PD1}{\035}% U+02DB  
14870 % U+02DA RING ABOVE; ring  
14871 \DeclareTextCommand{\textring}{PD1}{\036}% U+02DA  
14872 % U+02DC SMALL TILDE; ilde, \*tilde  
14873 \DeclareTextCommand{\texttilde}{PD1}{\037}% U+02DC  
\040: U+0020 SPACE; \*space, spacehackarabic  
\041: U+0021 EXCLAMATION MARK; exclam  
14874 % U+0022 QUOTATION MARK; quotedbl  
14875 \DeclareTextCommand{\textquotedbl}{PD1}{"}% \042 U+0022  
14876 % U+0023 NUMBER SIGN; numbersign  
14877 \DeclareTextCommand{\textnumbersign}{PD1}{\043}% U+0023  
14878 % U+0024 DOLLAR SIGN; dollar  
14879 \DeclareTextCommand{\textdollar}{PD1}{\044}% U+0024  
14880 % U+0025 PERCENT SIGN; percent  
14881 \DeclareTextCommand{\textpercent}{PD1}{\045}% U+0025  
14882 % U+0026 AMPERSAND; ampersand  
14883 \DeclareTextCommand{\textampersand}{PD1}{\046}% U+0026  
\047: U+0027 APOSTROPHE; quotesingle  
  
14884 % U+0028 LEFT PARENTHESIS; parenleft  
14885 \DeclareTextCommand{\textparenleft}{PD1}{\string\(% \050 U+0028  
14886 % U+0029 RIGHT PARENTHESIS; parenright  
14887 \DeclareTextCommand{\textparenright}{PD1}{\string\)% \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  
14888 % U+002E FULL STOP; period  
14889 \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  
14890 % U+003C LESS-THAN SIGN; less  
14891 \DeclareTextCommand{\textless}{PD1}{<}% \074 U+003C  
\075: U+003D EQUALS SIGN; equal  
14892 % U+003E GREATER-THAN SIGN; greater  
14893 \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  
14894 % U+005C REVERSE SOLIDUS; backslash  
14895 \DeclareTextCommand{\textbackslash}{PD1}{\134}% U+005C  
14896 % "U+2216 SET MINUS" simulated by "U+005C REVERSE SOLIDUS"  
14897 \DeclareTextCommand{\textsetminus}{PD1}{\textbackslash}

$\backslash 135$ : U+005D RIGHT SQUARE BRACKET; bracketright  
14898 % U+005E CIRCUMFLEX ACCENT; asciicircum  
14899  $\backslash \text{DeclareTextCommand}\{\text{textasciicircum}\}\{\text{PD1}\}\{\backslash 136\}\%$  U+005E  
14900 % U+005F LOW LINE; underscore  
14901  $\backslash \text{DeclareTextCommand}\{\text{textunderscore}\}\{\text{PD1}\}\{\backslash 137\}\%$  U+005F  
14902  $\backslash \text{DeclareTextCommand}\{\text{textmacronbelow}\}\{\text{PD1}\}\{\backslash 137\}\%$  U+005F  
14903 % U+0060 GRAVE ACCENT; grave  
14904  $\backslash \text{DeclareTextCommand}\{\text{textasciigrave}\}\{\text{PD1}\}\{\backslash 140\}\%$  U+0060  
 $\backslash 141$ : U+0061 LATIN SMALL LETTER A; a  
...  
 $\backslash 150$ : U+0068 LATIN SMALL LETTER H; h  
14905 % U+0069 LATIN SMALL LETTER I; i  
14906  $\backslash \text{DeclareTextCompositeCommand}\{\backslash \cdot\}\{\text{PD1}\}\{\text{i}\}\{\text{i}\}\%$   $\backslash 151$  U+0069  
 $\backslash 152$ : U+006A LATIN SMALL LETTER J; j  
...  
 $\backslash 172$ : U+007A LATIN SMALL LETTER Z; z  
14907 % U+007B LEFT CURLY BRACKET; braceleft  
14908  $\backslash \text{DeclareTextCommand}\{\text{textbraceleft}\}\{\text{PD1}\}\{\backslash 173\}\%$  U+007B  
14909 % U+007C VERTICAL LINE; \*bar, verticalbar  
14910  $\backslash \text{DeclareTextCommand}\{\text{textbar}\}\{\text{PD1}\}\{\backslash 174\}\%$  U+007C  
14911 % U+007D RIGHT CURLY BRACKET; braceright  
14912  $\backslash \text{DeclareTextCommand}\{\text{textbraceright}\}\{\text{PD1}\}\{\backslash 175\}\%$  U+007D  
14913 % U+007E TILDE; asciitilde  
14914  $\backslash \text{DeclareTextCommand}\{\text{textasciitilde}\}\{\text{PD1}\}\{\backslash 176\}\%$  U+007E  
Slot  $\backslash 177$  (0x7F) is undefined in PDFDocEncoding.  
14915 % U+2022 BULLET; bullet  
14916  $\backslash \text{DeclareTextCommand}\{\text{textbullet}\}\{\text{PD1}\}\{\backslash 200\}\%$  U+2022  
14917 % U+2020 DAGGER; dagger  
14918  $\backslash \text{DeclareTextCommand}\{\text{textdagger}\}\{\text{PD1}\}\{\backslash 201\}\%$  U+2020  
14919 % U+2021 DOUBLE DAGGER; daggerdbl;  $\backslash \text{ddagger}$  (LaTeX)  
14920  $\backslash \text{DeclareTextCommand}\{\text{textdaggerdbl}\}\{\text{PD1}\}\{\backslash 202\}\%$  U+2021  
14921  $\backslash \text{DeclareTextCommand}\{\text{tex addedddagger}\}\{\text{PD1}\}\{\backslash 203\}\%$  U+2021  
14922 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
14923  $\backslash \text{DeclareTextCommand}\{\text{textellipsis}\}\{\text{PD1}\}\{\backslash 203\}\%$  U+2026  
14924 % U+2014 EM DASH; emdash  
14925  $\backslash \text{DeclareTextCommand}\{\text{textemdash}\}\{\text{PD1}\}\{\backslash 204\}\%$  U+2014  
14926 % U+2013 EN DASH; endash  
14927  $\backslash \text{DeclareTextCommand}\{\text{textendash}\}\{\text{PD1}\}\{\backslash 205\}\%$  U+2013  
14928 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
14929  $\backslash \text{DeclareTextCommand}\{\text{textflorin}\}\{\text{PD1}\}\{\backslash 206\}\%$  U+0192  
14930 % U+2044 FRACTION SLASH; fraction  
14931  $\backslash \text{DeclareTextCommand}\{\text{textfractionsolidus}\}\{\text{PD1}\}\{\backslash 207\}\%$  U+2044  
14932 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guillemetleft  
14933  $\backslash \text{DeclareTextCommand}\{\text{guillemetleft}\}\{\text{PD1}\}\{\backslash 210\}\%$  U+2039  
14934 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guillemetright  
14935  $\backslash \text{DeclareTextCommand}\{\text{guillemetright}\}\{\text{PD1}\}\{\backslash 211\}\%$  U+203A  
14936 % U+2212 MINUS SIGN; minus  
14937  $\backslash \text{DeclareTextCommand}\{\text{textminus}\}\{\text{PD1}\}\{\backslash 212\}\%$  U+2212  
14938 % U+2030 PER MILLE SIGN; perthousand  
14939  $\backslash \text{DeclareTextCommand}\{\text{textperthousand}\}\{\text{PD1}\}\{\backslash 213\}\%$  U+2030  
14940 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase

14941 \DeclareTextCommand{\quotedblbase}{PD1}{\214}% U+201E  
 14942 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 14943 \DeclareTextCommand{\textquotedblleft}{PD1}{\215}% U+201C  
 14944 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 14945 \DeclareTextCommand{\textquotedblright}{PD1}{\216}% U+201D  
 14946 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 14947 \DeclareTextCommand{\textquoteleft}{PD1}{\217}% U+2018  
 14948 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 14949 \DeclareTextCommand{\textquoteright}{PD1}{\220}% U+2019  
 14950 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 14951 \DeclareTextCommand{\quotesinglbase}{PD1}{\221}% U+201A  
 14952 % U+2122 TRADE MARK SIGN; trademark  
 14953 \DeclareTextCommand{\texttrademark}{PD1}{\222}% U+2122  
 14954 % U+FB01 LATIN SMALL LIGATURE FI; fi  
 14955 \DeclareTextCommand{\textfi}{PD1}{\223}% U+FB01  
 14956 % U+FB02 LATIN SMALL LIGATURE FL; fl  
 14957 \DeclareTextCommand{\textfl}{PD1}{\224}% U+FB02  
 14958 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
 14959 \DeclareTextCommand{\L}{PD1}{\225}% U+0141  
 14960 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
 14961 \DeclareTextCommand{\OE}{PD1}{\226}% U+0152  
 14962 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
 14963 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227}% U+0160  
 14964 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
 14965 \DeclareTextCompositeCommand{\Y}{PD1}{Y}{\230}% U+0178  
 14966 \DeclareTextCommand{\IJ}{PD1}{IJ}% ligature U+0049 U+004A  
 14967 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
 14968 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231}% U+017D  
 14969 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
 14970 \DeclareTextCommand{\i}{PD1}{\232}% U+0131  
 14971 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
 14972 \DeclareTextCommand{\l}{PD1}{\233}% U+0142  
 14973 % U+0153 LATIN SMALL LIGATURE OE; oe  
 14974 \DeclareTextCommand{\oe}{PD1}{\234}% U+0153  
 14975 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
 14976 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235}% U+0161  
 14977 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
 14978 \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.

14979 % U+20AC EURO SIGN; \*Euro, euro  
 14980 \DeclareTextCommand{\texteuro}{PD1}{\240}% U+20AC  
 14981 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
 14982 \DeclareTextCommand{\textexclamdown}{PD1}{\241}% U+00A1  
 14983 % U+00A2 CENT SIGN; cent  
 14984 \DeclareTextCommand{\textcent}{PD1}{\242}% U+00A2  
 14985 % U+00A3 POUND SIGN; sterling  
 14986 \DeclareTextCommand{\textsterling}{PD1}{\243}% U+00A3  
 14987 % U+00A4 CURRENCY SIGN; currency  
 14988 \DeclareTextCommand{\textcurrency}{PD1}{\244}% U+00A4  
 14989 % U+00A5 YEN SIGN; yen  
 14990 \DeclareTextCommand{\textyen}{PD1}{\245}% U+00A5  
 14991 % U+00A6 BROKEN BAR; brokenbar  
 14992 \DeclareTextCommand{\textbrokenbar}{PD1}{\246}% U+00A6

14993 % U+00A7 SECTION SIGN; section  
 14994 \DeclareTextCommand{\textsection}{PD1}{\247}% U+00A7  
 14995 % U+00A8 DIAERESIS; dieresis  
 14996 \DeclareTextCommand{\textasciidieresis}{PD1}{\250}% U+00A8  
 14997 % U+00A9 COPYRIGHT SIGN; copyright  
 14998 \DeclareTextCommand{\textcopyright}{PD1}{\251}% U+00A9  
 14999 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
 15000 \DeclareTextCommand{\textordfeminine}{PD1}{\252}% U+00AA  
 15001 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotleft  
 15002 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB  
 15003 % U+00AC NOT SIGN; logicalnot  
 15004 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC  
 15005 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not  
 No glyph \255 in PDFDocEncoding.  
 15006 % U+00AE REGISTERED SIGN; registered  
 15007 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE  
 15008 % U+00AF MACRON; \*macron, overscore  
 15009 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF  
 15010 % U+00B0 DEGREE SIGN; degree  
 15011 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0  
 15012 % U+00B1 PLUS-MINUS SIGN; plusminus  
 15013 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1  
 15014 % U+00B2 SUPERSCRIPT TWO; twosuperior  
 15015 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}%\* U+00B2  
 15016 % U+00B3 SUPERSCRIPT THREE; threesuperior  
 15017 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}%\* U+00B3  
 15018 % U+00B4 ACUTE ACCENT; acute  
 15019 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4  
 15020 % U+00B5 MICRO SIGN; mu, mul  
 15021 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5  
 15022 % U+00B6 PILCROW SIGN; paragraph  
 15023 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6  
 15024 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
 15025 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7  
 15026 % U+00B8 CEDILLA; cedilla  
 15027 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8  
 15028 % U+00B9 SUPERSCRIPT ONE; onesuperior  
 15029 \DeclareTextCommand{\textonesuperior}{PD1}{\271}%\* U+00B9  
 15030 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
 15031 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA  
 15032 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotright  
 15033 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB  
 15034 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
 15035 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC  
 15036 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
 15037 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD  
 15038 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
 15039 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE  
 15040 % U+00BF INVERTED QUESTION MARK; questiondown  
 15041 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF  
 15042 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
 15043 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0

15044 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
15045 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1  
15046 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
15047 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2  
15048 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
15049 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3  
15050 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
15051 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304}% U+00C4  
15052 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
15053 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5  
15054 % U+00C6 LATIN CAPITAL LETTER AE; AE  
15055 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6  
15056 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
15057 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7  
15058 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
15059 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310}% U+00C8  
15060 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
15061 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311}% U+00C9  
15062 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
15063 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312}% U+00CA  
15064 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
15065 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313}% U+00CB  
15066 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
15067 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314}% U+00CC  
15068 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
15069 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315}% U+00CD  
15070 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
15071 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316}% U+00CE  
15072 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
15073 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317}% U+00CF  
15074 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
15075 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0  
15076 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0  
15077 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
15078 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321}% U+00D1  
15079 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
15080 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322}% U+00D2  
15081 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
15082 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323}% U+00D3  
15083 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
15084 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324}% U+00D4  
15085 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
15086 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325}% U+00D5  
15087 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
15088 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326}% U+00D6  
15089 % U+00D7 MULTIPLICATION SIGN; multiply  
15090 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7  
15091 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
15092 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8  
15093 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
15094 \DeclareTextCompositeCommand{\`}{PD1}{U}{\331}% U+00D9  
15095 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
15096 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332}% U+00DA  
15097 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex

15098 \DeclareTextCompositeCommand{\~}{PD1}{U}{\333}% U+00DB  
15099 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
15100 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334}% U+00DC  
15101 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
15102 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335}% U+00DD  
15103 % U+00DE LATIN CAPITAL LETTER THORN; Thorn; \TH, \Thorn (wasysym)  
15104 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE  
15105 \DeclareTextCommand{\textThorn}{PD1}{\336}%\* U+00DE  
15106 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
15107 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF  
15108 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
15109 \DeclareTextCompositeCommand{\`}{PD1}{a}{\340}% U+00E0  
15110 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
15111 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341}% U+00E1  
15112 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
15113 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342}% U+00E2  
15114 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
15115 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343}% U+00E3  
15116 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
15117 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344}% U+00E4  
15118 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
15119 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345}% U+00E5  
15120 % U+00E6 LATIN SMALL LETTER AE; ae  
15121 \DeclareTextCommand{\ae}{PD1}{\346}% U+00E6  
15122 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
15123 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347}% U+00E7  
15124 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
15125 \DeclareTextCompositeCommand{\`}{PD1}{e}{\350}% U+00E8  
15126 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
15127 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351}% U+00E9  
15128 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
15129 \DeclareTextCompositeCommand{\^}{PD1}{e}{\352}% U+00EA  
15130 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
15131 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353}% U+00EB  
15132 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
15133 \DeclareTextCompositeCommand{\`}{PD1}{i}{\354}% U+00EC  
15134 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354}% U+00EC  
15135 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
15136 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
15137 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
15138 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
15139 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
15140 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
15141 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
15142 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
15143 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
15144 % U+00F0 LATIN SMALL LETTER ETH; eth  
15145 \DeclareTextCommand{\dh}{PD1}{\360}% U+00F0  
15146 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
15147 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361}% U+00F1  
15148 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
15149 \DeclareTextCompositeCommand{\`}{PD1}{o}{\362}% U+00F2  
15150 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
15151 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363}% U+00F3

15152 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
 15153 \DeclareTextCompositeCommand{\~}{PD1}{o}{\364}% U+00F4  
 15154 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
 15155 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365}% U+00F5  
 15156 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
 15157 \DeclareTextCompositeCommand{\"}{PD1}{o}{\366}% U+00F6  
 15158 % U+00F7 DIVISION SIGN; divide  
 15159 \DeclareTextCommand{\textdivide}{PD1}{\367}% U+00F7  
 15160 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
 15161 \DeclareTextCommand{\o}{PD1}{\370}% U+00F8  
 15162 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
 15163 \DeclareTextCompositeCommand{\`}{PD1}{u}{\371}% U+00F9  
 15164 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
 15165 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372}% U+00FA  
 15166 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
 15167 \DeclareTextCompositeCommand{\^}{PD1}{u}{\373}% U+00FB  
 15168 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
 15169 \DeclareTextCompositeCommand{\"}{PD1}{u}{\374}% U+00FC  
 15170 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
 15171 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375}% U+00FD  
 15172 % U+00FE LATIN SMALL LETTER THORN; thorn; \th, \thorn (wasysym)  
 15173 \DeclareTextCommand{\th}{PD1}{\376}% U+00FE  
 15174 \DeclareTextCommand{\textthorn}{PD1}{\376}%\* U+00FE  
 15175 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
 15176 \DeclareTextCompositeCommand{\"}{PD1}{y}{\377}% U+00FF  
 15177 \DeclareTextCommand{\ij}{PD1}{ij}% ligature U+0069 U+006A

Glyphs that consist of several characters.

15178 \DeclareTextCommand{\SS}{PD1}{SS}%  
 15179 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}%

Aliases (german.sty)

15180 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}%  
 15181 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}%  
 15182 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}%  
 15183 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}%  
 15184 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}%  
 15185 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}%  
 15186 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}%  
 15187 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}%

Aliases (math names)

15188 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}%  
 15189 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}%  
 15190 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}%  
 15191 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}%  
 15192 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}%  
 15193 \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).

15194 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek  
 15195 \DeclareTextCompositeCommand{\'}{PD1}{c}{c}% cacute  
 15196 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek  
 15197 \DeclareTextCompositeCommand{\'}{PD1}{n}{n}% nacute  
 15198 \DeclareTextCompositeCommand{\'}{PD1}{s}{s}% sacute

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15199 \DeclareTextCompositeCommand{\'}{PD1}{z}{z}% zacute
15200 \DeclareTextCompositeCommand{\.}{PD1}{z}{z}% zdot
15201 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek
15202 \DeclareTextCompositeCommand{\'}{PD1}{C}{C}% Cacute
15203 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek
15204 \DeclareTextCompositeCommand{\'}{PD1}{N}{N}% Nacute
15205 \DeclareTextCompositeCommand{\'}{PD1}{S}{S}% Sacute
15206 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z}% Zacute
15207 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z}% Zdot
15208 </pd1enc>

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## 47.2 PU encoding

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15209 <*puenc>
15210 \DeclareFontEncoding{PU}{-}{-}

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### 47.2.1 NFSS2 accents

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15211 % U+0300 COMBINING GRAVE ACCENT; gravecmb, *gravecmb
15212 \DeclareTextCommand{\`}{PU}[1]{#1\83\000}% U+0300
15213 % U+0301 COMBINING ACUTE ACCENT; acutecmb, *acutecmb
15214 \DeclareTextCommand{\'}{PU}[1]{#1\83\001}% U+0301
15215 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb
15216 \DeclareTextCommand{\^}{PU}[1]{#1\83\002}% U+0302
15217 % U+0303 COMBINING TILDE; tildecmb, *tildecmb
15218 \DeclareTextCommand{\~}{PU}[1]{#1\83\003}% U+0303
15219 % U+0304 COMBINING MACRON; macroncmb
15220 \DeclareTextCommand{\=}{PU}[1]{#1\83\004}% U+0304
15221 % U+0306 COMBINING BREVE; brevecmb
15222 \DeclareTextCommand{\u}{PU}[1]{#1\83\006}% U+0306
15223 \ifx\CYRDZE\@undefined \else
15224 \DeclareTextCommand{\U}{PU}[1]{#1\83\006}% U+0306
15225 \fi
15226 % U+0307 COMBINING DOT ABOVE; dotaccentcmb
15227 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307
15228 % U+0308 COMBINING DIAERESIS; dieresiscmb
15229 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308
15230 % U+030A COMBINING RING ABOVE; ringcmb
15231 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A
15232 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb
15233 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B
15234 % U+030C COMBINING CARON; caroncmb
15235 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C
15236 </puenc>
15237 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb
15238 <puextra>\DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F
15239 <*puenc>
15240 \ifx\CYRDZE\@undefined \else
15241 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F
15242 \fi
15243 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb
15244 \DeclareTextCommand{\textinvbreve}{PU}[1]{#1\83\021}% U+0311
15245 \DeclareTextCommand{\newtie}{PU}[1]{#1\83\021}% U+0311
15246 % U+0323 COMBINING DOT BELOW; dotbelowcmb, *dotbelowcmb
15247 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323

```



15248 % U+0324 COMBINING DIAERESIS BELOW; dieresisbelowcmb; \textsubumlaut (tipa)  
15249 \DeclareTextCommand{\textsubumlaut}{PU}[1]{#1\83\044}% U+0324  
15250 % U+0325 COMBINING RING BELOW; ringbelowcmb; \textsubring (tipa)  
15251 \DeclareTextCommand{\textsubring}{PU}[1]{#1\83\045}% U+0325  
15252 % U+0327 COMBINING CEDILLA; cedillacmb  
15253 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327  
15254 % U+0328 COMBINING OGONEK; ogonekcmb  
15255 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328  
15256 % U+032D COMBINING CIRCUMFLEX ACCENT BELOW;  
15257 % \textsubcircum (tipa)  
15258 \DeclareTextCommand{\textsubcircum}{PU}[1]{#1\83\055}% U+032D  
15259 % U+032E COMBINING BREVE BELOW; brevebelowcmb  
15260 \DeclareTextCommand{\textsubbreve}{PU}[1]{#1\83\056}% U+032E  
15261 % U+0330 COMBINING TILDE BELOW; tildebelowcmb; \textsubtilde (tipa)  
15262 \DeclareTextCommand{\textsubtilde}{PU}[1]{#1\83\060}% U+0330  
15263 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
15264 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331  
15265 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb  
15266 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361  
15267 % U+20DD COMBINING ENCLOSING CIRCLE  
15268 \DeclareTextCommand{\textcircled}{PU}[1]{#1\9040\335}% U+20DD

Double accents.

15269 \DeclareTextCommand{\textacutemacron}{PU}[1]{#1\83\001\83\004}% U+0301 U+0304  
15270 \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.

15271 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textasciigrave}%  
15272 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}%  
15273 \DeclareTextCompositeCommand{\^}{PU}{\@empty}{\textasciicircum}%  
15274 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}%  
15275 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textasciidiereis}%  
15276 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}%  
15277 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textasciicaron}%  
15278 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}%  
15279 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}%  
15280 \DeclareTextCompositeCommand{\u}{PU}{\@empty}{\textasciibreve}%  
15281 (/puenc)  
15282 (puextra)\DeclareTextCompositeCommand{\G}{PU}{\@empty}{\textdoublegrave}%  
15283 (\*puenc)  
15284 \DeclareTextCompositeCommand{\=}{PU}{\@empty}{\textasciimacron}%  
15285 \DeclareTextCompositeCommand{\H}{PU}{\@empty}{\texthungarumlaut}%  
15286 \DeclareTextCompositeCommand{\k}{PU}{\@empty}{\textogonek}%  
15287 \DeclareTextCompositeCommand{\textinvbreve}{PU}{\@empty}{\83\021}}% U+0311  
15288 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{\@empty}{\83\044}}% U+0324  
15289 \DeclareTextCompositeCommand{\textsubring}{PU}{\@empty}{\textringlow}%  
15290 \DeclareTextCompositeCommand{\textsubcircum}{PU}{\@empty}{\textcircum-  
low}%  
15291 \DeclareTextCompositeCommand{\textsubbreve}{PU}{\@empty}{\83\056}}% U+032E  
15292 \DeclareTextCompositeCommand{\textsubtilde}{PU}{\@empty}{\texttildebelow}%  
15293 \DeclareTextCompositeCommand{\b}{PU}{\@empty}{\textmacronbelow}%  
15294 \DeclareTextCompositeCommand{\d}{PU}{\@empty}{\textdotbelow}%

```

15295 \DeclareTextCompositeCommand{\t}{PU}{\@empty}{\texttie}%
15296 \DeclareTextCompositeCommand{\newtie}{PU}{\@empty}{\textnewtie}%
15297 \DeclareTextCompositeCommand{\textcircled}{PU}{\@empty}{\textbigcircle}%
15298 \DeclareTextCompositeCommand{\textacutemacron}{PU}{\@empty}{\{\ \83\001\83\004\}}% U+0301 U
15299 \DeclareTextCompositeCommand{\textgravemacron}{PU}{\@empty}{\{\ \83\000\83\004\}}% U+0300 U
15300 \DeclareTextCompositeCommand{\`}{PU}{\ }{\textasciigrave}%
15301 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textacute}%
15302 \DeclareTextCompositeCommand{\~}{PU}{\ }{\textasciicircum}%
15303 \DeclareTextCompositeCommand{\~}{PU}{\ }{\texttilde}%
15304 \DeclareTextCompositeCommand{\"}{PU}{\ }{\textasciidieresis}%
15305 \DeclareTextCompositeCommand{\r}{PU}{\ }{\textring}%
15306 \DeclareTextCompositeCommand{\v}{PU}{\ }{\textasciicaron}%
15307 \DeclareTextCompositeCommand{\.}{PU}{\ }{\textdotaccent}%
15308 \DeclareTextCompositeCommand{\c}{PU}{\ }{\textcedilla}%
15309 \DeclareTextCompositeCommand{\u}{PU}{\ }{\textasciibreve}%
15310 (/puenc)
15311 (puextra)\DeclareTextCompositeCommand{\G}{PU}{\ }{\textdoublegrave}%
15312 (*puenc)
15313 \DeclareTextCompositeCommand{\=}{PU}{\ }{\textasciimacron}%
15314 \DeclareTextCompositeCommand{\H}{PU}{\ }{\texthungarumlaut}%
15315 \DeclareTextCompositeCommand{\k}{PU}{\ }{\textogonek}%
15316 \DeclareTextCompositeCommand{\textinvbreve}{PU}{\ }{\{\ \83\021\}}% U+0311
15317 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{\ }{\{\ \83\044\}}% U+0324
15318 \DeclareTextCompositeCommand{\textsubring}{PU}{\ }{\textringlow}%
15319 \DeclareTextCompositeCommand{\textsubcircum}{PU}{\ }{\textcircumlow}%
15320 \DeclareTextCompositeCommand{\textsubbreve}{PU}{\ }{\{\ \83\056\}}% U+032E
15321 \DeclareTextCompositeCommand{\textsubtilde}{PU}{\ }{\texttildedown}%
15322 \DeclareTextCompositeCommand{\b}{PU}{\ }{\textmacronbelow}%
15323 \DeclareTextCompositeCommand{\d}{PU}{\ }{\textdotbelow}%
15324 \DeclareTextCompositeCommand{\t}{PU}{\ }{\texttie}%
15325 \DeclareTextCompositeCommand{\newtie}{PU}{\ }{\textnewtie}%
15326 \DeclareTextCompositeCommand{\textcircled}{PU}{\ }{\textbigcircle}%
15327 \DeclareTextCompositeCommand{\textacutemacron}{PU}{\ }{\{\ \83\001\83\004\}}% U+0301 U+0304
15328 \DeclareTextCompositeCommand{\textgravemacron}{PU}{\ }{\{\ \83\000\83\004\}}% U+0300 U+0304

```

Accents for capitals (see encoding TS1)

```

15329 \DeclareTextCommand{\capitalcedilla}{PU}[1]{\c{#1}}%
15330 \DeclareTextCommand{\capitalogonek}{PU}[1]{\k{#1}}%
15331 \DeclareTextCommand{\capitalgrave}{PU}[1]{\`{#1}}%
15332 \DeclareTextCommand{\capitalacute}{PU}[1]{\'{#1}}%
15333 \DeclareTextCommand{\capitalcircumflex}{PU}[1]{\^{#1}}%
15334 \DeclareTextCommand{\capitaltilde}{PU}[1]{\~{#1}}%
15335 \DeclareTextCommand{\capitaldieresis}{PU}[1]{\"{#1}}%
15336 \DeclareTextCommand{\capitalhungarumlaut}{PU}[1]{\H{#1}}%
15337 \DeclareTextCommand{\capitalring}{PU}[1]{\r{#1}}%
15338 \DeclareTextCommand{\capitalcaron}{PU}[1]{\v{#1}}%
15339 \DeclareTextCommand{\capitalbreve}{PU}[1]{\u{#1}}%
15340 \DeclareTextCommand{\capitalmacron}{PU}[1]{\={#1}}%
15341 \DeclareTextCommand{\capitaldotaccent}{PU}[1]{\.{#1}}%
15342 \DeclareTextCommand{\capitaltie}{PU}[1]{\t{#1}}%
15343 \DeclareTextCommand{\capitalnewtie}{PU}[1]{\newtie{#1}}%

```

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

Special white space escape characters.

15344 % U+0009 (CHARACTER TABULATION)  
 15345 \DeclareTextCommand{\textHT}{PU}{\80\011}% U+0009  
 15346 % U+000A (LINE FEED)  
 15347 \DeclareTextCommand{\textLF}{PU}{\80\012}% U+000A  
 15348 % U+000D (CARRIAGE RETURN)  
 15349 \DeclareTextCommand{\textCR}{PU}{\80\015}% U+000D  
 \80\040: U+0020 SPACE; space, spacehackarabic  
 \80\041: U+0021 EXCLAMATION MARK; exclam  
 15350 % U+0022 QUOTATION MARK; quotedbl  
 15351 \DeclareTextCommand{\textquotedbl}{PU}{"}% \80\042 U+0022  
 15352 % U+0023 NUMBER SIGN; numbersign  
 15353 \DeclareTextCommand{\textnumbersign}{PU}{\80\043}% U+0023  
 15354 % U+0024 DOLLAR SIGN; dollar  
 15355 \DeclareTextCommand{\textdollar}{PU}{\80\044}% U+0024  
 15356 %\* \textdollar -> \mathdollar  
 15357 %\* \textdollar -> \EyesDollar (marvosym)  
 15358 % U+0025 PERCENT SIGN; percent  
 15359 \DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025  
 15360 % U+0026 AMPERSAND; ampersand  
 15361 \DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026  
 15362 %\* \textampersand -> \binampersand (stmaryrd)  
 15363 %\* \textampersand -> \with (cml)  
 15364 % U+0027 APOSTROPHE; quotesingle  
 15365 \DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027  
 15366 % U+0028 LEFT PARENTHESIS; parenleft  
 15367 \DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028  
 15368 % U+0029 RIGHT PARENTHESIS; parenright  
 15369 \DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029  
 15370 % U+002A ASTERISK; asterisk; (?)  
 15371 \DeclareTextCommand{\textasteriskcentered}{PU}{\80\052}% U+002A  
 15372 % U+002B PLUS SIGN; plus; \MVPlus (marvosym)  
 15373 \DeclareTextCommand{\textMVPlus}{PU}{\80\053}%\* U+002B  
 15374 % U+002C COMMA; comma; \MVComma (marvosym)  
 15375 \DeclareTextCommand{\textMVComma}{PU}{\80\054}%\* U+002C  
 15376 % U+002D HYPHEN-MINUS; hyphen; \MVMinus (marvosym)  
 15377 \DeclareTextCommand{\textMVMinus}{PU}{\80\055}%\* U+002D  
 15378 % U+002E FULL STOP; period; \MVPeriod (marvosym)  
 15379 \DeclareTextCommand{\textMVPeriod}{PU}{\80\056}%\* U+002E  
 15380 % U+002F SOLIDUS; slash; \MVDivision (marvosym)  
 15381 \DeclareTextCommand{\textMVDivision}{PU}{\80\057}%\* U+002F  
 15382 % U+0030 DIGIT ZERO; zero; \MVZero (marvosym)  
 15383 \DeclareTextCommand{\textMVZero}{PU}{\80\060}%\* U+0030  
 15384 % U+0031 DIGIT ONE; one; \MVOne (marvosym)  
 15385 \DeclareTextCommand{\textMVOne}{PU}{\80\061}%\* U+0031  
 15386 % U+0032 DIGIT TWO; two; \MVTwo (marvosym)  
 15387 \DeclareTextCommand{\textMVTwo}{PU}{\80\062}%\* U+0032  
 15388 % U+0033 DIGIT THREE; three; \MVThree (marvosym)  
 15389 \DeclareTextCommand{\textMVThree}{PU}{\80\063}%\* U+0033  
 15390 % U+0034 DIGIT FOUR; four; \MVFour (marvosym)  
 15391 \DeclareTextCommand{\textMVFour}{PU}{\80\064}%\* U+0034  
 15392 % U+0035 DIGIT FIVE; five; \MVFive (marvosym)  
 15393 \DeclareTextCommand{\textMVFive}{PU}{\80\065}%\* U+0035  
 15394 % U+0036 DIGIT SIX; six; \MVSix (marvosym)

15395 \DeclareTextCommand{\textMVSix}{PU}{\80\066}%\* U+0036  
15396 % U+0037 DIGIT SEVEN; seven; \MVSeven (marvosym)  
15397 \DeclareTextCommand{\textMVSeven}{PU}{\80\067}%\* U+0037  
15398 % U+0038 DIGIT EIGHT; eight; \MVEight (marvosym)  
15399 \DeclareTextCommand{\textMVEight}{PU}{\80\070}%\* U+0038  
15400 % U+0039 DIGIT NINE; nine; \MVNine (marvosym)  
15401 \DeclareTextCommand{\textMVNine}{PU}{\80\071}%\* U+0039  
\80\072: U+003A COLON; colon  
\80\073: U+003B SEMICOLON; semicolon  
15402 % U+003C LESS-THAN SIGN; less  
15403 \DeclareTextCommand{\textless}{PU}{<}% \80\074 U+003C  
\80\075: U+003D EQUALS SIGN; equal  
15404 % U+003E GREATER-THAN SIGN; greater  
15405 \DeclareTextCommand{\textgreater}{PU}{>}% \80\076 U+003E  
\80\077: U+003F QUESTION MARK; question  
15406 % U+0040 COMMERCIAL AT; at; \MVAt (marvosym)  
15407 \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  
15408 % U+005C REVERSE SOLIDUS; backslash  
15409 \DeclareTextCommand{\textbackslash}{PU}{\80\134}% U+005C  
\80\135: U+005D RIGHT SQUARE BRACKET; bracketright  
15410 % U+005E CIRCUMFLEX ACCENT; asciicircum  
15411 \DeclareTextCommand{\textasciicircum}{PU}{\80\136}% U+005E  
15412 % U+005F LOW LINE; underscore  
15413 \DeclareTextCommand{\textunderscore}{PU}{\80\137}% U+005F  
15414 %\* \textunderscore -> \mathunderscore (LaTeX)  
15415 % U+0060 GRAVE ACCENT; grave  
15416 \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  
15417 % U+0069 LATIN SMALL LETTER I; i  
15418 \DeclareTextCompositeCommand{\.}{PU}{i}% \80\151 U+0069  
15419 \DeclareTextCompositeCommand{\.}{PU}{i}% \80\151 U+0069  
\80\152: U+006A LATIN SMALL LETTER J; j  
...  
\80\172: U+007A LATIN SMALL LETTER Z; z  
15420 % U+007B LEFT CURLY BRACKET; braceleft  
15421 \DeclareTextCommand{\textbraceleft}{PU}{\80\173}% U+007B  
15422 % U+007C VERTICAL LINE; \*bar, verticalbar  
15423 \DeclareTextCommand{\textbar}{PU}{|}% \80\174 U+007C  
15424 %\* \textbar -> \textvertline (tipa)  
15425 % U+007D RIGHT CURLY BRACKET; braceright  
15426 \DeclareTextCommand{\textbraceright}{PU}{\80\175}% U+007D  
15427 % U+007E TILDE; asciitilde  
15428 \DeclareTextCommand{\textasciitilde}{PU}{\80\176}% U+007E

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

\80\240: U+00A0 NO-BREAK SPACE; nbspace, nonbreakingspace  
15429 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
15430 \DeclareTextCommand{\textexclamdown}{PU}{\80\241}% U+00A1  
15431 % U+00A2 CENT SIGN; cent  
15432 \DeclareTextCommand{\textcent}{PU}{\80\242}% U+00A2  
15433 % U+00A3 POUND SIGN; sterling  
15434 \DeclareTextCommand{\textsterling}{PU}{\80\243}% U+00A3  
15435 %\* \textsterling -> \mathsterling (LaTeX)  
15436 %\* \textsterling -> \pounds (LaTeX)  
15437 % U+00A4 CURRENCY SIGN; currency  
15438 \DeclareTextCommand{\textcurrency}{PU}{\80\244}% U+00A4  
15439 % U+00A5 YEN SIGN; yen  
15440 \DeclareTextCommand{\textyen}{PU}{\80\245}% U+00A5  
15441 % U+00A6 BROKEN BAR; brokenbar  
15442 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246}% U+00A6  
15443 %\* \textbrokenbar -> \brokenvert (wasysym)  
15444 % U+00A7 SECTION SIGN; section  
15445 \DeclareTextCommand{\textsection}{PU}{\80\247}% U+00A7  
15446 %\* \textsection -> \mathsection (LaTeX)  
15447 %\* \textsection -> \S (LaTeX)  
15448 % U+00A8 DIAERESIS; dieresis  
15449 \DeclareTextCommand{\textasciidieresis}{PU}{\80\250}% U+00A8  
15450 % U+00A9 COPYRIGHT SIGN; copyright  
15451 \DeclareTextCommand{\textcopyright}{PU}{\80\251}%\* U+00A9  
15452 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
15453 \DeclareTextCommand{\textordfeminine}{PU}{\80\252}% U+00AA  
15454 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
motleft  
15455 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB  
15456 % U+00AC NOT SIGN; logicalnot  
15457 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254}% U+00AC  
15458 \DeclareTextCommand{\textlnot}{PU}{\80\254}% U+00AC  
\80\255: U+00AD SOFT HYPHEN; sfthyphen, softthyphen  
15459 % U+00AE REGISTERED SIGN; registered  
15460 \DeclareTextCommand{\textregistered}{PU}{\80\256}% U+00AE  
15461 % U+00AF MACRON; \*macron, overscore  
15462 \DeclareTextCommand{\textasciimacron}{PU}{\80\257}% U+00AF  
15463 % U+00B0 DEGREE SIGN; degree  
15464 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0  
15465 % U+00B1 PLUS-MINUS SIGN; plusminus  
15466 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1  
15467 % U+00B2 SUPERSCRIFT TWO; twosuperior  
15468 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}%\* U+00B2  
15469 % U+00B3 SUPERSCRIFT THREE; threesuperior  
15470 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}%\* U+00B3  
15471 % U+00B4 ACUTE ACCENT; acute  
15472 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4  
15473 \DeclareTextCommand{\textasciiacute}{PU}{\80\264}% U+00B4  
15474 % U+00B5 MICRO SIGN; mu, mu1  
15475 \DeclareTextCommand{\textmu}{PU}{\80\265}% U+00B5  
15476 % U+00B6 PILCROW SIGN; paragraph  
15477 \DeclareTextCommand{\textparagraph}{PU}{\80\266}% U+00B6

15478 %\* \textparagraph -> \mathparagraph (LaTeX)  
15479 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
15480 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267}% U+00B7  
15481 %\* \textperiodcentered -> \MultiplicationDot (marvosym)  
15482 %\* \textperiodcentered -> \Squaredot (marvosym)  
15483 % U+00B8 CEDILLA; cedilla  
15484 \DeclareTextCommand{\textcedilla}{PU}{\80\270}% U+00B8  
15485 % U+00B9 SUPERSCRIPT ONE; onesuperior  
15486 \DeclareTextCommand{\textonesuperior}{PU}{\80\271}%\* U+00B9  
15487 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
15488 \DeclareTextCommand{\textordmasculine}{PU}{\80\272}% U+00BA  
15489 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
motright  
15490 \DeclareTextCommand{\guillemotright}{PU}{\80\273}% U+00BB  
15491 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
15492 \DeclareTextCommand{\textonequarter}{PU}{\80\274}% U+00BC  
15493 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
15494 \DeclareTextCommand{\textonehalf}{PU}{\80\275}% U+00BD  
15495 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
15496 \DeclareTextCommand{\textthreequarters}{PU}{\80\276}% U+00BE  
15497 % U+00BF INVERTED QUESTION MARK; questiondown  
15498 \DeclareTextCommand{\textquestiondown}{PU}{\80\277}% U+00BF  
15499 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
15500 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
15501 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
15502 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
15503 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
15504 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302}% U+00C2  
15505 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
15506 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
15507 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
15508 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304}% U+00C4  
15509 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
15510 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305}% U+00C5  
15511 % U+00C6 LATIN CAPITAL LETTER AE; AE  
15512 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6  
15513 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
15514 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7  
15515 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
15516 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
15517 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
15518 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
15519 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
15520 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312}% U+00CA  
15521 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
15522 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313}% U+00CB  
15523 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
15524 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
15525 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
15526 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
15527 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
15528 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316}% U+00CE  
15529 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
15530 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317}% U+00CF

15531 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
15532 \DeclareTextCommand{\DH}{PU}{\80\320}% U+00D0  
15533 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
15534 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321}% U+00D1  
15535 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
15536 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
15537 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
15538 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
15539 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
15540 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324}% U+00D4  
15541 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
15542 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
15543 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
15544 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326}% U+00D6  
15545 % U+00D7 MULTIPLICATION SIGN; multiply  
15546 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7  
15547 %\* \textmultiply -> \vartimes (stmaryrd)  
15548 %\* \textmultiply -> \MVMultiplication (marvosym)  
15549 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
15550 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8  
15551 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
15552 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9  
15553 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
15554 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA  
15555 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
15556 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333}% U+00DB  
15557 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
15558 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334}% U+00DC  
15559 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
15560 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD  
15561 % U+00DE LATIN CAPITAL LETTER THORN; Thorn; \TH, \Thorn (wasysym)  
15562 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE  
15563 \DeclareTextCommand{\textThorn}{PU}{\80\336}%\* U+00DE  
15564 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
15565 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF  
15566 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
15567 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0  
15568 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
15569 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1  
15570 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
15571 \DeclareTextCompositeCommand{\^}{PU}{a}{\80\342}% U+00E2  
15572 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
15573 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
15574 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
15575 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344}% U+00E4  
15576 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
15577 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5  
15578 % U+00E6 LATIN SMALL LETTER AE; ae  
15579 \DeclareTextCommand{\ae}{PU}{\80\346}% U+00E6  
15580 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
15581 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7  
15582 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
15583 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8  
15584 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute

15585 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
15586 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
15587 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA  
15588 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
15589 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353}% U+00EB  
15590 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
15591 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
15592 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\354}% U+00EC  
15593 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
15594 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
15595 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\355}% U+00ED  
15596 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
15597 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
15598 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
15599 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
15600 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
15601 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
15602 % U+00F0 LATIN SMALL LETTER ETH; eth  
15603 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0  
15604 %\* \dh -> \eth (wsuipa, phonetic)  
15605 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
15606 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361}% U+00F1  
15607 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
15608 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
15609 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
15610 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
15611 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
15612 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364}% U+00F4  
15613 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
15614 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
15615 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
15616 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366}% U+00F6  
15617 % U+00F7 DIVISION SIGN; divide  
15618 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7  
15619 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
15620 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8  
15621 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
15622 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
15623 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
15624 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
15625 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
15626 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373}% U+00FB  
15627 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
15628 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374}% U+00FC  
15629 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
15630 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
15631 % U+00FE LATIN SMALL LETTER THORN; thorn;  
15632 % \th, \thorn (wasysym), \textthorn (tipa)  
15633 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE  
15634 \DeclareTextCommand{\textthorn}{PU}{\80\376}%\* U+00FE  
15635 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
15636 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377}% U+00FF



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

15637 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron  
15638 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% U+0100  
15639 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron  
15640 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% U+0101  
15641 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve  
15642 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% U+0102  
15643 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve  
15644 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% U+0103  
15645 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek  
15646 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% U+0104  
15647 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek  
15648 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% U+0105  
15649 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacute  
15650 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% U+0106  
15651 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacute  
15652 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% U+0107  
15653 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex  
15654 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% U+0108  
15655 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex  
15656 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% U+0109  
15657 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotaccent  
15658 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% U+010A  
15659 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent  
15660 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% U+010B  
15661 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron  
15662 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% U+010C  
15663 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron  
15664 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% U+010D  
15665 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron  
15666 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% U+010E  
15667 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron  
15668 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% U+010F  
15669 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash  
15670 \DeclareTextCommand{\DJ}{PU}{\81\020}% U+0110  
15671 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron;  
15672 % \textcrd (tipa)  
15673 \DeclareTextCommand{\dj}{PU}{\81\021}% U+0111  
15674 \DeclareTextCommand{\textcrd}{PU}{\81\021}% U+0111  
15675 %\* \textcrd -> \crossd (wsuipa)  
15676 % An alternate glyph with the stroke through the bowl:  
15677 %\* \textcrd -> \textbard (tipa)  
15678 %\* \textcrd -> \bard (wsuipa)  
15679 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron  
15680 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% U+0112  
15681 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron  
15682 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% U+0113  
15683 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve  
15684 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% U+0114  
15685 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve  
15686 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% U+0115  
15687 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent

15688 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% U+0116  
15689 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent  
15690 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% U+0117  
15691 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek  
15692 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% U+0118  
15693 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek  
15694 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% U+0119  
15695 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron  
15696 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% U+011A  
15697 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron  
15698 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% U+011B  
15699 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex  
15700 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% U+011C  
15701 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex  
15702 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% U+011D  
15703 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve  
15704 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% U+011E  
15705 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve  
15706 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% U+011F  
15707 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotac-  
cent  
15708 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% U+0120  
15709 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent  
15710 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% U+0121  
15711 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcom-  
maaccent  
15712 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% U+0122  
15713 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent  
15714 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% U+0123  
15715 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex  
15716 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% U+0124  
15717 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex  
15718 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% U+0125  
15719 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar  
15720 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126  
15721 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar; \hbar (AmS)  
15722 \DeclareTextCommand{\textthbar}{PU}{\81\047}%\* U+0127  
15723 %\* \textthbar -> \textcrh (tipa)  
15724 %\* \textthbar -> \crossh (wsuipa)  
15725 %\* \textthbar -> \planck (phonetic)  
15726 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; Itilde  
15727 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128  
15728 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde  
15729 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
15730 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
15731 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron  
15732 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% U+012A  
15733 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron  
15734 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
15735 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
15736 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibreve  
15737 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C  
15738 % U+012D LATIN SMALL LETTER I WITH BREVE; ibreve  
15739 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D

```

15740 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D
15741 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek
15742 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E
15743 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek
15744 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F
15745 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F
15746 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent
15747 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% U+0130
15748 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi
15749 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131
15750 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ
15751 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132
15752 % U+0133 LATIN SMALL LIGATURE IJ; ij
15753 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133
15754 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex
15755 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% U+0134
15756 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex
15757 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135
15758 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135
15759 % U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaac-
cent
15760 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136
15761 % U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent
15762 \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`.

```

15763 % U+0138 LATIN SMALL LETTER KRA; kgreenlandic
15764 \DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138
15765 % U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute
15766 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071}% U+0139
15767 % U+013A LATIN SMALL LETTER L WITH ACUTE; lacute
15768 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072}% U+013A
15769 % U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaac-
cent
15770 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B
15771 % U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent
15772 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C
15773 % U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron
15774 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D
15775 % U+013E LATIN SMALL LETTER L WITH CARON; lcaron
15776 \DeclareTextCompositeCommand{\v}{PU}{l}{\81\076}% U+013E

```

There seems to be no variants of letters ‘L’ and ‘l’ with a dot above (reasonable). Therefore the `\.` accent is reused instead of making a separate accent macro `\textmiddledot`.

```

15777 % U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotac-
cent
15778 \DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F
15779 % U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent
15780 \DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140
15781 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash
15782 \DeclareTextCommand{\L}{PU}{\81\101}% U+0141
15783 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash

```

15784 \DeclareTextCommand{\l}{PU}{\81\102}% U+0142  
15785 % U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute  
15786 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103}% U+0143  
15787 % U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute  
15788 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104}% U+0144  
15789 % U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaac-  
cent  
15790 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105}% U+0145  
15791 % U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent  
15792 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106}% U+0146  
15793 % U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron  
15794 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107}% U+0147  
15795 % U+0148 LATIN SMALL LETTER N WITH CARON; ncaron  
15796 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110}% U+0148  
15797 % U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napos-  
trophe, quoterightn  
15798 \DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149  
15799 % U+014A LATIN CAPITAL LETTER ENG; Eng  
15800 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A  
15801 % U+014B LATIN SMALL LETTER ENG; eng  
15802 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B  
15803 %\* \ng -> \eng (wsuipa)  
15804 %\* \ng -> \engma (phonetic)  
15805 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron  
15806 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114}% U+014C  
15807 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron  
15808 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115}% U+014D  
15809 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve  
15810 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116}% U+014E  
15811 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve  
15812 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117}% U+014F  
15813 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odbla-  
cute, Ohungarumlaut  
15814 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120}% U+0150  
15815 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odbla-  
cute, ohungarumlaut  
15816 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121}% U+0151  
15817 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
15818 \DeclareTextCommand{\OE}{PU}{\81\122}% U+0152  
15819 % U+0153 LATIN SMALL LIGATURE OE; oe  
15820 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153  
15821 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute  
15822 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124}% U+0154  
15823 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute  
15824 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125}% U+0155  
15825 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcommaac-  
cent  
15826 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126}% U+0156  
15827 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcommaaccent  
15828 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127}% U+0157  
15829 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron  
15830 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130}% U+0158  
15831 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron  
15832 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131}% U+0159

15833 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute  
 15834 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132}% U+015A  
 15835 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute  
 15836 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133}% U+015B  
 15837 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex  
 15838 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134}% U+015C  
 15839 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex  
 15840 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135}% U+015D  
 15841 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla  
 15842 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136}% U+015E  
 15843 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla  
 15844 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137}% U+015F  
 15845 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
 15846 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140}% U+0160  
 15847 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
 15848 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141}% U+0161  
 15849 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcommaac-  
 cent  
 15850 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162  
 15851 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcommaaccent  
 15852 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163  
 15853 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron  
 15854 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164  
 15855 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron  
 15856 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165  
 15857 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar  
 15858 \DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166  
 15859 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar  
 15860 \DeclareTextCommand{\texttslash}{PU}{\81\147}% U+0167  
 15861 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde  
 15862 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168  
 15863 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde  
 15864 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
 15865 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron  
 15866 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152}% U+016A  
 15867 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron  
 15868 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153}% U+016B  
 15869 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve  
 15870 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154}% U+016C  
 15871 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve  
 15872 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155}% U+016D  
 15873 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring  
 15874 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156}% U+016E  
 15875 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring  
 15876 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157}% U+016F  
 15877 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Udbla-  
 cute, Uhungarumlaut  
 15878 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160}% U+0170  
 15879 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; udbla-  
 cute, uhungarumlaut  
 15880 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161}% U+0171  
 15881 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek  
 15882 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162}% U+0172  
 15883 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek

15884 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163}% U+0173  
 15885 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex  
 15886 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164}% U+0174  
 15887 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex  
 15888 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165}% U+0175  
 15889 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex  
 15890 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166}% U+0176  
 15891 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex  
 15892 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167}% U+0177  
 15893 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
 15894 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170}% U+0178  
 15895 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute  
 15896 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171}% U+0179  
 15897 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute  
 15898 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172}% U+017A  
 15899 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent  
 15900 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173}% U+017B  
 15901 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent  
 15902 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174}% U+017C  
 15903 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
 15904 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175}% U+017D  
 15905 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
 15906 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176}% U+017E  
 15907 % U+017F LATIN SMALL LETTER LONG S; longs, slong  
 15908 \DeclareTextCommand{\textlongS}{PU}{\81\177}% U+017F

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

15909 % U+0180 LATIN SMALL LETTER B WITH STROKE; bstroke; \textcrb (tipa)  
 15910 \DeclareTextCommand{\textcrb}{PU}{\81\200}% U+0180  
 15911 %\* \textcrb -> \crossb (wsuipa)  
 15912 % An alternate glyph with the stroke through the bowl:  
 15913 %\* \textcrb -> \textbarb (tipa)  
 15914 %\* \textcrb -> \barb (wsuipa)  
 15915 % U+0181 LATIN CAPITAL LETTER B WITH HOOK; Bhook; \hausaB (pho-  
 netic)  
 15916 \DeclareTextCommand{\texthausaB}{PU}{\81\201}%\* U+0181  
 15917 % U+0188 LATIN SMALL LETTER C WITH HOOK; chook; \texthtc (tipa)  
 15918 \DeclareTextCommand{\texthtc}{PU}{\81\210}% U+0188  
 15919 % U+018A LATIN CAPITAL LETTER D WITH HOOK; Dhook; \hausaD (pho-  
 netic)  
 15920 \DeclareTextCommand{\texthausaD}{PU}{\81\212}%\* U+018A  
 15921 % U+018E LATIN CAPITAL LETTER REVERSED E; Ereversed  
 15922 \DeclareTextCommand{\textEreversed}{PU}{\81\216}% U+018E  
 15923 \DeclareTextCommand{\textrevE}{PU}{\81\216}% U+018E  
 15924 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
 15925 \DeclareTextCommand{\textflorin}{PU}{\81\222}% U+0192  
 15926 %\* \textflorin -> \Florin (marvosym)  
 15927 % U+0195 LATIN SMALL LETTER HV; hv; \texthvlig (tipa)  
 15928 \DeclareTextCommand{\texthvlig}{PU}{\81\225}% U+0195  
 15929 %\* \texthvlig -> \hv (wsuipa)  
 15930 % U+0198 LATIN CAPITAL LETTER K WITH HOOK; Khook; \hausaK (pho-  
 netic)  
 15931 \DeclareTextCommand{\texthausaK}{PU}{\81\230}%\* U+0198  
 15932 % U+0199 LATIN SMALL LETTER K WITH HOOK; khook; \texthtk (tipa)

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15933 \DeclareTextCommand{\texthtk}{PU}{\81\231}% U+0199
15934 %* \texthtk -> \hausak (phonetic)
15935 % U+019A LATIN SMALL LETTER L WITH BAR; lbar;
15936 % \textbarl (tipa), \barl (wsuipa)
15937 \DeclareTextCommand{\textbarl}{PU}{\81\232}%* U+019A
15938 % U+019B LATIN SMALL LETTER LAMBDA WITH STROKE/
15939 % LATIN SMALL LETTER BARRED LAMBDA; lambdastroke;
15940 % \textcrlambda (tipa)
15941 \DeclareTextCommand{\textcrlambda}{PU}{\81\233}% U+019B
15942 %* \textcrlambda -> \crossnilambda (wsuipa)
15943 %* \textcrlambda -> \barlambdabar (phonetic)
15944 %* \textcrlambda -> \lambdabar (txfonts/pxfonts)
15945 %* \textcrlambda -> \lambdaslash (txfonts/pxfonts)
15946 % U+019E LATIN SMALL LETTER N WITH LONG RIGHT LEG; nlegright-
long;
15947 % \textnrleg (tipx)
15948 \DeclareTextCommand{\textPUnrleg}{PU}{\81\236}% U+019E
15949 %* \textPUnrleg -> \textnrleg (tipx)
15950 % U+01A5 LATIN SMALL LETTER P WITH HOOK; phook; \texthtp (tipa)
15951 \DeclareTextCommand{\texthtp}{PU}{\81\245}% U+01A5
15952 % U+01AB LATIN SMALL LETTER T WITH PALATAL HOOK; tpalatalhook;
15953 % \textlhookt (tipa)
15954 \DeclareTextCommand{\textlhookt}{PU}{\81\253}% U+01AB
15955 % U+01AD LATIN SMALL LETTER T WITH HOOK; thook; \texthtt (tipa)
15956 \DeclareTextCommand{\texthtt}{PU}{\81\255}% U+01AD
15957 % U+01B9 LATIN SMALL LETTER EZH REVERSED/
15958 % LATIN SMALL LETTER REVERSED YOGH; \textrevyogh (tipa)
15959 \DeclareTextCommand{\textrevyogh}{PU}{\81\271}% U+01B9
15960 % U+01BB LATIN LETTER TWO WITH STROKE; twostroke; \textcrtwo (tipa)
15961 \DeclareTextCommand{\textcrtwo}{PU}{\81\273}% U+01BB
15962 % U+01BE LATIN LETTER INVERTED GLOTTAL STOP WITH STROKE;
15963 % glottalinvertedstroke; \textcrinvglotstop (tipa)
15964 \DeclareTextCommand{\textcrinvglotstop}{PU}{\81\276}% U+01BE
15965 % U+01BF LATIN LETTER WYNN; wynn; \textwynn (tipa)
15966 \DeclareTextCommand{\textwynn}{PU}{\81\277}% U+01BF
15967 % U+01C0 LATIN LETTER DENTAL CLICK/LATIN LETTER PIPE; clickden-
tal;
15968 % \textpipe (tipa)
15969 \DeclareTextCommand{\textpipe}{PU}{\81\300}% U+01C0
15970 %* \textpipe -> \textpipevar (tipx)
15971 % U+01C1 LATIN LETTER LATERAL CLICK/LATIN LETTER
15972 % DOUBLE PIPE; clicklateral; \textdoublepipe (tipa)
15973 \DeclareTextCommand{\textdoublepipe}{PU}{\81\301}% U+01C1
15974 %* \textdoublepipe -> \textdoublepipevar (tipx)
15975 % U+01C2 LATIN LETTER ALVEOLAR CLICK/LATIN LETTER PIPE DOU-
BLE BAR;
15976 % clickalveolar; \textdoublebarpipe (tipa)
15977 \DeclareTextCommand{\textdoublebarpipe}{PU}{\81\302}% U+01C2
15978 %* \textdoublebarpipe -> \textdoublebarpipevar (tipx)
15979 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron
15980 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315}% U+01CD
15981 % U+01CE LATIN SMALL LETTER A WITH CARON; acaron
15982 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316}% U+01CE
15983 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icaron

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15984 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317}% U+01CF  
15985 % U+01D0 LATIN SMALL LETTER I WITH CARON; icaron  
15986 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
15987 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
15988 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocaron  
15989 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1  
15990 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocaron  
15991 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2  
15992 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucaron  
15993 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3  
15994 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucaron  
15995 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4  
15996 % U+01DD LATIN SMALL LETTER TURNED E; eturned; \inve (wasysym)  
15997 \DeclareTextCommand{\textinve}{PU}{\81\335}%\* U+01DD  
15998 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke  
15999 \DeclareTextCommand{\textGslash}{PU}{\81\344}% U+01E4  
16000 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke  
16001 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5  
16002 %\* \textgslash -> \textcrg (tipa)  
16003 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcaron  
16004 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6  
16005 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcaron  
16006 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7  
16007 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcaron  
16008 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8  
16009 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcaron  
16010 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9  
16011 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek  
16012 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA  
16013 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek  
16014 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB  
16015 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcaron  
16016 \DeclareTextCompositeCommand{\v}{PU}{\j}{\81\360}% U+01F0  
16017 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
16018 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute  
16019 \DeclareTextCompositeCommand{\'}{PU}{G}{\81\364}% U+01F4  
16020 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute  
16021 \DeclareTextCompositeCommand{\'}{PU}{g}{\81\365}% U+01F5  
16022 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE  
16023 \DeclareTextCompositeCommand{\`}{PU}{N}{\81\370}% U+01F8  
16024 % U+01F9 LATIN SMALL LETTER N WITH GRAVE  
16025 \DeclareTextCompositeCommand{\`}{PU}{n}{\81\371}% U+01F9  
16026 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute  
16027 \DeclareTextCompositeCommand{\'}{PU}{\AE}{\81\374}% U+01FC  
16028 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute  
16029 \DeclareTextCompositeCommand{\'}{PU}{\ae}{\81\375}% U+01FD  
16030 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE;  
16031 % \*Oslashacute, Ostrokeacut  
16032 \DeclareTextCompositeCommand{\'}{PU}{\O}{\81\376}% U+01FE  
16033 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE;  
16034 % \*oslashacute, ostrokeacute  
16035 \DeclareTextCompositeCommand{\'}{PU}{\o}{\81\377}% U+01FF  
16036 </puenc>  
16037 <\*puextra>



16038 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave  
16039 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200  
16040 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave  
16041 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201  
16042 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave  
16043 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204  
16044 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave  
16045 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205  
16046 \puextra  
16047 \puenc  
16048 % U+0206 LATIN CAPITAL LETTER E WITH INVERTED BREVE; Einvert-  
edbreve  
16049 \DeclareTextCompositeCommand{\textinvbreve}{PU}{E}{\82\006}% U+0206  
16050 % U+0207 LATIN SMALL LETTER E WITH INVERTED BREVE; einverted-  
breve  
16051 \DeclareTextCompositeCommand{\textinvbreve}{PU}{e}{\82\007}% U+0207  
16052 \puenc  
16053 \puextra  
16054 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; Idblgrave  
16055 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208  
16056 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave  
16057 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
16058 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
16059 \puextra  
16060 \puenc  
16061 % U+020A LATIN CAPITAL LETTER I WITH INVERTED BREVE; Iinverted-  
breve  
16062 \DeclareTextCompositeCommand{\textinvbreve}{PU}{I}{\82\012}% U+020A  
16063 % U+020B LATIN SMALL LETTER I WITH INVERTED BREVE; iinverted-  
breve  
16064 \DeclareTextCompositeCommand{\textinvbreve}{PU}{i}{\82\013}% U+020B  
16065 \DeclareTextCompositeCommand{\textinvbreve}{PU}{i}{\82\013}% U+020B  
16066 \puenc  
16067 \puextra  
16068 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave  
16069 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C  
16070 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave  
16071 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D  
16072 \puextra  
16073 \puenc  
16074 % U+020E LATIN CAPITAL LETTER O WITH INVERTED BREVE; Oinvert-  
edbreve  
16075 \DeclareTextCompositeCommand{\textinvbreve}{PU}{O}{\82\016}% U+020E  
16076 % U+020F LATIN SMALL LETTER O WITH INVERTED BREVE; oinverted-  
breve  
16077 \DeclareTextCompositeCommand{\textinvbreve}{PU}{o}{\82\017}% U+020F  
16078 \puenc  
16079 \puextra  
16080 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave  
16081 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210  
16082 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave  
16083 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211  
16084 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave  
16085 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214

16086 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave  
 16087 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215  
 16088 \puextra)  
 16089 (\*puenc)  
 16090 % U+0216 LATIN CAPITAL LETTER U WITH INVERTED BREVE; Uinvert-  
 edbreve  
 16091 \DeclareTextCompositeCommand{\textinvbreve}{PU}{U}{\82\026}% U+0216  
 16092 % U+0217 LATIN SMALL LETTER U WITH INVERTED BREVE; uinverted-  
 breve  
 16093 \DeclareTextCompositeCommand{\textinvbreve}{PU}{u}{\82\027}% U+0217  
 16094 % U+021E LATIN CAPITAL LETTER H WITH CARON  
 16095 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E  
 16096 % U+021F LATIN SMALL LETTER H WITH CARON  
 16097 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F  
 16098 % U+0221 LATIN SMALL LETTER D WITH CURL; \textctd (tipa)  
 16099 \DeclareTextCommand{\textctd}{PU}{\82\041}% U+0221  
 16100 % U+0225 LATIN SMALL LETTER Z WITH HOOK; \textcommatailz (tipa)  
 16101 \DeclareTextCommand{\textcommatailz}{PU}{\82\045}% U+0225  
 16102 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE  
 16103 \DeclareTextCompositeCommand{\.}{PU}{A}{\82\046}% U+0226  
 16104 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE  
 16105 \DeclareTextCompositeCommand{\.}{PU}{a}{\82\047}% U+0227  
 16106 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA  
 16107 \DeclareTextCompositeCommand{\c}{PU}{E}{\82\050}% U+0228  
 16108 % U+0229 LATIN SMALL LETTER E WITH CEDILLA  
 16109 \DeclareTextCompositeCommand{\c}{PU}{e}{\82\051}% U+0229  
 16110 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE  
 16111 \DeclareTextCompositeCommand{\.}{PU}{O}{\82\056}% U+022E  
 16112 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE  
 16113 \DeclareTextCompositeCommand{\.}{PU}{o}{\82\057}% U+022F  
 16114 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON  
 16115 \DeclareTextCompositeCommand{\=}{PU}{Y}{\82\062}% U+0232  
 16116 % U+0233 LATIN SMALL LETTER Y WITH MACRON  
 16117 \DeclareTextCompositeCommand{\=}{PU}{y}{\82\063}% U+0233  
 16118 % U+0235 LATIN SMALL LETTER N WITH CURL; \textctn (tipa)  
 16119 \DeclareTextCommand{\textctn}{PU}{\82\065}% U+0235  
 16120 % U+0236 LATIN SMALL LETTER T WITH CURL; \textctt (tipa)  
 16121 \DeclareTextCommand{\textctt}{PU}{\82\066}% U+0236  
 16122 % U+0237 LATIN SMALL LETTER DOTLESS J  
 16123 \DeclareTextCommand{\j}{PU}{\82\067}% U+0237  
 16124 % U+0238 LATIN SMALL LETTER DB DIGRAPH; \textdblig (tipx)  
 16125 \DeclareTextCommand{\textPUdblig}{PU}{\82\070}% U+0238  
 16126 %\* \textPUdblig -> \textdblig (tipx)  
 16127 % U+0239 LATIN SMALL LETTER QP DIGRAPH; \textqplig (tipx)  
 16128 \DeclareTextCommand{\textPUqplig}{PU}{\82\071}% U+0239  
 16129 %\* \textPUqplig -> \textqplig (tipx)  
 16130 % U+023C LATIN SMALL LETTER C WITH STROKE; \slashc (wsuipa)  
 16131 \DeclareTextCommand{\textslashc}{PU}{\82\074}%\* U+023C  
 16132 %\* \textslashc -> \textcentoldstyle (textcomp)  
 16133 % With bar instead of stroke:  
 16134 %\* \textslashc -> \textbarc (tipa)

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

16135 % U+0250 LATIN SMALL LETTER TURNED A; aturned; \textturna (tipa)

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16136 \DeclareTextCommand{\textturna}{PU}{\82\120}% U+0250
16137 %* \textturna -> \inva (wasysym)
16138 % U+0251 LATIN SMALL LETTER ALPHA/LATIN SMALL LETTER
16139 % SCRIPT A; ascript; \textscripta (tipa), \scripta (wsuipa)
16140 \DeclareTextCommand{\textscripta}{PU}{\82\121}%* U+0251
16141 %* \textscripta -> \vara (phonetic)
16142 % U+0252 LATIN SMALL LETTER TURNED ALPHA; ascriptturned;
16143 % \textturnscripta (tipa)
16144 \DeclareTextCommand{\textturnscripta}{PU}{\82\122}% U+0252
16145 %* \textturnscripta -> \invscripta (wsuipa)
16146 %* \textturnscripta -> \rotvara (phonetic)
16147 % U+0253 LATIN CAPITAL LETTER B WITH HOOK; bhook; \texthtb (tipa)
16148 \DeclareTextCommand{\texthtb}{PU}{\82\123}% U+0253
16149 %* \texthtb -> \hookb (wsuipa)
16150 %* \texthtb -> \hausab (phonetic)
16151 % U+0254 LATIN SMALL LETTER OPEN O; oopen;
16152 % \textopeno (tipa), \openo (wasysym)
16153 \DeclareTextCommand{\textopeno}{PU}{\82\124}%* U+0254
16154 %* \textopeno -> \varopeno (phonetic)
16155 % U+0255 LATIN SMALL LETTER C WITH CURL; ccurl; \textctc (tipa)
16156 \DeclareTextCommand{\textctc}{PU}{\82\125}% U+0255
16157 %* \textctc -> \curlyc (wsuipa)
16158 % U+0256 LATIN SMALL LETTER D WITH TAIL; dtail; \textrtaild (tipa)
16159 \DeclareTextCommand{\textrtaild}{PU}{\82\126}%* U+0256
16160 %* \textrtaild -> \taild (wsuipa)
16161 % U+0257 LATIN SMALL LETTER D WITH HOOK; dhook; \texthtd (tipa)
16162 \DeclareTextCommand{\texthtd}{PU}{\82\127}% U+0257
16163 %* \texthtd -> \hookd (wsuipa)
16164 %* \texthtd -> \hausad (phonetic)
16165 % U+0258 LATIN SMALL LETTER REVERSED E; ereversed;
16166 % \textreve (tipa), \reve (wsuipa)
16167 \DeclareTextCommand{\textreve}{PU}{\82\130}%* U+0258
16168 % U+0259 LATIN SMALL LETTER SCHWA; schwa;
16169 % \textschwa (tipa), \schwa (wsuipa, phonetic)
16170 \DeclareTextCommand{\textschwa}{PU}{\82\131}%* U+0259
16171 % U+025A LATIN SMALL LETTER SCHWA WITH HOOK; schwahook;
16172 % \textrhookswa (tipa)
16173 \DeclareTextCommand{\textrhookswa}{PU}{\82\132}% U+025A
16174 %* \textrhookswa -> \er (wsuipa)
16175 % U+025B LATIN SMALL LETTER OPEN E/LATIN SMALL LETTER EP-
    SILON; eopen;
16176 % \niepsilon (wsuipa)
16177 \DeclareTextCommand{\textniepsilon}{PU}{\82\133}%* U+025B
16178 %* \textniepsilon -> \epsi (phonetic)
16179 % U+025C LATIN SMALL LETTER REVERSED OPEN E; eopenreversed;
16180 % \textrevepsilon (tipa), \revepsilon (wsuipa)
16181 \DeclareTextCommand{\textrevepsilon}{PU}{\82\134}%* U+025C
16182 % U+025D LATIN SMALL LETTER REVERSED OPEN E WITH HOOK; eopen-
    reversedhook;
16183 % \textrhookrevepsilon (tipa)
16184 \DeclareTextCommand{\textrhookrevepsilon}{PU}{\82\135}%* U+025D
16185 %* \textrhookrevepsilon -> \hookrevepsilon (wsuipa)
16186 % U+025E LATIN SMALL LETTER CLOSED REVERSED OPEN E; eopenre-
    versedclosed;

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16187 % \textcloserevepsilon (tipa)  
16188 \DeclareTextCommand{\textcloserevepsilon}{PU}{\82\136}% U+025E  
16189 %\* \textcloserevepsilon -> \closedrevepsilon (wsuipa)  
16190 % U+025F LATIN SMALL LETTER DOTLESS J WITH STROKE; jdot-  
lessstroke;  
16191 % \textbardotlessj (tipa)  
16192 \DeclareTextCommand{\textbardotlessj}{PU}{\82\137}% U+025F  
16193 %\* \textbardotlessj -> \barj (phonetic)  
16194 % U+0260 LATIN SMALL LETTER G WITH HOOK; ghook; \texthtg (tipa)  
16195 \DeclareTextCommand{\texthtg}{PU}{\82\140}% U+0260  
16196 %\* \texthtg -> \hookg (wsuipa)  
16197 % U+0261 LATIN SMALL LETTER SCRIPT G; gscript;  
16198 % \textscriptg (tipa), \scriptg (wsuipa)  
16199 \DeclareTextCommand{\textscriptg}{PU}{\82\141}%\* U+0261  
16200 %\* \textscriptg -> \varg (phonetic)  
16201 % U+0262 LATIN LETTER SMALL CAPITAL G; \textscg (tipa), \scg (wsuipa)  
16202 \DeclareTextCommand{\textscg}{PU}{\82\142}%\* U+0262  
16203 % U+0263 LATIN SMALL LETTER GAMMA; gammalatinssmall;  
16204 % \ipagamma (wsuipa), \vod (phonetic)  
16205 \DeclareTextCommand{\textipagamma}{PU}{\82\143}%\* U+0263  
16206 %\* \textipagamma -> \vod (pnonetic)  
16207 % U+0264 LATIN SMALL LETTER RAMS HORN; ramshorn;  
16208 % \babygamma (wsuipa)  
16209 \DeclareTextCommand{\textbabygamma}{PU}{\82\144}%\* U+0264  
16210 % U+0265 LATIN SMALL LETTER TURNED H; hturned; \textturnh (tipa)  
16211 \DeclareTextCommand{\textturnh}{PU}{\82\145}% U+0265  
16212 %\* \textturnh -> \invh (wsuipa)  
16213 %\* \textturnh -> \udesc (phonetic)  
16214 % U+0266 LATIN SMALL LETTER H WITH HOOK; hhook; \texthth (tipa)  
16215 \DeclareTextCommand{\texthth}{PU}{\82\146}% U+0266  
16216 %\* \texthth -> \hookh (wsuipa)  
16217 %\* \texthth -> \voicedh (phonetic)  
16218 % U+0267 LATIN SMALL LETTER HENG WITH HOOK; henghook; \tex-  
ththeng (tipa)  
16219 \DeclareTextCommand{\texththeng}{PU}{\82\147}% U+0267  
16220 %\* \texththeng -> \hookheng (wsuipa)  
16221 % U+0268 LATIN SMALL LETTER I WITH STROKE;  
16222 % \textbari (tipa), \bari (wsuipa)  
16223 \DeclareTextCommand{\textbari}{PU}{\82\150}%\* U+0268  
16224 %\* \textbari -> \ibar (phonetic)  
16225 % U+0269 LATIN SMALL LETTER IOTA; iotalatin; \niiota (wsuipa)  
16226 \DeclareTextCommand{\textniiota}{PU}{\82\151}%\* U+0269  
16227 %\* \textniiota -> \vari (phonetic)  
16228 % U+026A LATIN LETTER SMALL CAPITAL I; \textsci (tipa), \sci (wsuipa)  
16229 \DeclareTextCommand{\textsci}{PU}{\82\152}%\* U+026A  
16230 % U+026B LATIN SMALL LETTER L WITH MIDDLE TILDE; lmiddletilde;  
16231 % \textltilde (tipa)  
16232 \DeclareTextCommand{\textltilde}{PU}{\82\153}% U+026B  
16233 %\* \textltilde -> \tildel (wsuipa)  
16234 % U+026C LATIN SMALL LETTER L WITH BELT; lbelt; \textbeltl (tipa)  
16235 \DeclareTextCommand{\textbeltl}{PU}{\82\154}% U+026C  
16236 %\* \textbeltl -> \latfric (wsuipa)  
16237 % U+026D LATIN SMALL LETTER L WITH RETROFLEX HOOK;  
16238 % lhookretroflex; \textrtail (tipa)

16239 \DeclareTextCommand{\texttrtail}{PU}{\82\155}% U+026D  
 16240 %\* \texttrtail -> \tail (wsuipa)  
 16241 % U+026E LATIN SMALL LETTER LEZH; lezh; \textlyoghlig (tipa)  
 16242 \DeclareTextCommand{\textlyoghlig}{PU}{\82\156}% U+026E  
 16243 %\* \textlyoghlig -> \lz (wsuipa)  
 16244 % U+026F LATIN SMALL LETTER TURNED M; mturned; \textturnm (tipa)  
 16245 \DeclareTextCommand{\textturnm}{PU}{\82\157}% U+026F  
 16246 %\* \textturnm -> \invm (wsuipa)  
 16247 %\* \textturnm -> \rotm (phonetic)  
 16248 % U+0270 LATIN SMALL LETTER TURNED M WITH LONG LEG; mlongleg-  
 turned;  
 16249 % \textturnmrleg (tipa)  
 16250 \DeclareTextCommand{\textturnmrleg}{PU}{\82\160}% U+0270  
 16251 %\* \textturnmrleg -> \legm (wsuipa)  
 16252 % U+0271 LATIN SMALL LETTER M WITH HOOK; mhook; \textltailm (tipa)  
 16253 \DeclareTextCommand{\textltailm}{PU}{\82\161}% U+0271  
 16254 %\* \textltailm -> \labdentalnas (wsuipa)  
 16255 %\* \textltailm -> \emgma (phonetic)  
 16256 % U+0272 LATIN SMALL LETTER N WITH LEFT HOOK; nhookleft; \textl-  
 tailn (tipa)  
 16257 \DeclareTextCommand{\textltailn}{PU}{\82\162}% U+0272  
 16258 %\* \textltailn -> \nj (wsuipa)  
 16259 %\* \textltailn -> \enya (phonetic)  
 16260 % U+0273 LATIN SMALL LETTER N WITH RETROFLEX HOOK;  
 16261 % nhookretroflex; \textrtailn (tipa)  
 16262 \DeclareTextCommand{\textrtailn}{PU}{\82\163}% U+0273  
 16263 %\* \textrtailn -> \tailn (wsuipa)  
 16264 % U+0274 LATIN LETTER SMALL CAPITAL N; \textscn (tipa), \scn (wsuipa)  
 16265 \DeclareTextCommand{\textscn}{PU}{\82\164}%\* U+0274  
 16266 % U+0275 LATIN CAPITAL LETTER O WITH MIDDLE TILDE/  
 16267 % LATIN CAPITAL LETTER BARRED O; obarred;  
 16268 % \textbaro (tipa), \baro (wsuipa)  
 16269 % But \baro from stmaryrd is different!  
 16270 \DeclareTextCommand{\textbaro}{PU}{\82\165}% U+0275  
 16271 % U+0276 LATIN LETTER SMALL CAPITAL OE; \textscœlig (tipa)  
 16272 \DeclareTextCommand{\textscœlig}{PU}{\82\166}% U+0276  
 16273 % U+0277 LATIN SMALL LETTER CLOSED OMEGA; omegalatincloded;  
 16274 % \textcloseomega (tipa)  
 16275 \DeclareTextCommand{\textcloseomega}{PU}{\82\167}% U+0277  
 16276 %\* \textcloseomega -> \closedniomega (wsuipa)  
 16277 %\* \textcloseomega -> \varomega (phonetic)  
 16278 % U+0278 LATIN SMALL LETTER PHI; philatin; \niph (wsuipa)  
 16279 \DeclareTextCommand{\textniph}{PU}{\82\170}%\* U+0278  
 16280 % U+0279 LATIN SMALL LETTER TURNED R; rturned; \textturnr (tipa)  
 16281 \DeclareTextCommand{\textturnr}{PU}{\82\171}% U+0279  
 16282 %\* \textturnr -> \invr (wsuipa)  
 16283 %\* \textturnr -> \rotr (phonetic)  
 16284 % U+027A LATIN SMALL LETTER TURNED R WITH LONG LEG;  
 16285 % rlonglegturned; \textturnlongleg (tipa)  
 16286 \DeclareTextCommand{\textturnlongleg}{PU}{\82\172}% U+027A  
 16287 %\* \textturnlongleg -> \invleg (wsuipa)  
 16288 % U+027B LATIN SMALL LETTER TURNED R WITH HOOK; rhohturned;  
 16289 % \textturnrrtail (tipa)  
 16290 \DeclareTextCommand{\textturnrrtail}{PU}{\82\173}% U+027B

16291 %\* \textturnrrtail -> \tailinvr (wsuipa)  
 16292 % U+027C LATIN SMALL LETTER R WITH LONG LEG; rlongleg; \textlonglegr (tipa)  
 16293 \DeclareTextCommand{\textlonglegr}{PU}{\82\174}%\* U+027C  
 16294 %\* \textlonglegr -> \legr (wsuipa)  
 16295 % U+027D LATIN SMALL LETTER R WITH TAIL; rhoor; \textrtailr (tipa)  
 16296 \DeclareTextCommand{\textrtailr}{PU}{\82\175}% U+027D  
 16297 %\* \textrtailr -> \tailr (wsuipa)  
 16298 % U+027E LATIN SMALL LETTER R WITH FISHHOOK; rfishhook;  
 16299 % \textfishhookr (tipa)  
 16300 \DeclareTextCommand{\textfishhookr}{PU}{\82\176}% U+027E  
 16301 %\* \textfishhookr -> \flapr (wsuipa)  
 16302 %\* \textfishhookr -> \flap (phonetic)  
 16303 % U+027F LATIN SMALL LETTER REVERSED R WITH FISHHOOK; rfishhookreversed;  
 16304 % \textlhtlongi (tipa)  
 16305 \DeclareTextCommand{\textlhtlongi}{PU}{\82\177}% U+027F  
 16306 % U+0280 LATIN LETTER SMALL CAPITAL R; \textscr (tipa), \scr (wsuipa)  
 16307 \DeclareTextCommand{\textscr}{PU}{\82\200}%\* U+0280  
 16308 % U+0281 LATIN LETTER SMALL CAPITAL INVERTED R; Rsmallinverted;  
 16309 % \textinvscr (tipa), \invscr (wsuipa)  
 16310 \DeclareTextCommand{\textinvscr}{PU}{\82\201}%\* U+0281  
 16311 % U+0282 LATIN SMALL LETTER S WITH HOOK; shook; \textrtails (tipa)  
 16312 \DeclareTextCommand{\textrtails}{PU}{\82\202}% U+0282  
 16313 %\* \textrtails -> \tails (wsuipa)  
 16314 % U+0283 LATIN SMALL LETTER ESH; esh; \textesh (tipa), \esh (wsuipa)  
 16315 \DeclareTextCommand{\textesh}{PU}{\82\203}%\* U+0283  
 16316 % U+0284 LATIN SMALL LETTER DOTLESS J WITH STROKE AND HOOK;  
 16317 % dotlessjstrokehook; \texthtbardotlessj (tipa)  
 16318 \DeclareTextCommand{\texthtbardotlessj}{PU}{\82\204}% U+0284  
 16319 % U+0285 LATIN SMALL LETTER SQUAT REVERSED ESH; eshsquatreversed;  
 16320 % \textvibyi (tipa)  
 16321 \DeclareTextCommand{\textvibyi}{PU}{\82\205}% U+0285  
 16322 % U+0286 LATIN SMALL LETTER ESH WITH CURL; eshcurl; \textctesh (tipa)  
 16323 \DeclareTextCommand{\textctesh}{PU}{\82\206}% U+0286  
 16324 %\* \textctesh -> \curlyesh (wsuipa)  
 16325 % U+0287 LATIN SMALL LETTER TURNED T; tturned; \textturnt (tipa)  
 16326 \DeclareTextCommand{\textturnt}{PU}{\82\207}% U+0287  
 16327 %\* \textturnt -> \clickt (wsuipa)  
 16328 % U+0288 LATIN SMALL LETTER T WITH RETROFLEX HOOK; tretroflexhook;  
 16329 % \textrtailt (tipa)  
 16330 \DeclareTextCommand{\textrtailt}{PU}{\82\210}% U+0288  
 16331 %\* \textrtailt -> \tailt (wsuipa)  
 16332 % U+0289 LATIN SMALL LETTER U BAR; ubar;  
 16333 % \textbaru (tipa), \baru (wsuipa)  
 16334 \DeclareTextCommand{\textbaru}{PU}{\82\211}%\* U+0289  
 16335 %\* \textbaru -> \ubar (phonetic)  
 16336 % U+028A LATIN SMALL LETTER UPSILON; \niupsilon (wsuipa)  
 16337 \DeclareTextCommand{\textniupsilon}{PU}{\82\212}%\* U+028A  
 16338 %\* \textniupsilon -> \rotOmega (phonetic)  
 16339 % U+028B LATIN SMALL LETTER V WITH HOOK/LATIN SMALL LETTER SCRIPT V;

16340 % vhook; \textscriptv (tipa), \scriptv (wsuipa)  
16341 \DeclareTextCommand{\textscriptv}{PU}{\82\213}%\* U+028B  
16342 % U+028C LATIN SMALL LETTER TURNED V; vturned; \textturnv (tipa)  
16343 \DeclareTextCommand{\textturnv}{PU}{\82\214}%\* U+028C  
16344 %\* \textturnv -> \invv (wsuipa)  
16345 %\* \textturnv -> \pwedge (phonetic)  
16346 % U+028D LATIN SMALL LETTER TURNED W; wturned; \textturnw (tipa)  
16347 \DeclareTextCommand{\textturnw}{PU}{\82\215}%\* U+028D  
16348 %\* \textturnw -> \invw (wsuipa)  
16349 %\* \textturnw -> \rotw (phonetic)  
16350 % U+028E LATIN SMALL LETTER TURNED Y; yturned; \textturny (tipa)  
16351 \DeclareTextCommand{\textturny}{PU}{\82\216}%\* U+028E  
16352 %\* \textturny -> \invy (wsuipa)  
16353 %\* \textturny -> \roty (phonetic)  
16354 % U+028F LATIN LETTER SMALL CAPITAL Y; \textscy (tipa), \scy (wsuipa)  
16355 \DeclareTextCommand{\textscy}{PU}{\82\217}%\* U+028F  
16356 % U+0290 LATIN SMALL LETTER Z WITH RETROFLEX HOOK; zretroflex-hook;  
16357 % \textrtailz (tipa)  
16358 \DeclareTextCommand{\textrtailz}{PU}{\82\220}% U+0290  
16359 %\* \textrtailz -> \tailz (wsuipa)  
16360 % U+0291 LATIN SMALL LETTER Z WITH CURL; zcurl; \textctz (tipa)  
16361 \DeclareTextCommand{\textctz}{PU}{\82\221}% U+0291  
16362 %\* \textctz -> \curlyz (wsuipa)  
16363 % U+0292 LATIN SMALL LETTER EZH/LATIN SMALL LETTER YOGH; ezh;  
16364 % \textyogh (tipa), \yogh (wsuipa)  
16365 \DeclareTextCommand{\textyogh}{PU}{\82\222}%\* U+0292  
16366 % U+0293 LATIN SMALL LETTER EZH WITH CURL/LATIN SMALL LETTER YOGH CURL;  
16367 % ezhcurl; \textctyogh (tipa)  
16368 \DeclareTextCommand{\textctyogh}{PU}{\82\223}% U+0293  
16369 %\* \textctyogh -> \curlyyogh (wsuipa)  
16370 % U+0294 LATIN LETTER GLOTTAL STOP; glottalstop;  
16371 % \textglotstop (tipa), \glotstop (wsuipa)  
16372 \DeclareTextCommand{\textglotstop}{PU}{\82\224}%\* U+0294  
16373 %\* \textglotstop -> \ejective (wsuipa)  
16374 %\* \textglotstop -> \glottal (phonetic)  
16375 % U+0295 LATIN LETTER PHARYNGEAL VOICED FRICATIVE/  
16376 % LATIN LETTER REVERSED GLOTTAL STOP; glottalstopreversed;  
16377 % \textrevglotstop (tipa), \revglotstop (wsuipa)  
16378 \DeclareTextCommand{\textrevglotstop}{PU}{\82\225}%\* U+0295  
16379 %\* \textrevglotstop -> \reveject (wsuipa)  
16380 % U+0296 LATIN LETTER INVERTED GLOTTAL STOP; glottalstopinverted;  
16381 % \textinvglotstop (tipa), \invglotstop (wsuipa)  
16382 \DeclareTextCommand{\textinvglotstop}{PU}{\82\226}%\* U+0296  
16383 % U+0297 LATIN LETTER STRETCHED C; cstretched; \textstretchc (tipa)  
16384 \DeclareTextCommand{\textstretchc}{PU}{\82\227}% U+0297  
16385 %\* \textstretchc -> \clickc (wsuipa)  
16386 %\* \textstretchc -> \textstretchcvar (tipx)  
16387 % U+0298 LATIN LETTER BILABIAL CLICK; bilabialclick;  
16388 % \textbullseye (tipa)  
16389 \DeclareTextCommand{\textbullseye}{PU}{\82\230}% U+0298  
16390 %\* \textbullseye -> \clickb (wsuipa)  
16391 %\* \textbullseye -> \textObullseye (tipx)

16392 % U+0299 LATIN LETTER SMALL CAPITAL B; \textscb (tipa)  
16393 \DeclareTextCommand{\textscb}{PU}{\82\231}% U+0299  
16394 % U+029A LATIN SMALL LETTER CLOSED OPEN E; eopenclosed;  
16395 % \textclosepsilon (tipa)  
16396 \DeclareTextCommand{\textclosepsilon}{PU}{\82\232}% U+029A  
16397 % U+029B LATIN LETTER SMALL CAPITAL G WITH HOOK; Gsmallhook;  
16398 % \texthtscg (tipa)  
16399 \DeclareTextCommand{\texthtscg}{PU}{\82\233}% U+029B  
16400 % U+029C LATIN LETTER SMALL CAPITAL H; \textsch (tipa)  
16401 \DeclareTextCommand{\textsch}{PU}{\82\234}% U+029C  
16402 % U+029D LATIN SMALL LETTER J WITH CROSSED-TAIL; jcrossed-  
tail; \textcdj (tipa)  
16403 \DeclareTextCommand{\textctj}{PU}{\82\235}% U+029D  
16404 %\* \textctj -> \textctjvar (tipx)  
16405 % U+029E LATIN SMALL LETTER TURNED K; kturned; \textturnk (tipa)  
16406 \DeclareTextCommand{\textturnk}{PU}{\82\236}% U+029E  
16407 %\* \textturnk -> \textturnsck (tipx)  
16408 % U+029F LATIN LETTER SMALL CAPITAL L; \textscL (tipa)  
16409 \DeclareTextCommand{\textscL}{PU}{\82\237}% U+029F  
16410 % U+02A0 LATIN SMALL LETTER Q WITH HOOK; qhook; \texthtq (tipa)  
16411 \DeclareTextCommand{\texthtq}{PU}{\82\240}% U+02A0  
16412 % U+02A1 LATIN LETTER GLOTTAL STOP WITH STROKE; glottalstop-  
stroke;  
16413 % \textbarglotstop (tipa)  
16414 \DeclareTextCommand{\textbarglotstop}{PU}{\82\241}% U+02A1  
16415 % U+02A2 LATIN LETTER REVERSED GLOTTAL STOP WITH STROKE/  
16416 % LATIN LETTER REVERSED GLOTTAL STOP BAR; glottalstopstrokere-  
versed;  
16417 % \textbarrevglotstop (tipa)  
16418 \DeclareTextCommand{\textbarrevglotstop}{PU}{\82\242}% U+02A2  
16419 % U+02A3 LATIN SMALL LETTER DZ DIGRAPH; dzaltone; \textdzlig (tipa)  
16420 \DeclareTextCommand{\textdzlig}{PU}{\82\243}% U+02A3  
16421 %\* \textdzlig -> \dz (wsupipa)  
16422 % U+02A4 LATIN SMALL LETTER DEZH DIGRAPH; dezh; \textdyogh-  
lig (tipa)  
16423 \DeclareTextCommand{\textdyoghlig}{PU}{\82\244}% U+02A4  
16424 % U+02A5 LATIN SMALL LETTER DZ DIGRAPH WITH CURL; dzcurl;  
16425 % \textdctzlig (tipa)  
16426 \DeclareTextCommand{\textdctzlig}{PU}{\82\245}% U+02A5  
16427 % U+02A6 LATIN SMALL LETTER TS DIGRAPH; ts; \texttslig (tipa)  
16428 \DeclareTextCommand{\texttslig}{PU}{\82\246}% U+02A6  
16429 % U+02A7 LATIN SMALL LETTER TESH DIGRAPH; tesh; \texttshlig (tipa)  
16430 \DeclareTextCommand{\texttshlig}{PU}{\82\247}% U+02A7  
16431 %\* \texttshlig -> \tesh (wsuipa)  
16432 % U+02A8 LATIN SMALL LETTER TC DIGRAPH WITH CURL; tccurl;  
16433 % \texttctclig (tipa)  
16434 \DeclareTextCommand{\texttctclig}{PU}{\82\250}% U+02A8  
16435 % U+02AE LATIN SMALL LETTER TURNED H WITH FISHHOOK;  
16436 % \textlhtlongy (tipa)  
16437 \DeclareTextCommand{\textlhtlongy}{PU}{\82\256}% U+02AE  
16438 % U+02AF LATIN SMALL LETTER TURNED H WITH FISHHOOK AND TAIL;  
16439 % \textvibyy (tipa)  
16440 \DeclareTextCommand{\textvibyy}{PU}{\82\257}% U+02AF



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

16441 % U+02BD MODIFIER LETTER REVERSED COMMA;  
16442 % commareversedmod, afi64937; \textrevapostrophe (tipa)  
16443 \DeclareTextCommand{\textrevapostrophe}{PU}{\82\275}% U+02BD  
16444 % U+02C0 MODIFIER LETTER GLOTTAL STOP; glottalstopmod;  
16445 % \textrai seglotstop (tipa)  
16446 \DeclareTextCommand{\textrai seglotstop}{PU}{\82\300}% U+02C0  
16447 % U+02C2 MODIFIER LETTER LEFT ARROWHEAD; arrowheadleftmod;  
16448 % \textlptr (tipa)  
16449 \DeclareTextCommand{\textlptr}{PU}{\82\302}% U+02C2  
16450 % U+02C3 MODIFIER LETTER RIGHT ARROWHEAD; arrowheadrightmod;  
16451 % \textrptr (tipa)  
16452 \DeclareTextCommand{\textrptr}{PU}{\82\303}% U+02C3  
16453 % U+02C7 CARON; caron  
16454 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7  
16455 % U+02C8 MODIFIER LETTER VERTICAL LINE; verticallinemod;  
16456 % \textprimstress (tipa)  
16457 \DeclareTextCommand{\textprimstress}{PU}{\82\310}% U+02C8  
16458 % U+02CC MODIFIER LETTER LOW VERTICAL LINE; verticallinelowmod;  
16459 % \textsecstress (tipa)  
16460 \DeclareTextCommand{\textsecstress}{PU}{\82\314}% U+02CC  
16461 % U+02D0 MODIFIER LETTER TRIANGULAR COLON; colontriangularmod;  
16462 % \textlengthmark (tipa)  
16463 \DeclareTextCommand{\textlengthmark}{PU}{\82\320}% U+02D0  
16464 % U+02D1 MODIFIER LETTER HALF TRIANGULAR COLON; colontriangularhalfmod;  
16465 % \texthalf length (tipa)  
16466 \DeclareTextCommand{\texthalf length}{PU}{\82\321}% U+02D1  
16467 % U+02D8 BREVE; breve  
16468 \DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8  
16469 % U+02D9 DOT ABOVE; dotaccent  
16470 \DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9  
16471 % U+02DA RING ABOVE; ring  
16472 \DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA  
16473 % U+02DB OGONEK; ogonek  
16474 \DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB  
16475 % U+02DC SMALL TILDE; ilde, \*tilde  
16476 \DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC  
16477 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
16478 \DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD  
16479 \DeclareTextCommand{\textacutedbl}{PU}{\82\335}% U+02DD  
16480 % U+02F3 MODIFIER LETTER LOW RING  
16481 \DeclareTextCommand{\textringlow}{PU}{\82\363}% U+02F3  
16482 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT  
16483 \DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5  
16484 % U+02F7 MODIFIER LETTER LOW TILDE  
16485 \DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7  
16486 % U+02F9 MODIFIER LETTER BEGIN HIGH TONE; \textopen corner (tipa)  
16487 \DeclareTextCommand{\textopen corner}{PU}{\82\371}% U+02F9  
16488 % U+02FA MODIFIER LETTER END HIGH TONE; \textcorner (tipa)  
16489 \DeclareTextCommand{\textcorner}{PU}{\82\372}% U+02FA

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

```

16490 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb
16491 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017}% U+030F
16492 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb
16493 \DeclareTextCommand{\textnewtie}{PU}{\83\021}% U+0311
16494 % U+0323 COMBINING DOT BELOW; dotbelowcmb, *dotbelowcomb
16495 \DeclareTextCommand{\textdotbelow}{PU}{\83\043}% U+0323
16496 % U+0331 COMBINING MACRON BELOW; macronbelowcmb
16497 \DeclareTextCommand{\textmacronbelow}{PU}{\83\061}% U+0331
16498 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddou-
      blecmb
16499 \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.

```

16500 \ifx\textBeta\@undefined \else
16501 \input{puenc-greekbasic.def}
16502 \fi
16503 </puenc>
16504 <*pugreek>
16505 % U+0374 GREEK NUMERAL SIGN; numeralsigngreek
16506 \DeclareTextCommand{\textnumeralsigngreek}{PU}{\83\164}% U+0374
16507 \DeclareTextCommand{\textdexiakeraia}{PU}{\83\164}% U+0374
16508 % U+0375 GREEK LOWER NUMERAL SIGN; numeralsignlowergreek
16509 \DeclareTextCommand{\textnumeralsignlowergreek}{PU}{\83\165}% U+0375
16510 \DeclareTextCommand{\textaristerikeraia}{PU}{\83\165}% U+0375
16511 % U+0386 GREEK CAPITAL LETTER ALPHA WITH TONOS; Alphatonos
16512 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}% U+0386
16513 % U+0388 GREEK CAPITAL LETTER EPSILON WITH TONOS; Epsilontonos
16514 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}% U+0388
16515 % U+0389 GREEK CAPITAL LETTER ETA WITH TONOS; Etatonos
16516 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}% U+0389
16517 % U+038A GREEK CAPITAL LETTER IOTA WITH TONOS; Iotatonos
16518 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}% U+038A
16519 % U+038C GREEK CAPITAL LETTER OMICRON WITH TONOS; Omi-
      crontonos
16520 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}% U+038C
16521 % U+038E GREEK CAPITAL LETTER UPSILON WITH TONOS; Upsilontonos
16522 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}% U+038E
16523 % U+038F GREEK CAPITAL LETTER OMEGA WITH TONOS; Omegatonos
16524 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}% U+038F
16525 % U+0390 GREEK SMALL LETTER IOTA WITH DIALYTIKA AND TONOS;
16526 % iodadiesistonos
16527 \DeclareTextCompositeCommand{\'}{PU}{\textIotadiesis}{\83\220}% U+0390
16528 % U+0391 GREEK CAPITAL LETTER ALPHA; Alpha
16529 \DeclareTextCommand{\textAlpha}{PU}{\83\221}% U+0391
16530 % U+0392 GREEK CAPITAL LETTER BETA; Beta
16531 \DeclareTextCommand{\textBeta}{PU}{\83\222}% U+0392
16532 % U+0393 GREEK CAPITAL LETTER GAMMA; Gamma; \Gamma (LaTeX)
16533 \DeclareTextCommand{\textGamma}{PU}{\83\223}%* U+0393
16534 % U+0394 GREEK CAPITAL LETTER DELTA; Deltagreek, *Delta; \Delta (La-
      TeX)
16535 \DeclareTextCommand{\textDelta}{PU}{\83\224}%* U+0394
16536 % U+0395 GREEK CAPITAL LETTER EPSILON; Epsilon
16537 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}% U+0395

```

16538 % U+0396 GREEK CAPITAL LETTER ZETA; Zeta  
 16539 \DeclareTextCommand{\textZeta}{PU}{\83\226}% U+0396  
 16540 % U+0397 GREEK CAPITAL LETTER ETA; Eta  
 16541 \DeclareTextCommand{\textEta}{PU}{\83\227}% U+0397  
 16542 % U+0398 GREEK CAPITAL LETTER THETA; Theta; \Theta (LaTeX)  
 16543 \DeclareTextCommand{\textTheta}{PU}{\83\230}%\* U+0398  
 16544 % U+0399 GREEK CAPITAL LETTER IOTA; Iota  
 16545 \DeclareTextCommand{\textIota}{PU}{\83\231}% U+0399  
 16546 % U+039A GREEK CAPITAL LETTER KAPPA; Kappa  
 16547 \DeclareTextCommand{\textKappa}{PU}{\83\232}% U+039A  
 16548 % U+039B GREEK CAPITAL LETTER LAMDA; Lambda; \Lambda (LaTeX)  
 16549 \DeclareTextCommand{\textLambda}{PU}{\83\233}%\* U+039B  
 16550 % U+039C GREEK CAPITAL LETTER MU; Mu  
 16551 \DeclareTextCommand{\textMu}{PU}{\83\234}% U+039C  
 16552 % U+039D GREEK CAPITAL LETTER NU; Nu  
 16553 \DeclareTextCommand{\textNu}{PU}{\83\235}% U+039D  
 16554 % U+039E GREEK CAPITAL LETTER XI; Xi; \Xi (LaTeX)  
 16555 \DeclareTextCommand{\textXi}{PU}{\83\236}%\* U+039E  
 16556 % U+039F GREEK CAPITAL LETTER OMICRON; Omicron  
 16557 \DeclareTextCommand{\textOmicron}{PU}{\83\237}% U+039F  
 16558 % U+03A0 GREEK CAPITAL LETTER PI; Pi  
 16559 \DeclareTextCommand{\textPi}{PU}{\83\240}%\* U+03A0  
 16560 % U+03A1 GREEK CAPITAL LETTER RHO; Rho  
 16561 \DeclareTextCommand{\textRho}{PU}{\83\241}% U+03A1  
 16562 % U+03A3 GREEK CAPITAL LETTER SIGMA; Sigma; \Sigma (LaTeX)  
 16563 \DeclareTextCommand{\textSigma}{PU}{\83\243}%\* U+03A3  
 16564 % U+03A4 GREEK CAPITAL LETTER TAU; Tau  
 16565 \DeclareTextCommand{\textTau}{PU}{\83\244}% U+03A4  
 16566 % U+03A5 GREEK CAPITAL LETTER UPSILON; Upsilon; \Upsilon (LaTeX)  
 16567 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}%\* U+03A5  
 16568 % U+03A6 GREEK CAPITAL LETTER PHI; Phi; \Phi (LaTeX)  
 16569 \DeclareTextCommand{\textPhi}{PU}{\83\246}%\* U+03A6  
 16570 % U+03A7 GREEK CAPITAL LETTER CHI; Chi  
 16571 \DeclareTextCommand{\textChi}{PU}{\83\247}% U+03A7  
 16572 % U+03A8 GREEK CAPITAL LETTER PSI; Psi; \Psi (LaTeX)  
 16573 \DeclareTextCommand{\textPsi}{PU}{\83\250}%\* U+03A8  
 16574 % U+03A9 GREEK CAPITAL LETTER OMEGA; Omegagreek, \*Omega;  
 16575 % \Omega (LaTeX)  
 16576 \DeclareTextCommand{\textOmega}{PU}{\83\251}%\* U+03A9  
 16577 % U+03AA GREEK CAPITAL LETTER IOTA WITH DIALYTIKA; Iotadieresis  
 16578 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}% U+03AA  
 16579 \DeclareTextCompositeCommand{"}{PU}{\textIota}{\83\252}% U+03AA  
 16580 % U+03AB GREEK CAPITAL LETTER UPSILON WITH DIALYTIKA; Up-  
 silondieresis  
 16581 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}% U+03AB  
 16582 % U+03AC GREEK SMALL LETTER ALPHA WITH TONOS; alphanos  
 16583 \DeclareTextCompositeCommand{'}{PU}{\textalpha}{\83\254}%\* U+03AC  
 16584 % U+03AD GREEK SMALL LETTER EPSILON WITH TONOS; epsilon  
 16585 \DeclareTextCompositeCommand{'}{PU}{\textepsilon}{\83\255}% U+03AD  
 16586 % U+03AE GREEK SMALL LETTER ETA WITH TONOS; etanos  
 16587 \DeclareTextCompositeCommand{'}{PU}{\texteta}{\83\256}% U+03AE  
 16588 % U+03AF GREEK SMALL LETTER IOTA WITH TONOS; iotanos  
 16589 \DeclareTextCompositeCommand{'}{PU}{\textiota}{\83\257}% U+03AF  
 16590 % U+03B0 GREEK SMALL LETTER UPSILON WITH DIALYTIKA

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16591 % AND TONOS; upsilonondieresis
16592 \DeclareTextCompositeCommand{"}{PU}{\textupsilonacute}{\83\260}% U+03B0
16593 % U+03B1 GREEK SMALL LETTER ALPHA; alpha; \alpha (LaTeX)
16594 \DeclareTextCommand{\textalpha}{PU}{\83\261}%* U+03B1
16595 % U+03B2 GREEK SMALL LETTER BETA; beta; \beta (LaTeX)
16596 \DeclareTextCommand{\textbeta}{PU}{\83\262}%* U+03B2
16597 % U+03B3 GREEK SMALL LETTER GAMMA; gamma; \gamma (LaTeX)
16598 \DeclareTextCommand{\textgamma}{PU}{\83\263}%* U+03B3
16599 % U+03B4 GREEK SMALL LETTER DELTA; delta; \delta (LaTeX)
16600 \DeclareTextCommand{\textdelta}{PU}{\83\264}%* U+03B4
16601 % U+03B5 GREEK SMALL LETTER EPSILON; epsilon; \epsilon (LaTeX)
16602 \DeclareTextCommand{\textepsilon}{PU}{\83\265}%* U+03B5
16603 % U+03B6 GREEK SMALL LETTER ZETA; zeta; \zeta (LaTeX)
16604 \DeclareTextCommand{\textzeta}{PU}{\83\266}%* U+03B6
16605 % U+03B7 GREEK SMALL LETTER ETA; eta; \eta (LaTeX)
16606 \DeclareTextCommand{\texteta}{PU}{\83\267}%* U+03B7
16607 % U+03B8 GREEK SMALL LETTER THETA; theta; \theta (LaTeX)
16608 \DeclareTextCommand{\texttheta}{PU}{\83\270}%* U+03B8
16609 % U+03B9 GREEK SMALL LETTER IOTA; iota; \iota (LaTeX)
16610 \DeclareTextCommand{\textiota}{PU}{\83\271}%* U+03B9
16611 % U+03BA GREEK SMALL LETTER KAPPA; kappa; \kappa (LaTeX)
16612 \DeclareTextCommand{\textkappa}{PU}{\83\272}%* U+03BA
16613 % U+03BB GREEK SMALL LETTER LAMDA; lambda; \lambda (LaTeX)
16614 \DeclareTextCommand{\textlambda}{PU}{\83\273}%* U+03BB
16615 % U+03BC GREEK SMALL LETTER MU; mugreek, *mu; \mu (LaTeX)
16616 \DeclareTextCommand{\textmugreek}{PU}{\83\274}%* U+03BC
16617 % U+03BD GREEK SMALL LETTER NU; nu; \nu (LaTeX)
16618 \DeclareTextCommand{\textnu}{PU}{\83\275}%* U+03BD
16619 % U+03BE GREEK SMALL LETTER XI; xi; \xi (LaTeX)
16620 \DeclareTextCommand{\textxi}{PU}{\83\276}%* U+03BE
16621 % U+03BF GREEK SMALL LETTER OMICRON; omicron
16622 \DeclareTextCommand{\textomicron}{PU}{\83\277}% U+03BF
16623 % U+03C0 GREEK SMALL LETTER PI; pi; \pi (LaTeX)
16624 \DeclareTextCommand{\textpi}{PU}{\83\300}%* U+03C0
16625 % U+03C1 GREEK SMALL LETTER RHO; rho; \rho (LaTeX)
16626 \DeclareTextCommand{\textrho}{PU}{\83\301}%* U+03C1
16627 % U+03C2 GREEK SMALL LETTER FINAL SIGMA; *sigma1, sigmafinal
16628 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}%* U+03C2
16629 % U+03C3 GREEK SMALL LETTER SIGMA; sigma; \sigma (LaTeX)
16630 \DeclareTextCommand{\textsigma}{PU}{\83\303}%* U+03C3
16631 % U+03C4 GREEK SMALL LETTER TAU; tau; \tau (LaTeX)
16632 \DeclareTextCommand{\texttau}{PU}{\83\304}%* U+03C4
16633 % U+03C5 GREEK SMALL LETTER UPSILON; upsilon; \upsilon (LaTeX)
16634 \DeclareTextCommand{\textupsilon}{PU}{\83\305}%* U+03C5
16635 % U+03C6 GREEK SMALL LETTER PHI; phi; \phi (LaTeX)
16636 \DeclareTextCommand{\textphi}{PU}{\83\306}%* U+03C6
16637 % U+03C7 GREEK SMALL LETTER CHI; chi; \chi (LaTeX)
16638 \DeclareTextCommand{\textchi}{PU}{\83\307}%* U+03C7
16639 % U+03C8 GREEK SMALL LETTER PSI; psi; \psi (LaTeX)
16640 \DeclareTextCommand{\textpsi}{PU}{\83\310}%* U+03C8
16641 % U+03C9 GREEK SMALL LETTER OMEGA; omega; \omega (LaTeX)
16642 \DeclareTextCommand{\textomega}{PU}{\83\311}%* U+03C9
16643 % U+03CA GREEK SMALL LETTER IOTA WITH DIALYTIKA; iodadieresis
16644 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}% U+03CA

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16645 % U+03CB GREEK SMALL LETTER UPSILON WITH DIALYTIKA; up-
        silondieresis
16646 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}% U+03CB
16647 % U+03CC GREEK SMALL LETTER OMICRON WITH TONOS; omicrontonos
16648 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}% U+03CC
16649 % U+03CD GREEK SMALL LETTER UPSILON WITH TONOS; upsilontonos
16650 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}% U+03CD
16651 \DeclareTextCompositeCommand{'}{PU}{\textupsilon}{\83\315}% U+03CD
16652 % U+03CE GREEK SMALL LETTER OMEGA WITH TONOS; omegatonos
16653 \DeclareTextCompositeCommand{'}{PU}{\textomega}{\83\316}% U+03CE
16654 % U+03D8 GREEK LETTER ARCHAIC KOPPA;
16655 \DeclareTextCommand{\textQoppa}{PU}{\83\330}% U+03D8
16656 % U+03D9 GREEK SMALL LETTER ARCHAIC KOPPA;
16657 \DeclareTextCommand{\textqoppa}{PU}{\83\331}% U+03D9
16658 % U+03DA GREEK LETTER STIGMA; Stigmatagreek
16659 \DeclareTextCommand{\textStigmatagreek}{PU}{\83\332}% U+03DA
16660 \DeclareTextCommand{\textStigma}{PU}{\83\332}% U+03DA
16661 % U+03DB GREEK SMALL LETTER STIGMA
16662 \DeclareTextCommand{\textstigmatagreek}{PU}{\83\333}% U+03DB
16663 \DeclareTextCommand{\textstigma}{PU}{\83\333}% U+03DB
16664 % U+03DC GREEK LETTER DIGAMMA; Digammagreek
16665 \DeclareTextCommand{\textDigammagreek}{PU}{\83\334}% U+03DC
16666 \DeclareTextCommand{\textDigamma}{PU}{\83\334}% U+03DC
16667 % U+03DD GREEK SMALL LETTER DIGAMMA
16668 \DeclareTextCommand{\textdigammagreek}{PU}{\83\335}% U+03DD
16669 \DeclareTextCommand{\textdigamma}{PU}{\83\335}% U+03DD
16670 %* \textdigammagreek -> \digamma (AmS)
16671 % U+03DE GREEK LETTER KOPPA; Koppagreek
16672 \DeclareTextCommand{\textKoppa}{PU}{\83\336}% U+03DE
16673 \DeclareTextCommand{\textKoppagreek}{PU}{\83\336}% U+03DE
16674 % U+03DF GREEK SMALL LETTER KOPPA
16675 \DeclareTextCommand{\textkoppa}{PU}{\83\337}% U+03DF
16676 \DeclareTextCommand{\textkoppagreek}{PU}{\83\337}% U+03DF
16677 % U+03E0 GREEK LETTER SAMPI; Sampigreek
16678 \DeclareTextCommand{\textSampigreek}{PU}{\83\340}% U+03E0
16679 \DeclareTextCommand{\textSampi}{PU}{\83\340}% U+03E0
16680 % U+03E1 GREEK SMALL LETTER SAMPI
16681 \DeclareTextCommand{\textsampigreek}{PU}{\83\341}% U+03E1
16682 \DeclareTextCommand{\textsampi}{PU}{\83\341}% U+03E1
16683 % U+03F6 GREEK REVERSED LUNATE EPSILON SYMBOL;
16684 % \backepsilon (AmS)
16685 \DeclareTextCommand{\textbackepsilon}{PU}{\83\366}% U+03F6
16686 \pugreek)

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#### 47.2.10 Cyrillic: U+0400 to U+04FF

Thanks to Vladimir Volovich (vvv@vvv.vsu.ru) for the help with the Cyrillic glyph names. Cyrillic only loaded if \CYRDZE is defined.

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16687 (*puenc)
16688 \ifx\CYRDZE@\undefined \else
16689 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE
16690 \DeclareTextCompositeCommand{"}{PU}{\CYRE}{\84\000}% U+0400
16691 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrillic, *afii10023
16692 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401

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16693 \DeclareTextCompositeCommand{\"}{PU}{\CYRE}{\84\001}% U+0401  
 16694 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, \*afii10051  
 16695 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402  
 16696 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, \*afii10052  
 16697 \DeclareTextCompositeCommand{\'}{PU}{\CYRG}{\84\003}% U+0403  
 16698 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrillic, \*afii10053  
 16699 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404  
 16700 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzecyrillic, \*afii10054  
 16701 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405  
 16702 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I;  
 16703 % Icyrillic, \*afii10055  
 16704 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406  
 16705 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrillic, \*afii10056  
 16706 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407  
 16707 \DeclareTextCompositeCommand{\"}{PU}{\CYRII}{\84\007}% U+0407  
 16708 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, \*afii10057  
 16709 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408  
 16710 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, \*afii10058  
 16711 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409  
 16712 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, \*afii10059  
 16713 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A  
 16714 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, \*afii10060  
 16715 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B  
 16716 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, \*afii10061  
 16717 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% U+040C  
 16718 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE  
 16719 \DeclareTextCompositeCommand{\`}{PU}{\CYRI}{\84\015}% U+040D  
 16720 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrillic, \*afii10062  
 16721 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E  
 16722 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\016}% U+040E  
 16723 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, \*afii10145  
 16724 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F  
 16725 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, \*afii10017  
 16726 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410  
 16727 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrillic, \*afii10018  
 16728 \DeclareTextCommand{\CYRB}{PU}{\84\021}% U+0411  
 16729 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, \*afii10019  
 16730 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412  
 16731 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, \*afii10020  
 16732 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413  
 16733 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, \*afii10021  
 16734 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414  
 16735 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, \*afii10022  
 16736 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415  
 16737 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, \*afii10024  
 16738 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416  
 16739 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, \*afii10025  
 16740 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417  
 16741 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrillic, \*afii10026  
 16742 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418  
 16743 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; Iishortcyrillic, \*afii10027  
 16744 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419  
 16745 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}% U+0419  
 16746 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, \*afii10028

16747 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A  
16748 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, \*afii10029  
16749 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B  
16750 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, \*afii10030  
16751 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C  
16752 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, \*afii10031  
16753 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D  
16754 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, \*afii10032  
16755 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E  
16756 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, \*afii10033  
16757 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F  
16758 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, \*afii10034  
16759 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420  
16760 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, \*afii10035  
16761 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421  
16762 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, \*afii10036  
16763 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422  
16764 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, \*afii10037  
16765 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423  
16766 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, \*afii10038  
16767 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424  
16768 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, \*afii10039  
16769 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425  
16770 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, \*afii10040  
16771 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426  
16772 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, \*afii10041  
16773 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427  
16774 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, \*afii10042  
16775 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428  
16776 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, \*afii10043  
16777 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429  
16778 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN;  
16779 % Hardsigncyrillic, \*afii10044  
16780 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A  
16781 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, \*afii10045  
16782 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B  
16783 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN;  
16784 % Softsigncyrillic, \*afii10046  
16785 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C  
16786 % U+042D CYRILLIC CAPITAL LETTER E; Eversedcyrillic, \*afii10047  
16787 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D  
16788 % U+042E CYRILLIC CAPITAL LETTER YU; IUcyrillic, \*afii10048  
16789 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E  
16790 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, \*afii10049  
16791 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F  
16792 % U+0430 CYRILLIC SMALL LETTER A; acyrillic, \*afii10065  
16793 \DeclareTextCommand{\cyra}{PU}{\84\060}% U+0430  
16794 % U+0431 CYRILLIC SMALL LETTER BE; \*afii10066, becyrillic  
16795 \DeclareTextCommand{\cyrb}{PU}{\84\061}% U+0431  
16796 % U+0432 CYRILLIC SMALL LETTER VE; \*afii10067, vecyrillic  
16797 \DeclareTextCommand{\cyrv}{PU}{\84\062}% U+0432  
16798 % U+0433 CYRILLIC SMALL LETTER GHE; \*afii10068, gecyrillic  
16799 \DeclareTextCommand{\cyrg}{PU}{\84\063}% U+0433  
16800 % U+0434 CYRILLIC SMALL LETTER DE; \*afii10069, decyrillic

16801 \DeclareTextCommand{\cyrd}{PU}{\84\064}% U+0434  
16802 % U+0435 CYRILLIC SMALL LETTER IE; \*afii10070, iecyrillic  
16803 \DeclareTextCommand{\cyre}{PU}{\84\065}% U+0435  
16804 % U+0436 CYRILLIC SMALL LETTER ZHE; \*afii10072, zhecyrillic  
16805 \DeclareTextCommand{\cyrzh}{PU}{\84\066}% U+0436  
16806 % U+0437 CYRILLIC SMALL LETTER ZE; \*afii10073, zecyrillic  
16807 \DeclareTextCommand{\cyrz}{PU}{\84\067}% U+0437  
16808 % U+0438 CYRILLIC SMALL LETTER I; \*afii10074, iicyrillic  
16809 \DeclareTextCommand{\cyri}{PU}{\84\070}% U+0438  
16810 % U+0439 CYRILLIC SMALL LETTER SHORT I; \*afii10075, iishortcyrillic  
16811 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% U+0439  
16812 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}% U+0439  
16813 % U+043A CYRILLIC SMALL LETTER KA; \*afii10076, kacyrillic  
16814 \DeclareTextCommand{\cyrk}{PU}{\84\072}% U+043A  
16815 % U+043B CYRILLIC SMALL LETTER EL; \*afii10077, elcyrillic  
16816 \DeclareTextCommand{\cyr}{PU}{\84\073}% U+043B  
16817 % U+043C CYRILLIC SMALL LETTER EM; \*afii10078, emcyrillic  
16818 \DeclareTextCommand{\cyrm}{PU}{\84\074}% U+043C  
16819 % U+043D CYRILLIC SMALL LETTER EN; \*afii10079, encyrillic  
16820 \DeclareTextCommand{\cyrn}{PU}{\84\075}% U+043D  
16821 % U+043E CYRILLIC SMALL LETTER O; \*afii10080, ocyrillic  
16822 \DeclareTextCommand{\cyro}{PU}{\84\076}% U+043E  
16823 % U+043F CYRILLIC SMALL LETTER PE; \*afii10081, pecyrillic  
16824 \DeclareTextCommand{\cyrp}{PU}{\84\077}% U+043F  
16825 % U+0440 CYRILLIC SMALL LETTER ER; \*afii10082, ercyrillic  
16826 \DeclareTextCommand{\cyrr}{PU}{\84\100}% U+0440  
16827 % U+0441 CYRILLIC SMALL LETTER ES; \*afii10083, escyrillic  
16828 \DeclareTextCommand{\cyrs}{PU}{\84\101}% U+0441  
16829 % U+0442 CYRILLIC SMALL LETTER TE; \*afii10084, tecyrillic  
16830 \DeclareTextCommand{\cyrt}{PU}{\84\102}% U+0442  
16831 % U+0443 CYRILLIC SMALL LETTER U; \*afii10085, ucyrillic  
16832 \DeclareTextCommand{\cyr}{PU}{\84\103}% U+0443  
16833 % U+0444 CYRILLIC SMALL LETTER EF; \*afii10086, efcyrillic  
16834 \DeclareTextCommand{\cyrf}{PU}{\84\104}% U+0444  
16835 % U+0445 CYRILLIC SMALL LETTER HA; \*afii10087, khacyrillic  
16836 \DeclareTextCommand{\cyrh}{PU}{\84\105}% U+0445  
16837 % U+0446 CYRILLIC SMALL LETTER TSE; \*afii10088, tsecyrillic  
16838 \DeclareTextCommand{\cyr}{PU}{\84\106}% U+0446  
16839 % U+0447 CYRILLIC SMALL LETTER CHE; \*afii10089, checyrillic  
16840 \DeclareTextCommand{\cyrch}{PU}{\84\107}% U+0447  
16841 % U+0448 CYRILLIC SMALL LETTER SHA; \*afii10090, shacyrillic  
16842 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% U+0448  
16843 % U+0449 CYRILLIC SMALL LETTER SHCHA; \*afii10091, shchacyrillic  
16844 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% U+0449  
16845 % U+044A CYRILLIC SMALL LETTER HARD SIGN; \*afii10092, hardsigncyrillic  
16846 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% U+044A  
16847 %\* \cyrhrdsn -> \hardsign (tipa)  
16848 % U+044B CYRILLIC SMALL LETTER YERU; \*afii10093, yericyrillic  
16849 \DeclareTextCommand{\cyrery}{PU}{\84\113}% U+044B  
16850 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; \*afii10094, softsigncyrillic  
16851 \DeclareTextCommand{\cyr}{PU}{\84\114}% U+044C  
16852 %\* \cyr}{PU}{\84\114}% U+044C  
16853 % U+044D CYRILLIC SMALL LETTER E; \*afii10095, ereversedcyrillic



16854 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% U+044D  
 16855 % U+044E CYRILLIC SMALL LETTER YU; \*afii10096, iucyrillic  
 16856 \DeclareTextCommand{\cyryu}{PU}{\84\116}% U+044E  
 16857 % U+044F CYRILLIC SMALL LETTER YA; \*afii10097, iacyrillic  
 16858 \DeclareTextCommand{\cyrya}{PU}{\84\117}% U+044F  
 16859 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE  
 16860 \DeclareTextCompositeCommand{\`}{PU}{\cyre}{\84\120}% U+0450  
 16861 % U+0451 CYRILLIC SMALL LETTER IO; \*afii10071, iocyirillic  
 16862 \DeclareTextCommand{\cyryo}{PU}{\84\121}% U+0451  
 16863 \DeclareTextCompositeCommand{\"}{PU}{\cyre}{\84\121}% U+0451  
 16864 % U+0452 CYRILLIC SMALL LETTER DJE; \*afii10099, djecyrillic  
 16865 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% U+0452  
 16866 % U+0453 CYRILLIC SMALL LETTER GJE; \*afii10100, gjecyrillic  
 16867 \DeclareTextCompositeCommand{\'}{PU}{\cyrg}{\84\123}% U+0453  
 16868 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; \*afii10101, ecyrillic  
 16869 \DeclareTextCommand{\cyrie}{PU}{\84\124}% U+0454  
 16870 % U+0455 CYRILLIC SMALL LETTER DZE; \*afii10102, dzecyrillic  
 16871 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% U+0455  
 16872 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I;  
 16873 % \*afii10103, icyrillic  
 16874 \DeclareTextCommand{\cyrii}{PU}{\84\126}% U+0456  
 16875 % U+0457 CYRILLIC SMALL LETTER YI; \*afii10104, yicyrillic  
 16876 \DeclareTextCommand{\cyryi}{PU}{\84\127}% U+0457  
 16877 \DeclareTextCompositeCommand{\"}{PU}{\cyrii}{\84\127}% U+0457  
 16878 % U+0458 CYRILLIC SMALL LETTER JE; \*afii10105, jecyrillic  
 16879 \DeclareTextCommand{\cyrje}{PU}{\84\130}% U+0458  
 16880 % U+0459 CYRILLIC SMALL LETTER LJE; \*afii10106, ljecyrillic  
 16881 \DeclareTextCommand{\cyrkje}{PU}{\84\131}% U+0459  
 16882 % U+045A CYRILLIC SMALL LETTER NJE; \*afii10107, njecyrillic  
 16883 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% U+045A  
 16884 % U+045B CYRILLIC SMALL LETTER TSHE; \*afii10108, tshecyrillic  
 16885 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% U+045B  
 16886 % U+045C CYRILLIC SMALL LETTER KJE; \*afii10109, kjecyrillic  
 16887 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% U+045C  
 16888 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE  
 16889 \DeclareTextCompositeCommand{\`}{PU}{\cyri}{\84\135}% U+045D  
 16890 % U+045E CYRILLIC SMALL LETTER SHORT U; \*afii10110, ushortcyrillic  
 16891 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E  
 16892 \DeclareTextCompositeCommand{\U}{PU}{\curu}{\84\136}% U+045E  
 16893 % U+045F CYRILLIC SMALL LETTER DZHE; \*afii10193, dzhecyrillic  
 16894 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% U+045F  
 16895 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic  
 16896 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460  
 16897 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrillic  
 16898 \DeclareTextCommand{\cyromega}{PU}{\84\141}% U+0461  
 16899 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, \*afii10146  
 16900 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462  
 16901 % U+0463 CYRILLIC SMALL LETTER YAT; \*afii10194, yatcyrillic  
 16902 \DeclareTextCommand{\cyryat}{PU}{\84\143}% U+0463  
 16903 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic  
 16904 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464  
 16905 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrillic  
 16906 \DeclareTextCommand{\cyriote}{PU}{\84\145}% U+0465  
 16907 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslittlecyrillic

16908 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466  
 16909 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslittlecyrillic  
 16910 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467  
 16911 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslitlei-  
 otifiedcyrillic  
 16912 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468  
 16913 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslitleioti-  
 fiedcyrillic  
 16914 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469  
 16915 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbigcyrillic  
 16916 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A  
 16917 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbigcyrillic  
 16918 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B  
 16919 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbigiotified-  
 cyrillic  
 16920 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C  
 16921 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbigiotified-  
 cyrillic  
 16922 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D  
 16923 % U+046E CYRILLIC CAPITAL LETTER KSI; Ksicyrillic  
 16924 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% U+046E  
 16925 % U+046F CYRILLIC SMALL LETTER KSI; ksicyrillic  
 16926 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F  
 16927 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psicyrillic  
 16928 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470  
 16929 % U+0471 CYRILLIC SMALL LETTER PSI; psicyrillic  
 16930 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471  
 16931 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, \*afii10147  
 16932 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472  
 16933 % U+0473 CYRILLIC SMALL LETTER FITA; \*afii10195, fitacyrillic  
 16934 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473  
 16935 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, \*afii10148  
 16936 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474  
 16937 % U+0475 CYRILLIC SMALL LETTER IZHITSA; \*afii10196, izhitsacyrillic  
 16938 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475  
 16939 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE  
 GRAVE ACCENT; Izhitsadblgravecyrillic  
 16940 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% U+0476  
 16942 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE  
 GRAVE ACCENT; izhitsadblgravecyrillic  
 16944 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477  
 16945 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic  
 16946 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478  
 16947 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic  
 16948 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479  
 16949 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyril-  
 lic  
 16950 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A  
 16951 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic  
 16952 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B  
 16953 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatit-  
 locyrillic  
 16954 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C

16955 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlo-cyrillic  
 16956 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D  
 16957 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic  
 16958 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E  
 16959 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic  
 16960 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F  
 16961 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic  
 16962 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480  
 16963 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic  
 16964 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481  
 16965 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic  
 16966 \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; dasiapneumatacyrilliccmb  
 \84\206: U+0486 COMBINING CYRILLIC PSILI PNEUMATA; psilipneumatacyrilliccmb  
 \84\207: U+0487 COMBINING CYRILLIC POKRYTIE  
 \84\210: U+0488 COMBINING CYRILLIC HUNDRED THOUSANDS SIGN  
 \84\211: U+0489 COMBINING CYRILLIC MILLIONS SIGN  
 16967 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL  
 16968 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A  
 16969 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL  
 16970 \DeclareTextCommand{\cyrishrtdsc}{PU}{\84\213}% U+048B  
 16971 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN  
 16972 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C  
 16973 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN  
 16974 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D  
 16975 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK  
 16976 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E  
 16977 % U+048F CYRILLIC SMALL LETTER ER WITH TICK  
 16978 \DeclareTextCommand{\cyrrtick}{PU}{\84\217}% U+048F  
 16979 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturn-cyrillic, \*afii10050  
 16980 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490  
 16981 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; \*afii10098, gheupturncyrillic  
 16982 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491  
 16983 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestroke-cyrillic  
 16984 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492  
 16985 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic  
 16986 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% U+0493  
 16987 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK;  
 16988 % Ghemiddlehookcyrillic  
 16989 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494  
 16990 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK;  
 16991 % ghemiddlehookcyrillic  
 16992 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495  
 16993 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER;

16994 % Zhedescendercyrillic  
 16995 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496  
 16996 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER;  
 16997 % zhedescendercyrillic  
 16998 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% U+0497  
 16999 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescen-  
 dercyrillic  
 17000 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498  
 17001 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498  
 17002 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescender-  
 cyrillic  
 17003 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% U+0499  
 17004 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499  
 17005 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescen-  
 dercyrillic  
 17006 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A  
 17007 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kadescen-  
 dercyrillic  
 17008 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% U+049B  
 17009 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE;  
 17010 % Kavertikalstrokecyrillic  
 17011 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C  
 17012 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE;  
 17013 % kavertikalstrokecyrillic  
 17014 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D  
 17015 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic  
 17016 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E  
 17017 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic  
 17018 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% U+049F  
 17019 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic  
 17020 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0  
 17021 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic  
 17022 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1  
 17023 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescen-  
 dercyrillic  
 17024 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2  
 17025 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endescender-  
 cyrillic  
 17026 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3  
 17027 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic  
 17028 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4  
 17029 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic  
 17030 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5  
 17031 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemid-  
 dlehookcyrillic  
 17032 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6  
 17033 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddle-  
 hookcyrillic  
 17034 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7  
 17035 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyril-  
 lic  
 17036 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8  
 17037 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic  
 17038 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% U+04A9

17039 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescendercyrillic  
17040 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA  
17041 \DeclareTextCompositeCommand{\CYRSDSC}{PU}{\CYRS}{\84\252}% U+04AA  
17042 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescendercyrillic  
17043 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% U+04AB  
17044 \DeclareTextCompositeCommand{\k}{PU}{\cyrs}{\84\253}% U+04AB  
17045 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescendercyrillic  
17046 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC  
17047 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescendercyrillic  
17048 \DeclareTextCommand{\cyrtddsc}{PU}{\84\255}% U+04AD  
17049 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic  
17050 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE  
17051 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; ustraightcyrillic  
17052 \DeclareTextCommand{\cyry}{PU}{\84\257}% U+04AF  
17053 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Ustraightstrokecyrillic  
17054 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0  
17055 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; usstraightstrokecyrillic  
17056 \DeclareTextCommand{\cyryhcrs}{PU}{\84\261}% U+04B1  
17057 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hadesendercyrillic  
17058 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% U+04B2  
17059 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadesendercyrillic  
17060 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% U+04B3  
17061 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetsecyrillic  
17062 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4  
17063 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetsecyrillic  
17064 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% U+04B5  
17065 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER;  
17066 % Chedescendercyrillic  
17067 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6  
17068 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescendercyrillic  
17069 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% U+04B7  
17070 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE;  
17071 % Cheverticalstrokecyrillic  
17072 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8  
17073 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE;  
17074 % cheverticalstrokecyrillic  
17075 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9  
17076 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic  
17077 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA  
17078 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic  
17079 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB  
17080 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasiancyrillic  
17081 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC  
17082 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyrillic

lic

17083 \DeclareTextCommand{\cyrahch}{PU}{\84\275}% U+04BD

17084 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCENDER; Chedescenderabkhasiancyrillic

17085 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE

17086 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE

17087 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCENDER; chedescenderabkhasiancyrillic

17088 \DeclareTextCommand{\cyrahchdsc}{PU}{\84\277}% U+04BF

17089 \DeclareTextCompositeCommand{\k}{PU}{\cyrahch}{\84\277}% U+04BF

17090 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic

17091 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0

17092 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic

17093 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1

17094 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic

17095 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% U+04C2

17096 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic

17097 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3

17098 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic

17099 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% U+04C4

17100 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL

17101 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5

17102 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL

17103 \DeclareTextCommand{\cyrlldsc}{PU}{\84\306}% U+04C6

17104 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic

17105 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7

17106 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic

17107 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% U+04C8

17108 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakasiancyrillic

17109 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB

17110 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassiancyrillic

17111 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% U+04CC

17112 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL

17113 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD

17114 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL

17115 \DeclareTextCommand{\cyrmdsc}{PU}{\84\316}% U+04CE

\84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA

17116 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevecyrillic

17117 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0

17118 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevecyrillic

17119 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% U+04D1

17120 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyrillic

17121 \DeclareTextCompositeCommand{"}{PU}{\CYRA}{\84\322}% U+04D2

17122 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresiscyrillic

17123 \DeclareTextCompositeCommand{"}{PU}{\cyra}{\84\323}% U+04D3

17124 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aiecyrillic

17125 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4

17126 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aiecyrillic

17127 \DeclareTextCommand{\cyrae}{PU}{\84\325}% U+04D5

17128 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrevecyrillic

17129 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6

17130 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrevacyrillic  
17131 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% U+04D7  
17132 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwacyrillic  
17133 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8  
17134 % U+04D9 CYRILLIC SMALL LETTER SCHWA; \*afii10846, schwacyrillic  
17135 \DeclareTextCommand{\cyrschwa}{PU}{\84\331}% U+04D9  
17136 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS;  
17137 % Schwadieresiscyrillic  
17138 \DeclareTextCompositeCommand{\"}{PU}{\CYRSCHWA}{\84\332}% U+04DA  
17139 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS;  
17140 % schwadieresiscyrillic  
17141 \DeclareTextCompositeCommand{\"}{PU}{\cyrschwa}{\84\333}% U+04DB  
17142 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhedie-  
siscyrillic  
17143 \DeclareTextCompositeCommand{\"}{PU}{\CYRZH}{\84\334}% U+04DC  
17144 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedieresis-  
cyrillic  
17145 \DeclareTextCompositeCommand{\"}{PU}{\cyrzh}{\84\335}% U+04DD  
17146 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedieresis-  
cyrillic  
17147 \DeclareTextCompositeCommand{\"}{PU}{\CYRZ}{\84\336}% U+04DE  
17148 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedieresiscyril-  
lic  
17149 \DeclareTextCompositeCommand{\"}{PU}{\cyrz}{\84\337}% U+04DF  
17150 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasian-  
cyrillic  
17151 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0  
17152 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasiancyril-  
lic  
17153 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% U+04E1  
17154 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Imacroncyrillic  
17155 \DeclareTextCompositeCommand{\=} {PU}{\CYRI}{\84\342}% U+04E2  
17156 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacroncyrillic  
17157 \DeclareTextCompositeCommand{\=} {PU}{\cyri}{\84\343}% U+04E3  
17158 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresiscyrillic  
17159 \DeclareTextCompositeCommand{\"}{PU}{\CYRI}{\84\344}% U+04E4  
17160 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresiscyrillic  
17161 \DeclareTextCompositeCommand{\"}{PU}{\cyri}{\84\345}% U+04E5  
17162 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresiscyril-  
lic  
17163 \DeclareTextCompositeCommand{\"}{PU}{\CYRO}{\84\346}% U+04E6  
17164 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresiscyrillic  
17165 \DeclareTextCompositeCommand{\"}{PU}{\cyro}{\84\347}% U+04E7  
17166 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarredcyrillic  
17167 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8  
17168 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarredcyrillic  
17169 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9  
17170 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERESIS;  
17171 % Obarreddieresiscyrillic  
17172 \DeclareTextCompositeCommand{\"}{PU}{\CYROTLD}{\84\352}% U+04EA  
17173 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS;  
17174 % obarreddieresiscyrillic  
17175 \DeclareTextCompositeCommand{\"}{PU}{\cyrotld}{\84\353}% U+04EB  
17176 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS

17177 \DeclareTextCompositeCommand{"}{PU}{\CYREREV}{\84\354}% U+04EC  
17178 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS  
17179 \DeclareTextCompositeCommand{"}{PU}{\cyreref}{\84\355}% U+04ED  
17180 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacroncyrillic  
17181 \DeclareTextCompositeCommand{=} {PU}{\CYRU}{\84\356}% U+04EE  
17182 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacroncyrillic  
17183 \DeclareTextCompositeCommand{=} {PU}{\cyru}{\84\357}% U+04EF  
17184 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udieresiscyrillic  
17185 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U+04F0  
17186 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udieresiscyrillic  
17187 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% U+04F1  
17188 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhungarumlautcyrillic  
17189 \DeclareTextCompositeCommand{H}{PU}{\CYRU}{\84\362}% U+04F2  
17190 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhungarumlautcyrillic  
17191 \DeclareTextCompositeCommand{H}{PU}{\cyru}{\84\363}% U+04F3  
17192 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chedieresiscyrillic  
17193 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% U+04F4  
17194 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieresiscyrillic  
17195 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% U+04F5  
17196 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER  
17197 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6  
17198 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER  
17199 \DeclareTextCommand{\cyr gdsc}{PU}{\84\367}% U+04F7  
17200 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudieresiscyrillic  
17201 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% U+04F8  
17202 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudieresiscyrillic  
17203 \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  
17204 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK  
17205 \DeclareTextCommand{\CYRHHK}{PU}{\84\374}% U+04FC  
17206 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK  
17207 \DeclareTextCommand{\cyr hkh}{PU}{\84\375}% U+04FD  
17208 \fi  
\84\376: U+04FE CYRILLIC CAPITAL LETTER HA WITH STROKE  
\84\377: U+04FF CYRILLIC SMALL LETTER HA WITH STROKE

#### 47.2.11 Hebrew: U+0590 to U+05FF

Macro names are taken from `he8enc.def`. `hebrew` is only loaded if `\hebdalet` is defined

17209 \ifx\hebdalet\undefined\else  
17210 % U+05C3 HEBREW PUNCTUATION SOF PASUQ



17211 \DeclareTextCommand{\sofpasuq}{PU}{\85\303}% U+05C3  
17212 % U+05D0 HEBREW LETTER ALEF  
17213 \DeclareTextCommand{\hebalef}{PU}{\85\320}% U+05D0  
17214 % U+05D1 HEBREW LETTER BET  
17215 \DeclareTextCommand{\hebbet}{PU}{\85\321}% U+05D1  
17216 % U+05D2 HEBREW LETTER GIMEL  
17217 \DeclareTextCommand{\hebgimel}{PU}{\85\322}% U+05D2  
17218 % U+05D3 HEBREW LETTER DALET  
17219 \DeclareTextCommand{\hebdalet}{PU}{\85\323}% U+05D3  
17220 % U+05D4 HEBREW LETTER HE  
17221 \DeclareTextCommand{\hebhe}{PU}{\85\324}% U+05D4  
17222 % U+05D5 HEBREW LETTER VAV  
17223 \DeclareTextCommand{\hebvav}{PU}{\85\325}% U+05D5  
17224 % U+05D6 HEBREW LETTER ZAYIN  
17225 \DeclareTextCommand{\hebzayin}{PU}{\85\326}% U+05D6  
17226 % U+05D7 HEBREW LETTER HET  
17227 \DeclareTextCommand{\hebbhet}{PU}{\85\327}% U+05D7  
17228 % U+05D8 HEBREW LETTER TET  
17229 \DeclareTextCommand{\hebtet}{PU}{\85\330}% U+05D8  
17230 % U+05D9 HEBREW LETTER YOD  
17231 \DeclareTextCommand{\hebyod}{PU}{\85\331}% U+05D9  
17232 % U+05DA HEBREW LETTER FINAL KAF  
17233 \DeclareTextCommand{\hebfinalkaf}{PU}{\85\332}% U+05DA  
17234 % U+05DB HEBREW LETTER KAF  
17235 \DeclareTextCommand{\hebkafe}{PU}{\85\333}% U+05DB  
17236 % U+05DC HEBREW LETTER LAMED  
17237 \DeclareTextCommand{\heblamed}{PU}{\85\334}% U+05DC  
17238 % U+05DD HEBREW LETTER FINAL MEM  
17239 \DeclareTextCommand{\hebfinalmem}{PU}{\85\335}% U+05DD  
17240 % U+05DE HEBREW LETTER MEM  
17241 \DeclareTextCommand{\hebmeme}{PU}{\85\336}% U+05DE  
17242 % U+05DF HEBREW LETTER FINAL NUN  
17243 \DeclareTextCommand{\hebfinalnun}{PU}{\85\337}% U+05DF  
17244 % U+05E0 HEBREW LETTER NUN  
17245 \DeclareTextCommand{\hebnun}{PU}{\85\340}% U+05E0  
17246 % U+05E1 HEBREW LETTER SAMEKH  
17247 \DeclareTextCommand{\hebsamekh}{PU}{\85\341}% U+05E1  
17248 % U+05E2 HEBREW LETTER AYIN  
17249 \DeclareTextCommand{\hebayin}{PU}{\85\342}% U+05E2  
17250 % U+05E3 HEBREW LETTER FINAL PE  
17251 \DeclareTextCommand{\hebfinalpe}{PU}{\85\343}% U+05E3  
17252 % U+05E4 HEBREW LETTER PE  
17253 \DeclareTextCommand{\hebpe}{PU}{\85\344}% U+05E4  
17254 % U+05E5 HEBREW LETTER FINAL TSADI  
17255 \DeclareTextCommand{\hebfinaltsadi}{PU}{\85\345}% U+05E5  
17256 % U+05E6 HEBREW LETTER TSADI  
17257 \DeclareTextCommand{\hebtsadi}{PU}{\85\346}% U+05E6  
17258 % U+05E7 HEBREW LETTER QOF  
17259 \DeclareTextCommand{\hebqof}{PU}{\85\347}% U+05E7  
17260 % U+05E8 HEBREW LETTER RESH  
17261 \DeclareTextCommand{\hebresh}{PU}{\85\350}% U+05E8  
17262 % U+05E9 HEBREW LETTER SHIN  
17263 \DeclareTextCommand{\hebshin}{PU}{\85\351}% U+05E9  
17264 %\* \hebshin -> \hebsin (he8)

```

17265 % U+05EA HEBREW LETTER TAV
17266 \DeclareTextCommand{\hebtav}{PU}{\85\352}% U+05EA
17267 % U+05F0 HEBREW LIGATURE YIDDISH DOUBLE VAV
17268 \DeclareTextCommand{\doublevav}{PU}{\85\360}% U+05F0
17269 % U+05F1 HEBREW LIGATURE YIDDISH VAV YOD
17270 \DeclareTextCommand{\vavyod}{PU}{\85\361}% U+05F1
17271 % U+05F2 HEBREW LIGATURE YIDDISH DOUBLE YOD
17272 \DeclareTextCommand{\doubleyod}{PU}{\85\362}% U+05F2
17273 \fi

```

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

```

17274 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai
17275 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

```

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

```

17276 % U+1D00 LATIN LETTER SMALL CAPITAL A; \textscA (tipa)
17277 \DeclareTextCommand{\textscA}{PU}{\9035\000}% U+1D00
17278 % U+1D05 LATIN LETTER SMALL CAPITAL D; \scd (wsuipa)
17279 \DeclareTextCommand{\textscd}{PU}{\9035\005}%* U+1D05
17280 % U+1D07 LATIN LETTER SMALL CAPITAL E; \textscE (tipa)
17281 \DeclareTextCommand{\textscE}{PU}{\9035\007}% U+1D07
17282 % U+1D0A LATIN LETTER SMALL CAPITAL J; \textscJ (tipa)
17283 \DeclareTextCommand{\textscJ}{PU}{\9035\012}% U+1D0A
17284 % U+1D0B LATIN LETTER SMALL CAPITAL K; \textscK (tipx)
17285 \DeclareTextCommand{\textPUscK}{PU}{\9035\013}% U+1D0B
17286 %* \textPUscK -> \textscK (tipx)
17287 % U+1D0D LATIN LETTER SMALL CAPITAL M; \textscM (tipx)
17288 \DeclareTextCommand{\textPUscM}{PU}{\9035\015}% U+1D0D
17289 %* \textPUscM -> \textscM (tipx)
17290 % U+1D18 LATIN LETTER SMALL CAPITAL P; \textscP (tipx)
17291 \DeclareTextCommand{\textPUscP}{PU}{\9035\030}% U+1D18
17292 %* \textPUscP -> \textscP (tipx)
17293 % U+1D19 LATIN LETTER SMALL CAPITAL REVERSED R; \textrevscr (tipx)
17294 \DeclareTextCommand{\textPUrevscr}{PU}{\9035\031}% U+1D19
17295 %* \textPUrevscr -> \textrevscr (tipx)
17296 % U+1D1C LATIN LETTER SMALL CAPITAL U; \textscU (tipa), \scu (wsuipa)
17297 \DeclareTextCommand{\textscU}{PU}{\9035\034}%* U+1D1C
17298 % U+1D62 LATIN SUBSCRIPT SMALL LETTER I
17299 \DeclareTextCommand{\textiiinferior}{PU}{\9035\142}%* U+1D62
17300 % U+1D63 LATIN SUBSCRIPT SMALL LETTER R
17301 \DeclareTextCommand{\textrinferior}{PU}{\9035\143}%* U+1D63
17302 % U+1D64 LATIN SUBSCRIPT SMALL LETTER U
17303 \DeclareTextCommand{\textuinferior}{PU}{\9035\144}%* U+1D64
17304 % U+1D65 LATIN SUBSCRIPT SMALL LETTER V
17305 \DeclareTextCommand{\textvinferior}{PU}{\9035\145}%* U+1D65
17306 % U+1D66 GREEK SUBSCRIPT SMALL LETTER BETA
17307 \DeclareTextCommand{\textbetainferior}{PU}{\9035\146}%* U+1D66
17308 % U+1D67 GREEK SUBSCRIPT SMALL LETTER GAMMA
17309 \DeclareTextCommand{\textgammainferior}{PU}{\9035\147}%* U+1D67
17310 % U+1D68 GREEK SUBSCRIPT SMALL LETTER RHO
17311 \DeclareTextCommand{\textrhoinferior}{PU}{\9035\150}%* U+1D68
17312 % U+1D69 GREEK SUBSCRIPT SMALL LETTER PHI
17313 \DeclareTextCommand{\textphiinferior}{PU}{\9035\151}%* U+1D69

```

17314 % U+1D6A GREEK SUBSCRIPT SMALL LETTER CHI  
 17315 \DeclareTextCommand{\textchiinferior}{PU}{\9035\152}%\* U+1D6A  
 17316 % U+1D7B LATIN SMALL CAPITAL LETTER I WITH STROKE;  
 17317 % \barsci (wsuipa)  
 17318 \DeclareTextCommand{\textbarsci}{PU}{\9035\173}%\* U+1D7B  
 17319 % U+1D7D LATIN SMALL LETTER P WITH STROKE; \barp (wsuipa)  
 17320 \DeclareTextCommand{\textbarp}{PU}{\9035\175}%\* U+1D7D  
 17321 % U+1D7E LATIN SMALL CAPITAL LETTER U WITH STROKE;  
 17322 % \barscu (wsuipa)  
 17323 \DeclareTextCommand{\textbarscu}{PU}{\9035\176}%\* U+1D7E

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

17324 % U+1D8F LATIN SMALL LETTER A WITH RETROFLEX HOOK; \tex-  
 trhooka (tipx)  
 17325 \DeclareTextCommand{\textPurhooka}{PU}{\9035\217}% U+1D8F  
 17326 %\* \textPurhooka -> \textrhooka (tipx)  
 17327 % U+1D91 LATIN SMALL LETTER D WITH HOOK AND TAIL; \texthtr-  
 taild (tipa)  
 17328 \DeclareTextCommand{\texthtrtaild}{PU}{\9035\221}%\* U+1D91  
 17329 % U+1D92 LATIN SMALL LETTER E WITH RETROFLEX HOOK; \tex-  
 trhooke (tipx)  
 17330 \DeclareTextCommand{\textPurhooke}{PU}{\9035\222}% U+1D92  
 17331 %\* \textPurhooke -> \textrhooke (tipx)  
 17332 % U+1D93 LATIN SMALL LETTER OPEN E WITH RETROFLEX HOOK;  
 17333 % \textrhookepsilon (tipx)  
 17334 \DeclareTextCommand{\textPurhookepsilon}{PU}{\9035\223}% U+1D93  
 17335 %\* \textPurhookepsilon -> \textrhookepsilon (tipx)  
 17336 % U+1D97 LATIN SMALL LETTER OPEN O WITH RETROFLEX HOOK;  
 17337 % \textrhookopeno (tipx)  
 17338 \DeclareTextCommand{\textPurhookopeno}{PU}{\9035\227}% U+1D97  
 17339 %\* \textPurhookopeno -> \textrhookopeno (tipx)

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

17340 % U+1E00 LATIN CAPITAL LETTER A WITH RING BELOW; Aringbelow  
 17341 \DeclareTextCompositeCommand{\textsubring}{PU}{A}{\9036\000}% U+1E00  
 17342 % U+1E01 LATIN SMALL LETTER A WITH RING BELOW; aringbelow  
 17343 \DeclareTextCompositeCommand{\textsubring}{PU}{a}{\9036\001}% U+1E01  
 17344 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent  
 17345 \DeclareTextCompositeCommand{\.}{PU}{B}{\9036\002}% U+1E02  
 17346 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent  
 17347 \DeclareTextCompositeCommand{\.}{PU}{b}{\9036\003}% U+1E03  
 17348 % U+1E04 LATIN CAPITAL LETTER B WITH DOT BELOW; Bdotbelow  
 17349 \DeclareTextCompositeCommand{\d}{PU}{B}{\9036\004}% U+1E04  
 17350 % U+1E05 LATIN SMALL LETTER B WITH DOT BELOW; bdotbelow  
 17351 \DeclareTextCompositeCommand{\d}{PU}{b}{\9036\005}% U+1E05  
 17352 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow  
 17353 \DeclareTextCompositeCommand{\b}{PU}{B}{\9036\006}% U+1E06  
 17354 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow  
 17355 \DeclareTextCompositeCommand{\b}{PU}{b}{\9036\007}% U+1E07  
 17356 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent  
 17357 \DeclareTextCompositeCommand{\.}{PU}{D}{\9036\012}% U+1E0A  
 17358 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent  
 17359 \DeclareTextCompositeCommand{\.}{PU}{d}{\9036\013}% U+1E0B  
 17360 % U+1E0C LATIN CAPITAL LETTER D WITH DOT BELOW; Ddotbelow

17361 \DeclareTextCompositeCommand{\d}{PU}{D}{\9036\014}% U+1E0C  
17362 % U+1E0D LATIN SMALL LETTER D WITH DOT BELOW; ddotbelow  
17363 \DeclareTextCompositeCommand{\d}{PU}{d}{\9036\015}% U+1E0D  
17364 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow  
17365 \DeclareTextCompositeCommand{\b}{PU}{D}{\9036\016}% U+1E0E  
17366 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow  
17367 \DeclareTextCompositeCommand{\b}{PU}{d}{\9036\017}% U+1E0F  
17368 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla  
17369 \DeclareTextCompositeCommand{\c}{PU}{D}{\9036\020}% U+1E10  
17370 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla  
17371 \DeclareTextCompositeCommand{\c}{PU}{d}{\9036\021}% U+1E11  
17372 % U+1E12 LATIN CAPITAL LETTER D WITH CIRCUMFLEX BELOW; Dcir-  
cumflexbelow  
17373 \DeclareTextCompositeCommand{\textsubcircum}{PU}{D}{\9036\022}% U+1E12  
17374 % U+1E13 LATIN SMALL LETTER D WITH CIRCUMFLEX BELOW; dcir-  
cumflexbelow  
17375 \DeclareTextCompositeCommand{\textsubcircum}{PU}{d}{\9036\023}% U+1E13  
17376 % U+1E14 LATIN CAPITAL LETTER E WITH MACRON AND GRAVE;  
17377 % E macrongrave  
17378 \DeclareTextCompositeCommand{\textgravemacron}{PU}{E}{\9036\024}% U+1E14  
17379 % U+1E15 LATIN SMALL LETTER E WITH MACRON AND GRAVE;  
17380 % e macrongrave  
17381 \DeclareTextCompositeCommand{\textgravemacron}{PU}{e}{\9036\025}% U+1E15  
17382 % U+1E16 LATIN CAPITAL LETTER E WITH MACRON AND ACUTE;  
17383 % E macronacute  
17384 \DeclareTextCompositeCommand{\textacutemacron}{PU}{E}{\9036\026}% U+1E16  
17385 % U+1E17 LATIN SMALL LETTER E WITH MACRON AND ACUTE;  
17386 % e macronacute  
17387 \DeclareTextCompositeCommand{\textacutemacron}{PU}{e}{\9036\027}% U+1E17  
17388 % U+1E18 LATIN CAPITAL LETTER E WITH CIRCUMFLEX BELOW; Ecir-  
cumflexbelow  
17389 \DeclareTextCompositeCommand{\textsubcircum}{PU}{E}{\9036\030}% U+1E18  
17390 % U+1E19 LATIN SMALL LETTER E WITH CIRCUMFLEX BELOW; ecir-  
cumflexbelow  
17391 \DeclareTextCompositeCommand{\textsubcircum}{PU}{e}{\9036\031}% U+1E19  
17392 % U+1E1A LATIN CAPITAL LETTER E WITH TILDE BELOW; Etildebelow  
17393 \DeclareTextCompositeCommand{\textsubtilde}{PU}{E}{\9036\032}% U+1E1A  
17394 % U+1E1B LATIN SMALL LETTER E WITH TILDE BELOW; etildebelow  
17395 \DeclareTextCompositeCommand{\textsubtilde}{PU}{e}{\9036\033}% U+1E1B  
17396 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent  
17397 \DeclareTextCompositeCommand{\.}{PU}{F}{\9036\036}% U+1E1E  
17398 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent  
17399 \DeclareTextCompositeCommand{\.}{PU}{f}{\9036\037}% U+1E1F  
17400 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron  
17401 \DeclareTextCompositeCommand{\=}{PU}{G}{\9036\040}% U+1E20  
17402 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron  
17403 \DeclareTextCompositeCommand{\=}{PU}{g}{\9036\041}% U+1E21  
17404 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent  
17405 \DeclareTextCompositeCommand{\.}{PU}{H}{\9036\042}% U+1E22  
17406 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent  
17407 \DeclareTextCompositeCommand{\.}{PU}{h}{\9036\043}% U+1E23  
17408 % U+1E24 LATIN CAPITAL LETTER H WITH DOT BELOW; Hdotbelow  
17409 \DeclareTextCompositeCommand{\d}{PU}{H}{\9036\044}% U+1E24  
17410 % U+1E25 LATIN SMALL LETTER H WITH DOT BELOW; hdotbelow

17411 \DeclareTextCompositeCommand{\d}{PU}{h}{\9036\045}% U+1E25  
17412 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis  
17413 \DeclareTextCompositeCommand{\"}{PU}{H}{\9036\046}% U+1E26  
17414 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis  
17415 \DeclareTextCompositeCommand{\"}{PU}{h}{\9036\047}% U+1E27  
17416 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla  
17417 \DeclareTextCompositeCommand{\c}{PU}{H}{\9036\050}% U+1E28  
17418 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla  
17419 \DeclareTextCompositeCommand{\c}{PU}{h}{\9036\051}% U+1E29  
17420 % U+1E2A LATIN CAPITAL LETTER H WITH BREVE BELOW; Hbrevebelow  
17421 \DeclareTextCompositeCommand{\textsubbreve}{PU}{H}{\9036\052}% U+1E2A  
17422 % U+1E2B LATIN SMALL LETTER H WITH BREVE BELOW; hbrevebelow  
17423 \DeclareTextCompositeCommand{\textsubbreve}{PU}{h}{\9036\053}% U+1E2B  
17424 % U+1E2C LATIN CAPITAL LETTER I WITH TILDE BELOW; Itildebelow  
17425 \DeclareTextCompositeCommand{\textsubtilde}{PU}{I}{\9036\054}% U+1E2C  
17426 % U+1E2D LATIN SMALL LETTER I WITH TILDE BELOW; itildebelow  
17427 \DeclareTextCompositeCommand{\textsubtilde}{PU}{i}{\9036\055}% U+1E2D  
17428 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute  
17429 \DeclareTextCompositeCommand{\'}{PU}{K}{\9036\060}% U+1E30  
17430 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute  
17431 \DeclareTextCompositeCommand{\'}{PU}{k}{\9036\061}% U+1E31  
17432 % U+1E32 LATIN CAPITAL LETTER K WITH DOT BELOW; Kdotbelow  
17433 \DeclareTextCompositeCommand{\d}{PU}{K}{\9036\062}% U+1E32  
17434 % U+1E33 LATIN SMALL LETTER K WITH DOT BELOW; kdotbelow  
17435 \DeclareTextCompositeCommand{\d}{PU}{k}{\9036\063}% U+1E33  
17436 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow  
17437 \DeclareTextCompositeCommand{\b}{PU}{K}{\9036\064}% U+1E34  
17438 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow  
17439 \DeclareTextCompositeCommand{\b}{PU}{k}{\9036\065}% U+1E35  
17440 % U+1E36 LATIN CAPITAL LETTER L WITH DOT BELOW; Ldotbelow  
17441 \DeclareTextCompositeCommand{\d}{PU}{L}{\9036\066}% U+1E36  
17442 % U+1E37 LATIN SMALL LETTER L WITH DOT BELOW; ldotbelow  
17443 \DeclareTextCompositeCommand{\d}{PU}{l}{\9036\067}% U+1E37  
17444 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow  
17445 \DeclareTextCompositeCommand{\b}{PU}{L}{\9036\072}% U+1E3A  
17446 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow  
17447 \DeclareTextCompositeCommand{\b}{PU}{l}{\9036\073}% U+1E3B  
17448 % U+1E3C LATIN CAPITAL LETTER L WITH CIRCUMFLEX BELOW; Lcir-  
cumflexbelow  
17449 \DeclareTextCompositeCommand{\textsubcircum}{PU}{L}{\9036\074}% U+1E3C  
17450 % U+1E3D LATIN SMALL LETTER L WITH CIRCUMFLEX BELOW; lcir-  
cumflexbelow  
17451 \DeclareTextCompositeCommand{\textsubcircum}{PU}{l}{\9036\075}% U+1E3D  
17452 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute  
17453 \DeclareTextCompositeCommand{\'}{PU}{M}{\9036\076}% U+1E3E  
17454 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute  
17455 \DeclareTextCompositeCommand{\'}{PU}{m}{\9036\077}% U+1E3F  
17456 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent  
17457 \DeclareTextCompositeCommand{\.}{PU}{M}{\9036\100}% U+1E40  
17458 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent  
17459 \DeclareTextCompositeCommand{\.}{PU}{m}{\9036\101}% U+1E41  
17460 % U+1E42 LATIN CAPITAL LETTER M WITH DOT BELOW; Mdotbelow  
17461 \DeclareTextCompositeCommand{\d}{PU}{M}{\9036\102}% U+1E42  
17462 % U+1E43 LATIN SMALL LETTER M WITH DOT BELOW; mdotbelow

17463 \DeclareTextCompositeCommand{\d}{PU}{m}{\9036\103}% U+1E43  
17464 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent  
17465 \DeclareTextCompositeCommand{\.}{PU}{N}{\9036\104}% U+1E44  
17466 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent  
17467 \DeclareTextCompositeCommand{\.}{PU}{n}{\9036\105}% U+1E45  
17468 % U+1E46 LATIN CAPITAL LETTER N WITH DOT BELOW; Ndotbelow  
17469 \DeclareTextCompositeCommand{\d}{PU}{N}{\9036\106}% U+1E46  
17470 % U+1E47 LATIN SMALL LETTER N WITH DOT BELOW; ndotbelow  
17471 \DeclareTextCompositeCommand{\d}{PU}{n}{\9036\107}% U+1E47  
17472 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow  
17473 \DeclareTextCompositeCommand{\b}{PU}{N}{\9036\110}% U+1E48  
17474 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow  
17475 \DeclareTextCompositeCommand{\b}{PU}{n}{\9036\111}% U+1E49  
17476 % U+1E4A LATIN CAPITAL LETTER N WITH CIRCUMFLEX BELOW; Ncir-  
cumflexbelow  
17477 \DeclareTextCompositeCommand{\textsubcircum}{PU}{N}{\9036\112}% U+1E4A  
17478 % U+1E4B LATIN SMALL LETTER N WITH CIRCUMFLEX BELOW; ncir-  
cumflexbelow  
17479 \DeclareTextCompositeCommand{\textsubcircum}{PU}{n}{\9036\113}% U+1E4B  
17480 % U+1E50 LATIN CAPITAL LETTER O WITH MACRON AND GRAVE;  
17481 % Omacrongrave  
17482 \DeclareTextCompositeCommand{\textgravemacron}{PU}{O}{\9036\120}% U+1E50  
17483 % U+1E51 LATIN SMALL LETTER O WITH MACRON AND GRAVE;  
17484 % omacrongrave  
17485 \DeclareTextCompositeCommand{\textgravemacron}{PU}{o}{\9036\121}% U+1E51  
17486 % U+1E52 LATIN CAPITAL LETTER O WITH MACRON AND ACUTE;  
17487 % Omacronacute  
17488 \DeclareTextCompositeCommand{\textacutemacron}{PU}{O}{\9036\122}% U+1E52  
17489 % U+1E53 LATIN SMALL LETTER O WITH MACRON AND ACUTE;  
17490 % omacronacute  
17491 \DeclareTextCompositeCommand{\textacutemacron}{PU}{o}{\9036\123}% U+1E53  
17492 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute  
17493 \DeclareTextCompositeCommand{\'}{PU}{P}{\9036\124}% U+1E54  
17494 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute  
17495 \DeclareTextCompositeCommand{\'}{PU}{p}{\9036\125}% U+1E55  
17496 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent  
17497 \DeclareTextCompositeCommand{\.}{PU}{P}{\9036\126}% U+1E56  
17498 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent  
17499 \DeclareTextCompositeCommand{\.}{PU}{p}{\9036\127}% U+1E57  
17500 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent  
17501 \DeclareTextCompositeCommand{\.}{PU}{R}{\9036\130}% U+1E58  
17502 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent  
17503 \DeclareTextCompositeCommand{\.}{PU}{r}{\9036\131}% U+1E59  
17504 % U+1E5A LATIN CAPITAL LETTER R WITH DOT BELOW; Rdotbelow  
17505 \DeclareTextCompositeCommand{\d}{PU}{R}{\9036\132}% U+1E5A  
17506 % U+1E5B LATIN SMALL LETTER R WITH DOT BELOW; rdotbelow  
17507 \DeclareTextCompositeCommand{\d}{PU}{r}{\9036\133}% U+1E5B  
17508 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow  
17509 \DeclareTextCompositeCommand{\b}{PU}{R}{\9036\136}% U+1E5E  
17510 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow  
17511 \DeclareTextCompositeCommand{\b}{PU}{r}{\9036\137}% U+1E5F  
17512 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent  
17513 \DeclareTextCompositeCommand{\.}{PU}{S}{\9036\140}% U+1E60  
17514 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent

17515 \DeclareTextCompositeCommand{\.}{PU}{s}{\9036\141}% U+1E61  
17516 % U+1E62 LATIN CAPITAL LETTER S WITH DOT BELOW; Sdotbelow  
17517 \DeclareTextCompositeCommand{\d}{PU}{S}{\9036\142}% U+1E62  
17518 % U+1E63 LATIN SMALL LETTER S WITH DOT BELOW; sdotbelow  
17519 \DeclareTextCompositeCommand{\d}{PU}{s}{\9036\143}% U+1E63  
17520 % U+1E6A LATIN CAPITAL LETTER T WITH DOT ABOVE; Tdotaccent  
17521 \DeclareTextCompositeCommand{\.}{PU}{T}{\9036\152}% U+1E6A  
17522 % U+1E6B LATIN SMALL LETTER T WITH DOT ABOVE; tdotaccent  
17523 \DeclareTextCompositeCommand{\.}{PU}{t}{\9036\153}% U+1E6B  
17524 % U+1E6C LATIN CAPITAL LETTER T WITH DOT BELOW; Tdotbelow  
17525 \DeclareTextCompositeCommand{\d}{PU}{T}{\9036\154}% U+1E6C  
17526 % U+1E6D LATIN SMALL LETTER T WITH DOT BELOW; tdotbelow  
17527 \DeclareTextCompositeCommand{\d}{PU}{t}{\9036\155}% U+1E6D  
17528 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow  
17529 \DeclareTextCompositeCommand{\b}{PU}{T}{\9036\156}% U+1E6E  
17530 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow  
17531 \DeclareTextCompositeCommand{\b}{PU}{t}{\9036\157}% U+1E6F  
17532 % U+1E70 LATIN CAPITAL LETTER T WITH CIRCUMFLEX BELOW; Tcir-  
cumflexbelow  
17533 \DeclareTextCompositeCommand{\textsubcircum}{PU}{T}{\9036\160}% U+1E70  
17534 % U+1E71 LATIN SMALL LETTER T WITH CIRCUMFLEX BELOW; tcir-  
cumflexbelow  
17535 \DeclareTextCompositeCommand{\textsubcircum}{PU}{t}{\9036\161}% U+1E71  
17536 % U+1E72 LATIN CAPITAL LETTER U WITH DIAERESIS BELOW; Udiere-  
sisbelow  
17537 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{U}{\9036\162}% U+1E72  
17538 % U+1E73 LATIN SMALL LETTER U WITH DIAERESIS BELOW; udiere-  
sisbelow  
17539 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{u}{\9036\163}% U+1E73  
17540 % U+1E74 LATIN CAPITAL LETTER U WITH TILDE BELOW; Utildebelow  
17541 \DeclareTextCompositeCommand{\textsubtilde}{PU}{U}{\9036\164}% U+1E74  
17542 % U+1E75 LATIN SMALL LETTER U WITH TILDE BELOW; utildebelow  
17543 \DeclareTextCompositeCommand{\textsubtilde}{PU}{u}{\9036\165}% U+1E75  
17544 % U+1E76 LATIN CAPITAL LETTER U WITH CIRCUMFLEX BELOW; Ucir-  
cumflexbelow  
17545 \DeclareTextCompositeCommand{\textsubcircum}{PU}{U}{\9036\166}% U+1E76  
17546 % U+1E77 LATIN SMALL LETTER U WITH CIRCUMFLEX BELOW; ucir-  
cumflexbelow  
17547 \DeclareTextCompositeCommand{\textsubcircum}{PU}{u}{\9036\167}% U+1E77  
17548 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde  
17549 \DeclareTextCompositeCommand{\~}{PU}{V}{\9036\174}% U+1E7C  
17550 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde  
17551 \DeclareTextCompositeCommand{\~}{PU}{v}{\9036\175}% U+1E7D  
17552 % U+1E7E LATIN CAPITAL LETTER V WITH DOT BELOW; Vdotbelow  
17553 \DeclareTextCompositeCommand{\d}{PU}{V}{\9036\176}% U+1E7E  
17554 % U+1E7F LATIN SMALL LETTER V WITH DOT BELOW; vdotbelow  
17555 \DeclareTextCompositeCommand{\d}{PU}{v}{\9036\177}% U+1E7F  
17556 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave  
17557 \DeclareTextCompositeCommand{\`}{PU}{W}{\9036\200}% U+1E80  
17558 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave  
17559 \DeclareTextCompositeCommand{\`}{PU}{w}{\9036\201}% U+1E81  
17560 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute  
17561 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\202}% U+1E82  
17562 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute

17563 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\203}% U+1E83  
17564 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis  
17565 \DeclareTextCompositeCommand{\"}{PU}{W}{\9036\204}% U+1E84  
17566 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis  
17567 \DeclareTextCompositeCommand{\.}{PU}{w}{\9036\205}% U+1E85  
17568 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent  
17569 \DeclareTextCompositeCommand{\.}{PU}{W}{\9036\206}% U+1E86  
17570 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent  
17571 \DeclareTextCompositeCommand{\.}{PU}{w}{\9036\207}% U+1E87  
17572 % U+1E88 LATIN CAPITAL LETTER W WITH DOT BELOW; wdotbelow  
17573 \DeclareTextCompositeCommand{\d}{PU}{W}{\9036\210}% U+1E88  
17574 % U+1E89 LATIN SMALL LETTER W WITH DOT BELOW; wdotbelow  
17575 \DeclareTextCompositeCommand{\d}{PU}{w}{\9036\211}% U+1E89  
17576 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent  
17577 \DeclareTextCompositeCommand{\.}{PU}{X}{\9036\212}% U+1E8A  
17578 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent  
17579 \DeclareTextCompositeCommand{\.}{PU}{x}{\9036\213}% U+1E8B  
17580 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis  
17581 \DeclareTextCompositeCommand{\"}{PU}{X}{\9036\214}% U+1E8C  
17582 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis  
17583 \DeclareTextCompositeCommand{\"}{PU}{x}{\9036\215}% U+1E8D  
17584 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent  
17585 \DeclareTextCompositeCommand{\.}{PU}{Y}{\9036\216}% U+1E8E  
17586 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent  
17587 \DeclareTextCompositeCommand{\.}{PU}{y}{\9036\217}% U+1E8F  
17588 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex  
17589 \DeclareTextCompositeCommand{\^}{PU}{Z}{\9036\220}% U+1E90  
17590 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex  
17591 \DeclareTextCompositeCommand{\^}{PU}{z}{\9036\221}% U+1E91  
17592 % U+1E92 LATIN CAPITAL LETTER Z WITH DOT BELOW; Zdotbelow  
17593 \DeclareTextCompositeCommand{\d}{PU}{Z}{\9036\222}% U+1E92  
17594 % U+1E93 LATIN SMALL LETTER Z WITH DOT BELOW; zdotbelow  
17595 \DeclareTextCompositeCommand{\d}{PU}{z}{\9036\223}% U+1E93  
17596 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow  
17597 \DeclareTextCompositeCommand{\b}{PU}{Z}{\9036\224}% U+1E94  
17598 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow  
17599 \DeclareTextCompositeCommand{\b}{PU}{z}{\9036\225}% U+1E95  
17600 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow  
17601 \DeclareTextCompositeCommand{\b}{PU}{h}{\9036\226}% U+1E96  
17602 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis  
17603 \DeclareTextCompositeCommand{\"}{PU}{t}{\9036\227}% U+1E97  
17604 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring  
17605 \DeclareTextCompositeCommand{\r}{PU}{w}{\9036\230}% U+1E98  
17606 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring  
17607 \DeclareTextCompositeCommand{\r}{PU}{y}{\9036\231}% U+1E99  
17608 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdotaccent  
17609 \DeclareTextCompositeCommand{\.}{PU}{\textlongs}{\9036\233}% U+1E9B  
17610 % U+1EA0 LATIN CAPITAL LETTER A WITH DOT BELOW; Adotbelow  
17611 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}% U+1EA0  
17612 % U+1EA1 LATIN SMALL LETTER A WITH DOT BELOW; adotbelow  
17613 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}% U+1EA1  
17614 % U+1EB8 LATIN CAPITAL LETTER E WITH DOT BELOW; Edotbelow  
17615 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}% U+1EB8



17616 % U+1EB9 LATIN SMALL LETTER E WITH DOT BELOW; edotbelow  
 17617 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}% U+1EB9  
 17618 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde  
 17619 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
 17620 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde  
 17621 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
 17622 % U+1ECA LATIN CAPITAL LETTER I WITH DOT BELOW; Idotbelow  
 17623 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}% U+1ECA  
 17624 % U+1ECB LATIN SMALL LETTER I WITH DOT BELOW; idotbelow  
 17625 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}% U+1ECB  
 17626 % U+1ECC LATIN CAPITAL LETTER O WITH DOT BELOW; Odotbelow  
 17627 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}% U+1ECC  
 17628 % U+1ECD LATIN SMALL LETTER O WITH DOT BELOW; odotbelow  
 17629 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}% U+1ECD  
 17630 % U+1EE4 LATIN CAPITAL LETTER U WITH DOT BELOW; Udotbelow  
 17631 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4  
 17632 % U+1EE5 LATIN SMALL LETTER U WITH DOT BELOW; udotbelow  
 17633 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}% U+1EE5  
 17634 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave  
 17635 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2  
 17636 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave  
 17637 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3  
 17638 % U+1EF4 LATIN CAPITAL LETTER Y WITH DOT BELOW; Ydotbelow  
 17639 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4  
 17640 % U+1EF5 LATIN SMALL LETTER Y WITH DOT BELOW; ydotbelow  
 17641 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}% U+1EF5  
 17642 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde  
 17643 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8  
 17644 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde  
 17645 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9

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

17646 % U+200C ZERO WIDTH NON-JOINER; \*afii61664, zerowidthnonjoiner  
 17647 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C  
 17648 % U+2013 EN DASH; endash  
 17649 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013  
 17650 % U+2014 EM DASH; emdash  
 17651 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014  
 17652 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar  
 17653 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016  
 17654 %\* \textbardbl -> \textdoublevertline (tipa)  
 17655 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 17656 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018  
 17657 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 17658 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019  
 17659 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 17660 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A  
 17661 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 17662 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034}% U+201C  
 17663 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 17664 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035}% U+201D  
 17665 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 17666 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E  
 17667 % U+2020 DAGGER; dagger

17668 \DeclareTextCommand{\textdagger}{PU}{\9040\040}%\* U+2020  
17669 %\* \textdagger -> \dag (LaTeX)  
17670 % U+2021 DOUBLE DAGGER; daggerdbl; \ddagger (LaTeX)  
17671 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021  
17672 %\* \textdaggerdbl -> \ddagger (LaTeX)  
17673 %\* \textdaggerdbl -> \ddag (LaTeX)  
17674 % U+2022 BULLET; bullet  
17675 \DeclareTextCommand{\textbullet}{PU}{\9040\042}%\* U+2022  
17676 % U+2025 TWO DOT LEADER; \hdotfor (MnSymbol)  
17677 \DeclareTextCommand{\texthdotfor}{PU}{\9040\045}%\* U+2025  
17678 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
17679 \DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026  
17680 %\* \textellipsis -> \mathellipsis  
17681 % U+2030 PER MILLE SIGN; perthousand  
17682 \DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030  
17683 % U+2031 PER TEN THOUSAND SIGN  
17684 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031  
17685 % U+2032 PRIME; minute; \prime (MnSymbol)  
17686 \DeclareTextCommand{\textprime}{PU}{\9040\062}%\* U+2032  
17687 % U+2033 DOUBLE PRIME; \second (mathabx)  
17688 \DeclareTextCommand{\textsecond}{PU}{\9040\063}%\* U+2033  
17689 % U+2034 TRIPLE PRIME; \third (mathabx)  
17690 \DeclareTextCommand{\textthird}{PU}{\9040\064}%\* U+2034  
17691 % U+2035 REVERSED PRIME; \backprime (AmsS)  
17692 \DeclareTextCommand{\textbackprime}{PU}{\9040\065}%\* U+2035  
17693 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
ingleft  
17694 \DeclareTextCommand{\guilsingleft}{PU}{\9040\071}% U+2039  
17695 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
ingright  
17696 \DeclareTextCommand{\guilsingright}{PU}{\9040\072}% U+203A  
17697 % U+203B REFERENCE MARK; referencemark  
17698 \DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B  
17699 % U+203D INTERROBANG  
17700 \DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D  
17701 % U+2044 FRACTION SLASH; fraction  
17702 \DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044  
17703 % U+2045 LEFT SQUARE BRACKET WITH QUILL  
17704 \DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045  
17705 % U+2046 RIGHT SQUARE BRACKET WITH QUILL  
17706 \DeclareTextCommand{\textrquill}{PU}{\9040\106}% U+2046  
17707 % U+2052 COMMERCIAL MINUS SIGN  
17708 \DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052  
17709 % U+2056 THREE DOT PUNCTUATION; \lefttherefore (MnSymbol)  
17710 \DeclareTextCommand{\textlefttherefore}{PU}{\9040\126}%\* U+2056  
17711 % U+2057 QUADRUPLE PRIME; \fourth (mathabx)  
17712 \DeclareTextCommand{\textfourth}{PU}{\9040\127}%\* U+2057  
17713 % U+2058 FOUR DOT PUNCTUATION; \diamonddots (MnSymbol)  
17714 \DeclareTextCommand{\textdiamonddots}{PU}{\9040\130}%\* U+2058

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

17715 % U+2070 SUPERSCRIPT ZERO; zerosuperior  
17716 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}%\* U+2070  
17717 % U+2071 SUPERSCRIPT LATIN SMALL LETTER I

17718 \DeclareTextCommand{\textisuperior}{PU}{\9040\161}%\* U+2071  
17719 % U+2074 SUPERSCRIPT FOUR; foursuperior  
17720 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}%\* U+2074  
17721 % U+2075 SUPERSCRIPT FIVE; fivesuperior  
17722 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}%\* U+2075  
17723 % U+2076 SUPERSCRIPT SIX; sixsuperior  
17724 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}%\* U+2076  
17725 % U+2077 SUPERSCRIPT SEVEN; sevensuperior  
17726 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}%\* U+2077  
17727 % U+2078 SUPERSCRIPT EIGHT; eightsuperior  
17728 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170}%\* U+2078  
17729 % U+2079 SUPERSCRIPT NINE; ninesuperior  
17730 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171}%\* U+2079  
17731 % U+207A SUPERSCRIPT PLUS SIGN; plussuperior  
17732 \DeclareTextCommand{\textplussuperior}{PU}{\9040\172}%\* U+207A  
17733 % U+207B SUPERSCRIPT MINUS  
17734 \DeclareTextCommand{\textminussuperior}{PU}{\9040\173}%\* U+207B  
17735 % U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior  
17736 \DeclareTextCommand{\textequalsuperior}{PU}{\9040\174}%\* U+207C  
17737 % U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftsuperior  
17738 \DeclareTextCommand{\textparenleftsuperior}{PU}{\9040\175}%\* U+207D  
17739 % U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightsuperior  
17740 \DeclareTextCommand{\textparenrightsuperior}{PU}{\9040\176}%\* U+207E  
17741 % U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior  
17742 \DeclareTextCommand{\textnsuperior}{PU}{\9040\177}%\* U+207F  
17743 % U+2080 SUBSCRIPT ZERO; zeroinferior  
17744 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}%\* U+2080  
17745 % U+2081 SUBSCRIPT ONE; oneinferior  
17746 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201}%\* U+2081  
17747 % U+2082 SUBSCRIPT TWO; twoinferior  
17748 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}%\* U+2082  
17749 % U+2083 SUBSCRIPT THREE; threeminferior  
17750 \DeclareTextCommand{\textthreeminferior}{PU}{\9040\203}%\* U+2083  
17751 % U+2084 SUBSCRIPT FOUR; fourinferior  
17752 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204}%\* U+2084  
17753 % U+2085 SUBSCRIPT FIVE; fiveinferior  
17754 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}%\* U+2085  
17755 % U+2086 SUBSCRIPT SIX; sixinferior  
17756 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}%\* U+2086  
17757 % U+2087 SUBSCRIPT SEVEN; seveninferior  
17758 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}%\* U+2087  
17759 % U+2088 SUBSCRIPT EIGHT; eightinferior  
17760 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}%\* U+2088  
17761 % U+2089 SUBSCRIPT NINE; nineinferior  
17762 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}%\* U+2089  
17763 % U+208A SUBSCRIPT PLUS SIGN  
17764 \DeclareTextCommand{\textplusinferior}{PU}{\9040\212}%\* U+208A  
17765 % U+208B SUBSCRIPT MINUS  
17766 \DeclareTextCommand{\textminusinferior}{PU}{\9040\213}%\* U+208B  
17767 % U+208C SUBSCRIPT EQUALS SIGN  
17768 \DeclareTextCommand{\textequalsinferior}{PU}{\9040\214}%\* U+208C  
17769 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior  
17770 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}%\* U+208D  
17771 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior

17772 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}%\* U+208E  
 17773 % U+2090 LATIN SUBSCRIPT SMALL LETTER A  
 17774 \DeclareTextCommand{\textainferior}{PU}{\9040\220}%\* U+2090  
 17775 % U+2091 LATIN SUBSCRIPT SMALL LETTER E  
 17776 \DeclareTextCommand{\texteinferior}{PU}{\9040\221}%\* U+2091  
 17777 % U+2092 LATIN SUBSCRIPT SMALL LETTER O  
 17778 \DeclareTextCommand{\textoinferior}{PU}{\9040\222}%\* U+2092  
 17779 % U+2093 LATIN SUBSCRIPT SMALL LETTER X  
 17780 \DeclareTextCommand{\textxinferior}{PU}{\9040\223}%\* U+2093  
 17781 % U+2094 LATIN SUBSCRIPT SMALL LETTER SCHWA  
 17782 \DeclareTextCommand{\textschwainferior}{PU}{\9040\224}%\* U+2094  
 17783 % U+2095 LATIN SUBSCRIPT SMALL LETTER H  
 17784 \DeclareTextCommand{\texthinferior}{PU}{\9040\225}%\* U+2095  
 17785 % U+2096 LATIN SUBSCRIPT SMALL LETTER K  
 17786 \DeclareTextCommand{\textkinferior}{PU}{\9040\226}%\* U+2096  
 17787 % U+2097 LATIN SUBSCRIPT SMALL LETTER L  
 17788 \DeclareTextCommand{\textlinferior}{PU}{\9040\227}%\* U+2097  
 17789 % U+2098 LATIN SUBSCRIPT SMALL LETTER M  
 17790 \DeclareTextCommand{\textminferior}{PU}{\9040\230}%\* U+2098  
 17791 % U+2099 LATIN SUBSCRIPT SMALL LETTER N  
 17792 \DeclareTextCommand{\textninferior}{PU}{\9040\231}%\* U+2099  
 17793 % U+209A LATIN SUBSCRIPT SMALL LETTER P  
 17794 \DeclareTextCommand{\textpinferior}{PU}{\9040\232}%\* U+209A  
 17795 % U+209B LATIN SUBSCRIPT SMALL LETTER S  
 17796 \DeclareTextCommand{\textsinferior}{PU}{\9040\233}%\* U+209B  
 17797 % U+209C LATIN SUBSCRIPT SMALL LETTER T  
 17798 \DeclareTextCommand{\texttinferior}{PU}{\9040\234}%\* U+209C

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

17799 % U+20A1 COLON SIGN; \*colonmonetary, colonsign  
 17800 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1  
 17801 % U+20A4 LIRA SIGN; afii08941, \*lira  
 17802 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4  
 17803 % U+20A6 NAIRA SIGN  
 17804 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6  
 17805 % U+20A7 PESETA SIGN; peseta  
 17806 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7  
 17807 % U+20A9 WON SIGN; won  
 17808 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9  
 17809 % U+20AB DONG SIGN; dong  
 17810 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB  
 17811 % U+20AC EURO SIGN; \*Euro, euro  
 17812 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC  
 17813 %\* \texteuro -> \EurDig (marvosym)  
 17814 %\* \texteuro -> \EURdig (marvosym)  
 17815 %\* \texteuro -> \EurHv (marvosym)  
 17816 %\* \texteuro -> \EURhv (marvosym)  
 17817 %\* \texteuro -> \EurCr (marvosym)  
 17818 %\* \texteuro -> \EURcr (marvosym)  
 17819 %\* \texteuro -> \EurTm (marvosym)  
 17820 %\* \texteuro -> \EURtm (marvosym)  
 17821 %\* \texteuro -> \Eur (marvosym)  
 17822 % U+20B0 GERMAN PENNY SIGN; \Deleatur (marvosym)  
 17823 \DeclareTextCommand{\textDeleatur}{PU}{\9040\260}%\* U+20B0

17824 %\* \textDeleatur -> \Denarius (marvosym)  
 17825 % U+20B1 PESO SIGN  
 17826 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1  
 17827 % U+20B2 GUARANI SIGN  
 17828 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

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

17829 % U+2103 DEGREE CELSIUS; centigrade  
 17830 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103  
 17831 % U+210F PLANCK CONSTANT OVER TWO PI; \hslash (AmS)  
 17832 \DeclareTextCommand{\texthslash}{PU}{\9041\017}%\* U+210F  
 17833 % U+2111 BLACK-LETTER CAPITAL I (=imaginary part); Ifraktur; \Im (LaTeX)  
 17834 \DeclareTextCommand{\textIm}{PU}{\9041\021}%\* U+2111  
 17835 % U+2113 SCRIPT SMALL L (=ell, liter); afii61289, lsquare; \ell (LaTeX)  
 17836 \DeclareTextCommand{\textell}{PU}{\9041\023}%\* U+2113  
 17837 % U+2116 NUMERO SIGN; \*afii61352, numero  
 17838 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116  
 17839 % U+2117 SOUND RECORDING COPYRIGHT  
 17840 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117  
 17841 % U+2118 SCRIPT CAPITAL P (=Weierstrass elliptic function);  
 17842 % weierstrass; \wp (LaTeX)  
 17843 \DeclareTextCommand{\textwp}{PU}{\9041\030}%\* U+2118  
 17844 % U+211C BLACK-LETTER CAPITAL R (=real part); Rfraktur; \Re (LaTeX)  
 17845 \DeclareTextCommand{\textRe}{PU}{\9041\034}%\* U+211C  
 17846 % U+211E PRESCRIPTION TAKE; prescription  
 17847 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E  
 17848 % U+2120 SERVICE MARK  
 17849 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120  
 17850 % U+2122 TRADE MARK SIGN; trademark  
 17851 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122  
 17852 % U+2126 OHM SIGN; Ohm, Omega  
 17853 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126  
 17854 % U+2127 INVERTED OHM SIGN  
 17855 \DeclareTextCommand{\textmho}{PU}{\9041\047}%\* U+2127  
 17856 %\* \textmho -> \agemO (wasysym)  
 17857 % U+2129 TURNED GREEK SMALL LETTER IOTA; \riota (phonetic)  
 17858 \DeclareTextCommand{\textriota}{PU}{\9041\051}%\* U+2129  
 17859 % U+212B ANGSTROM SIGN; angstrom  
 17860 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B  
 17861 % U+212E ESTIMATED SYMBOL; estimated  
 17862 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E  
 17863 %\* \textestimated -> \EstimatedSign (marvosym)  
 17864 %\* \textestimated -> \Ecommerce (marvosym)  
 17865 % U+2132 TURNED CAPITAL F; \Finv (AmS)  
 17866 \DeclareTextCommand{\textFinv}{PU}{\9041\062}%\* U+2132  
 17867 % U+2135 ALEF SYMBOL; aleph; \aleph (LaTeX)  
 17868 \DeclareTextCommand{\textaleph}{PU}{\9041\065}%\* U+2135  
 17869 % U+2136 BET SYMBOL; \beth (AmS, MnSymbol)  
 17870 \DeclareTextCommand{\textbeth}{PU}{\9041\066}%\* U+2136  
 17871 % U+2137 GIMEL SYMBOL; \gimel (AmS, MnSymbol)  
 17872 \DeclareTextCommand{\textgimel}{PU}{\9041\067}%\* U+2137  
 17873 % U+2138 DALET SYMBOL; \daleth (AmS, MnSymbol)  
 17874 \DeclareTextCommand{\textdaleth}{PU}{\9041\070}%\* U+2138

17875 % U+213B FACSIMILE SIGN; \fax (marvosym)  
 17876 \DeclareTextCommand{\textfax}{PU}{\9041\073}%\* U+213B  
 17877 % U+2141 TURNED SANS-SERIF CAPITAL G (=game); \Game  
 17878 \DeclareTextCommand{\textGame}{PU}{\9041\101}%\* U+2141  
 17879 % U+214B TURNED AMPERSAND; \invamp (txfonts/pxfonts)  
 17880 \DeclareTextCommand{\textinvamp}{PU}{\9041\113}% U+214B  
 17881 %\* \textinvamp -> \bindnasrepma (stmaryrd)  
 17882 %\* \textinvamp -> \parr (cml)

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

17883 % U+2150 VULGAR FRACTION ONE SEVENTH  
 17884 \DeclareTextCommand{\textoneseventh}{PU}{\9041\120}% U+2150  
 17885 % U+2151 VULGAR FRACTION ONE NINTH  
 17886 \DeclareTextCommand{\textoneninth}{PU}{\9041\121}% U+2151  
 17887 % U+2152 VULGAR FRACTION ONE TENTH  
 17888 \DeclareTextCommand{\textonetenth}{PU}{\9041\122}% U+2152  
 17889 % U+2153 VULGAR FRACTION ONE THIRD; onethird  
 17890 \DeclareTextCommand{\textonethird}{PU}{\9041\123}% U+2153  
 17891 % U+2154 VULGAR FRACTION TWO THIRDS; twothirds  
 17892 \DeclareTextCommand{\texttwothirds}{PU}{\9041\124}% U+2154  
 17893 % U+2155 VULGAR FRACTION ONE FIFTH  
 17894 \DeclareTextCommand{\textonefifth}{PU}{\9041\125}% U+2155  
 17895 % U+2156 VULGAR FRACTION TWO FIFTHS  
 17896 \DeclareTextCommand{\texttwofifths}{PU}{\9041\126}% U+2156  
 17897 % U+2157 VULGAR FRACTION THREE FIFTHS  
 17898 \DeclareTextCommand{\textthreefifths}{PU}{\9041\127}% U+2157  
 17899 % U+2158 VULGAR FRACTION FOUR FIFTHS  
 17900 \DeclareTextCommand{\textfourfifths}{PU}{\9041\130}% U+2158  
 17901 % U+2159 VULGAR FRACTION ONE SIXTH  
 17902 \DeclareTextCommand{\textonesixth}{PU}{\9041\131}% U+2159  
 17903 % U+215A VULGAR FRACTION FIVE SIXTHS  
 17904 \DeclareTextCommand{\textfivesixths}{PU}{\9041\132}% U+215A  
 17905 % U+215B VULGAR FRACTION ONE EIGHTH; oneeighth  
 17906 \DeclareTextCommand{\textoneeighth}{PU}{\9041\133}% U+215B  
 17907 % U+215C VULGAR FRACTION THREE EIGHTHS; threeeighths  
 17908 \DeclareTextCommand{\textthreeeighths}{PU}{\9041\134}% U+215C  
 17909 % U+215D VULGAR FRACTION FIVE EIGHTHS; fiveeighths  
 17910 \DeclareTextCommand{\textfiveeighths}{PU}{\9041\135}% U+215D  
 17911 % U+215E VULGAR FRACTION SEVEN EIGHTHS; seveneighths  
 17912 \DeclareTextCommand{\textseveneighths}{PU}{\9041\136}% U+215E  
 17913 % U+2184 LATIN SMALL LETTER REVERSED C  
 17914 \DeclareTextCommand{\textrevc}{PU}{\9041\204}% U+2184  
 17915 % U+2189 VULGAR FRACTION ZERO THIRDS  
 17916 \DeclareTextCommand{\textzerthirds}{PU}{\9041\211}% U+2189

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

17917 % U+2190 LEFTWARDS ARROW; arrowleft  
 17918 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}%\* U+2190  
 17919 % U+2191 UPWARDS ARROW; arrowup  
 17920 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}%\* U+2191  
 17921 % U+2192 RIGHTWARDS ARROW; arrowright  
 17922 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}%\* U+2192  
 17923 %\* \textrightarrow -> \MVRightArrow (marvosym)  
 17924 %\* \textrightarrow -> \MVRightarrow (marvosym)

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17925 % U+2193 DOWNWARDS ARROW; arrowdown
17926 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}%* U+2193
17927 %* \textdownarrow -> \MVAarrowDown (marvosym)
17928 %* \textdownarrow -> \Force (marvosym)
17929 % U+2194 LEFT RIGHT ARROW; arrowboth; \leftrightarrow (LaTeX)
17930 \DeclareTextCommand{\textleftrightarrow}{PU}{\9041\224}%* U+2194
17931 % U+2195 UP DOWN ARROW; arrowupdn; \updownarrow (LaTeX)
17932 \DeclareTextCommand{\textupdownarrow}{PU}{\9041\225}%* U+2195
17933 % U+2196 NORTH WEST ARROW; arrowupleft; \nwarrow (LaTeX)
17934 \DeclareTextCommand{\textnwarrow}{PU}{\9041\226}%* U+2196
17935 % U+2197 NORTH EAST ARROW; arrowupright; \nearrow (LaTeX)
17936 \DeclareTextCommand{\textnearrow}{PU}{\9041\227}%* U+2197
17937 %* \textnearrow -> \textglobrise (tipa)
17938 % U+2198 SOUTH EAST ARROW; arrowdownright; \searrow (LaTeX)
17939 \DeclareTextCommand{\textsearrow}{PU}{\9041\230}%* U+2198
17940 %* \textsearrow -> \textglobfall (tipa)
17941 % U+2199 SOUTH WEST ARROW; arrowdownleft; \swarrow (LaTeX)
17942 \DeclareTextCommand{\textswarrow}{PU}{\9041\231}%* U+2199
17943 % U+219A LEFTWARDS ARROW WITH STROKE; \leftarrow (AmS)
17944 \DeclareTextCommand{\textleftarrow}{PU}{\9041\232}%* U+219A
17945 % U+219B RIGHTWARDS ARROW WITH STROKE; \rightarrow (AmS)
17946 \DeclareTextCommand{\textrightarrow}{PU}{\9041\233}%* U+219B
17947 % U+219E LEFTWARDS TWO HEADED ARROW; \twoheadleftarrow (AmS)
17948 \DeclareTextCommand{\texttwoheadleftarrow}{PU}{\9041\236}%* U+219E
17949 % \ntwoheadleftarrow (txfonts/pxfonts)
17950 \DeclareTextCommand{\textntwoheadleftarrow}{PU}{\9041\236\83\070}%* U+219E U+0338
17951 % U+219F UPWARDS TWO HEADED ARROW; \twoheaduparrow (MnSymbol)
17952 \DeclareTextCommand{\texttwoheaduparrow}{PU}{\9041\237}%* U+219F
17953 % U+21A0 RIGHTWARDS TWO HEADED ARROW;
17954 % \twoheadrightarrow (AmS)
17955 \DeclareTextCommand{\texttwoheadrightarrow}{PU}{\9041\240}%* U+21A0
17956 % \ntwoheadrightarrow (txfonts/pxfonts)
17957 \DeclareTextCommand{\textntwoheadrightarrow}{PU}{\9041\240\83\070}%* U+21A0 U+0338
17958 % U+21A1 DOWNWARDS TWO HEADED ARROW; \twoheaddownarrow (Mn-
Symbol)
17959 \DeclareTextCommand{\texttwoheaddownarrow}{PU}{\9041\241}%* U+21A1
17960 % U+21A2 LEFTWARDS ARROW WITH TAIL; \leftarrowtail (AmS)
17961 \DeclareTextCommand{\textleftarrowtail}{PU}{\9041\242}%* U+21A2
17962 % U+21A3 RIGHTWARDS ARROW WITH TAIL; \rightarrowtail (AmS)
17963 \DeclareTextCommand{\textrightarrowtail}{PU}{\9041\243}%* U+21A3
17964 % U+21A6 RIGHTWARDS ARROW FROM BAR; \mapsto (LaTeX)
17965 \DeclareTextCommand{\textmapsto}{PU}{\9041\246}%* U+21A6
17966 % U+21A9 LEFTWARDS ARROW WITH HOOK; \hookleftarrow (LaTeX)
17967 \DeclareTextCommand{\texthookleftarrow}{PU}{\9041\251}%* U+21A9
17968 % U+21AA RIGHTWARDS ARROW WITH HOOK; \hookrightarrow (LaTeX)
17969 \DeclareTextCommand{\texthookrightarrow}{PU}{\9041\252}%* U+21AA
17970 % U+21AB LEFTWARDS ARROW WITH LOOP; \looparrowleft (AmS)
17971 \DeclareTextCommand{\textlooparrowleft}{PU}{\9041\253}%* U+21AB
17972 % U+21AC RIGHTWARDS ARROW WITH LOOP; \looparrowright (AmS)
17973 \DeclareTextCommand{\textlooparrowright}{PU}{\9041\254}%* U+21AC
17974 % U+21AE LEFT RIGHT ARROW WITH STROKE; \leftrightharrow (AmS)
17975 \DeclareTextCommand{\textleftrightharrow}{PU}{\9041\256}%* U+21AE
17976 % U+21AF DOWNWARDS ZIGZAG ARROW; \lightning (stmaryrd)
17977 \DeclareTextCommand{\textlightning}{PU}{\9041\257}%* U+21AF

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17978 %* \textlightning -> \Lightning (marvosym)
17979 % U+21B5 DOWNWARDS ARROW WITH CORNER LEFTWARDS;
17980 % \dlsh (mathabx)
17981 \DeclareTextCommand{\textdlsh}{PU}{\9041\265}%* U+21B5
17982 % U+21B6 ANTICLOCKWISE TOP SEMICIRCLE ARROW;
17983 % \curvearrowleft (AmS)
17984 \DeclareTextCommand{\textcurvearrowleft}{PU}{\9041\266}%* U+21B6
17985 % U+21B7 CLOCKWISE TOP SEMICIRCLE ARROW; \curvearrowright (AmS)
17986 \DeclareTextCommand{\textcurvearrowright}{PU}{\9041\267}%* U+21B7
17987 % U+21BC LEFTWARDS HARPOON WITH BARB UPWARDS; harpoonleft-
    barbup;
17988 % \leftharpoonup (LaTeX)
17989 \DeclareTextCommand{\textleftharpoonup}{PU}{\9041\274}%* U+21BC
17990 % U+21BD LEFTWARDS HARPOON WITH BARB DOWNWARDS;
17991 % \leftharpoondown (LaTeX)
17992 \DeclareTextCommand{\textleftharpoondown}{PU}{\9041\275}%* U+21BD
17993 % U+21BE UPWARDS HARPOON WITH BARB RIGHTWARDS;
17994 % \upharpoonright (AmS)
17995 \DeclareTextCommand{\textupharpoonright}{PU}{\9041\276}%* U+21BE
17996 % U+21BF UPWARDS HARPOON WITH BARB LEFTWARDS;
17997 % \upharpoonleft (AmS)
17998 \DeclareTextCommand{\textupharpoonleft}{PU}{\9041\277}%* U+21BF
17999 % U+21C0 RIGHTWARDS HARPOON WITH BARB UPWARDS; harpoonright-
    barbup
18000 % \rightharpoonup (LaTeX)
18001 \DeclareTextCommand{\textrightharpoonup}{PU}{\9041\300}%* U+21C0
18002 % U+21C1 RIGHTWARDS HARPOON WITH BARB DOWNWARDS;
18003 % \rightharpoondown (LaTeX)
18004 \DeclareTextCommand{\textrightharpoondown}{PU}{\9041\301}%* U+21C1
18005 % U+21C2 DOWNWARDS HARPOON WITH BARB RIGHTWARDS;
18006 % \downharpoonright (AmS)
18007 \DeclareTextCommand{\textdownharpoonright}{PU}{\9041\302}%* U+21C2
18008 % U+21C3 DOWNWARDS HARPOON WITH BARB LEFTWARDS;
18009 % \downharpoonleft (AmS)
18010 \DeclareTextCommand{\textdownharpoonleft}{PU}{\9041\303}%* U+21C3
18011 % U+21C4 RIGHTWARDS ARROW OVER LEFTWARDS ARROW;
18012 % \rightarrowleft; \rightleftarrows (MnSymbol)
18013 \DeclareTextCommand{\textrightleftarrows}{PU}{\9041\304}%* U+21C4
18014 % U+21C5 UPWARDS ARROW LEFTWARDS OF DOWNWARDS ARROW; ar-
    rowupleftofdown;
18015 % \updownarrows (MnSymbol)
18016 \DeclareTextCommand{\textupdownarrows}{PU}{\9041\305}%* U+21C5
18017 % U+21C6 LEFTWARDS ARROW OVER RIGHTWARDS ARROW; arrowleft-
    overright;
18018 % \leftrightarrows (AmS)
18019 \DeclareTextCommand{\textleftrightarrows}{PU}{\9041\306}%* U+21C6
18020 % U+21C7 LEFTWARDS PAIRED ARROWS; \leftleftarrows (AmS)
18021 \DeclareTextCommand{\textleftleftarrows}{PU}{\9041\307}%* U+21C7
18022 % U+21C8 UPWARDS PAIRED ARROWS; \upuparrows (AmS)
18023 \DeclareTextCommand{\textupuparrows}{PU}{\9041\310}%* U+21C8
18024 % U+21C9 RIGHTWARDS PAIRED ARROWS; \rightrightarrows (AmS)
18025 \DeclareTextCommand{\textrightarrows}{PU}{\9041\311}%* U+21C9
18026 % U+21CA DOWNWARDS PAIRED ARROWS; \downdownarrows (AmS)
18027 \DeclareTextCommand{\textdowndownarrows}{PU}{\9041\312}%* U+21CA

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18028 % U+21CB LEFTWARDS HARPOON OVER RIGHTWARDS HARPOON;
18029 % \leftrightharpoons (AmS);
18030 \DeclareTextCommand{\textleftrightharpoons}{PU}{\9041\313}%* U+21CB
18031 % U+21CC RIGHTWARDS HARPOON OVER LEFTWARDS HARPOON;
18032 % \rightleftharpoons (LaTeX, AmS)
18033 \DeclareTextCommand{\textrightleftharpoons}{PU}{\9041\314}%* U+21CC
18034 % U+21CD LEFTWARDS DOUBLE ARROW WITH STROKE; arrowleftd-
    blstroke;
18035 % \nLeftarrow (AmS)
18036 \DeclareTextCommand{\textnLeftarrow}{PU}{\9041\315}%* U+21CD
18037 % U+21CE LEFT RIGHT DOUBLE ARROW WITH STROKE; \nLeftrightarrow (AmS)
18038 \DeclareTextCommand{\textnLeftrightarrow}{PU}{\9041\316}%* U+21CE
18039 % U+21CF RIGHTWARDS DOUBLE ARROW WITH STROKE; arrowrightd-
    blstroke;
18040 % \nRightarrow (AmS)
18041 \DeclareTextCommand{\textnRightarrow}{PU}{\9041\317}%* U+21CF
18042 % U+21D0 LEFTWARDS DOUBLE ARROW; arrowdblleft, arrowleftdbl;
18043 % \Leftarrow (LaTeX)
18044 \DeclareTextCommand{\textLeftarrow}{PU}{\9041\320}%* U+21D0
18045 % U+21D1 UPWARDS DOUBLE ARROW; arrowdblup; \Uparrow (LaTeX)
18046 \DeclareTextCommand{\textUparrow}{PU}{\9041\321}%* U+21D1
18047 % U+21D2 RIGHTWARDS DOUBLE ARROW; arrowdblright, dblarrowright;
18048 % \Rightarrow (LaTeX)
18049 \DeclareTextCommand{\textRightarrow}{PU}{\9041\322}%* U+21D2
18050 %* \textRightarrow -> \Conclusion (marvosym)
18051 % U+21D3 DOWNWARDS DOUBLE ARROW; arrowdbldown; \Downarrow (La-
    TeX)
18052 \DeclareTextCommand{\textDownarrow}{PU}{\9041\323}%* U+21D3
18053 % U+21D4 LEFT RIGHT DOUBLE ARROW; arrowdblboth;
18054 % \Leftrightarrow (LaTeX)
18055 \DeclareTextCommand{\textLeftrightarrow}{PU}{\9041\324}%* U+21D4
18056 %* \textLeftrightarrow -> \Equivalence (marvosym)
18057 % U+21D5 UP DOWN DOUBLE ARROW; \Updownarrow (LaTeX)
18058 \DeclareTextCommand{\textUpdownarrow}{PU}{\9041\325}%* U+21D5
18059 % U+21D6 NORTH WEST DOUBLE ARROW; \Nwarrow (MnSymbol)
18060 \DeclareTextCommand{\textNwarrow}{PU}{\9041\326}%* U+21D6
18061 % U+21D7 NORTH EAST DOUBLE ARROW; \Nearrow (MnSymbol)
18062 \DeclareTextCommand{\textNearrow}{PU}{\9041\327}%* U+21D7
18063 % U+21D8 SOUTH EAST DOUBLE ARROW; \Searrow (MnSymbol)
18064 \DeclareTextCommand{\textSearrow}{PU}{\9041\330}%* U+21D8
18065 % U+21D9 SOUTH WEST DOUBLE ARROW; \Swarrow (MnSymbol)
18066 \DeclareTextCommand{\textSwarrow}{PU}{\9041\331}%* U+21D9
18067 % U+21DA LEFTWARDS TRIPLE ARROW; \Lleftarrow (AmS)
18068 \DeclareTextCommand{\textLleftarrow}{PU}{\9041\332}%* U+21DA
18069 % U+21DB RIGHTWARDS TRIPLE ARROW; \Rrightarrow (MnSymbol)
18070 \DeclareTextCommand{\textRrightarrow}{PU}{\9041\333}%* U+21DB
18071 % U+21DC LEFTWARDS SQUIGGLE ARROW; \leftsquigarrow (mathabx)
18072 \DeclareTextCommand{\textleftsquigarrow}{PU}{\9041\334}%* U+21DC
18073 % U+21DD RIGHTWARDS SQUIGGLE ARROW; \rightsquigarrow (mathabx)
18074 \DeclareTextCommand{\textright squigarrow}{PU}{\9041\335}%* U+21DD
18075 % U+21E0 LEFTWARDS DASHED ARROW; arrowdashleft;
18076 % \dashleftarrow (AmS)
18077 \DeclareTextCommand{\textdashleftarrow}{PU}{\9041\340}%* U+21E0

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18078 %* \textdashleftarrow -> \dashedleftarrow (MnSymbol)
18079 % U+21E1 UPWARDS DASHED ARROW; arrowdashup; \dasheduparrow (Mn-
      Symbol)
18080 \DeclareTextCommand{\textdasheduparrow}{PU}{\9041\341}%* U+21E1
18081 % U+21E2 RIGHTWARDS DASHED ARROW; arrowdashright; \dashrightarrow
      (AmS)
18082 \DeclareTextCommand{\textdashrightarrow}{PU}{\9041\342}%* U+21E2
18083 %* \textdashrightarrow -> \dashedrightarrow (MnSymbol)
18084 % U+21E3 DOWNWARDS DASHED ARROW; arrowdashdown; \dasheddownarrow
      (MnSymbol)
18085 \DeclareTextCommand{\textdasheddownarrow}{PU}{\9041\343}%* U+21E3
18086 % U+21E8 RIGHTWARDS WHITE ARROW; \pointer (wasysym)
18087 \DeclareTextCommand{\textpointer}{PU}{\9041\350}%* U+21E8
18088 % U+21F5 DOWNWARDS ARROW LEFTWARDS OF UPWARDS ARROW;
18089 % \downuparrows (MnSymbol)
18090 \DeclareTextCommand{\textdownuparrows}{PU}{\9041\365}%* U+21F5
18091 % U+21FD LEFTWARDS OPEN-HEADED ARROW; \leftarrowtriangle (stmaryrd)
18092 \DeclareTextCommand{\textleftarrowtriangle}{PU}{\9041\375}%* U+21FD
18093 % U+21FE RIGHTWARDS OPEN-HEADED ARROW; \rightarrowtriangle (stmaryrd)
18094 \DeclareTextCommand{\textrightarrowtriangle}{PU}{\9041\376}%* U+21FE
18095 % U+21FF LEFT RIGHT OPEN-HEADED ARROW; \leftrightarrowtriangle
      (stmaryrd)
18096 \DeclareTextCommand{\textleftrightarrowtriangle}{PU}{\9041\377}%* U+21FF

```

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

```

18097 % U+2200 FOR ALL; forall; \forall (LaTeX)
18098 \DeclareTextCommand{\textforall}{PU}{\9042\000}%* U+2200
18099 % U+2201 COMPLEMENT; \complement (AmS)
18100 \DeclareTextCommand{\textcomplement}{PU}{\9042\001}%* U+2201
18101 % U+2202 PARTIAL DIFFERENTIAL; partialdiff; \partial (LaTeX)
18102 \DeclareTextCommand{\textpartial}{PU}{\9042\002}%* U+2202
18103 % U+2203 THERE EXISTS; existential; \exists (LaTeX)
18104 \DeclareTextCommand{\textexists}{PU}{\9042\003}%* U+2203
18105 % U+2204 THERE DOES NOT EXIST; \nexists (AmS)
18106 \DeclareTextCommand{\textnexists}{PU}{\9042\004}%* U+2204
18107 % U+2205 EMPTY SET; emptyset; \emptyset (LaTeX), \varnothing (AmS)
18108 \DeclareTextCommand{\textemptyset}{PU}{\9042\005}%* U+2205
18109 %* \textemptyset -> \varnothing (AmS)
18110 % U+2206 INCREMENT; increment, Delta; \triangle (LaTeX)
18111 \DeclareTextCommand{\texttriangle}{PU}{\9042\006}%* U+2206
18112 % U+2207 NABLA; nabla, gradient; \nabla (LaTeX)
18113 \DeclareTextCommand{\textnabla}{PU}{\9042\007}%* U+2207
18114 % U+2208 ELEMENT OF; element; \in (LaTeX)
18115 \DeclareTextCommand{\textin}{PU}{\9042\010}%* U+2208
18116 % U+2209 NOT AN ELEMENT OF; notelement, notelementof; \notin (LaTeX)
18117 \DeclareTextCommand{\textnotin}{PU}{\9042\011}%* U+2209
18118 % U+220A SMALL ELEMENT OF; \smallin (mathdesign)
18119 \DeclareTextCommand{\textsmallin}{PU}{\9042\012}%* U+220A
18120 % U+220B CONTAINS AS MEMBER; suchthat; \ni (LaTeX)
18121 \DeclareTextCommand{\textni}{PU}{\9042\013}%* U+220B
18122 %* \textni -> \owns (mathabx)
18123 % U+220C DOES NOT CONTAIN AS MEMBER; \notowner (mathabx)
18124 \DeclareTextCommand{\textnotowner}{PU}{\9042\014}%* U+220C
18125 %* \textnotowner -> \notni (txfonts/pxfonts)

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18126 % U+220D SMALL CONTAINS AS MEMBER; \smallowns (mathdesign)  
18127 \DeclareTextCommand{\textsmallowns}{PU}{\9042\015}%\* U+220D  
18128 % U+220F N-ARY PRODUCT; \prod (LaTeX)  
18129 \DeclareTextCommand{\textprod}{PU}{\9042\017}%\* U+220F  
18130 % U+2210 N-ARY COPRODUCT; \amalg (LaTeX)  
18131 \DeclareTextCommand{\textamalg}{PU}{\9042\020}%\* U+2210  
18132 % U+2211 N-ARY SUMMATION; summation; \sum (LaTeX)  
18133 \DeclareTextCommand{\textsum}{PU}{\9042\021}%\* U+2211  
18134 % U+2212 MINUS SIGN; minus  
18135 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212  
18136 % U+2213 MINUS-OR-PLUS SIGN; minusplus; \mp (LaTeX)  
18137 \DeclareTextCommand{\textmp}{PU}{\9042\023}%\* U+2213  
18138 % U+2214 DOT PLUS; \dotplus (AmS)  
18139 \DeclareTextCommand{\textdotplus}{PU}{\9042\024}%\* U+2214  
18140 % U+2215 DIVISION SLASH; divisionslash; \Divides (marvosym)  
18141 \DeclareTextCommand{\textDivides}{PU}{\9042\025}%\* U+2215  
18142 % \DividesNot (marvosym)  
18143 \DeclareTextCommand{\textDividesNot}{PU}{\9042\025\9040\322}%\* U+2215 U+20D2  
18144 % U+2216 SET MINUS; \setminus (LaTeX)  
18145 \DeclareTextCommand{\textsetminus}{PU}{\9042\026}%\* U+2216  
18146 % U+2217 ASTERISK OPERATOR; asteriskmath; \ast (LaTeX)  
18147 \DeclareTextCommand{\textast}{PU}{\9042\027}%\* U+2217  
18148 % U+2218 RING OPERATOR; \circ (LaTeX)  
18149 \DeclareTextCommand{\textcirc}{PU}{\9042\030}%\* U+2218  
18150 % U+2219 BULLET OPERATOR; bulletoperator; \bullet (LaTeX)  
18151 \DeclareTextCommand{\textbulletoperator}{PU}{\9042\031}% U+2219  
18152 % U+221A SQUARE ROOT; radical  
18153 \DeclareTextCommand{\textsqrt}{PU}{\9042\032}%\* U+221A  
18154 % U+221D PROPORTIONAL TO; proportional; \propto (LaTeX)  
18155 \DeclareTextCommand{\textpropto}{PU}{\9042\035}%\* U+221D  
18156 %\* \textpropto -> \varprop (wasysym)  
18157 % U+221E INFINITY; infinity; \infty (LaTeX)  
18158 \DeclareTextCommand{\textinfty}{PU}{\9042\036}%\* U+221E  
18159 % U+2220 ANGLE; angle; \angle (LaTeX)  
18160 \DeclareTextCommand{\textangle}{PU}{\9042\040}%\* U+2220  
18161 % U+2221 MEASURED ANGLE; \measuredangle (mathabx, MnSymbol)  
18162 \DeclareTextCommand{\textmeasuredangle}{PU}{\9042\041}%\* U+2221  
18163 % U+2222 SPHERICAL ANGLE; \sphericalangle (AmS)  
18164 \DeclareTextCommand{\textsphericalangle}{PU}{\9042\042}%\* U+2222  
18165 %\* \textsphericalangle -> \varangle (wasysym)  
18166 %\* \textsphericalangle -> \Anglesign (marvosym)  
18167 %\* \textsphericalangle -> \AngleSign (marvosym)  
18168 % U+2223 DIVIDES; divides; \mid (LaTeX)  
18169 \DeclareTextCommand{\textmid}{PU}{\9042\043}%\* U+2223  
18170 % U+2224 DOES NOT DIVIDE; \nmid (AmS)  
18171 \DeclareTextCommand{\textnmid}{PU}{\9042\044}%\* U+2224  
18172 %\* \textnmid -> \notdivides (mathabx)  
18173 % U+2225 PARALLEL TO; parallel; \parallel (LaTeX)  
18174 \DeclareTextCommand{\textparallel}{PU}{\9042\045}%\* U+2225  
18175 % U+2226 NOT PARALLEL TO; notparallel; \nparallel (AmS)  
18176 \DeclareTextCommand{\textnparallel}{PU}{\9042\046}%\* U+2226  
18177 %\* \textnparallel -> nUpdownline (MnSymbol)  
18178 % U+2227 LOGICAL AND; logicaland; \wedge (LaTeX)  
18179 \DeclareTextCommand{\textwedge}{PU}{\9042\047}%\* U+2227

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18180 % \owedge (stmaryrd)
18181 \DeclareTextCommand{\textowedge}{PU}{\9042\047\9040\335}%* U+2227 U+20DD
18182 %* \textowedge -> \varowedge (stmaryrd)
18183 % U+2228 LOGICAL OR; logicalor; \vee (LaTeX)
18184 \DeclareTextCommand{\textvee}{PU}{\9042\050}%* U+2228
18185 % \ovee (stmaryrd)
18186 \DeclareTextCommand{\textovee}{PU}{\9042\050\9040\335}%* U+2228 U+20DD
18187 %* \textovee -> \varovee (stmaryrd)
18188 % U+2229 INTERSECTION; intersection; \cap (LaTeX)
18189 \DeclareTextCommand{\textcap}{PU}{\9042\051}%* U+2229
18190 % U+222A UNION; union; \cup (LaTeX)
18191 \DeclareTextCommand{\textcup}{PU}{\9042\052}%* U+222A
18192 % U+222B INTEGRAL; integral; \int (LaTeX)
18193 \DeclareTextCommand{\textint}{PU}{\9042\053}%* U+222B
18194 %* \textint -> \varint (wasysym)
18195 % U+222C DOUBLE INTEGRAL; dblintegral; \iint (AmS)
18196 \DeclareTextCommand{\textiint}{PU}{\9042\054}%* U+222C
18197 % U+222D TRIPLE INTEGRAL; \iiint (AmS)
18198 \DeclareTextCommand{\textiiint}{PU}{\9042\055}%* U+222D
18199 % U+222E CONTOUR INTEGRAL; contourintegral; \oint (LaTeX)
18200 \DeclareTextCommand{\textoint}{PU}{\9042\056}%* U+222E
18201 %* \textoint -> \varoint (wasysym)
18202 % U+222F SURFACE INTEGRAL; \oiint (wasysym)
18203 \DeclareTextCommand{\textoiint}{PU}{\9042\057}%* U+222F
18204 % U+2232 CLOCKWISE CONTOUR INTEGRAL;
18205 % \ointclockwise (txfonts/pxfonts)
18206 \DeclareTextCommand{\textointclockwise}{PU}{\9042\062}%* U+2232
18207 % U+2233 ANTICLOCKWISE CONTOUR INTEGRAL; \ointctrclockwise (tx-
      fonts/pxfonts)
18208 \DeclareTextCommand{\textointctrclockwise}{PU}{\9042\063}%* U+2233
18209 % U+2234 THEREFORE; therefore; \therefore (AmS)
18210 \DeclareTextCommand{\texttherefore}{PU}{\9042\064}%* U+2234
18211 %* \texttherefore -> uptherefore (MnSymbol)
18212 % U+2235 BECAUSE; because; \because (AmS)
18213 \DeclareTextCommand{\textbecause}{PU}{\9042\065}%* U+2235
18214 %* \textbecause -> \downtherefore (MnSymbol)
18215 % U+2236 RATIO; \vdots (MnSymbol)
18216 \DeclareTextCommand{\textvdotdot}{PU}{\9042\066}%* U+2236
18217 % U+2237 PROPORTION; \squaredots (MnSymbol)
18218 \DeclareTextCommand{\textsquaredots}{PU}{\9042\067}%* U+2237
18219 % U+2238 DOT MINUS; \dotminus (MnSymbol)
18220 \DeclareTextCommand{\textdotminus}{PU}{\9042\070}%* U+2238
18221 %* \textdotminus -> \textdotdiv (mathabx)
18222 % U+2239 EXCESS; \eqcolon (txfonts/pxfonts)
18223 \DeclareTextCommand{\texteqcolon}{PU}{\9042\071}%* U+2239
18224 % U+223C TILDE OPERATOR; similar; \sim (LaTeX)
18225 \DeclareTextCommand{\textsim}{PU}{\9042\074}%* U+223C
18226 %* \textsim -> \AC (wasysym)
18227 % U+223D REVERSED TILDE; reverseditilde; \backsim (AmS)
18228 \DeclareTextCommand{\textbacksim}{PU}{\9042\075}%* U+223D
18229 % \nbacksim (txfonts/pxfonts)
18230 \DeclareTextCommand{\textnbacksim}{PU}{\9042\075\83\070}%* U+223D U+0338
18231 % U+2240 WREATH PRODUCT; \wr (LaTeX)
18232 \DeclareTextCommand{\textwr}{PU}{\9042\100}%* U+2240

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18233 %* \textwr -> \wreath (MnSymbol)
18234 % U+2241 NOT TILDE; \nsim (AmS)
18235 \DeclareTextCommand{\textnsim}{PU}{\9042\101}%* U+2241
18236 % U+2242 MINUS TILDE; \eqsim (MnSymbol)
18237 \DeclareTextCommand{\texteqsim}{PU}{\9042\102}%* U+2242
18238 % \neqsim (MnSymbol)
18239 \DeclareTextCommand{\textneqsim}{PU}{\9042\102\83\070}%* U+2242 U+0338
18240 % U+2243 ASYMPTOTICALLY EQUAL TO; asymptoticallyequal; \simeq (La-
TeX)
18241 \DeclareTextCommand{\textsimeq}{PU}{\9042\103}%* U+2243
18242 % U+2244 NOT ASYMPTOTICALLY EQUAL TO; \nsimeq (txfonts/pxfonts)
18243 \DeclareTextCommand{\textnsimeq}{PU}{\9042\104}%* U+2244
18244 % U+2245 APPROXIMATELY EQUAL TO; approximatelyequal; \cong (LaTeX)
18245 \DeclareTextCommand{\textcong}{PU}{\9042\105}%* U+2245
18246 % U+2247 NEITHER APPROXIMATELY NOR ACTUALLY EQUAL TO;
18247 % \ncong (AmS)
18248 \DeclareTextCommand{\textncong}{PU}{\9042\107}%* U+2247
18249 % U+2248 ALMOST EQUAL TO; approxequal; \approx (LaTeX)
18250 \DeclareTextCommand{\textapprox}{PU}{\9042\110}%* U+2248
18251 % U+2249 NOT ALMOST EQUAL TO; \napprox (txfonts/pxfonts)
18252 \DeclareTextCommand{\textnapprox}{PU}{\9042\111}%* U+2249
18253 %* \textnapprox -> \nthickapprox (txfonts/pxfonts)
18254 % U+224A ALMOST EQUAL OR EQUAL TO; \approxeq (AmS)
18255 \DeclareTextCommand{\textapproxeq}{PU}{\9042\112}%* U+224A
18256 % \napproxeq (txfonts/pxfonts)
18257 \DeclareTextCommand{\textnapproxeq}{PU}{\9042\112\83\070}%* U+224A U+0338
18258 % U+224B TRIPLE TILDE; \triple sim (MnSymbol)
18259 \DeclareTextCommand{\texttriple sim}{PU}{\9042\113}%* U+224B
18260 %* \texttriple sim -> \VHF (wasysym)
18261 % \ntriple sim (MnSymbol)
18262 \DeclareTextCommand{\textntriple sim}{PU}{\9042\113\83\070}%* U+224B U+0338
18263 % U+224C ALL EQUAL TO; allequal; \backcong (MnSymbol)
18264 \DeclareTextCommand{\textbackcong}{PU}{\9042\114}%* U+224C
18265 % \nbackcong (MnSymbol)
18266 \DeclareTextCommand{\textnbackcong}{PU}{\9042\114\83\070}%* U+224C U+0338
18267 % U+224D EQUIVALENT TO; \asymp (LaTeX)
18268 \DeclareTextCommand{\textasymp}{PU}{\9042\115}%* U+224D
18269 % \nasymp (txfonts/pxfonts)
18270 \DeclareTextCommand{\textnasymp}{PU}{\9042\115\83\070}%* U+224D U+0338
18271 %* \textnasymp -> \notasym (mathabx)
18272 % U+224E GEOMETRICALLY EQUIVALENT TO; \Bumpeq (AmS)
18273 \DeclareTextCommand{\textBumpeq}{PU}{\9042\116}%* U+224E
18274 % \nBumpeq (txfonts/pxfonts)
18275 \DeclareTextCommand{\textnBumpeq}{PU}{\9042\116\83\070}%* U+224E U+0338
18276 % U+224F DIFFERENCE BETWEEN; \bumpeq (AmS)
18277 \DeclareTextCommand{\textbumpeq}{PU}{\9042\117}%* U+224F
18278 % \nbumpeq (txfonts/pxfonts)
18279 \DeclareTextCommand{\textnbumpeq}{PU}{\9042\117\83\070}%* U+224F U+0338
18280 % U+2250 APPROACHES THE LIMIT; approaches; \doteq (LaTeX)
18281 \DeclareTextCommand{\textdoteq}{PU}{\9042\120}%* U+2250
18282 % \ndoteq (MnSymbol)
18283 \DeclareTextCommand{\textndoteq}{PU}{\9042\120\83\070}%* U+2250 U+0338
18284 % U+2251 GEOMETRICALLY EQUAL TO; geometricallyequal;
18285 % \doteqdot (AmS)

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18286 \DeclareTextCommand{\textdoteqdot}{PU}{\9042\121}%* U+2251
18287 %* \textdoteqdot -> \Doteq (MnSymbol)
18288 % \nDoteq (MnSymbol)
18289 \DeclareTextCommand{\textnDoteq}{PU}{\9042\121\83\070}%* U+2251 U+0338
18290 % U+2252 APPROXIMATELY EQUAL TO OR THE IMAGE OF; approx-
qualorimage;
18291 % \fallingdotseq (AmS)
18292 \DeclareTextCommand{\textfallingdotseq}{PU}{\9042\122}%* U+2252
18293 % \nfallingdotseq (MnSymbol)
18294 \DeclareTextCommand{\textnfallingdotseq}{PU}{\9042\122\83\070}%* U+2252 U+0338
18295 % U+2253 IMAGE OF OR APPROXIMATELY EQUAL TO; imageorapprox-
matelyequal;
18296 % \risingdotseq (AmS)
18297 \DeclareTextCommand{\textrisingdotseq}{PU}{\9042\123}%* U+2253
18298 % \nrisingdotseq (MnSymbol)
18299 \DeclareTextCommand{\textnrisingdotseq}{PU}{\9042\123\83\070}%* U+2253 U+0338
18300 % U+2254 COLON EQUALS; \colonequals (colonequals)
18301 \DeclareTextCommand{\textcolonequals}{PU}{\9042\124}%* U+2254
18302 % U+2255 EQUALS COLON; \equalscolon (colonequals)
18303 \DeclareTextCommand{\textequalscolon}{PU}{\9042\125}%* U+2255
18304 % U+2256 RING IN EQUAL TO; \eqcirc (AmS)
18305 \DeclareTextCommand{\texteqcirc}{PU}{\9042\126}%* U+2256
18306 % \neqcirc (MnSymbol)
18307 \DeclareTextCommand{\textneqcirc}{PU}{\9042\126\83\070}%* U+2256 U+0338
18308 % U+2257 RING EQUAL TO; \circeq (AmS)
18309 \DeclareTextCommand{\textcirceq}{PU}{\9042\127}%* U+2257
18310 % \ncirceq (MnSymbol)
18311 \DeclareTextCommand{\textncirceq}{PU}{\9042\127\83\070}%* U+2257 U+0338
18312 % U+2259 ESTIMATES; \hateq (MnSymbol)
18313 \DeclareTextCommand{\texthateq}{PU}{\9042\131}%* U+2259
18314 %* \texthateq -> \corresponds (mathabx)
18315 %* \texthateq -> \Corresponds (marvosym)
18316 % \nhateq (MnSymbol)
18317 \DeclareTextCommand{\textnhateq}{PU}{\9042\131\83\070}%* U+2259 U+0338
18318 % U+225C DELTA EQUAL TO; \triangleeq (AmS)
18319 \DeclareTextCommand{\texttriangleeq}{PU}{\9042\134}%* U+225C
18320 % U+2260 NOT EQUAL TO; notequal; \ne (LaTeX), \neq (LaTeX)
18321 \DeclareTextCommand{\textneq}{PU}{\9042\140}%* U+2260
18322 \DeclareTextCommand{\textne}{PU}{\9042\140}%* U+2260
18323 %* \textneq -> \nequal (MnSymbol)
18324 % U+2261 IDENTICAL TO; equivalence; \equiv (LaTeX)
18325 \DeclareTextCommand{\textequiv}{PU}{\9042\141}%* U+2261
18326 %* \textequiv -> \Congruent (marvosym)
18327 % U+2262 NOT IDENTICAL TO; notidentical; \nequiv (txfonts/pxfonts)
18328 \DeclareTextCommand{\textnequiv}{PU}{\9042\142}%* U+2262
18329 %* \textnequiv -> \NotCongruent (marvosym)
18330 %* \textnequiv -> \notequiv (mathabx)
18331 % U+2264 LESS-THAN OR EQUAL TO; lessequal; \le (LaTeX), \leq (LaTeX)
18332 \DeclareTextCommand{\textleq}{PU}{\9042\144}%* U+2264
18333 \DeclareTextCommand{\textle}{PU}{\9042\144}%* U+2264
18334 %* \textleq -> \LessOrEqual (marvosym)
18335 % U+2265 GREATER-THAN OR EQUAL TO; greaterequal;
18336 % \ge (LaTeX), \geq (LaTeX)
18337 \DeclareTextCommand{\textgeq}{PU}{\9042\145}%* U+2265

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18338 \DeclareTextCommand{\textge}{PU}{\9042\145}%* U+2265
18339 %* \textgeq -> \LargerOrEqual (marvosym)
18340 % U+2266 LESS-THAN OVER EQUAL TO; lessorequal; \leqq (AmS)
18341 \DeclareTextCommand{\textleqq}{PU}{\9042\146}%* U+2266
18342 % \nleqq (txfonts/pxfonts)
18343 \DeclareTextCommand{\textnleqq}{PU}{\9042\146\83\070}%* U+2266 U+0338
18344 % U+2267 GREATER-THAN OVER EQUAL TO; greaterorequal; \geqq (AmS)
18345 \DeclareTextCommand{\textgeqq}{PU}{\9042\147}%* U+2267
18346 % \ngeqq (txfonts/pxfonts)
18347 \DeclareTextCommand{\textngeqq}{PU}{\9042\147\83\070}%* U+2267 U+0338
18348 % U+2268 LESS-THAN BUT NOT EQUAL TO; \lneqq (AmS)
18349 \DeclareTextCommand{\textlneqq}{PU}{\9042\150}%* U+2268
18350 % U+2269 GREATER-THAN BUT NOT EQUAL TO; \gneqq (AmS)
18351 \DeclareTextCommand{\textgneqq}{PU}{\9042\151}%* U+2269
18352 % U+226A MUCH LESS-THAN; muchless; \ll (LaTeX)
18353 \DeclareTextCommand{\textll}{PU}{\9042\152}%* U+226A
18354 % \nll (txfonts/pxfonts)
18355 \DeclareTextCommand{\textnll}{PU}{\9042\152\83\070}%* U+226A U+0338
18356 % U+226B MUCH GREATER-THAN; muchgreater; \gg (LaTeX)
18357 \DeclareTextCommand{\textgg}{PU}{\9042\153}%* U+226B
18358 % \ngg (txfonts/pxfonts)
18359 \DeclareTextCommand{\textngg}{PU}{\9042\153\83\070}%* U+226B U+0338
18360 % U+226C BETWEEN; \between (AmS)
18361 \DeclareTextCommand{\textbetween}{PU}{\9042\154}%* U+226C
18362 % U+226E NOT LESS-THAN; notless; \nless (AmS)
18363 \DeclareTextCommand{\textnless}{PU}{\9042\156}%* U+226E
18364 % U+226F NOT GREATER-THAN; notgreater; \ngtr (AmS)
18365 \DeclareTextCommand{\textngtr}{PU}{\9042\157}%* U+226F
18366 % U+2270 NEITHER LESS-THAN NOR EQUAL TO; notlessnorequal;
18367 % \nleq (AmS)
18368 \DeclareTextCommand{\textnleq}{PU}{\9042\160}%* U+2270
18369 % U+2271 NEITHER GREATER-THAN NOR EQUAL TO; notgreaternorequal;
18370 % \ngeq (AmS)
18370 \DeclareTextCommand{\textngeq}{PU}{\9042\161}%* U+2271
18371 % U+2272 LESS-THAN OR EQUIVALENT TO; lessorequivalent; \lessim (AmS)
18372 \DeclareTextCommand{\textlessim}{PU}{\9042\162}%* U+2272
18373 %* \textlessim -> \apprle (wasysym)
18374 % U+2273 GREATER-THAN OR EQUIVALENT TO; greaterorequivalent; \gtrsim (AmS)
18375 \DeclareTextCommand{\textgtrsim}{PU}{\9042\163}%* U+2273
18376 %* \textgtrsim -> \apprge (wasysym)
18377 % U+2274 NEITHER LESS-THAN NOR EQUIVALENT TO; \nlessim (txfonts/pxfonts)
18378 \DeclareTextCommand{\textnlessim}{PU}{\9042\164}%* U+2274
18379 % U+2275 NEITHER GREATER-THAN NOR EQUIVALENT TO; \ngtrsim (txfonts/pxfonts)
18380 \DeclareTextCommand{\textngtrsim}{PU}{\9042\165}%* U+2275
18381 % U+2276 LESS-THAN OR GREATER-THAN; lessorgreater; \lessgtr (AmS)
18382 \DeclareTextCommand{\textlessgtr}{PU}{\9042\166}%* U+2276
18383 % U+2277 GREATER-THAN OR LESS-THAN; greaterorless; \gtrless (AmS)
18384 \DeclareTextCommand{\textgtrless}{PU}{\9042\167}%* U+2277
18385 % U+2278 NEITHER LESS-THAN NOR GREATER-THAN; \ngtrless (txfonts/pxfonts)
18386 \DeclareTextCommand{\textngtrless}{PU}{\9042\170}%* U+2278

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18387 % U+2279 NEITHER GREATER-THAN NOR LESS-THAN; \nlessgtr (tx-
      fonts/pxfonts)
18388 \DeclareTextCommand{\textnlessgtr}{PU}{\9042\171}%* U+2279
18389 % U+227A PRECEDES; precedes; \prec (LaTeX)
18390 \DeclareTextCommand{\textprec}{PU}{\9042\172}%* U+227A
18391 % U+227B SUCCEEDS; succeeds; \succ (LaTeX)
18392 \DeclareTextCommand{\textsucc}{PU}{\9042\173}%* U+227B
18393 % U+227C PRECEDES OR EQUAL TO; \preccurlyeq (AmS)
18394 \DeclareTextCommand{\textpreccurlyeq}{PU}{\9042\174}%* U+227C
18395 % U+227D SUCCEEDS OR EQUAL TO; \succcurlyeq (AmS)
18396 \DeclareTextCommand{\textsucccurlyeq}{PU}{\9042\175}%* U+227D
18397 % U+227E PRECEDES OR EQUIVALENT TO; \precsim (AmS)
18398 \DeclareTextCommand{\textprecsim}{PU}{\9042\176}%* U+227E
18399 % \nprecsim (txfonts/pxfonts)
18400 \DeclareTextCommand{\textnprecsim}{PU}{\9042\176\83\070}%* U+227E U+0338
18401 % U+227F SUCCEEDS OR EQUIVALENT TO; \succsim (AmS)
18402 \DeclareTextCommand{\textsuccsim}{PU}{\9042\177}%* U+227F
18403 % \nsuccsim (txfonts/pxfonts)
18404 \DeclareTextCommand{\textnsuccsim}{PU}{\9042\177\83\070}%* U+227F U+0338
18405 % U+2280 DOES NOT PRECEDE; notprecedes; \nprec (AmS)
18406 \DeclareTextCommand{\textnprec}{PU}{\9042\200}%* U+2280
18407 % U+2281 DOES NOT SUCCEED; notsucceeds; \nsucc (AmS)
18408 \DeclareTextCommand{\textnsucc}{PU}{\9042\201}%* U+2281
18409 % U+2282 SUBSET OF; propersubset; \subset (LaTeX)
18410 \DeclareTextCommand{\textsubset}{PU}{\9042\202}%* U+2282
18411 % U+2283 SUPERSET OF; proper superset; \supset (LaTeX)
18412 \DeclareTextCommand{\textsupset}{PU}{\9042\203}%* U+2283
18413 % U+2284 NOT A SUBSET OF; notsubset; \nsubset (mathabx)
18414 \DeclareTextCommand{\textnsubset}{PU}{\9042\204}%* U+2284
18415 % U+2285 NOT A SUPERSET OF; notsuperset; \nsupset (mathabx)
18416 \DeclareTextCommand{\textnsupset}{PU}{\9042\205}%* U+2285
18417 % U+2286 SUBSET OF OR EQUAL TO; reflexsubset; \subseteq (LaTeX)
18418 \DeclareTextCommand{\textsubseteq}{PU}{\9042\206}%* U+2286
18419 % U+2287 SUPERSET OF OR EQUAL TO; reflexsuperset; \supseteq (LaTeX)
18420 \DeclareTextCommand{\textsupseteq}{PU}{\9042\207}%* U+2287
18421 % U+2288 NEITHER A SUBSET OF NOR EQUAL TO; \nsubseteq (AmS)
18422 \DeclareTextCommand{\textnsubseteq}{PU}{\9042\210}%* U+2288
18423 % U+2289 NEITHER A SUPERSET OF NOR EQUAL TO; \nsupseteq (AmS)
18424 \DeclareTextCommand{\textnsupseteq}{PU}{\9042\211}%* U+2289
18425 % U+228A SUBSET OF WITH NOT EQUAL TO; subsetnotequal; \subset-
      neq (AmS)
18426 \DeclareTextCommand{\textsubsetneq}{PU}{\9042\212}%* U+228A
18427 % U+228B SUPERSET OF WITH NOT EQUAL TO; supersetnotequal; \supset-
      neq (AmS)
18428 \DeclareTextCommand{\textsupsetneq}{PU}{\9042\213}%* U+228B
18429 % U+228D MULTISSET MULTIPLICATION; \cupdot (MnSymbol)
18430 \DeclareTextCommand{\textcupdot}{PU}{\9042\215}%* U+228D
18431 % U+228E MULTISSET UNION; \cupplus (MnSymbol)
18432 \DeclareTextCommand{\textcupplus}{PU}{\9042\216}%* U+228E
18433 % U+228F SQUARE IMAGE OF; \sqsubset (latexsym, ...)
18434 \DeclareTextCommand{\textsqsubset}{PU}{\9042\217}%* U+228F
18435 % \nsqsubset (txfonts/pxfonts)
18436 \DeclareTextCommand{\textnsqsubset}{PU}{\9042\217\83\070}%* U+228F U+0338
18437 % U+2290 SQUARE ORIGINAL OF; \sqsupset (latexsym, ...)

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18438 \DeclareTextCommand{\textsqsupset}{PU}{\9042\220}%* U+2290
18439 % \nsqsupset (txfonts/pxfonts)
18440 \DeclareTextCommand{\textnsqsupset}{PU}{\9042\220\83\070}%* U+2290 U+0338
18441 % U+2291 SQUARE IMAGE OF OR EQUAL TO; \sqsubseq (LaTeX)
18442 \DeclareTextCommand{\textsqsubseq}{PU}{\9042\221}%* U+2291
18443 % \nsqsubseq (txfonts/pxfonts)
18444 \DeclareTextCommand{\textnsqsubseq}{PU}{\9042\221\83\070}%* U+2291 U+0338
18445 % U+2292 SQUARE ORIGINAL OF OR EQUAL TO; \sqsupseteq (LaTeX)
18446 \DeclareTextCommand{\textsqsupseteq}{PU}{\9042\222}%* U+2292
18447 % \nsqsupseteq (txfonts/pxfonts)
18448 \DeclareTextCommand{\textnsqsupseteq}{PU}{\9042\222\83\070}%* U+2292 U+0338
18449 % U+2293 SQUARE CAP; \sqcap (LaTeX)
18450 \DeclareTextCommand{\textsqcap}{PU}{\9042\223}%* U+2293
18451 % U+2294 SQUARE CUP; \sqcup (LaTeX)
18452 \DeclareTextCommand{\textsqcup}{PU}{\9042\224}%* U+2294
18453 % U+2295 CIRCLED PLUS; circleplus; \oplus (LaTeX)
18454 \DeclareTextCommand{\textoplus}{PU}{\9042\225}%* U+2295
18455 %* \textoplus -> \varoplus (stmaryrd)
18456 % U+2296 CIRCLED MINUS; minuscircle; \ominus (LaTeX)
18457 \DeclareTextCommand{\textominus}{PU}{\9042\226}%* U+2296
18458 %* \textominus -> \varominus (stmaryrd)
18459 % U+2297 CIRCLED TIMES; circlemultiply; \otimes (LaTeX)
18460 \DeclareTextCommand{\textotimes}{PU}{\9042\227}%* U+2297
18461 %* \textotimes -> \varotimes (stmaryrd)
18462 % U+2298 CIRCLED DIVISION SLASH; \oslash (LaTeX)
18463 \DeclareTextCommand{\textoslash}{PU}{\9042\230}%* U+2298
18464 %* \textoslash -> \varoslash (stmaryrd)
18465 % U+2299 CIRCLED DOT OPERATOR; circle(d?)ot; \odot (LaTeX)
18466 \DeclareTextCommand{\textodot}{PU}{\9042\231}%* U+2299
18467 %* \textodot -> \varodot (stmaryrd)
18468 % U+229A CIRCLED RING OPERATOR; \circledcirc (AmS)
18469 \DeclareTextCommand{\textcircledcirc}{PU}{\9042\232}%* U+229A
18470 %* \textcircledcirc -> \ocirc (mathabx)
18471 %* \textcircledcirc -> \varocircle (stmaryrd)
18472 % U+229B CIRCLED ASTERISK OPERATOR; \circledast (AmS)
18473 \DeclareTextCommand{\textcircledast}{PU}{\9042\233}%* U+229B
18474 %* \textcircledast -> \varoast (stmaryrd)
18475 %* \textcircledast -> \oasterisk (mathabx)
18476 % U+229D CIRCLED DASH; \circleddash (AmS)
18477 \DeclareTextCommand{\textcircleddash}{PU}{\9042\235}%* U+229D
18478 % U+229E SQUARED PLUS; \boxplus (AmS)
18479 \DeclareTextCommand{\textboxplus}{PU}{\9042\236}%* U+229E
18480 % U+229F SQUARED MINUS; \boxminus (AmS)
18481 \DeclareTextCommand{\textboxminus}{PU}{\9042\237}%* U+229F
18482 % U+22A0 SQUARED TIMES; \boxtimes (AmS)
18483 \DeclareTextCommand{\textboxtimes}{PU}{\9042\240}%* U+22A0
18484 % U+22A1 SQUARED DOT OPERATOR; \boxdot (AmS)
18485 \DeclareTextCommand{\textboxdot}{PU}{\9042\241}%* U+22A1
18486 % U+22A2 RIGHT TACK; \vdash (LaTeX)
18487 \DeclareTextCommand{\textvdash}{PU}{\9042\242}%* U+22A2
18488 %* \textvdash -> \rightvdash (MnSymbol)
18489 % U+22A3 LEFT TACK; tackleft; \dashv (LaTeX)
18490 \DeclareTextCommand{\textdashv}{PU}{\9042\243}%* U+22A3
18491 %* \textdashv -> \leftvdash (MnSymbol)

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18492 % \ndashv (mathabx)
18493 \DeclareTextCommand{\textndashv}{PU}{\9042\243\83\070}%* U+22A3 U+0338
18494 %* \textndashv -> \leftvdash (MnSymbol)
18495 % U+22A4 DOWN TACK (=top); tackdown; \top (LaTeX)
18496 \DeclareTextCommand{\texttop}{PU}{\9042\244}%* U+22A4
18497 %* \texttop -> \downvdash (MnSymbol)
18498 % \ndownvdash (MnSymbol)
18499 \DeclareTextCommand{\textndownvdash}{PU}{\9042\244\83\070}%* U+22A4 U+0338
18500 % U+22A5 UP TACK (=base, bottom); \bot (LaTeX)
18501 \DeclareTextCommand{\textbot}{PU}{\9042\245}%* U+22A5
18502 %* \textbot -> \upvdash (MnSymbol)
18503 % \nupvdash (MnSymbol)
18504 \DeclareTextCommand{\textnupvdash}{PU}{\9042\245\83\070}%* U+22A5 U+0338
18505 %* \textnupvdash -> \nperp (MnSymbol)
18506 % U+22A8 TRUE; \vDash (AmS)
18507 \DeclareTextCommand{\textvDash}{PU}{\9042\250}%* U+22A8
18508 %* \textvDash -> \models (LaTeX)
18509 %* \textvDash -> \rightmodels (MnSymbol)
18510 % U+22A9 FORCES; \Vdash (AmS)
18511 \DeclareTextCommand{\textVdash}{PU}{\9042\251}%* U+22A9
18512 %* \textVdash -> \rightVdash (MnSymbol)
18513 % U+22AA TRIPLE VERTICAL BAR RIGHT TURNSTILE; \Vvdash (AmS)
18514 \DeclareTextCommand{\textVvdash}{PU}{\9042\252}%* U+22AA
18515 % \nVdash (mathabx)
18516 \DeclareTextCommand{\textnVdash}{PU}{\9042\252\83\070}%* U+22AA U+0338
18517 % U+22AB DOUBLE VERTICAL BAR DOUBLE RIGHT TURNSTILE;
18518 % \VDash (mathabx)
18519 \DeclareTextCommand{\textVDash}{PU}{\9042\253}%* U+22AB
18520 %* \textVDash -> \rightModels (MnSymbol)
18521 % U+22AC DOES NOT PROVE; \nvdash (AmS)
18522 \DeclareTextCommand{\textnvdash}{PU}{\9042\254}%* U+22AC
18523 %* \textnvdash -> \nrightvdash (MnSymbol)
18524 % U+22AD NOT TRUE; \nvDash (AmS)
18525 \DeclareTextCommand{\textnvDash}{PU}{\9042\255}%* U+22AD
18526 %* \textnvDash -> \nrightmodels (MnSymbol)
18527 %* \textnvDash -> \nmodels (MnSymbol)
18528 % U+22AE DOES NOT FORCE; \nVdash (txfonts/pxfonts)
18529 \DeclareTextCommand{\textnVdash}{PU}{\9042\256}%* U+22AE
18530 %* \textnVdash -> \nrightVdash (MnSymbol)
18531 % U+22AF NEGATED DOUBLE VERTICAL BAR DOUBLE RIGHT TURN-
      STILE; \nVDash (AmS)
18532 \DeclareTextCommand{\textnVDash}{PU}{\9042\257}%* U+22AF
18533 %* \textnVDash -> \nrightModels (MnSymbol)
18534 % U+22B2 NORMAL SUBGROUP OF; \lhd (latexsym, ...)
18535 \DeclareTextCommand{\textlhd}{PU}{\9042\262}%* U+22B2
18536 %* \textlhd -> \lessclosed (MnSymbol)
18537 % U+22B3 CONTAINS AS NORMAL SUBGROUP; \rhd (latexsym, ...)
18538 \DeclareTextCommand{\textrhd}{PU}{\9042\263}%* U+22B3
18539 %* \textrhd -> \gtrclosed (MnSymbol)
18540 % U+22B4 NORMAL SUBGROUP OF OR EQUAL TO; \unlhd (latexsym, ...)
18541 \DeclareTextCommand{\textunlhd}{PU}{\9042\264}%* U+22B4
18542 %* \textunlhd -> \leqclosed (MnSymbol)
18543 %* \textunlhd -> \trianglelefteq (MnSymbol)
18544 % U+22B5 CONTAINS AS NORMAL SUBGROUP OR EQUAL TO; \unrhd (la-

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texsym, ...)
18545 \DeclareTextCommand{\textunrhd}{PU}{\9042\265}%* U+22B5
18546 %* \textunrhd -> \geqclosed (MnSymbol)
18547 %* \textunrhd -> \trianglerighteq (MnSymbol)
18548 % U+22B6 ORIGINAL OF; \multimapdotbothA (txfonts/pxfonts)
18549 \DeclareTextCommand{\textmultimapdotbothA}{PU}{\9042\266}%* U+22B6
18550 % U+22B7 IMAGE OF; \multimapdotbothB (txfonts/pxfonts)
18551 \DeclareTextCommand{\textmultimapdotbothB}{PU}{\9042\267}%* U+22B7
18552 % U+22B8 MULTIMAP; \multimap (AmS, txfonts/pxfonts)
18553 \DeclareTextCommand{\textmultimap}{PU}{\9042\270}%* U+22B8
18554 % U+22BB XOR; \veebar (AmS)
18555 \DeclareTextCommand{\textveebar}{PU}{\9042\273}%* U+22BB
18556 % U+22BC NAND; \barwedge (mathabx)
18557 \DeclareTextCommand{\textbarwedge}{PU}{\9042\274}%* U+22BC
18558 % U+22C6 STAR OPERATOR; \star (LaTeX)
18559 \DeclareTextCommand{\textstar}{PU}{\9042\306}%* U+22C6
18560 % U+22C7 DIVISION TIMES; \divideontimes (AmS)
18561 \DeclareTextCommand{\textdivideontimes}{PU}{\9042\307}%* U+22C7
18562 % U+22C8 BOWTIE; \bowtie (LaTeX)
18563 \DeclareTextCommand{\textbowtie}{PU}{\9042\310}%* U+22C8
18564 %* \textbowtie -> \Bowtie (wasysym)
18565 % U+22C9 LEFT NORMAL FACTOR SEMIDIRECT PRODUCT; \ltimes (AmS)
18566 \DeclareTextCommand{\textltimes}{PU}{\9042\311}%* U+22C9
18567 % U+22CA RIGHT NORMAL FACTOR SEMIDIRECT PRODUCT;
18568 % \rtimes (AmS)
18569 \DeclareTextCommand{\textrtimes}{PU}{\9042\312}%* U+22CA
18570 % U+22CB LEFT SEMIDIRECT PRODUCT; \leftthreetimes (AmS)
18571 \DeclareTextCommand{\textleftthreetimes}{PU}{\9042\313}%* U+22CB
18572 % U+22CC RIGHT SEMIDIRECT PRODUCT; \rightthreetimes (AmS)
18573 \DeclareTextCommand{\textrightthreetimes}{PU}{\9042\314}%* U+22CC
18574 % U+22CD REVERSED TILDE EQUALS; \backsimeq (AmS)
18575 \DeclareTextCommand{\textbacksimeq}{PU}{\9042\315}%* U+22CD
18576 % \nbacksimeq (txfonts/pxfonts)
18577 \DeclareTextCommand{\textnbacksimeq}{PU}{\9042\315\83\070}%* U+22CD U+0338
18578 % U+22CE CURLY LOGICAL OR; curlyor; \curlyvee (AmS)
18579 \DeclareTextCommand{\textcurlyvee}{PU}{\9042\316}%* U+22CE
18580 %* \textcurlyvee -> \varcurlyvee (stmaryrd)
18581 % U+22CF CURLY LOGICAL AND; curlyand; \curlywedge (AmS)
18582 \DeclareTextCommand{\textcurlywedge}{PU}{\9042\317}%* U+22CF
18583 %* \textcurlywedge -> \varcurlywedge (stmaryrd)
18584 % U+22D0 DOUBLE SUBSET; \Subset (AmS)
18585 \DeclareTextCommand{\textSubset}{PU}{\9042\320}%* U+22D0
18586 % \nSubset (txfonts/pxfonts)
18587 \DeclareTextCommand{\textnSubset}{PU}{\9042\320\83\070}%* U+22D0 U+0338
18588 % U+22D1 DOUBLE SUPERSET; \Supset (AmS)
18589 \DeclareTextCommand{\textSupset}{PU}{\9042\321}%* U+22D1
18590 % \nSupset (txfonts/pxfonts)
18591 \DeclareTextCommand{\textnSupset}{PU}{\9042\321\83\070}%* U+22D1 U+0338
18592 % U+22D2 DOUBLE INTERSECTION; \Cap (AmS)
18593 \DeclareTextCommand{\textCap}{PU}{\9042\322}%* U+22D2
18594 %* \textCap -> \doublecap (mathabx)
18595 % U+22D3 DOUBLE UNION; \Cup (AmS)
18596 \DeclareTextCommand{\textCup}{PU}{\9042\323}%* U+22D3
18597 %* \textCup -> \doublecup (mathabx)

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18598 % U+22D4 PITCHFORK; \pitchfork (mathabx)
18599 \DeclareTextCommand{\textpitchfork}{PU}{\9042\324}%* U+22D4
18600 % U+22D6 LESS-THAN WITH DOT; \lessdot (AmS)
18601 \DeclareTextCommand{\textlessdot}{PU}{\9042\326}%* U+22D6
18602 % U+22D7 GREATER-THAN WITH DOT; \gtrdot (AmS)
18603 \DeclareTextCommand{\textgtrdot}{PU}{\9042\327}%* U+22D7
18604 % U+22D8 VERY MUCH LESS-THAN; \lll (AmS)
18605 \DeclareTextCommand{\textlll}{PU}{\9042\330}%* U+22D8
18606 % U+22D9 VERY MUCH GREATER-THAN; \ggg (AmS)
18607 \DeclareTextCommand{\textggg}{PU}{\9042\331}%* U+22D9
18608 % U+22DA LESS-THAN EQUAL TO OR GREATER-THAN; lesseqqualorgreater;
18609 % \lesseqgtr (AmS)
18610 \DeclareTextCommand{\textlesseqgtr}{PU}{\9042\332}%* U+22DA
18611 % U+22DB GREATER-THAN EQUAL TO OR LESS-THAN; greaterqualorless;
18612 % \gtreqless (AmS)
18613 \DeclareTextCommand{\textgtreqless}{PU}{\9042\333}%* U+22DB
18614 % U+22DE EQUAL TO OR PRECEDES; \curlyeqprec (MnSymbol)
18615 \DeclareTextCommand{\textcurlyeqprec}{PU}{\9042\336}%* U+22DE
18616 % \ncurlyeqprec (mathabx)
18617 \DeclareTextCommand{\textncurlyeqprec}{PU}{\9042\336\83\070}%* U+22DE U+0338
18618 % U+22DF EQUAL TO OR SUCCEEDS; \curlyeqsucc (MnSymbol)
18619 \DeclareTextCommand{\textcurlyeqsucc}{PU}{\9042\337}%* U+22DF
18620 % \ncurlyeqsucc (mathabx)
18621 \DeclareTextCommand{\textncurlyeqsucc}{PU}{\9042\337\83\070}%* U+22DF U+0338
18622 % U+22E0 DOES NOT PRECEDE OR EQUAL; \npreccurlyeq (txfonts/pxfonts)
18623 \DeclareTextCommand{\textnpreccurlyeq}{PU}{\9042\340}%* U+22E0
18624 % U+22E1 DOES NOT SUCCEED OR EQUAL; \nsucccurlyeq (txfonts/pxfonts)
18625 \DeclareTextCommand{\textnsucccurlyeq}{PU}{\9042\341}%* U+22E1
18626 % U+22E2 NOT SQUARE IMAGE OF OR EQUAL TO; \nsqsubseteq (tx-
      fonts/pxfonts)
18627 \DeclareTextCommand{\textnqsubseteq}{PU}{\9042\342}%* U+22E2
18628 % U+22E3 NOT SQUARE ORIGINAL OF OR EQUAL TO; \nsqsupseteq (tx-
      fonts/pxfonts)
18629 \DeclareTextCommand{\textnqsupseteq}{PU}{\9042\343}%* U+22E3
18630 % U+22E4 SQUARE IMAGE OF OR NOT EQUAL TO; \sqsubsetneq (mathabx)
18631 \DeclareTextCommand{\textsqsubsetneq}{PU}{\9042\344}%* U+22E4
18632 %* \textsqsubsetneq -> \varsqsubsetneq (mathabx)
18633 % U+22E5 SQUARE ORIGINAL OF OR NOT EQUAL TO; \sqsupsetneq (math-
      abx)
18634 \DeclareTextCommand{\textsqsupsetneq}{PU}{\9042\345}%* U+22E5
18635 %* \textsqsupsetneq -> \varsqsupsetneq (mathabx)
18636 % U+22E6 LESS-THAN BUT NOT EQUIVALENT TO; \lnsim (AmS)
18637 \DeclareTextCommand{\textlnsim}{PU}{\9042\346}%* U+22E6
18638 % U+22E7 GREATER-THAN BUT NOT EQUIVALENT TO; \gnsim (AmS)
18639 \DeclareTextCommand{\textgnsim}{PU}{\9042\347}%* U+22E7
18640 % U+22E8 PRECEDES BUT NOT EQUIVALENT TO; \preccnsim (AmS)
18641 \DeclareTextCommand{\textpreccnsim}{PU}{\9042\350}%* U+22E8
18642 % U+22E9 SUCCEEDS BUT NOT EQUIVALENT TO; \succnsim (AmS)
18643 \DeclareTextCommand{\textsuccnsim}{PU}{\9042\351}%* U+22E9
18644 % U+22EA NOT NORMAL SUBGROUP OF; \ntriangleleft (AmS)
18645 \DeclareTextCommand{\textntriangleleft}{PU}{\9042\352}%* U+22EA
18646 %* \textntriangleleft -> \nlessclosed (MnSymbol)
18647 % U+22EB DOES NOT CONTAIN AS NORMAL SUBGROUP; \ntriang-
      leright (AmS)

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18648 \DeclareTextCommand{\textntriangleright}{PU}{\9042\353}%* U+22EB
18649 %* \textntriangleright -> \ngtrclosed (MnSymbol)
18650 % U+22EC NOT NORMAL SUBGROUP OF OR EQUAL TO;
18651 % \ntrianglelefteq (AmS)
18652 \DeclareTextCommand{\textntrianglelefteq}{PU}{\9042\354}%* U+22EC
18653 % U+22ED DOES NOT CONTAIN AS NORMAL SUBGROUP OR EQUAL;
18654 % \ntrianglerighteq (AmS)
18655 \DeclareTextCommand{\textntrianglerighteq}{PU}{\9042\355}%* U+22ED
18656 %* \textntrianglerighteq -> \textngeqclosed
18657 % U+22EE VERTICAL ELLIPSIS; \vdots (LaTeX)
18658 \DeclareTextCommand{\textvdots}{PU}{\9042\356}%* U+22EE
18659 % U+22EF MIDLINE HORIZONTAL ELLIPSIS; \cdots (LaTeX)
18660 \DeclareTextCommand{\textcdots}{PU}{\9042\357}%* U+22EF
18661 % U+22F0 UP RIGHT DIAGONAL ELLIPSIS; \udots (MnSymbol)
18662 \DeclareTextCommand{\textudots}{PU}{\9042\360}%* U+22F0
18663 % U+22F1 DOWN RIGHT DIAGONAL ELLIPSIS; \ddots (LaTeX)
18664 \DeclareTextCommand{\textddots}{PU}{\9042\361}%* U+22F1
18665 % U+22F6 ELEMENT OF WITH OVERBAR; \barin (mathabx)
18666 \DeclareTextCommand{\textbarin}{PU}{\9042\366}%* U+22F6

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

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18667 % U+2300 DIAMETER SIGN; \diameter (mathabx,wasysym)
18668 \DeclareTextCommand{\textdiameter}{PU}{\9043\000}%* U+2300
18669 % U+2310 REVERSED NOT SIGN; \backneg (MnSymbol)
18670 \DeclareTextCommand{\textbackneg}{PU}{\9043\020}%* U+2310
18671 % U+2311 SQUARE LOZENGE; \wasylozenge (wasysym)
18672 \DeclareTextCommand{\textwasylozenge}{PU}{\9043\021}%* U+2311
18673 % U+2319 TURNED NOT SIGN; \invbackneg (MnSymbol)
18674 \DeclareTextCommand{\textinvbackneg}{PU}{\9043\031}%* U+2319
18675 % U+231A WATCH; \clock (wasysym)
18676 \DeclareTextCommand{\textclock}{PU}{\9043\032}%* U+231A
18677 %* \textclock -> \Clocklogo (marvosym)
18678 %* \textclock -> \ClockLogo (marvosym)
18679 % U+231C TOP LEFT CORNER; \ulcorner (AmS)
18680 \DeclareTextCommand{\textulcorner}{PU}{\9043\034}%* U+231C
18681 % U+231D TOP RIGHT CORNER; \urcorner (AmS)
18682 \DeclareTextCommand{\texturcorner}{PU}{\9043\035}%* U+231D
18683 % U+231E BOTTOM LEFT CORNER; \llcorner (AmS)
18684 \DeclareTextCommand{\textllcorner}{PU}{\9043\036}%* U+231E
18685 % U+231F BOTTOM RIGHT CORNER; \lrcorner (AmS)
18686 \DeclareTextCommand{\textlrcorner}{PU}{\9043\037}%* U+231F
18687 % U+2322 FROWN; \frown (LaTeX)
18688 \DeclareTextCommand{\textfrown}{PU}{\9043\042}%* U+2322
18689 % U+2323 SMILE; \smile (LaTeX)
18690 \DeclareTextCommand{\textsmile}{PU}{\9043\043}%* U+2323
18691 % U+2328 KEYBOARD; \Keyboard (marvosym)
18692 \DeclareTextCommand{\textKeyboard}{PU}{\9043\050}%* U+2328
18693 % U+2329 LEFT-POINTING ANGLE BRACKET; \angleleft; \langle (LaTeX)
18694 \DeclareTextCommand{\textlangle}{PU}{\9043\051}%* U+2329
18695 % U+232A RIGHT-POINTING ANGLE BRACKET; \angleright; \rangle (LaTeX)
18696 \DeclareTextCommand{\textrightangle}{PU}{\9043\052}%* U+232A
18697 % U+2339 APL FUNCTIONAL SYMBOL QUAD DIVIDE; \APLinv (wasysym)
18698 \DeclareTextCommand{\textAPLinv}{PU}{\9043\071}%* U+2339
18699 % U+233C APL FUNCTIONAL SYMBOL QUAD CIRCLE; \Tumbler (mar-

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vosym)
18700 \DeclareTextCommand{\textTumbler}{PU}{\9043\074}%* U+233C
18701 % U+233D APL FUNCTIONAL SYMBOL CIRCLE STILE; \baro (stmaryrd)
18702 \DeclareTextCommand{\textstmaryrdbaro}{PU}{\9043\075}% U+233D
18703 %* \textstmaryrdbaro -> \baro (stmaryrd)
18704 % U+233F APL FUNCTIONAL SYMBOL SLASH BAR; \notslash (wasysym)
18705 \DeclareTextCommand{\textnotslash}{PU}{\9043\077}%* U+233F
18706 % U+2340 APL FUNCTIONAL SYMBOL BACKSLASH BAR;
18707 % \notbackslash (wasysym)
18708 \DeclareTextCommand{\textnotbackslash}{PU}{\9043\100}%* U+2340
18709 % U+2342 APL FUNCTIONAL SYMBOL QUAD BACKSLASH; \boxback-
      slash (mathabx)
18710 \DeclareTextCommand{\textboxbackslash}{PU}{\9043\102}%* U+2342
18711 % U+2347 APL FUNCTIONAL SYMBOL QUAD LEFTWARDS ARROW;
18712 % \APLleftarrowbox (wasysym)
18713 \DeclareTextCommand{\textAPLleftarrowbox}{PU}{\9043\107}%* U+2347
18714 % U+2348 APL FUNCTIONAL SYMBOL QUAD RIGHTWARDS ARROW;
18715 % \APLrightarrowbox (wasysym)
18716 \DeclareTextCommand{\textAPLrightarrowbox}{PU}{\9043\110}%* U+2348
18717 % U+2350 APL FUNCTIONAL SYMBOL QUAD UPWARDS ARROW; \APLu-
      parrowbox (wasysym)
18718 \DeclareTextCommand{\textAPLuparrowbox}{PU}{\9043\120}%* U+2350
18719 % U+2357 APL FUNCTIONAL SYMBOL QUAD DOWNWARDS ARROW;
18720 % \APLdownarrowbox (wasysym)
18721 \DeclareTextCommand{\textAPLdownarrowbox}{PU}{\9043\127}%* U+2357
18722 % U+235E APL FUNCTIONAL SYMBOL QUOTE QUAD;
18723 % \APLinput (wasysym)
18724 \DeclareTextCommand{\textAPLinput}{PU}{\9043\136}%* U+235E
18725 % U+2370 APL FUNCTIONAL SYMBOL QUAD QUESTION; \Request (china2e)
18726 \DeclareTextCommand{\textRequest}{PU}{\9043\160}%* U+2370
18727 % U+2393 DIRECT CURRENT SYMBOL FORM TWO; \Beam (marvosym)
18728 \DeclareTextCommand{\textBeam}{PU}{\9043\223}%* U+2393
18729 % U+2394 SOFTWARE-FUNCTION SYMBOL; \hexagon (wasysym)
18730 \DeclareTextCommand{\texthexagon}{PU}{\9043\224}%* U+2394
18731 % U+2395 APL FUNCTIONAL SYMBOL QUAD; \APLbox (wasysym)
18732 \DeclareTextCommand{\textAPLbox}{PU}{\9043\225}%* U+2395
18733 % U+23ED BLACK RIGHT-POINTING DOUBLE TRIANGLE WITH VERTI-
      CAL BAR;
18734 % \ForwardToIndex (marvosym)
18735 \DeclareTextCommand{\textForwardToIndex}{PU}{\9043\355}%* U+23ED
18736 % U+23EE BLACK LEFT-POINTING DOUBLE TRIANGLE WITH VERTI-
      CAL BAR;
18737 % \RewindToIndex (marvosym)
18738 \DeclareTextCommand{\textRewindToIndex}{PU}{\9043\356}%* U+23EE

```

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

```

18739 % U+2422 BLANK SYMBOL
18740 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422
18741 % U+2423 OPEN BOX; blank
18742 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

```

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

```

18743 % U+244A OCR DOUBLE BACKSLASH; \bbslash (stmaryrd)
18744 \DeclareTextCommand{\textbbslash}{PU}{\9044\112}%* U+244A

```

18745 %\* \textbbslash -> \varparallelinv (txfonts/pxfonts)

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

18746 % U+2460 CIRCLED DIGIT ONE; onecircle  
18747 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460  
18748 % U+2461 CIRCLED DIGIT TWO; twocircle  
18749 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461  
18750 % U+2462 CIRCLED DIGIT THREE; threecircle  
18751 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462  
18752 % U+2463 CIRCLED DIGIT FOUR; fourcircle  
18753 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463  
18754 % U+2464 CIRCLED DIGIT FIVE; fivecircle  
18755 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464  
18756 % U+2465 CIRCLED DIGIT SIX; sixcircle  
18757 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465  
18758 % U+2466 CIRCLED DIGIT SEVEN; sevenscircle  
18759 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466  
18760 % U+2467 CIRCLED DIGIT EIGHT; eightcircle  
18761 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467  
18762 % U+2468 CIRCLED DIGIT NINE; ninecircle  
18763 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468  
18764 % U+2469 CIRCLED NUMBER TEN; tencircle  
18765 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469  
18766 % U+246A CIRCLED NUMBER ELEVEN; elevencircle  
18767 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A  
18768 % U+246B CIRCLED NUMBER TWELVE; twelvecircle  
18769 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B  
18770 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle  
18771 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C  
18772 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle  
18773 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D  
18774 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle  
18775 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E  
18776 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle  
18777 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F  
18778 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle  
18779 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470  
18780 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle  
18781 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471  
18782 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle  
18783 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472  
18784 % U+2473 CIRCLED NUMBER TWENTY; twentycircle  
18785 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473  
18786 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle  
18787 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6  
18788 % \CircledA (marvosym)  
18789 \DeclareTextCommand{\textCircledA}{PU}{\9044\266}%\* U+24B6  
18790 %\* \textCircledA -> \CleaningA  
18791 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle  
18792 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7  
18793 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle  
18794 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8  
18795 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle  
18796 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9

18797 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle  
 18798 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA  
 18799 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle  
 18800 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB  
 18801 % \CleaningF (marvosym)  
 18802 \DeclareTextCommand{\textCleaningF}{PU}{\9044\273}%\* U+24BB  
 18803 % \CleaningFF (marvosym)  
 18804 \DeclareTextCommand{\textCleaningFF}{PU}{\9044\273\83\062}%\* U+24BB U+0332  
 18805 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle  
 18806 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC  
 18807 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle  
 18808 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD  
 18809 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle  
 18810 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE  
 18811 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle  
 18812 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF  
 18813 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle  
 18814 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0  
 18815 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle  
 18816 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1  
 18817 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle  
 18818 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2  
 18819 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle  
 18820 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3  
 18821 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle  
 18822 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4  
 18823 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle  
 18824 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5  
 18825 % \CleaningP (marvosym)  
 18826 \DeclareTextCommand{\textCleaningP}{PU}{\9044\305}%\* U+24C5  
 18827 % \CleaningPP (marvosym)  
 18828 \DeclareTextCommand{\textCleaningPP}{PU}{\9044\305\83\062}%\* U+24C5 U+0332  
 18829 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle  
 18830 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6  
 18831 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle  
 18832 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7  
 18833 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle  
 18834 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8  
 18835 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle  
 18836 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9  
 18837 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle  
 18838 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA  
 18839 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle  
 18840 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB  
 18841 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle  
 18842 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC  
 18843 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle  
 18844 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD  
 18845 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle  
 18846 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE  
 18847 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle  
 18848 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF  
 18849 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle  
 18850 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0



18851 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle  
 18852 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1  
 18853 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle  
 18854 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2  
 18855 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle  
 18856 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3  
 18857 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle  
 18858 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4  
 18859 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle  
 18860 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5  
 18861 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle  
 18862 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6  
 18863 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle  
 18864 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7  
 18865 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle  
 18866 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8  
 18867 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcircle  
 18868 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9  
 18869 % U+24DA CIRCLED LATIN SMALL LETTER K; kcircle  
 18870 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA  
 18871 % U+24DB CIRCLED LATIN SMALL LETTER L; lcircle  
 18872 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB  
 18873 % U+24DC CIRCLED LATIN SMALL LETTER M; mcircle  
 18874 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC  
 18875 % U+24DD CIRCLED LATIN SMALL LETTER N; ncircle  
 18876 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD  
 18877 % U+24DE CIRCLED LATIN SMALL LETTER O; ocircle  
 18878 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE  
 18879 % U+24DF CIRCLED LATIN SMALL LETTER P; pcircle  
 18880 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF  
 18881 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcircle  
 18882 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0  
 18883 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcircle  
 18884 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1  
 18885 % U+24E2 CIRCLED LATIN SMALL LETTER S; scircle  
 18886 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2  
 18887 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcircle  
 18888 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3  
 18889 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucircle  
 18890 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4  
 18891 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcircle  
 18892 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5  
 18893 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcircle  
 18894 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6  
 18895 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcircle  
 18896 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7  
 18897 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycircle  
 18898 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8  
 18899 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcircle  
 18900 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9  
 18901 % U+24EA CIRCLED DIGIT ZERO  
 18902 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

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

18903 % U+2504 BOX DRAWINGS LIGHT TRIPLE DASH HORIZONTAL; \Cutting-  
Line (marvosym)  
18904 \DeclareTextCommand{\textCuttingLine}{PU}{\9045\004}%\* U+2504  
18905 %\* \textCuttingLine -> \Kutline (marvosym)  
18906 %\* \textCuttingLine -> \CutLine (marvosym)  
18907 %\* \textCuttingLine -> \Cutline (marvosym)

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

18908 % U+25B2 BLACK UP-POINTING TRIANGLE; \UParrow (wasysym)  
18909 \DeclareTextCommand{\textUParrow}{PU}{\9045\262}%\* U+25B2  
18910 %\* \textUParrow -> \MoveUp (marvosym)  
18911 % U+25B3 WHITE UP-POINTING TRIANGLE; whiteuppointingtriangle;  
18912 % \bigtriangleup (LaTeX)  
18913 \DeclareTextCommand{\textbigtriangleup}{PU}{\9045\263}%\* U+25B3  
18914 %\* \textbigtriangleup -> \APLup (wasysym)  
18915 %\* \textbigtriangleup -> \Bleech (marvosym)  
18916 % U+25B6 BLACK RIGHT-POINTING TRIANGLE; \Forward (marvosym)  
18917 \DeclareTextCommand{\textForward}{PU}{\9045\266}%\* U+25B6  
18918 % U+25B7 WHITE RIGHT-POINTING TRIANGLE (= z notation range restric-  
tion);  
18919 % whiterightpointingtriangle; \triangleright (LaTeX)  
18920 \DeclareTextCommand{\texttriangleright}{PU}{\9045\267}%\* U+25B7  
18921 % U+25BA BLACK RIGHT-POINTING POINTER; \RHD (wasysym)  
18922 \DeclareTextCommand{\textRHD}{PU}{\9045\272}%\* U+25BA  
18923 % U+25BC BLACK DOWN-POINTING TRIANGLE; \DOWNarrow (wasysym)  
18924 \DeclareTextCommand{\textDOWNarrow}{PU}{\9045\274}%\* U+25BC  
18925 %\* \textDOWNarrow -> \MoveDown (marvosym)  
18926 % U+25BD WHITE DOWN-POINTING TRIANGLE; whitedownpointingtri-  
angle;  
18927 % \bigtriangledown (LaTeX)  
18928 \DeclareTextCommand{\textbigtriangledown}{PU}{\9045\275}%\* U+25BD  
18929 %\* \textbigtriangledown -> \APLdown (wasysym)  
18930 % U+25C0 BLACK LEFT-POINTING TRIANGLE; \Rewind (marvosym)  
18931 \DeclareTextCommand{\textRewind}{PU}{\9045\300}%\* U+25C0  
18932 % U+25C1 WHITE RIGHT-POINTING TRIANGLE (= z notation domain re-  
striction);  
18933 % whiteleftpointingtriangle; \triangleleft (LaTeX)  
18934 \DeclareTextCommand{\texttriangleleft}{PU}{\9045\301}%\* U+25C1  
18935 % U+25C4 BLACK LEFT-POINTING POINTER; \LHD (wasysym)  
18936 \DeclareTextCommand{\textLHD}{PU}{\9045\304}%\* U+25C4  
18937 % U+25C7 WHITE DIAMOND; whitediamond; \diamond (LaTeX)  
18938 \DeclareTextCommand{\textdiamond}{PU}{\9045\307}%\* U+25C7  
18939 %\* \textdiamond -> \Diamond (wasysym)  
18940 % U+25CA LOZENGE; lozenge; \lozenge (AmS)  
18941 \DeclareTextCommand{\textlozenge}{PU}{\9045\312}%\* U+25CA  
18942 % U+25D6 LEFT HALF BLACK CIRCLE; \LEFTCIRCLE (wasysym)  
18943 \DeclareTextCommand{\textLEFTCIRCLE}{PU}{\9045\326}%\* U+25D6  
18944 % U+25D7 RIGHT HALF BLACK CIRCLE; \RIGHTCIRCLE (wasysym)  
18945 \DeclareTextCommand{\textRIGHTCIRCLE}{PU}{\9045\327}%\* U+25D7  
18946 % U+25E6 WHITE BULLET; \*openbullet, whitebullet  
18947 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}%\* U+25E6  
18948 % U+25EB WHITE SQUARE WITH VERTICAL BISECTING LINE;  
18949 % \boxbar (stmaryrd)  
18950 \DeclareTextCommand{\textboxbar}{PU}{\9045\353}%\* U+25EB

18951 % U+25EF LARGE CIRCLE; largecircle  
 18952 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}%\* U+25EF  
 18953 %\* \textbigcircle -> \varbigcirc (stmaryrd)  
 18954 %

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

18955 % U+2601 CLOUD; \Cloud (ifsym)  
 18956 \DeclareTextCommand{\textCloud}{PU}{\9046\001}%\* U+2601  
 18957 % U+2605 BLACK STAR; \FiveStar (bding)  
 18958 \DeclareTextCommand{\textFiveStar}{PU}{\9046\005}%\* U+2605  
 18959 % U+2606 WHITE STAR; \FiveStarOpen (bding)  
 18960 \DeclareTextCommand{\textFiveStarOpen}{PU}{\9046\006}%\* U+2606  
 18961 % U+260E BLACK TELEPHONE; telephoneblack; \Phone (bding)  
 18962 \DeclareTextCommand{\textPhone}{PU}{\9046\016}%\* U+260E  
 18963 %\* \textPhone -> \Telefon (marvosym)  
 18964 % U+2610 BALLOT BOX; \boxempty (stmaryrd)  
 18965 \DeclareTextCommand{\textboxempty}{PU}{\9046\020}%\* U+2610  
 18966 %\* \textboxempty -> \Box (wasysym)  
 18967 % U+2611 BALLOT BOX WITH CHECK; \Checkedbox (marvosym)  
 18968 \DeclareTextCommand{\textCheckedbox}{PU}{\9046\021}%\* U+2611  
 18969 %\* \textCheckedbox -> \CheckedBox (marvosym)  
 18970 % U+2612 BALLOT BOX WITH X; \Crossedbox (marvosym)  
 18971 \DeclareTextCommand{\textCrossedbox}{PU}{\9046\022}%\* U+2612  
 18972 %\* \textCrossedbox -> \XBox (wasysym)  
 18973 %\* \textCrossedbox -> \CrossedBox (marvosym)  
 18974 % U+2615 HOT BEVERAGE; \Coffeecup (marvosym)  
 18975 \DeclareTextCommand{\textCoffeecup}{PU}{\9046\025}%\* U+2615  
 18976 % U+261A BLACK LEFT POINTING INDEX; \HandCuffLeft (bding)  
 18977 \DeclareTextCommand{\textHandCuffLeft}{PU}{\9046\032}%\* U+261A  
 18978 % U+261B BLACK RIGHT POINTING INDEX; \HandCuffRight (bding)  
 18979 \DeclareTextCommand{\textHandCuffRight}{PU}{\9046\033}%\* U+261B  
 18980 % U+261C WHITE LEFT POINTING INDEX; \HandLeft (bding)  
 18981 \DeclareTextCommand{\textHandLeft}{PU}{\9046\034}%\* U+261C  
 18982 %\* \textHandLeft -> \rightpointleft (fourier)  
 18983 % U+261E WHITE RIGHT POINTING INDEX; \HandRight (bding)  
 18984 \DeclareTextCommand{\textHandRight}{PU}{\9046\036}%\* U+261E  
 18985 %\* \textHandRight -> \leftpointright (fourier)  
 18986 %\* \textHandRight -> \PointingHand (marvosym)  
 18987 %\* \textHandRight -> \Pointinghand (marvosym)  
 18988 % U+2622 RADIOACTIVE SIGN; \Radioactivity (marvosym)  
 18989 \DeclareTextCommand{\textRadioactivity}{PU}{\9046\042}%\* U+2622  
 18990 %\* \textRadioactivity -> \Radiation (ifsym)  
 18991 % U+2623 BIOHAZARD SIGN; \Biohazard (marvosym)  
 18992 \DeclareTextCommand{\textBiohazard}{PU}{\9046\043}%\* U+2623  
 18993 % U+2625 ANKH; \Ankh (marvosym)  
 18994 \DeclareTextCommand{\textAnkh}{PU}{\9046\045}%\* U+2625  
 18995 % U+262F YIN YANG; \YinYang (marvosym)  
 18996 \DeclareTextCommand{\textYinYang}{PU}{\9046\057}%\* U+262F  
 18997 %\* \textYinYang -> \Yinyang (marvosym)  
 18998 %\* \textYinYang -> \YingYang (marvosym)  
 18999 %\* \textYinYang -> \Yingyang (marvosym)  
 19000 % U+2639 WHITE FROWNING FACE; \frownie (wasysym)  
 19001 \DeclareTextCommand{\textfrownie}{PU}{\9046\071}%\* U+2639  
 19002 %\* \textfrownie -> \Frowny (marvosym)

19003 % U+263A WHITE SMILING FACE; \smiley (wasysym)  
19004 \DeclareTextCommand{\textsmiley}{PU}{\9046\072}%\* U+263A  
19005 %\* \textsmiley -> \Smiley (marvosym)  
19006 % U+263B BLACK SMILING FACE; \blacksmiley (wasysym)  
19007 \DeclareTextCommand{\textblacksmiley}{PU}{\9046\073}%\* U+263B  
19008 % U+263C WHITE SUN WITH RAYS; \sun (wasysym)  
19009 \DeclareTextCommand{\textsun}{PU}{\9046\074}%\* U+263C  
19010 %\* \textsun -> \Sun (marvosym)  
19011 % U+263D FIRST QUARTER MOON; \leftmoon (wasysym, mathabx)  
19012 \DeclareTextCommand{\textleftmoon}{PU}{\9046\075}%\* U+263D  
19013 % U+263E LAST QUARTER MOON; \rightmoon (wasysym, mathabx)  
19014 \DeclareTextCommand{\textrightmoon}{PU}{\9046\076}%\* U+263E  
19015 % U+263F MERCURY; \mercury (wasysym)  
19016 \DeclareTextCommand{\textmercury}{PU}{\9046\077}%\* U+263F  
19017 %\* \textmercury -> \Mercury (marvosym)  
19018 % U+2640 FEMALE SIGN; female; \female (wasysym)  
19019 \DeclareTextCommand{\textPUfemale}{PU}{\9046\100}% U+2640  
19020 %\* \textPUfemale -> \textfemale (tipx)  
19021 %\* \textPUfemale -> \female (wasysym)  
19022 %\* \textPUfemale -> \venus (wasysym)  
19023 %\* \textPUfemale -> \Venus (marvosym)  
19024 %\* \textPUfemale -> \Female (marvosym)  
19025 % U+2641 EARTH; \earth (wasysym)  
19026 \DeclareTextCommand{\textearth}{PU}{\9046\101}%\* U+2641  
19027 %\* \textearth -> \Earth (marvosym)  
19028 % U+2642 MALE SIGN; male, mars; \male (wasysym)  
19029 \DeclareTextCommand{\textmale}{PU}{\9046\102}%\* U+2642  
19030 %\* \textmale -> \mars (wasysym)  
19031 %\* \textmale -> \Mars (marvosym)  
19032 %\* \textmale -> \Male (marvosym)  
19033 % U+2643 JUPITER; \jupiter (wasysym)  
19034 \DeclareTextCommand{\textjupiter}{PU}{\9046\103}%\* U+2643  
19035 %\* \textjupiter -> \Jupiter (marvosym)  
19036 % U+2644 SATURN; \saturn (wasysym)  
19037 \DeclareTextCommand{\textsaturn}{PU}{\9046\104}%\* U+2644  
19038 %\* \textsaturn -> \Saturn (marvosym)  
19039 % U+2645 URANUS; \uranus (wasysym)  
19040 \DeclareTextCommand{\texturanus}{PU}{\9046\105}%\* U+2645  
19041 %\* \texturanus -> \Uranus (marvosym)  
19042 % U+2646 NEPTUNE; \neptune (wasysym)  
19043 \DeclareTextCommand{\textneptune}{PU}{\9046\106}%\* U+2646  
19044 %\* \textneptune -> \Neptune (marvosym)  
19045 % U+2647 PLUTO; \pluto (wasysym)  
19046 \DeclareTextCommand{\textpluto}{PU}{\9046\107}%\* U+2647  
19047 %\* \textpluto -> \Pluto (marvosym)  
19048 % U+2648 ARIES; \aries (wasysym)  
19049 \DeclareTextCommand{\textaries}{PU}{\9046\110}%\* U+2648  
19050 %\* \textaries -> \Aries (marvosym)  
19051 % U+2649 TAURUS; \taurus (wasysym)  
19052 \DeclareTextCommand{\texttaurus}{PU}{\9046\111}%\* U+2649  
19053 %\* \texttaurus -> \Taurus (marvosym)  
19054 % U+264A GEMINI; \gemini (wasysym)  
19055 \DeclareTextCommand{\textgemini}{PU}{\9046\112}%\* U+264A  
19056 %\* \textgemini -> \Gemini (marvosym)

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19057 % U+264B CANCER; \cancer (wasysym)
19058 \DeclareTextCommand{\textcancer}{PU}{\9046\113}%* U+264B
19059 %* \textcancer -> \Cancer (marvosym)
19060 % U+264C LEO; \leo (wasysym)
19061 \DeclareTextCommand{\textleo}{PU}{\9046\114}%* U+264C
19062 %* \textleo -> \Leo (marvosym)
19063 % U+264D VIRGO; \virgo (wasysym)
19064 \DeclareTextCommand{\textvirgo}{PU}{\9046\115}%* U+264D
19065 %* \textvirgo -> \Virgo (marvosym)
19066 % U+264E LIBRA; \libra (wasysym)
19067 \DeclareTextCommand{\textlibra}{PU}{\9046\116}%* U+264E
19068 %* \textlibra -> \Libra (marvosym)
19069 % U+264F SCORPIO; \scorpio (wasysym)
19070 \DeclareTextCommand{\textscorpio}{PU}{\9046\117}%* U+264F
19071 %* \textscorpio -> \Scorpio (marvosym)
19072 % U+2650 SAGITTARIUS; \sagittarius (wasysym)
19073 \DeclareTextCommand{\textsagittarius}{PU}{\9046\120}%* U+2650
19074 %* \textsagittarius -> \Sagittarius (marvosym)
19075 % U+2651 CAPRICORN; \capricornus (wasysym)
19076 \DeclareTextCommand{\textcapricornus}{PU}{\9046\121}%* U+2651
19077 %* \textcapricornus -> \Capricorn (marvosym)
19078 % U+2652 AQUARIUS; \aquarius (wasysym)
19079 \DeclareTextCommand{\textaquarius}{PU}{\9046\122}%* U+2652
19080 %* \textaquarius -> \Aquarius (marvosym)
19081 % U+2653 PISCES; \pisces (wasysym)
19082 \DeclareTextCommand{\textpisces}{PU}{\9046\123}%* U+2653
19083 %* \textpisces -> \Pisces (marvosym)
19084 % U+2660 BLACK SPADE SUIT; spade, spadesuitblack; \spadesuit (LaTeX)
19085 \DeclareTextCommand{\textspadesuitblack}{PU}{\9046\140}% U+2660
19086 %* \textspadesuitblack -> \spadesuit (MnSymbol)
19087 % U+2661 WHITE HEART SUIT; heartsuitwhite; \heartsuit (LaTeX)
19088 \DeclareTextCommand{\textheartsuitwhite}{PU}{\9046\141}% U+2661
19089 %* \textheartsuitwhite -> \Heart (marvosym)
19090 %* \textheartsuitwhite -> \heartsuit (MnSymbol)
19091 % U+2662 WHITE DIAMOND SUIT; diamondsuitwhite; \diamondsuit (LaTeX)
19092 \DeclareTextCommand{\textdiamondsuitwhite}{PU}{\9046\142}% U+2662
19093 %* \textdiamondsuitwhite -> \diamondsuit (MnSymbol)
19094 % U+2663 BLACK CLUB SUIT; club, clubsuitblack; \clubsuit (LaTeX)
19095 \DeclareTextCommand{\textclubsuitblack}{PU}{\9046\143}% U+2663
19096 %* \textclubsuitblack -> \clubsuit (MnSymbol)
19097 % U+2664 WHITE SPADE SUIT; spadesuitwhite
19098 \DeclareTextCommand{\textspadesuitwhite}{PU}{\9046\144}% U+2664
19099 % U+2665 BLACK HEART SUIT; heartsuitblack, heart
19100 \DeclareTextCommand{\textheartsuitblack}{PU}{\9046\145}% U+2665
19101 % U+2666 BLACK DIAMOND SUIT; diamond
19102 \DeclareTextCommand{\textdiamondsuitblack}{PU}{\9046\146}% U+2666
19103 % U+2667 WHITE CLUB SUIT; clubsuitwhite
19104 \DeclareTextCommand{\textclubsuitwhite}{PU}{\9046\147}% U+2667
19105 % U+2669 QUARTER NOTE; quarternote; \quarternote (wasysym, arev)
19106 \DeclareTextCommand{\textquarternote}{PU}{\9046\151}%* U+2669
19107 % U+266A EIGHTH NOTE; musicalnote; \textmusicalnote (textcomp)
19108 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}% U+266A
19109 %* \textmusicalnote -> \eighthnote (wasysym, arev)
19110 % U+266B BEAMED EIGHTH NOTES; eighthnotebeamed; \twonotes (wasysym)

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19111 \DeclareTextCommand{\texttwonotes}{PU}{\9046\153}%\* U+266B  
 19112 % U+266C BEAMED SIXTEENTH NOTES; beamedsixteenthnotes; \sixteenth-  
         note (arev)  
 19113 \DeclareTextCommand{\textsixteenthnote}{PU}{\9046\154}%\* U+266C  
 19114 % U+266D MUSIC FLAT SIGN; musicflatsign; \flat (LaTeX)  
 19115 \DeclareTextCommand{\textflat}{PU}{\9046\155}%\* U+266D  
 19116 % U+266E MUSIC NATURAL SIGN; \natural (LaTeX)  
 19117 \DeclareTextCommand{\textnatural}{PU}{\9046\156}%\* U+266E  
 19118 % U+266F MUSIC SHARP SIGN; musicsharpsign; \sharp (LaTeX)  
 19119 \DeclareTextCommand{\textsharp}{PU}{\9046\157}%\* U+266F  
 19120 % U+2672 UNIVERSAL RECYCLING SYMBOL; \recycle (recycle)  
 19121 \DeclareTextCommand{\textrecycle}{PU}{\9046\162}%\* U+2672  
 19122 %\* \textrecycle -> \Recycling (marvosym)  
 19123 % U+267F WHEELCHAIR SYMBOL; \Wheelchair (marvosym)  
 19124 \DeclareTextCommand{\textWheelchair}{PU}{\9046\177}%\* U+267F  
 19125 % U+2691 BLACK FLAG; \Flag (ifsym)  
 19126 \DeclareTextCommand{\textFlag}{PU}{\9046\221}%\* U+2691  
 19127 %\* \textFlag -> \VarFlag (ifsym)  
 19128 % U+2692 HAMMER AND PICK; \MineSign (marvosym)  
 19129 \DeclareTextCommand{\textMineSign}{PU}{\9046\222}%\* U+2692  
 19130 % U+2694 CROSSED SWORDS; \dsmilitary (dictsym)  
 19131 \DeclareTextCommand{\textdsmilitary}{PU}{\9046\224}%\* U+2694  
 19132 %\* \textdsmilitary -> \textxswup (fourier)  
 19133 % U+2695 STAFF OF AESCULAPIUS; \dsmedical (dictsym)  
 19134 \DeclareTextCommand{\textdsmedical}{PU}{\9046\225}%\* U+2695  
 19135 % U+2696 SCALES; \dsjuridical (dictsym)  
 19136 \DeclareTextCommand{\textdsjuridical}{PU}{\9046\226}%\* U+2696  
 19137 % U+2697 ALEMBIC; \dschemical (dictsym)  
 19138 \DeclareTextCommand{\textdschemical}{PU}{\9046\227}%\* U+2697  
 19139 % U+2698 FLOWER; \dsbiological (dictsym)  
 19140 \DeclareTextCommand{\textdsbiological}{PU}{\9046\230}%\* U+2698  
 19141 % U+269A STAFF OF HERMES; \dscommercial (dictsym)  
 19142 \DeclareTextCommand{\textdscommercial}{PU}{\9046\232}%\* U+269A  
 19143 % U+269D OUTLINED WHITE STAR; \manstar (manfnt)  
 19144 \DeclareTextCommand{\textmanstar}{PU}{\9046\235}%\* U+269D  
 19145 % U+26A0 WARNING SIGN; \danger (fourier)  
 19146 \DeclareTextCommand{\textdanger}{PU}{\9046\240}%\* U+26A0  
 19147 % U+26A2 DOUBLED FEMALE SIGN; \FemaleFemale (marvosym)  
 19148 \DeclareTextCommand{\textFemaleFemale}{PU}{\9046\242}%\* U+26A2  
 19149 % U+26A3 DOUBLED MALE SIGN; \MaleMale (marvosym)  
 19150 \DeclareTextCommand{\textMaleMale}{PU}{\9046\243}%\* U+26A3  
 19151 % U+26A4 INTERLOCKED FEMALE AND MALE SIGN; \FemaleMale (mar-  
         vosym)  
 19152 \DeclareTextCommand{\textFemaleMale}{PU}{\9046\244}%\* U+26A4  
 19153 % U+26A5 MALE AND FEMALE SIGN; \Hermaphrodite (marvosym)  
 19154 \DeclareTextCommand{\textHermaphrodite}{PU}{\9046\245}%\* U+26A5  
 19155 % U+26AA MEDIUM WHITE CIRCLE; \Neural (marvosym)  
 19156 \DeclareTextCommand{\textNeutral}{PU}{\9046\252}%\* U+26AA  
 19157 % U+26AD MARRIAGE SYMBOL  
 19158 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD  
 19159 % U+26AE DIVORCE SYMBOL  
 19160 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE  
 19161 % U+26B2 NEUTER; \textuncrfemale (tipx)  
 19162 \DeclareTextCommand{\textPUuncrfemale}{PU}{\9046\262}% U+26B2

19163 %\* \textPUuncrfemale -> \textuncrfemale (tipx)  
 19164 % U+26B9 SEXTILE; \hexstar (wasysym)  
 19165 \DeclareTextCommand{\texthexstar}{PU}{\9046\271}%\* U+26B9  
 19166 % U+26BD SOCCER BALL; \Football (marvosym)  
 19167 \DeclareTextCommand{\textSoccerBall}{PU}{\9046\275}% U+26BD  
 19168 %\* \textSoccerBall -> \Football (marvosym)  
 19169 % U+26C5 SUN BEHIND CLOUD; \SunCloud (ifsym)  
 19170 \DeclareTextCommand{\textSunCloud}{PU}{\9046\305}%\* U+26C5  
 19171 % U+26C6 RAIN; \Rain (ifsym)  
 19172 \DeclareTextCommand{\textRain}{PU}{\9046\306}%\* U+26C6  
 19173 % U+26D4 NO ENTRY; \noway (fourier)  
 19174 \DeclareTextCommand{\textnoway}{PU}{\9046\324}%\* U+26D4  
 19175 % U+26F0 MOUNTAIN; \Mountain (ifsym)  
 19176 \DeclareTextCommand{\textMountain}{PU}{\9046\360}%\* U+26F0  
 19177 % U+26FA TENT; \Tent (ifsym)  
 19178 \DeclareTextCommand{\textTent}{PU}{\9046\372}%\* U+26FA

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

19179 % U+2701 UPPER BLADE SCISSORS; \ScissorRightBrokenBottom (bbling)  
 19180 \DeclareTextCommand{\textScissorRightBrokenBottom}{PU}{\9047\001}% U+2701  
 19181 %\* \textScissorRightBrokenBottom -> \CutLeft (marvosym)  
 19182 %\* \textScissorRightBrokenBottom -> \Cutright (marvosym)  
 19183 % U+2702 BLACK SCISSORS; \ScissorRight (bbling)  
 19184 \DeclareTextCommand{\textScissorRight}{PU}{\9047\002}%\* U+2702  
 19185 %\* \textScissorRight -> \RightScissors (marvosym)  
 19186 %\* \textScissorRight -> \Leftscissors (marvosym)  
 19187 % U+2703 LOWER BLADE SCISSORS; \ScissorRightBrokenTop (bbling)  
 19188 \DeclareTextCommand{\textScissorRightBrokenTop}{PU}{\9047\003}%\* U+2703  
 19189 % U+2704 WHITE SCISSORS; \ScissorHollowRight (bbling)  
 19190 \DeclareTextCommand{\textScissorHollowRight}{PU}{\9047\004}%\* U+2704  
 19191 % U+2706 TELEPHONE LOCATION SIGN; \PhoneHandset (bbling)  
 19192 \DeclareTextCommand{\textPhoneHandset}{PU}{\9047\006}%\* U+2706  
 19193 % U+2707 TAPE DRIVE; \Tape (bbling)  
 19194 \DeclareTextCommand{\textTape}{PU}{\9047\007}%\* U+2707  
 19195 % U+2708 AIRPLANE; \Plane (bbling)  
 19196 \DeclareTextCommand{\textPlane}{PU}{\9047\010}%\* U+2708  
 19197 % U+2709 ENVELOPE; \Envelope (bbling),  
 19198 \DeclareTextCommand{\textEnvelope}{PU}{\9047\011}%\* U+2709  
 19199 %\* \textEnvelope -> \Letter (marvosym)  
 19200 % U+270C VICTORY HAND; \Peace (bbling)  
 19201 \DeclareTextCommand{\textPeace}{PU}{\9047\014}%\* U+270C  
 19202 % U+270D WRITING HAND; \WritingHand (marvosym)  
 19203 \DeclareTextCommand{\textWritingHand}{PU}{\9047\015}%\* U+270D  
 19204 %\* \textWritingHand -> \Writinghand (marvosym)  
 19205 % U+270E LOWER RIGHT PENCIL; \PencilRightDown (bbling)  
 19206 \DeclareTextCommand{\textPencilRightDown}{PU}{\9047\016}%\* U+270E  
 19207 % U+270F PENCIL; \PencilRight (bbling)  
 19208 \DeclareTextCommand{\textPencilRight}{PU}{\9047\017}%\* U+270F  
 19209 % U+2710 UPPER RIGHT PENCIL; \PencilRightUp (bbling)  
 19210 \DeclareTextCommand{\textPencilRightUp}{PU}{\9047\020}%\* U+2710  
 19211 % U+2711 WHITE NIB; \NibRight (bbling)  
 19212 \DeclareTextCommand{\textNibRight}{PU}{\9047\021}%\* U+2711  
 19213 % U+2712 BLACK NIB; \NibSolidRight (bbling)  
 19214 \DeclareTextCommand{\textNibSolidRight}{PU}{\9047\022}%\* U+2712

19215 % U+2713 CHECK MARK; checkmark; \Checkmark (bding)  
 19216 \DeclareTextCommand{\textCheckmark}{PU}{\9047\023}%\* U+2713  
 19217 %\* \textCheckmark -> \checkmark (MnSymbol)  
 19218 % U+2714 HEAVY CHECK MARK; \CheckmarkBold (bding)  
 19219 \DeclareTextCommand{\textCheckmarkBold}{PU}{\9047\024}%\* U+2714  
 19220 % U+2715 MULTIPLICATION X; \XSolid (bding)  
 19221 \DeclareTextCommand{\textXSolid}{PU}{\9047\025}%\* U+2715  
 19222 % U+2716 HEAVY MULTIPLICATION X; \XSolidBold (bding)  
 19223 \DeclareTextCommand{\textXSolidBold}{PU}{\9047\026}%\* U+2716  
 19224 % U+2717 BALLOT X; \XSolidBrush (bding)  
 19225 \DeclareTextCommand{\textXSolidBrush}{PU}{\9047\027}%\* U+2717  
 19226 % U+2719 OUTLINED GREEK CROSS; \PlusOutline (bding)  
 19227 \DeclareTextCommand{\textPlusOutline}{PU}{\9047\031}%\* U+2719  
 19228 % U+271A HEAVY GREEK CROSS; \Plus (bding)  
 19229 \DeclareTextCommand{\textPlus}{PU}{\9047\032}%\* U+271A  
 19230 % U+271B OPEN CENTRE CROSS; \PlusThinCenterOpen (bding)  
 19231 \DeclareTextCommand{\textPlusThinCenterOpen}{PU}{\9047\033}%\* U+271B  
 19232 % U+271C HEAVY OPEN CENTRE CROSS; \PlusCenterOpen (bding)  
 19233 \DeclareTextCommand{\textPlusCenterOpen}{PU}{\9047\034}%\* U+271C  
 19234 % U+271D LATIN CROSS; \Cross (bding)  
 19235 \DeclareTextCommand{\textCross}{PU}{\9047\035}%\* U+271D  
 19236 % U+271E SHADOWED WHITE LATIN CROSS; \CrossOpenShadow (bding)  
 19237 \DeclareTextCommand{\textCrossOpenShadow}{PU}{\9047\036}%\* U+271E  
 19238 % U+271F OUTLINED LATIN CROSS; \CrossOutline (bding)  
 19239 \DeclareTextCommand{\textCrossOutline}{PU}{\9047\037}%\* U+271F  
 19240 % U+2720 MALTESE CROSS; \CrossMaltese (bding)  
 19241 \DeclareTextCommand{\textCrossMaltese}{PU}{\9047\040}%\* U+2720  
 19242 % U+2721 STAR OF DAVID; \DavidStar (bding)  
 19243 \DeclareTextCommand{\textDavidStar}{PU}{\9047\041}%\* U+2721  
 19244 %\* \textDavidStar -> \davidstar (wasysym)  
 19245 % U+2722 FOUR TEARDROP-SPOKED ASTERISK; \FourAsterisk (bding)  
 19246 \DeclareTextCommand{\textFourAsterisk}{PU}{\9047\042}%\* U+2722  
 19247 % U+2723 FOUR BALLOON-SPOKED ASTERISK; \JackStar (bding)  
 19248 \DeclareTextCommand{\textJackStar}{PU}{\9047\043}%\* U+2723  
 19249 % U+2724 HEAVY FOUR BALLOON-SPOKED ASTERISK; \JackStarBold (bding)  
 19250 \DeclareTextCommand{\textJackStarBold}{PU}{\9047\044}%\* U+2724  
 19251 % U+2725 FOUR CLUB-SPOKED ASTERISK; \CrossClowerTips (bding)  
 19252 \DeclareTextCommand{\textClowerTips}{PU}{\9047\045}%\* U+2725  
 19253 % U+2726 BLACK FOUR POINTED STAR; \FourStar (bding)  
 19254 \DeclareTextCommand{\textFourStar}{PU}{\9047\046}%\* U+2726  
 19255 % U+2727 WHITE FOUR POINTED STAR; \FourStarOpen (bding)  
 19256 \DeclareTextCommand{\textFourStarOpen}{PU}{\9047\047}%\* U+2727  
 19257 % U+272A CIRCLED WHITE STAR; \FiveStarOpenCircled (bding)  
 19258 \DeclareTextCommand{\textFiveStarOpenCircled}{PU}{\9047\052}%\* U+272A  
 19259 % U+272B OPEN CENTRE BLACK STAR; \FiveStarCenterOpen (bding)  
 19260 \DeclareTextCommand{\textFiveStarCenterOpen}{PU}{\9047\053}%\* U+272B  
 19261 % U+272C BLACK CENTRE WHITE STAR; \FiveStarOpenDotted (bding)  
 19262 \DeclareTextCommand{\textFiveStarOpenDotted}{PU}{\9047\054}%\* U+272C  
 19263 % U+272D OUTLINED BLACK STAR; \FiveStarOutline (bding)  
 19264 \DeclareTextCommand{\textFiveStarOutline}{PU}{\9047\055}%\* U+272D  
 19265 % U+272E HEAVY OUTLINED BLACK STAR; \FiveStarOutlineHeavy (bding)  
 19266 \DeclareTextCommand{\textFiveStarOutlineHeavy}{PU}{\9047\056}%\* U+272E  
 19267 % U+272F PINWHEEL STAR; \FiveStarConvex (bding)



19268 \DeclareTextCommand{\textFiveStarConvex}{PU}{\9047\057}%\* U+272F  
 19269 % U+2730 SHADOWED WHITE STAR; \FiveStarShadow (bding)  
 19270 \DeclareTextCommand{\textFiveStarShadow}{PU}{\9047\060}%\* U+2730  
 19271 % U+2731 HEAVY ASTERISK; \AsteriskBold (bding)  
 19272 \DeclareTextCommand{\textAsteriskBold}{PU}{\9047\061}%\* U+2731  
 19273 % U+2732 OPEN CENTRE ASTERISK; \AsteriskCenterOpen (bding)  
 19274 \DeclareTextCommand{\textAsteriskCenterOpen}{PU}{\9047\062}%\* U+2732  
 19275 % U+2734 EIGHT POINTED BLACK STAR; \EightStarTaper (bding)  
 19276 \DeclareTextCommand{\textEightStarTaper}{PU}{\9047\064}%\* U+2734  
 19277 % U+2735 EIGHT POINTED PINWHEEL STAR; \EightStarConvex (bding)  
 19278 \DeclareTextCommand{\textEightStarConvex}{PU}{\9047\065}%\* U+2735  
 19279 % U+2736 SIX POINTED BLACK STAR; \SixStar (bding)  
 19280 \DeclareTextCommand{\textSixStar}{PU}{\9047\066}%\* U+2736  
 19281 % U+2737 EIGHT POINTED RECTILINEAR BLACK STAR; \EightStar (bding)  
 19282 \DeclareTextCommand{\textEightStar}{PU}{\9047\067}%\* U+2737  
 19283 % U+2738 HEAVY EIGHT POINTED RECTILINEAR BLACK STAR; \EightStarBold (bding)  
 19284 \DeclareTextCommand{\textEightStarBold}{PU}{\9047\070}%\* U+2738  
 19285 % U+2739 TWELVE POINTED BLACK STAR; \TwelveStar (bding)  
 19286 \DeclareTextCommand{\textTwelveStar}{PU}{\9047\071}%\* U+2739  
 19287 % U+273A SIXTEEN POINTED ASTERISK; \SixteenStarLight (bding)  
 19288 \DeclareTextCommand{\textSixteenStarLight}{PU}{\9047\072}%\* U+273A  
 19289 % U+273B TEARDROP-SPOKED ASTERISK; \SixFlowerPetalRemoved (bding)  
 19290 \DeclareTextCommand{\textSixFlowerPetalRemoved}{PU}{\9047\073}%\* U+273B  
 19291 % U+273C OPEN CENTRE TEARDROP-SPOKED ASTERISK;  
 19292 % \SixFlowerOpenCenter (bding)  
 19293 \DeclareTextCommand{\textSixFlowerOpenCenter}{PU}{\9047\074}%\* U+273C  
 19294 % U+273D HEAVY TEARDROP-SPOKED ASTERISK; \Asterisk (bding)  
 19295 \DeclareTextCommand{\textAsterisk}{PU}{\9047\075}%\* U+273D  
 19296 % U+273E SIX PETALLED BLACK AND WHITE FLORETTE; \SixFlowerAlternate (bding)  
 19297 \DeclareTextCommand{\textSixFlowerAlternate}{PU}{\9047\076}%\* U+273E  
 19298 % U+273F BLACK FLORETTE; \FiveFlowerPetal (bding)  
 19299 \DeclareTextCommand{\textFiveFlowerPetal}{PU}{\9047\077}%\* U+273F  
 19300 % U+2740 WHITE FLORETTE; \FiveFlowerOpen (bding)  
 19301 \DeclareTextCommand{\textFiveFlowerOpen}{PU}{\9047\100}%\* U+2740  
 19302 % U+2741 EIGHT PETALLED OUTLINED BLACK FLORETTE; \EightFlowerPetal (bding)  
 19303 \DeclareTextCommand{\textEightFlowerPetal}{PU}{\9047\101}%\* U+2741  
 19304 % U+2742 CIRCLED OPEN CENTRE EIGHT POINTED STAR; \SunshineOpenCircled (bding)  
 19305 \DeclareTextCommand{\textSunshineOpenCircled}{PU}{\9047\102}%\* U+2742  
 19306 % U+2743 HEAVY TEARDROP-SPOKED PINWHEEL ASTERISK; \SixFlowerAltPetal (bding)  
 19307 \DeclareTextCommand{\textSixFlowerAltPetal}{PU}{\9047\103}%\* U+2743  
 19308 % U+2744 SNOWFLAKE; \SnowflakeChevron (bding)  
 19309 \DeclareTextCommand{\textSnowflakeChevron}{PU}{\9047\104}%\* U+2744  
 19310 % U+2745 TIGHT TRIFOLIATE SNOWFLAKE; \Snowflake (bding)  
 19311 \DeclareTextCommand{\textSnowflake}{PU}{\9047\105}%\* U+2745  
 19312 % U+2746 HEAVY CHEVRON SNOWFLAKE; \SnowflakeChevronBold (bding)  
 19313 \DeclareTextCommand{\textSnowflakeChevronBold}{PU}{\9047\106}%\* U+2746  
 19314 % U+2747 SPARKLE; \Sparkle (bding)

19315 \DeclareTextCommand{\textSparkle}{PU}{\9047\107}%\* U+2747  
 19316 % U+2748 HEAVY SPARKLE; \SparkleBold (bding)  
 19317 \DeclareTextCommand{\textSparkleBold}{PU}{\9047\110}%\* U+2748  
 19318 % U+2749 BALLOON-SPOKED ASTERISK; \AsteriskRoundedEnds (bding)  
 19319 \DeclareTextCommand{\textAsteriskRoundedEnds}{PU}{\9047\111}%\* U+2749  
 19320 % U+274A EIGHT TEARDROP-SPOKED PROPELLER ASTERISK;  
 19321 % \EightFlowerPetalRemoved (bding)  
 19322 \DeclareTextCommand{\textEightFlowerPetalRemoved}{PU}{\9047\112}%\* U+274A  
 19323 % U+274B HEAVY EIGHT TEARDROP-SPOKED PROPELLER ASTERISK;  
 19324 % \EightAsterisk (bding)  
 19325 \DeclareTextCommand{\textEightAsterisk}{PU}{\9047\113}%\* U+274B  
 19326 % U+274D SHADOWED WHITE CIRCLE; \CircleShadow (bding)  
 19327 \DeclareTextCommand{\textCircleShadow}{PU}{\9047\115}%\* U+274D  
 19328 % U+274F LOWER RIGHT DROP-SHADOWED WHITE SQUARE;  
 19329 % \SquareShadowBottomRight (bding)  
 19330 \DeclareTextCommand{\textSquareShadowBottomRight}{PU}{\9047\117}%\* U+274F  
 19331 % U+2750 UPPER RIGHT DROP-SHADOWED WHITE SQUARE;  
 19332 % \SquareShadowTopRight (bding)  
 19333 \DeclareTextCommand{\textSquareTopRight}{PU}{\9047\120}%\* U+2750  
 19334 % U+2751 LOWER RIGHT SHADOWED WHITE SQUARE;  
 19335 % \SquareCastShadowBottomRight (bding)  
 19336 \DeclareTextCommand{\textSquareCastShadowBottomRight}{PU}{\9047\121}%\* U+2751  
 19337 % U+2752 UPPER RIGHT SHADOWED WHITE SQUARE;  
 19338 % \SquareCastShadowTopRight (bding)  
 19339 \DeclareTextCommand{\textSquareCastShadowTopRight}{PU}{\9047\122}%\* U+2752  
 19340 % U+2756 BLACK DIAMOND MINUS WHITE X; \OrnamentDiamandSolid (b-  
 ding)  
 19341 \DeclareTextCommand{\textDiamandSolid}{PU}{\9047\126}%\* U+2756  
 19342 % U+2758 LIGHT VERTICAL BAR; \RectangleThin (bding)  
 19343 \DeclareTextCommand{\textRectangleThin}{PU}{\9047\130}%\* U+2758  
 19344 % U+2759 MEDIUM VERTICAL BAR; \Rectangle (bding)  
 19345 \DeclareTextCommand{\textRectangle}{PU}{\9047\131}%\* U+2759  
 19346 % U+275A HEAVY VERTICAL BAR; \RectangleBold (bding)  
 19347 \DeclareTextCommand{\textRectangleBold}{PU}{\9047\132}%\* U+275A

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

19348 % U+27C2 PERPENDICULAR; perpendicular; \perp (LaTeX)  
 19349 \DeclareTextCommand{\textperp}{PU}{\9047\302}%\* U+27C2  
 19350 % \notperp (mathabx)  
 19351 \DeclareTextCommand{\textnotperp}{PU}{\9047\302\83\070}%\* U+27C2 U+0338  
 19352 % U+27C7 OR WITH DOT INSIDE; \veedot (MnSymbol)  
 19353 \DeclareTextCommand{\textveedot}{PU}{\9047\307}%\* U+27C7  
 19354 % U+27D1 AND WITH DOT; \wedgedot (MnSymbol)  
 19355 \DeclareTextCommand{\textwedgedot}{PU}{\9047\321}%\* U+27D1  
 19356 % U+27DC LEFT MULTIMAP; \leftspoon (MnSymbol)  
 19357 \DeclareTextCommand{\textleftspoon}{PU}{\9047\334}%\* U+27DC  
 19358 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET  
 19359 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}%\* U+27E6  
 19360 %\* \textlbrackdbl -> \lbracket (stmaryrd)  
 19361 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET  
 19362 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}%\* U+27E7  
 19363 %\* \textrbrackdbl -> \rrbracket (stmaryrd)

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

19364 % U+27F2 ANTICLOCKWISE GAPPED CIRCLE ARROW;  
 19365 % \circlearrowleft (AmS)  
 19366 \DeclareTextCommand{\textcirclearrowleft}{PU}{\9047\362}%\* U+27F2  
 19367 % U+27F3 CLOCKWISE GAPPED CIRCLE ARROW; \circlearrowright (AmS)  
 19368 \DeclareTextCommand{\textcirclearrowright}{PU}{\9047\363}%\* U+27F3  
 19369 % U+27F5 LONG LEFTWARDS ARROW; \longleftarrow (AmS)  
 19370 \DeclareTextCommand{\textlongleftarrow}{PU}{\9047\365}%\* U+27F5  
 19371 % U+27F6 LONG RIGHTWARDS ARROW; \longrightarrow (AmS)  
 19372 \DeclareTextCommand{\textlongrightarrow}{PU}{\9047\366}%\* U+27F6  
 19373 % U+27F7 LONG LEFT RIGHT ARROW; \longleftrightarrow (AmS)  
 19374 \DeclareTextCommand{\textlongleftrightarrow}{PU}{\9047\367}%\* U+27F7  
 19375 % U+27F8 LONG LEFTWARDS DOUBLE ARROW; \Longleftarrow (AmS)  
 19376 \DeclareTextCommand{\textLongleftarrow}{PU}{\9047\370}%\* U+27F8  
 19377 % U+27F9 LONG RIGHTWARDS DOUBLE ARROW; \Longrightarrow (AmS)  
 19378 \DeclareTextCommand{\textLongrightarrow}{PU}{\9047\371}%\* U+27F9  
 19379 % U+27FA LONG LEFT RIGHT DOUBLE ARROW; \Longleftrightarrow (AmS)  
 19380 \DeclareTextCommand{\textLongleftrightarrow}{PU}{\9047\372}%\* U+27FA  
 19381 % U+27FC LONG RIGHTWARDS ARROW FROM BAR; \longmapsto (AmS)  
 19382 \DeclareTextCommand{\textlongmapsto}{PU}{\9047\374}%\* U+27FC  
 19383 % U+27FD LONG LEFTWARDS DOUBLE ARROW FROM BAR; \Longmaps-  
 from (stmaryrd)  
 19384 \DeclareTextCommand{\textLongmapsfrom}{PU}{\9047\375}%\* U+27FD  
 19385 % U+27FE LONG RIGHTWARDS DOUBLE ARROW FROM BAR; \Longmap-  
 sto (stmaryrd)  
 19386 \DeclareTextCommand{\textLongmapsto}{PU}{\9047\376}%\* U+27FE

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

19387 % U+2921 NORTH WEST AND SOUTH EAST ARROW; \nwsearrow (MnSym-  
 bol)  
 19388 \DeclareTextCommand{\textnwsearrow}{PU}{\9051\041}%\* U+2921  
 19389 % U+2922 NORTH EAST AND SOUTH WEST ARROW; \neswarrow (MnSym-  
 bol)  
 19390 \DeclareTextCommand{\textneswarrow}{PU}{\9051\042}%\* U+2922  
 19391 % U+2923 NORTH WEST ARROW WITH HOOK; \hooknwarrow (MnSymbol)  
 19392 \DeclareTextCommand{\textlhooknwarrow}{PU}{\9051\043}%\* U+2923  
 19393 % U+2924 NORTH EAST ARROW WITH HOOK; \rhooknearrow (MnSymbol)  
 19394 \DeclareTextCommand{\textrhooknearrow}{PU}{\9051\044}%\* U+2924  
 19395 % U+2925 SOUTH EAST ARROW WITH HOOK; \hooksearrow (MnSymbol)  
 19396 \DeclareTextCommand{\textlhooksearrow}{PU}{\9051\045}%\* U+2925  
 19397 % U+2926 SOUTH WEST ARROW WITH HOOK; \rhookswarrow (MnSymbol)  
 19398 \DeclareTextCommand{\textrhookswarrow}{PU}{\9051\046}%\* U+2926  
 19399 % U+2933 WAVE ARROW POINTING DIRECTLY RIGHT; \leadsto (wasysym)  
 19400 \DeclareTextCommand{\textleadsto}{PU}{\9051\063}%\* U+2933  
 19401 % U+2934 ARROW POINTING RIGHTWARDS THEN CURVING UPWARDS;  
 19402 % \rcurvearrowne (MnSymbol)  
 19403 \DeclareTextCommand{\textrcurvearrowne}{PU}{\9051\064}%\* U+2934  
 19404 % U+2935 ARROW POINTING RIGHTWARDS THEN CURVING DOWN-  
 WARDS;  
 19405 % \lcurvearrowse (MnSymbol)  
 19406 \DeclareTextCommand{\textlcurvearrowse}{PU}{\9051\065}%\* U+2935  
 19407 % U+2936 ARROW POINTING DOWNWARDS THEN CURVING LEFT-  
 WARDS;  
 19408 % \lcurvearrowsw (MnSymbol)  
 19409 \DeclareTextCommand{\textlcurvearrowsw}{PU}{\9051\066}%\* U+2936

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19410 % U+2937 ARROW POINTING DOWNWARDS THEN CURVING RIGHT-
        WARDS;
19411 % \rcurvearrowse (MnSymbol)
19412 \DeclareTextCommand{\texttrcurvearrowse}{PU}{\9051\067}%* U+2937
19413 % U+2938 RIGHT-SIDE ARC CLOCKWISE ARROW; \lcurvearrowdown (Mn-
        Symbol)
19414 \DeclareTextCommand{\textlcurvearrowdown}{PU}{\9051\070}%* U+2938
19415 %* \textlcurvearrowdown -> \RightTorque (marvosym)
19416 %* \textlcurvearrowdown -> \Righttorque (marvosym)
19417 % U+2939 LEFT-SIDE ARC ANTICLOCKWISE ARROW;
19418 % \rcurvearrowdown (MnSymbol)
19419 \DeclareTextCommand{\texttrcurvearrowdown}{PU}{\9051\071}%* U+2939
19420 %* \texttrcurvearrowdown -> \LeftTorque (marvosym)
19421 %* \texttrcurvearrowdown -> \Lefttorque (marvosym)
19422 % U+293A TOP ARC ANTICLOCKWISE ARROW; \rcurvearrowleft (MnSym-
        bol)
19423 \DeclareTextCommand{\texttrcurvearrowleft}{PU}{\9051\072}%* U+293A
19424 % U+293B BOTTOM ARC ANTICLOCKWISE ARROW;
19425 % \rcurvearrowright (MnSymbol)
19426 \DeclareTextCommand{\texttrcurvearrowright}{PU}{\9051\073}%* U+293B
19427 % U+294A LEFT BARB UP RIGHT BARB DOWN HARPOON; \lefttrighthar-
        poon (mathabx)
19428 \DeclareTextCommand{\textlefttrightharpoon}{PU}{\9051\112}%* U+294A
19429 % U+294B LEFT BARB DOWN RIGHT BARB UP HARPOON; \rightlefthar-
        poon (mathabx)
19430 \DeclareTextCommand{\textrightleftharpoon}{PU}{\9051\113}%* U+294B
19431 % U+294C UP BARB RIGHT DOWN BARB LEFT HARPOON;
19432 % \updownharpoonleftright (MnSymbol)
19433 \DeclareTextCommand{\textupdownharpoonleftright}{PU}{\9051\114}%* U+294C
19434 % U+294D UP BARB LEFT DOWN BARB RIGHT HARPOON;
19435 % \updownharpoonletright (MnSymbol)
19436 \DeclareTextCommand{\textupdownharpoonletright}{PU}{\9051\115}%* U+294D
19437 % U+2962 LEFTWARDS HARPOON WITH BARB UP ABOVE LEFTWARDS
19438 % HARPOON WITH BARB DOWN; \leftleftharpoons (mathabx)
19439 \DeclareTextCommand{\textleftleftharpoons}{PU}{\9051\142}%* U+2962
19440 % U+2963 UPWARDS HARPOON WITH BARB LEFT BESIDE UPWARDS
19441 % HARPOON WITH BARB RIGHT; \upupharpoons (mathabx)
19442 \DeclareTextCommand{\textupupharpoons}{PU}{\9051\143}%* U+2963
19443 % U+2964 RIGHTWARDS HARPOON WITH BARB UP ABOVE RIGHT-
        WARDS HARPOON
19444 % WITH BARB DOWN; \rightrightarpoons (mathabx)
19445 \DeclareTextCommand{\textrightarpoons}{PU}{\9051\144}%* U+2964
19446 % U+2965 DOWNWARDS HARPOON WITH BARB LEFT BESIDE DOWN-
        WARDS HARPOON
19447 % WITH BARB RIGHT; \downdownharpoons (mathabx)
19448 \DeclareTextCommand{\textdowndownharpoons}{PU}{\9051\145}%* U+2965
19449 % U+296A LEFTWARDS HARPOON WITH BARB UP ABOVE LONG DASH;
19450 % \leftbarharpoon (mathabx)
19451 \DeclareTextCommand{\textleftbarharpoon}{PU}{\9051\152}%* U+296A
19452 % U+296B LEFTWARDS HARPOON WITH BARB DOWN BELOW
19453 % LONG DASH; \barleftharpoon (mathabx)
19454 \DeclareTextCommand{\textbarleftharpoon}{PU}{\9051\153}%* U+296B
19455 % U+296C RIGHTWARDS HARPOON WITH BARB UP ABOVE
19456 % LONG DASH; \rightbarharpoon (mathabx)

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19457 \DeclareTextCommand{\textrightbarharpoon}{PU}{\9051\154}%\* U+296C  
 19458 % U+296D RIGHTWARDS HARPOON WITH BARB DOWN BELOW  
 19459 % LONG DASH; \barrightharpoon (mathabx)  
 19460 \DeclareTextCommand{\textbarrightharpoon}{PU}{\9051\155}%\* U+296D  
 19461 % U+296E UPWARDS HARPOON WITH BARB LEFT BESIDE DOWN-  
 WARDS HARPOON  
 19462 % WITH BARB RIGHT; \updownharpoons (mathabx)  
 19463 \DeclareTextCommand{\textupdownharpoons}{PU}{\9051\156}%\* U+296E  
 19464 % U+296F DOWNWARDS HARPOON WITH BARB LEFT BESIDE UP-  
 WARDS HARPOON  
 19465 % WITH BARB RIGHT; \downupharpoons (mathabx)  
 19466 \DeclareTextCommand{\textdownupharpoons}{PU}{\9051\157}%\* U+296F  
 19467 % U+297F DOWN FISH TAIL  
 19468 \DeclareTextCommand{\textmoo}{PU}{\9051\177\83\066}%\* U+297F U+0336

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

19469 % U+2987 Z NOTATION LEFT IMAGE BRACKET; \lparenthesis (stmaryrd)  
 19470 \DeclareTextCommand{\textllparenthesis}{PU}{\9051\207}%\* U+2987  
 19471 % U+2988 Z NOTATION RIGHT IMAGE BRACKET; \rrparenthesis (stmaryrd)  
 19472 \DeclareTextCommand{\textrrparenthesis}{PU}{\9051\210}%\* U+2988  
 19473 % U+29B0 REVERSED EMPTY SET; \invdiameter (wasysym)  
 19474 \DeclareTextCommand{\textinvdiameter}{PU}{\9051\260}%\* U+29B0  
 19475 % U+29B6 CIRCLED VERTICAL BAR; \obar (stmaryrd)  
 19476 \DeclareTextCommand{\textobar}{PU}{\9051\266}%\* U+29B6  
 19477 %\* \textobar -> \textvarobar (stmaryrd)  
 19478 % U+29B8 CIRCLED REVERSE SOLIDUS; \obslash (stmaryrd)  
 19479 \DeclareTextCommand{\textobslash}{PU}{\9051\270}%\* U+29B8  
 19480 %\* \textobslash -> \circledbslash (txfonts/pxfonts)  
 19481 %\* \textobslash -> \obackslash (mathabx)  
 19482 %\* \textobslash -> \varobslash (stmaryrd)  
 19483 % U+29BA CIRCLE DIVIDED BY HORIZONTAL BAR AND TOP HALF  
 19484 % DIVIDED BY VERTICAL BAR; \obot (mathabx)  
 19485 \DeclareTextCommand{\textobot}{PU}{\9051\272}%\* U+29BA  
 19486 %\* \textobot -> \odplus (ulsy)  
 19487 % U+29BB CIRCLE WITH SUPERIMPOSED X; \NoChemicalCleaning (mar-  
 vosym)  
 19488 \DeclareTextCommand{\textNoChemicalCleaning}{PU}{\9051\273}%\* U+29BB  
 19489 % U+29C0 CIRCLED LESS-THAN; \olessthan (stmaryrd)  
 19490 \DeclareTextCommand{\textolessthan}{PU}{\9051\300}%\* U+29C0  
 19491 %\* \textolessthan -> \varolessthan (stmaryrd)  
 19492 % U+29C1 CIRCLED GREATER-THAN; \ogreaterthan (stmaryrd)  
 19493 \DeclareTextCommand{\textogreaterthan}{PU}{\9051\301}%\* U+29C1  
 19494 %\* \textogreaterthan -> \varogreaterthan (stmaryrd)  
 19495 % U+29C4 SQUARED RISING DIAGONAL SLASH; \boxslash (mathabx, stmaryrd)  
 19496 \DeclareTextCommand{\textboxslash}{PU}{\9051\304}%\* U+29C4  
 19497 % U+29C5 SQUARED FALLING DIAGONAL SLASH; \boxbslash (stmaryrd)  
 19498 \DeclareTextCommand{\textboxbslash}{PU}{\9051\305}%\* U+29C5  
 19499 % U+29C6 SQUARED ASTERISK; \boxast (stmaryrd)  
 19500 \DeclareTextCommand{\textboxast}{PU}{\9051\306}%\* U+29C6  
 19501 % U+29C7 SQUARED SMALL CIRCLE; \boxcircle (stmaryrd)  
 19502 \DeclareTextCommand{\textboxcircle}{PU}{\9051\307}%\* U+29C7  
 19503 % U+29C8 SQUARED SQUARE; \boxbox (stmaryrd)  
 19504 \DeclareTextCommand{\textboxbox}{PU}{\9051\310}%\* U+29C8  
 19505 % U+29D3 BLACK BOWTIE; \Valve (marvosym)

19506 \DeclareTextCommand{\textValve}{PU}{\9051\323}%\* U+29D3  
 19507 % U+29DF DOUBLE-ENDED MULTIMAP; \multimapboth (txfonts/pxfonts)  
 19508 \DeclareTextCommand{\textmultimapboth}{PU}{\9051\337}%\* U+29DF  
 19509 % U+29E2 SHUFFLE PRODUCT; \shuffle (shuffle)  
 19510 \DeclareTextCommand{\textshuffle}{PU}{\9051\342}%\* U+29E2

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

19511 % U+2A04 N-ARY UNION OPERATOR WITH PLUS; \uplus (LaTeX)  
 19512 \DeclareTextCommand{\textuplus}{PU}{\9052\004}%\* U+2A04  
 19513 % U+2A07 TWO LOGICAL AND OPERATOR; \bigdoublewedge (MnSymbol)  
 19514 \DeclareTextCommand{\textbigdoublewedge}{PU}{\9052\007}%\* U+2A07  
 19515 % U+2A08 TWO LOGICAL OR OPERATOR; \bigdoublevee (MnSymbol)  
 19516 \DeclareTextCommand{\textbigdoublevee}{PU}{\9052\010}%\* U+2A08  
 19517 % U+2A1D JOIN; \Join (latexsym, amsfonts, amssymb, mathabx, txfonts,  
 19518 % pxfonts, wasysym)  
 19519 \DeclareTextCommand{\textJoin}{PU}{\9052\035}%\* U+2A1D  
 19520 % U+2A1F Z NOTATION SCHEMA COMPOSITION; \fatsemi (stmaryrd)  
 19521 \DeclareTextCommand{\textfatsemi}{PU}{\9052\037}%\* U+2A1F  
 19522 % U+2A22 PLUS SIGN WITH SMALL CIRCLE ABOVE; \circplus (mathabx)  
 19523 \DeclareTextCommand{\textcircplus}{PU}{\9052\042}%\* U+2A22  
 19524 % U+2A2A MINUS SIGN WITH DOT BELOW; \minusdot (MnSymbol)  
 19525 \DeclareTextCommand{\textminusdot}{PU}{\9052\052}%\* U+2A2A  
 19526 %\* \textminusdot -> \divdot (mathabx)  
 19527 % U+2A30 MULTIPLICATION SIGN WITH DOT ABOVE; \dottimes (mathabx)  
 19528 \DeclareTextCommand{\textdottimes}{PU}{\9052\060}%\* U+2A30  
 19529 % U+2A32 SEMIDIRECT PRODUCT WITH BOTTOM CLOSED;  
 19530 % \dtimes (mathdesign)  
 19531 \DeclareTextCommand{\textdtimes}{PU}{\9052\062}%\* U+2A32  
 19532 % U+2A38 CIRCLED DIVISION SIGN; \odiv (mathabx)  
 19533 \DeclareTextCommand{\textodiv}{PU}{\9052\070}%\* U+2A38  
 19534 % U+2A3C INTERIOR PRODUCT; \invneg (MnSymbol)  
 19535 \DeclareTextCommand{\textinvneg}{PU}{\9052\074}%\* U+2A3C  
 19536 % U+2A4E DOUBLE SQUARE INTERSECTION; \sqdoublecap (mathabx)  
 19537 \DeclareTextCommand{\textsqdoublecap}{PU}{\9052\116}%\* U+2A4E  
 19538 %\* \textsqdoublecap -> \doublesqcap (MnSymbol)  
 19539 % U+2A40 INTERSECTION WITH DOT; \capdot (MnSymbol)  
 19540 \DeclareTextCommand{\textcapdot}{PU}{\9052\100}%\* U+2A40  
 19541 % U+2A4F DOUBLE SQUARE UNION; \sqdoublecup (mathabx)  
 19542 \DeclareTextCommand{\textsqdoublecup}{PU}{\9052\117}%\* U+2A4F  
 19543 %\* \textsqdoublecup -> \doublesqcup (MnSymbol)  
 19544 % U+2A55 TWO INTERSECTING LOGICAL AND; \doublewedge (MnSymbol)  
 19545 \DeclareTextCommand{\textdoublewedge}{PU}{\9052\125}%\* U+2A55  
 19546 % U+2A56 TWO INTERSECTING LOGICAL OR; \doublevee (MnSymbol)  
 19547 \DeclareTextCommand{\textdoublevee}{PU}{\9052\126}%\* U+2A56  
 19548 %\* \textdoublevee -> \merge (stmaryrd)  
 19549 % U+2A5E LOGICAL AND WITH DOUBLE OVERBAR;  
 19550 % \doublebarwedge (AmS)  
 19551 \DeclareTextCommand{\textdoublebarwedge}{PU}{\9052\136}%\* U+2A5E  
 19552 % U+2A63 LOGICAL OR WITH DOUBLE UNDERBAR;  
 19553 % \veedoublebar (mathabx)  
 19554 \DeclareTextCommand{\textveedoublebar}{PU}{\9052\143}%\* U+2A63  
 19555 % U+2A66 EQUALS SIGN WITH DOT BELOW; \eqdot (MnSymbol)  
 19556 \DeclareTextCommand{\texteqdot}{PU}{\9052\146}%\* U+2A66  
 19557 % \neqdot (MnSymbol)

19558 \DeclareTextCommand{\textneqdot}{PU}{\9052\146\83\070}%\* U+2A66 U+0338  
 19559 % U+2A74 DOUBLE COLON EQUAL; \coloncolonequals (colonequals)  
 19560 \DeclareTextCommand{\textcoloncolonequals}{PU}{\9052\164}%\* U+2A74  
 19561 % U+2A7D LESS-THAN OR SLANTED EQUAL TO; \leqslant (AmS)  
 19562 \DeclareTextCommand{\textleqslant}{PU}{\9052\175}%\* U+2A7D  
 19563 % \nleqslant (txfonts/pxfonts)  
 19564 \DeclareTextCommand{\textnleqslant}{PU}{\9052\175\83\070}%\* U+2A7D U+0338  
 19565 % U+2A7E GREATER-THAN OR SLANTED EQUAL TO; \geqslant (AmS)  
 19566 \DeclareTextCommand{\textgeqslant}{PU}{\9052\176}%\* U+2A7E  
 19567 % \ngeqslant (txfonts/pxfonts)  
 19568 \DeclareTextCommand{\textngeqslant}{PU}{\9052\176\83\070}%\* U+2A7E U+0338  
 19569 % U+2A85 LESS-THAN OR APPROXIMATE; \lessapprox (AmS)  
 19570 \DeclareTextCommand{\textlessapprox}{PU}{\9052\205}%\* U+2A85  
 19571 % \nlessapprox (txfonts/pxfonts)  
 19572 \DeclareTextCommand{\textnlessapprox}{PU}{\9052\205\83\070}%\* U+2A85 U+0338  
 19573 % U+2A86 GREATER-THAN OR APPROXIMATE; \gtrapprox (AmS)  
 19574 \DeclareTextCommand{\textgtrapprox}{PU}{\9052\206}%\* U+2A86  
 19575 % \ngtrapprox (txfonts/pxfonts)  
 19576 \DeclareTextCommand{\textngtrapprox}{PU}{\9052\206\83\070}%\* U+2A86 U+0338  
 19577 % U+2A87 LESS-THAN AND SINGLE-LINE NOT EQUAL TO; \lneq (AmS)  
 19578 \DeclareTextCommand{\textlneq}{PU}{\9052\207}%\* U+2A87  
 19579 % U+2A88 GREATER-THAN AND SINGLE-LINE NOT EQUAL TO;  
 19580 % \gneq (AmS)  
 19581 \DeclareTextCommand{\textgneq}{PU}{\9052\210}%\* U+2A88  
 19582 % U+2A89 LESS-THAN AND NOT APPROXIMATE; \lnapprox (AmS)  
 19583 \DeclareTextCommand{\textlnapprox}{PU}{\9052\211}%\* U+2A89  
 19584 % U+2A8A GREATER-THAN AND NOT APPROXIMATE; \gnapprox (AmS)  
 19585 \DeclareTextCommand{\textgnapprox}{PU}{\9052\212}%\* U+2A8A  
 19586 % U+2A8B LESS-THAN ABOVE DOUBLE-LINE EQUAL ABOVE GREATER-  
 THAN;  
 19587 % \lesseqqgtr (AmS)  
 19588 \DeclareTextCommand{\textlesseqqgtr}{PU}{\9052\213}%\* U+2A8B  
 19589 % U+2A8C GREATER-THAN ABOVE DOUBLE-LINE EQUAL ABOVE LESS-  
 THAN;  
 19590 % \gtreqqless (AmS)  
 19591 \DeclareTextCommand{\textgtreqqless}{PU}{\9052\214}%\* U+2A8C  
 19592 % U+2A95 SLANTED EQUAL TO OR LESS-THAN; \eqslantless (AmS)  
 19593 \DeclareTextCommand{\texteqslantless}{PU}{\9052\225}%\* U+2A95  
 19594 % U+2A96 SLANTED EQUAL TO OR GREATER-THAN; \eqslantgtr (AmS)  
 19595 \DeclareTextCommand{\texteqslantgtr}{PU}{\9052\226}%\* U+2A96  
 19596 % U+2AA6 LESS-THAN CLOSED BY CURVE; \leftslice (stmaryrd)  
 19597 \DeclareTextCommand{\textleftslice}{PU}{\9052\246}%\* U+2AA6  
 19598 % U+2AA7 GREATER-THAN CLOSED BY CURVE; \rightslice (stmaryrd)  
 19599 \DeclareTextCommand{\textright slice}{PU}{\9052\247}%\* U+2AA7  
 19600 % U+2AAF PRECEDES ABOVE SINGLE-LINE EQUALS SIGN; \preceq (Mn-  
 Symbol)  
 19601 \DeclareTextCommand{\textpreceq}{PU}{\9052\257}%\* U+2AAF  
 19602 % \npreceq (txfonts/pxfonts)  
 19603 \DeclareTextCommand{\textnpreceq}{PU}{\9052\257\83\070}%\* U+2AAF U+0338  
 19604 % U+2AB0 SUCCEEDS ABOVE SINGLE-LINE EQUALS SIGN; \succeq (Mn-  
 Symbol)  
 19605 \DeclareTextCommand{\textsucceq}{PU}{\9052\260}%\* U+2AB0  
 19606 % \nsucceq (txfonts/pxfonts)  
 19607 \DeclareTextCommand{\textnsucceq}{PU}{\9052\260\83\070}%\* U+2AB0 U+0338

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19608 % U+2AB1 PRECEDES ABOVE SINGLE-LINE NOT EQUAL TO; \prec-
      neq (mathabx)
19609 \DeclareTextCommand{\textprecneq}{PU}{\9052\261}%* U+2AB1
19610 % U+2AB2 SUCCEEDS ABOVE SINGLE-LINE NOT EQUAL TO; \succ-
      neq (mathabx)
19611 \DeclareTextCommand{\textsuccneq}{PU}{\9052\262}%* U+2AB2
19612 % U+2AB3 PRECEDES ABOVE EQUALS SIGN; \preceqq (txfonts/pxfonts)
19613 \DeclareTextCommand{\textpreceqq}{PU}{\9052\263}%* U+2AB3
19614 % \npreceqq (txfonts/pxfonts)
19615 \DeclareTextCommand{\textnpreceqq}{PU}{\9052\263\83\070}%* U+2AB3 U+0338
19616 % U+2AB4 SUCCEEDS ABOVE EQUALS SIGN; \succeqq (txfonts/pxfonts)
19617 \DeclareTextCommand{\textsucceqq}{PU}{\9052\264}%* U+2AB4
19618 % \nsucceqq (txfonts/pxfonts)
19619 \DeclareTextCommand{\textnsucceqq}{PU}{\9052\264\83\070}%* U+2AB4 U+0338
19620 % U+2AB5 PRECEDES ABOVE NOT EQUAL TO; \precneqq (txfonts/pxfonts)
19621 \DeclareTextCommand{\textprecneqq}{PU}{\9052\265}%* U+2AB5
19622 % U+2AB6 SUCCEEDS ABOVE NOT EQUAL TO; \succneqq (txfonts/pxfonts)
19623 \DeclareTextCommand{\textsuccneqq}{PU}{\9052\266}%* U+2AB6
19624 % U+2AB7 PRECEDES ABOVE ALMOST EQUAL TO; \precapprox (AmS)
19625 \DeclareTextCommand{\textprecapprox}{PU}{\9052\267}%* U+2AB7
19626 % \nprecapprox (txfonts/pxfonts)
19627 \DeclareTextCommand{\textnprecapprox}{PU}{\9052\267\83\070}%* U+2AB7 U+0338
19628 % U+2AB8 SUCCEEDS ABOVE ALMOST EQUAL TO; \succapprox (AmS)
19629 \DeclareTextCommand{\textsuccapprox}{PU}{\9052\270}%* U+2AB8
19630 % \nsuccapprox (txfonts/pxfonts)
19631 \DeclareTextCommand{\textnsuccapprox}{PU}{\9052\270\83\070}%* U+2AB8 U+0338
19632 % U+2AB9 PRECEDES ABOVE NOT ALMOST EQUAL TO; \precnap-
      prox (AmS)
19633 \DeclareTextCommand{\textprecnapprox}{PU}{\9052\271}%* U+2AB9
19634 % U+2ABA SUCCEEDS ABOVE NOT ALMOST EQUAL TO; \succnap-
      prox (AmS)
19635 \DeclareTextCommand{\textsuccnapprox}{PU}{\9052\272}%* U+2ABA
19636 % U+2AC5 SUBSET OF ABOVE EQUALS SIGN; \subseteqq (AmS)
19637 \DeclareTextCommand{\textsubseteqq}{PU}{\9052\305}%* U+2AC5
19638 % \nsubseteqq (txfonts/pxfonts, mathabx)
19639 \DeclareTextCommand{\textnsubseteqq}{PU}{\9052\305\83\070}%* U+2AC5 U+0338
19640 % U+2AC6 SUPERSET OF ABOVE EQUALS SIGN; \supseteqq (AmS)
19641 \DeclareTextCommand{\textsupseteqq}{PU}{\9052\306}%* U+2AC6
19642 % \nsupseteqq (mathabx)
19643 \DeclareTextCommand{\textnsupseteqq}{PU}{\9052\306\83\070}%* U+2AC6 U+0338
19644 % U+2AE3 DOUBLE VERTICAL BAR LEFT TURNSTILE
19645 \DeclareTextCommand{\textdashV}{PU}{\9052\343}%* U+2AE3
19646 %* \textdashV -> \leftVdash (MnSymbol)
19647 % \ndashV (mathabx)
19648 \DeclareTextCommand{\textndashV}{PU}{\9052\343\83\070}%* U+2AE3 U+0338
19649 %* \textndashV -> \nleftVdash (MnSymbol)
19650 % U+2AE4 VERTICAL BAR DOUBLE LEFT TURNSTILE; \Dashv (mathabx)
19651 \DeclareTextCommand{\textDashv}{PU}{\9052\344}%* U+2AE4
19652 %* \textDashv -> \leftmodels (MnSymbol)
19653 % \nDashv (mathabx)
19654 \DeclareTextCommand{\textnDashv}{PU}{\9052\344\83\070}%* U+2AE4 U+0338
19655 %* \textnDashv -> \nleftmodels (MnSymbol)
19656 % U+2AE5 DOUBLE VERTICAL BAR DOUBLE LEFT TURNSTILE;
19657 % \DashV (mathabx)

```



19658 \DeclareTextCommand{\textDashV}{PU}{\9052\345}%\* U+2AE5  
 19659 %\* \textDashV -> \leftModels (MnSymbol)  
 19660 % \nDashV (mathabx)  
 19661 \DeclareTextCommand{\textnDashV}{PU}{\9052\345\83\070}%\* U+2AE5 U+0338  
 19662 %\* \textnDashV -> \leftModels (MnSymbol)  
 19663 % U+2AEA DOUBLE DOWN TACK; \downmodels (MnSymbol)  
 19664 \DeclareTextCommand{\textdownmodels}{PU}{\9052\352}%\* U+2AEA  
 19665 % \ndownmodels (MnSymbol)  
 19666 \DeclareTextCommand{\textndownmodels}{PU}{\9052\352\83\070}%\* U+2AEA U+0338  
 19667 % U+2AEB DOUBLE UP TACK; \upmodels (MnSymbol)  
 19668 \DeclareTextCommand{\textupmodels}{PU}{\9052\353}%\* U+2AEB  
 19669 % \nupmodels (MnSymbol)  
 19670 \DeclareTextCommand{\textnupmodels}{PU}{\9052\353\83\070}%\* U+2AEB U+0338  
 19671 % U+2AEF VERTICAL LINE WITH CIRCLE ABOVE; \upspoon (MnSymbol)  
 19672 \DeclareTextCommand{\textupspoon}{PU}{\9052\357}%\* U+2AEF  
 19673 % U+2AF4 TRIPLE VERTICAL BAR BINARY RELATION;  
 19674 % \interleave (stmaryrd)  
 19675 \DeclareTextCommand{\textinterleave}{PU}{\9052\364}%\* U+2AF4  
 19676 % U+2AFD DOUBLE SOLIDUS OPERATOR; \sslash (stmaryrd)  
 19677 \DeclareTextCommand{\textsslash}{PU}{\9052\375}%\* U+2AFD  
 19678 %\* \textsslash -> \varparallel (txfonts\pxfonts)

#### 47.2.36 Miscellaneous Symbols and Arrows: U+2B00 to U+2BFF

19679 % U+2B20 WHITE PENTAGON; \pentagon (wasysym)  
 19680 \DeclareTextCommand{\textpentagon}{PU}{\9053\040}%\* U+2B20  
 19681 % U+2B21 WHITE HEXAGON; \varhexagon (wasysym)  
 19682 \DeclareTextCommand{\textvarhexagon}{PU}{\9053\041}%\* U+2B21

#### 47.2.37 Latin Extended-C: U+2C60 to U+2C7F

19683 % U+2C7C LATIN SUBSCRIPT SMALL LETTER J  
 19684 \DeclareTextCommand{\textjinferior}{PU}{\9054\174}%\* U+2C7C

#### 47.2.38 Supplemental Punctuation: U+2E00 to U+2E7F

19685 % U+2E13 DOTTED OBELOS; \slashdiv (MnSymbol)  
 19686 \DeclareTextCommand{\textslashdiv}{PU}{\9056\023}%\* U+2E13  
 19687 % U+2E18 INVERTED INTERROBANG; \textinterrobangdown (textcomp)  
 19688 \DeclareTextCommand{\textinterrobangdown}{PU}{\9056\030}% U+2E18  
 19689 % U+2E2D FIVE DOT MARK; \fivedots (MnSymbol)  
 19690 \DeclareTextCommand{\textfivedots}{PU}{\9056\055}%\* U+2E2D

#### 47.2.39 Modifier Tone Letters: U+A700 to U+A71F

19691 % U+A71B MODIFIER LETTER RAISED UP ARROW; \textupstep (tipa)  
 19692 \DeclareTextCommand{\textupstep}{PU}{\9247\033}% U+A71B  
 19693 % U+A71C MODIFIER LETTER RAISED DOWN ARROW;  
 19694 % \textdownstep (tipa)  
 19695 \DeclareTextCommand{\textdownstep}{PU}{\9247\034}% U+A71C

#### 47.2.40 Latin Extended-D: U+A720 to U+A7FF

19696 % U+A727 LATIN SMALL LETTER HENG; \textheng (tipx)  
 19697 \DeclareTextCommand{\textPUheng}{PU}{\9247\047}% U+A727  
 19698 %\* \textPUheng -> \textheng (tipx)  
 19699 % U+A72C LATIN CAPITAL LETTER CUATRILLO; \textlhookfour (tipx)  
 19700 \DeclareTextCommand{\textPULhookfour}{PU}{\9247\054}% U+A72C  
 19701 %\* \textPULhookfour -> \textlhookfour (tipx)

19702 % U+A730 LATIN LETTER SMALL CAPITAL F; \textscf (tipx)  
 19703 \DeclareTextCommand{\textPUscf}{PU}{\9247\060}% U+A730  
 19704 %\* \textPUscf -> \textscf (tipx)  
 19705 % U+A735 LATIN SMALL LETTER AO; \textao (tipx)  
 19706 \DeclareTextCommand{\textPUaolig}{PU}{\9247\065}% U+A735  
 19707 %\* \textPUaolig -> \textao (tipx)  
 19708 % U+A74F LATIN SMALL LETTER OO; \oo (wsuipa)  
 19709 \DeclareTextCommand{\textoo}{PU}{\9247\117}%\* U+A74F  
 19710 % U+A788 MODIFIER LETTER LOW CIRCUMFLEX ACCENT  
 19711 \DeclareTextCommand{\textcircuml}{PU}{\9247\210}% U+A788

#### 47.2.41 Alphabetic Presentation Forms: U+FB00 to U+FB4F

19712 % U+FB01 LATIN SMALL LIGATURE FI; fi  
 19713 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01  
 19714 % U+FB02 LATIN SMALL LIGATURE FL; fl  
 19715 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02

#### 47.2.42 Musical Symbols: U+1D100 to U+1D1FF

19716 % U+1D13B MUSICAL SYMBOL WHOLE REST; \GaPa (harmony)  
 19717 \DeclareTextCommand{\textGaPa}{PU}{\9330\064\9335\073}%\* U+1D13B  
 19718 % U+1D13C MUSICAL SYMBOL HALF REST; \HaPa (harmony)  
 19719 \DeclareTextCommand{\textHaPa}{PU}{\9330\064\9335\074}%\* U+1D13C  
 19720 % U+1D13D MUSICAL SYMBOL QUARTER REST; \ViPa (harmony)  
 19721 \DeclareTextCommand{\textViPa}{PU}{\9330\064\9335\075}%\* U+1D13D  
 19722 % U+1D13E MUSICAL SYMBOL EIGHTH REST; \AcPa (harmony)  
 19723 \DeclareTextCommand{\textAcPa}{PU}{\9330\064\9335\076}%\* U+1D13E  
 19724 % U+1D13F MUSICAL SYMBOL SIXTEENTH REST; \SePa (harmony)  
 19725 \DeclareTextCommand{\textSePa}{PU}{\9330\064\9335\077}%\* U+1D13F  
 19726 % U+1D140 MUSICAL SYMBOL THIRTY-SECOND REST; \ZwPa (harmony)  
 19727 \DeclareTextCommand{\textZwPa}{PU}{\9330\064\9335\100}%\* U+1D140  
 19728 % U+1D15D MUSICAL SYMBOL WHOLE NOTE; \fullnote (wasysym)  
 19729 \DeclareTextCommand{\textfullnote}{PU}{\9330\064\9335\135}%\* U+1D15D  
 19730 %\* \textfullnote -> \Ganz (harmony)  
 19731 % U+1D15E MUSICAL SYMBOL HALF NOTE; \halfnote (wasysym)  
 19732 \DeclareTextCommand{\texthalfnote}{PU}{\9330\064\9335\136}%\* U+1D15E  
 19733 %\* \texthalfnote -> \Halb (harmony)  
 19734 % U+1D15F MUSICAL SYMBOL QUARTER NOTE; \Vier (harmony)  
 19735 \DeclareTextCommand{\textVier}{PU}{\9330\064\9335\137}%\* U+1D15F  
 19736 % U+1D160 MUSICAL SYMBOL EIGHTH NOTE; \Acht (harmony)  
 19737 \DeclareTextCommand{\textAcht}{PU}{\9330\064\9335\140}%\* U+1D160  
 19738 % U+1D161 MUSICAL SYMBOL SIXTEENTH NOTE; \Sech (harmony)  
 19739 \DeclareTextCommand{\textSech}{PU}{\9330\064\9335\141}%\* U+1D161  
 19740 % U+1D162 MUSICAL SYMBOL THIRTY-SECOND NOTE; \Zwdr (harmony)  
 19741 \DeclareTextCommand{\textZwdr}{PU}{\9330\064\9335\142}%\* U+1D162

#### 47.2.43 Miscellaneous Symbols and Pictographs: U+1F300 to U+1F5FF

19742 % U+1F30D EARTH GLOBE EUROPE-AFRICA; \Mundus (marvosym)  
 19743 \DeclareTextCommand{\textMundus}{PU}{\9330\074\9337\015}%\* U+1F30D  
 19744 % U+1F319 CRESCENT MOON; \Moon (marvosym)  
 19745 \DeclareTextCommand{\textMoon}{PU}{\9330\074\9337\031}%\* U+1F319  
 19746 % U+1F468 MAN; \ManFace (marvosym)  
 19747 \DeclareTextCommand{\textManFace}{PU}{\9330\075\9334\150}%\* U+1F468  
 19748 % U+1F469 WOMAN; \WomanFace (marvosym)  
 19749 \DeclareTextCommand{\textWomanFace}{PU}{\9330\075\9334\151}%\* U+1F469

```

19750 %* \textWomanFace -> \Womanface (marvosym)
19751 % U+1F4E0 FAX MACHINE; \Fax (marvosym)
19752 \DeclareTextCommand{\textFax}{PU}{\9330\075\9334\340}%* U+1F4E0
19753 %* \textFax -> \Faxmachine (marvosym)
19754 % U+1F525 FIRE; \Fire (ifsym)
19755 \DeclareTextCommand{\textFire}{PU}{\9330\075\9335\045}%* U+1F525

```

#### 47.2.44 Transport and Map Symbols: U+1F680 to U+1F6FF

```

19756 % U+1F6B2 BICYCLE; \Bicycle (marvosym)
19757 \DeclareTextCommand{\textBicycle}{PU}{\9330\075\9336\262}%* U+1F6B2
19758 % U+1F6B9 MENS SYMBOL; \Gentsroom (marvosym)
19759 \DeclareTextCommand{\textGentsroom}{PU}{\9330\075\9336\271}%* U+1F6B9
19760 % U+1F6BA WOMENS SYMBOL; \Ladiesroom (marvosym)
19761 \DeclareTextCommand{\textLadiesroom}{PU}{\9330\075\9336\272}%* U+1F6BA

```

#### 47.2.45 Miscellaneous

```

19762 \DeclareTextCommand{\SS}{PU}{SS}%
19763 % \textcopyleft (textcomp)
19764 \DeclareTextCommand{\textcopyleft}{PU}{\9041\204\9040\335}% U+2184 U+20DD
19765 % \ccnc (ccllicenses)
19766 \DeclareTextCommand{\textccnc}{PU}{\80\044\9040\340}%* U+0024 U+20E0
19767 % \ccnd (ccllicenses)
19768 \DeclareTextCommand{\textccnd}{PU}{=\9040\335}%* U+003D U+20DD
19769 % \ccsa (ccllicenses)
19770 \DeclareTextCommand{\textccsa}{PU}{\9047\362\9040\335}%* U+27F2 U+20DD
19771 % \Info (marvosym, china2e)
19772 \DeclareTextCommand{\textInfo}{PU}{\9330\065\9334\042\9040\336}%* U+1D422 U+20DE
19773 % \CESign (marvosym)
19774 \DeclareTextCommand{\textCESign}{PU}{\80\103\80\105}%* U+0043 U+0045
19775 %* \textCESign -> \CESign (marvosym)

```

#### 47.2.46 Aliases

Aliases (german.sty)

```

19776 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}%
19777 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}%
19778 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}%
19779 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}%
19780 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}%
19781 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}%
19782 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}%
19783 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}%

```

Aliases (math names)

```

19784 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}%*
19785 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}%*
19786 \DeclareTextCommand{\textdiv}{PU}{\textdivide}%*
19787 \DeclareTextCommand{\textpm}{PU}{\textplusminus}%*
19788 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}%*
19789 </puenc>

```

### 47.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

19790 \DeclareTextCommand{\*puvnc}\PU{\81\003}% U+0103

19791 \DeclareTextCommand{\abreve}\PU{\81\003}% U+0103

19792 \DeclareTextCommand{\acircumflex}\PU{\80\342}% U+00E2

19793 \DeclareTextCommand{\ecircumflex}\PU{\80\352}% U+00EA

19794 \DeclareTextCommand{\ocircumflex}\PU{\80\364}% U+00F4

19795 \DeclareTextCommand{\ohorn}\PU{\81\241}% U+01A1

19796 \DeclareTextCommand{\uhorn}\PU{\81\260}% U+01B0

19797 \DeclareTextCommand{\ABREVE}\PU{\81\002}% U+0102

19798 \DeclareTextCommand{\ACIRCUMFLEX}\PU{\80\302}% U+00C2

19799 \DeclareTextCommand{\ECIRCUMFLEX}\PU{\80\312}% U+00CA

19800 \DeclareTextCommand{\OCIRCUMFLEX}\PU{\80\324}% U+00D4

19801 \DeclareTextCommand{\OHORN}\PU{\81\240}% U+01A0

19802 \DeclareTextCommand{\UHORN}\PU{\81\257}% U+01AF

19803 \DeclareTextCompositeCommand{\'}\PU{a}\80\341}% U+00E1

19804 \DeclareTextCompositeCommand{\d}\PU{a}\9036\241}% U+1EA1

19805 \DeclareTextCompositeCommand{\`}\PU{a}\80\340}% U+00E0

19806 \DeclareTextCompositeCommand{\h}\PU{a}\9036\243}% U+1EA3

19807 \DeclareTextCompositeCommand{\~}\PU{a}\80\343}% U+00E3

19808 \DeclareTextCompositeCommand{\'}\PU{\abreve}\9036\257}% U+1EAF

19809 \DeclareTextCompositeCommand{\d}\PU{\abreve}\9036\267}% U+1EB7

19810 \DeclareTextCompositeCommand{\`}\PU{\abreve}\9036\261}% U+1EB1

19811 \DeclareTextCompositeCommand{\h}\PU{\abreve}\9036\263}% U+1EB3

19812 \DeclareTextCompositeCommand{\~}\PU{\abreve}\9036\265}% U+1EB5

19813 \DeclareTextCompositeCommand{\'}\PU{\acircumflex}\9036\245}% U+1EA5

19814 \DeclareTextCompositeCommand{\d}\PU{\acircumflex}\9036\255}% U+1EAD

19815 \DeclareTextCompositeCommand{\`}\PU{\acircumflex}\9036\247}% U+1EA7

19816 \DeclareTextCompositeCommand{\h}\PU{\acircumflex}\9036\251}% U+1EA9

19817 \DeclareTextCompositeCommand{\~}\PU{\acircumflex}\9036\253}% U+1EAB

19818 \DeclareTextCompositeCommand{\'}\PU{e}\80\351}% U+00E9

19819 \DeclareTextCompositeCommand{\d}\PU{e}\9036\271}% U+1EB9

19820 \DeclareTextCompositeCommand{\`}\PU{e}\80\350}% U+00E8

19821 \DeclareTextCompositeCommand{\h}\PU{e}\9036\273}% U+1EBB

19822 \DeclareTextCompositeCommand{\~}\PU{e}\9036\275}% U+1EBD

19823 \DeclareTextCompositeCommand{\'}\PU{\ecircumflex}\9036\277}% U+1EBF

19824 \DeclareTextCompositeCommand{\d}\PU{\ecircumflex}\9036\307}% U+1EC7

19825 \DeclareTextCompositeCommand{\`}\PU{\ecircumflex}\9036\301}% U+1EC1

19826 \DeclareTextCompositeCommand{\h}\PU{\ecircumflex}\9036\303}% U+1EC3

19827 \DeclareTextCompositeCommand{\~}\PU{\ecircumflex}\9036\305}% U+1EC5

19828 \DeclareTextCompositeCommand{\'}\PU{i}\80\355}% U+00ED

19829 \DeclareTextCompositeCommand{\d}\PU{i}\9036\313}% U+1ECB

19830 \DeclareTextCompositeCommand{\`}\PU{i}\80\354}% U+00EC

19831 \DeclareTextCompositeCommand{\h}\PU{i}\9036\311}% U+1EC9

19832 \DeclareTextCompositeCommand{\~}\PU{i}\81\051}% U+0129

19833 \DeclareTextCompositeCommand{\'}\PU{o}\80\363}% U+00F3

19834 \DeclareTextCompositeCommand{\d}\PU{o}\9036\315}% U+1ECD

19835 \DeclareTextCompositeCommand{\`}\PU{o}\80\362}% U+00F2

19836 \DeclareTextCompositeCommand{\h}\PU{o}\9036\317}% U+1ECF

19837 \DeclareTextCompositeCommand{\~}\PU{o}\80\365}% U+00F5

19838 \DeclareTextCompositeCommand{\'}\PU{\ocircumflex}\9036\321}% U+1ED1

19839 \DeclareTextCompositeCommand{\d}\PU{\ocircumflex}\9036\331}% U+1ED9

19840 \DeclareTextCompositeCommand{\`}\PU{\ocircumflex}\9036\323}% U+1ED3

19841 \DeclareTextCompositeCommand{\h}\PU{\ocircumflex}\9036\325}% U+1ED5

19842 \DeclareTextCompositeCommand{\~}\PU{\ocircumflex}\9036\327}% U+1ED7

19843 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}% U+1EDB  
 19844 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}% U+1EE3  
 19845 \DeclareTextCompositeCommand{\`}{PU}{\ohorn}{\9036\335}% U+1EDD  
 19846 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}% U+1EDF  
 19847 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}% U+1EE1  
 19848 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
 19849 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}% U+1EE5  
 19850 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
 19851 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}% U+1EE7  
 19852 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
 19853 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}% U+1EE9  
 19854 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}% U+1EF1  
 19855 \DeclareTextCompositeCommand{\`}{PU}{\uhorn}{\9036\353}% U+1EEB  
 19856 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}% U+1EED  
 19857 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}% U+1EEF  
 19858 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
 19859 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}% U+1EF5  
 19860 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3  
 19861 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}% U+1EF7  
 19862 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9  
 19863 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
 19864 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}% U+1EA0  
 19865 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
 19866 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}% U+1EA2  
 19867 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
 19868 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}% U+1EAE  
 19869 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}% U+1EB6  
 19870 \DeclareTextCompositeCommand{\`}{PU}{\ABREVE}{\9036\260}% U+1EB0  
 19871 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}% U+1EB2  
 19872 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}% U+1EB4  
 19873 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}% U+1EA4  
 19874 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}% U+1EAC  
 19875 \DeclareTextCompositeCommand{\`}{PU}{\ACIRCUMFLEX}{\9036\246}% U+1EA6  
 19876 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}% U+1EA8  
 19877 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}% U+1EAA  
 19878 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
 19879 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}% U+1EB8  
 19880 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
 19881 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}% U+1EBA  
 19882 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
 19883 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\276}% U+1EBE  
 19884 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}% U+1EC6  
 19885 \DeclareTextCompositeCommand{\`}{PU}{\ECIRCUMFLEX}{\9036\300}% U+1EC0  
 19886 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}% U+1EC2  
 19887 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}% U+1EC4  
 19888 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
 19889 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}% U+1ECA  
 19890 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
 19891 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}% U+1EC8  
 19892 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128  
 19893 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
 19894 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}% U+1ECC  
 19895 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
 19896 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}% U+1ECE

```

19897 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5
19898 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}% U+1ED0
19899 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}% U+1ED8
19900 \DeclareTextCompositeCommand{\`}{PU}{\OCIRCUMFLEX}{\9036\322}% U+1ED2
19901 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}% U+1ED4
19902 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}% U+1ED6
19903 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\332}% U+1EDA
19904 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}% U+1EE2
19905 \DeclareTextCompositeCommand{\`}{PU}{\OHORN}{\9036\334}% U+1EDC
19906 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}% U+1EDE
19907 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}% U+1EE0
19908 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA
19909 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4
19910 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9
19911 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}% U+1EE6
19912 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168
19913 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}% U+1EE8
19914 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}% U+1EF0
19915 \DeclareTextCompositeCommand{\`}{PU}{\UHORN}{\9036\352}% U+1EEA
19916 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}% U+1EEC
19917 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}% U+1EEE
19918 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD
19919 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4
19920 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2
19921 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}% U+1EF6
19922 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8
19923 \p{puvnenc}

```

## 47.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```

19924 \*puarenc)
19925 % U+0621;afii57409;ARABIC LETTER HAMZA
19926 \DeclareTextCommand{\hamza}{PU}{\86\041}% U+0621
19927 % U+0622;afii57410;ARABIC LETTER ALEF WITH MADDA ABOVE
19928 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% U+0622
19929 % U+0623;afii57411;ARABIC LETTER ALEF WITH HAMZA ABOVE
19930 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% U+0623
19931 % U+0624;afii57412;ARABIC LETTER WAW WITH HAMZA ABOVE
19932 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% U+0624
19933 % U+0625;afii57413;ARABIC LETTER ALEF WITH HAMZA BELOW
19934 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% U+0625
19935 % U+0626;afii57414;ARABIC LETTER YEH WITH HAMZA ABOVE
19936 \DeclareTextCommand{\yahamza}{PU}{\86\046}% U+0626
19937 % U+0627;afii57415;ARABIC LETTER ALEF
19938 \DeclareTextCommand{\alef}{PU}{\86\047}% U+0627
19939 % U+0628;afii57416;ARABIC LETTER BEH
19940 \DeclareTextCommand{\baa}{PU}{\86\050}% U+0628
19941 % U+0629;afii57417;ARABIC LETTER TEH MARBUTA
19942 \DeclareTextCommand{\T}{PU}{\86\051}% U+0629
19943 % U+062A;afii57418;ARABIC LETTER TEH
19944 \DeclareTextCommand{\taa}{PU}{\86\052}% U+062A
19945 % U+062B;afii57419;ARABIC LETTER THEH

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19946 \DeclareTextCommand{\thaa}{PU}{\86\053}% U+062B  
 19947 % U+062C;afii57420;ARABIC LETTER JEEM  
 19948 \DeclareTextCommand{\jeem}{PU}{\86\054}% U+062C  
 19949 % U+062D;afii57421;ARABIC LETTER HAH  
 19950 \DeclareTextCommand{\Haa}{PU}{\86\055}% U+062D  
 19951 % U+062E;afii57422;ARABIC LETTER KHAH  
 19952 \DeclareTextCommand{\kha}{PU}{\86\056}% U+062E  
 19953 % U+062F;afii57423;ARABIC LETTER DAL  
 19954 \DeclareTextCommand{\dal}{PU}{\86\057}% U+062F  
 19955 % U+0630;afii57424;ARABIC LETTER THAL  
 19956 \DeclareTextCommand{\dhal}{PU}{\86\060}% U+0630  
 19957 % U+0631;afii57425;ARABIC LETTER REH  
 19958 \DeclareTextCommand{\ra}{PU}{\86\061}% U+0631  
 19959 % U+0632;afii57426;ARABIC LETTER ZAIN  
 19960 \DeclareTextCommand{\zay}{PU}{\86\062}% U+0632  
 19961 % U+0633;afii57427;ARABIC LETTER SEEN  
 19962 \DeclareTextCommand{\seen}{PU}{\86\063}% U+0633  
 19963 % U+0634;afii57428;ARABIC LETTER SHEEN  
 19964 \DeclareTextCommand{\sheen}{PU}{\86\064}% U+0634  
 19965 % U+0635;afii57429;ARABIC LETTER SAD  
 19966 \DeclareTextCommand{\sad}{PU}{\86\065}% U+0635  
 19967 % U+0636;afii57430;ARABIC LETTER DAD  
 19968 \DeclareTextCommand{\dad}{PU}{\86\066}% U+0636  
 19969 % U+0637;afii57431;ARABIC LETTER TAH  
 19970 \DeclareTextCommand{\Ta}{PU}{\86\067}% U+0637  
 19971 % U+0638;afii57432;ARABIC LETTER ZAH  
 19972 \DeclareTextCommand{\za}{PU}{\86\070}% U+0638  
 19973 % U+0639;afii57433;ARABIC LETTER AIN  
 19974 \DeclareTextCommand{\ayn}{PU}{\86\071}% U+0639  
 19975 % U+063A;afii57434;ARABIC LETTER GHAIN  
 19976 \DeclareTextCommand{\ghayn}{PU}{\86\072}% U+063A  
 19977 % U+0640;afii57440;ARABIC TATWEEL  
 19978 \DeclareTextCommand{\tatweel}{PU}{\86\100}% U+0640  
 19979 % U+0641;afii57441;ARABIC LETTER FEH  
 19980 \DeclareTextCommand{\fa}{PU}{\86\101}% U+0641  
 19981 % U+0642;afii57442;ARABIC LETTER QAF  
 19982 \DeclareTextCommand{\qaf}{PU}{\86\102}% U+0642  
 19983 % U+0643;afii57443;ARABIC LETTER KAF  
 19984 \DeclareTextCommand{\kaf}{PU}{\86\103}% U+0643  
 19985 % U+0644;afii57444;ARABIC LETTER LAM  
 19986 \DeclareTextCommand{\lam}{PU}{\86\104}% U+0644  
 19987 % U+0645;afii57445;ARABIC LETTER MEEM  
 19988 \DeclareTextCommand{\meem}{PU}{\86\105}% U+0645  
 19989 % U+0646;afii57446;ARABIC LETTER NOON  
 19990 \DeclareTextCommand{\nun}{PU}{\86\106}% U+0646  
 19991 % U+0647;afii57470;ARABIC LETTER HEH  
 19992 \DeclareTextCommand{\ha}{PU}{\86\107}% U+0647  
 19993 % U+0648;afii57448;ARABIC LETTER WAW  
 19994 \DeclareTextCommand{\waw}{PU}{\86\110}% U+0648  
 19995 % U+0649;afii57449;ARABIC LETTER ALEF MAKSURA  
 19996 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% U+0649  
 19997 % U+064A;afii57450;ARABIC LETTER YEH  
 19998 \DeclareTextCommand{\ya}{PU}{\86\112}% U+064A  
 19999 % U+064B;afii57451;ARABIC FATHATAN

20000 \DeclareTextCommand{\nasb}{PU}{\86\113}% U+064B  
 20001 % U+064C;afii57452;ARABIC DAMMATAN  
 20002 \DeclareTextCommand{\raff}{PU}{\86\114}% U+064C  
 20003 % U+064D;afii57453;ARABIC KASRATAN  
 20004 \DeclareTextCommand{\jarr}{PU}{\86\115}% U+064D  
 20005 % U+064E;afii57454;ARABIC FATHA  
 20006 \DeclareTextCommand{\fatha}{PU}{\86\116}% U+064E  
 20007 % U+064F;afii57455;ARABIC DAMMA  
 20008 \DeclareTextCommand{\damma}{PU}{\86\117}% U+064F  
 20009 % U+0650;afii57456;ARABIC KASRA  
 20010 \DeclareTextCommand{\kasra}{PU}{\86\120}% U+0650  
 20011 % U+0651;afii57457;ARABIC SHADDA  
 20012 \DeclareTextCommand{\shadda}{PU}{\86\121}% U+0651  
 20013 % U+0652;afii57458;ARABIC SUKUN  
 20014 \DeclareTextCommand{\sukun}{PU}{\86\122}% U+0652  
  
 Farsi  
 20015 % U+067E ARABIC LETTER PEH; afii57506  
 20016 \DeclareTextCommand{\peh}{PU}{\86\176}% U+067E  
 20017 % U+0686 ARABIC LETTER TCHEH; afii57507  
 20018 \DeclareTextCommand{\tcheh}{PU}{\86\206}% U+0686  
 20019 % U+0698 ARABIC LETTER JEH; afii57508  
 20020 \DeclareTextCommand{\jeh}{PU}{\86\230}% U+0698  
 20021 % U+06A9 ARABIC LETTER KEHEH  
 20022 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% U+06A9  
 20023 % U+06AF ARABIC LETTER GAF; afii57509  
 20024 \DeclareTextCommand{\gaf}{PU}{\86\257}% U+06AF  
 20025 % U+06CC ARABIC LETTER FARSI YEH  
 20026 \DeclareTextCommand{\farsiya}{PU}{\86\314}% U+06CC  
  
 20027 % U+200C ZERO WIDTH NON-JOINER; afii61664  
 20028 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% U+200C  
 20029 % U+200D ZERO WIDTH JOINER; afii301  
 20030 \DeclareTextCommand{\textEncodingNoboundary}{PU}{\9040\015}% U+200D  
  
 20031 </puarenc>  
 20032 <psdextra>  
 20033 \Hy@VersionCheck{psdextra.def}  
 20034 \newcommand\*{\psdmapshortnames}{%  
 20035   \let\MVPlus\textMVPlus  
 20036   \let\MVComma\textMVComma  
 20037   \let\MVMinus\textMVMinus  
 20038   \let\MVPeriod\textMVPeriod  
 20039   \let\MVDivision\textMVDivision  
 20040   \let\MVZero\textMVZero  
 20041   \let\MVOne\textMVOne  
 20042   \let\MVTwo\textMVTwo  
 20043   \let\MVThree\textMVThree  
 20044   \let\MVFour\textMVFour  
 20045   \let\MVFive\textMVFive  
 20046   \let\MVSix\textMVSix  
 20047   \let\MVSeven\textMVSeven  
 20048   \let\MVEight\textMVEight  
 20049   \let\MVNine\textMVNine  
 20050   \let\MVAt\textMVAAt



20051 \let\copyright\textcopyright  
 20052 \let\twosuperior\texttwosuperior  
 20053 \let\threesuperior\textthreesuperior  
 20054 \let\onesuperior\textonesuperior  
 20055 \let\Thorn\textThorn  
 20056 \let\thorn\textthorn  
 20057 \let\hbar\texthbar  
 20058 \let\hausaB\texthausaB  
 20059 \let\hausaD\texthausaD  
 20060 \let\hausaK\texthausaK  
 20061 \let\barl\textbarl  
 20062 \let\inve\textinve  
 20063 \let\slashc\textslashc  
 20064 \let\scripta\textscripta  
 20065 \let\openo\textopeno  
 20066 \let\rtaild\textrtaild  
 20067 \let\reve\textreve  
 20068 \let\schwa\textschwa  
 20069 \let\niepsilon\textniepsilon  
 20070 \let\repsilon\textrepsilon  
 20071 \let\rhookrepsilon\texthookrepsilon  
 20072 \let\scriptg\textscriptg  
 20073 \let\scg\textscg  
 20074 \let\ipagamma\textipagamma  
 20075 \let\babygamma\textbabygamma  
 20076 \let\bari\textbari  
 20077 \let\niiota\textniiota  
 20078 \let\sci\textsci  
 20079 \let\scn\textscn  
 20080 \let\niphi\textniphi  
 20081 \let\longleg\textlongleg  
 20082 \let\scr\textscr  
 20083 \let\invscr\textinvscr  
 20084 \let\esh\textesh  
 20085 \let\baru\textbaru  
 20086 \let\niupsilon\textniupsilon  
 20087 \let\scriptv\textscriptv  
 20088 \let\turnv\textturnv  
 20089 \let\turnw\textturnw  
 20090 \let\turny\textturny  
 20091 \let\scy\textscy  
 20092 \let\yogh\textyogh  
 20093 \let\glotstop\textglotstop  
 20094 \let\revglotstop\textrevglotstop  
 20095 \let\invglotstop\textinvglotstop  
 20096 \let\Gamma\textGamma  
 20097 \let\Delta\textDelta  
 20098 \let\Theta\textTheta  
 20099 \let\Lambda\textLambda  
 20100 \let\Xi\textXi  
 20101 \let\Pi\textPi  
 20102 \let\Sigma\textSigma  
 20103 \let\Upsilon\textUpsilon  
 20104 \let\Phi\textPhi

20105 \let\Psi\textPsi  
 20106 \let\Omega\textOmega  
 20107 \let\alpha\textalpha  
 20108 \let\beta\textbeta  
 20109 \let\gamma\textgamma  
 20110 \let\delta\textdelta  
 20111 \let\epsilon\textepsilon  
 20112 \let\zeta\textzeta  
 20113 \let\eta\texteta  
 20114 \let\theta\texttheta  
 20115 \let\iota\textiota  
 20116 \let\kappa\textkappa  
 20117 \let\lambda\textlambda  
 20118 \let\mu\textmu  
 20119 \let\mugreek\textmugreek  
 20120 \let\nu\textnu  
 20121 \let\xi\textxi  
 20122 \let\pi\textpi  
 20123 \let\rho\rho  
 20124 \let\varsigma\textvarsigma  
 20125 \let\sigma\textsigma  
 20126 \let\tau\texttau  
 20127 \let\upsilon\textupsilon  
 20128 \let\phi\textphi  
 20129 \let\chi\textchi  
 20130 \let\psi\textpsi  
 20131 \let\omega\textomega  
 20132 \let\scd\textscd  
 20133 \let\scu\textscu  
 20134 \let\iinferior\textiinferior  
 20135 \let\rinferior\extrinferior  
 20136 \let\uinferior\textuinferior  
 20137 \let\vinferior\textvinferior  
 20138 \let\betainferior\textbetainferior  
 20139 \let\gammainferior\textgammainferior  
 20140 \let\rhoinferior\textrhoinferior  
 20141 \let\phiinferior\textphiinferior  
 20142 \let\chiinferior\textchiinferior  
 20143 \let\barsci\textbarsci  
 20144 \let\barp\textbarp  
 20145 \let\barscu\textbarscu  
 20146 \let\htrtaild\texthtrtaild  
 20147 \let\dagger\textdagger  
 20148 \let\bullet\textbullet  
 20149 \let\hdotfor\texthdotfor  
 20150 \let\prime\textprime  
 20151 \let\second\textsecond  
 20152 \let\third\textthird  
 20153 \let\backprime\textbackprime  
 20154 \let\lefttherefore\textlefttherefore  
 20155 \let\fourth\textfourth  
 20156 \let\diamonddots\textdiamonddots  
 20157 \let\zerosuperior\textzerosuperior  
 20158 \let\isuperior\textisuperior

20159 \let\foursuperior\textfoursuperior  
 20160 \let\fivesuperior\textfivesuperior  
 20161 \let\sixsuperior\textsixsuperior  
 20162 \let\sevensuperior\textsevensuperior  
 20163 \let\eightsuperior\texteightsuperior  
 20164 \let\ninesuperior\textninesuperior  
 20165 \let\plussuperior\textplussuperior  
 20166 \let\minussuperior\textminussuperior  
 20167 \let\equalsuperior\textequalsuperior  
 20168 \let\parenleftsuperior\textparenleftsuperior  
 20169 \let\parenrightsuperior\textparenrightsuperior  
 20170 \let\nsuperior\textnsuperior  
 20171 \let\zeroinferior\textzeroinferior  
 20172 \let\oneinferior\textoneinferior  
 20173 \let\twoinferior\texttwoinferior  
 20174 \let\threeinferior\textthreeinferior  
 20175 \let\fourinferior\textfourinferior  
 20176 \let\fiveinferior\textfiveinferior  
 20177 \let\sixinferior\textsixinferior  
 20178 \let\seveninferior\textseveninferior  
 20179 \let\eightinferior\texteightinferior  
 20180 \let\nineinferior\textnineinferior  
 20181 \let\plusinferior\textplusinferior  
 20182 \let\minusinferior\textminusinferior  
 20183 \let\equalsinferior\textequalsinferior  
 20184 \let\parenleftinferior\textparenleftinferior  
 20185 \let\parenrightinferior\textparenrightinferior  
 20186 \let\ainferior\textainferior  
 20187 \let\einferior\texteinferior  
 20188 \let\oinferior\textoinferior  
 20189 \let\xinferior\textxinferior  
 20190 \let\schwainferior\textschwainferior  
 20191 \let\hinferior\texthinferior  
 20192 \let\kinferior\textkinferior  
 20193 \let\linferior\textlinferior  
 20194 \let\minferior\textminferior  
 20195 \let\ninferior\textninferior  
 20196 \let\pinferior\textpinferior  
 20197 \let\sinferior\textsinferior  
 20198 \let\tinferior\texttinferior  
 20199 \let\Deleatur\textDeleatur  
 20200 \let\hslash\texthslash  
 20201 \let\Im\textIm  
 20202 \let\ell\textell  
 20203 \let\wp\textwp  
 20204 \let\Re\textRe  
 20205 \let\mho\textmho  
 20206 \let\riota\textriota  
 20207 \let\Finv\textFinv  
 20208 \let\aleph\textaleph  
 20209 \let\beth\textbeth  
 20210 \let\gimel\textgimel  
 20211 \let\daleth\textdaleth  
 20212 \let\xfax\textfax

20213 \let\Game\textGame  
 20214 \let\leftarrow\textleftarrow  
 20215 \let\uparrow\textuparrow  
 20216 \let\rightarrow\textrightarrow  
 20217 \let\downarrow\textdownarrow  
 20218 \let\leftrightarrow\textleftrightarrow  
 20219 \let\updownarrow\textupdownarrow  
 20220 \let\nwarrow\textnwarrow  
 20221 \let\nearrow\textnearrow  
 20222 \let\searrow\textsearrow  
 20223 \let\swarrow\textswarrow  
 20224 \let\nleftarrow\textnleftarrow  
 20225 \let\nrightarrow\textnrightarrow  
 20226 \let\twoheadleftarrow\texttwoheadleftarrow  
 20227 \let\ntwoheadleftarrow\textntwoheadleftarrow  
 20228 \let\twoheaduparrow\texttwoheaduparrow  
 20229 \let\twoheadrightarrow\texttwoheadrightarrow  
 20230 \let\ntwoheadrightarrow\textntwoheadrightarrow  
 20231 \let\twoheaddownarrow\texttwoheaddownarrow  
 20232 \let\leftarrowtail\textleftarrowtail  
 20233 \let\rightarrowtail\textrightarrowtail  
 20234 \let\mapsto\textmapsto  
 20235 \let\hookleftarrow\texthookleftarrow  
 20236 \let\hookrightarrow\texthookrightarrow  
 20237 \let\looparrowleft\textlooparrowleft  
 20238 \let\looparrowright\textlooparrowright  
 20239 \let\leftrightarrows\textleftrightarrows  
 20240 \let\lightning\textlightning  
 20241 \let\dlsh\textdlsh  
 20242 \let\curvearrowleft\textcurvearrowleft  
 20243 \let\curvearrowright\textcurvearrowright  
 20244 \let\leftharpoonup\textleftharpoonup  
 20245 \let\leftharpoondown\textleftharpoondown  
 20246 \let\upharpoonright\textupharpoonright  
 20247 \let\upharpoonleft\textupharpoonleft  
 20248 \let\rightharpoonup\text\rightharpoonup  
 20249 \let\rightharpoondown\text\rightharpoondown  
 20250 \let\downharpoonright\textdownharpoonright  
 20251 \let\downharpoonleft\textdownharpoonleft  
 20252 \let\rightleftarrows\textrightleftarrows  
 20253 \let\updownarrows\textupdownarrows  
 20254 \let\leftrightarrows\textleftrightarrows  
 20255 \let\leftleftarrows\textleftleftarrows  
 20256 \let\upuparrows\textupuparrows  
 20257 \let\righttrightarrows\textrighttrightarrows  
 20258 \let\downdownarrows\textdowndownarrows  
 20259 \let\leftrightharpoons\textleftrightharpoons  
 20260 \let\rightleftharpoons\textrightleftharpoons  
 20261 \let\Leftarrow\textLeftarrow  
 20262 \let\Lefttrightarrow\textLefttrightarrow  
 20263 \let\Rightarrow\textRightarrow  
 20264 \let\Leftarrow\textLeftarrow  
 20265 \let\Uparrow\textUparrow  
 20266 \let\Rightarrow\textRightarrow

20267  $\text{\let\Downarrow\textDownarrow}$   
 20268  $\text{\let\Leftrightarrow\textLeftrightarrow}$   
 20269  $\text{\let\Updownarrow\textUpdownarrow}$   
 20270  $\text{\let\Nwarrow\textNwarrow}$   
 20271  $\text{\let\Nearrow\textNearrow}$   
 20272  $\text{\let\SEarrow\textSEarrow}$   
 20273  $\text{\let\SEarrow\textSEarrow}$   
 20274  $\text{\let\Lleftarrow\textLleftarrow}$   
 20275  $\text{\let\Rrightarrow\textRrightarrow}$   
 20276  $\text{\let\leftsquigarrow\textleftsquigarrow}$   
 20277  $\text{\let\rightsquigarrow\textrightsquigarrow}$   
 20278  $\text{\let\dashleftarrow\textdashleftarrow}$   
 20279  $\text{\let\dasheduparrow\textdasheduparrow}$   
 20280  $\text{\let\dashrightarrow\textdashrightarrow}$   
 20281  $\text{\let\dasheddownarrow\textdasheddownarrow}$   
 20282  $\text{\let\pointer\textpointer}$   
 20283  $\text{\let\downuparrows\textdownuparrows}$   
 20284  $\text{\let\leftarrowtriangle\textleftarrowtriangle}$   
 20285  $\text{\let\rightarrowtriangle\textrightarrowtriangle}$   
 20286  $\text{\let\leftrightarrowtriangle\textleftrightarrowtriangle}$   
 20287  $\text{\let\forall\textforall}$   
 20288  $\text{\let\complement\textcomplement}$   
 20289  $\text{\let\partial\textpartial}$   
 20290  $\text{\let\exists\textexists}$   
 20291  $\text{\let\nexists\textnexists}$   
 20292  $\text{\let\emptyset\textemptyset}$   
 20293  $\text{\let\triangle\texttriangle}$   
 20294  $\text{\let\nabla\textnabla}$   
 20295  $\text{\let\in\textin}$   
 20296  $\text{\let\notin\textnotin}$   
 20297  $\text{\let\smallin\textsmallin}$   
 20298  $\text{\let\ni\textni}$   
 20299  $\text{\let\notowner\textnotowner}$   
 20300  $\text{\let\smallowns\textsmallowns}$   
 20301  $\text{\let\prod\textprod}$   
 20302  $\text{\let\amalg\textamalg}$   
 20303  $\text{\let\sum\textsum}$   
 20304  $\text{\let\mp\textmp}$   
 20305  $\text{\let\dotplus\textdotplus}$   
 20306  $\text{\let\Divides\textDivides}$   
 20307  $\text{\let\DividesNot\textDividesNot}$   
 20308  $\text{\let\setminus\textsetminus}$   
 20309  $\text{\let\ast\textast}$   
 20310  $\text{\let\circ\textcirc}$   
 20311  $\text{\let\surd\textsurd}$   
 20312  $\text{\let\propto\textpropto}$   
 20313  $\text{\let\infty\textinfty}$   
 20314  $\text{\let\angle\textangle}$   
 20315  $\text{\let\measuredangle\textmeasuredangle}$   
 20316  $\text{\let\sphericalangle\textsphericalangle}$   
 20317  $\text{\let\mid\textmid}$   
 20318  $\text{\let\nmid\textnmid}$   
 20319  $\text{\let\parallel\textparallel}$   
 20320  $\text{\let\nparallel\textnparallel}$

20321 `\let\wedge\textwedge`  
 20322 `\let\owedge\textowedge`  
 20323 `\let\vee\textvee`  
 20324 `\let\ovee\textovee`  
 20325 `\let\cap\textcap`  
 20326 `\let\cup\textcup`  
 20327 `\let\int\textint`  
 20328 `\let\iint\textiint`  
 20329 `\let\iiint\textiiint`  
 20330 `\let\oint\textoint`  
 20331 `\let\oiint\textoiint`  
 20332 `\let\ointclockwise\textointclockwise`  
 20333 `\let\ointctrclockwise\textointctrclockwise`  
 20334 `\let\therefore\texttherefore`  
 20335 `\let\because\textbecause`  
 20336 `\let\vdotdot\textvdotdot`  
 20337 `\let\squaredots\textsquaredots`  
 20338 `\let\dotminus\textdotminus`  
 20339 `\let\eqcolon\texteqcolon`  
 20340 `\let\sim\textsim`  
 20341 `\let\backsim\textbacksim`  
 20342 `\let\nbacksim\textnbacksim`  
 20343 `\let\wr\textwr`  
 20344 `\let\nsim\textnsim`  
 20345 `\let\eqsim\texteqsim`  
 20346 `\let\neqsim\textneqsim`  
 20347 `\let\simeq\textsimeq`  
 20348 `\let\nsimeq\textnsimeq`  
 20349 `\let\cong\textcong`  
 20350 `\let\ncong\textncong`  
 20351 `\let\approx\textapprox`  
 20352 `\let\napprox\textnapprox`  
 20353 `\let\approxeq\textapproxeq`  
 20354 `\let\napproxeq\textnapproxeq`  
 20355 `\let\triplesim\texttriplesim`  
 20356 `\let\ntriplesim\textntriplesim`  
 20357 `\let\backcong\textbackcong`  
 20358 `\let\nbackcong\textnbackcong`  
 20359 `\let\asympt\textasympt`  
 20360 `\let\nasympt\textnasympt`  
 20361 `\let\Bumpeq\textBumpeq`  
 20362 `\let\nBumpeq\textnBumpeq`  
 20363 `\let\bumpeq\textbumpeq`  
 20364 `\let\nbumpeq\textnbumpeq`  
 20365 `\let\doteq\textdoteq`  
 20366 `\let\ndoteq\textndoteq`  
 20367 `\let\doteqdot\textdoteqdot`  
 20368 `\let\NDoteq\textNDoteq`  
 20369 `\let\fallingdoteq\textfallingdoteq`  
 20370 `\let\nfallingdoteq\textnfallingdoteq`  
 20371 `\let\risingdoteq\textrisingdoteq`  
 20372 `\let\nrisingdoteq\textnrisingdoteq`  
 20373 `\let\colonequals\textcolonequals`  
 20374 `\let\equalscolon\textequalscolon`

20375 \let\eqcirc\texteqcirc  
 20376 \let\neqcirc\textneqcirc  
 20377 \let\circeq\textcirceq  
 20378 \let\ncirceq\textncirceq  
 20379 \let\hateq\texthateq  
 20380 \let\nhateq\textnhateq  
 20381 \let\triangleleeq\texttriangleleeq  
 20382 \let\neq\textneq  
 20383 \let\ne\textne  
 20384 \let\equiv\textequiv  
 20385 \let\nequiv\textnequiv  
 20386 \let\leq\textleq  
 20387 \let\le\textle  
 20388 \let\geq\textgeq  
 20389 \let\ge\textge  
 20390 \let\leqq\textleqq  
 20391 \let\leqq\textnleqq  
 20392 \let\geqq\textgeqq  
 20393 \let\geqq\textngeqq  
 20394 \let\lneqq\textlneqq  
 20395 \let\gneqq\textgneqq  
 20396 \let\ll\textll  
 20397 \let\nll\textnll  
 20398 \let\gg\textgg  
 20399 \let\ngg\textngg  
 20400 \let\between\textbetween  
 20401 \let\nless\textnless  
 20402 \let\ngtr\textngtr  
 20403 \let\nleq\textnleq  
 20404 \let\ngex\textngex  
 20405 \let\lesssim\textlessssim  
 20406 \let\gtrsim\textgtrsim  
 20407 \let\nlesssim\textnlesssim  
 20408 \let\ngtrsim\textngtrsim  
 20409 \let\lessgtr\textlessgtr  
 20410 \let\gtrless\textgtrless  
 20411 \let\ngtrless\textngtrless  
 20412 \let\nlessgtr\textnlessgtr  
 20413 \let\prec\textprec  
 20414 \let\succ\textsucc  
 20415 \let\preccurlyeq\textpreccurlyeq  
 20416 \let\succcurlyeq\textsucccurlyeq  
 20417 \let\prec\textprec  
 20418 \let\prec\textnprec  
 20419 \let\succsim\textsuccsim  
 20420 \let\nsuccsim\textnsuccsim  
 20421 \let\prec\textnprec  
 20422 \let\succ\textnsucc  
 20423 \let\subset\textsubset  
 20424 \let\supset\textsupset  
 20425 \let\subset\textnsubset  
 20426 \let\supset\textnsupset  
 20427 \let\subseteq\textsubseteq  
 20428 \let\supseteq\textsupseteq

20429  $\backslash\mathrm{let}\backslash\mathrm{nsubseteq}\backslash\mathrm{textnsubseteq}$   
 20430  $\backslash\mathrm{let}\backslash\mathrm{nsupseteq}\backslash\mathrm{textnsupseteq}$   
 20431  $\backslash\mathrm{let}\backslash\mathrm{subsetneq}\backslash\mathrm{textsubsetneq}$   
 20432  $\backslash\mathrm{let}\backslash\mathrm{supsetneq}\backslash\mathrm{textsuptneq}$   
 20433  $\backslash\mathrm{let}\backslash\mathrm{cupdot}\backslash\mathrm{textcupdot}$   
 20434  $\backslash\mathrm{let}\backslash\mathrm{cupplus}\backslash\mathrm{textcupplus}$   
 20435  $\backslash\mathrm{let}\backslash\mathrm{sqsubset}\backslash\mathrm{textsqssubset}$   
 20436  $\backslash\mathrm{let}\backslash\mathrm{nsqsubset}\backslash\mathrm{textnsqsubset}$   
 20437  $\backslash\mathrm{let}\backslash\mathrm{sqsupset}\backslash\mathrm{textsqsupset}$   
 20438  $\backslash\mathrm{let}\backslash\mathrm{nsqsupset}\backslash\mathrm{textnsqsupset}$   
 20439  $\backslash\mathrm{let}\backslash\mathrm{sqsubsest}\backslash\mathrm{textsqssubsest}$   
 20440  $\backslash\mathrm{let}\backslash\mathrm{nsqsubsest}\backslash\mathrm{textnsqsubsest}$   
 20441  $\backslash\mathrm{let}\backslash\mathrm{sqsupsest}\backslash\mathrm{textsqsupsest}$   
 20442  $\backslash\mathrm{let}\backslash\mathrm{nsqsupsest}\backslash\mathrm{textnsqsupsest}$   
 20443  $\backslash\mathrm{let}\backslash\mathrm{sqcap}\backslash\mathrm{textsqqap}$   
 20444  $\backslash\mathrm{let}\backslash\mathrm{sqcup}\backslash\mathrm{textsqqcup}$   
 20445  $\backslash\mathrm{let}\backslash\mathrm{oplus}\backslash\mathrm{textoplus}$   
 20446  $\backslash\mathrm{let}\backslash\mathrm{ominus}\backslash\mathrm{textominus}$   
 20447  $\backslash\mathrm{let}\backslash\mathrm{otimes}\backslash\mathrm{textotimes}$   
 20448  $\backslash\mathrm{let}\backslash\mathrm{oslash}\backslash\mathrm{textoslash}$   
 20449  $\backslash\mathrm{let}\backslash\mathrm{odot}\backslash\mathrm{textodot}$   
 20450  $\backslash\mathrm{let}\backslash\mathrm{circledcirc}\backslash\mathrm{textcircledcirc}$   
 20451  $\backslash\mathrm{let}\backslash\mathrm{circledast}\backslash\mathrm{textcircledast}$   
 20452  $\backslash\mathrm{let}\backslash\mathrm{circleddash}\backslash\mathrm{textcircleddash}$   
 20453  $\backslash\mathrm{let}\backslash\mathrm{boxplus}\backslash\mathrm{textboxplus}$   
 20454  $\backslash\mathrm{let}\backslash\mathrm{boxminus}\backslash\mathrm{textboxminus}$   
 20455  $\backslash\mathrm{let}\backslash\mathrm{boxtimes}\backslash\mathrm{textboxtimes}$   
 20456  $\backslash\mathrm{let}\backslash\mathrm{boxdot}\backslash\mathrm{textboxdot}$   
 20457  $\backslash\mathrm{let}\backslash\mathrm{vdash}\backslash\mathrm{textvdash}$   
 20458  $\backslash\mathrm{let}\backslash\mathrm{dashv}\backslash\mathrm{texdashv}$   
 20459  $\backslash\mathrm{let}\backslash\mathrm{ndashv}\backslash\mathrm{textndashv}$   
 20460  $\backslash\mathrm{let}\backslash\mathrm{top}\backslash\mathrm{texttop}$   
 20461  $\backslash\mathrm{let}\backslash\mathrm{ndownvdash}\backslash\mathrm{textndownvdash}$   
 20462  $\backslash\mathrm{let}\backslash\mathrm{bot}\backslash\mathrm{textbot}$   
 20463  $\backslash\mathrm{let}\backslash\mathrm{nupvdash}\backslash\mathrm{textnupvdash}$   
 20464  $\backslash\mathrm{let}\backslash\mathrm{vDash}\backslash\mathrm{textvDash}$   
 20465  $\backslash\mathrm{let}\backslash\mathrm{VDash}\backslash\mathrm{textVDash}$   
 20466  $\backslash\mathrm{let}\backslash\mathrm{Vvdash}\backslash\mathrm{textVvdash}$   
 20467  $\backslash\mathrm{let}\backslash\mathrm{nVdash}\backslash\mathrm{textnVdash}$   
 20468  $\backslash\mathrm{let}\backslash\mathrm{VDash}\backslash\mathrm{textVDash}$   
 20469  $\backslash\mathrm{let}\backslash\mathrm{nvDash}\backslash\mathrm{textnvDash}$   
 20470  $\backslash\mathrm{let}\backslash\mathrm{nvDash}\backslash\mathrm{textnvDash}$   
 20471  $\backslash\mathrm{let}\backslash\mathrm{nVdash}\backslash\mathrm{textnVdash}$   
 20472  $\backslash\mathrm{let}\backslash\mathrm{nVDash}\backslash\mathrm{textnVDash}$   
 20473  $\backslash\mathrm{let}\backslash\mathrm{lhs}\backslash\mathrm{texlhs}$   
 20474  $\backslash\mathrm{let}\backslash\mathrm{rhs}\backslash\mathrm{texrhs}$   
 20475  $\backslash\mathrm{let}\backslash\mathrm{unlhs}\backslash\mathrm{textunlhs}$   
 20476  $\backslash\mathrm{let}\backslash\mathrm{unrhs}\backslash\mathrm{textunrhs}$   
 20477  $\backslash\mathrm{let}\backslash\mathrm{multimapdotbothA}\backslash\mathrm{textmultimapdotbothA}$   
 20478  $\backslash\mathrm{let}\backslash\mathrm{multimapdotbothB}\backslash\mathrm{textmultimapdotbothB}$   
 20479  $\backslash\mathrm{let}\backslash\mathrm{multimap}\backslash\mathrm{textmultimap}$   
 20480  $\backslash\mathrm{let}\backslash\mathrm{veebar}\backslash\mathrm{textveebar}$   
 20481  $\backslash\mathrm{let}\backslash\mathrm{barwedge}\backslash\mathrm{textbarwedge}$   
 20482  $\backslash\mathrm{let}\backslash\mathrm{star}\backslash\mathrm{textstar}$



20483  $\backslash\mathrm{divideontimes}\text{divideontimes}$   
 20484  $\backslash\mathrm{bowtie}\text{bowtie}$   
 20485  $\backslash\mathrm{ltimes}\text{ltimes}$   
 20486  $\backslash\mathrm{rtimes}\text{trtimes}$   
 20487  $\backslash\mathrm{leftthreetimes}\text{leftthreetimes}$   
 20488  $\backslash\mathrm{rightthreetimes}\text{rightthreetimes}$   
 20489  $\backslash\mathrm{backsimeq}\text{backsimeq}$   
 20490  $\backslash\mathrm{nbacksimeq}\text{nbacksimeq}$   
 20491  $\backslash\mathrm{curlyvee}\text{curlyvee}$   
 20492  $\backslash\mathrm{curlywedge}\text{curlywedge}$   
 20493  $\backslash\mathrm{Subset}\text{Subset}$   
 20494  $\backslash\mathrm{nSubset}\text{nSubset}$   
 20495  $\backslash\mathrm{Supset}\text{Supset}$   
 20496  $\backslash\mathrm{nSupset}\text{nSupset}$   
 20497  $\backslash\mathrm{Cap}\text{Cap}$   
 20498  $\backslash\mathrm{Cup}\text{Cup}$   
 20499  $\backslash\mathrm{pitchfork}\text{pitchfork}$   
 20500  $\backslash\mathrm{lessdot}\text{lessdot}$   
 20501  $\backslash\mathrm{gtrdot}\text{gtrdot}$   
 20502  $\backslash\mathrm{lll}\text{lll}$   
 20503  $\backslash\mathrm{ggg}\text{ggg}$   
 20504  $\backslash\mathrm{lesseqgtr}\text{lesseqgtr}$   
 20505  $\backslash\mathrm{gtreqless}\text{gtreqless}$   
 20506  $\backslash\mathrm{curlyeqprec}\text{curlyeqprec}$   
 20507  $\backslash\mathrm{ncurlyeqprec}\text{ncurlyeqprec}$   
 20508  $\backslash\mathrm{curlyeqsucc}\text{curlyeqsucc}$   
 20509  $\backslash\mathrm{ncurlyeqsucc}\text{ncurlyeqsucc}$   
 20510  $\backslash\mathrm{npreccurlyeq}\text{npreccurlyeq}$   
 20511  $\backslash\mathrm{nsucccurlyeq}\text{nsucccurlyeq}$   
 20512  $\backslash\mathrm{nqsubseteq}\text{nqsubseteq}$   
 20513  $\backslash\mathrm{nqsupseteq}\text{nqsupseteq}$   
 20514  $\backslash\mathrm{sqsubsetneq}\text{sqsubsetneq}$   
 20515  $\backslash\mathrm{sqsupsetneq}\text{sqsupsetneq}$   
 20516  $\backslash\mathrm{lnsim}\text{lnsim}$   
 20517  $\backslash\mathrm{gnsim}\text{gnsim}$   
 20518  $\backslash\mathrm{precnsim}\text{precnsim}$   
 20519  $\backslash\mathrm{succnsim}\text{succnsim}$   
 20520  $\backslash\mathrm{ntriangleleft}\text{ntriangleleft}$   
 20521  $\backslash\mathrm{ntriangleright}\text{ntriangleright}$   
 20522  $\backslash\mathrm{ntrianglelefteq}\text{ntrianglelefteq}$   
 20523  $\backslash\mathrm{ntrianglerighteq}\text{ntrianglerighteq}$   
 20524  $\backslash\mathrm{vdots}\text{vdots}$   
 20525  $\backslash\mathrm{cdots}\text{cdots}$   
 20526  $\backslash\mathrm{udots}\text{udots}$   
 20527  $\backslash\mathrm{ddots}\text{ddots}$   
 20528  $\backslash\mathrm{barin}\text{barin}$   
 20529  $\backslash\mathrm{diameter}\text{diameter}$   
 20530  $\backslash\mathrm{backneg}\text{backneg}$   
 20531  $\backslash\mathrm{wasylozenge}\text{wasylozenge}$   
 20532  $\backslash\mathrm{invbackneg}\text{invbackneg}$   
 20533  $\backslash\mathrm{clock}\text{clock}$   
 20534  $\backslash\mathrm{ulcorner}\text{ulcorner}$   
 20535  $\backslash\mathrm{urcorner}\text{urcorner}$   
 20536  $\backslash\mathrm{llcorner}\text{llcorner}$

20537 \let\lrcorner\textlrcorner  
 20538 \let\frown\textfrown  
 20539 \let\smile\textsmile  
 20540 \let\Keyboard\textKeyboard  
 20541 \let\langle\textlangle  
 20542 \let\rangle\textrangle  
 20543 \let\APLinv\textAPLinv  
 20544 \let\Tumbler\textTumbler  
 20545 \let\notslash\textnotslash  
 20546 \let\notbackslash\textnotbackslash  
 20547 \let\boxbackslash\textboxbackslash  
 20548 \let\APLleftarrowbox\textAPLleftarrowbox  
 20549 \let\APLrightarrowbox\textAPLrightarrowbox  
 20550 \let\APLuparrowbox\textAPLuparrowbox  
 20551 \let\APLdownarrowbox\textAPLdownarrowbox  
 20552 \let\APLinput\textAPLinput  
 20553 \let\Request\textRequest  
 20554 \let\Beam\textBeam  
 20555 \let\hexagon\texthexagon  
 20556 \let\APLbox\textAPLbox  
 20557 \let\ForwardToIndex\textForwardToIndex  
 20558 \let\RewindToIndex\textRewindToIndex  
 20559 \let\bbslash\textbbslash  
 20560 \let\CircledA\textCircledA  
 20561 \let\CleaningF\textCleaningF  
 20562 \let\CleaningFF\textCleaningFF  
 20563 \let\CleaningP\textCleaningP  
 20564 \let\CleaningPP\textCleaningPP  
 20565 \let\CuttingLine\textCuttingLine  
 20566 \let\UParrow\textUParrow  
 20567 \let\bigtriangleup\textbigtriangleup  
 20568 \let\Forward\textForward  
 20569 \let\triangleright\texttriangleright  
 20570 \let\RHD\textRHD  
 20571 \let\DOWNarrow\textDOWNarrow  
 20572 \let\bigtriangledown\textbigtriangledown  
 20573 \let\Rewind\textRewind  
 20574 \let\triangleleft\texttriangleleft  
 20575 \let\LHD\textLHD  
 20576 \let\diamond\textdiamond  
 20577 \let\lozenge\textlozenge  
 20578 \let\LEFTCIRCLE\textLEFTCIRCLE  
 20579 \let\RIGHTCIRCLE\textRIGHTCIRCLE  
 20580 \let\openbullet\textopenbullet  
 20581 \let\boxbar\textboxbar  
 20582 \let\bigcircle\textbigcircle  
 20583 \let\Cloud\textCloud  
 20584 \let\FiveStar\textFiveStar  
 20585 \let\FiveStarOpen\textFiveStarOpen  
 20586 \let\Phone\textPhone  
 20587 \let\boxempty\textboxempty  
 20588 \let\Checkedbox\textCheckedbox  
 20589 \let\Crossedbox\textCrossedbox  
 20590 \let\Coffeecup\textCoffeecup

20591 \let\HandCuffLeft\textHandCuffLeft  
 20592 \let\HandCuffRight\textHandCuffRight  
 20593 \let\HandLeft\textHandLeft  
 20594 \let\HandRight\textHandRight  
 20595 \let\Radioactivity\textRadioactivity  
 20596 \let\Biohazard\textBiohazard  
 20597 \let\Ankh\textAnkh  
 20598 \let\YinYang\textYinYang  
 20599 \let\frownie\textfrownie  
 20600 \let\smiley\textsmiley  
 20601 \let\blacksmiley\textblacksmiley  
 20602 \let\sun\textsun  
 20603 \let\leftmoon\textleftmoon  
 20604 \let\rightmoon\textrightmoon  
 20605 \let\mercury\textmercury  
 20606 \let\earth\textearth  
 20607 \let\male\textmale  
 20608 \let\jupiter\textjupiter  
 20609 \let\saturn\textsaturn  
 20610 \let\uranus\texturanus  
 20611 \let\neptune\textneptune  
 20612 \let\pluto\textpluto  
 20613 \let\aries\textaries  
 20614 \let\taurus\texttaurus  
 20615 \let\gemini\textgemini  
 20616 \let\cancer\textcancer  
 20617 \let\leo\textleo  
 20618 \let\virgo\textvirgo  
 20619 \let\libra\textlibra  
 20620 \let\scorpio\textscorpio  
 20621 \let\sagittarius\textsagittarius  
 20622 \let\capricornus\textcapricornus  
 20623 \let\aquarius\textaquarius  
 20624 \let\pisces\textpisces  
 20625 \let\quarternote\textquarternote  
 20626 \let\twonotes\texttwonotes  
 20627 \let\sixteenthnote\textsixteenthnote  
 20628 \let\flat\textflat  
 20629 \let\natural\textnatural  
 20630 \let\sharp\textsharp  
 20631 \let\recycle\textrecycle  
 20632 \let\Wheelchair\textWheelchair  
 20633 \let\Flag\textFlag  
 20634 \let\MineSign\textMineSign  
 20635 \let\ds\textds  
 20636 \let\dsmedical\textdsmedical  
 20637 \let\dsjuridical\textdsjuridical  
 20638 \let\dschemical\textdschemical  
 20639 \let\dsbiological\textdsbiological  
 20640 \let\dscommercial\textdscommercial  
 20641 \let\manstar\textmanstar  
 20642 \let\danger\textdanger  
 20643 \let\FemaleFemale\textFemaleFemale  
 20644 \let\MaleMale\textMaleMale

20645 \let\FemaleMale\textFemaleMale  
 20646 \let\Hermaphrodite\textHermaphrodite  
 20647 \let\Neutral\textNeutral  
 20648 \let\hexstar\texthexstar  
 20649 \let\SunCload\textSunCload  
 20650 \let\Rain\textRain  
 20651 \let\noway\textnoway  
 20652 \let\Mountain\textMountain  
 20653 \let\Tent\textTent  
 20654 \let\ScissorRight\textScissorRight  
 20655 \let\ScissorRightBrokenTop\textScissorRightBrokenTop  
 20656 \let\ScissorHollowRight\textScissorHollowRight  
 20657 \let\PhoneHandset\textPhoneHandset  
 20658 \let\Tape\textTape  
 20659 \let\Plane\textPlane  
 20660 \let\Envelope\textEnvelope  
 20661 \let\Peace\textPeace  
 20662 \let\WritingHand\textWritingHand  
 20663 \let\PencilRightDown\textPencilRightDown  
 20664 \let\PencilRight\textPencilRight  
 20665 \let\PencilRightUp\textPencilRightUp  
 20666 \let\NibRight\textNibRight  
 20667 \let\NibSolidRight\textNibSolidRight  
 20668 \let\Checkmark\textCheckmark  
 20669 \let\CheckmarkBold\textCheckmarkBold  
 20670 \let\XSolid\textXSolid  
 20671 \let\XSolidBold\textXSolidBold  
 20672 \let\XSolidBrush\textXSolidBrush  
 20673 \let\PlusOutline\textPlusOutline  
 20674 \let\Plus\textPlus  
 20675 \let\PlusThinCenterOpen\textPlusThinCenterOpen  
 20676 \let\PlusCenterOpen\textPlusCenterOpen  
 20677 \let\Cross\textCross  
 20678 \let\CrossOpenShadow\textCrossOpenShadow  
 20679 \let\CrossOutline\textCrossOutline  
 20680 \let\CrossMaltese\textCrossMaltese  
 20681 \let\DavidStar\textDavidStar  
 20682 \let\FourAsterisk\textFourAsterisk  
 20683 \let\JackStar\textJackStar  
 20684 \let\JackStarBold\textJackStarBold  
 20685 \let\ClowerTips\textClowerTips  
 20686 \let\FourStar\textFourStar  
 20687 \let\FourStarOpen\textFourStarOpen  
 20688 \let\FiveStarOpenCircled\textFiveStarOpenCircled  
 20689 \let\FiveStarCenterOpen\textFiveStarCenterOpen  
 20690 \let\FiveStarOpenDotted\textFiveStarOpenDotted  
 20691 \let\FiveStarOutline\textFiveStarOutline  
 20692 \let\FiveStarOutlineHeavy\textFiveStarOutlineHeavy  
 20693 \let\FiveStarConvex\textFiveStarConvex  
 20694 \let\FiveStarShadow\textFiveStarShadow  
 20695 \let\AsteriskBold\textAsteriskBold  
 20696 \let\AsteriskCenterOpen\textAsteriskCenterOpen  
 20697 \let\EightStarTaper\textEightStarTaper  
 20698 \let\EightStarConvex\textEightStarConvex

20699 \let\SixStar\textSixStar  
 20700 \let\EightStar\textEightStar  
 20701 \let\EightStarBold\textEightStarBold  
 20702 \let\TwelveStar\textTwelveStar  
 20703 \let\SixteenStarLight\textSixteenStarLight  
 20704 \let\SixFlowerPetalRemoved\textSixFlowerPetalRemoved  
 20705 \let\SixFlowerOpenCenter\textSixFlowerOpenCenter  
 20706 \let\Asterisk\textAsterisk  
 20707 \let\SixFlowerAlternate\textSixFlowerAlternate  
 20708 \let\FiveFlowerPetal\textFiveFlowerPetal  
 20709 \let\FiveFlowerOpen\textFiveFlowerOpen  
 20710 \let\EightFlowerPetal\textEightFlowerPetal  
 20711 \let\SunshineOpenCircled\textSunshineOpenCircled  
 20712 \let\SixFlowerAltPetal\textSixFlowerAltPetal  
 20713 \let\SnowflakeChevron\textSnowflakeChevron  
 20714 \let\Snowflake\textSnowflake  
 20715 \let\SnowflakeChevronBold\textSnowflakeChevronBold  
 20716 \let\Sparkle\textSparkle  
 20717 \let\SparkleBold\textSparkleBold  
 20718 \let\AsteriskRoundedEnds\textAsteriskRoundedEnds  
 20719 \let\EightFlowerPetalRemoved\textEightFlowerPetalRemoved  
 20720 \let\EightAsterisk\textEightAsterisk  
 20721 \let\CircleShadow\textCircleShadow  
 20722 \let\SquareShadowBottomRight\textSquareShadowBottomRight  
 20723 \let\SquareTopRight\textSquareTopRight  
 20724 \let\SquareCastShadowBottomRight\textSquareCastShadowBottomRight  
 20725 \let\SquareCastShadowTopRight\textSquareCastShadowTopRight  
 20726 \let\DiamondSolid\textDiamondSolid  
 20727 \let\RectangleThin\textRectangleThin  
 20728 \let\Rectangle\textRectangle  
 20729 \let\RectangleBold\textRectangleBold  
 20730 \let\perp\textperp  
 20731 \let\notperp\textnotperp  
 20732 \let\veedot\textveedot  
 20733 \let\wedgedot\textwedgedot  
 20734 \let\leftspoon\textleftspoon  
 20735 \let\lbrackdbl\textlbrackdbl  
 20736 \let\rbrackdbl\textrbrackdbl  
 20737 \let\circlearrowleft\textcirclearrowleft  
 20738 \let\circlearrowright\textcirclearrowright  
 20739 \let\longleftarrow\textlongleftarrow  
 20740 \let\longrightarrow\textlongrightarrow  
 20741 \let\longlefttrightarrow\textlonglefttrightarrow  
 20742 \let\Longleftarrow\textLongleftarrow  
 20743 \let\Longrightarrow\textLongrightarrow  
 20744 \let\Longlefttrightarrow\textLonglefttrightarrow  
 20745 \let\longmapsto\textlongmapsto  
 20746 \let\Longmapsfrom\textLongmapsfrom  
 20747 \let\Longmapsto\textLongmapsto  
 20748 \let\nwsearrow\textnwsearrow  
 20749 \let\neswarrow\textneswarrow  
 20750 \let\hooknwarrow\texthooknwarrow  
 20751 \let\rhooknearrow\text\rhooknearrow  
 20752 \let\hooksearrow\texthooksearrow

20753  $\backslash\mathrm{rhookswarrow}\mathrm{textrhookswarrow}$   
 20754  $\backslash\mathrm{leadsto}\mathrm{textleadsto}$   
 20755  $\backslash\mathrm{rcurvearrowne}\mathrm{textrcurvearrowne}$   
 20756  $\backslash\mathrm{lcurvearrowse}\mathrm{textlcurvearrowse}$   
 20757  $\backslash\mathrm{lcurvearrowsw}\mathrm{textlcurvearrowsw}$   
 20758  $\backslash\mathrm{rcurvearrowse}\mathrm{textrcurvearrowse}$   
 20759  $\backslash\mathrm{lcurvearrowdown}\mathrm{textlcurvearrowdown}$   
 20760  $\backslash\mathrm{rcurvearrowdown}\mathrm{textrcurvearrowdown}$   
 20761  $\backslash\mathrm{rcurvearrowleft}\mathrm{textrcurvearrowleft}$   
 20762  $\backslash\mathrm{rcurvearrowright}\mathrm{textrcurvearrowright}$   
 20763  $\backslash\mathrm{leftrightharpoon}\mathrm{textleftrightharpoon}$   
 20764  $\backslash\mathrm{rightleftharpoon}\mathrm{textrightleftharpoon}$   
 20765  $\backslash\mathrm{updownharpoonrightleft}\mathrm{textupdownharpoonrightleft}$   
 20766  $\backslash\mathrm{updownharpoonleftright}\mathrm{textupdownharpoonleftright}$   
 20767  $\backslash\mathrm{leftleftharpoons}\mathrm{textleftleftharpoons}$   
 20768  $\backslash\mathrm{upupharpoons}\mathrm{textupupharpoons}$   
 20769  $\backslash\mathrm{rightrightarpoons}\mathrm{textrighttrightarpoons}$   
 20770  $\backslash\mathrm{downdownharpoons}\mathrm{textdowndownharpoons}$   
 20771  $\backslash\mathrm{leftbarharpoon}\mathrm{textleftbarharpoon}$   
 20772  $\backslash\mathrm{barleftharpoon}\mathrm{textbarleftharpoon}$   
 20773  $\backslash\mathrm{rightbarharpoon}\mathrm{textrightbarharpoon}$   
 20774  $\backslash\mathrm{barrightharpoon}\mathrm{textbarrightharpoon}$   
 20775  $\backslash\mathrm{updownharpoons}\mathrm{textupdownharpoons}$   
 20776  $\backslash\mathrm{downupharpoons}\mathrm{textdownupharpoons}$   
 20777  $\backslash\mathrm{moo}\mathrm{textmoo}$   
 20778  $\backslash\mathrm{llparenthesis}\mathrm{textllparenthesis}$   
 20779  $\backslash\mathrm{rrparenthesis}\mathrm{textrrparenthesis}$   
 20780  $\backslash\mathrm{invdiameter}\mathrm{textinvdiameter}$   
 20781  $\backslash\mathrm{obar}\mathrm{textobar}$   
 20782  $\backslash\mathrm{obslash}\mathrm{textobslash}$   
 20783  $\backslash\mathrm{obot}\mathrm{textobot}$   
 20784  $\backslash\mathrm{NoChemicalCleaning}\mathrm{textNoChemicalCleaning}$   
 20785  $\backslash\mathrm{olessthan}\mathrm{textolessthan}$   
 20786  $\backslash\mathrm{ogreaterthan}\mathrm{textogreaterthan}$   
 20787  $\backslash\mathrm{boxslash}\mathrm{textboxslash}$   
 20788  $\backslash\mathrm{boxbslash}\mathrm{textboxbslash}$   
 20789  $\backslash\mathrm{boxast}\mathrm{textboxast}$   
 20790  $\backslash\mathrm{boxcircle}\mathrm{textboxcircle}$   
 20791  $\backslash\mathrm{boxbox}\mathrm{textboxbox}$   
 20792  $\backslash\mathrm{Valve}\mathrm{textValve}$   
 20793  $\backslash\mathrm{multimapboth}\mathrm{textmultimapboth}$   
 20794  $\backslash\mathrm{shuffle}\mathrm{textshuffle}$   
 20795  $\backslash\mathrm{uplus}\mathrm{textuplus}$   
 20796  $\backslash\mathrm{bigdoublewedge}\mathrm{textbigdoublewedge}$   
 20797  $\backslash\mathrm{bigdoublevee}\mathrm{textbigdoublevee}$   
 20798  $\backslash\mathrm{Join}\mathrm{textJoin}$   
 20799  $\backslash\mathrm{fatsemi}\mathrm{textfatsemi}$   
 20800  $\backslash\mathrm{circplus}\mathrm{textcircplus}$   
 20801  $\backslash\mathrm{minusdot}\mathrm{textminusdot}$   
 20802  $\backslash\mathrm{dotimes}\mathrm{textdotimes}$   
 20803  $\backslash\mathrm{dtimes}\mathrm{textdtimes}$   
 20804  $\backslash\mathrm{odiv}\mathrm{textodiv}$   
 20805  $\backslash\mathrm{invneg}\mathrm{textinvneg}$   
 20806  $\backslash\mathrm{sqdoublecap}\mathrm{textsdoublecap}$

20807 \let\capdot\textcapdot  
 20808 \let\squdoublecup\textsqudoublecup  
 20809 \let\doublewedge\textdoublewedge  
 20810 \let\doublevee\textdoublevee  
 20811 \let\doublebarwedge\textdoublebarwedge  
 20812 \let\veedoublebar\textveedoublebar  
 20813 \let\eqdot\texteqdot  
 20814 \let\neqdot\textneqdot  
 20815 \let\coloncolonequals\textcoloncolonequals  
 20816 \let\leqslant\textleqslant  
 20817 \let\neqslant\textneqslant  
 20818 \let\geqslant\textgeqslant  
 20819 \let\ngeqslant\textngeqslant  
 20820 \let\lessapprox\textlessapprox  
 20821 \let\nlessapprox\textnlessapprox  
 20822 \let\gtrapprox\textgtrapprox  
 20823 \let\ngtrapprox\textngtrapprox  
 20824 \let\lneq\textlneq  
 20825 \let\gneq\textgneq  
 20826 \let\lnapprox\textlnapprox  
 20827 \let\gnapprox\textgnapprox  
 20828 \let\lesseqqgtr\textlesseqqgtr  
 20829 \let\gtreqqless\textgtreqqless  
 20830 \let\eqslantless\texteqslantless  
 20831 \let\eqslantgtr\texteqslantgtr  
 20832 \let\leftslice\textleftslice  
 20833 \let\rightslice\textrightslice  
 20834 \let\preceq\textpreceq  
 20835 \let\preceq\textpreceq  
 20836 \let\succeq\textsucceq  
 20837 \let\succeq\textsucceq  
 20838 \let\precneq\textprecneq  
 20839 \let\succneq\textsuccneq  
 20840 \let\preceqq\textpreceqq  
 20841 \let\preceqq\textpreceqq  
 20842 \let\succeqq\textsucceqq  
 20843 \let\succeqq\textsucceqq  
 20844 \let\precneqq\textprecneqq  
 20845 \let\succneqq\textsuccneqq  
 20846 \let\precapprox\textprecapprox  
 20847 \let\precapprox\textprecapprox  
 20848 \let\succapprox\textsuccapprox  
 20849 \let\succapprox\textsuccapprox  
 20850 \let\precnapprox\textprecnapprox  
 20851 \let\succnapprox\textsuccnapprox  
 20852 \let\subseteqq\textsubseteqq  
 20853 \let\subseteqq\textsubseteqq  
 20854 \let\supseteqq\textsupseteqq  
 20855 \let\supseteqq\textsupseteqq  
 20856 \let\dashV\textdashV  
 20857 \let\ndashV\textndashV  
 20858 \let\Dashv\textDashv  
 20859 \let\ndashv\textndashv  
 20860 \let\DashV\textDashV

20861 \let\nDashV\textnDashV  
 20862 \let\downmodels\textdownmodels  
 20863 \let\ndownmodels\textndownmodels  
 20864 \let\upmodels\textupmodels  
 20865 \let\nupmodels\textnupmodels  
 20866 \let\upspoon\textupspoon  
 20867 \let\interleave\textinterleave  
 20868 \let\sslash\textsslash  
 20869 \let\pentagon\textpentagon  
 20870 \let\varhexagon\textvarhexagon  
 20871 \let\jinferior\textjinferior  
 20872 \let\slashdiv\textslashdiv  
 20873 \let\fivedots\textfivedots  
 20874 \let\oo\textoo  
 20875 \let\GaPa\textGaPa  
 20876 \let\HaPa\textHaPa  
 20877 \let\ViPa\textViPa  
 20878 \let\AcPa\textAcPa  
 20879 \let\SePa\textSePa  
 20880 \let\ZwPa\textZwPa  
 20881 \let\fullnote\textfullnote  
 20882 \let\halfnote\texthalfnote  
 20883 \let\Vier\textVier  
 20884 \let\Acht\textAcht  
 20885 \let\Sech\textSech  
 20886 \let\Zwdr\textZwdr  
 20887 \let\Mundus\textMundus  
 20888 \let\Moon\textMoon  
 20889 \let\ManFace\textManFace  
 20890 \let\WomanFace\textWomanFace  
 20891 \let\Fax\textFax  
 20892 \let\Fire\textFire  
 20893 \let\Bicycle\textBicycle  
 20894 \let\Gentsroom\textGentsroom  
 20895 \let\Ladiesroom\textLadiesroom  
 20896 \let\ccnc\textccnc  
 20897 \let\ccsa\textccsa  
 20898 \let\Info\textInfo  
 20899 \let\CESign\textCESign  
 20900 \let\neg\textneg  
 20901 \let\times\texttimes  
 20902 \let\div\textdiv  
 20903 \let\pm\textpm  
 20904 \let\cdot\textcdot  
 20905 }% \psdmapshortnames  
 20906 \newcommand\*{\psdaliasnames}{%  
 20907 \let\epsdice\HyPsd@DieFace  
 20908 \let\fcdice\HyPsd@DieFace  
 20909 \let\MoonPha\HyPsd@MoonPha  
 20910 \let\mathdollar\textdollar  
 20911 \let\EyesDollar\textdollar  
 20912 \let\binampersand\textampersand  
 20913 \let\with\textampersand  
 20914 \let\mathunderscore\textunderscore



20915 `\let\textvertline\textbar`  
 20916 `\let\mathsterling\textsterling`  
 20917 `\let\pounds\textsterling`  
 20918 `\let\brokenvert\textbrokenbar`  
 20919 `\let\mathsection\textsection`  
 20920 `\let\S\textsection`  
 20921 `\let\mathparagraph\textparagraph`  
 20922 `\let\MultiplicationDot\textperiodcentered`  
 20923 `\let\Squaredot\textperiodcentered`  
 20924 `\let\vartimes\textmultiply`  
 20925 `\let\MVMultiplication\textmultiply`  
 20926 `\let\eth\dh`  
 20927 `\let\crossd\textcrd`  
 20928 `\let\textbard\textcrd`  
 20929 `\let\bard\textcrd`  
 20930 `\let\textcrh\textthbar`  
 20931 `\let\crossh\textthbar`  
 20932 `\let\planck\textthbar`  
 20933 `\let\eng\ng`  
 20934 `\let\engma\ng`  
 20935 `\let\crossb\textcrb`  
 20936 `\let\textbarb\textcrb`  
 20937 `\let\barb\textcrb`  
 20938 `\let\Florin\textflorin`  
 20939 `\let\hv\texthvlig`  
 20940 `\let\hausak\texthtk`  
 20941 `\let\crossnilambda\textcrlambda`  
 20942 `\let\barlambda\textcrlambda`  
 20943 `\let\lambdabar\textcrlambda`  
 20944 `\let\lambdaslash\textcrlambda`  
 20945 `\let\textnrleg\textPUnrleg`  
 20946 `\let\textpipevar\textpipe`  
 20947 `\let\textdoublepipevar\textdoublepipe`  
 20948 `\let\textdoublebarpipevar\textdoublebarpipe`  
 20949 `\let\textcrg\textgslash`  
 20950 `\let\textdblig\textPUdblig`  
 20951 `\let\textqplig\textPUqplig`  
 20952 `\let\textcentoldstyle\textslashc`  
 20953 `\let\textbarc\textslashc`  
 20954 `\let\inva\textturna`  
 20955 `\let\vara\textscripta`  
 20956 `\let\invscripta\textturnscripta`  
 20957 `\let\rotvara\textturnscripta`  
 20958 `\let\hookb\texthtb`  
 20959 `\let\hausab\texthtb`  
 20960 `\let\varopeno\textopeno`  
 20961 `\let\curlyc\textctc`  
 20962 `\let\taild\textrtaild`  
 20963 `\let\hookd\texthtd`  
 20964 `\let\hausad\texthtd`  
 20965 `\let\er\textrhohookswa`  
 20966 `\let\epsi\textniepsilon`  
 20967 `\let\hookrepsilon\textrhohookrepsilon`  
 20968 `\let\closedrepsilon\textcloserepsilon`

20969 \let\barj\textbardotlessj  
 20970 \let\hookg\texthtg  
 20971 \let\varg\textscriptg  
 20972 \let\vod\textipagamma  
 20973 \let\invh\textturnh  
 20974 \let\udesc\textturnh  
 20975 \let\hookh\texthth  
 20976 \let\voicedh\texthth  
 20977 \let\hookheng\texththeng  
 20978 \let\ibar\textbari  
 20979 \let\vari\textniiota  
 20980 \let\tildel\textltilde  
 20981 \let\latfric\textbeltl  
 20982 \let\taill\textrtail  
 20983 \let\lz\textlyoghlig  
 20984 \let\invm\textturnm  
 20985 \let\rotm\textturnm  
 20986 \let\legm\textturnmrleg  
 20987 \let\labdentalnas\textltailm  
 20988 \let\emgma\textltailm  
 20989 \let\nj\textltailn  
 20990 \let\enya\textltailn  
 20991 \let\tailn\textrtailn  
 20992 \let\closedniomega\textcloseomega  
 20993 \let\varomega\textcloseomega  
 20994 \let\invr\textturnr  
 20995 \let\rotr\textturnr  
 20996 \let\invlegr\textturnlonglegr  
 20997 \let\tailinvr\textturnrrtail  
 20998 \let\legr\textlonglegr  
 20999 \let\tailr\textrtailr  
 21000 \let\flapr\textfishhookr  
 21001 \let\flap\textfishhookr  
 21002 \let\tails\textrtails  
 21003 \let\curlyesh\textctesh  
 21004 \let\clickt\textturnt  
 21005 \let\tailt\textrtailt  
 21006 \let\ubar\textbaru  
 21007 \let\rotOmega\textniupsilon  
 21008 \let\invv\textturnv  
 21009 \let\pwedge\textturnv  
 21010 \let\invw\textturnw  
 21011 \let\rotw\textturnw  
 21012 \let\invy\textturny  
 21013 \let\roty\textturny  
 21014 \let\tailz\textrtailz  
 21015 \let\curlyz\textctz  
 21016 \let\curlyyogh\textctyogh  
 21017 \let\ejective\textglotstop  
 21018 \let\glottal\textglotstop  
 21019 \let\reveject\textrevglotstop  
 21020 \let\clickc\textstretchc  
 21021 \let\textstretchcvar\textstretchc  
 21022 \let\clickb\textbullseye

21023 \let\textObullseye\textbullseye  
 21024 \let\textctjvar\textctj  
 21025 \let\textturnsck\textturnk  
 21026 \let\dz\textdzlig  
 21027 \let\tesh\textteshlig  
 21028 \let\digamma\textdigammagreek  
 21029 \let\hardsign\cyrhrdsn  
 21030 \let\softsign\cyrsoftsn  
 21031 \let\hebsin\hebshin  
 21032 \let\textsck\textPUscK  
 21033 \let\textscm\textPUscm  
 21034 \let\textscp\textPUscp  
 21035 \let\textrevscr\textPUrevscr  
 21036 \let\textrhoKa\textPUrhoKa  
 21037 \let\textrhoKe\textPUrhoKe  
 21038 \let\textrhoKepsilon\textPUrhoKepsilon  
 21039 \let\textrhoKopeno\textPUrhoKopeno  
 21040 \let\textdoublevertline\textbardbl  
 21041 \let\dag\textdagger  
 21042 \let\ddagger\textdaggerdbl  
 21043 \let\ddag\textdaggerdbl  
 21044 \let\mathellipsis\textellipsis  
 21045 \let\EurDig\texteuro  
 21046 \let\EURdig\texteuro  
 21047 \let\EurHv\texteuro  
 21048 \let\EURhv\texteuro  
 21049 \let\EurCr\texteuro  
 21050 \let\EURcr\texteuro  
 21051 \let\EurTm\texteuro  
 21052 \let\EURtm\texteuro  
 21053 \let\Eur\texteuro  
 21054 \let\Denarius\textDeleatur  
 21055 \let\agemO\textmho  
 21056 \let\EstimatedSign\textestimated  
 21057 \let\Ecommerce\textestimated  
 21058 \let\bindnasrepma\textinvamp  
 21059 \let\parr\textinvamp  
 21060 \let\MVRightArrow\textrightarrow  
 21061 \let\MVRightarrow\textrightarrow  
 21062 \let\MVArrowDown\textdownarrow  
 21063 \let\Force\textdownarrow  
 21064 \let\textglobrise\textnearrow  
 21065 \let\textglobfall\textsearrow  
 21066 \let\Lightning\textlightning  
 21067 \let\Conclusion\textRightarrow  
 21068 \let\dashedleftarrow\textdashleftarrow  
 21069 \let\dashedrightarrow\textdashrightarrow  
 21070 \let\varnothing\textemptyset  
 21071 \let\owns\textni  
 21072 \let\notni\textnotowner  
 21073 \let\varprop\textpropto  
 21074 \let\varangle\textsphericalangle  
 21075 \let\Anglesign\textsphericalangle  
 21076 \let\AngleSign\textsphericalangle

21077 \let\notdivides\textnmid  
 21078 \let\varowedge\textowedge  
 21079 \let\varovee\textovee  
 21080 \let\varint\textint  
 21081 \let\varoint\textoint  
 21082 \let\downtherefore\textbecause  
 21083 \let\textdotdiv\textdotminus  
 21084 \let\AC\textsim  
 21085 \let\wreath\textwr  
 21086 \let\nthickapprox\textnapprox  
 21087 \let\VHF\texttriplesim  
 21088 \let\notasymp\textnasymp  
 21089 \let\Doteq\textdoteqdot  
 21090 \let\corresponds\texthateq  
 21091 \let\Corresponds\texthateq  
 21092 \let\nequal\textneq  
 21093 \let\Congruent\textequiv  
 21094 \let\NotCongruent\textnequiv  
 21095 \let\notequiv\textnequiv  
 21096 \let\LessOrEqual\textleq  
 21097 \let\LargerOrEqual\textgeq  
 21098 \let\apprle\textlessssim  
 21099 \let\apprge\textgtrsim  
 21100 \let\varoplus\textoplus  
 21101 \let\varominus\textominus  
 21102 \let\varotimes\textotimes  
 21103 \let\varoslash\textoslash  
 21104 \let\varodot\textodot  
 21105 \let\ocirc\textcircledcirc  
 21106 \let\varocircle\textcircledcirc  
 21107 \let\varoast\textcircledast  
 21108 \let\oasterisk\textcircledast  
 21109 \let\rightvdash\textvdash  
 21110 \let\leftvdash\textdashv  
 21111 \let\leftvdash\textndashv  
 21112 \let\downvdash\texttop  
 21113 \let\upvdash\textbot  
 21114 \let\nperp\textnupvdash  
 21115 \let\models\textvDash  
 21116 \let\rightmodels\textvDash  
 21117 \let\rightVdash\textVdash  
 21118 \let\rightModels\textVDash  
 21119 \let\nrightvdash\textnvdash  
 21120 \let\nrightmodels\textnvDash  
 21121 \let\nmodels\textnvDash  
 21122 \let\nrightVdash\textnVdash  
 21123 \let\nrightModels\textnVDash  
 21124 \let\lessclosed\textlhd  
 21125 \let\gtrclosed\textrhd  
 21126 \let\leqclosed\textunlhd  
 21127 \let\trianglelefteq\textunlhd  
 21128 \let\geqclosed\textunrhd  
 21129 \let\trianglerighteq\textunrhd  
 21130 \let\Bowtie\textbowtie

21131 \let\varcurlyvee\textcurlyvee  
 21132 \let\varcurlywedge\textcurlywedge  
 21133 \let\doublecap\textCap  
 21134 \let\doublecup\textCup  
 21135 \let\varsqsubsetneq\textsqsubsetneq  
 21136 \let\varsqsupsetneq\textsqsupsetneq  
 21137 \let\nlessclosed\textntriangleleft  
 21138 \let\ngtrclosed\textntriangleright  
 21139 \let\Clocklogo\textclock  
 21140 \let\ClockLogo\textclock  
 21141 \let\baro\textstmaryrdbaro  
 21142 \let\varparallelinv\textbbslash  
 21143 \let\CleaningA\textCircledA  
 21144 \let\Kutline\textCuttingLine  
 21145 \let\CutLine\textCuttingLine  
 21146 \let\Cutline\textCuttingLine  
 21147 \let\MoveUp\textUParrow  
 21148 \let\APLup\textbigtriangleup  
 21149 \let\Bleech\textbigtriangleup  
 21150 \let\MoveDown\textDOWNarrow  
 21151 \let\APLdown\textbigtriangledown  
 21152 \let\Diamond\textdiamond  
 21153 \let\varbigcirc\textbigcircle  
 21154 \let\Telefon\textPhone  
 21155 \let\Box\textboxempty  
 21156 \let\CheckedBox\textCheckedbox  
 21157 \let\XBox\textCrossedbox  
 21158 \let\CrossedBox\textCrossedbox  
 21159 \let\rightpointleft\textHandLeft  
 21160 \let\leftpointright\textHandRight  
 21161 \let\PointingHand\textHandRight  
 21162 \let\Pointinghand\textHandRight  
 21163 \let\Radiation\textRadioactivity  
 21164 \let\Yinyang\textYinYang  
 21165 \let\YingYang\textYinYang  
 21166 \let\Yingyang\textYinYang  
 21167 \let\Frowny\textfrownie  
 21168 \let\Smiley\textsmiley  
 21169 \let\Sun\textsun  
 21170 \let\Mercury\textmercury  
 21171 \let\textfemale\textPUfemale  
 21172 \let\female\textPUfemale  
 21173 \let\venus\textPUfemale  
 21174 \let\Venus\textPUfemale  
 21175 \let\Female\textPUfemale  
 21176 \let\Earth\textearth  
 21177 \let\mars\textmale  
 21178 \let\Mars\textmale  
 21179 \let\Male\textmale  
 21180 \let\Jupiter\textjupiter  
 21181 \let\Saturn\textsaturn  
 21182 \let\Uranus\texturanus  
 21183 \let\Neptune\textneptune  
 21184 \let\Pluto\textpluto

21185 \let\Aries\textaries  
 21186 \let\Taurus\texttaurus  
 21187 \let\Gemini\textgemini  
 21188 \let\Cancer\textcancer  
 21189 \let\Leo\textleo  
 21190 \let\Virgo\textvirgo  
 21191 \let\Libra\textlibra  
 21192 \let\Scorpio\textscorpio  
 21193 \let\Sagittarius\textsagittarius  
 21194 \let\Capricorn\textcapricornus  
 21195 \let\Aquarius\textaquarius  
 21196 \let\Pisces\textpisces  
 21197 \let\spadesuit\textspadesuitblack  
 21198 \let\Heart\textheartsuitwhite  
 21199 \let\heartsuit\textheartsuitwhite  
 21200 \let\diamondsuit\textdiamondsuitwhite  
 21201 \let\clubsuit\textclubsuitblack  
 21202 \let\eighthnote\textmusicalnote  
 21203 \let\Recycling\textrecycle  
 21204 \let\VarFlag\textFlag  
 21205 \let\textxswup\textdsimilitary  
 21206 \let\textuncrfemale\textPUuncrfemale  
 21207 \let\Football\textSoccerBall  
 21208 \let\CutLeft\textScissorRightBrokenBottom  
 21209 \let\Cutright\textScissorRightBrokenBottom  
 21210 \let\RightScissors\textScissorRight  
 21211 \let\Leftscissors\textScissorRight  
 21212 \let\Letter\textEnvelope  
 21213 \let\Writinghand\textWritingHand  
 21214 \let\checkmark\textCheckmark  
 21215 \let\ davidstar\textDavidStar  
 21216 \let\llbracket\textlbrackdbl  
 21217 \let\rrbracket\textrrbrackdbl  
 21218 \let\RightTorque\textlcurvearrowdown  
 21219 \let\Righttorque\textlcurvearrowdown  
 21220 \let\LeftTorque\textrcurvearrowdown  
 21221 \let\Lefttorque\textrcurvearrowdown  
 21222 \let\textvarobar\textobar  
 21223 \let\circledbslash\textobslash  
 21224 \let\obackslash\textobslash  
 21225 \let\varobslash\textobslash  
 21226 \let\odplus\textobot  
 21227 \let\varolessthan\textolessthan  
 21228 \let\varogreaterthan\textogreaterthan  
 21229 \let\divdot\textminusdot  
 21230 \let\doublesqcap\textsqdoublecap  
 21231 \let\doublesqcup\textsqdoublecup  
 21232 \let\merge\textdoublevee  
 21233 \let\leftVdash\textdashV  
 21234 \let\leftVdash\textdashV  
 21235 \let\leftmodels\textDashv  
 21236 \let\leftmodels\textDashv  
 21237 \let\leftModels\textDashV  
 21238 \let\leftModels\textDashV

```

21239 \let\varparallel\textsslash
21240 \let\textheng\textPUheng
21241 \let\textlhookfour\textPUlhookfour
21242 \let\textscf\textPUscf
21243 \let\texttaolig\textPUaolig
21244 \let\Ganz\textfullnote
21245 \let\Halb\texthalfnote
21246 \let\Womanface\textWomanFace
21247 \let\Faxmachine\textFax
21248 \let\CEsign\textCESign
21249 }% \psdaliasnames
21250 </psdextra>

```

## 48 End of file hyccheck.tex

```

21251 <*check>
21252 \typeout{}
21253 \begin{document}
21254 \end{document}
21255 </check>

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